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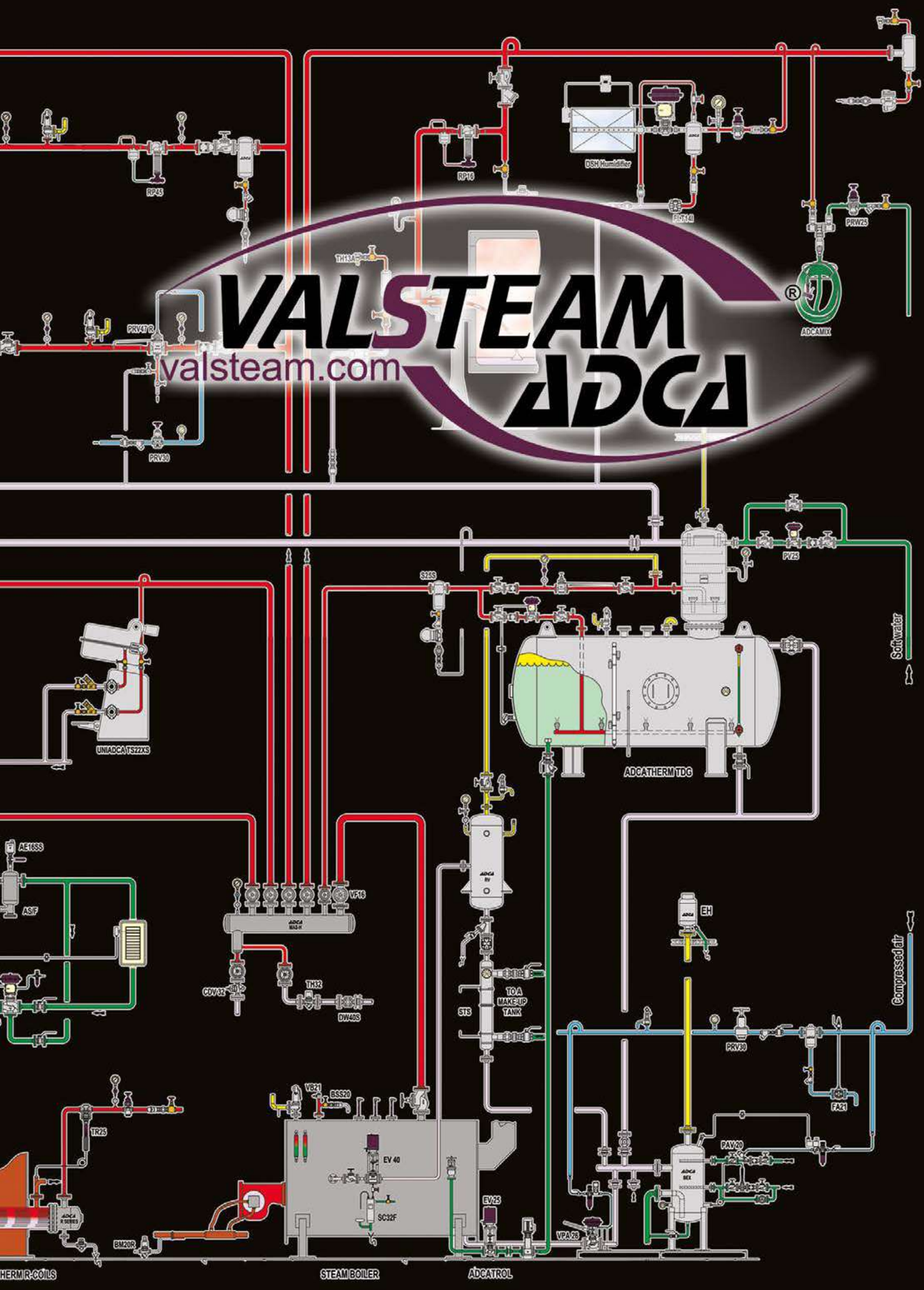


1

STEAM TRAPS

We provide a complete range of stream traps using carbon, stainless or cost steel, from DN15 to DN150, designed for pressure up to 80 bar and flow rates over 100,00 Kgs/h.

2

PRESSURE REGULATORS

From the simples, direct action valve, to the most sophisticated pilot operated valve, we assure a wide range of options, varying in different types of construction.

3

CONTROL VALVES

Our control valves offer different solutions for controlling temperature, level, pressure, and humidity. All can be supplied with electric or pneumatic actuators, including positioners, transmitters, switches, and all kinds of options.

4

PIPELINE ANCILLARIES

We produce strainers, sight glasses, vacuum breakers, drip traps (liquid drainers) for compressed air systems, air eliminators and several other ancillary items that are vital to the functioning of your installation.

5

SPECIAL EQUIPMENT

A wide range of equipment, in most cases specially developed for the process industries. Our knowledge of energy recovery systems allows us to provide a complete solution in “plug-and-play” packages. To higher the efficiency of these skids, heat exchangers and pumps can be designed and supplied

6

TECHNICAL INFORMATION

7

ASSEMBLY DRAWING

ADCA
Steam Traps

1 - Steam traps

Thermodynamic steam traps .....
Blowdown/depressurization and vent valves .....
Float and thermostatic steam traps .....
Inverted bucket steam traps .....
Thermostatic steam traps .....
Bimetallic steam traps .....
Condensate drain valve .....
Universal steam traps and connectors .....
Ultrasonic trap tester .....

THERMODYNAMIC STEAM TRAPS
DT40/2

DESCRIPTION

The thermodynamic DT40/2 disc steam traps are compact and lightweight-easy to install traps, excellent for high pressure systems, including steam tracing applications.
The insulation cover ensures a consistent operation and makes it particularly suitable for those applications where the weather conditions, such as rain and wind, may affect the normal operation.
These traps have only one moving part and offer a wide operating range, without adjustment.

MAIN FEATURES

Intermittent discharge.
Integral air vent.
Standard insulation cover.
Operates on superheated steam.
The seat and disc can be easily replaced in field without removing the trap from the line.
Unaffected by water hammer and vibrations.
Built-in easy-to-clean strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: DT40/2 – stainless steel.

SIZES: 3/8” to 1”; DN 10 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
3/8” to 1” – DN 10 to 25	SEP

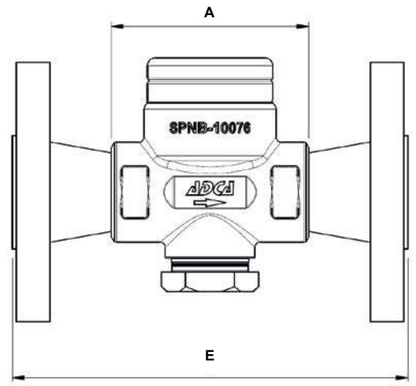
BODY LIMITING CONDITIONS				
FLANGED CLASS 150 ** ALLOWABLE PRESSURE	**FLANGED CLASS 300 ** ALLOWABLE PRESSURE**	**FLANGED PN 40 * ALLOWABLE PRESSURE**	**THREADED / SW / BW * ALLOWABLE PRESSURE**	**RELATED TEMP.**
15,3 bar	39,9 bar	40 bar	63 bar	50 ºC
13,3 bar	34,4 bar	37,9 bar	57,3 bar	100 ºC
11,1 bar	28,8 bar	31,8 bar	47,1 bar	200 ºC
9,7 bar	25,2 bar	27,6 bar	40,5 bar	300 ºC

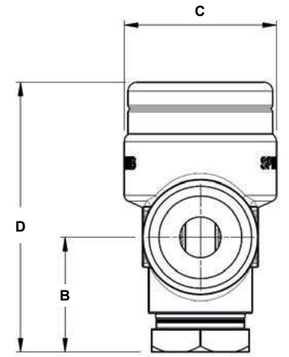
PMO – Maximum operating pressure: 40 bar;
TMO – Maximum operating temperature: 300 ºC.
* According to EN 1092-1:2018; ** According to EN 1759-1:2004.
Body limiting conditions PN 63 or below, depending on the type of connection adopted.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)													
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**											
		1,5	**3**	**5**	**7**	**9**	**12**	**15**	**18**	**21**	**24**	**30**	**35**	**40**
DT40/2 (Hot)	**3/8” to 1” DN 10 to 25**	70	100	130	175	190	200	225	240	250	270	290	300	310
DT40/2 (Cold)	**3/8” to 1” DN 10 to 25**	170	230	300	335	390	435	485	520	575	600	645	695	740

Minimum operating pressure: 1,5 bar; Maximum operating backpressure: 80% of upstream pressure.

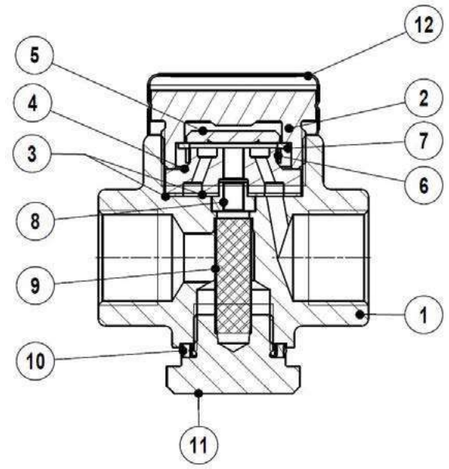




DIMENSIONS (mm)											
THREADED / SW						**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**
3/8” to 1/2” DN 10 to 15	75	38	50	89	1,06	150	2,50	150	2,20	150	2,60
3/4”– DN 20	75	38	50	89	1,06	150	3,04	150	2,63	150	3,55
1” – DN 25	90	41	50	98	1,25	160	3,65	160	3,43	160	4,88

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8 / 1.4308
2	Cover	AISI 304 / 1.4301 AISI 303 / 1.4305
3	* Gasket	Stainless St. / Graphite
4	* Seat	Hardened st. steel
5	* Valve disc	Hardened st. steel
6	* Bimetal ring	Bimetal
7	* Washer support	AISI 304 / 1.4301
8	* Tube	AISI 304 / 1.4301
9	* Strainer screen	AISI 304 / 1.4301
10	* Gasket	Stainless St. / Graphite
11	Plug	AISI 304 / 1.4301 AISI 303 / 1.4305
12	Insulation cover	AISI 304 / 1.4301

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

THERMODYNAMIC STEAM TRAPS
DT42/2

DESCRIPTION

The thermodynamic DT42/2 disc steam traps are compact and lightweight-easy to install traps, excellent for high pressure systems, including steam tracing applications.
These traps have only one moving part and offer a wide operating range, without adjustment.

MAIN FEATURES

Intermittent discharge.
Operates on superheated steam.
The seat and disc can be easily replaced in field without removing the trap from the line.
Unaffected by water hammer and vibrations.
Built-in easy-to-clean strainer.

OPTIONS: Insulation cover.
Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: DT42/2 – carbon steel.

SIZES: 1/2” to 1” – DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40 or PN 63.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/2” to 1” – DN 15 to 25	SEP

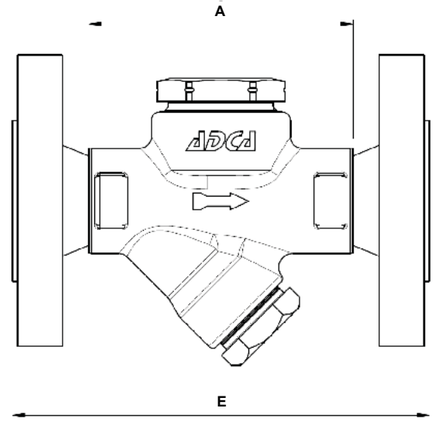
BODY LIMITING CONDITIONS			
FLANGED PN 40 / CLASS 300 *	**FLANGED PN 63 ***	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
40 bar	63 bar	19,3 bar	50 ºC
35 bar	55,5 bar	15,8 bar	150 ºC
30,4 bar	48 bar	12,1 bar	250 ºC
27,4 bar	43,5 bar	10,2 bar	300 ºC

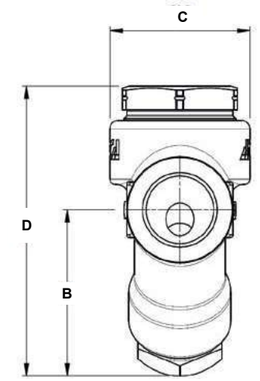
PMO – Maximum operating pressure: 42 bar;
TMO – Maximum operating temperature: 300 ºC;
* According to EN 1092-1:2018; ** According to EN 1759-1:2004.
Body limiting conditions PN 63 or below, depending on the type of connection adopted. Rating PN 63 for threaded, SW and BW versions.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		1	**3**	**5**	**7**	**9**	**12**	**15**	**18**	**21**	**24**	**30**	**35**	**42**
DT42/2	**1/2” – DN 15**	180	250	300	380	430	500	550	590	620	690	730	770	820
DT42/2	**3/4” – DN 20**	320	450	530	600	690	720	810	850	900	930	950	980	1040
DT42/2	**1” – DN 25**	320	450	530	600	690	720	810	850	900	930	950	980	1040

Minimum operating pressure: 0,25 bar; Maximum operating backpressure: 80% of upstream pressure.

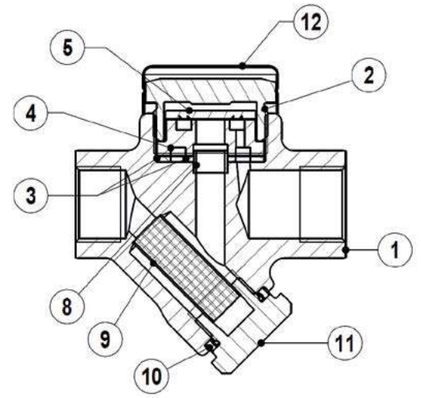




DIMENSIONS (mm)													
THREADED / SW						**PN 40**		**PN 63**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**	**E**	**WEIGHT (kg)**
1/2” – DN 15	95	60	50	104	1,3	150	2,8	150	3,7	150	2,4	150	2,8
3/4”– DN 20	95	60	50	104	1,2	150	3,3	150	5,2	150	2,8	150	3,6
1” – DN 25	95	60	50	110	1,5	160	4	160	6,5	160	3,6	160	4,5

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460
2	Cover	AISI 304 / 1.4301 AISI 303 / 1.4305
3	* Gasket	Stainless steel / Graphite
4	* Seat	Hardened stainless steel
5	* Valve disc	Hardened stainless steel
8	* Tube	AISI 304 / 1.4301
9	* Strainer screen	AISI 304 / 1.4301
10	* Gasket	Stainless steel / Graphite
11	Plug	A105 / 1.0432
12	** Insulation cover	AISI 304 / 1.4301

* Available spare parts; ** Optional.



VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS 1.141 E 12.15

THERMODYNAMIC STEAM TRAPS
DT46

DESCRIPTION

The thermodynamic DT46 disc steam traps are compact and lightweight-easy to install traps, excellent for high pressure systems, including steam tracing applications.
The insulation cover ensures a consistent operation and makes it particularly suitable for those applications where the weather conditions, such as rain and wind, may affect the normal operation.
These traps have only one moving part and offer a wide operating range, without adjustment.

MAIN FEATURES

Intermittent discharge.
Integral air vent.
Standard insulation cover.
Operates on superheated steam.
The seat and disc can be easily replaced in field without removing the trap from the line.
Unaffected by water hammer and vibrations.
Built-in easy-to-clean strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: DT46 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40, PN 63 or PN 100.
Flanged ASME B16.5 Class 150, 300 or 600.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	**Category**
1/2” to 1” – DN 15 to 25	SEP

BODY LIMITING CONDITIONS

FLANGED PN 40 / CLASS 300 *	FLANGED PN 63 *	FLANGED PN 100 *	FLANGED CLASS 150 **	FLANGED CLASS 600 **	RELATED TEMPERATURE
ALLOW. PRESS.	ALLOW. PRESS.	ALLOW. PRESS.	ALLOW. PRESS.	ALLOW. PRESS.	
40 bar	63 bar	100 bar	19,3 bar	90,5 bar	50 ºC
37,1 bar	58,5 bar	92,8 bar	17,7 bar	80,2 bar	100 ºC
33,3 bar	52,5 bar	83,3 bar	14 bar	72 bar	200 ºC
27,6 bar	43,5 bar	69 bar	10,2 bar	59,7 bar	300 ºC
23,8 bar	37,5 bar	59,5 bar	6,5 bar	51,4 bar	400 ºC

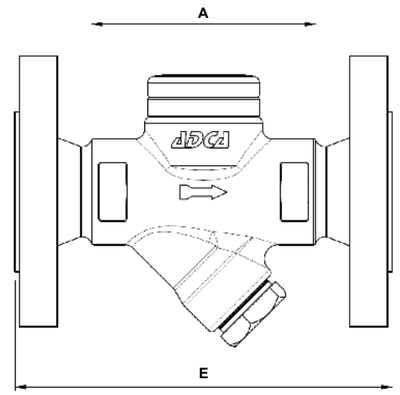
PMO – Maximum operating pressure: 46 bar ; TMO – Maximum operating temperature: 400 ºC.
* According to EN 1092-1:2018; ** According to EN 1759-1:2004.
Body limiting conditions PN 100 or below, depending on the type of connection adopted. Rating PN 100 for threaded, SW and BW versions.

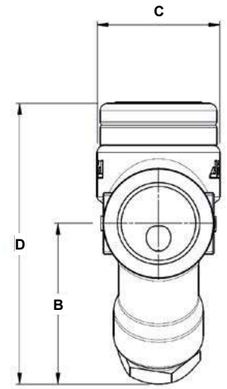
We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)

MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)													
		1,5	3	5	7	9	12	15	18	21	24	30	35	42	46
DT46 (Hot)	1/2” to 1” DN 15 to 25	70	100	130	175	190	200	225	240	250	270	290	300	310	320
DT46 (Cold)	1/2” to 1” DN 15 to 25	170	230	300	335	390	435	485	520	575	600	645	695	740	800

Minimum operating pressure: 1,5 bar; Maximum operating back pressure: 80% of upstream pressure.





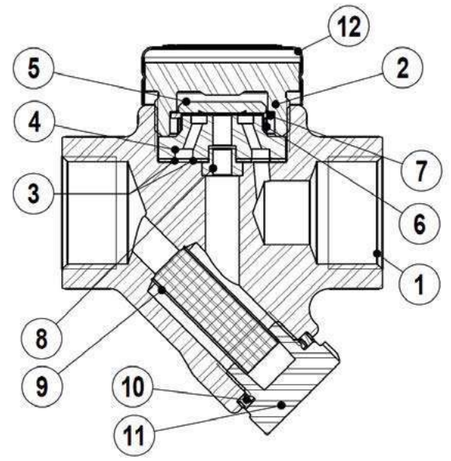
DIMENSIONS (mm)

THREADED / SW						PN 40		PN 63 / PN 100		CLASS 150		CLASS 300		CLASS 600	
SIZE	A	B	C	D	WGT. (kg)	E	WGT. (kg)	E	WGT. (kg)	E	WGT. (kg)	E	WGT. (kg)	E	WGT. (kg)
1/2” – DN 15	95	60	50	109	1,3	150	2,8	150	3,7	150	2,4	150	2,8	210	3,2
3/4”– DN 20	95	60	50	109	1,2	150	3,3	150	5,2	150	2,8	150	3,6	210	4,2
1” – DN 25	95	66	50	115	1,5	160	4,1	160	6,5	160	3,6	160	4,5	210	5,2

MATERIALS

POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	AISI 304 / 1.4301 AISI 303 / 1.4305
3	* Gasket	Stainless steel / Graphite
4	* Seat	Hardened stainless steel
5	* Valve disc	Hardened stainless steel
6	* Bimetal ring	Bimetal
7	* Washer support	AISI 304 / 1.4301
8	* Tube	AISI 304 / 1.4301
9	* Strainer screen	AISI 304 / 1.4301
10	* Gasket	Stainless steel / Graphite
11	Plug	A105 / 1.0432
12	Insulation cover	AISI 304 / 1.4301

* Available spare parts.



VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS 1.139 E 13.15

Insulation cover

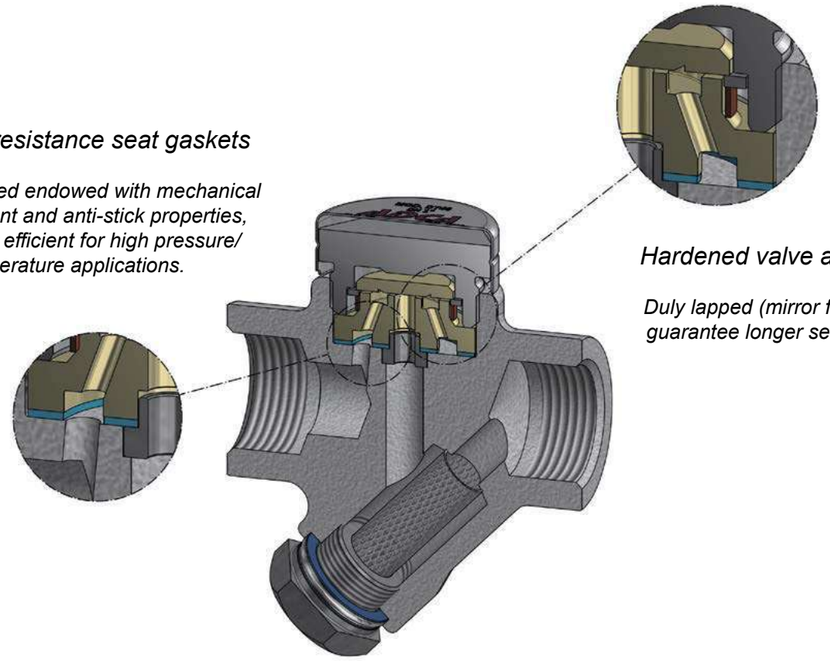
Reduces heat losses, mainly where weather conditions, such as rain and wind, may affect the normal operation

Automatic air vent

Faster response during start-up, avoiding air blockage

Blow-out resistance seat gaskets

Graphite based endowed with mechanical reinforcement and anti-stick properties, particularly efficient for high pressure/ temperature applications.



Hardened valve and disc

Duly lapped (mirror finished), guarantee longer service life

Easy maintenance

Seat and disc are replaceable

Strong design

Solid and compact forged steel design, ensures increased life

Strainer

Integral stainless steel strainer

Strainer gasket

Spiral wound stainless steel/graphite strainer gasket

We reserve the right to change the design and material of this product without notice.

BLOWDOWN / DEPRESSURIZATION AND VENT VALVES
BDV - BDVL - HVV - AFZ

DESCRIPTION

The BDV, AFZ and HVV vent valves are designed to drain (blowdown) or vent (depressurize) pipework, steam traps, valves and others.

USE: BDV – Blowdown valves – Manual discharge of strainer screen contents and generally to be used as a drain and/or depressurization valve.
BDVL – Same as above, but also allows the discharge to be connected to a safe location.
HVV – Hand vent valves – Venting of float traps and generally to be used as a vent or depressurization valve.
AFZ – Anti-freeze device – Automatic discharge of condensate from steam traps, valves, pipelines and others, to prevent the condensate from freezing.

AVAILABLE MODELS: BDV, BDVL, AFZ, HVV.

SIZES: 3/8” and M22.

CONNECTIONS: NPT-M.
ISO 228.
Metric fine pitch.

BDV

BDVL

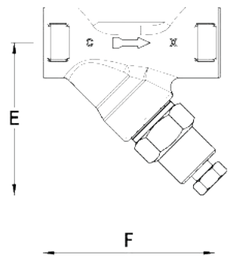
AFZ

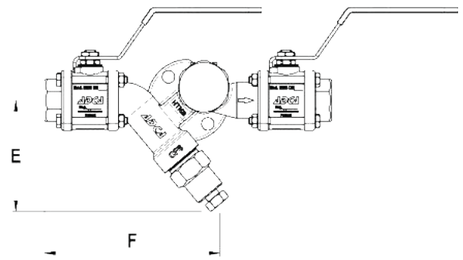
HVV

LIMITING CONDITIONS	
Body design conditions	PN100
TMO – Maximum operating temperature	400 ºC
PMO – Maximum operating pressure	42 bar
AFZ opening pressure	≈ 0,2 bar
AFZ closing pressure	≈ 0,3 bar

DIMENSIONS WHEN APPLYING BDV TO STEAM TRAPS AND UNIVERSAL CONNECTORS (mm)

SIZE	BDV SIZE	STEAM TRAP MODEL															
		DT46		DT42/2		TH32		BM20		BM32		CDV		UCX41		CTS4U	
		E	F	E	F	E	F	E	F	E	F	E	F	E	F	E	F
1/2” – DN 15	M22	83	94	83	94	83	94	83	94	83	94	83	94	83	102	94	148
3/4” – DN 20	M22	83	94	83	94	83	94	83	94	83	94	83	94	83	102	94	148
1” – DN 25	M22	90	100	90	100	90	100	90	100	90	100	90	100	83	108	–	–





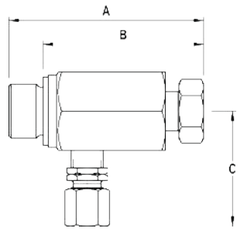
We reserve the right to change the design and material of this product without notice.

DIMENSIONS (mm) – BDV					
SIZE	A	B	SW1	SW2	WEIGHT (kg)
3/8”	61	50	24	17	0,16
M22	60	48	30	17	0,205

DIMENSIONS (mm) – BDVL						
SIZE	A	B	C	SW1	SW2	WEIGHT (kg)
3/8”	61	50	35,5	24	17	0,16

DIMENSIONS (mm) – HVV					
SIZE	A	B	SW1	SW2	WEIGHT (kg)
3/8”	61	49	24	17	0,17

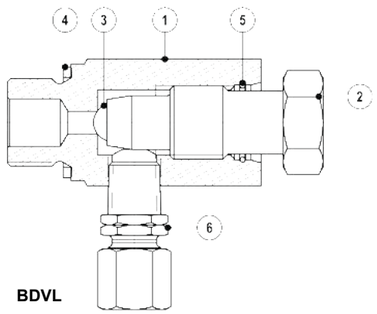
DIMENSIONS (mm) – AFZ				
SIZE	A	B	SW1	WEIGHT (kg)
3/8”	61	50	24	0,14



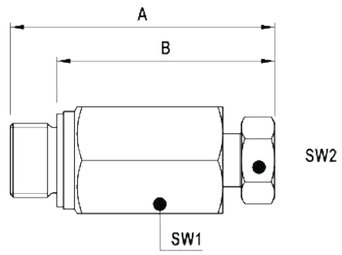
BDVL

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 303 / 1.4301
2	Valve screw	AISI 410 / 1.4301
3	Ball valve	AISI 440C / 1.4125
4	* Gasket	Stainless steel / Graphite; Copper / Stainless steel
5	Retaining ring	Spring steel
6	Compression fitting 1/8” x 6 mm	AISI 316 / 1.4401
6.1	Compression fitting 1/4” x 8 mm	AISI 316 / 1.4401
7	Spring	AISI 302 / 1.4310
8	Ball retainer	AISI 303 / 1.4305

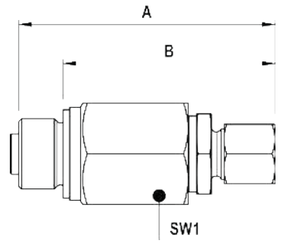
* Not applicable in NPT version.



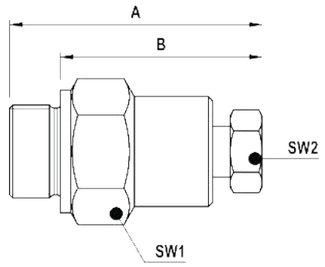
BDVL



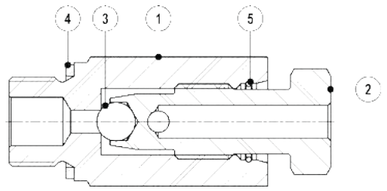
BDV / HVV



AFZ



BDV-M22



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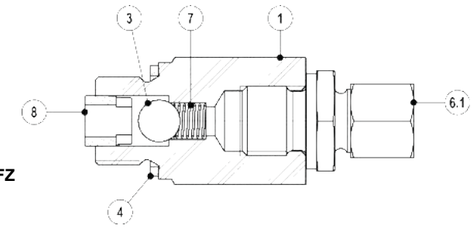
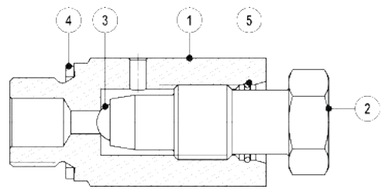


AFZ



HVV

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT16

DESCRIPTION

The FLT16 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT16-4,5 , 10 and 14 – SG iron.

SIZES: 1/2" and 3/4"; DN 15 and DN 20.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-2 PN 16.

INSTALLATION: Horizontal installation from right to left (R-L).
See IMI – Installation and maintenance instructions.
On request: horizontal installation from left to right (L-R) or vertical from top to bottom (V).

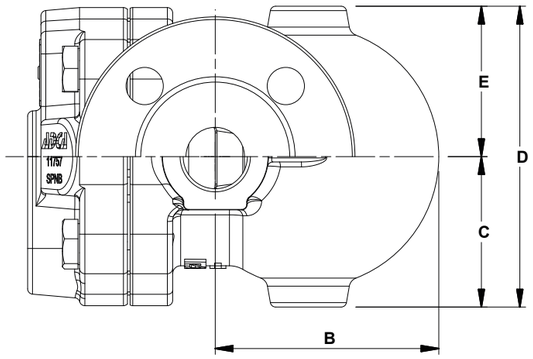
MAX. ΔP: FLT16-4,5 – 4,5 bar
FLT16-10 – 10 bar
FLT16-14 – 14 bar

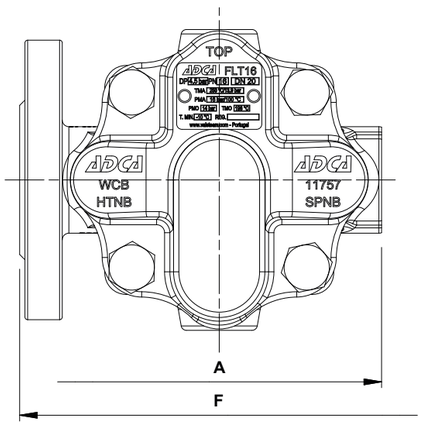
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
1/2" and 3/4" – DN 15 and 20	SEP

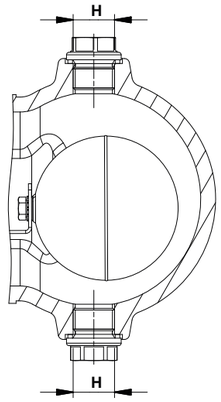
BODY LIMITING CONDITIONS *	
ALLOWABLE PRESSURE	RELATED TEMPERATURE
16 bar	100 ºC
15,5 bar	150 ºC
14,7 bar	200 ºC
13,9 bar	250 ºC

PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 198 ºC.
* According to EN 1092-2:2018.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	3	4,5	6	7	8	9	10	12	14
FLT16-4,5	1/2" and 3/4" – DN 15 and 20	200	280	320	360	400	495	–	–	–	–	–	–	–
FLT16-10	1/2" and 3/4" – DN 15 and 20	110	140	175	190	230	280	300	330	350	390	405	–	–
FLT16-14	1/2" and 3/4" – DN 15 and 20	70	100	120	140	155	190	210	220	225	230	260	280	300



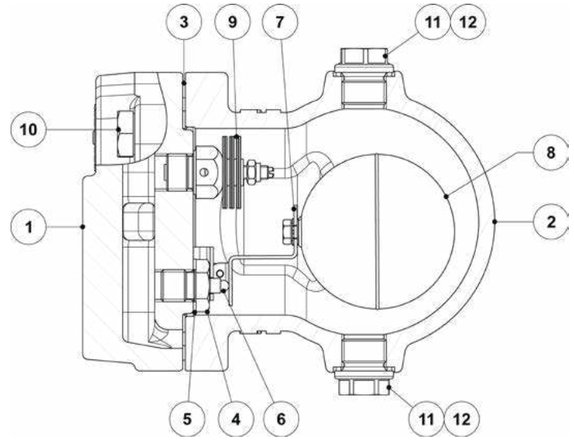


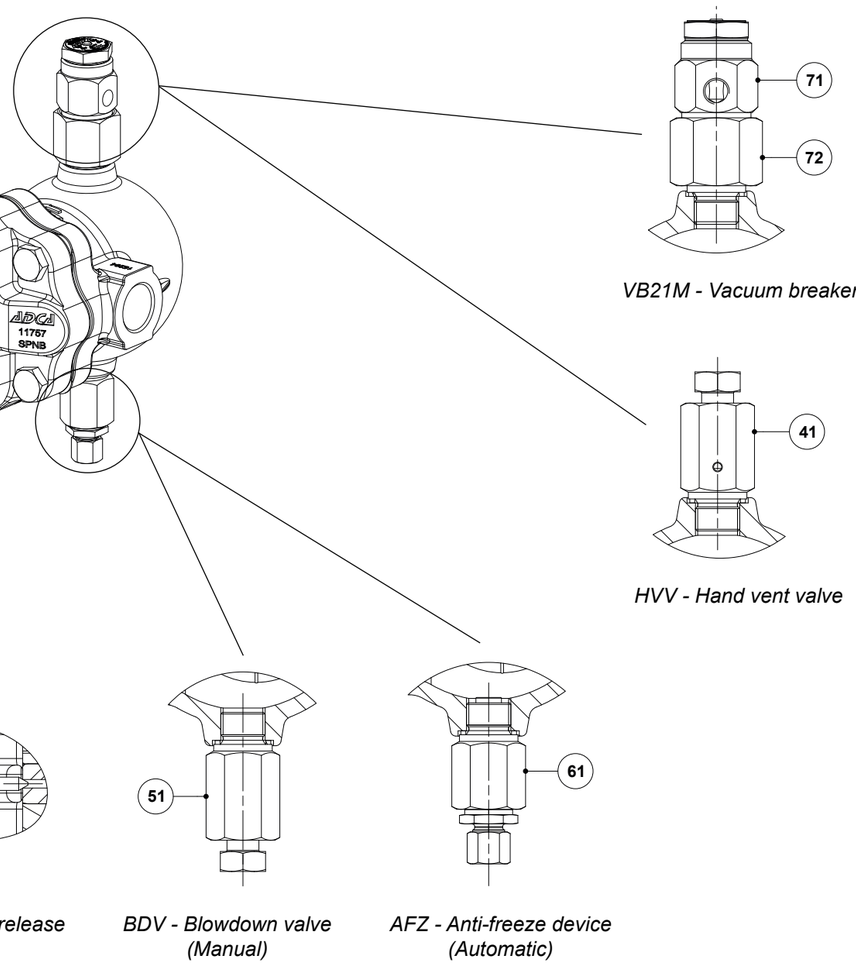


DIMENSIONS (mm)										
THREADED								PN 16		
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	E	F	WEIGHT (kg)
1/2" – DN 15	122	84	56,5	113	56,5	3/8"	4,2	56,5	150	4,9
3/4" – DN 20	122	84	56,5	113	56,5	3/8"	4,2	56,5	150	5,3

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT

MATERIALS





VB21M - Vacuum breaker

HVV - Hand vent valve

SLR - Steam lock release

BDV - Blowdown valve (Manual)

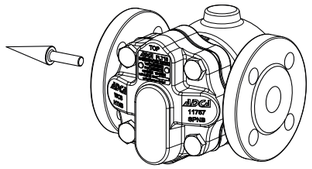
AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FLT16.015 E 00.22

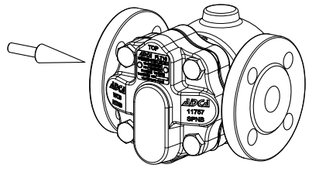
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-15 / 0.7040
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
5	* Gasket	AISI 304 / 1.4301
6	* Valve	AISI 440C / 1.4125
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetal
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021; AISI 316L / 1.4404
22	Packing	Graphite
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts.

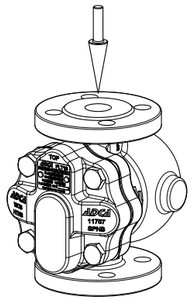
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

ORDERING CODES FLT16									
Model	**A16**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FLT16	**A16**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
Automatic air vent									
Bimetallic air vent (standard)			**V**						
None			**X**						
Cover connections									
None				**XX**					
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered) *				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
SLR - Steam lock release									
None					**X**				
With steam lock release assembled					**S**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Flanged EN 1092-2 PN 16							**L**		
Size									
1/2" or DN 15								**15**	
3/4" or DN 20								**20**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

* Not recommended with vertical flow direction, as the connections will be in the horizontal plane.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FLT16.015 E 00.22

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT20
(SG iron ; 1/2" to 1" – DN 15 to 25)

DESCRIPTION

The FLT20 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT20-4,5 , 10 and 14 – SG iron.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1/-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

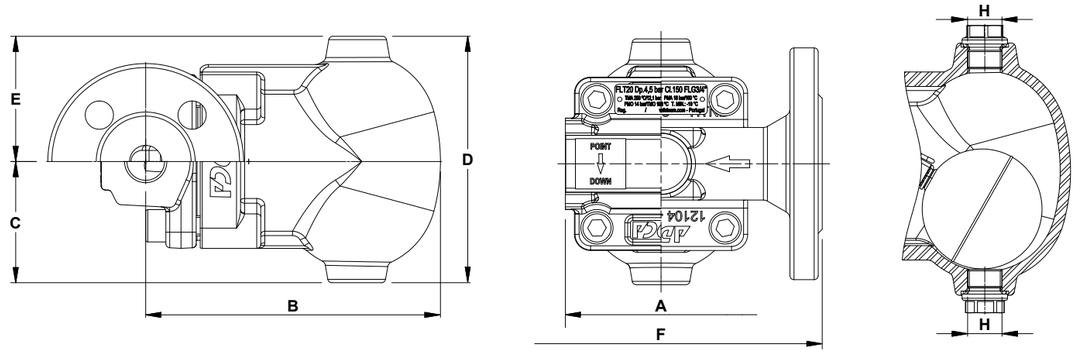
MAX. ΔP: FLT20-4,5 – 4,5 bar
FLT20-10 – 10 bar
FLT20-14 – 14 bar

BODY LIMITING CONDITIONS		
FLANGED PN 16 *	FLANGED CLASS 150 **	RELAT. TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

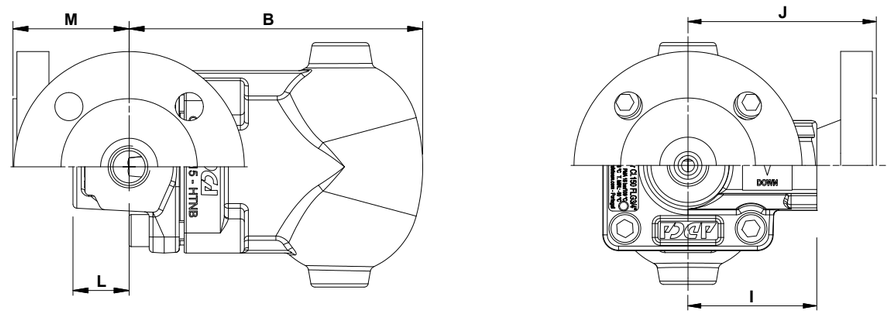
PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. Rating PN 16 for threaded versions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,5	1	1,5	2	4,5	7	10	12	14
FLT20-4,5	1/2" to 1" – DN 15 to 25	220	280	320	360	495	–	–	–	–
FLT20-10	1/2" to 1" – DN 15 to 25	200	252	290	335	440	505	595	–	–
FLT20-14	1/2" to 1" – DN 15 to 25	145	198	225	252	350	415	480	535	580



Inline design



Angled design

DIMENSIONS (mm) – INLINE DESIGN											
	THREADED							PN 16		CLASS 150	
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)
1/2" – DN 15	95	146	60	122	62	3/8"	3,8	150	5,1	150	4,8
3/4" – DN 20	95	146	60	122	62	3/8"	3,8	150	5,7	150	5
1" – DN 25	95	146	60	122	62	3/8"	3,6	160	6,4	160	6

DIMENSIONS (mm) – ANGLED DESIGN													
	THREADED								PN 16			CLASS 150		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1/2" – DN 15	146	60	122	62	3/8"	65	28	3,8	95	58	5,3	100	63	4,8
3/4" – DN 20	146	60	122	62	3/8"	65	28	3,8	95	58	5,9	100	63	5,2
1" – DN 25	146	60	122	62	3/8"	65	28	3,8	95	58	6,3	100	63	5,7

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

VALSTEAM ADCA
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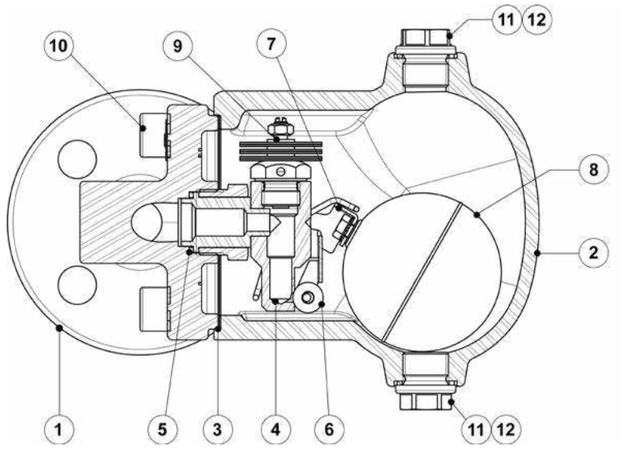
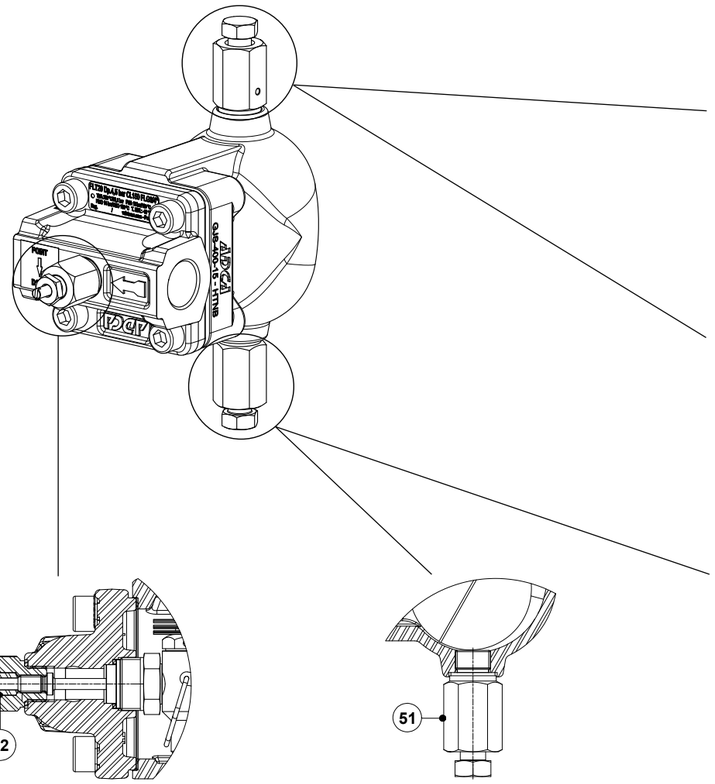
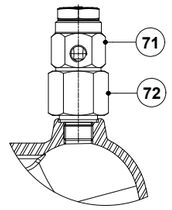
IS FLT20.015 E 02.21

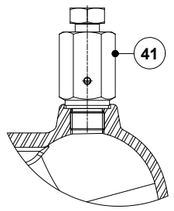
MATERIALS



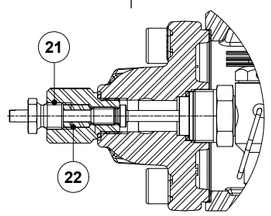




VB21M - Vacuum breaker

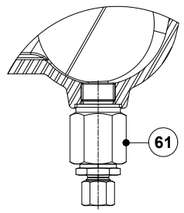


HVV - Hand vent valve



SLR - Steam lock release

BDV - Blowdown valve (Manual)

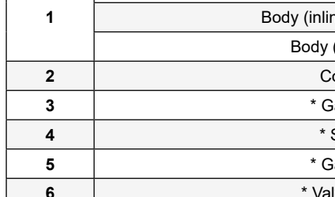


AFZ - Anti-freeze device (Automatic)

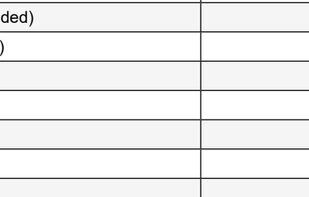
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	GJS-400-15 / 0.7040
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

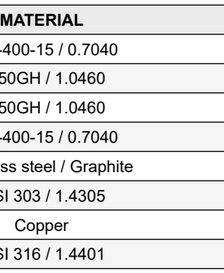
FLOW DIRECTION



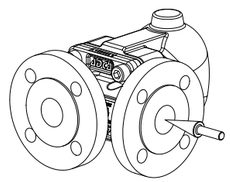
IR - Horizontal from right to left



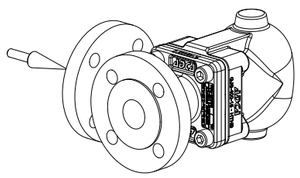
IL - Horizontal from left to right



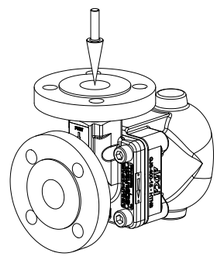
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FLT20.015 E 02.21

ORDERING CODES FLT20									
Model	**A20**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FLT20	**A20**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
Automatic air vent									
Bimetallic air vent (standard)			**V**						
None			**X**						
Cover connections									
None				**XX**					
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
SLR - Steam lock release									
None					**X**				
With steam lock release assembled					**S**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Flanged EN 1092-2 PN 16							**L**		
Flanged ASME B16.42 Class 150							**U**		
Size									
1/2" or DN 15								**15**	
3/4" or DN 20								**20**	
1" or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT21
(SG iron ; 1/2" to 1" – DN 15 to 25)

DESCRIPTION

The FLT21 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT21-4,5 , 10 and 14 – SG iron.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1/-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

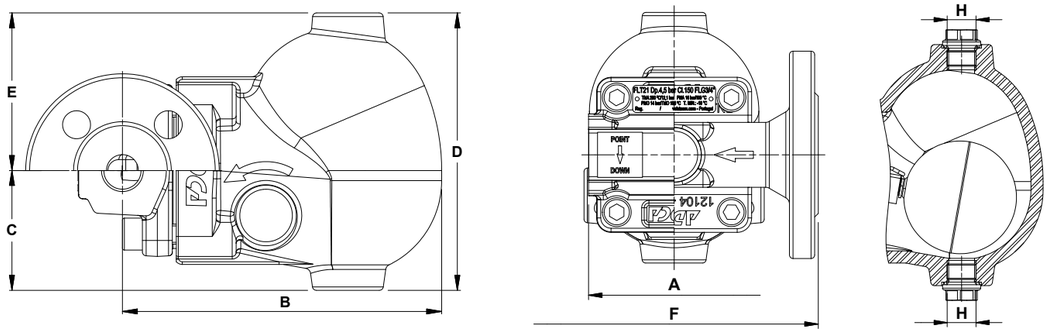
MAX. ΔP: FLT21-4,5 – 4,5 bar
FLT21-10 – 10 bar
FLT21-14 – 14 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2" to 1" – DN 15 to 25	SEP

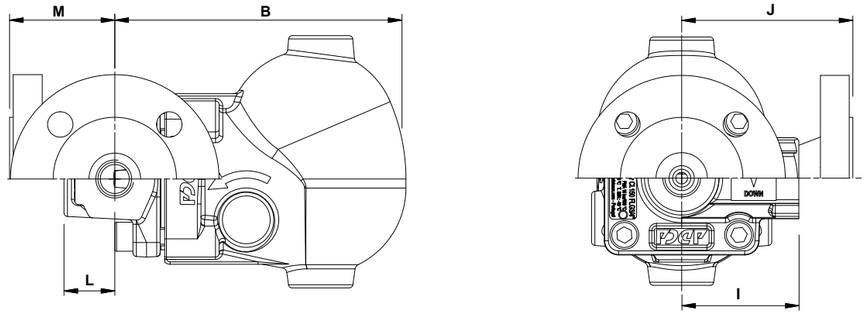
BODY LIMITING CONDITIONS		
FLANGED PN 16 * ALLOWABLE PRESSURE	**FLANGED CLASS 150 ** ALLOWABLE PRESSURE**	**RELAT. TEMP.**
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. Rating PN 16 for threaded versions.

FLOW RATE CAPACITY (kg/h)									
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,5	1	1,5	2	4,5	7	10	12	14
FLT21-4,5	1/2" to 1" – DN 15 to 25	305	395	455	500	680	–	–	–	–
FLT21-10	1/2" to 1" – DN 15 to 25	235	330	400	440	630	694	705	–	–
FLT21-14	1/2" to 1" – DN 15 to 25	220	277	318	365	481	556	654	691	710



Inline design



Angled design

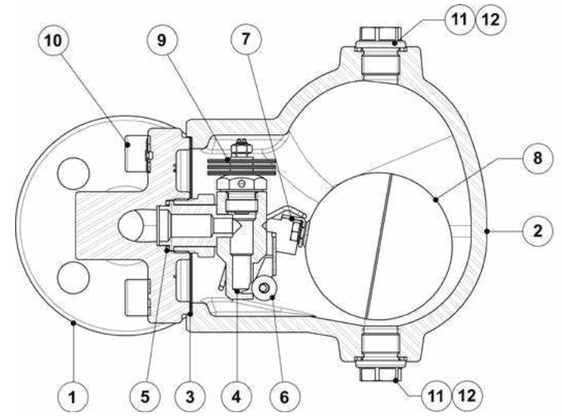
DIMENSIONS (mm) – INLINE DESIGN											
	THREADED							PN 16		CLASS 150	
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)
1/2" – DN 15	95	160	60	139	79	3/8"	4,9	150	6,2	150	5,8
3/4" – DN 20	95	160	60	139	79	3/8"	4,8	150	6,7	150	6,1
1" – DN 25	95	160	60	139	79	3/8"	4,7	160	7,4	160	7,2

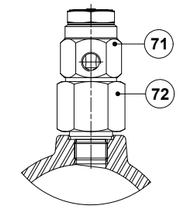
DIMENSIONS (mm) – ANGLED DESIGN														
	THREADED								PN 16			CLASS 150		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1/2" – DN 15	160	60	139	79	3/8"	65	28	4,9	95	58	6,5	100	63	6
3/4" – DN 20	160	60	139	79	3/8"	65	28	4,9	95	58	7	100	63	6,4
1" – DN 25	160	60	139	79	3/8"	65	28	4,9	95	58	7,5	100	63	6,9

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

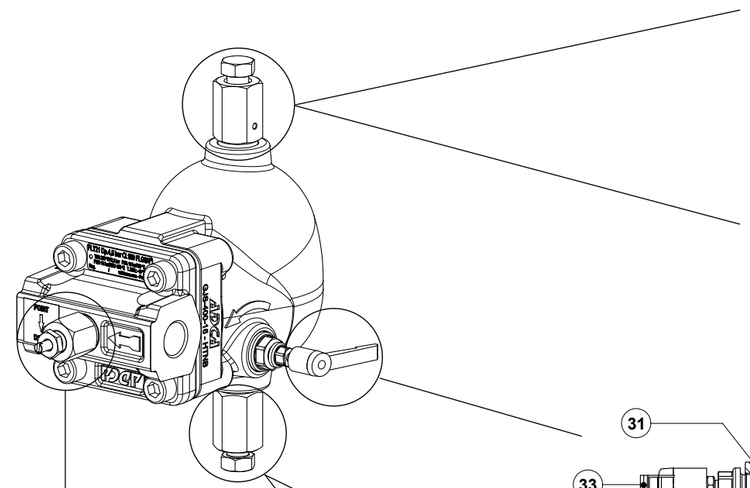
We reserve the right to change the design and material of this product without notice.

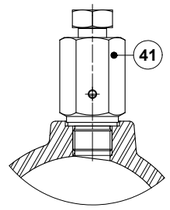
MATERIALS



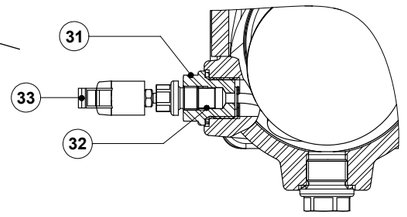


VB21M - Vacuum breaker

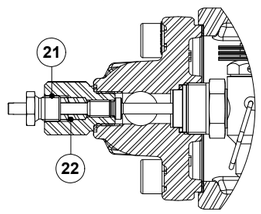




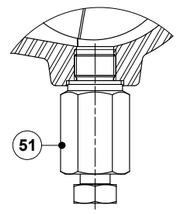
HVV - Hand vent valve



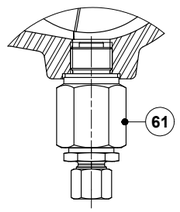
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA

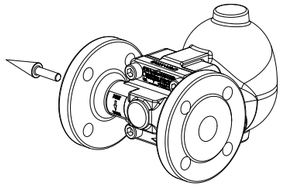
We reserve the right to change the design and material of this product without notice.

IS FLT21.015 E 02.21

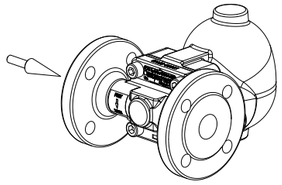
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	GJS-400-15 / 0.7040
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021; AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

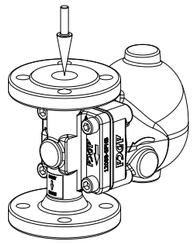
FLOW DIRECTION



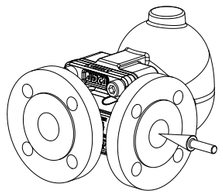
IR - Horizontal from right to left



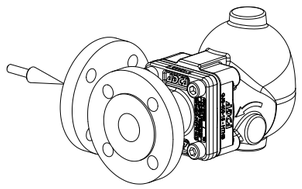
IL - Horizontal from left to right



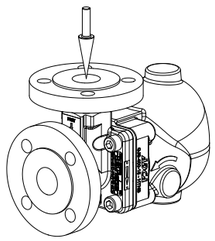
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FLT21										
Model	**A21**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**15**	
FLT21	**A21**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-2 PN 16								**L**		
Flanged ASME B16.42 Class 150								**U**		
Size										
1/2" or DN 15									**15**	
3/4" or DN 20									**20**	
1" or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FLT21.015 E 02.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT25
(SG iron ; 1" – DN 25)

DESCRIPTION

The FLT25 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT25-4,5 , 10 and 14 – SG iron.

SIZES: 1"; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1/-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

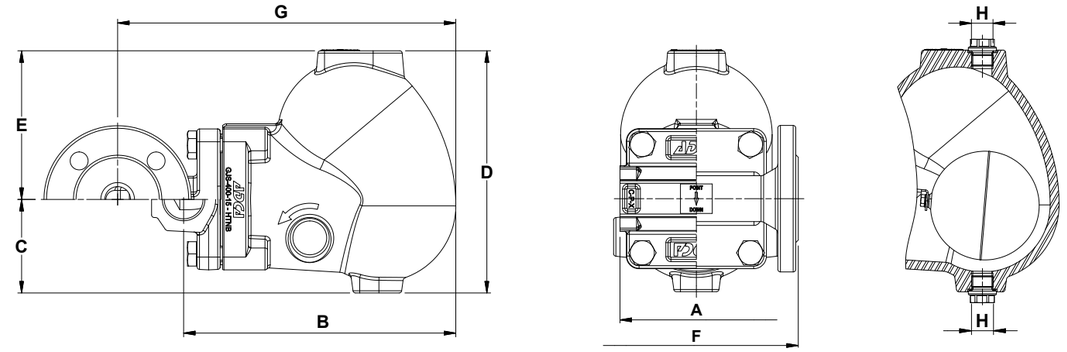
MAX. ΔP: FLT25-4,5 – 4,5 bar
FLT25-10 – 10 bar
FLT25-14 – 14 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1" – DN 25	SEP

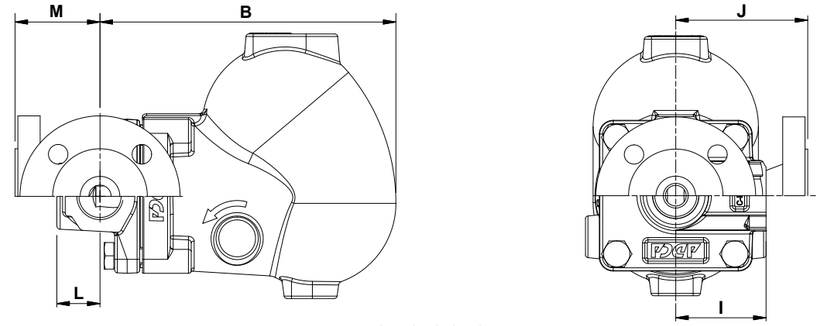
BODY LIMITING CONDITIONS		
FLANGED PN 16 *	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. Rating PN 16 for threaded versions.

FLOW RATE CAPACITY (kg/h)										
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**								
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**
FLT25-4,5	**1" – DN 25**	900	1250	1490	1630	2490	–	–	–	–
FLT25-10	**1" – DN 25**	445	610	705	850	1285	1670	1820	–	–
FLT25-14	**1" – DN 25**	335	445	515	600	885	1150	1350	1500	1610



Inline design



Angled design

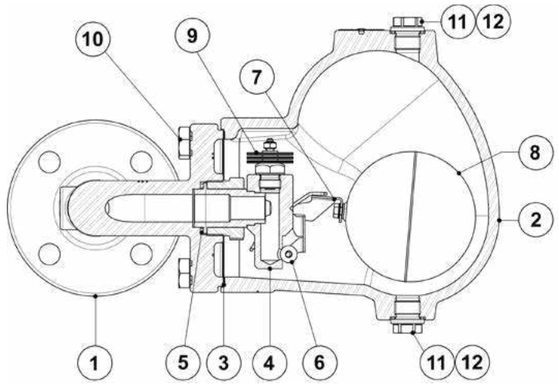
DIMENSIONS (mm) – INLINE DESIGN													
	THREADED							**PN 16**			**CLASS 150**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**G**	**WEIGHT (kg)**	**F**	**G**	**WEIGHT (kg)**
1" – DN 25	120	212	73	189	116	3/8"	8,9	160	264	12	160	264	11,9

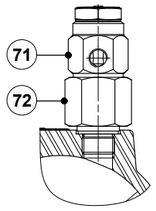
DIMENSIONS (mm) – ANGLED DESIGN													
	THREADED								**PN 16**			**CLASS 150**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1" – DN 25	212	73	189	116	3/8"	65	31	8,4	95	61	11	100	66	10,5

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

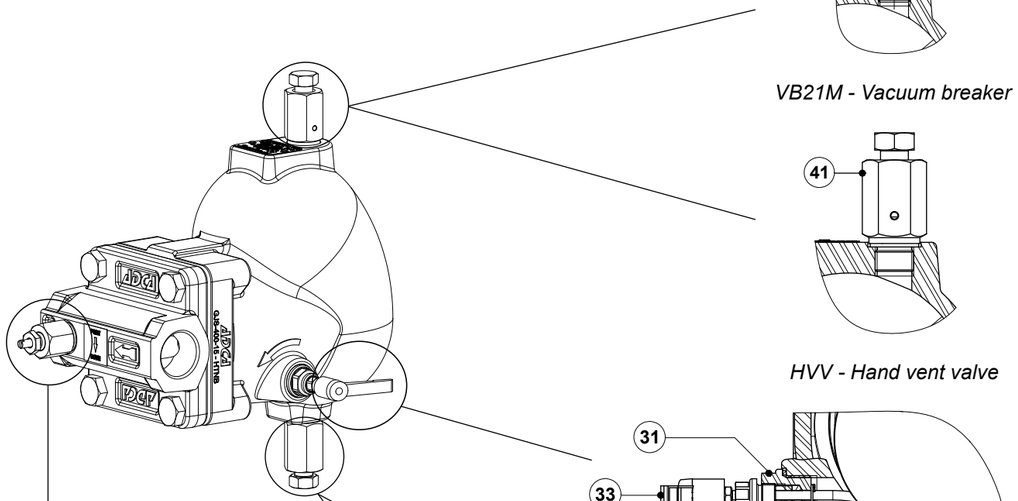
VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FLT25.025 E 02.21

MATERIALS

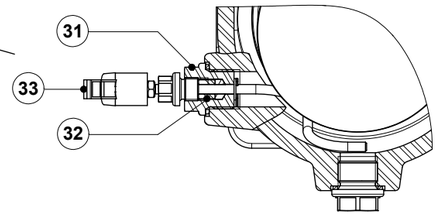




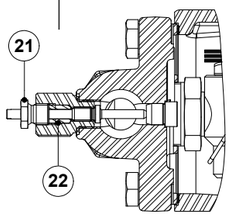
VB21M - Vacuum breaker



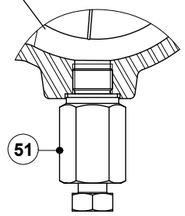
HVV - Hand vent valve



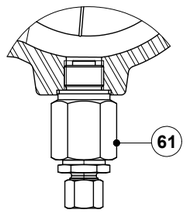
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)

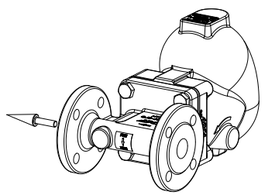


AFZ - Anti-freeze device (Automatic)

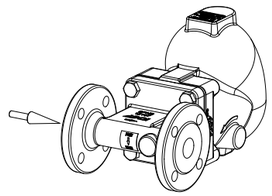
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	GJS-400-15 / 0.7040
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

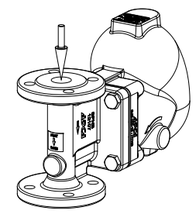
FLOW DIRECTION



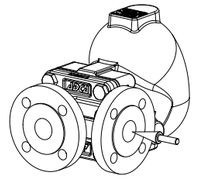
IR - Horizontal from right to left



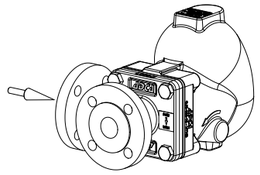
IL - Horizontal from left to right



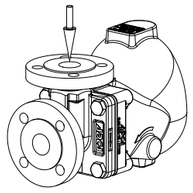
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

We reserve the right to change the design and material of this product without notice.

IS FLT25.025 E 02.21

ORDERING CODES FLT25										
Model	**A25**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**25**	
FLT25	**A25**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-2 PN 16								**L**		
Flanged ASME B16.42 Class 150								**U**		
Size										
1" or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT27
(SG iron ; 11/2" and 2" – DN 40 and 50)

DESCRIPTION

The FLT27 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT27-4,5 , 10 and 14 – SG iron.

SIZES: 11/2" and 2"; DN 40 and DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Horizontal or vertical installation.

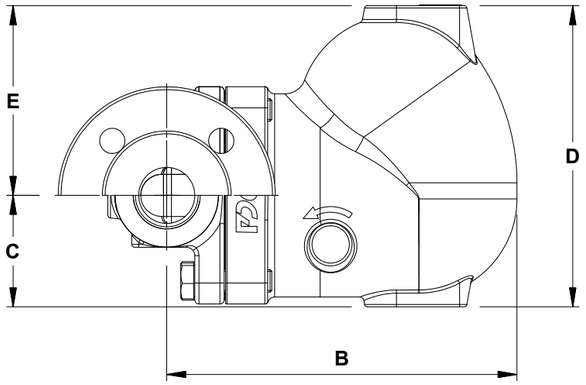
MAX. ΔP: FLT27-4,5 – 4,5 bar
FLT27-10 – 10 bar
FLT27-14 – 14 bar

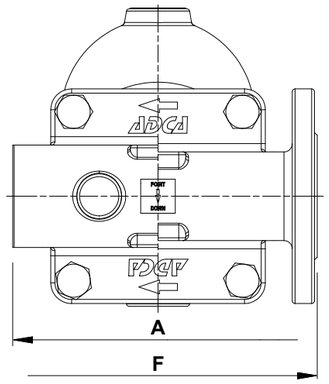
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
11/2" and 2" – DN 40 and 50	SEP

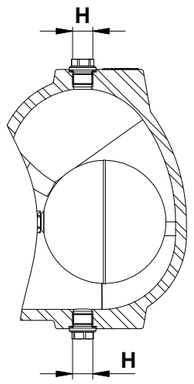
BODY LIMITING CONDITIONS		
FLANGED PN 16 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. Rating PN 16 for threaded versions.

FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,5	1	1,5	2	4,5	7	10	12	14
FLT27-4,5	11/2" and 2" – DN 40 and 50	2400	3400	3900	4500	7300	–	–	–	–
FLT27-10	11/2" and 2" – DN 40 and 50	1500	2000	2600	3000	4000	5400	6200	–	–
FLT27-14	11/2" and 2" – DN 40 and 50	950	1300	1600	1800	2600	3250	3900	4210	4950



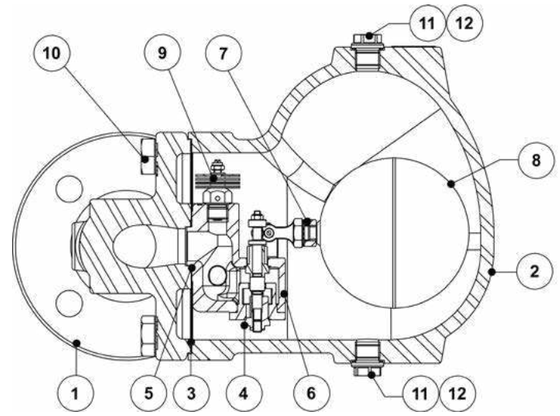


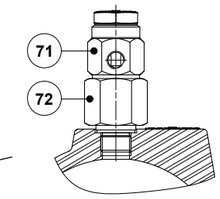


DIMENSIONS (mm)											
THREADED								PN 16		CLASS 150	
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)
11/2" – DN 40	210	250	80	215	136	3/8"	19	230	21,9	230	20,4
2" – DN 50	210	250	80	215	136	3/8"	18,4	230	23,8	230	21,7

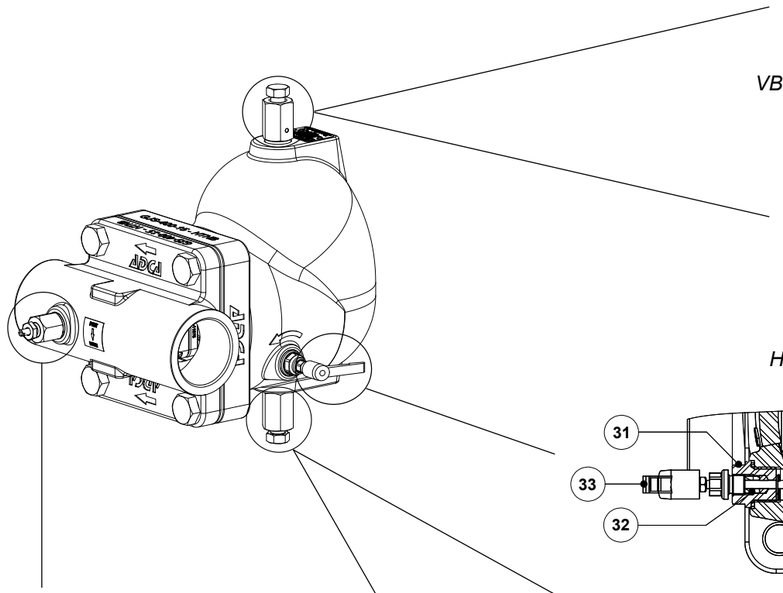
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

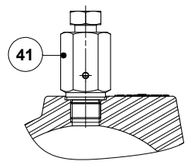
MATERIALS



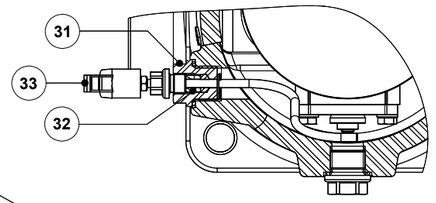


VB21M - Vacuum breaker

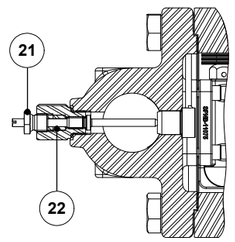




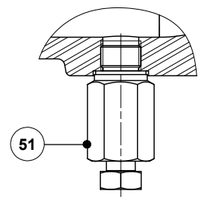
HVV - Hand vent valve



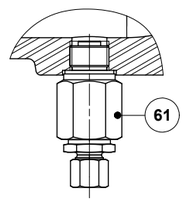
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
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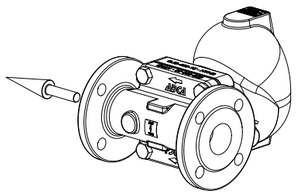
IS FLT27.040 E 03.21

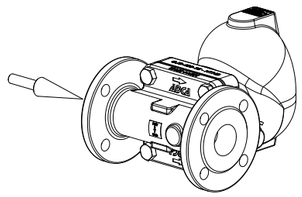
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-15 / 0.7040
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (bimetallic)
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

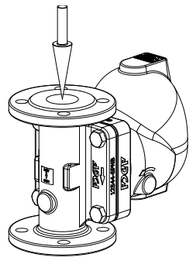
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

ORDERING CODES FLT27										
Model	**A27**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**40**	
FLT27 – GJS-400-15 / 0.7040 SG iron	**A27**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-2 PN 16								**L**		
Flanged ASME B16.42 Class 150								**U**		
Size										
11/2" or DN 40									**40**	
2" or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA
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IS FLT27.040 E 03.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT29
(SG iron ; 2" – DN 50)

DESCRIPTION

The FLT29 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT29-4,5 , 10 and 14 – SG iron.

SIZES: 2"; DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Horizontal or vertical installation.

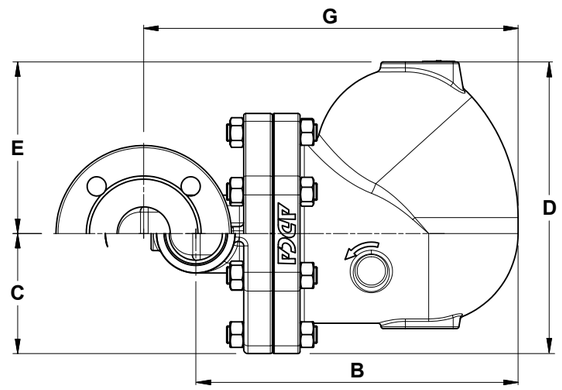
MAX. ΔP: FLT29-4,5 – 4,5 bar
FLT29-10 – 10 bar
FLT29-14 – 14 bar

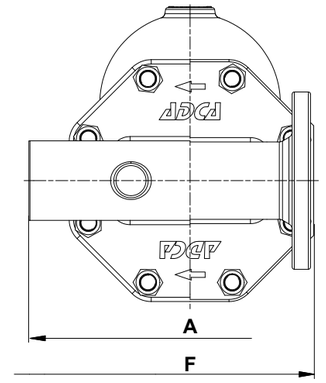
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
2" – DN 50	1 (CE marked)

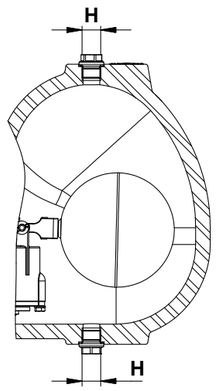
BODY LIMITING CONDITIONS		
FLANGED PN 16 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. Rating PN 16 for threaded versions.

FLOW RATE CAPACITY (kg/h)										
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**								
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**
FLT29-4,5	**2" – DN 50**	7550	11000	14000	15500	22500	–	–	–	–
FLT29-10	**2" – DN 50**	3900	5000	6100	7100	10000	13750	16000	–	–
FLT29-14	**2" – DN 50**	1900	2700	3100	3600	5000	6900	8100	9000	9800







DIMENSIONS (mm)													
THREADED								**PN 16**			**CLASS 150**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**
2" – DN 50	300	303	80	215	136	3/8"	35,5	230	352	40,8	230	352	39,9

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

VALSTEAM ADCA
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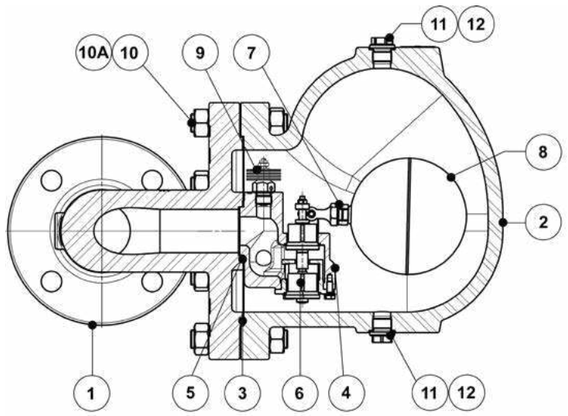
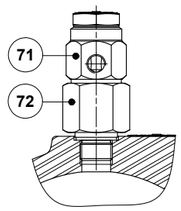
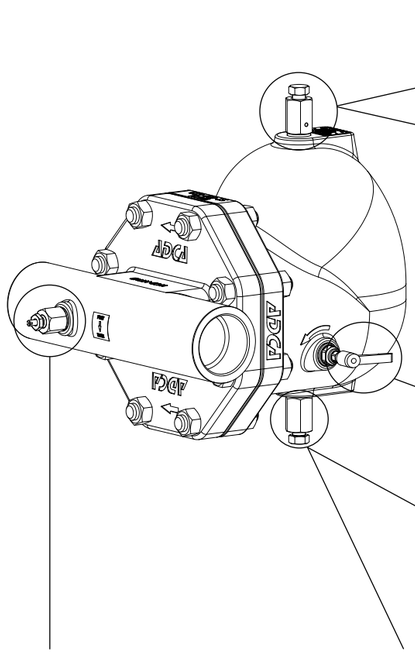
IS FLT29.050 E 03.21

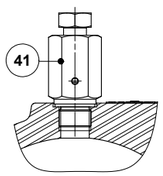
MATERIALS



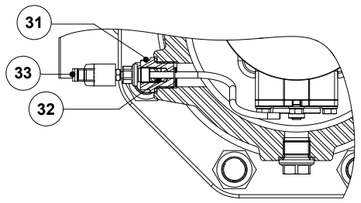


VB21M - Vacuum breaker

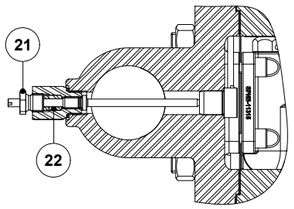




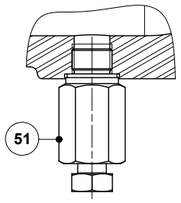
HVV - Hand vent valve



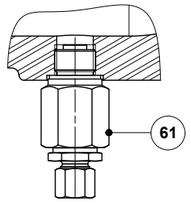
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)

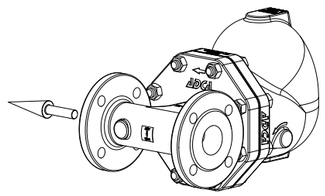


AFZ - Anti-freeze device (Automatic)

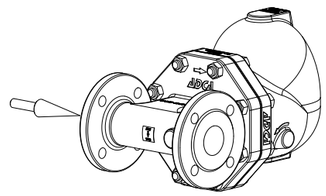
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (Flanged)	GJS-400-15 / 0.7040
	Body (Threaded)	A216 WCB / 1.0619
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless st. (bimetallic)
10	Studs	Zinc plated steel
10A	Nuts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

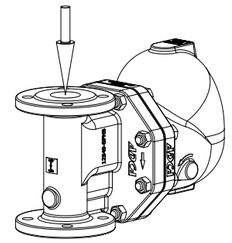
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

VALSTEAM ADCA
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IS FLT29.050 E 03.21

ORDERING CODES FLT29										
Model	**A29**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**50**	
FLT29	**A29**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-2 PN 16								**L**		
Flanged ASME B16.42 Class 150								**U**		
Size										
2" or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT29TW
(SG iron ; 3" and 4" – DN 80 and 100)

DESCRIPTION

The FLT29TW is a range of high capacity float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT29TW-4,5 , 10 and 14 – SG iron.

SIZES: 3" to 4"; DN 80 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

INSTALLATION: Horizontal or vertical installation.

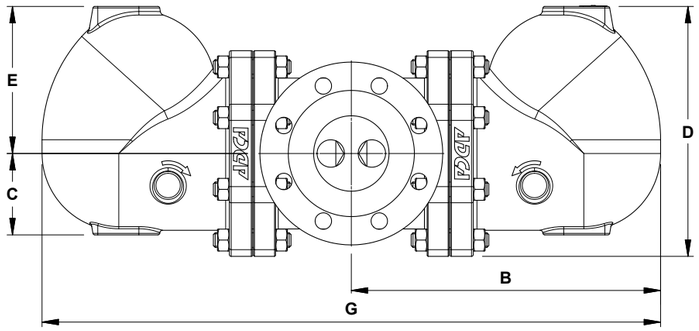
MAX. ΔP: FLT29TW-4,5 – 4,5 bar
FLT29TW-10 – 10 bar
FLT29TW-14 – 14 bar

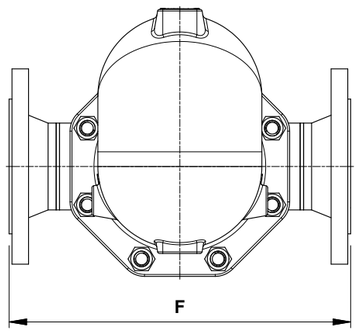
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
3" to 4" – DN 80 to 100	1 (CE marked)

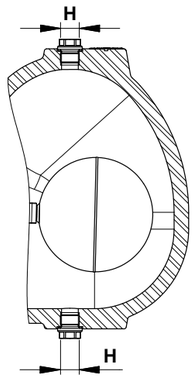
BODY LIMITING CONDITIONS		
FLANGED PN 16 * ALLOWABLE PRESSURE	**FLANGED CLASS 150 ** ALLOWABLE PRESSURE**	**RELATED TEMP.**
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Maximum operating pressure: 14 bar;
TMO – Maximum operating temperature: 198 ºC.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted.

FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,5	1	1,5	2	4,5	7	10	12	14
FLT29TW-4,5	3" to 4" – DN 80 to 100	15100	22000	28000	31000	45000	–	–	–	–
FLT29TW-10	3" to 4" – DN 80 to 100	7800	10000	12200	14200	20000	27500	32000	–	–
FLT29TW-14	3" to 4" – DN 80 to 100	3800	5400	6200	7200	10000	13800	16200	18000	19600



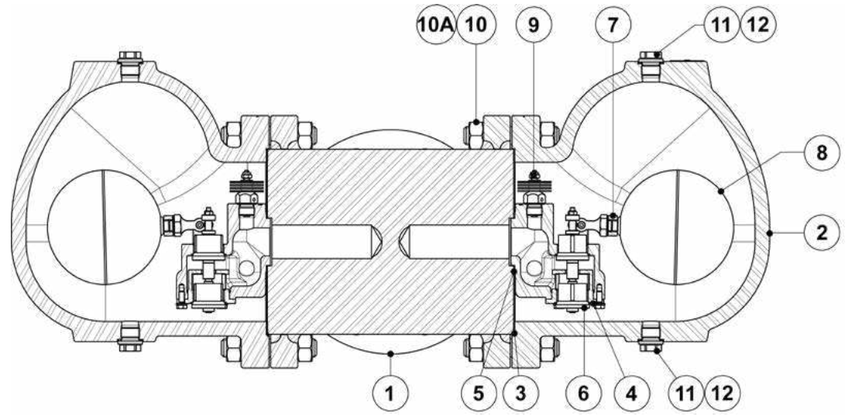


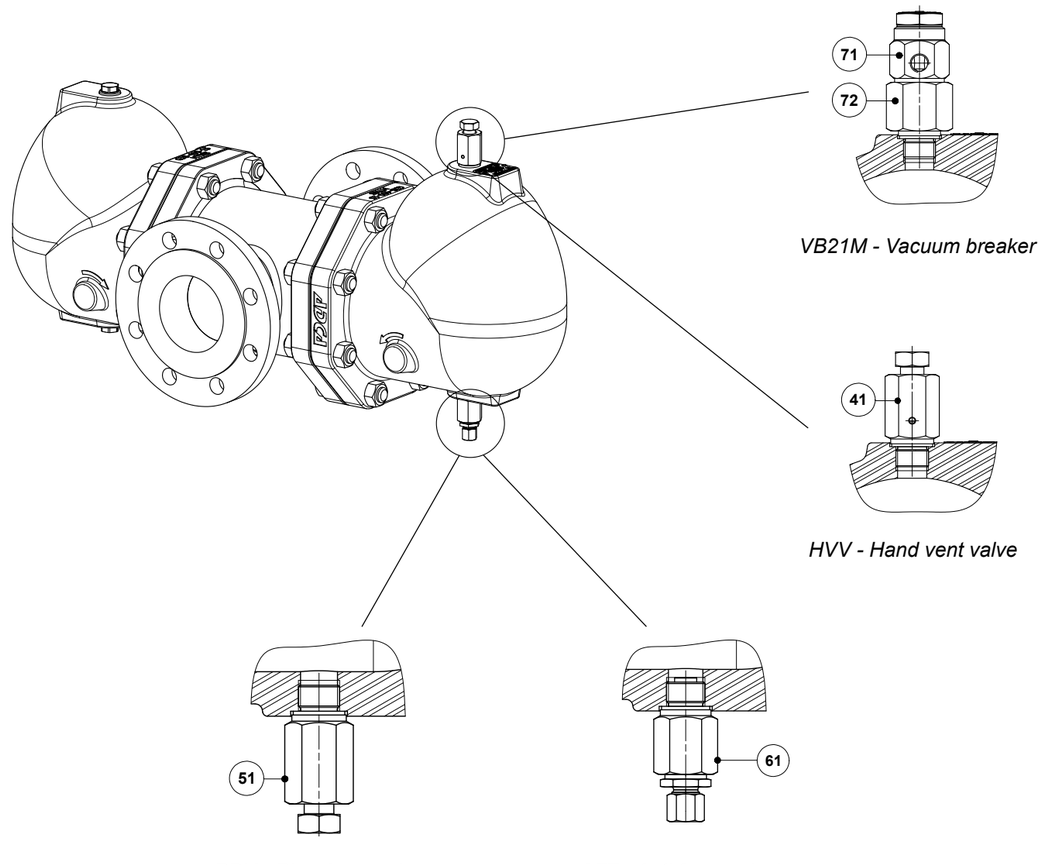


DIMENSIONS (mm)									
SIZE	PN 16								CLASS 150
	B	C	D	E	F	G	H *	WEIGHT (kg)	WEIGHT (kg)
3" – DN 80	339	113	273	161	350	677	3/8"	86	86,6
4" – DN 100	339	113	273	161	350	677	3/8"	85,1	87,9

* As standard, in versions with EN flanges, these connections are female threaded ISO 228. In versions with ASME flanges, these connections are female threaded NPT.

MATERIALS





VB21M - Vacuum breaker

HVV - Hand vent valve

BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
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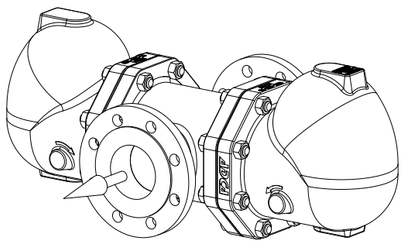
IS FLT29TW.080 E 02.20

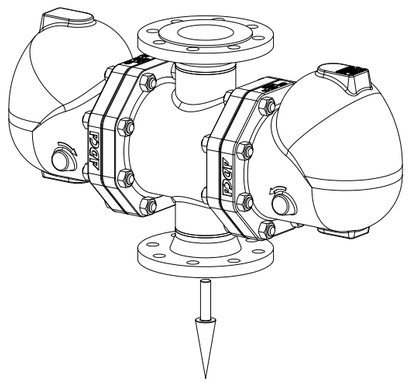
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460; P235GH / 1.0345; S235JR / 1.0038
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Stainless steel / Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless st. (bimetallic)
10	Studs	Zinc plated steel
10A	Nuts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

FLOW DIRECTION



IH - Horizontal



IT - Vertical from top to bottom

ORDERING CODES FLT29TW								
Model	**A29T**	**2**	**V**	**XX**	**IH**	**L**	**80**	**E**
FLT29TW – GJS-400-15 / 0.7040 SG iron	**A29T**							
Differential pressure								
4,5 bar		**2**						
10 bar		**3**						
14 bar		**4**						
Automatic air vent								
Bimetallic air vent (standard)			**V**					
None			**X**					
Cover connections								
None				**XX**				
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**				
Options								
HVV, BDV, AFZ and VB21M have specific separated ordering codes, please refer to the appropriate documentation.								
Flow direction								
Horizontal					**IH**			
Vertical from top to bottom					**IT**			
Pipe connections								
Flanged EN 1092-1 PN 16						**L**		
Flanged ASME B16.5 Class 150						**U**		
Size								
3" or DN 80							**80**	
4" or DN 100							**100**	
Special valves / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

VALSTEAM ADCA

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IS FLT29TW.080 E 02.20

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT30
(Carbon steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FLT30 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT30-4,5 , 10, 14 and 21 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

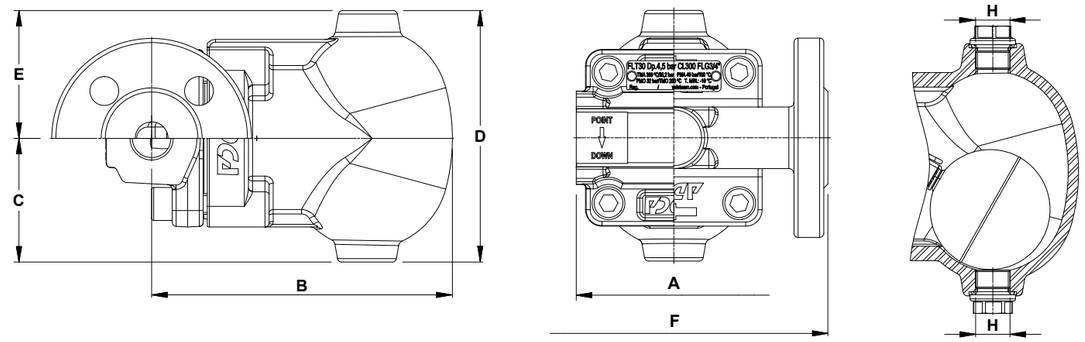
MAX. ΔP: FLT30-4,5 – 4,5 bar
FLT30-10 – 10 bar
FLT30-14 – 14 bar
FLT30-21 – 21 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

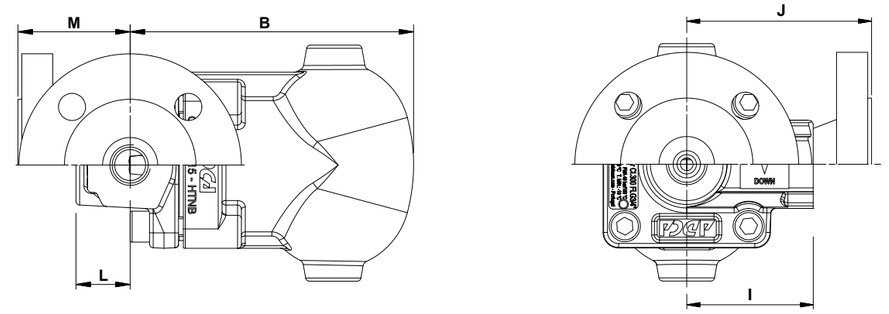
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)												
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**										
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**
FLT30-4,5	**1/2” to 1” – DN 15 to 25**	220	280	320	360	495	–	–	–	–	–	–
FLT30-10	**1/2” to 1” – DN 15 to 25**	200	252	290	335	440	505	595	–	–	–	–
FLT30-14	**1/2” to 1” – DN 15 to 25**	145	198	225	252	350	415	480	535	580	–	–
FLT30-21	**1/2” to 1” – DN 15 to 25**	70	95	120	150	205	250	320	380	390	405	435



Inline design



Angled design

DIMENSIONS (mm) – INLINE DESIGN												
THREADED / SW								**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2" – DN 15	95	146	60	122	62	3/8”	3,8	150	5,1	150	4,8	150	5
3/4” – DN 20	95	146	60	122	62	3/8”	3,8	150	5,7	150	5	150	6
1” – DN 25	95	146	60	122	62	3/8”	3,6	160	6,4	160	6	160	6,8

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1/2" – DN 15	146	60	122	62	3/8”	65	28	3,8	95	58	5,3	100	63	4,8	105	68	5,4
3/4” – DN 20	146	60	122	62	3/8”	65	28	3,8	95	58	5,9	100	63	5,2	110	73	6,4
1” – DN 25	146	60	122	62	3/8”	65	28	3,8	95	58	6,3	100	63	5,7	110	73	6,9

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
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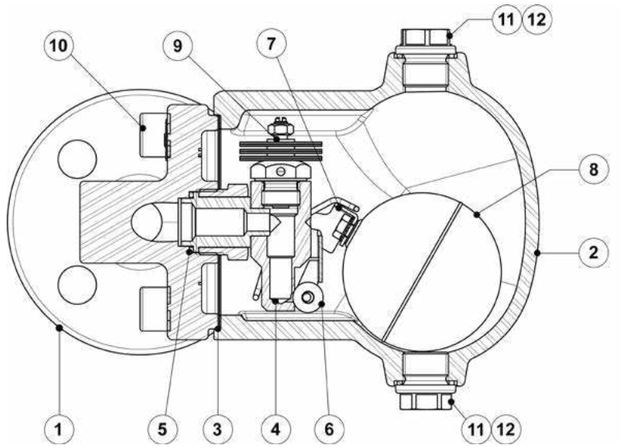
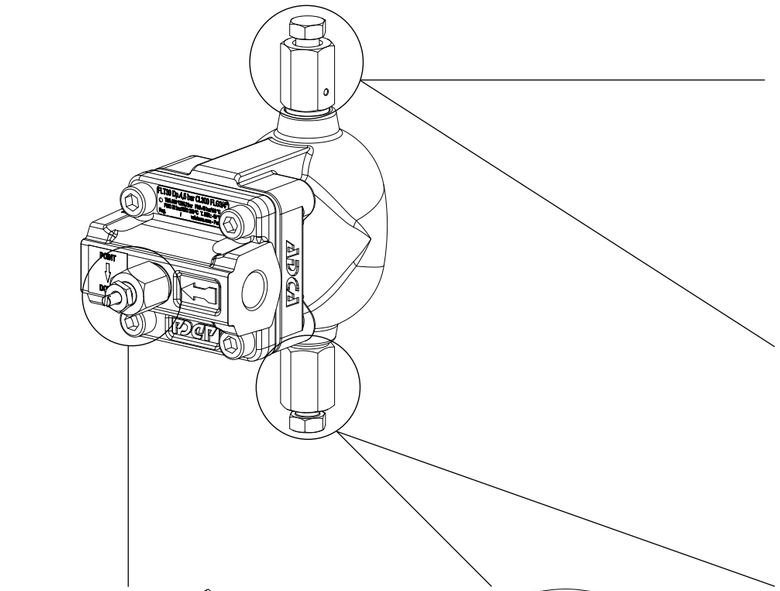
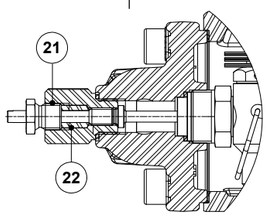
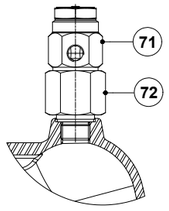
IS FLT30.015 E 00.21



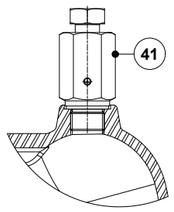


SLR - Steam lock release

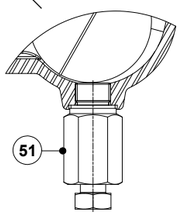




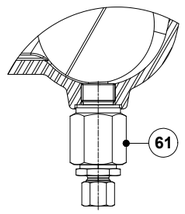
VB21M - Vacuum breaker



HVV - Hand vent valve



BDV - Blowdown valve (Manual)



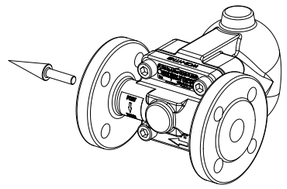
AFZ - Anti-freeze device (Automatic)

LRQA CERTIFIED ISO 9001

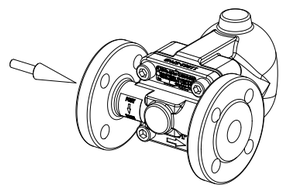
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A216 WCB / 1.0619
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

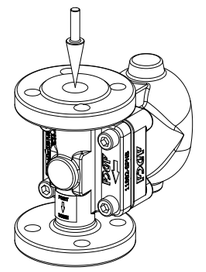
FLOW DIRECTION



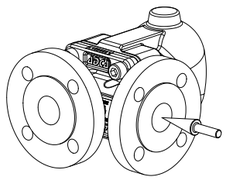
IR - Horizontal from right to left



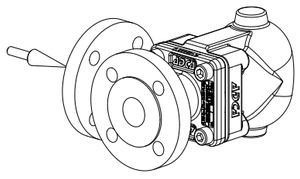
IL - Horizontal from left to right



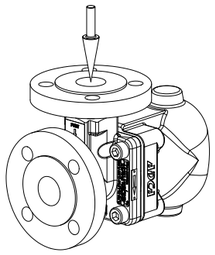
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

VALSTEAM ADCA
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IS FLT30.015 E 00.21

ORDERING CODES FLT30									
Model	**A30**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FLT30 – carbon steel	**A30**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
Automatic air vent									
Bimetallic air vent (standard)			**V**						
None			**X**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
SLR - Steam lock release									
None					**X**				
With steam lock release assembled					**S**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1/2” or DN 15								**15**	
3/4” or DN 20								**20**	
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT31
(Carbon steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FLT31 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT31-4,5 , 14, 10, 21 and 32 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

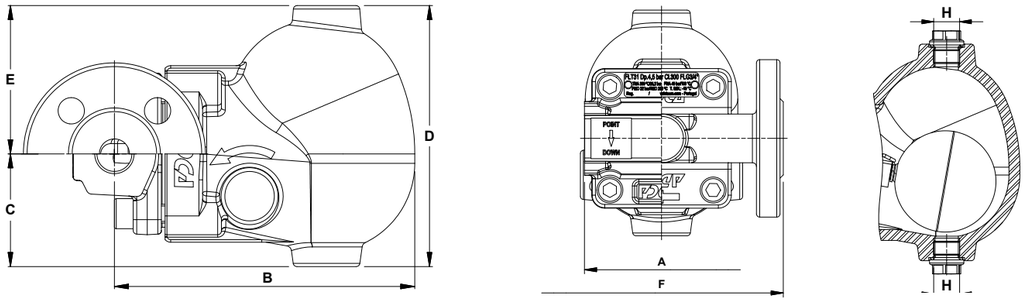
MAX. ΔP: FLT31-4,5 – 4,5 bar
FLT31-10 – 10 bar
FLT31-14 – 14 bar
FLT31-21 – 21 bar
FLT31-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

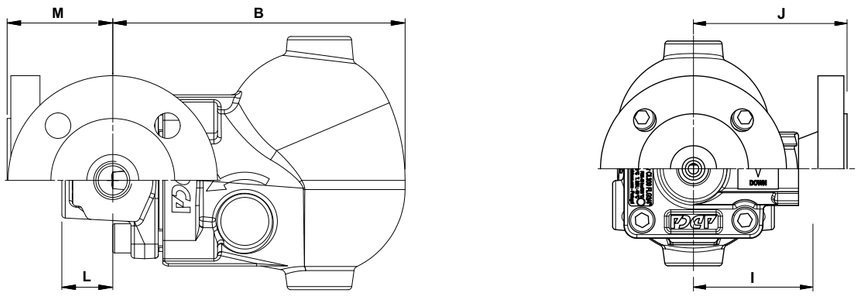
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT31-4,5	1/2” to 1” – DN 15 to 25	305	395	455	500	680	–	–	–	–	–	–	–	–
FLT31-10	1/2” to 1” – DN 15 to 25	235	330	400	440	630	694	705	–	–	–	–	–	–
FLT31-14	1/2” to 1” – DN 15 to 25	220	277	318	365	481	556	654	691	710	–	–	–	–
FLT31-21	1/2” to 1” – DN 15 to 25	148	205	228	255	353	418	485	530	560	595	635	–	–
FLT31-32	1/2” to 1” – DN 15 to 25	72	97	123	155	208	252	323	385	393	410	440	550	595



Inline design



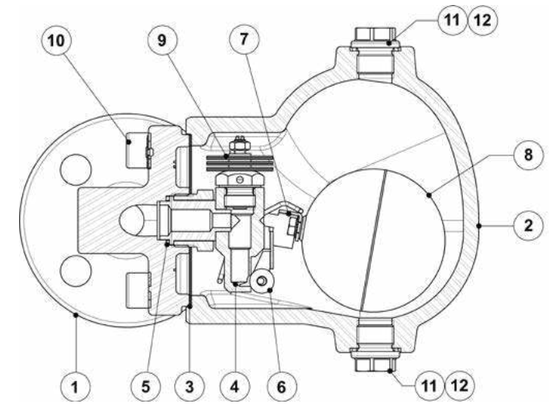
Angled design

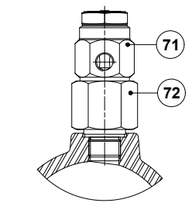
DIMENSIONS (mm) – INLINE DESIGN													
THREADED / SW								PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)
1/2" – DN 15	95	160	60	139	79	3/8”	4,9	150	6,2	150	5,8	150	6,1
3/4” – DN 20	95	160	60	139	79	3/8”	4,8	150	6,7	150	6,1	150	7,2
1” – DN 25	95	160	60	139	79	3/8”	4,7	160	7,4	160	7,2	160	7,9

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									PN 40			CLASS 150			CLASS 300		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1/2" – DN 15	160	60	139	79	3/8”	65	28	4,9	95	58	6,5	95	58	6	95	58	6,5
3/4” – DN 20	160	60	139	79	3/8”	65	28	4,9	95	58	7	95	58	6,4	95	58	7,5
1” – DN 25	160	60	139	79	3/8”	65	28	4,9	95	58	7,5	95	58	6,9	95	58	8

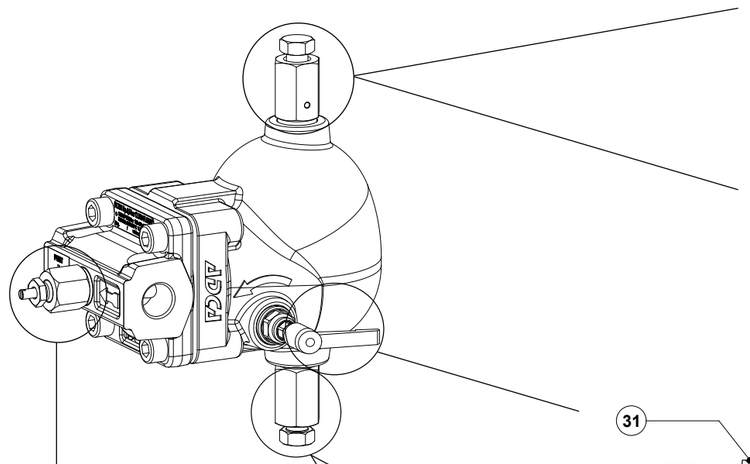
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

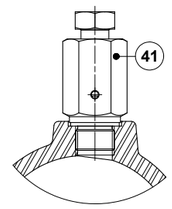
We reserve the right to change the design and material of this product without notice.



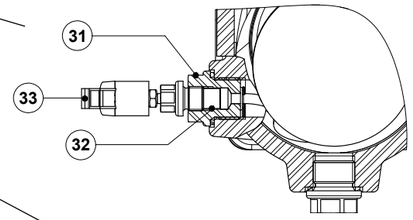


VB21M - Vacuum breaker

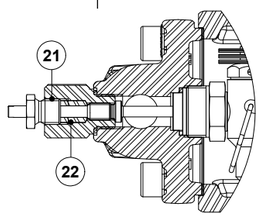




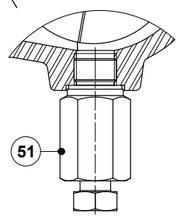
HVV - Hand vent valve



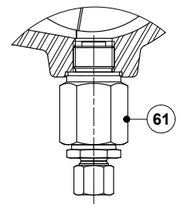
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA

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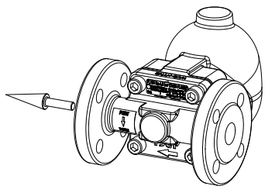
IS FLT31.015 E 00.21

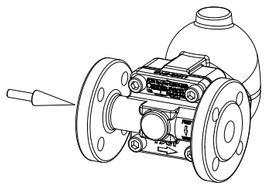
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A216 WCB / 1.0619
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

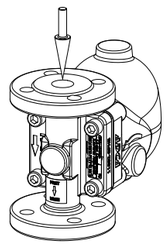
FLOW DIRECTION



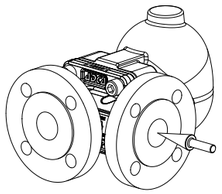
IR - Horizontal from right to left



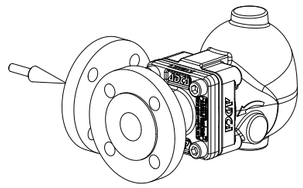
IL - Horizontal from left to right



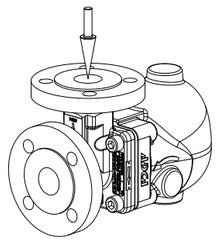
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FLT31										
Model	**A31**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**15**	
FLT31 – carbon steel	**A31**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
1/2” or DN 15									**15**	
3/4” or DN 20									**20**	
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA

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IS FLT31.015 E 00.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT35
(Carbon steel 1”; DN 25)

DESCRIPTION

The FLT35 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT35-4,5 , 10, 14, 21 and 32 – carbon steel.

SIZES: 1”; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

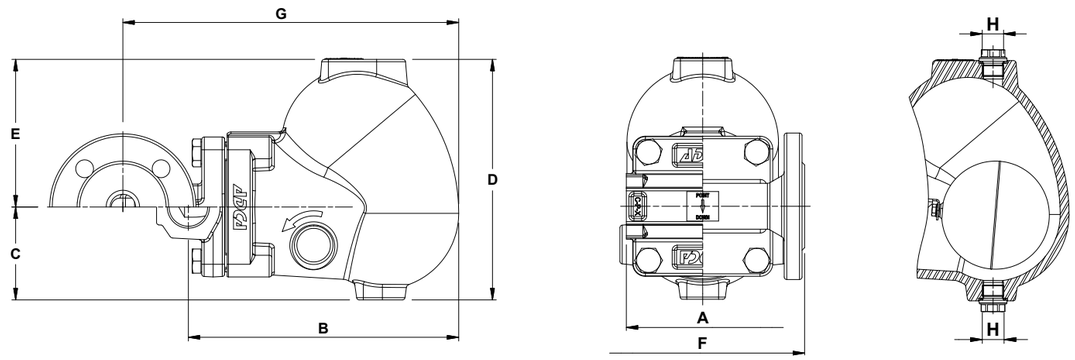
MAX. ΔP: FLT35-4,5 – 4,5 bar
FLT35-10 – 10 bar
FLT35-14 – 14 bar
FLT35-21 – 21 bar
FLT35-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1” – DN 25	–	SEP
–	1” – DN 25	1 (CE marked)

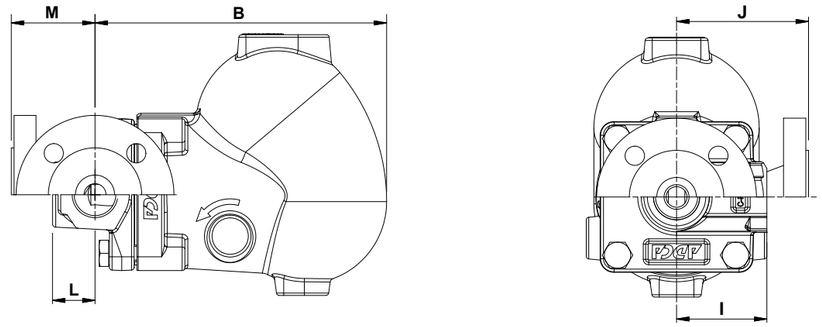
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FLT35-4,5	**1” – DN 25**	900	1250	1490	1630	2490	–	–	–	–	–	–	–	–
FLT35-10	**1” – DN 25**	445	610	705	850	1285	1670	1820	–	–	–	–	–	–
FLT35-14	**1” – DN 25**	335	445	515	600	885	1150	1350	1500	1610	–	–	–	–
FLT35-21	**1” – DN 25**	255	335	380	410	555	680	745	790	815	895	920	–	–
FLT35-32	**1” – DN 25**	230	275	315	345	440	500	570	600	610	650	705	750	810



Inline design



Angled design

DIMENSIONS (mm) – INLINE DESIGN																
THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**
1” – DN 25	120	212	73	189	116	3/8”	8,9	160	264	12	160	264	11,9	160	264	12,6

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1” – DN 25	212	73	189	116	3/8”	65	31	8,4	95	61	11	100	66	10,5	110	76	11,7

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
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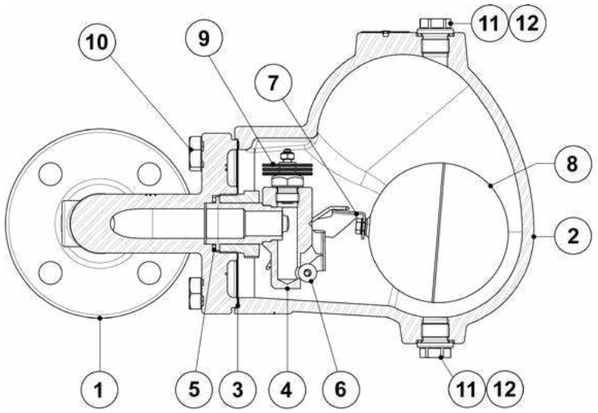
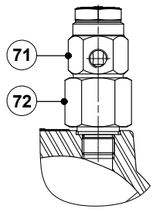
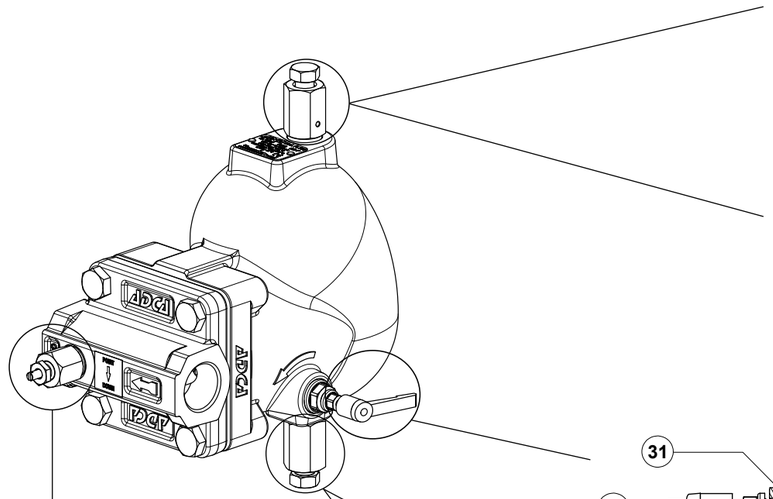
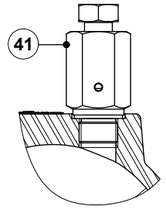
IS FLT35.025 E 00.21



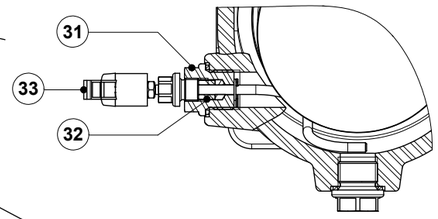


VB21M - Vacuum breaker

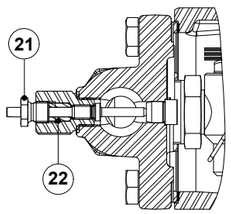




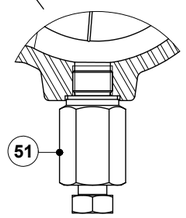
HVV - Hand vent valve



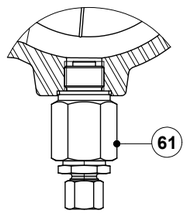
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)

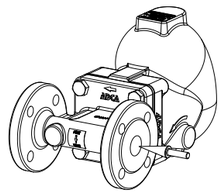


AFZ - Anti-freeze device (Automatic)

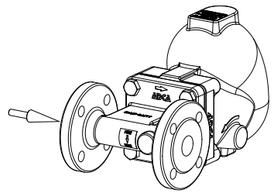
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A216 WCB / 1.0619
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

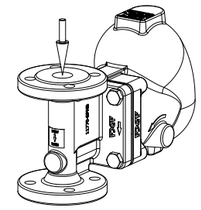
FLOW DIRECTION



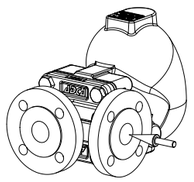
IR - Horizontal from right to left



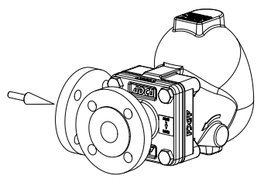
IL - Horizontal from left to right



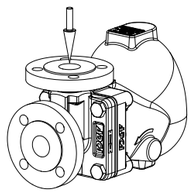
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

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IS FLT35.025 E 00.21

ORDERING CODES FLT35										
Model	**A35**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**25**	
FLT35 – Carbon steel	**A35**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled (not available for angled design versions)					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT37
(Carbon steel 11/2” – 2”; DN 40 – 50)

DESCRIPTION

The FLT37 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and all applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT37-4,5 , 10 , 21 and 32 – carbon steel.

SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld ASME B16.11.

INSTALLATION: Horizontal or vertical installation.

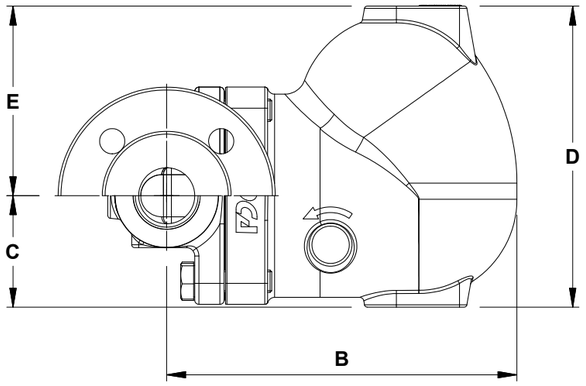
MAX. ΔP: FLT37-4,5 – 4,5 bar
FLT37-10 – 10 bar
FLT37-21 – 21 bar
FLT37-32 – 32 bar

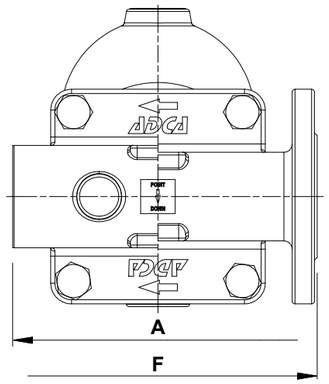
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
11/2” to 2” – DN 40 to 50	–	SEP
–	11/2” to 2” – DN 40 to 50	1 (CE marked)

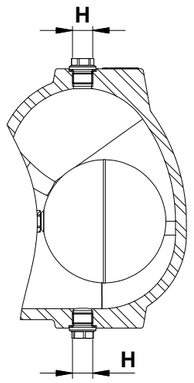
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	17,7 bar	100 ºC
40 bar	14 bar	200 ºC
39 bar	12,1 bar	250 ºC
35,2 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT37-4,5	11/2" to 2" – DN 40 to 50	2400	3400	3900	4500	7300	–	–	–	–	–	–	–	–
FLT37-10	11/2" to 2" – DN 40 to 50	1500	2000	2600	3000	4000	5400	6200	–	–	–	–	–	–
FLT37-21	11/2" to 2" – DN 40 to 50	950	1300	1600	1800	2600	3250	3900	4210	4950	5000	5600	–	–
FLT37-32	11/2" to 2" – DN 40 to 50	950	1300	1600	1800	2600	3250	3900	4210	4950	5000	5600	6000	6500

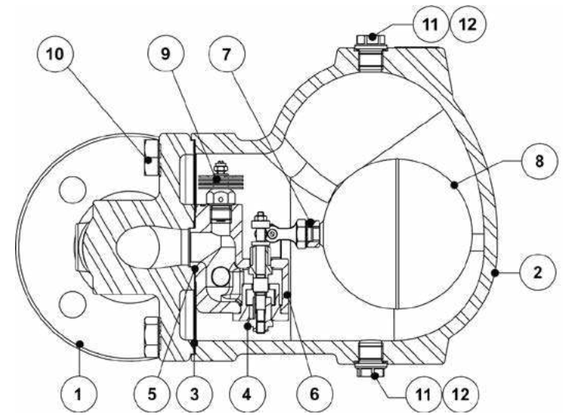


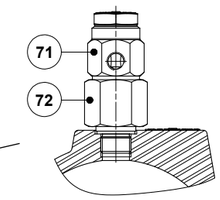




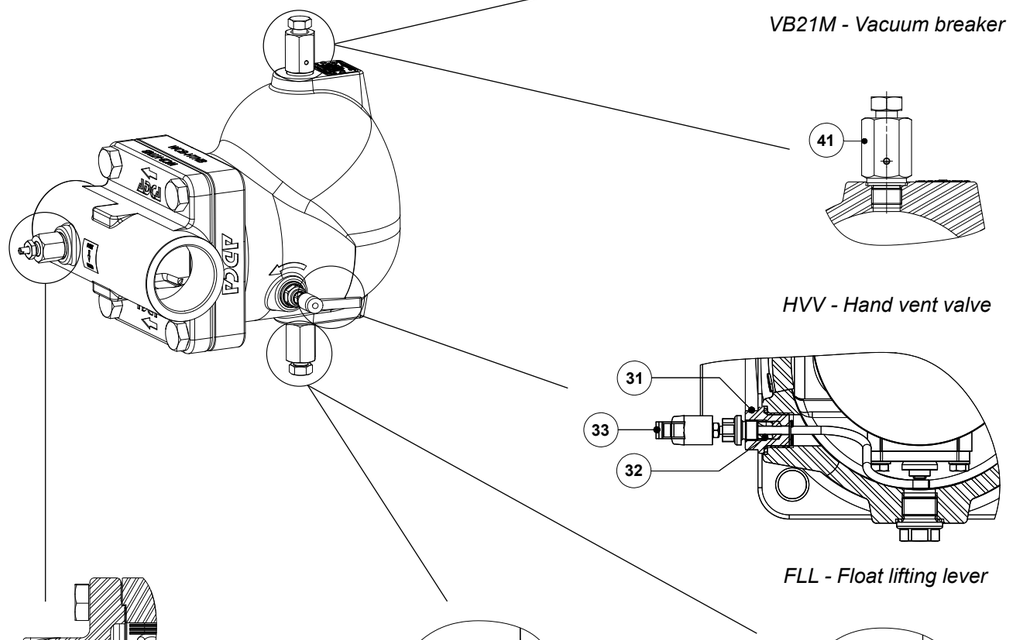
DIMENSIONS (mm)													
THREADED / SW								PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	E	H *	WGT. (kg)	F	WGT. (kg)	F	WGT. (kg)	F	WGT. (kg)
11/2" – DN 40	210	250	80	215	136	3/8"	19	230	21,9	230	20,4	230	21,7
2" – DN 50	210	250	80	215	136	3/8"	18,4	230	23,8	230	21,7	230	23,4

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.



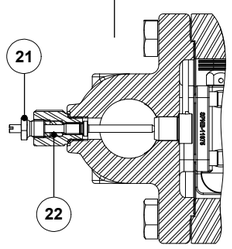


VB21M - Vacuum breaker

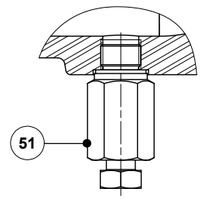


HVV - Hand vent valve

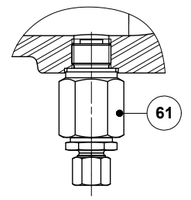
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

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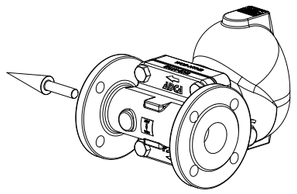
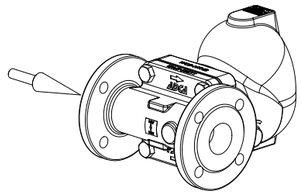
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A216 WCB / 1.0619
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (bimetallic)
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

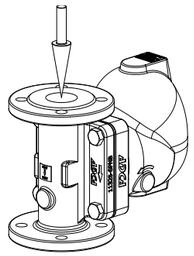
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

ORDERING CODES FLT37										
Model	**A37**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**40**	
FLT37 – A216 WCB / 1.0619 carbon steel	**A37**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
21 bar		**4**								
32 bar		**5**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld ASME B16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
11/2” or DN 40									**40**	
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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IS FLT37.040 E 00.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT39
(Carbon steel 2”; DN 50)

DESCRIPTION

The FLT39 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT39-4,5 , 10 , 21 and 32 – carbon steel.

SIZES: 2”; DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld ASME B16.11.

INSTALLATION: Horizontal or vertical installation.

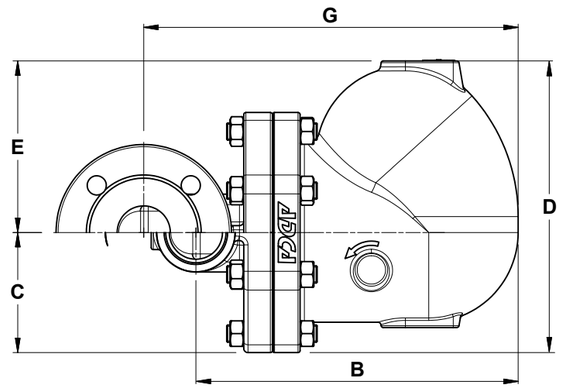
MAX. ΔP: FLT39-4,5 – 4,5 bar
FLT39-10 – 10 bar
FLT39-21 – 21 bar
FLT39-32 – 32 bar

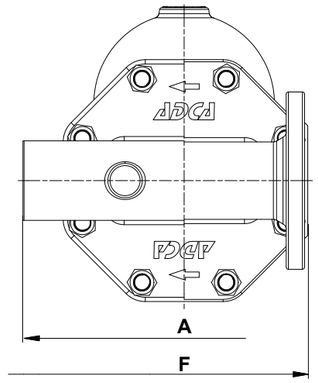
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
2” – DN 50	1 (CE marked)

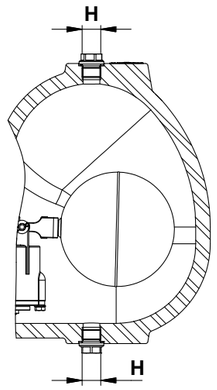
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	17,7 bar	100 ºC
40 bar	14 bar	200 ºC
39 bar	12,1 bar	250 ºC
35,2 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FLT39-4,5	**2” – DN 50**	7550	11000	14000	15500	22500	–	–	–	–	–	–	–	–
FLT39-10	**2” – DN 50**	3900	5000	6100	7100	10000	13750	16000	–	–	–	–	–	–
FLT39-21	**2” – DN 50**	1900	2700	3100	3600	5000	6900	8100	9000	9800	10050	11150	–	–
FLT39-32	**2” – DN 50**	1900	2700	3100	3600	5000	6900	8100	9000	9800	10050	11150	12000	12550







DIMENSIONS (mm)																
THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**
2” – DN 50	300	303	80	215	136	3/8”	35,5	230	352	40,8	230	352	39,9	230	352	40,4

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

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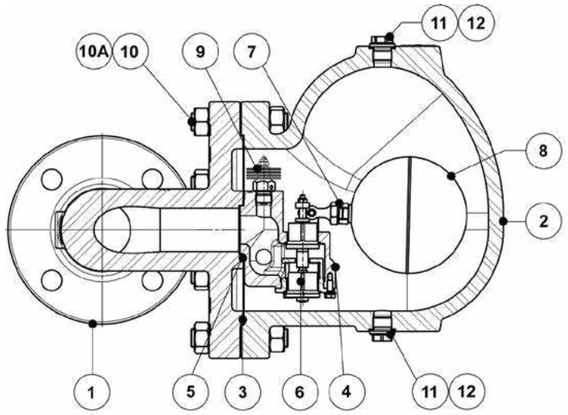
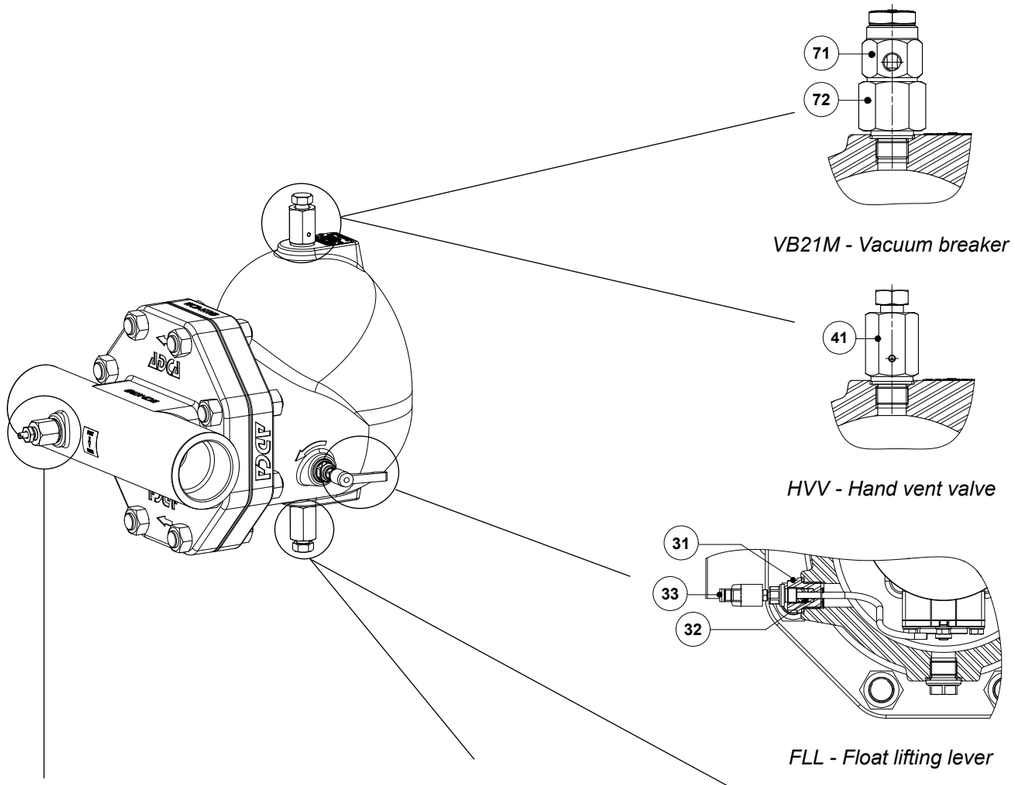
IS FLT39.050 E 00.21





VB21M - Vacuum breaker

HVV - Hand vent valve

FLL - Float lifting lever

SLR - Steam lock release

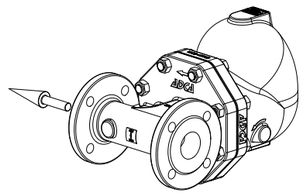
BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

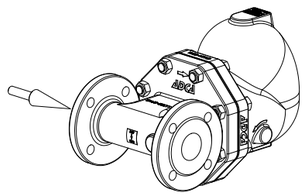
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A216 WCB / 1.0619
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (bimetallic)
10	Studs	Zinc plated steel
10A	Nuts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

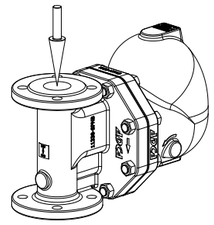
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

ORDERING CODES FLT39										
Model	**A39**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**50**	
FLT39 – A216 WCB / 1.0619 carbon steel	**A39**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
21 bar		**4**								
32 bar		**5**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld ASME B16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

We reserve the right to change the design and material of this product without notice.

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT39TW
(Carbon steel 3” – 4”; DN 80 – 100)

DESCRIPTION

The FLT39TW is a range of high capacity float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT39TW-4,5 , 10 , 21 and 32 – carbon steel.

SIZES: 3” to 4”; DN 80 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.

MAX. ΔP: FLT39TW-4,5 – 4,5 bar
FLT39TW-10 – 10 bar
FLT39TW-21 – 21 bar
FLT39TW-32 – 32 bar

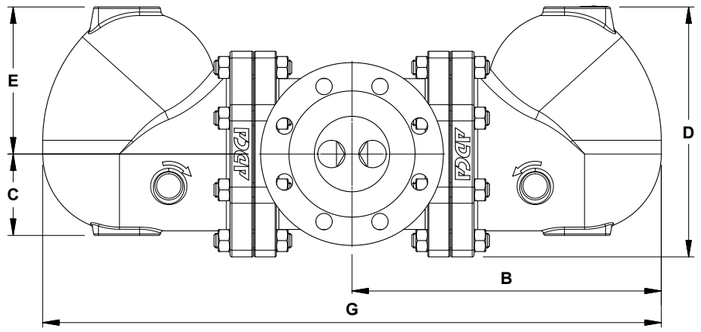
CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
3” to 4” DN 80 to 100	–	1 (CE marked)
–	3” to 4” DN 80 to 100	2 (CE marked)

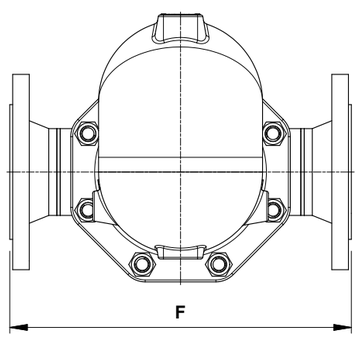
BODY LIMITING CONDITIONS			
FLANGED PN 16 *	**FLANGED PN 40 / CLASS 300 ***	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
14,8 bar	37,1 bar	17,7 bar	100 ºC
13,3 bar	33,3 bar	14 bar	200 ºC
12,1 bar	30,4 bar	12,1 bar	250 ºC
11 bar	27,6 bar	10,2 bar	300 ºC

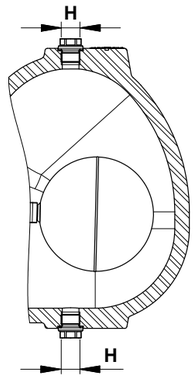
PMO – Maximum operating pressure: 32 bar;
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT39TW-4,5	3” to 4” – DN 80 to 100	15100	22000	28000	31000	45000	–	–	–	–	–	–	–	–
FLT39TW-10	3” to 4” – DN 80 to 100	7800	10000	12200	14200	20000	27500	32000	–	–	–	–	–	–
FLT39TW-21	3” to 4” – DN 80 to 100	3800	5400	6200	7200	10000	13800	16200	18000	19600	20100	22300	–	–
FLT39TW-32	3” to 4” – DN 80 to 100	3800	5400	6200	7200	10000	13800	16200	18000	19600	20100	22300	24000	25100

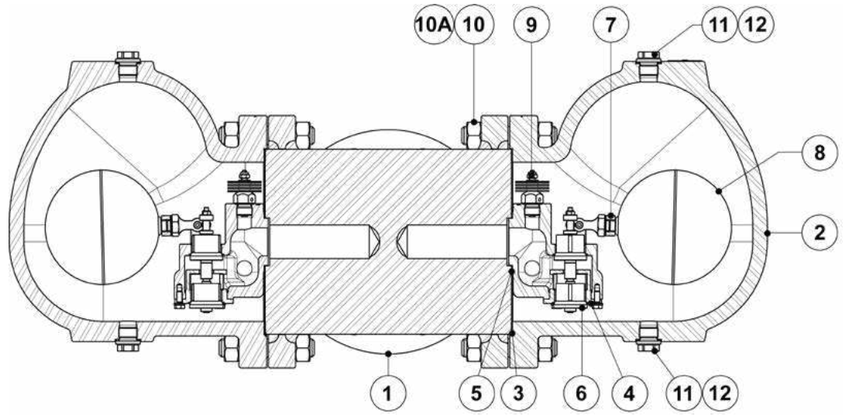


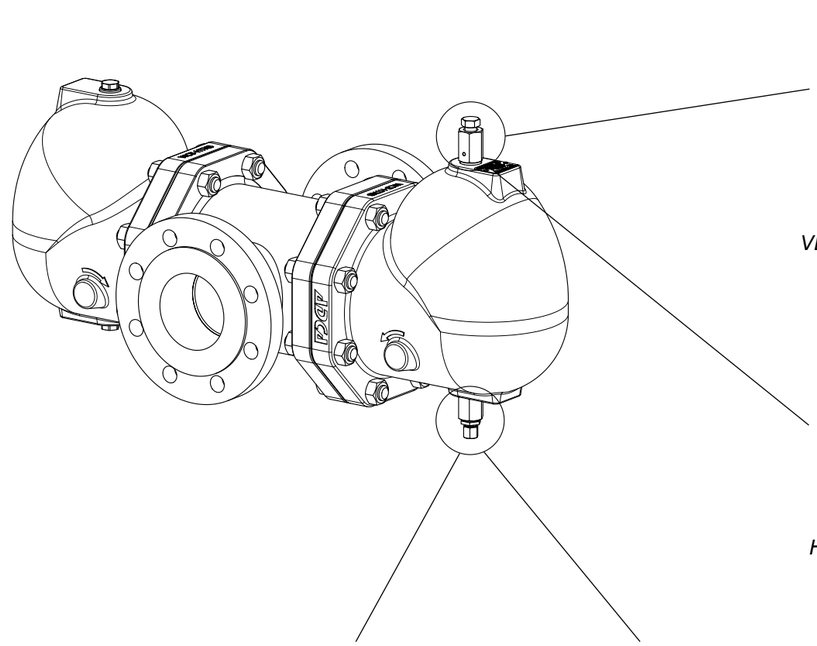




DIMENSIONS (mm)											
SIZE	PN 16								PN 40	CLASS 150	CLASS 300
	B	C	D	E	F	G	H *	WEIGHT (kg)	WEIGHT (kg)	WEIGHT (kg)	WEIGHT (kg)
3” – DN 80	339	113	273	161	350	677	3/8”	89,3	90,9	90,4	94,2
4” – DN 100	339	113	273	161	350	677	3/8”	88,5	92	91,7	100,2

* As standard, in versions with EN flanges, these connections are female threaded ISO 228. In versions with ASME flanges, these connections are female threaded NPT.





VB21M - Vacuum breaker

HVV - Hand vent valve

BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
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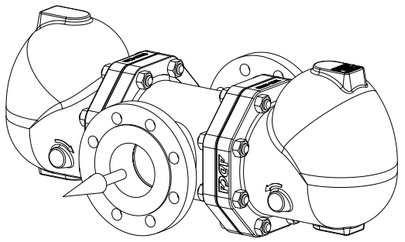
IS FLT39TW.0180 E 00.20

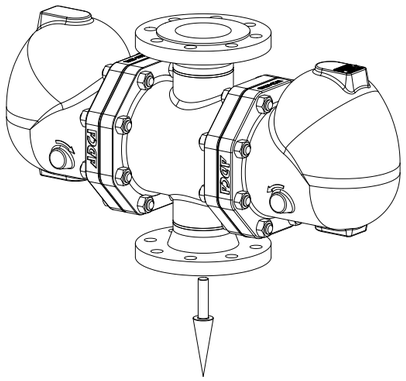
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460; P235GH / 1.0345; S235JR / 1.0038
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (bimetallic)
10	Studs	Zinc plated steel
10A	Nuts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

FLOW DIRECTION



IH - Horizontal



IT - Vertical from top to bottom

ORDERING CODES FLT39TW								
Model	**A39T**	**2**	**V**	**XX**	**IH**	**L**	**80**	**E**
FLT39TW – A216 WCB / 1.0619 carbon steel	**A39T**							
Differential pressure								
4,5 bar		**2**						
10 bar		**3**						
21 bar		**4**						
32 bar		**5**						
Automatic air vent								
Bimetallic air vent (standard)			**V**					
None			**X**					
Cover connections								
None				**XX**				
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**				
Options								
HVV, BDV, AFZ and VB21M have specific separated ordering codes, please refer to the appropriate documentation.								
Flow direction								
Horizontal					**IH**			
Vertical from top to bottom					**IT**			
Pipe connections								
Flanged EN 1092-1 PN 16						**L**		
Flanged EN 1092-1 PN 40						**N**		
Flanged ASME B16.5 Class 150						**U**		
Flanged ASME B16.5 Class 300						**V**		
Size								
3” or DN 80							**80**	
4” or DN 100							**100**	
Special valves / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

VALSTEAM ADCA
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IS FLT39TW.0180 E 00.20

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT40
(Stainless steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FLT40 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT40-4,5 , 10, 14 and 21 – stainless steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

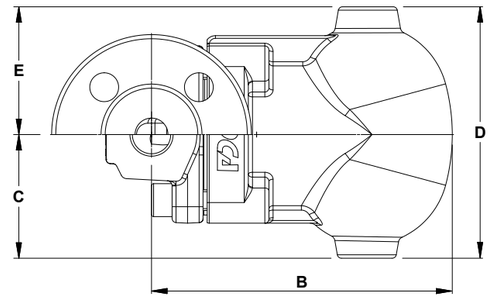
MAX. ΔP: FLT40-4,5 – 4,5 bar
FLT40-10 – 10 bar
FLT40-14 – 14 bar
FLT40-21 – 21 bar

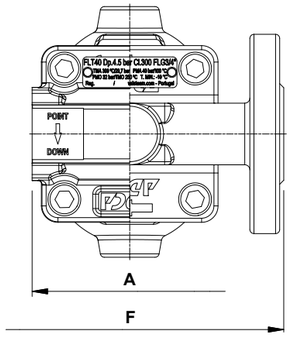
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

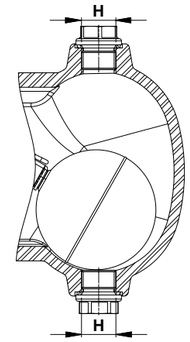
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 300 ****	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	34,4 bar	13,3 bar	100 ºC
31,8 bar	28,8 bar	11,1 bar	200 ºC
29,9 bar	26,6 bar	10,2 bar	250 ºC
27,6 bar	25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

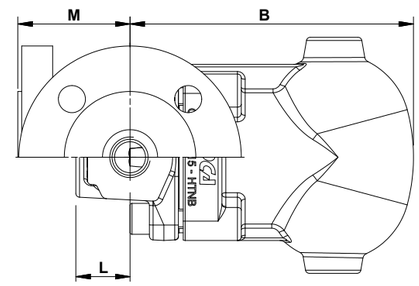
FLOW RATE CAPACITY (kg/h)												
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**										
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**
FLT40-4,5	**1/2” to 1” – DN 15 to 25**	220	280	320	360	495	–	–	–	–	–	–
FLT40-10	**1/2” to 1” – DN 15 to 25**	200	252	290	335	440	505	595	–	–	–	–
FLT40-14	**1/2” to 1” – DN 15 to 25**	145	198	225	252	350	415	480	535	580	–	–
FLT40-21	**1/2” to 1” – DN 15 to 25**	70	95	120	150	205	250	320	380	390	405	435

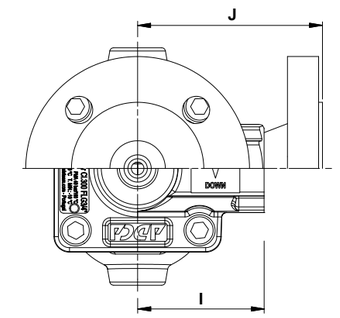






Inline design





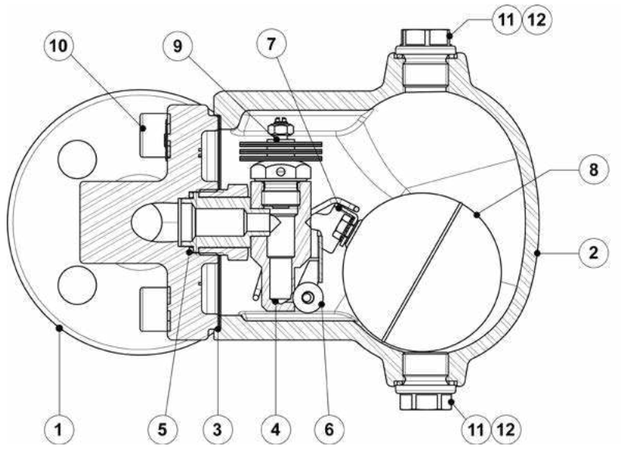
Angled design

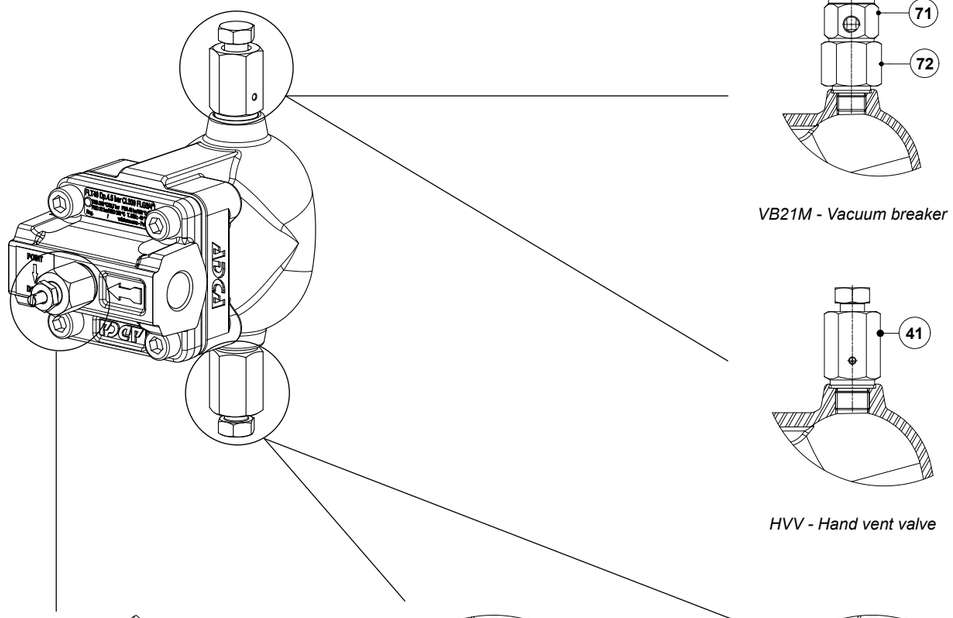
DIMENSIONS (mm) – INLINE DESIGN												
THREADED / SW								**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2" – DN 15	95	146	60	122	62	3/8”	3,8	150	5,1	150	4,8	150	5
3/4” – DN 20	95	146	60	122	62	3/8”	3,8	150	5,7	150	5	150	6
1” – DN 25	95	146	60	122	62	3/8”	3,6	160	6,4	160	6	160	6,8

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1/2" – DN 15	146	60	122	62	3/8”	65	28	3,8	95	58	5,3	100	63	4,8	105	68	5,4
3/4” – DN 20	146	60	122	62	3/8”	65	28	3,8	95	58	5,9	100	63	5,2	110	73	6,4
1” – DN 25	146	60	122	62	3/8”	65	28	3,8	95	58	6,3	100	63	5,7	110	73	6,9

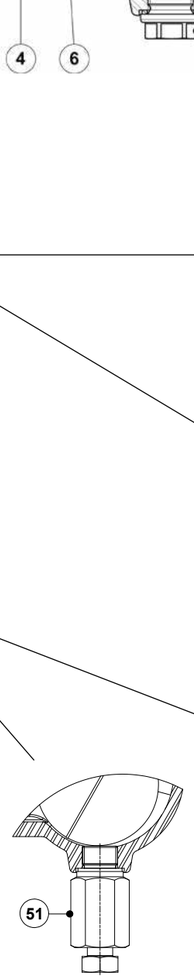
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FLT40.015 E 00.21

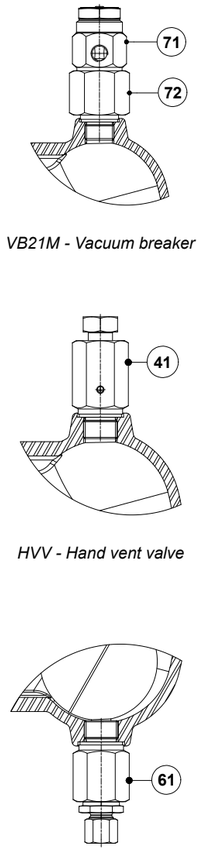




SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VB21M - Vacuum breaker

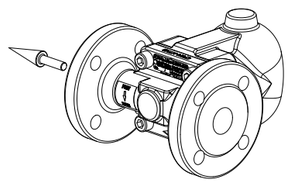
HVV - Hand vent valve

LRQA CERTIFIED ISO 9001

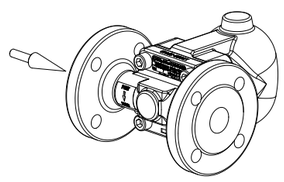
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A351 CF8M / 1.4408
	Body (inline threaded)	AISI 316L / 1.4404
	Body (angled)	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

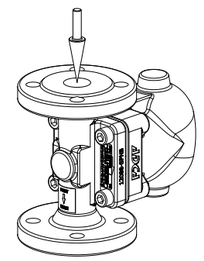
FLOW DIRECTION



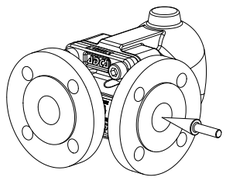
IR - Horizontal from right to left



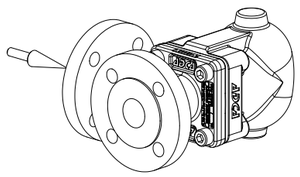
IL - Horizontal from left to right



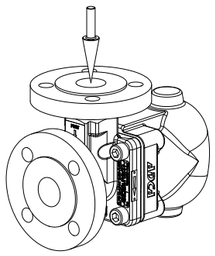
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

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IS FLT40.015 E 00.21

ORDERING CODES FLT40									
Model	**A40**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FLT40 – stainless steel	**A40**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
Automatic air vent									
Bimetallic air vent (standard)			**V**						
None			**X**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
SLR - Steam lock release									
None					**X**				
With steam lock release assembled					**S**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1/2” or DN 15								**15**	
3/4” or DN 20								**20**	
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT41
(Stainless steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FLT41 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT41-4,5 , 10, 14 , 21 and 32 – stainless steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

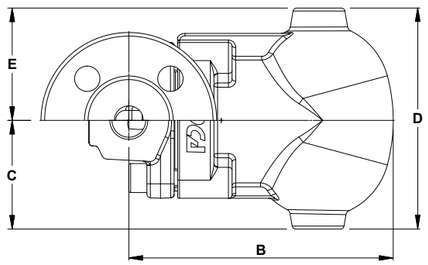
MAX. ΔP:
FLT41-4,5 – 4,5 bar
FLT41-10 – 10 bar
FLT41-14 – 14 bar
FLT41-21 – 21 bar
FLT41-32 – 32 bar

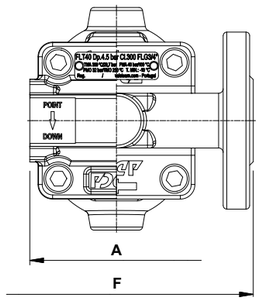
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

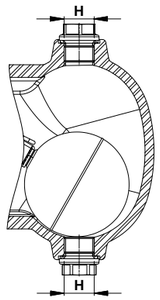
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 300 ****	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	34,4 bar	13,3 bar	100 ºC
31,8 bar	28,8 bar	11,1 bar	200 ºC
29,9 bar	26,6 bar	10,2 bar	250 ºC
27,6 bar	25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT41-4,5	1/2” to 1” – DN 15 to 25	305	395	455	500	680	–	–	–	–	–	–	–	–
FLT41-10	1/2” to 1” – DN 15 to 25	235	330	400	440	630	694	705	–	–	–	–	–	–
FLT41-14	1/2” to 1” – DN 15 to 25	220	277	318	365	481	556	654	691	710	–	–	–	–
FLT41-21	1/2” to 1” – DN 15 to 25	148	205	228	255	353	418	485	530	560	595	635	–	–
FLT41-32	1/2” to 1” – DN 15 to 25	72	97	123	155	208	252	323	385	393	410	440	550	595







Inline design

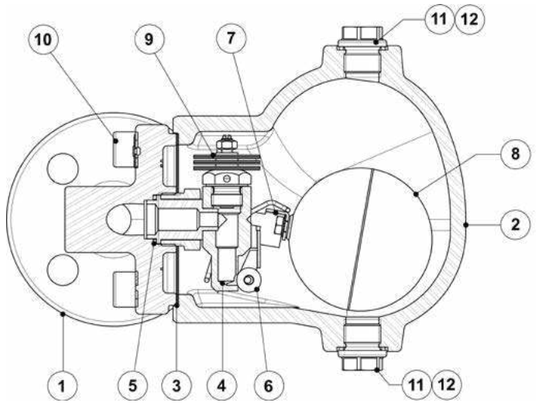
Angled design

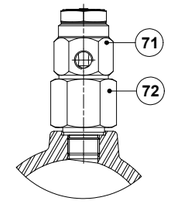
DIMENSIONS (mm) – INLINE DESIGN													
THREADED / SW								PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)	F	WEIGHT (kg)
1/2" – DN 15	95	160	60	139	79	3/8”	4,9	150	6,2	150	5,8	150	6,1
3/4” – DN 20	95	160	60	139	79	3/8”	4,8	150	6,7	150	6,1	150	7,2
1” – DN 25	95	160	60	139	79	3/8”	4,7	160	7,4	160	7,2	160	7,9

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									PN 40			CLASS 150			CLASS 300		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1/2" – DN 15	160	60	139	79	3/8”	65	28	4,8	95	58	6,5	100	63	6	105	68	6,5
3/4” – DN 20	160	60	139	79	3/8”	65	28	4,8	95	58	7	100	63	6,4	110	73	7,5
1” – DN 25	160	60	139	79	3/8”	65	28	4,8	95	58	7,5	100	63	6,9	110	73	8

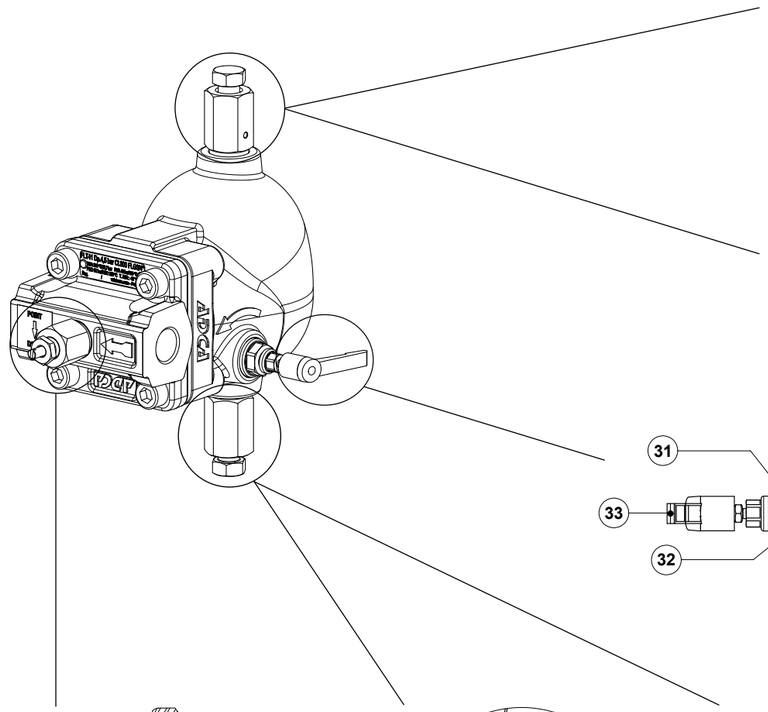
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

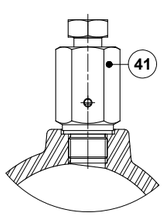
We reserve the right to change the design and material of this product without notice.



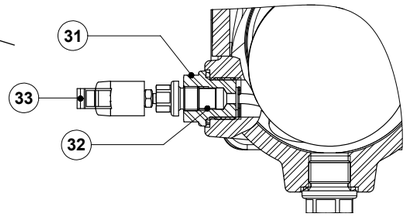


VB21M - Vacuum breaker

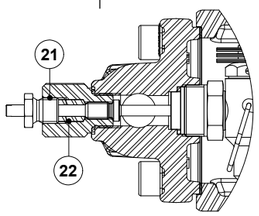




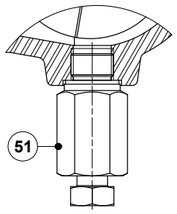
HVV - Hand vent valve



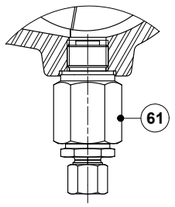
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

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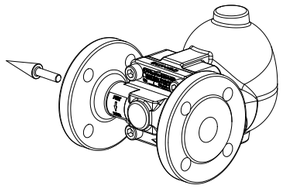
IS FLT41.015 E 00.21

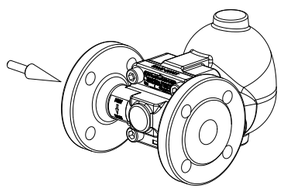
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A351 CF8M / 1.4408
	Body (inline threaded)	AISI 316L / 1.4404
	Body (angled)	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021; AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Connector	AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

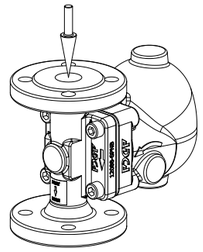
FLOW DIRECTION



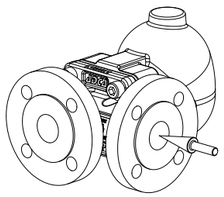
IR - Horizontal from right to left



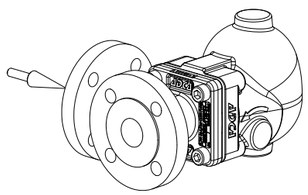
IL - Horizontal from left to right



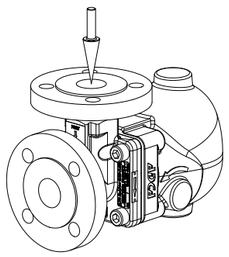
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FLT41										
Model	**A41**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**15**	
FLT41 – stainless steel	**A41**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
1/2” or DN 15									**15**	
3/4” or DN 20									**20**	
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA

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IS FLT41.015 E 00.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT45
(Stainless steel 1”; DN 25)

DESCRIPTION

The FLT45 is a series of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT45-4,5 , 10, 14, 21 and 32 – stainless steel.

SIZES: 1”; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

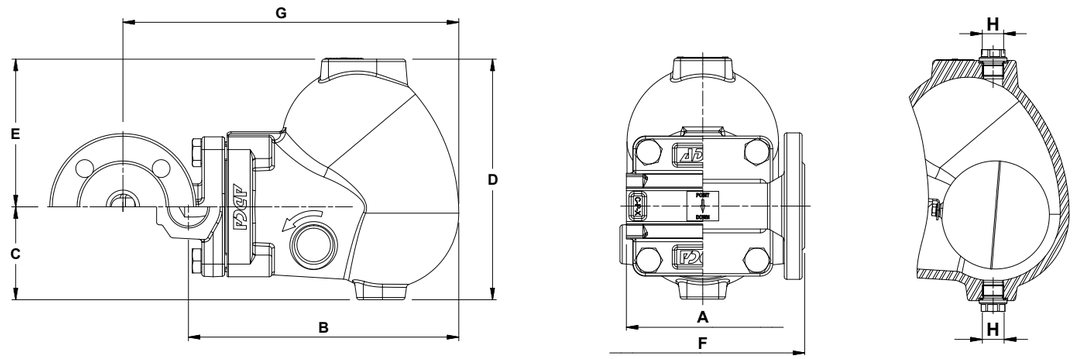
MAX. ΔP: FLT45-4,5 – 4,5 bar
FLT45-10 – 10 bar
FLT45-14 – 14 bar
FLT45-21 – 21 bar
FLT45-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1” – DN 25	–	SEP
–	1” – DN 25	1 (CE marked)

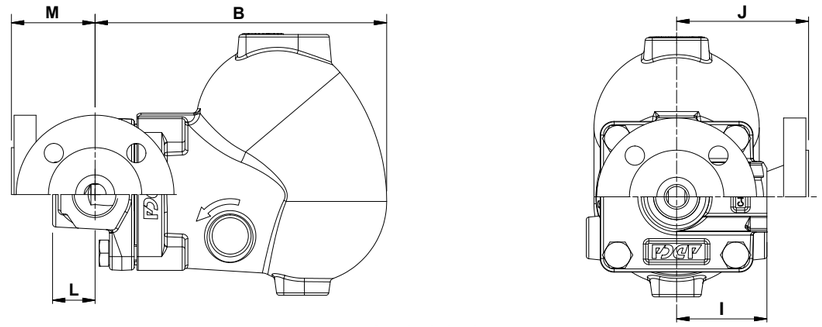
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 300 ****	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	34,4 bar	13,3 bar	100 ºC
31,8 bar	28,8 bar	11,1 bar	200 ºC
29,9 bar	26,6 bar	10,2 bar	250 ºC
27,6 bar	25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FLT45-4,5	**1” – DN 25**	900	1250	1490	1630	2490	–	–	–	–	–	–	–	–
FLT45-10	**1” – DN 25**	445	610	705	850	1285	1670	1820	–	–	–	–	–	–
FLT45-14	**1” – DN 25**	335	445	515	600	885	1150	1350	1500	1610	–	–	–	–
FLT45-21	**1” – DN 25**	255	335	380	410	555	680	745	790	815	895	920	–	–
FLT45-32	**1” – DN 25**	230	275	315	345	440	500	570	600	610	650	705	750	810



Inline design



Angled design

DIMENSIONS (mm) – INLINE DESIGN																
THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**	**F**	**G**	**WGT. (kg)**
1” – DN 25	120	212	73	189	116	3/8”	8,9	160	264	12	160	264	11,9	160	264	12,6

DIMENSIONS (mm) – ANGLED DESIGN																
THREADED / SW									**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1” – DN 25	212	73	189	116	3/8”	65	31	8,4	95	61	11	100	66	10,5	110	76	11,7

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

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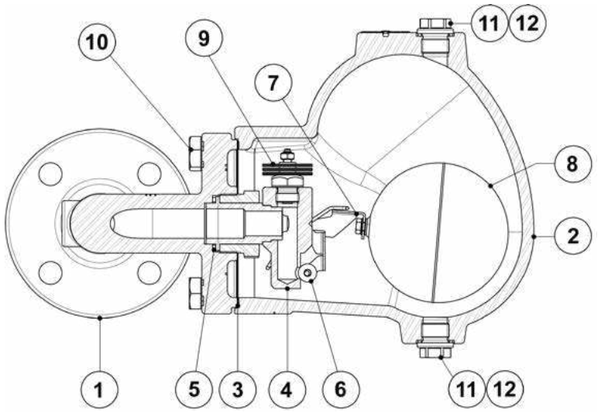
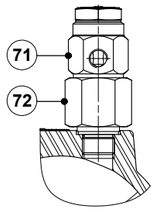
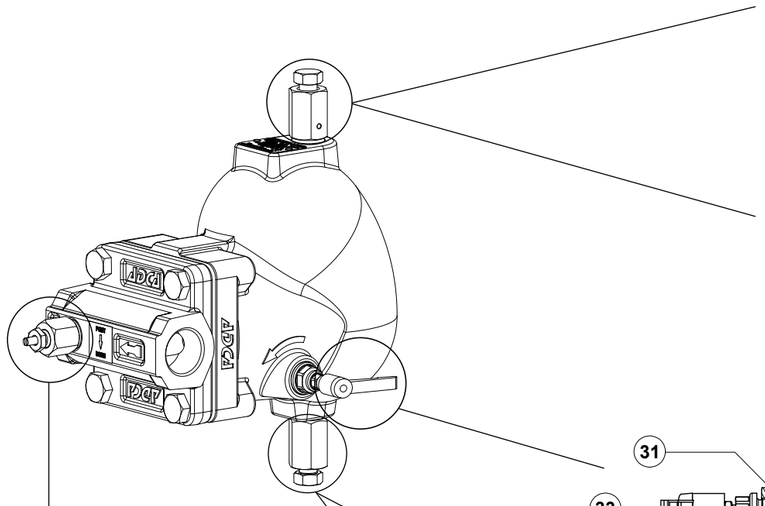
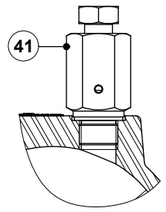


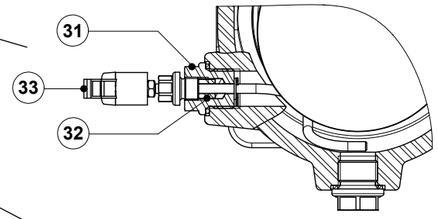


VB21M - Vacuum breaker

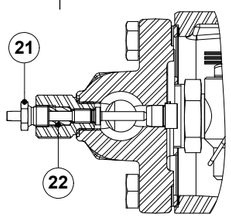




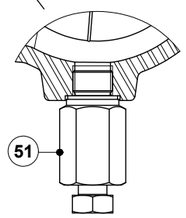
HVV - Hand vent valve



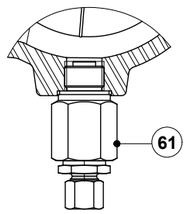
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



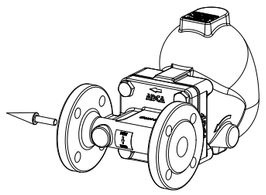
AFZ - Anti-freeze device (Automatic)

LRQA CERTIFIED ISO 9001

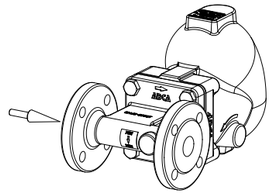
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A351 CF8M / 1.4408
	Body (inline threaded)	AISI 316L / 1.4404
	Body (angled)	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel; Bimetallic
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

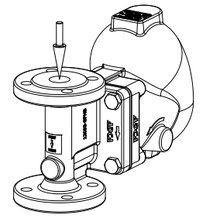
FLOW DIRECTION



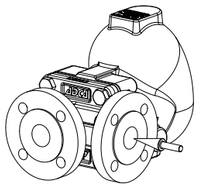
IR - Horizontal from right to left



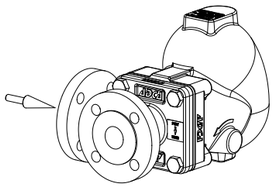
IL - Horizontal from left to right



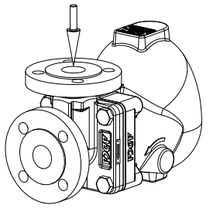
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

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ORDERING CODES FLT45										
Model	**A45**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**25**	
FLT45 – stainless steel	**A45**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Inline horizontal from right to left (standard)							**IR**			
Inline horizontal from left to right							**IL**			
Inline vertical from top to bottom							**IT**			
Angled from right to front							**AR**			
Angled from left to front							**AL**			
Angled from top to front							**AT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT47
(Stainless steel 11/2” – 2”; DN 40 – 50)

DESCRIPTION

The FLT47 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT47-4,5 , 10 , 21 and 32 – stainless steel.

SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld ASME B16.11.

INSTALLATION: Horizontal or vertical installation.

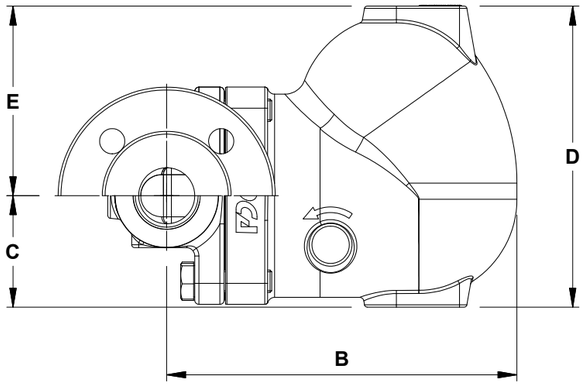
MAX. ΔP: FLT47-4,5 – 4,5 bar
FLT47-10 – 10 bar
FLT47-21 – 21 bar
FLT47-32 – 32 bar

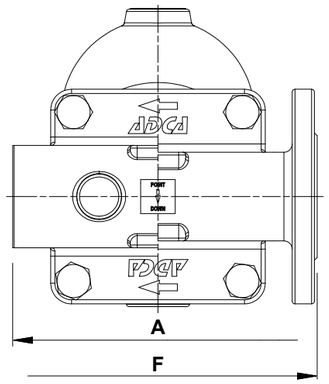
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
11/2” to 2” – DN 40 to 50	–	SEP
–	11/2” to 2” – DN 40 to 50	1 (CE marked)

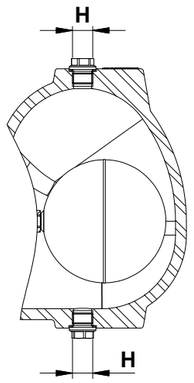
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	16,3 bar	100 ºC
33,7 bar	13,5 bar	200 ºC
31,8 bar	12,1 bar	250 ºC
29,7 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT47-4,5	11/2" to 2" – DN 40 to 50	2400	3400	3900	4500	7300	–	–	–	–	–	–	–	–
FLT47-10	11/2" to 2" – DN 40 to 50	1500	2000	2600	3000	4000	5400	6200	–	–	–	–	–	–
FLT47-21	11/2" to 2" – DN 40 to 50	950	1300	1600	1800	2600	3250	3900	4210	4950	5000	5600	–	–
FLT47-32	11/2" to 2" – DN 40 to 50	950	1300	1600	1800	2600	3250	3900	4210	4950	5000	5600	6000	6500



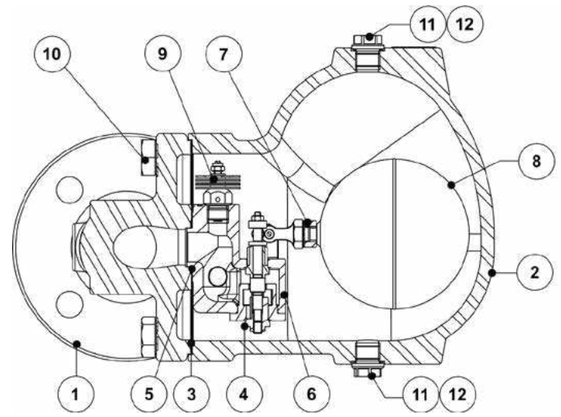


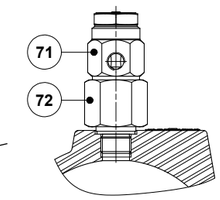


DIMENSIONS (mm)													
THREADED / SW								PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	E	H *	WGT. (kg)	F	WGT. (kg)	F	WGT. (kg)	F	WGT. (kg)
11/2" – DN 40	210	250	80	215	136	3/8"	19	230	21,9	230	20,4	230	21,7
2" – DN 50	210	250	80	215	136	3/8"	18,4	230	23,8	230	21,7	230	23,4

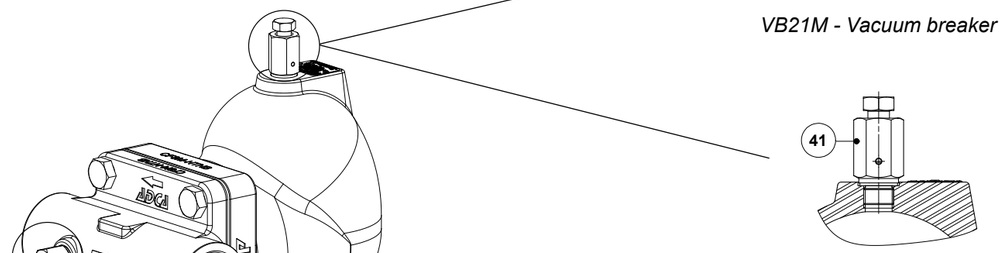
* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.

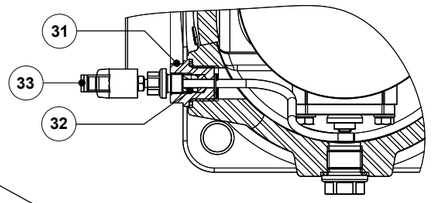




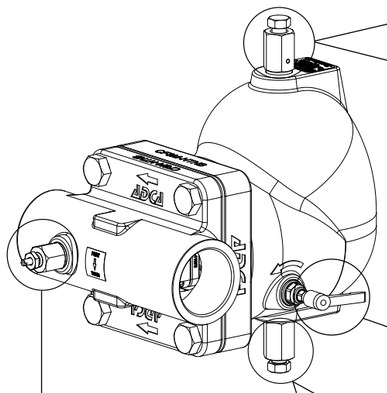
VB21M - Vacuum breaker

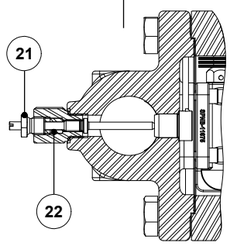


HVV - Hand vent valve

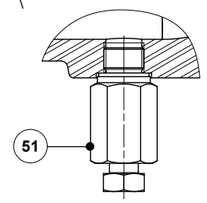


FLL - Float lifting lever

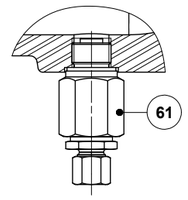




SLR - Steam lock release



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

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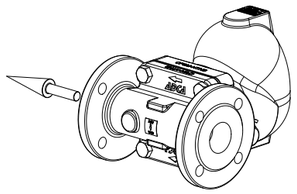
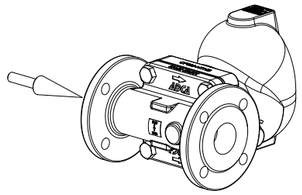
MATERIALS		
POS Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless st. (bimetallic)
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

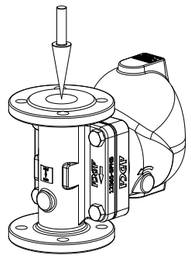
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

ORDERING CODES FLT47										
Model	**A47**	**2**	**V**	**XX**	**X**	**X**	**IR**	**A**	**40**	
FLT47 – A351 CF8M / 1.4408 stainless steel	**A47**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
21 bar		**4**								
32 bar		**5**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld ASME B16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
11/2” or DN 40									**40**	
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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IS FLT47.040 E 00.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT49
(Stainless steel 2”; DN 50)

DESCRIPTION

The FLT49 is a range of float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
SLR – Steam lock release.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT49-4,5 , 10 , 21 and 32 – stainless steel.

SIZES: 2”; DN 50.

CONNECTIONS: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.

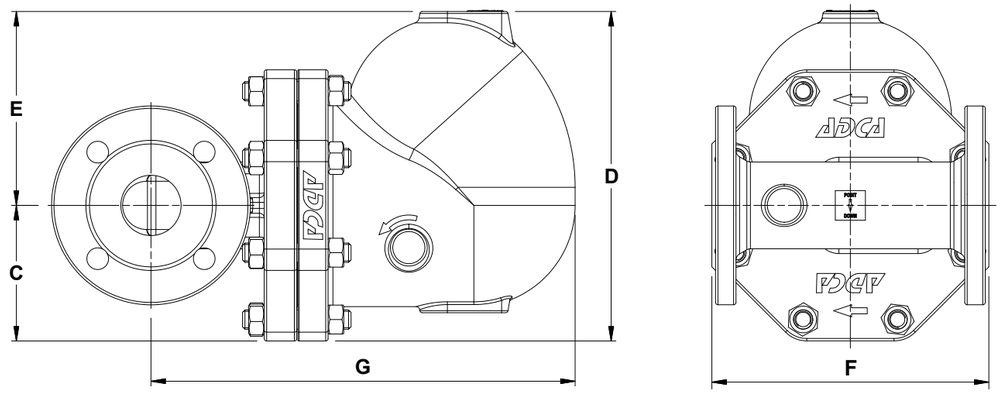
MAX. ΔP: FLT49-4,5 – 4,5 bar
FLT49-10 – 10 bar
FLT49-21 – 21 bar
FLT49-32 – 32 bar

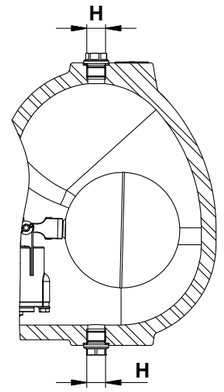
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
2” – DN 50	1 (CE marked)

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	16,3 bar	100 ºC
33,7 bar	13,5 bar	200 ºC
31,8 bar	12,1 bar	250 ºC
29,7 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FLT49-4,5	**2” – DN 50**	7550	11000	14000	15500	22500	–	–	–	–	–	–	–	–
FLT49-10	**2” – DN 50**	3900	5000	6100	7100	10000	13750	16000	–	–	–	–	–	–
FLT49-21	**2” – DN 50**	1900	2700	3100	3600	5000	6900	8100	9000	9800	10050	11150	–	–
FLT49-32	**2” – DN 50**	1900	2700	3100	3600	5000	6900	8100	9000	9800	10050	11150	12000	12550





DIMENSIONS (mm)									
	PN 40							**CLASS 150**	**CLASS 300**
SIZE	**C**	**D**	**E**	**H ***	**F**	**G**	**WEIGHT (kg)**	**WEIGHT (kg)**	**WEIGHT (kg)**
2” – DN 50	80	215	136	3/8”	230	352	40,8	39,9	40,4

* As standard, in versions with EN flanges, these connections are female threaded ISO 228. In versions with ASME flanges, these connections are female threaded NPT.

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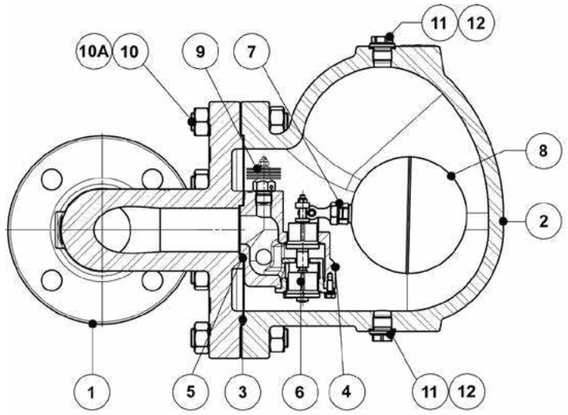
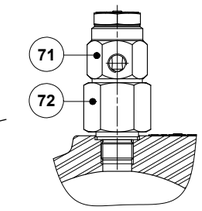
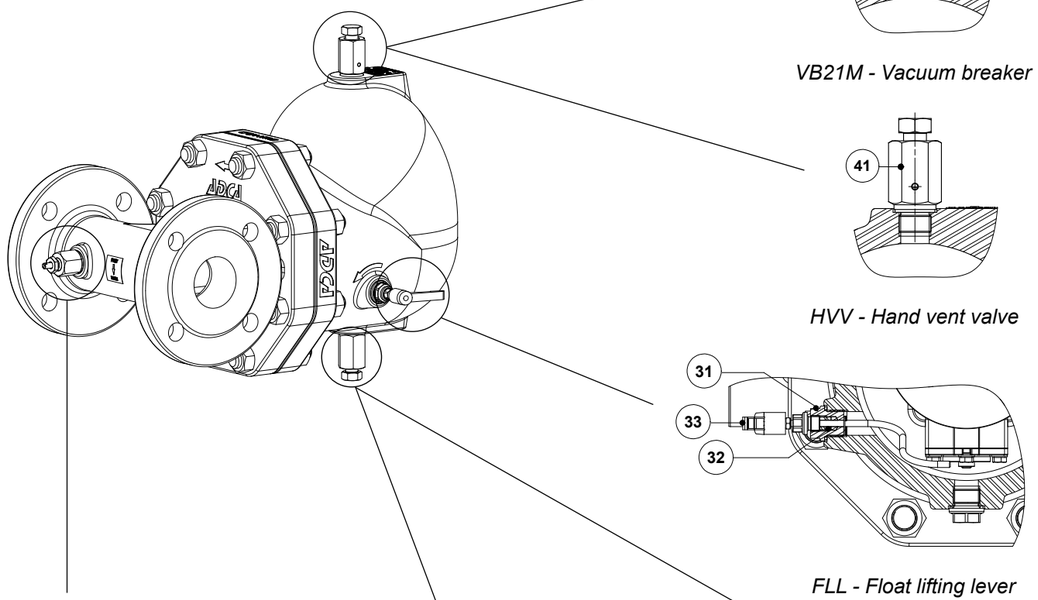
IS FLT49.050 E 00.21



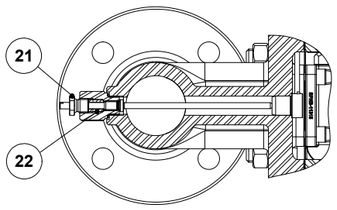


VB21M - Vacuum breaker

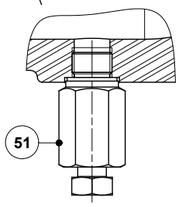


HVV - Hand vent valve

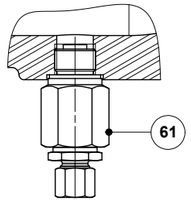
FLL - Float lifting lever



SLR - Steam lock release



BDV - Blowdown valve (Manual)



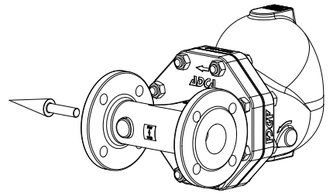
AFZ - Anti-freeze device (Automatic)

LRQA CERTIFIED ISO 9001

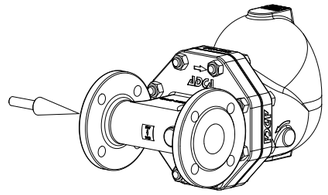
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless st. (bimetallic)
10	Studs	Stainless steel A2-70
10A	Nuts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
21	Steam Lock Release	AISI 420 / 1.4021 AISI 316L / 1.4404
22	Packing	Graphite
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

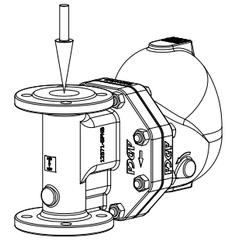
FLOW DIRECTION



IR - Horizontal from right to left



IL - Horizontal from left to right



IT - Vertical from top to bottom

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IS FLT49.050 E 00.21

ORDERING CODES FLT49										
Model	**A49**	**2**	**V**	**XX**	**X**	**X**	**IR**	**N**	**50**	
FLT49 – A351 CF8M / 1.4408 stainless steel	**A49**									
Differential pressure										
4,5 bar		**2**								
10 bar		**3**								
21 bar		**4**								
32 bar		**5**								
Automatic air vent										
Bimetallic air vent (standard)			**V**							
None			**X**							
Cover connections										
None				**XX**						
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
SLR - Steam lock release										
None					**X**					
With steam lock release assembled					**S**					
FLL - Float lifting lever										
None						**X**				
Lifting lever on the right side (when facing the steam trap body)						**R**				
Lifting lever on the left side (when facing the steam trap body)						**L**				
Flow direction										
Horizontal from right to left (standard)							**IR**			
Horizontal from left to right							**IL**			
Vertical from top to bottom							**IT**			
Pipe connections										
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Size										
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

We reserve the right to change the design and material of this product without notice.

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT49TW
(Stainless steel 3” – 4”; DN 80 – 100)

DESCRIPTION

The FLT49TW is a range of high capacity float and thermostatic steam traps with integral air vent designed for modulating discharge of condensate, ensuring maximum system heat transfer.
Typical applications include unit heaters, heat exchangers, dryers, jacketed vessels and other applications where continuous discharge is essential and high flow capacities are involved.

MAIN FEATURES

Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT49TW-4,5 , 10 , 21 and 32 – stainless steel.

SIZES: 3” to 4”; DN 80 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.

MAX. ΔP: FLT49TW-4,5 – 4,5 bar
FLT49TW-10 – 10 bar
FLT49TW-21 – 21 bar
FLT49TW-32 – 32 bar

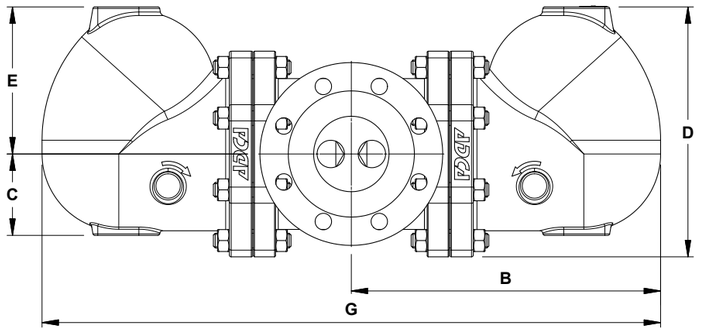
CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
3” to 4” DN 80 to 100	–	1 (CE marked)
–	3” to 4” DN 80 to 100	2 (CE marked)

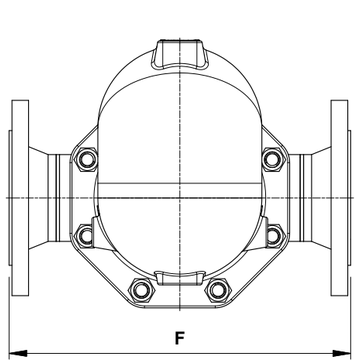
BODY LIMITING CONDITIONS				
FLANGED PN 16 *	**FLANGED PN 40 ***	**FLANGED CLASS 150 ****	**FLANGED CLASS 300 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
15,1 bar	37,9 bar	13,3 bar	34,4 bar	100 ºC
12,7 bar	31,8 bar	11,1 bar	28,8 bar	200 ºC
11,9 bar	29,9 bar	10,2 bar	26,6 bar	250 ºC
11 bar	27,6 bar	9,7 bar	25,2 bar	300 ºC

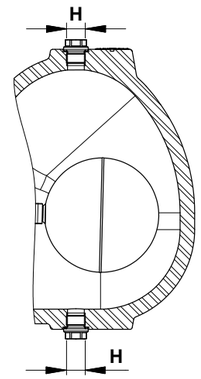
PMO – Maximum operating pressure: 32 bar;
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FLT49TW-4,5	3” to 4” – DN 80 to 100	15100	22000	28000	31000	45000	–	–	–	–	–	–	–	–
FLT49TW-10	3” to 4” – DN 80 to 100	7800	10000	12200	14200	20000	27500	32000	–	–	–	–	–	–
FLT49TW-21	3” to 4” – DN 80 to 100	3800	5400	6200	7200	10000	13800	16200	18000	19600	20100	22300	–	–
FLT49TW-32	3” to 4” – DN 80 to 100	3800	5400	6200	7200	10000	13800	16200	18000	19600	20100	22300	24000	25100

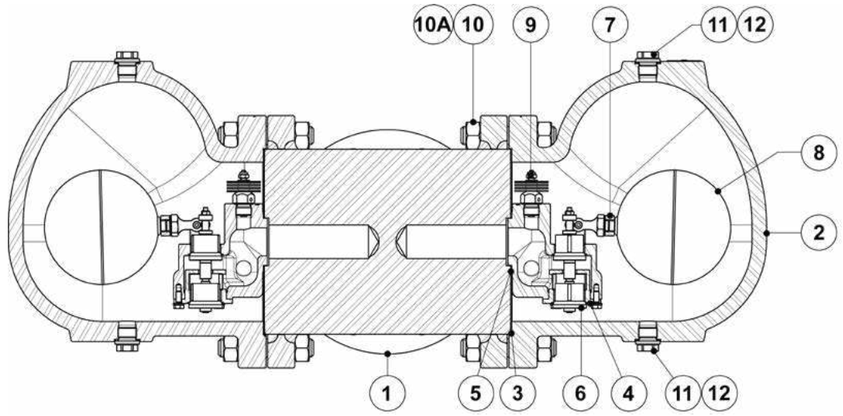


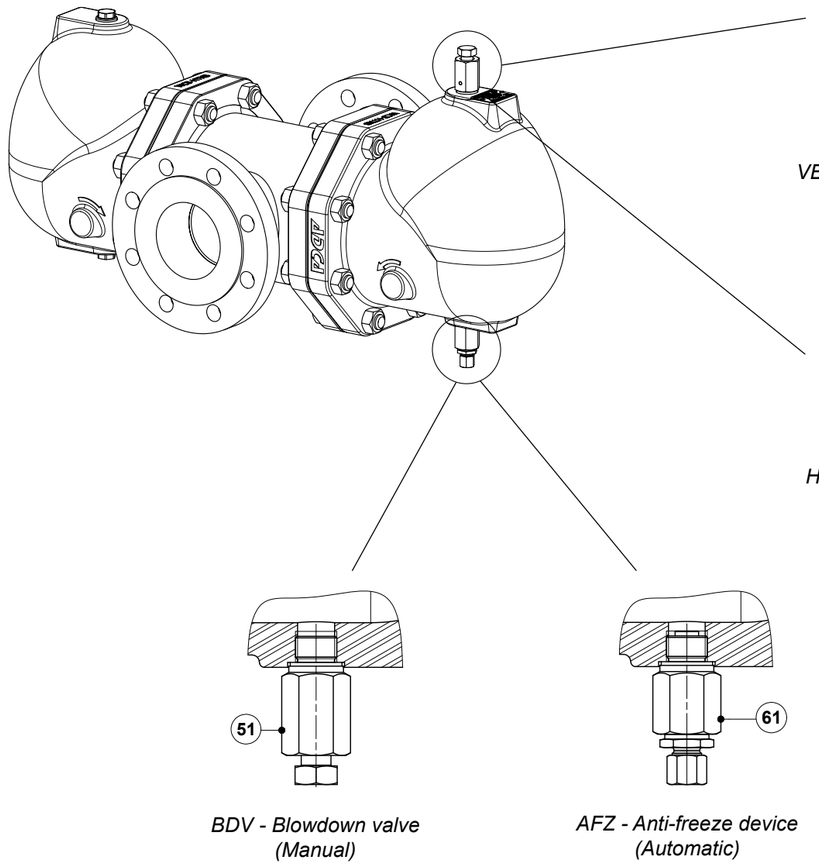




DIMENSIONS (mm)											
SIZE	PN 16								PN 40	CLASS 150	CLASS 300
	B	C	D	E	F	G	H *	WEIGHT (kg)	WEIGHT (kg)	WEIGHT (kg)	WEIGHT (kg)
3” – DN 80	339	113	273	161	350	677	3/8”	90,8	92,4	92	96
4” – DN 100	339	113	273	161	350	677	3/8”	90,3	93,8	94	102,5

* As standard, in versions with EN flanges, these connections are female threaded ISO 228. In versions with ASME flanges, these connections are female threaded NPT.





VB21M - Vacuum breaker

HVV - Hand vent valve

BDV - Blowdown valve (Manual)

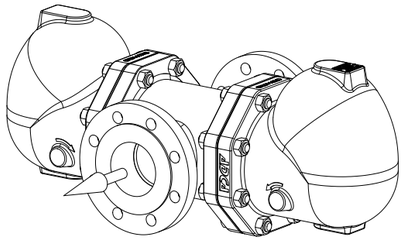
AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FLT49TW.080 E 00.20

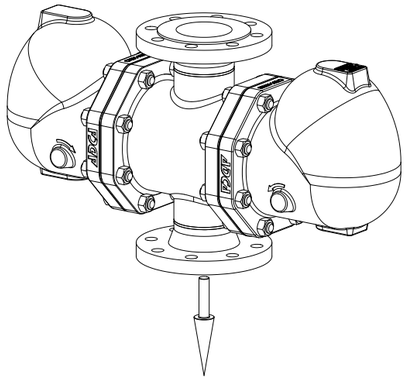
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 304 / 1.4301; AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308; A276-98B / 1.4057
5	* Gasket	Graphite
6	* Valve	AISI 316 / 1.4401; AISI 420 / 1.4021
7	* Lever	A351 CF8M / 1.4408
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless st. (bimetallic)
10	Studs	Stainless steel A2-70
10A	Nuts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.

FLOW DIRECTION



IH - Horizontal



IT - Vertical from top to bottom

ORDERING CODES FLT49TW								
Model	**A49T**	**2**	**V**	**XX**	**IH**	**L**	**80**	**E**
FLT49TW – A351 CF8M / 1.4408 stainless steel	**A49T**							
Differential pressure								
4,5 bar		**2**						
10 bar		**3**						
21 bar		**4**						
32 bar		**5**						
Automatic air vent								
Bimetallic air vent (standard)			**V**					
None			**X**					
Cover connections								
None				**XX**				
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**				
Options								
HVV, BDV, AFZ and VB21M have specific separated ordering codes, please refer to the appropriate documentation.								
Flow direction								
Horizontal					**IH**			
Vertical from top to bottom					**IT**			
Pipe connections								
Flanged EN 1092-1 PN 16						**L**		
Flanged EN 1092-1 PN 40						**N**		
Flanged ASME B16.5 Class 150						**U**		
Flanged ASME B16.5 Class 300						**V**		
Size								
3’’ or DN 80							**80**	
4’’ or DN 100							**100**	
Special valves / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

VALSTEAM ADCA

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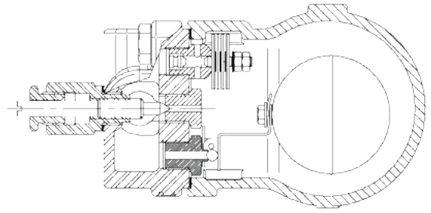
IS FLT49TW.080 E 00.20

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT17 - FLT32 - FLT14I
SLR Assembly (optional)

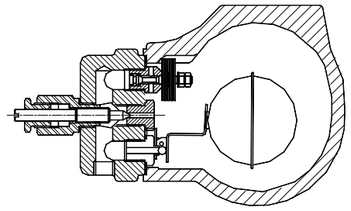
DESCRIPTION

In siphon drip tubes connected to rotating cylinders or long drain lines a steam pocket may form and so the condensate does not reach the trap.
This condition is normally known as steam locking and when float and thermostatic steam traps are used it is necessary to prevent the problem.
The SLR - Steam Lock Release should be requested to bleed away that steam.
All the ADCA float and thermostatic steam traps can be supplied with the SLR and some can even be supplied with both SLR and air vent.

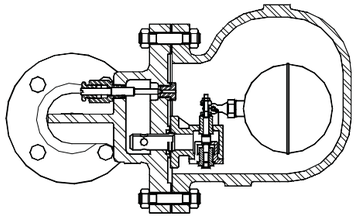
FLT17, FLT32 and FLT14I series can be supplied with air eliminator (standard), with SLR or with both air vent and SLR on request.



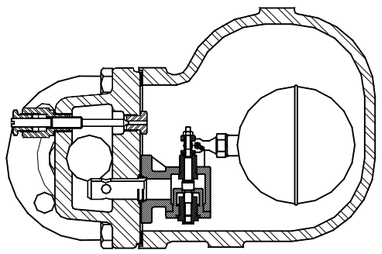
FLT17LC / FLT4I DN 15 - DN 20



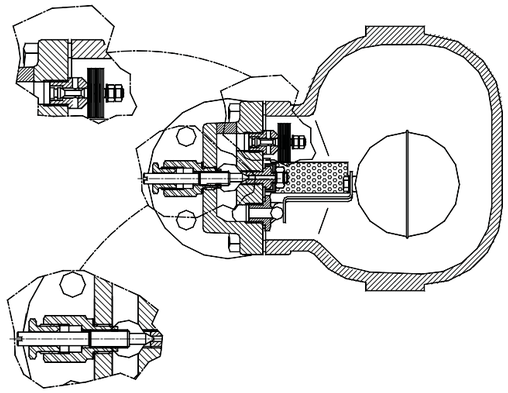
FLT17 / FLT32 / FLT4I DN 15 - DN 25



FLT17 DN 50HC



FLT17 / FLT32 / FLT4I DN 40 - DN 50



FLT17 / FLT32 / FLT4I DN 25HC

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT22

DESCRIPTION

The FLT22 is a series of high capacity float and thermostatic steam traps with integral air vent, designed for modulating discharge of condensate to ensure maximum system heat transfer.
Specially designed for applications where continuous drainage is essential and high loads are involved.

MAIN FEATURES

High capacity.
Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated air vent.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT22S-4,5, 10, 14 and 21 – carbon steel.
FLT22SS-4,5, 10, 14 and 21 – stainless steel.

SIZES: 11/2" and 2"; DN 40 and DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 25.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation from right to left (R-L).
See IMI – Installation and maintenance instructions.
On request: Horizontal installation from left to right (L-R) or vertical from top to bottom (V).

MAX. ΔP: FLT22S-4,5 – 4,5 bar
FLT22S-10 – 10 bar
FLT22S-14 – 14 bar
FLT22S-21 – 21 bar
Remark: the same figures are valid for the FLT22SS.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
11/2" to 2" – DN 40 to 50	1 (CE marked)

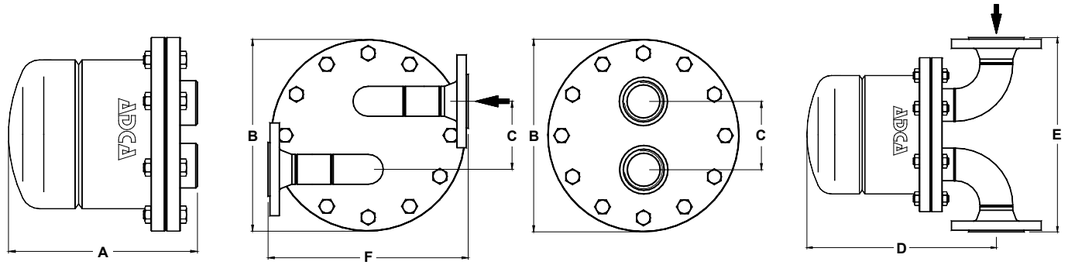
FLOW RATE CAPACITY (kg/h)

MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		0,5	0,7	1	1,5	2	4,5	7	10	12	14	16	21
FLT22S-4,5	11/2" – DN 40	2400	2800	3400	3900	4500	7300	–	–	–	–	–	–
FLT22S-10	11/2" – DN 40	1500	1750	2000	2600	3000	4000	5400	6200	–	–	–	–
FLT22S-14	11/2" – DN 40	950	1100	1300	1600	1800	2600	3250	3900	4210	4950	–	–
FLT22S-21	11/2" – DN 40	950	1100	1300	1600	1800	2600	3250	3900	4210	4950	5000	5600
FLT22S-4,5	2" – DN 50	7550	9050	11000	14000	15500	22500	–	–	–	–	–	–
FLT22S-10	2" – DN 50	3900	4450	5000	6100	7100	10000	13750	16000	–	–	–	–
FLT22S-14	2" – DN 50	1900	2300	2700	3100	3600	5000	6900	8100	9000	9800	–	–
FLT22S-21	2" – DN 50	1900	2300	2700	3100	3600	5000	6900	8100	9000	9800	10000	12050

Remark: the same figures are valid for the FLT22SS.

BODY LIMITING CONDITIONS				
FLT22S		FLT22SS		RELATED TEMPERATURE
FLANGED PN 25 / CLASS 300 *	FLANGED CLASS 150 **	FLANGED PN 25 / CLASS 300 *	FLANGED CLASS 150 **	
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
23,2 bar	15,4 bar	23,6 bar	15,3 bar	100 ºC
20,8 bar	13,8 bar	19,8 bar	11,1 bar	200 ºC
19 bar	12,1 bar	18,6 bar	10,2 bar	250 ºC
17,2 bar	10,2 bar	17,2 bar	9,7 bar	300 ºC

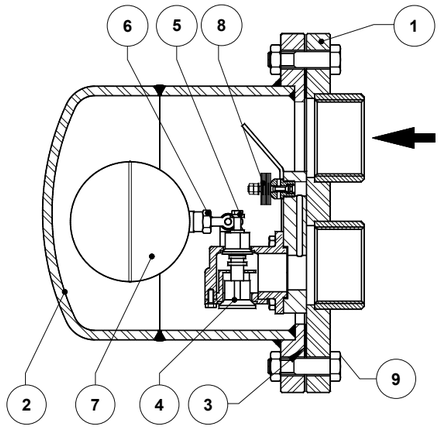
PMO – Max. operating pressure: 21 bar; TMO – Max. operating temperature: 250 ºC; * Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 25 or below, depending on the type of connection adopted. Rating PN 25 for threaded connections.



DIMENSIONS (mm)																
SIZE	THREADED				PN 25				CLASS 150				CLASS 300			
	A	B	C	WGT. (kg)	D	E	F	WGT. (kg)	D	E	F	WGT. (kg)	D	E	F	WGT. (kg)
11/2" – DN 40	290	310	110	41	355	320	320	43	355	320	320	47	355	320	320	50
2" – DN 50	290	310	110	42	355	360	320	45	355	390	350	50	355	403	365	52

MATERIALS			
POS. Nº	DESIGNATION	FLT22S	FLT22SS
1	Body	P250GH / 1.0460; P235GH / 1.0345; S355JR / 1.0045; S235JR / 1.0038	AISI 316 / 1.4401; AISI 304 / 1.4301
2	Cover	P235GH / 1.0345; P265GH / 1.0425; S355JR / 1.0045	AISI 316 / 1.4401; AISI 304 / 1.4301
3	* Gasket	Graphite	Graphite
4	* Seat	A351 CF8 / 1.4308	A351 CF8 / 1.4308
5	* Valve	AISI 420 / 1.4021	AISI 420 / 1.4021
6	* Lever	AISI 304 / 1.4301	AISI 304 / 1.4301
7	* Float	AISI 304 / 1.4301	AISI 304 / 1.4301
8	* Air vent	Stainless st. (bimetallic)	Stainless st. (bimetallic)
9	Bolts	Steel 8.8	Stainless steel A2-70

* Available spare parts.



FLOAT AND THERMOSTATIC STEAM TRAPS
FLT50 and FLT65

DESCRIPTION

The FLT50S and FLT65S float and thermostatic steam traps series (with integral air vent) are designed for all types of low and high pressure steam heating and process equipment.
Typical applications include unit heaters, heat exchangers, driers, jacketed vessels and all the applications where continuous drainage is essential.

MAIN FEATURES

Modulating discharge.
Discharges condensate at steam temperature.
Unaffected by sudden or wide load and pressure changes.
Excellent air discharge (by thermostatic air vent).

OPTIONS: Equalizing plug or vent connection.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT50S and FLT65S – carbon steel.

SIZES: FLT50S – 2” to 21/2”; DN 50 to DN 65.
FLT65S – 21/2” to 4”; DN 65 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

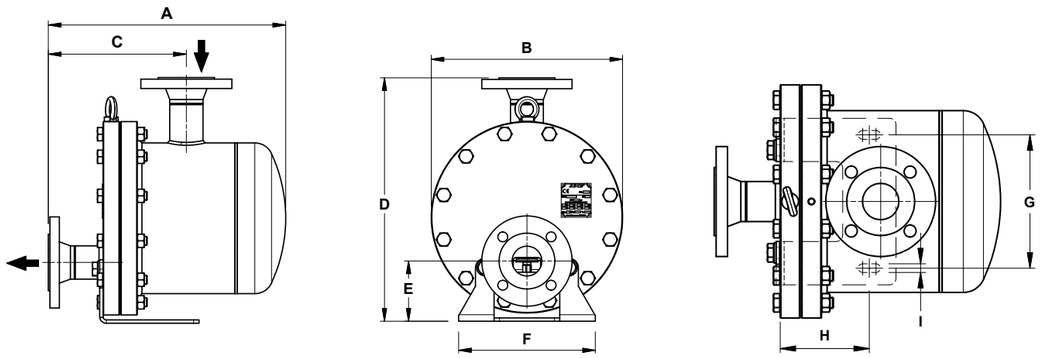
INSTALLATION: Horizontal standard installation with vertical inlet and horizontal outlet.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
2” to 4” – DN 50 to 100	2 (CE marked)

BODY LIMITING CONDITIONS *	
FLANGED PN 16 / CLASS 150	RELATED TEMPERATURE
ALLOWABLE PRESSURE	
14,8 bar	100 ºC
13,3 bar	200 ºC
12,1 bar	250 ºC
11 bar	300 ºC

PMO – Max. operating pressure: 12 bar.
TMO – Max. operating temperature: 250 ºC.
* According to EN 1092-1:2018.

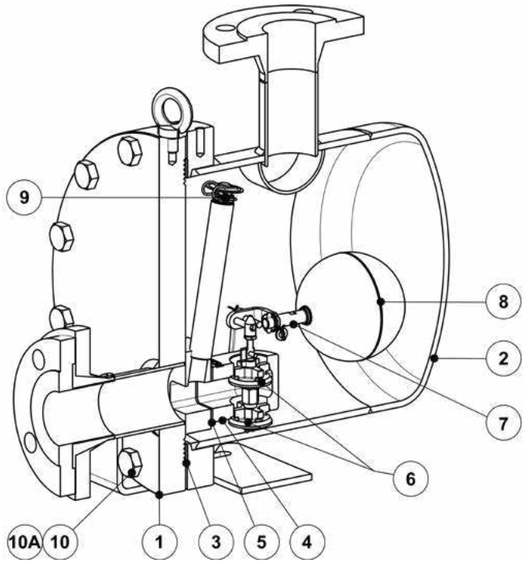
FLOW RATE CAPACITY (kg/h)																	
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)															
		0,1	0,3	0,5	1	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
FLT50S	2” to 21/2” DN 50 to 65	7500	10000	11300	12500	13500	15000	16000	17500	18500	20000	20500	21500	22000	22500	23000	23500
FLT65S	21/2” to 4” DN 65 to 100	18800	22700	24500	29000	31000	34000	37000	38000	39500	42000	43500	45500	47000	48000	49500	50000



DIMENSIONS (mm)													
MODEL	SIZE	A PN 16	A CL. 150	B	C PN 16	C CL. 150	D	E	F	G	H	I	WEIGHT (kg)
FLT50S	2” – DN 50	430	445	350	250	265	445	110	250	200	134	13	57
FLT50S	21/2” – DN 65	460	485	350	280	305	445	110	250	200	134	13	58,2
FLT65S	21/2” – DN 65	475	500	440	255	280	535	125	310	250	134	13	92
FLT65S	3” – DN 80	506	526	440	286	306	535	125	310	250	134	13	93,5
FLT65S	4” – DN 100	520	544	440	300	324	535	125	310	250	134	13	96

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P235GH / 1.0345; P250GH / 1.0460; S235JR / 1.0038; S355JR / 1.0045; A105 / 1.0432
2	Cover	P235GH / 1.0345; P250GH / 1.0460; P265GH / 1.0425; S355JR / 1.0045; A105 / 1.0432
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308
5	* Gasket	Stainless steel / Graphite
6	* Valve	AISI 420 / 1.4021; A351 CF8M / 1.4408
7	* Lever	AISI 316 / 1.4401; AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (thermostatic)
10	Bolts	Steel 8.8
10A	Nuts	Steel 8.8

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT80

DESCRIPTION

The FLT80S float and thermostatic steam traps series (with integral air vent) are designed for all types of low and high pressure steam heating and process equipment.
Typical applications include unit heaters, heat exchangers, driers, jacketed vessels and all the applications where continuous drainage is essential.

MAIN FEATURES

Modulating discharge.
Discharges condensate at steam temperature.
Unaffected by sudden or wide load and pressure changes.
Excellent air discharge (by thermostatic air vent).

OPTIONS: Equalizing plug or vent connection.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT80S – carbon steel.

SIZES: 3” and 4”; DN 80 and DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

INSTALLATION: Horizontal standard installation with vertical inlet and horizontal outlet.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
3” and 4” – DN 80 and 100	2 (CE marked)

BODY LIMITING CONDITIONS *	
FLANGED PN 16 / CLASS 150 ALLOWABLE PRESSURE	RELATED TEMPERATURE
14,8 bar	100 ºC
13,3 bar	200 ºC
12,1 bar	250 ºC
11 bar	300 ºC

PMO – Max. operating pressure: 12 bar.
TMO – Max. operating temperature: 250 ºC.
* According to EN 1092-1:2018.

FLOW RATE CAPACITY (kg/h)																	
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)															
		0,1	0,3	0,5	1	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
FLT80S	3” to 4” DN 80 to 100	37600	45400	49000	58000	62000	68000	74000	76000	79000	84000	87000	91000	94000	96000	99000	100000

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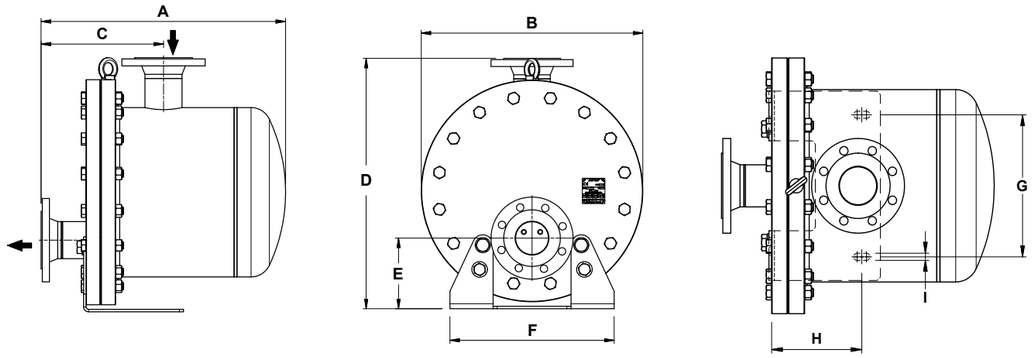
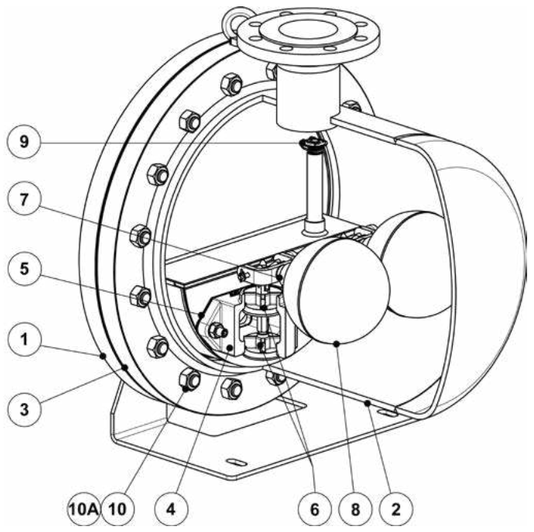


DIMENSIONS (mm)													
MODEL	SIZE	A PN 16	A CL. 150	B	C PN 16	C CL. 150	D	E	F	G	H	I	WEIGHT (kg)
FLT80S	3” – DN 80	587	607	540	294	314	610	172	400	300	194	15	159
FLT80S	4” – DN 100	634	658	540	341	365	610	172	400	300	194	15	161

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P235GH / 1.0345; P250GH / 1.0460; S235JR / 1.0038; S355JR / 1.0045; A105 / 1.0432
2	Cover	P235GH / 1.0345; P250GH / 1.0460; P265GH / 1.0425; S355JR / 1.0045; A105 / 1.0432
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308
5	* Gasket	Stainless steel / Graphite
6	* Valve	AISI 420 / 1.4021; A351 CF8M / 1.4408
7	* Lever	AISI 316 / 1.4401; AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (thermostatic)
10	Bolts	Steel 8.8
10A	Nuts	Steel 8.8

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT151

DESCRIPTION

The FLT151 is a series of high capacity float and thermostatic steam traps with integral air vent, designed for modulating discharge of condensate to ensure maximum system heat transfer.
Specially designed for applications where continuous drainage is essential and extremely high loads are involved, such as those found in sugar and alcohol refineries.

MAIN FEATURES

High capacity.
Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated thermostatic air vent.

OPTIONS: Level gauge.
HVV – Hand vent valve.
VB21M – Vacuum breaker.

USE: Saturated steam.

AVAILABLE MODELS: FLT151S-O – carbon steel.

SIZES: 4” and 6”; DN 100 and DN 150.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
4” and 6” – DN 100 and 150	3 (CE marked)

FLOW RATE CAPACITY WITH MECHANISM AND ORIFICE (kg/h)								
MODEL	ORIFICE Nº	O1	O2	O3	O4	O5	O6	MAXIMUM ΔQ
	ΔP (bar)	4” – DN 100				6” – DN 150		
FLT151S-O	0,1	22300	24100	26600	33700	43600	56400	18800
	0,3	27400	30300	34200	45400	61200	81400	22700
	0,7	32200	36200	41800	57700	79900	108600	26200
	1	34700	39500	46500	65800	93100	128100	27700
	1,4	37000	42600	50500	72900	104400	144900	29200
	2	40700	47600	57200	84800	144900	172900	31700

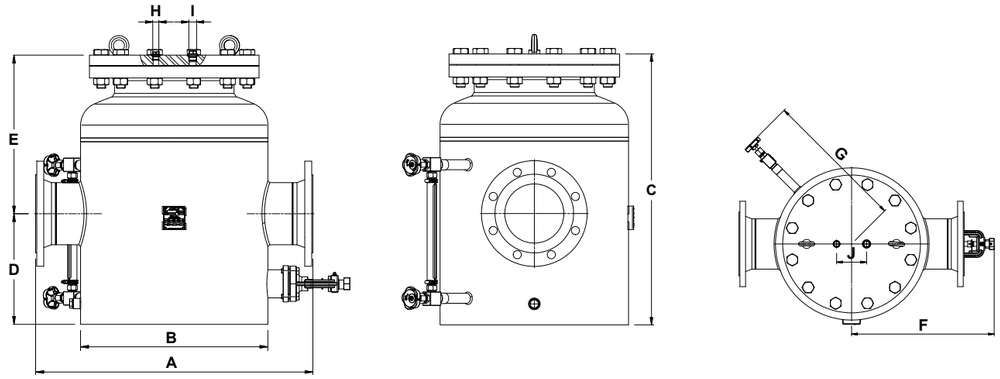
Example: One FLT151-O DN150-O5 (with orifice nº 5), operating at a D.P. of 0,3 bar, must have a minimum flow of 38500 kg/h (61200-22700).

FLOW RATE CAPACITY WITH MECHANISM ONLY (kg/h)																	
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)															
		0,1	0,3	0,5	1	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
FLT151S-O	4” and 6” DN 100 and 150	18800	22700	24500	29000	31000	34000	37000	38000	39500	42000	43500	45500	47000	48000	49500	50000

We reserve the right to change the design and material of this product without notice.

BODY LIMITING CONDITIONS *	
FLANGED PN 16 / CLASS 150 **ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC
14,8 bar	100 ºC
13,3 bar	200 ºC
12,1 bar	250 ºC

PMO – Maximum operating pressure: 12 bar.
TMO – Maximum operating temperature: 250 ºC.
* According to EN 1092-1:2018.

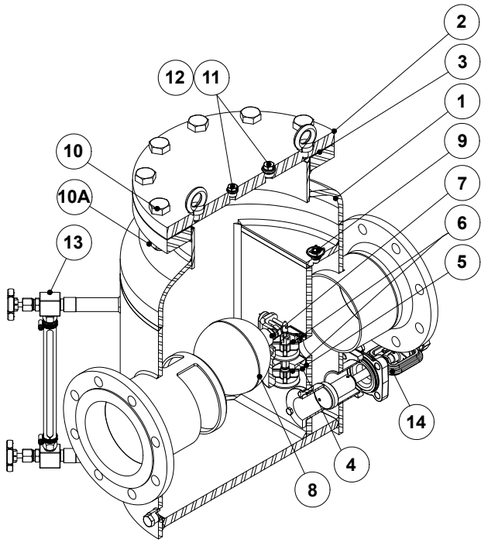


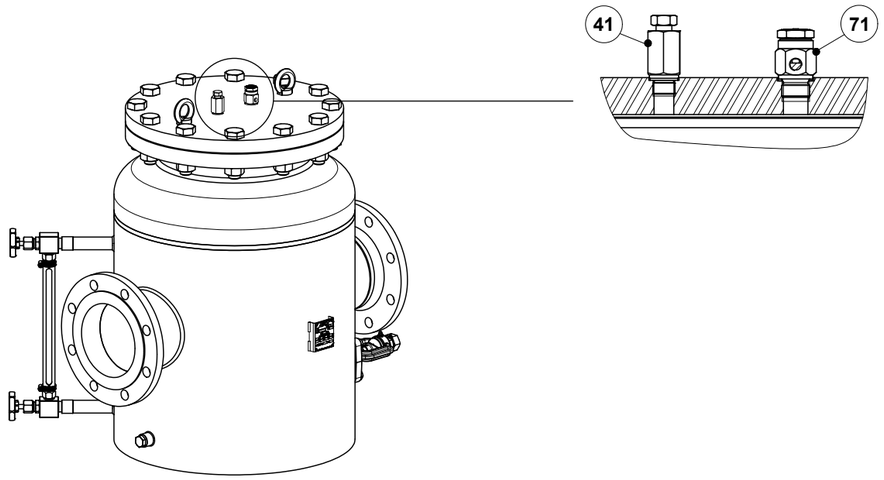
DIMENSIONS (mm)												
SIZE	**A PN 16**	**A CLASS 150**	**B**	**C**	**D**	**E**	**F**	**G**	**H ***	**I ***	**J**	**WEIGHT (kg)**
4” – DN 100	694	743	457	685	275	410	451	450	3/8”	1/2”	100	170
6” – DN 150	752	820	508	730	300	430	476	475	3/8”	1/2”	100	202

* As standard, in versions with EN flanges, these connections are female threaded ISO 228. In versions with ASME flanges, these connections are female threaded NPT.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P265GH / 1.0425; P235GH / 1.0345; S235JR /1.0038; A105 / 1.0432
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8 / 1.4308
5	* Gasket	Graphite
6	* Valve	AISI 420 / 1.4021; A351 CF8M / 1.4408
7	* Lever	AISI 316 / 1.4401; AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (thermostatic)
10	Bolts	Steel 8.8
10A	Nuts	Steel 8.8
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper
13	Level gauges	Stainless steel; Borosilicate glass
14	By-pass valve	GJS-400-15 / 0.7040; AISI 304 / 1.4301; AISI 316 / 1.4401
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305

* Available spare parts; ** Not applicable in NPT version.





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IS FLT151.100 E 01.21

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT312 and FLT314

DESCRIPTION

The FLT312 and FLT314 are a series of high capacity float and thermostatic steam traps with integral air vent, designed for modulating discharge of condensate to ensure maximum system heat transfer.
Specially designed for applications where continuous drainage is essential and high loads are involved.

MAIN FEATURES

High capacity.
Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated thermostatic air vent.

OPTIONS: Equalizing (vent) and drain connections.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT312S and FLT314S – carbon steel.

SIZES: FLT312S – 2"; DN 50.
FLT314S – 21/2"; DN 65.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

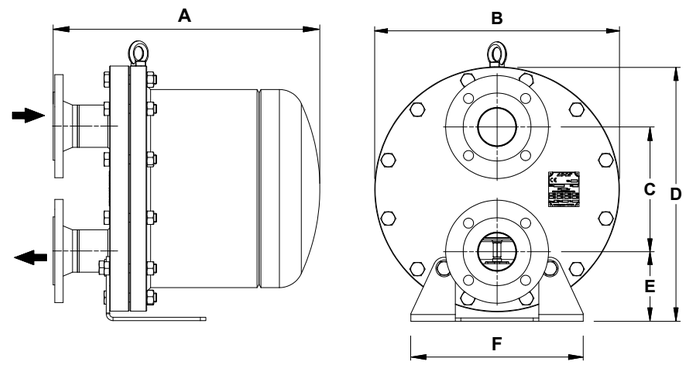
INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
2" and 21/2" – DN 50 and 65	2 (CE marked)

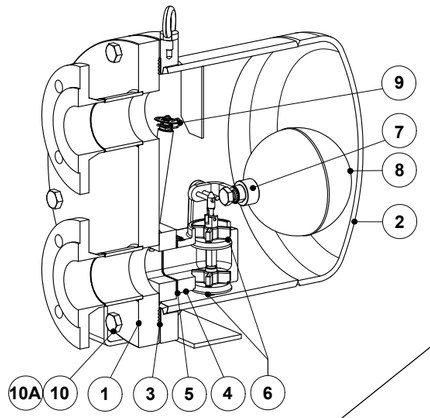
BODY LIMITING CONDITIONS *	
FLANGED PN 16 / CLASS 150 ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
14,8 bar	100 ºC
13,3 bar	200 ºC
12,1 bar	250 ºC
11 bar	300 ºC

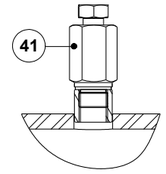
PMO – Max. operating pressure: 12 bar.
TMO – Max. operating temperature: 250 ºC.
* According to EN 1092-1:2018.

FLOW RATE CAPACITY (kg/h)																	
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**															
		0,1	**0,3**	**0,5**	**1**	**1,5**	**2**	**2,5**	**3**	**3,5**	**4**	**5**	**6**	**7**	**8**	**10**	**12**
FLT312S	**2" – DN 50**	7500	10000	11300	12500	13500	15000	16000	17500	18500	20000	20500	21500	22000	22500	23000	23500
FLT314S	**21/2" – DN 65**	18800	22700	24500	29000	31000	34000	37000	38000	39500	42000	43500	45500	47000	48000	49500	50000

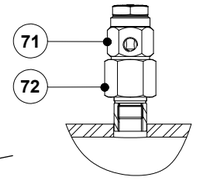


DIMENSIONS (mm)												
MODEL	**SIZE**	**A PN 16**	**A CL. 150**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**WEIGHT (kg)**
FLT312S	**2" – DN 50**	430	446	350	177	370	110	250	200	140	13	57
FLT314S	**21/2" – DN 65**	482	506	440	224	457	125	310	250	134	13	100

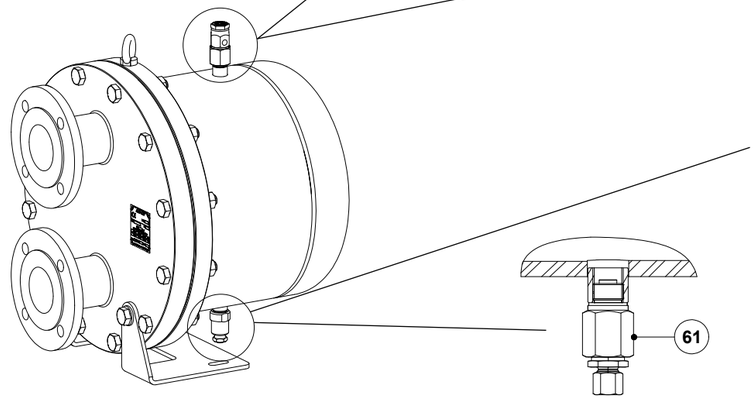


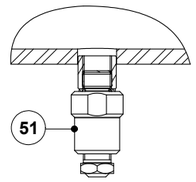


HVV - Hand vent valve



VB21M - Vacuum breaker





BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

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IS FLT312.050 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460; P235GH / 1.0345; S355JR / 1.0045; S235JR / 1.0038
2	Cover	P265GH / 1.0425; P235GH / 1.0345; S355JR / 1.0045; S235JR / 1.0038
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8M / 1.4408
5	* Gasket	Stainless steel / Graphite
6	* Valve	AISI 420 / 1.4021; A351 CF8M / 1.4408
7	* Lever	AISI 316 / 1.4401; AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (thermostatic)
10	Bolts	Steel 8.8
10A	Nuts	Steel 8.8
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts.

FLOAT AND THERMOSTATIC STEAM TRAPS
FLT314TW

DESCRIPTION

The FLT314TW is a series of high capacity float and thermostatic steam traps with integral air vent, designed for modulating discharge of condensate to ensure maximum system heat transfer.
Specially designed for applications where continuous drainage is essential and high loads are involved.

MAIN FEATURES

High capacity.
Modulating discharge of condensate at steam temperature.
Unaffected by sudden or wide load and pressure variations.
No backing-up with condensate.
Excellent air discharge through its integrated thermostatic air vent.

OPTIONS: Equalizing (vent) and drain connections.
HVV – Hand vent valve.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
VB21M – Vacuum breaker.

USE: Saturated and superheated steam.

AVAILABLE MODELS: FLT314STW – carbon steel.

SIZES: 3” – DN 80.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

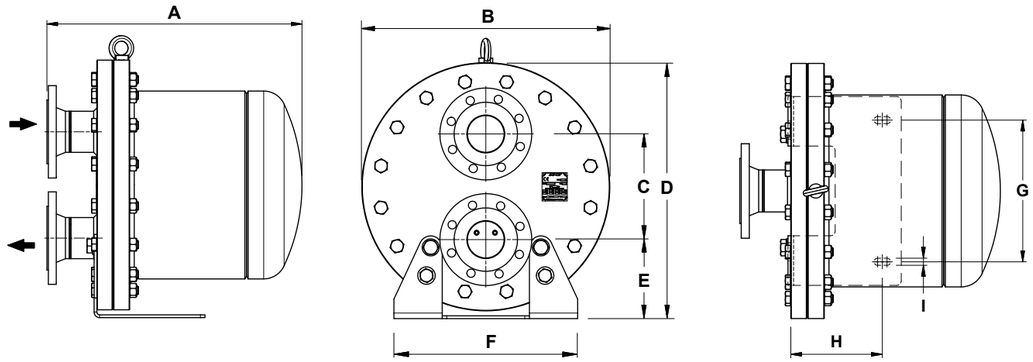
INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
3” – DN 80	2 (CE marked)

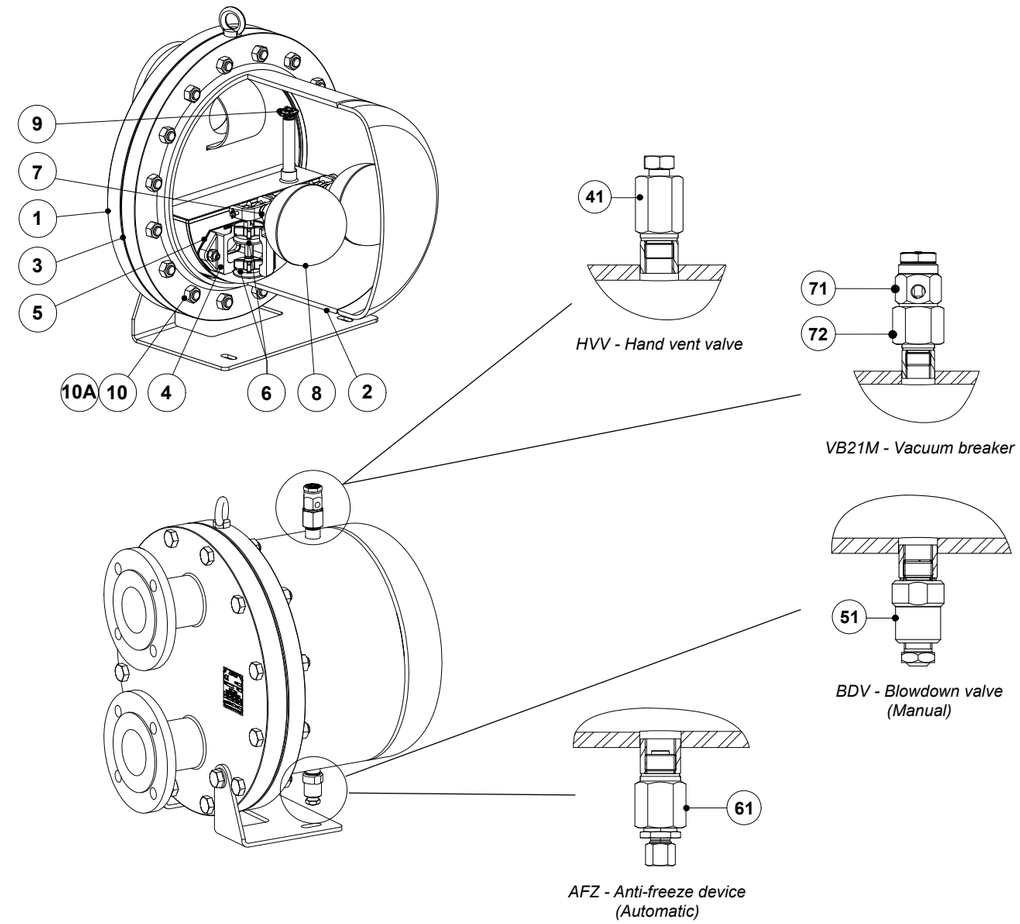
BODY LIMITING CONDITIONS *	
FLANGED PN 16 / CLASS 150 ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
14,8 bar	100 ºC
13,3 bar	200 ºC
12,1 bar	250 ºC
11 bar	300 ºC

PMO – Max. operating pressure: 12 bar.
TMO – Max. operating temperature: 250 ºC.
* According to EN 1092-1:2018.

FLOW RATE CAPACITY (kg/h)																
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**														
		0,1	**0,3**	**0,5**	**1**	**1,5**	**2**	**2,5**	**3**	**3,5**	**4**	**5**	**6**	**7**	**8**	**10**	**12**
FLT314STW	**3” – DN 80**	37600	45400	49000	58000	62000	68000	74000	76000	79000	84000	87000	91000	94000	96000	99000	100000



DIMENSIONS (mm)												
MODEL	SIZE	A PN 16	A CL. 150	B	C	D	E	F	G	H	I	WEIGHT (kg)
FLT314STW	3" – DN 80	552	572	540	230	557	172	400	300	194	15	160



MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460; P235GH / 1.0345; S355JR / 1.0045; S235JR / 1.0038
2	Cover	P265GH / 1.0425; P250GH / 1.0460; P235GH / 1.0345; S355JR / 1.0045
3	* Gasket	Stainless steel / Graphite
4	* Seat	A351 CF8M / 1.4408
5	* Gasket	Stainless steel / Graphite
6	* Valve	AISI 420 / 1.4021; A351 CF8M / 1.4408
7	* Lever	AISI 316 / 1.4401; AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	* Automatic air vent	Stainless steel (thermostatic)
10	Bolts	Steel 8.8
10A	Nuts	Steel 8.8
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404
71	Vacuum breaker	AISI 303 / 1.4305
72	Adapter fitting	AISI 303 / 1.4305

* Available spare parts.

VALSTEAM ADCA
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IS FLT314.080 01.21

INVERTED BUCKET STEAM TRAPS
IB12

DESCRIPTION

The IB12 is a series of general purpose robust and versatile inverted bucket steam traps manufactured in SG iron.
These steam traps operate intermittently and are suitable for use with saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Easy to maintain.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB12-4, 8 and 12 – SG iron.

SIZES: 1/2” to 3/4” – DN 15 to DN 20.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Screw-on flanges EN 1092-2 PN 16/40.
Screw-on flanges ASME B16.42 Class 150.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

MAX. ΔP: IB12-4 – 4 bar
IB12-8 – 8 bar
IB12-12 – 12 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2" to 3/4" – DN 15 to 20	SEP

BODY LIMITING CONDITIONS	
THREADED / SCREW-ON FLANGED ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	100 ºC
15,5 bar	150 ºC
14,7 bar	200 ºC
13,9 bar	250 ºC

PMO – Max. operating pressure: 14 bar.
TMO – Max. operating temperature: 198 ºC.

FLOW RATE CAPACITY (kg/h)											
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**11**	**12**
IB12-4	**1/2" to 3/4" DN 15 to 20**	280	390	470	530	–	–	–	–	–	–	–
IB12-8	**1/2" to 3/4" DN 15 to 20**	190	260	320	360	400	430	460	500	–	–	–
IB12-12	**1/2" to 3/4" DN 15 to 20**	160	220	260	290	320	360	370	400	440	480	490

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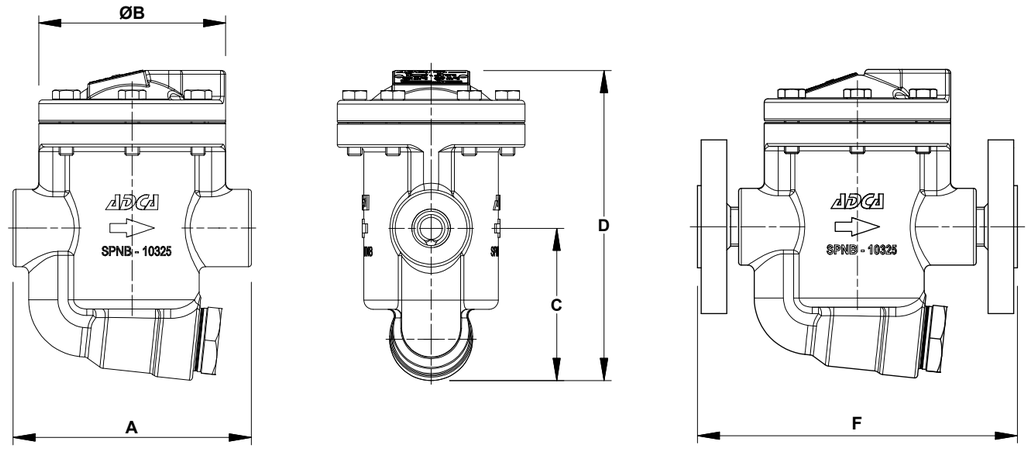
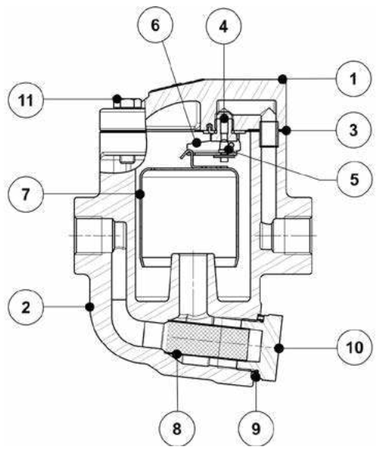


DIMENSIONS (mm)									
	THREADED					**PN 16/40**		**CLASS 150**	
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**
1/2” – DN 15	130	102	83	168	3,9	175	5,3	175	4,7
3/4” – DN 20	130	102	83	168	3,9	175	5,8	175	5

* With screw-on flanges.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-15 / 0.7040
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
5	* Valve	AISI 410 / 1.4006
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	* Strainer screen	AISI 304 / 1.4301
9	Gasket	Stainless steel / Graphite
10	Plug	A105 / 1.0432
11	Bolts	Steel 8.8

* Available spare parts.



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IS 1.202 E 11.08

INVERTED BUCKET STEAM TRAPS
IBB12

DESCRIPTION

The IBB12 is a series of general purpose robust and versatile inverted bucket steam traps manufactured in SG iron.
These steam traps operate intermittently and are suitable for use with saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Easy to maintain.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IBB12-4, 8 and 12 – SG iron.

SIZES: 3/4” to 1” – DN 20 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Screw-on flanges EN 1092-2 PN 16/40.
Screw-on flanges ASME B16.42 Class 150.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

MAX. ΔP: IBB12-4 – 4 bar
IBB12-8 – 8 bar
IBB12-12 – 12 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
3/4" to 1” – DN 20 to 25	SEP

BODY LIMITING CONDITIONS	
THREADED / SCREW-ON FLANGED ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	100 ºC
15,5 bar	150 ºC
14,7 bar	200 ºC
13,9 bar	250 ºC

PMO – Max. operating pressure: 14 bar.
TMO – Max. operating temperature: 198 ºC.

FLOW RATE CAPACITY (kg/h)											
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**11**	**12**
IBB12-4	**3/4" to 1” DN 20 to 25**	1090	1340	1550	1670	–	–	–	–	–	–	–
IBB12-8	**3/4" to 1” DN 20 to 25**	725	910	1030	1100	1160	1210	1250	1290	–	–	–
IBB12-12	**3/4" to 1” DN 20 to 25**	570	720	810	860	920	950	985	1010	1060	1080	1100

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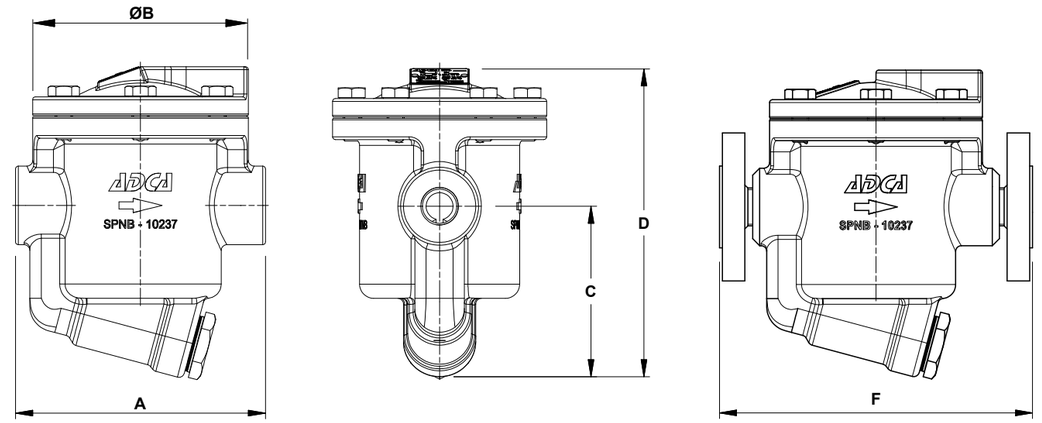
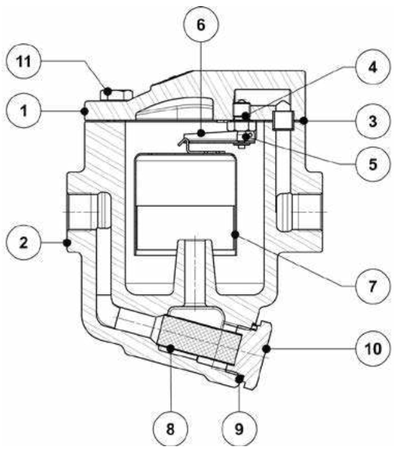


DIMENSIONS (mm)									
						PN 16/40		**CLASS 150**	
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**
3/4” – DN 20	175	151	120	217	9,4	222	11,2	222	10,4
1” – DN 25	175	151	120	217	9,3	222	11,5	222	10,8

* With screw-on flanges.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-15 / 0.7040
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
5	* Valve	AISI 410 / 1.4006
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	* Strainer screen	AISI 304 / 1.4301
9	Gasket	Stainless steel / Graphite
10	Plug	A105 / 1.0432
11	Bolts	Steel 8.8

* Available spare parts.



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IS 1.203 E 12.08

INVERTED BUCKET STEAM TRAPS
IB30S

DESCRIPTION

The IB30S is a series of general purpose robust and versatile inverted bucket steam traps manufactured in carbon steel.
These steam traps operate intermittently and are suitable for use with saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Robust and versatile.
Easy to maintain.

OPTIONS: BDV – Blowdown valve.
AFZ – Anti-freeze device.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB30S-4, 8, 12 and 17 – carbon steel.

SIZES: 1/2" to 1".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

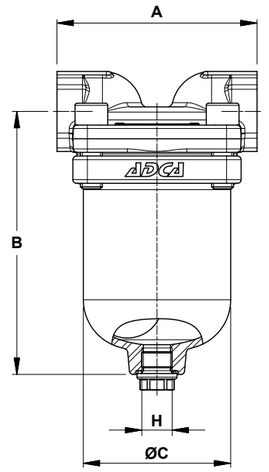
MAX. ΔP: IB30S-4 – 4 bar
IB30S-8 – 8 bar
IB30S-12 – 12 bar
IB30S-17 – 17 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
1/2" to 1"	SEP

BODY LIMITING CONDITIONS *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
25 bar	100 ºC
25 bar	200 ºC
24,4 bar	250 ºC
22 bar	300 ºC

PMO – Maximum operating pressure: 17 bar.
TMO – Maximum operating temperature: 300 ºC.
* According to EN 1092-1:2018.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**11**	**12**	**14**	**17**
IB30S-4	**1/2" to 1"**	280	390	470	530	–	–	–	–	–	–	–	–	–
IB30S-8	**1/2" to 1"**	190	260	320	360	400	430	460	500	–	–	–	–	–
IB30S-12	**1/2" to 1"**	160	220	260	290	320	360	370	400	440	480	490	–	–
IB30S-17	**1/2" to 1"**	140	180	200	215	225	235	240	250	265	270	275	280	400

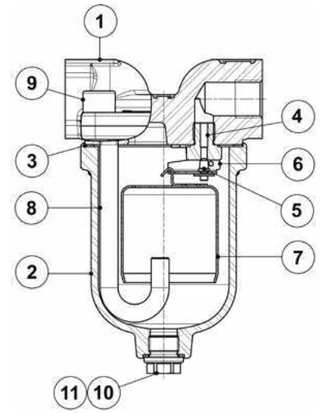


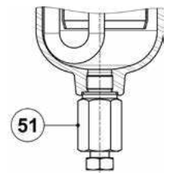
DIMENSIONS (mm)					
SIZE	**A**	**B**	**ØC**	**H**	**WEIGHT (kg)**
1/2"	110	144	81	3/8"	3,4
3/4"	110	144	81	3/8"	3,3
1"	110	144	81	3/8"	3,2

* As standard, in versions with female Rp threads, this connection is female threaded ISO 7 Rp. In versions with female NPT threads or SW, this connection is female threaded NPT.

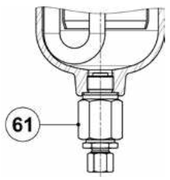
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A216 WCB / 1.0619
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
5	* Valve	AISI 410 / 1.4006
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	Inlet tube	AISI 304 / 1.4301
9	Bolts	Steel 8.8
10	Plug	AISI 316 / 1.4401
11	** Washer	Copper; AISI 304 / 1.4301
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.





BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
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IS IB30S.015 E 00.22

INVERTED BUCKET STEAM TRAPS
IB30SS

DESCRIPTION

The IB30SS is a series of general purpose robust and versatile inverted bucket steam traps manufactured in stainless steel.
These steam traps operate intermittently and are suitable for use with saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Robust and versatile.
Easy to maintain.

OPTIONS: BDV – Blowdown valve.
AFZ – Anti-freeze device.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB30SS-4, 8, 12 and 17 – stainless steel.

SIZES: 1/2” to 1”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

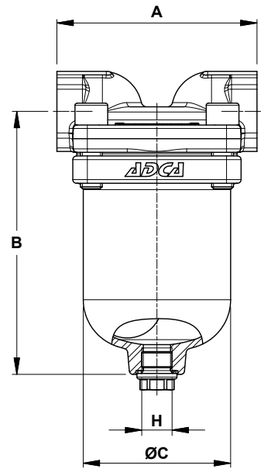
MAX. ΔP: IB30SS-4 – 4 bar
IB30SS-8 – 8 bar
IB30SS-12 – 12 bar
IB30SS-17 – 17 bar

BODY LIMITING CONDITIONS *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
25 bar	100 ºC
21 bar	200 ºC
18,5 bar	350 ºC
17,1 bar	400 ºC

PMO – Maximum operating pressure: 17 bar.
TMO – Maximum operating temperature: 400 ºC.
* According to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
1/2” to 1”	SEP

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**11**	**12**	**14**	**17**
IB30SS-4	**1/2” to 1”**	280	390	470	530	–	–	–	–	–	–	–	–	–
IB30SS-8	**1/2” to 1”**	190	260	320	360	400	430	460	500	–	–	–	–	–
IB30SS-12	**1/2” to 1”**	160	220	260	290	320	360	370	400	440	480	490	–	–
IB30SS-17	**1/2” to 1”**	140	180	200	215	225	235	240	250	265	270	275	280	400

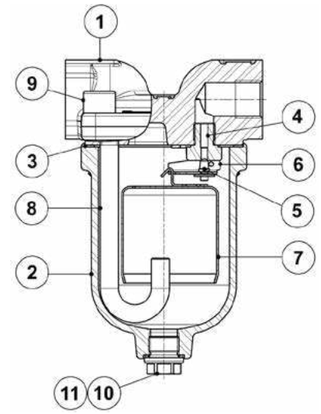


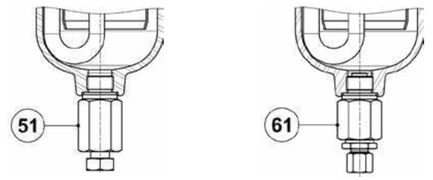
DIMENSIONS (mm)					
SIZE	**A**	**B**	**ØC**	**H**	**WEIGHT (kg)**
1/2”	110	144	81	3/8”	3,4
3/4”	110	144	81	3/8”	3,3
1”	110	144	81	3/8”	3,2

* As standard, in versions with female Rp threads, this connection is female threaded ISO 7 Rp. In versions with female NPT threads or SW, this connection is female threaded NPT.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
5	* Valve	AISI 410 / 1.4006
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	Inlet tube	AISI 304 / 1.4301
9	Bolts	Stainless steel A2-70
10	Plug	AISI 316 / 1.4401
11	** Washer	Copper; AISI 304 / 1.4301
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.





BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
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IS IB30SS.015 E 00.21

INVERTED BUCKET STEAM TRAPS
IB30
(11/2” – 2”; DN 40 – DN 50)

DESCRIPTION

The IB30 series inverted bucket steam traps are recommended for applications where the most important requirements are overall operating efficiency and long, trouble-free service life.
They operate intermittently, either wide open or tightly closed and are, therefore, best suited for medium and high steam pressure applications.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Easy to maintain.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB30S-4, 8 and 12 – carbon steel.

SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 25
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Vertical installation.
See IMI – Installation and maintenance instructions.

MAX. ΔP: IB30S-4 – 4 bar
IB30S-8 – 8 bar
IB30S-12 – 12 bar

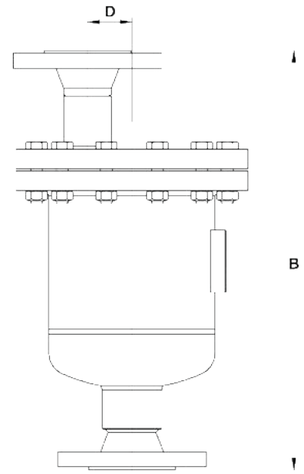
BODY LIMITING CONDITIONS		
FLANGED PN 25 / CLASS 300 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMPERATURE
23,2 bar	15,4 bar	100 ºC
20,8 bar	13,8 bar	200 ºC
19 bar	12,1 bar	250 ºC
17,2 bar	10,2 bar	300 ºC

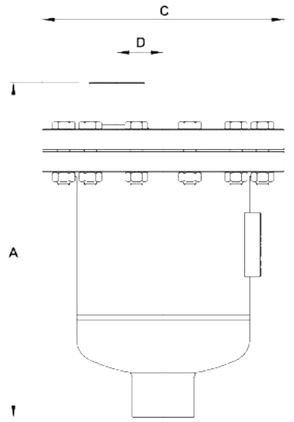
PMO – Maximum operating pressure: 17 bar;
TMO – Maximum operating temperature: 220 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 25 or below, depending on the type of connection adopted. Rating PN 25 for threaded, SW and BW versions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	Category
11/2” to 2” DN 40 to 50	1 (CE marked)

FLOW RATE CAPACITY (kg/h)												
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)										
		1	2	3	4	5	6	7	8	10	11	12
IB30S-4	11/2” to 2” DN 40 to 50	2200	2770	3220	3570	–	–	–	–	–	–	–
IB30S-8	11/2” to 2” DN 40 to 50	1850	2200	2560	2800	3070	3300	3500	3700	–	–	–
IB30S-12	11/2” to 2” DN 40 to 50	1150	1500	1720	1880	2050	2200	2325	2470	2670	2820	2900

We reserve the right to change the design and material of this product without notice.

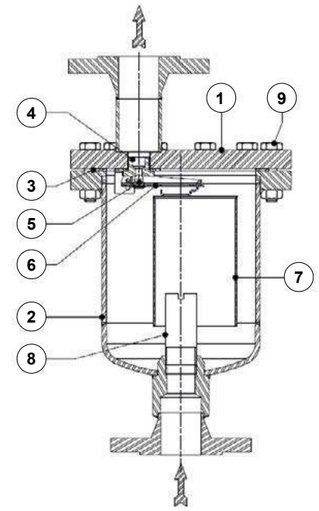




DIMENSIONS (mm)										
THREADED / SW					PN 25		CLASS 150		CLASS 300	
SIZE	A	C	D	WEIGHT (kg)	B	WEIGHT (kg)	B	WEIGHT (kg)	B	WEIGHT (kg)
11/2” – DN 40	330	235	45	17,5	425	21,6	442	21,3	448	23,4
2" – DN 50	338	235	45	18	428	23,5	444	23,6	450	24,9

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	S355JR / 1.0045
2	Cover	P235GH / 1.0345
3	* Gasket	Graphite
4	* Seat	AISI 420 / 1.4021
5	* Valve	AISI 420 / 1.4021
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	Inlet tube	P235GH / 1.0345
9	Bolts	Steel 8.8

* Available spare parts.



VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 1.235 E 05.13

INVERTED BUCKET STEAM TRAPS
IB36S

DESCRIPTION

The IB36S is a series of robust and versatile inverted bucket steam traps manufactured in carbon steel.
These steam traps operate intermittently, and are suitable for use with low to high pressure saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Robust and versatile.
Easy to maintain.

OPTIONS: BDV – Blowdown valve.
AFZ – Anti-freeze device.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB36S-5, 10, 15, 30 and 40 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

MAX. ΔP: IB36S-5 – 5 bar
IB36S-10 – 10 bar
IB36S-15 – 15 bar
IB36S-30 – 30 bar
IB36S-40 – 40 bar

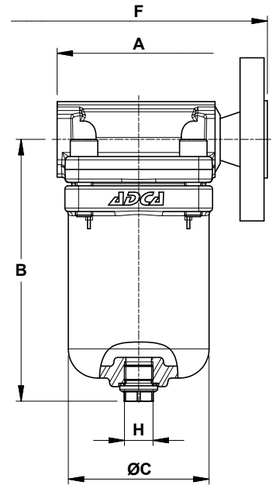
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

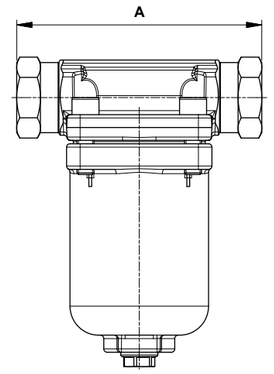
BODY LIMITING CONDITIONS			
FLANGED CLASS 300 / THREADED / BW / SW **	**FLANGED PN 40 ***	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOWABLE PRESSURE	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
50 bar	40 bar	19,3 bar	50 °C
46,3 bar	37,1 bar	17,7 bar	100 °C
43,9 bar	33,3 bar ***	14 bar ***	200 °C
41,6 bar ***	30,4 bar	12,1 bar	250 °C
38,9 bar	27,6 bar	10,2 bar	300 °C
34,6 bar	23,8 bar	6,5 bar	400 °C

* According to EN 1092-1:2018.
** According to EN 1759-1:2004.
*** PMO – Maximum operating pressure.
TMO – Maximum operating temperature: 400 °C.
Body limiting conditions Class 300 or below, depending on the type of connection adopted. Rating Class 300 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)															
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**													
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**30**	**40**
IB36S-5	**1/2” to 1” – DN 15 to 25**	290	400	495	550	610	–	–	–	–	–	–	–	–	–
IB36S-10	**1/2” to 1” – DN 15 to 25**	225	300	350	395	420	470	490	520	540	560	–	–	–	–
IB36S-15	**1/2” to 1” – DN 15 to 25**	190	255	295	330	370	390	410	445	465	490	520	–	–	–
IB36S-30	**1/2” to 1” – DN 15 to 25**	130	180	210	225	265	285	300	315	340	355	415	450	480	–
IB36S-40	**1/2” to 1” – DN 15 to 25**	90	120	135	155	165	185	205	220	230	245	290	320	370	400

We reserve the right to change the design and material of this product without notice.





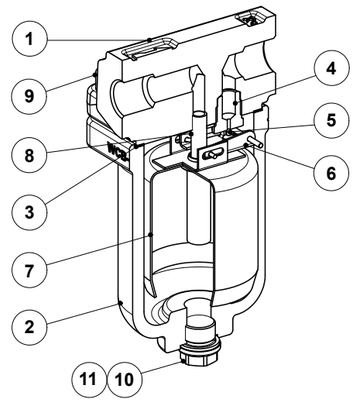
Only for 1” threaded version (with welded coupling)

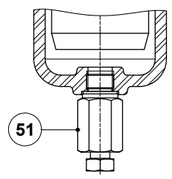
DIMENSIONS (mm)													
	THREADED					**SW**		**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**ØC**	**H ***	**WEIGHT (kg)**	**A**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2” – DN 15	95	153	82	3/8”	3,9	95	3,9	150	5,4	150	4,8	150	5,3
3/4" – DN 20	95	153	82	3/8”	3,8	95	3,8	150	5,9	150	5,2	150	6,2
1” – DN 25	145 **	153	82	3/8”	4	95	3,8	160	6,3	160	5,7	160	6,8

* As standard, in versions with EN flanges or female Rp threads, this connection is female threaded ISO 7 Rp. In versions with ASME flanges, female NPT threads or SW, this connection is female threaded NPT.
** With welded coupling.

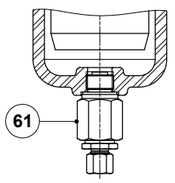
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 440C / 1.4125
5	* Valve	AISI 420 / 1.4021
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	Inlet tube	AISI 316L / 1.4404
9	Bolts	ASTM A193 Gr. B7
10	Plug	AISI 316 / 1.4401
11	** Washer	Copper; AISI 304 / 1.4301
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.





BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS IB36S.015 E 01.21

INVERTED BUCKET STEAM TRAPS
IB36i

DESCRIPTION

The IB36i is a series of robust and versatile inverted bucket steam traps manufactured in stainless steel.
These steam traps operate intermittently, and are suitable for use with low to high pressure saturated or superheated steam.
Typical applications include drip points, steam tracing lines, dryers, chemical and laundry equipment.

MAIN FEATURES

Intermittent discharge.
Discharges condensate at steam temperature.
Unaffected by water hammer and vibrations.
Robust and versatile.
Easy to maintain.

OPTIONS: BDV – Blowdown valve.
AFZ – Anti-freeze device.

USE: Saturated and superheated steam.

AVAILABLE MODELS: IB36i-5, 10, 15 and 27 – stainless steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

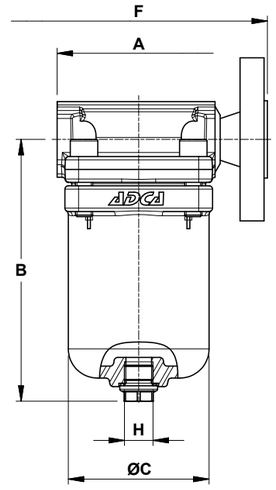
MAX. ΔP: IB36i-5 – 5 bar
IB36i-10 – 10 bar
IB36i-15 – 15 bar
IB36i-27 – 27 bar

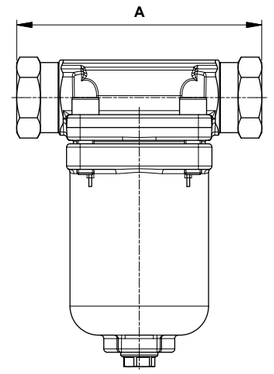
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300	**FLANGED CLASS 150 ***	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37 bar	15,3 bar	50 ºC
30 bar	13,3 bar	100 ºC
28,8 bar	11,1 bar **	200 ºC
26,6 bar **	10,2 bar	250 ºC
25,2 bar	9,7 bar	300 ºC
23,1 bar	6,5 bar	400 ºC

* According to EN 1759-1:2004.
** PMO – Maximum operating pressure.
TMO – Maximum operating temperature: 400 ºC.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**15**	**20**	**27**
IB36i-5	**1/2” to 1” – DN 15 to 25**	290	400	495	550	610	–	–	–	–	–	–	–	–
IB36i-10	**1/2” to 1” – DN 15 to 25**	225	300	350	395	420	470	490	520	540	560	–	–	–
IB36i-15	**1/2” to 1” – DN 15 to 25**	190	255	295	330	370	390	410	445	465	490	520	–	–
IB36i-27	**1/2” to 1” – DN 15 to 25**	130	180	210	225	265	285	300	315	340	355	415	450	470





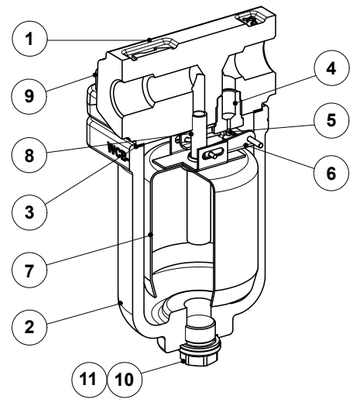
Only for 1” threaded version (with welded coupling)

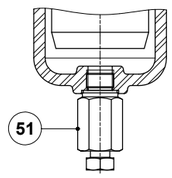
DIMENSIONS (mm)													
	THREADED					**SW**		**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**ØC**	**H ***	**WEIGHT (kg)**	**A**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2” – DN 15	95	153	82	3/8”	3,9	95	3,9	150	5,4	150	4,8	150	5,3
3/4" – DN 20	95	153	82	3/8”	3,8	95	3,8	150	5,9	150	5,2	150	6,2
1” – DN 25	145 **	153	82	3/8”	4	95	3,8	160	6,3	160	5,7	160	6,8

* As standard, in versions with EN flanges or female Rp threads, this connection is female threaded ISO 7 Rp. In versions with ASME flanges, female NPT threads or SW, this connection is female threaded NPT.
** With welded coupling.

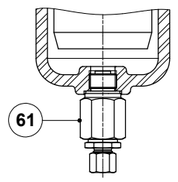
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 440C / 1.4125
5	* Valve	AISI 420 / 1.4021
6	* Lever	AISI 304 / 1.4301
7	* Bucket	AISI 304 / 1.4301
8	Inlet tube	AISI 316L / 1.4404
9	Bolts	Stainless steel A2-70
10	Plug	AISI 316 / 1.4401
11	** Washer	Copper; AISI 304 / 1.4301
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.





BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

We reserve the right to change the design and material of this product without notice.
IS IB36i.015 E 00.21

THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH13A

DESCRIPTION

The TH13A series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment.
Their small size makes them ideal for use with a wide variety of this equipment and, specially, as air vents.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Simple and compact design.
Built-in strainer.

USE: Saturated steam.

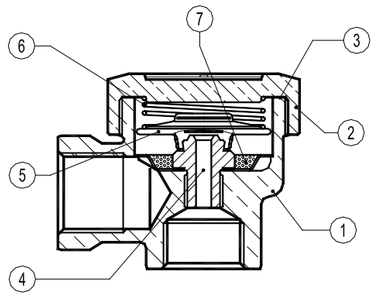
AVAILABLE MODELS: TH13A – brass.

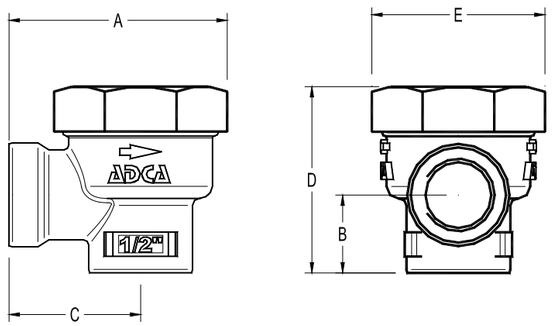
SIZES: 1/2”.

CONNECTIONS: Female threaded ISO 7 Rp.

INSTALLATION: Vertical installation, angled connections.
See IMI – Installation and maintenance instructions.

LIMITING CONDITIONS	
PMA – Maximum allowable pressure	16 bar
TMA – Maximum allowable temperature	260 ºC
PMO – Maximum operating pressure	13 bar
TMO – Maximum operating temperature	200 ºC





MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	Brass EN 12165 / CuZn39Pb2
2	Cover	Brass EN 12165 / CuZn39Pb2
3	* Gasket	Stainless steel / Graphite
4	* Valve seat	AISI 304 / 1.4301
5	* Thermostat	Stainless steel
6	* Spring	AISI 302 / 1.4300
7	* Strainer screen	AISI 304 / 1.4301

* Available spare parts.

DIMENSIONS (mm)						
SIZE	A	B	C	D	E	WEIGHT (kg)
1/2"	63	22,5	38	54	50	0,5

FLOW RATE CAPACITY (kg/h)													
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13
TH13A	1/2"	45	55	70	95	125	135	180	200	270	315	330	360

Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.

We reserve the right to change the design and material of this product without notice.

THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH21

DESCRIPTION

The TH21 series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.
Built-in strainer.

USE: Saturated steam.

AVAILABLE MODELS: TH21 – carbon steel.
TH21LC – carbon steel, low capacity.

SIZES: 1/2"; DN 15.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 25.
Flanged ASME B16.5 Class 150.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

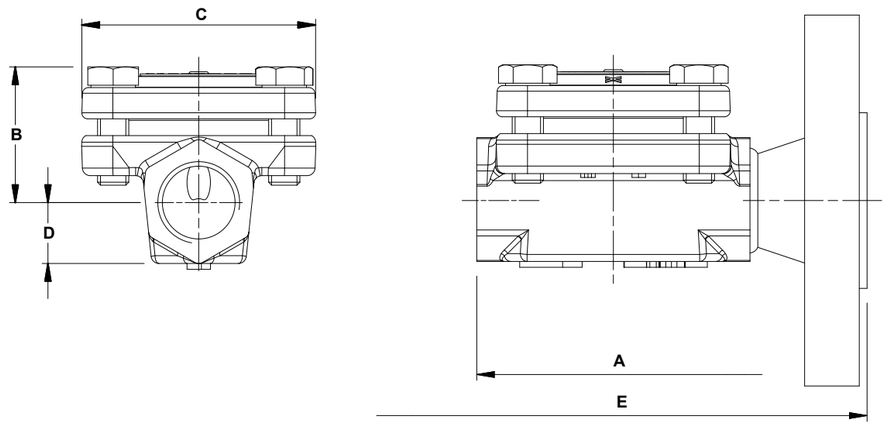
BODY LIMITING CONDITIONS		
FLANGED PN 25 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMPERATURE
23,2 bar	15,4 bar	100 ºC
20,8 bar	13,8 bar	200 ºC
19 bar	12,1 bar	250 ºC

PMO – Max. operating pressure: 21 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 25 or below, depending on the type of connection adopted. Rating PN 25 for threaded version.

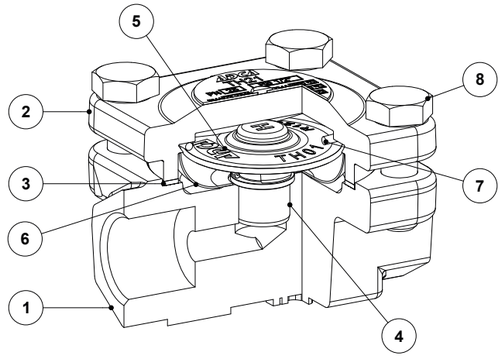
FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	21
TH21	1/2" – DN 15	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795
TH21LC	1/2" – DN 15	45	55	70	95	125	135	180	200	270	315	330	360	370	405	415

Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.

We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)									
SIZE	THREADED					PN 25		CLASS 150	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2"	70	35	60	15	0,7	130	2,2	150	1,7



MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	Valve seat	AISI 304 / 1.4301
5	* Thermostatic element	Stainless steel
6	* Strainer screen	AISI 304 / 1.4301
7	* Spring	AISI 302 / 1.4300
8	Bolts	Steel 8.8

* Available spare parts.

THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH32Y

DESCRIPTION

The TH32Y series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.
Built-in strainer.

OPTIONS: Blowdown valve.
Integrated check valve.

USE: Saturated steam.

AVAILABLE MODELS: TH32Y – carbon steel.
TH32YLC – low capacity, carbon steel.
Suffix “CK”: Version with integrated check valve.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATON: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

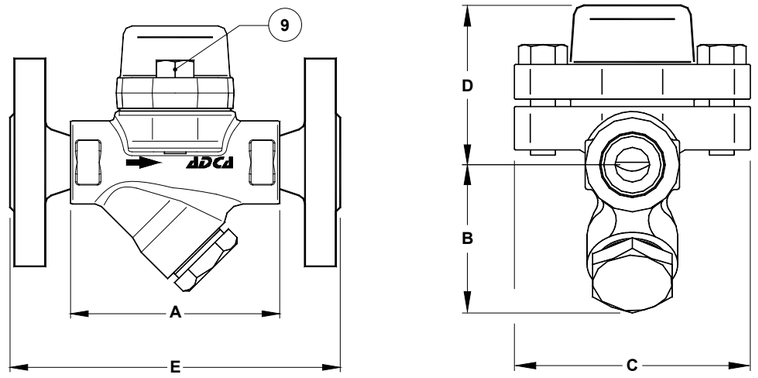
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMPERATURE
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Max. operating pressure: 22 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE CAPACITY (kg/h)															
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)													
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TH32Y	1/2" to 1" DN 15 to 25	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795
TH32YLC	1/2" to 1" DN 15 to 25	45	55	70	95	125	135	180	200	270	315	330	360	370	405	415

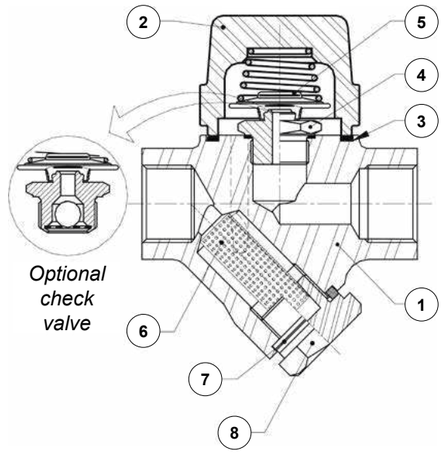
Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.



DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	65	1,6	150	3,2	150	2,7	150	3,5
3/4" – DN 20	95	59	95	65	1,6	150	3,9	150	3,1	150	4,7
1" – DN 25	95	65	95	65	1,8	160	4,7	160	4,3	160	5,9

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve seat	AISI 304 / 1.4301
5	* Thermostatic element	Stainless steel
6	* Strainer screen	AISI 304 / 1.4301
7	* Gasket	Stainless steel / Graphite
8	* Strainer cover	A 105 / 1.0432
9	Bolts	Stainless steel A2-70

* Available spare parts.



THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH32i

DESCRIPTION

The TH32i series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.
Built-in strainer.

OPTIONS: LC – low capacity.
Integral check valve.
Blowdown valve.

USE: Saturated steam.

AVAILABLE MODELS: TH32i – stainless steel.
TH32i-CK – stainless steel, with check valve.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATON: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

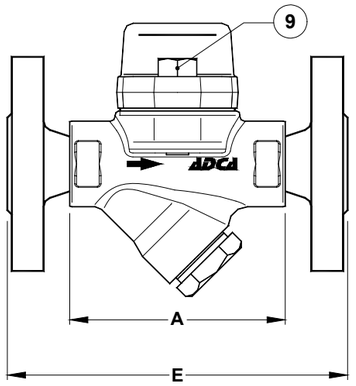
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2” to 1” – DN 15 to 25	SEP

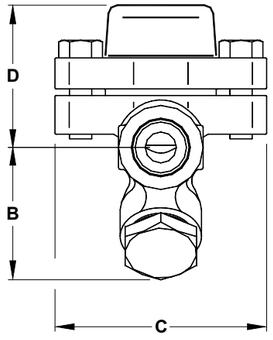
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	FLANGED CLASS 150 **	FLANGED CLASS 300 **	RELAT. TEMP.
ALLOW. PRESSURE	ALLOW. PRESSURE	ALLOW. PRESSURE	
40 bar	15,3 bar	39,9 bar	50 ºC
34,4 bar	12 bar	31,3 bar	150 ºC
29,9 bar	10,2 bar	26,6 bar	250 ºC
27,6 bar	9,7 bar	25,2 bar	300 ºC

PMO – Max. operating pressure: 22 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TH32i	1/2” to 1” DN 15 to 25	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795
TH32iLC	1/2” to 1” DN 15 to 25	45	55	70	95	125	135	180	200	270	315	330	360	370	405	415

Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.

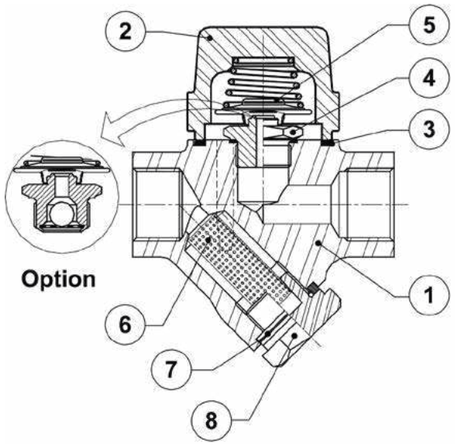




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	65	1,6	150	3,2	150	2,7	150	3,5
3/4" – DN 20	95	59	95	65	1,6	150	3,9	150	3,1	150	4,7
1" – DN 25	95	65	95	65	1,8	160	4,7	160	4,3	160	5,9

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Valve seat	AISI 304 / 1.4301
5	* Thermostatic element	Stainless steel
6	* Strainer screen	AISI 304 / 1.4301
7	* Gasket	Stainless steel / Graphite
8	* Strainer cover	AISI 303 / 1.4305
9	Bolts	Stainless steel A2-70

* Available spare parts.



THERMOSTATIC STEAM TRAPS AND AIR VENTS
TSS22

DESCRIPTION

The TSS22 series of balanced pressure thermostatic steam traps and air vents are specifically designed for use on process equipment such as sterilizers and other autoclaves, kettle cookers, food, chemical and laundry equipment.
Their small size makes them ideal specially when a fully stainless steel steam trap is required.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.
Simple and compact design.

OPTIONS: Welded body.

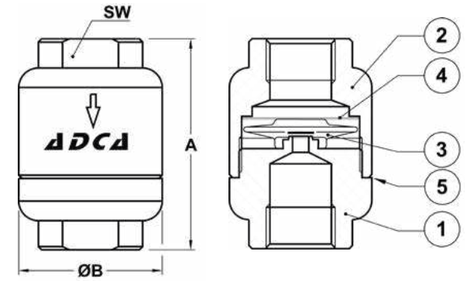
USE: Saturated steam.

AVAILABLE MODELS: TSS22, TSS22H – stainless steel.

SIZES: 1/4" to 1".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.



BODY LIMITING CONDITIONS	
THREADED PN 40 ALLOWABLE PRESSURE	RELATED TEMPERATURE
34,4 bar	100 ºC
30,8 bar	150 ºC
28 bar	200 ºC
26 bar	250 ºC

PMO – Max. operating pressure: 22 bar;
TMO – Max. operating temperature: 250 ºC.

DIMENSIONS (mm)				
SIZE	A	B	SW	WGT. (kg)
1/4"	65	44	27	0,5
3/8"	65	44	27	0,5
1/2"	65	44	27	0,45
3/4"	65	44	36	0,47
1"	65	44	40	0,4

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 304 / 1.4301
2	Cover	AISI 304 / 1.4301
3	* Thermostatic element	Stainless steel
4	* Strainer screen	AISI 304 / 1.4301
5	* Gasket	St. steel / Graphite

* Available spare parts.

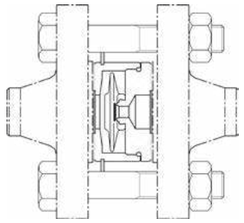
FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TSS22	1/4" to 1"	45	55	70	95	125	135	180	200	270	315	330	360	370	405	415
TSS22H	1/2" to 1"	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795

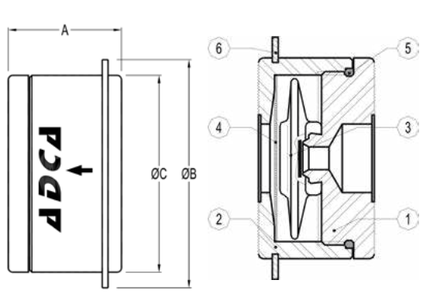
Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.

THERMOSTATIC STEAM TRAPS AND AIR VENTS
TSW22

DESCRIPTION

The TSW22 all stainless steel thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment. Their small size makes them ideal for use with a wide variety of this equipment.





MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.
Simple and compact design.
Can operate in any plane.

USE: Saturated steam.

AVAILABLE MODELS: TSW22 – stainless steel wafer design.

SIZES: DN 15 to DN 25.

CONNECTIONS: Sandwiched between flanges as per EN 1092-1 PN 40.

INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS	
WAFER PN 40 ALLOWABLE PRESSURE	RELATED TEMPERATURE
34,4 bar	100 ºC
30,8 bar	150 ºC
28 bar	200 ºC
26 bar	250 ºC

PMO – Max. operating pressure: 22 bar.
TMO – Max. operating temperature: 250 ºC.

DIMENSIONS (mm)				
SIZE	A	B	C	WGT. (kg)
DN 15	25	51	43	0,25
DN 20	31,5	61	53	0,45
DN 25	35,5	71	64	0,75

* DN 20 is suitable for installation between flanges DN 15, removing the centering ring.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 304 / 1.4301
2	Cover	AISI 304 / 1.4301
3	* Thermostatic element	Stainless steel
4	* Strainer screen	AISI 304 / 1.4301
5	* Gasket	St. steel / Graphite
6	Centering ring	AISI 304 / 1.4301

* Available spare parts.

FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TSW22	DN 15 to 25	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795

Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available. Capacities for cold condensate discharge at 20 ºC are two to three times greater.

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH35/2 and TH35/3

DESCRIPTION

The TH35 series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment.

MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Excellent air discharge.
Operates on moderate superheated steam.
Can operate in any plane.

OPTIONS: Stainless steel construction.

USE: Saturated steam.

AVAILABLE MODELS: TH35/2 – carbon steel, 2 capsules.
TH35/3 – carbon steel, 3 capsules.

SIZES: 1” – DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 * ALLOW. PRESSURE	FLANGED CLASS 150 ** ALLOW. PRESSURE	RELATED TEMP.
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 22 bar;
TMO – Maximum operating temperature: 250 ºC;
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

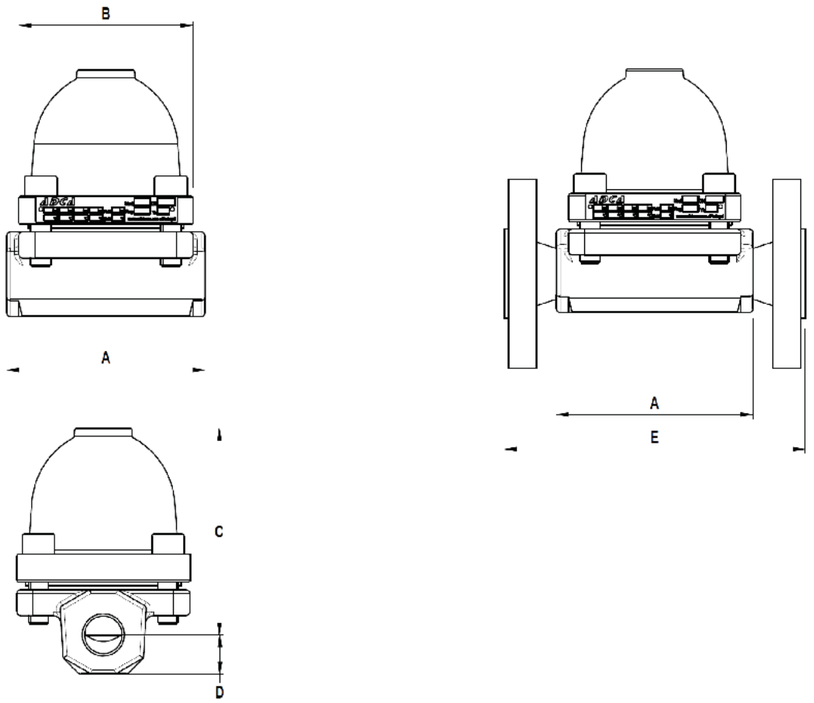
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1” – DN 25	SEP

FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TH35/2	1” – DN 25	140	240	280	510	660	770	910	1020	1200	1340	1400	1440	1500	1550	1590
TH35/3	1” – DN 25	210	360	420	765	990	1155	1365	1530	1800	2010	2100	2160	2250	2325	2385

Capacities shown refer to condensate at 5 ºC below saturated steam temperature.
Capacities for cold condensate discharge at 20 ºC are two to three times greater.

VALSTEAM ADCA

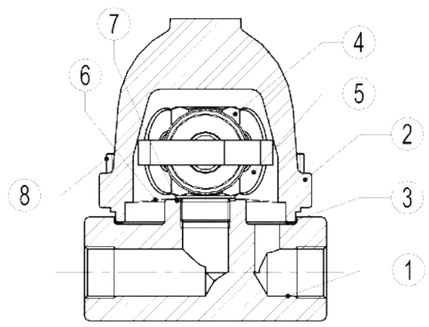
We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)											
THREADED / SW						PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1" – DN 25	98	86	103	20	2,8	160	5,4	160	5	160	6,6

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve seat	AISI 304 / 1.4301
5	* Thermostats	Stainless steel
6	* Strainer screen	AISI 304 / 1.4301
7	* Gasket	Copper
8	Bolts	Steel 8.8

* Available spare parts.



THERMOSTATIC STEAM TRAPS AND AIR VENTS
TH36/4 – TH36/6

DESCRIPTION

The TH36 series thermostatic steam traps and air vents are specifically designed for use on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment where high discharge capacities are required.

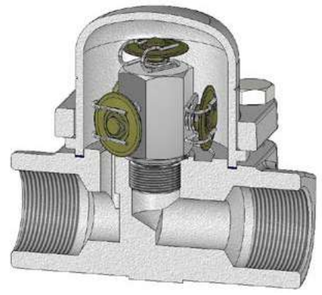
MAIN FEATURES

Modulating discharge.
Discharges condensate close to steam temperature.
Excellent air discharge.
Operates on moderate superheated steam.

OPTIONS: Stainless steel construction.

USE: Saturated steam.

AVAILABLE MODELS: TH36/4 – carbon steel, 4 capsules.
TH36/6 – carbon steel, 6 capsules.



SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

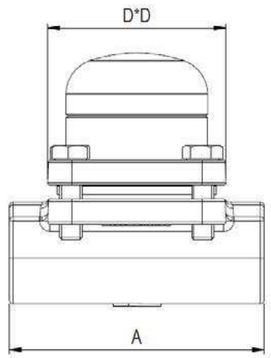
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMPERATURE
ALLOW. PRESSURE	ALLOW. PRESSURE	
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

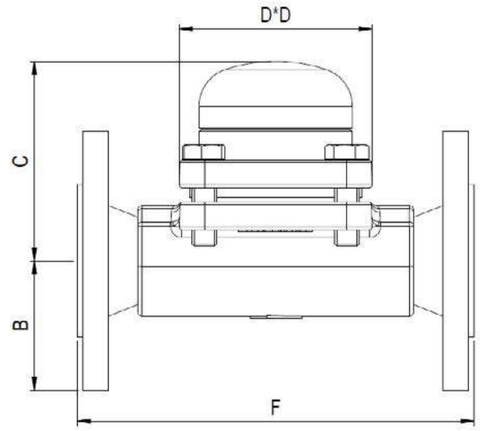
PMO – Maximum operating pressure: 22 bar;
TMO – Maximum operating temperature: 250 ºC;
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004. Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	PN 40	Category
11/2” to 2”	–	SEP
–	11/2” to 2” – DN 40 to 50	1 (CE marked)

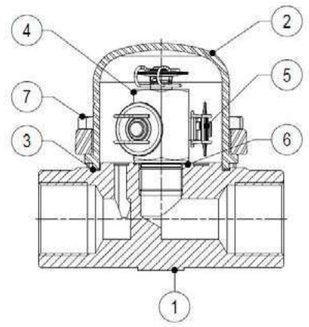
FLOW RATE CAPACITY (kg/h)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,2	0,3	0,5	1	1,5	2	3	4	6	8	10	13	15	20	22
TH36/4	11/2” to 2” DN 40 to 50	280	480	560	1020	1320	1540	1820	2040	2400	2680	2800	2880	3000	3100	3180
TH36/6	11/2” to 2” DN 40 to 50	420	720	840	1530	1980	2310	2730	3060	3600	4020	4200	4320	4500	4650	4770

Capacities shown refer to condensate at 5 ºC below saturated steam temperature.
Capacities for cold condensate discharge at 20 ºC are two to three times greater.

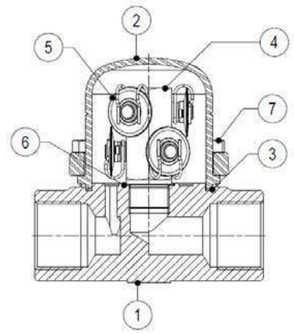




DIMENSIONS (mm)													
THREADED / SW / BW					PN 40			CLASS 150			CLASS 300		
SIZE	A	C	D	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)
11/2" – DN 40	160	126	112	4,6	75	230	9,3	64	230	8,2	78	230	11,2
2" – DN 50	230	126	112	5,8	83	230	10,2	76	230	10	83	230	11,6



TH36/4



TH36/6

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A105 / 1.0432 (Equiv. P250GH)
2	Cover	P265GH / 1.0425 S355JR / 1.0045
3	* Gasket	Stainless steel / Graphite
4	* Valve seat	AISI 304 / 1.4301
5	* Thermostats	Stainless steel
6	* Seat gasket	Copper
7	Bolts	Steel 8.8

* Available spare parts.

We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BSS20

DESCRIPTION

BSS20 all stainless steel bimetallic steam traps and air vents are simple and robust traps, specially suited for instrument tracing, line tracing applications and where condensate sensible heat can be recovered. It is specially recommended as air eliminator.
The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on moderate superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BSS20 – stainless steel.

SIZES: 1/2".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2"	SEP

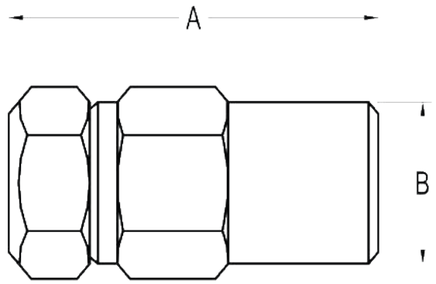
BODY LIMITING CONDITIONS	
THREADED PN 40 ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
34,4 bar	100 ºC
30,8 bar	150 ºC
28 bar	200 ºC
26 bar	250 ºC

PMO – Maximum operating pressure: 20 bar;
TMO – Max. operating temperature 250 ºC.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,6	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**13**	**15**	**20**
BSS20	**1/2" A**	45	65	100	130	155	170	195	205	220	245	255	270	330
BSS20	**1/2" B**	150	230	350	440	490	540	630	650	680	730	820	980	1120

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

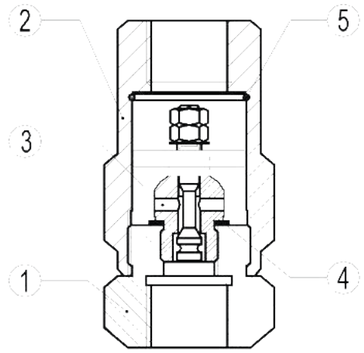
We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)				
SIZE	**A**	**B**	**C**	**WEIGHT (kg)**
1/2”	80	35	36	0,42

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 304 / 1.4301
2	Cover	AISI 304 / 1.4301
3	* Valve assembly	Special stainless steel
4	* Gasket	AISI 304 / 1.4301
5	* Strainer cover	AISI 304 / 1.4301

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM20

DESCRIPTION

The BM20 series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM20 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

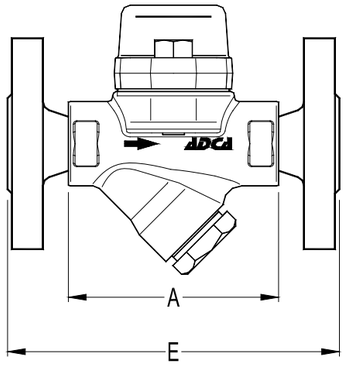
PMO – Max. operating pressure: 17 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

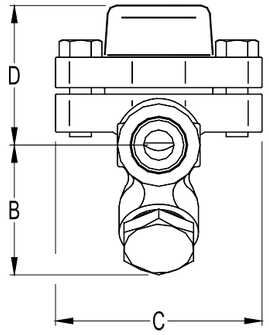
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1” – DN 15 to 25	SEP

FLOW RATE CAPACITY (kg/h)											
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**									
		0,5	**1**	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**17**
BM20	**1/2” to 1” A DN 15 to 25 A**	125	200	320	410	445	485	500	540	580	600
BM20	**1/2” to 1” B DN 15 to 25 B**	450	700	1000	1220	1340	1450	1560	1650	1780	1850

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

We reserve the right to change the design and material of this product without notice.

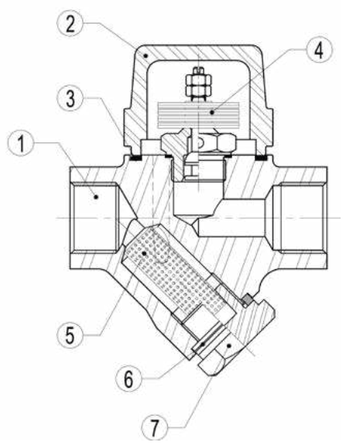




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	65	1,6	150	3,2	150	2,7	150	3,5
3/4" – DN 20	95	59	95	65	1,6	150	3,9	150	3,1	150	4,7
1" – DN 25	95	65	95	65	1,8	160	4,7	160	4,3	160	5,9

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Bimetallic
5	* Strainer screen	AISI 304 / 1.4301
6	* Gasket	Stainless steel / Graphite
7	* Strainer cover	A105 / 1.0432
8	Bolts	Stainless steel A2-70

* Available spare parts.



BIMETALLIC STEAM TRAPS AND AIR VENTS
BM20i

DESCRIPTION

The BM20i is a series of robust and efficient bimetallic steam traps and air vents. These steam traps are recommended for steam process applications where sensible heat can be recovered, such as steam tracing lines, drip points, storage tank coils and steam air venting.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM20i – stainless steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Inline horizontal installation is recommended. See IMI – Installation and maintenance instructions.

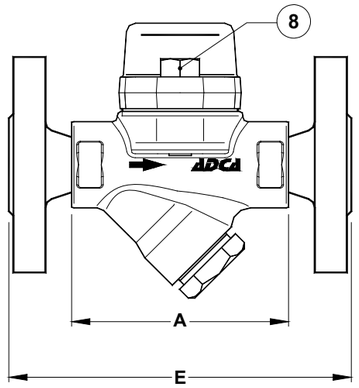
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2" to 1" – DN 15 to 25	SEP

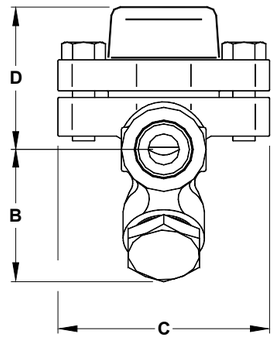
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	FLANGED CLASS 150 **	FLANGED CLASS 300 **	RELAT. TEMP.
ALLOW. PRESSURE	ALLOW. PRESSURE	ALLOW. PRESSURE	
40 bar	15,3 bar	39,9 bar	50 ºC
34,4 bar	12 bar	31,3 bar	150 ºC
29,9 bar	10,2 bar	26,6 bar	250 ºC
27,6 bar	9,7 bar	25,2 bar	300 ºC

PMO – Max. operating pressure: 17 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)											
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)									
		0,5	1	2	4	6	8	10	12	14	17
BM20i	1/2" to 1" A DN 15 to 25 A	125	200	320	410	445	485	500	540	580	600
BM20i	1/2" to 1" B DN 15 to 25 B	450	700	1000	1220	1340	1450	1560	1650	1780	1850

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

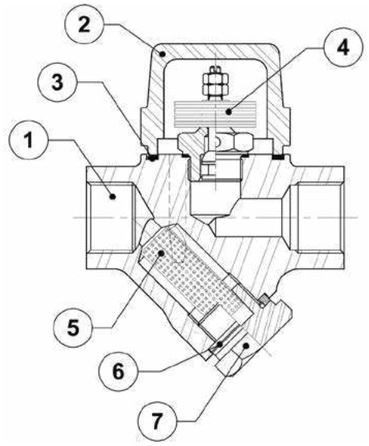




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	65	1,6	150	3,2	150	2,7	150	3,5
3/4" – DN 20	95	59	95	65	1,6	150	3,9	150	3,1	150	4,7
1" – DN 25	95	65	95	65	1,8	160	4,7	160	4,3	160	5,9

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Bimetallic
5	* Strainer screen	AISI 304 / 1.4301
6	* Gasket	Stainless steel / Graphite
7	* Strainer cover	AISI 303 / 1.4305
8	Bolts	Stainless steel A2-70

* Available spare parts.



BIMETALLIC STEAM TRAPS AND AIR VENTS
BM20R

DESCRIPTION

The BM20R series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature. Easy condensate temperature adjustment without disconnecting the trap from the piping.
Independent valve and seat placed in the low velocity flow area reduces erosion and extends product life.
Low maintenance costs consequence of the split regulator design.
Excellent air discharge.
Freeze protection of condensate lines.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

OPTIONS: Blowdown valve.
Seat with check valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM20R – carbon steel, with external adjustable temperature control.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

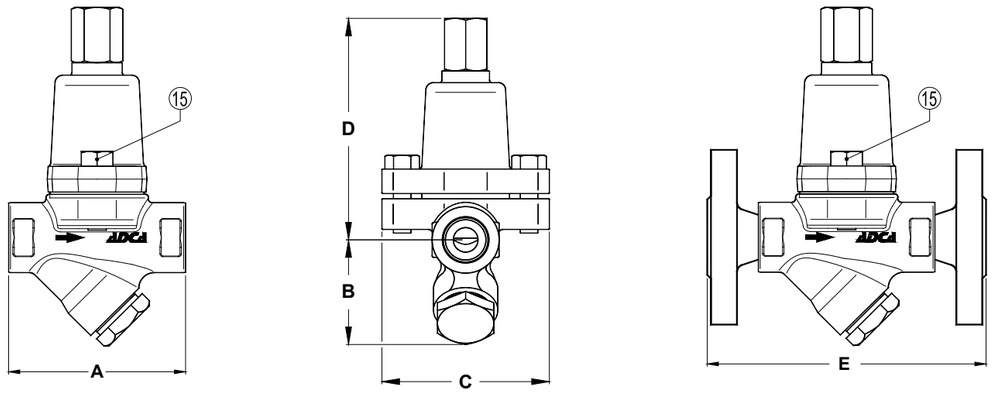
INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Max. operating pressure: 17 bar.
TMO – Max. operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)											
MODEL	SIZE	TEMP. (ºC) *	DIFFERENTIAL PRESSURE (bar)								
			0,5	1	2	4	6	8	10	12	14	17
BM20R	1/2" to 1" DN 15 to 25	10 **	125	200	320	410	445	485	500	540	580	600
BM20R	1/2" to 1" DN 15 to 25	20	200	300	440	550	580	600	620	670	700	720
BM20R	1/2" to 1" DN 15 to 25	40	380	500	700	970	990	1010	1050	1100	1130	1180
BM20R	1/2" to 1" DN 15 to 25	Cold	530	700	1210	1230	1320	1440	1650	1730	1780	1840

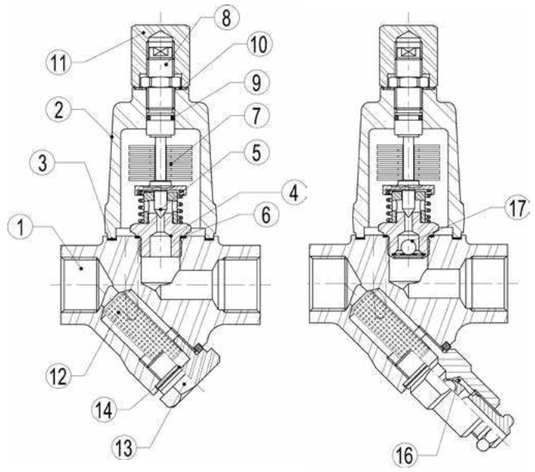
* Condensate discharge temperature below saturation temperature; ** Standard factory setting.



DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	125	2,3	150	3,9	150	3,4	150	4,2
3/4" – DN 20	95	59	95	125	2,3	150	4,7	150	3,9	150	5,5
1" – DN 25	95	65	95	125	2,5	160	5,1	160	4,7	160	6,3

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Seat	Hardened stainless steel
5	* Plug	Hardened stainless steel
6	* Seat gasket	Copper
7	* Regulator	Bimetal
8	Adjusting screw	AISI 304 / 1.4301
9	Seal ring	Viton
10	* Gasket	Copper
11	Cap nut	AISI 304 / 1.4301
12	* Strainer screen	AISI 304 / 1.4301
13	Strainer cover	A 105 / 1.0432
14	* Gasket	Stainless steel / Graphite
15	Bolts	Stainless steel A2-70
16	* Blowdown valve	AISI 304 (see IS 1.150)
17	Ball check valve	AISI 440C / 1.4125

* Available spare parts.



BIMETALLIC STEAM TRAPS AND AIR VENTS
BM24
(1/2" – 1"; DN 15 – 25)

DESCRIPTION

The BM24 series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM24 – carbon steel.

SIZES: 1/2" to 1" ; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

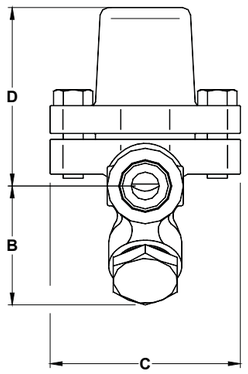
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

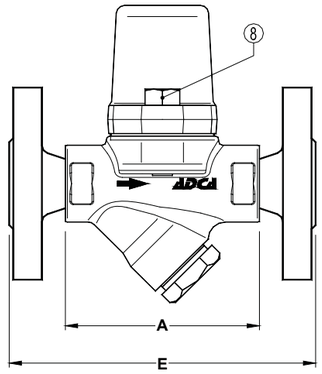
PMO – Maximum operating pressure: 24 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE CAPACITY (kg/h)															
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)													
		0,5	1	2	4	6	8	10	12	14	16	18	20	22	24
BM24	1/2" to 1" A DN 15 to 25 A	225	350	490	650	720	795	820	850	880	900	905	910	915	925
BM24	1/2" to 1" B DN 15 to 25 B	550	800	1100	1500	1750	1825	2000	2100	2175	2235	2390	2490	2585	2680

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

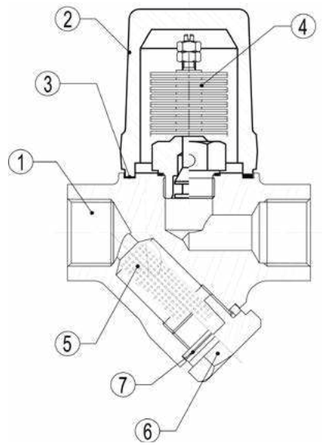




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	90	2,1	150	3,7	150	3,2	150	4
3/4" – DN 20	95	59	95	90	2,1	150	4,5	150	3,7	150	5,3
1" – DN 25	95	65	95	90	2,1	160	4,9	160	4,5	160	6,1

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Bimetal
5	* Strainer screen	AISI 304 / 1.4301
6	* Strainer cover	A 105 / 1.0432
7	* Gasket	Stainless steel / Graphite
8	Bolts	Stainless steel A2-70

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM24
(11/2" – 2"; DN 40 – 50)

DESCRIPTION

The BM24 series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM24 – carbon steel.

SIZES: 11/2" to 2"; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATON: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	PN 40 / CLASS 300	Category
–	11/2" to 2" DN 40 to 50	1 (CE Marked)
11/2" to 2"	–	SEP

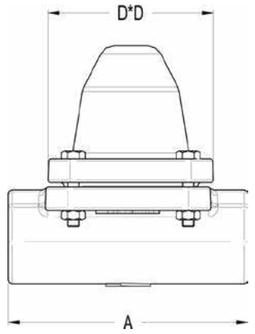
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMP.
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

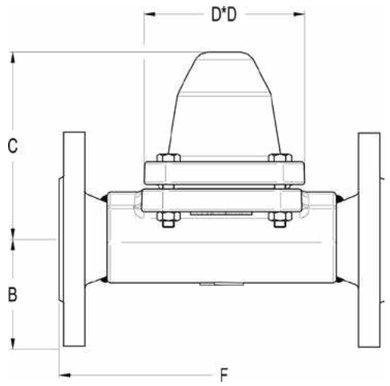
PMO – Maximum operating pressure: 24 bar.
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)													
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		0,5	1	2	4	6	8	10	12	16	18	20	24
BM24	11/2" to 2" A DN 40 to 50 A	700	900	1200	1450	1600	1700	1780	1880	1900	1950	2020	2100
BM24	11/2" to 2" B DN 40 to 50 B	1900	2400	3500	4900	5500	6050	7000	7200	7800	8400	8800	9000

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

We reserve the right to change the design and material of this product without notice.



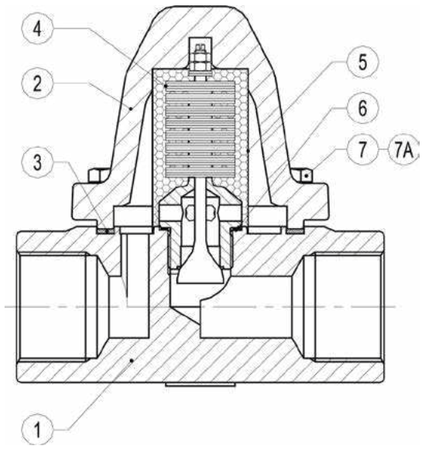


DIMENSIONS (mm)														
SIZE	BW	THREADED / SW				PN 40			CLASS 150			CLASS 300		
	A	A	C	D	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)
11/2" – DN 40	160	160	132	115	7,2	75	230	11,9	64	230	10,6	78	230	12,9
2" – DN 50	160	230	132	115	9,3	83	230	14,9	76	230	14,5	83	230	16,1

* Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A105 / 1.0432 (Equiv. P250GH)
2	Cover	A105 / 1.0432 (Equiv. P250GH)
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Hardened st. steel / Bimetal
5	* Strainer screen	AISI 304 / 1.4301
6	* Seat gasket	Copper
7	Studs	A193 Gr. B7
7A	Nuts	A194 Gr. 2H

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM32
(1/2" – 1"; DN 15 – 25)

DESCRIPTION

The BM32 series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM32 – carbon steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMP.
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

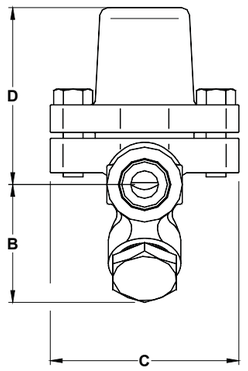
PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 300 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

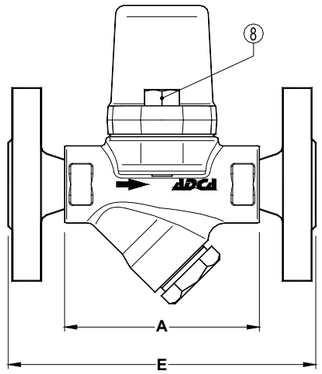
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	2	4	6	10	12	14	16	18	20	25	32
BM32	**1/2" to 1" A DN 15 to 25 A**	200	300	390	430	510	580	600	620	660	680	700	740	810
BM32	**1/2" to 1" B DN 15 to 25 B**	700	1000	1300	1530	1750	2050	2150	2250	2360	2480	2550	2750	2900

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

We reserve the right to change the design and material of this product without notice.

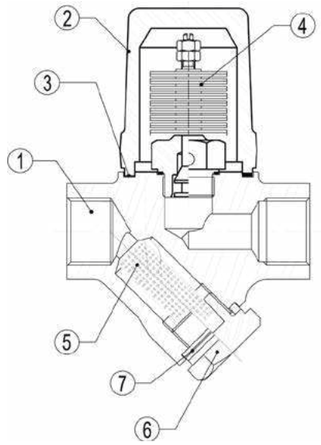




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	59	95	90	2,1	150	3,7	150	3,2	150	4
3/4" – DN 20	95	59	95	90	2,1	150	4,5	150	3,7	150	5,3
1" – DN 25	95	65	95	90	2,1	160	4,9	160	4,5	160	6,1

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Bimetal
5	* Strainer screen	AISI 304 / 1.4301
6	* Strainer cover	A105 / 1.0432
7	* Gasket	Stainless steel / Graphite
8	Bolts	Stainless steel A2-70

* Available spare parts.



BIMETALLIC STEAM TRAPS AND AIR VENTS
BM32
(11/2" – 2"; DN 40 – 50)

DESCRIPTION

The BM32 series bimetallic steam traps and air vents are simple and robust traps, recommended for steam process applications where condensate sensible heat can be recovered, steam tracing lines, drip points, storage tank coils, steam air venting, etc. The use of condensate sensible heat reduces steam consumption.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM32 – carbon steel.

SIZES: 11/2" to 2"; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Horizontal installation recommended, can be installed in any position.
See IMI – Installation and maintenance instructions.

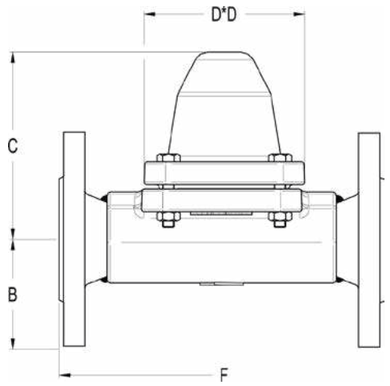
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 * ALLOWABLE PRESSURE	FLANGED CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMP.
40 bar	19,3 bar	50 ºC
35 bar	15,8 bar	150 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: 300 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	PN 40 / CLASS 300	Category
–	11/2" to 2" DN 40 to 50	1 (CE Marked)
11/2" to 2"	–	SEP

FLOW RATE CAPACITY (kg/h)													
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		2	4	6	8	10	12	16	18	20	24	28	32
BM32	11/2" to 2" A DN 40 to 50 A	450	490	550	640	700	730	850	920	980	1050	1100	1150
BM32	11/2" to 2" B DN 40 to 50 B	1400	1500	1700	1950	2200	2200	2600	2800	2950	3150	3300	3500

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

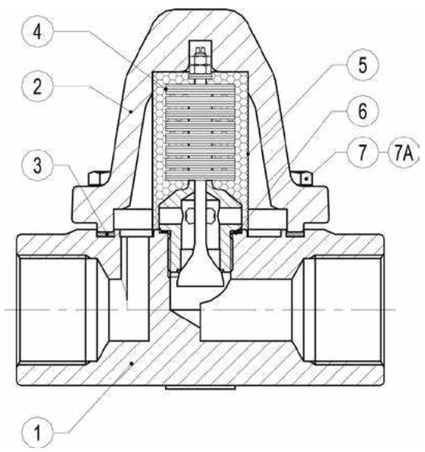


DIMENSIONS (mm)														
SIZE	BW	THREADED / SW				PN 40			CLASS 150			CLASS 300		
	A	A	C	D	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)	B	F *	WEIGHT (kg)
11/2" – DN 40	160	160	132	115	7,2	75	230	11,9	64	230	10,6	78	230	12,9
2" – DN 50	160	230	132	115	9,3	83	230	14,9	76	230	14,5	83	230	16,1

* Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A105 / 1.0432 (Equiv. P250GH)
2	Cover	A105 / 1.0432 (Equiv. P250GH)
3	* Gasket	Stainless steel / Graphite
4	* Valve assembly	Hardened st. steel / Bimetal
5	* Strainer screen	AISI 304 / 1.4301
6	* Seat gasket	Copper
7	Studs	A193 Gr. B7
7A	Nuts	A194 Gr. 2H

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM87

DESCRIPTION

The BM87 is a series of robust and efficient bimetallic steam traps and air vents. These steam traps are recommended for steam process applications where sensible heat can be recovered, such as steam tracing lines, drip points, storage tank coils and steam air venting.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM87 – carbon steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 63.
Flanged ASME B16.5 Class 300 or 600.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Inline horizontal installation is recommended. See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	Category
1/2" to 1" – DN 15 to 25	SEP

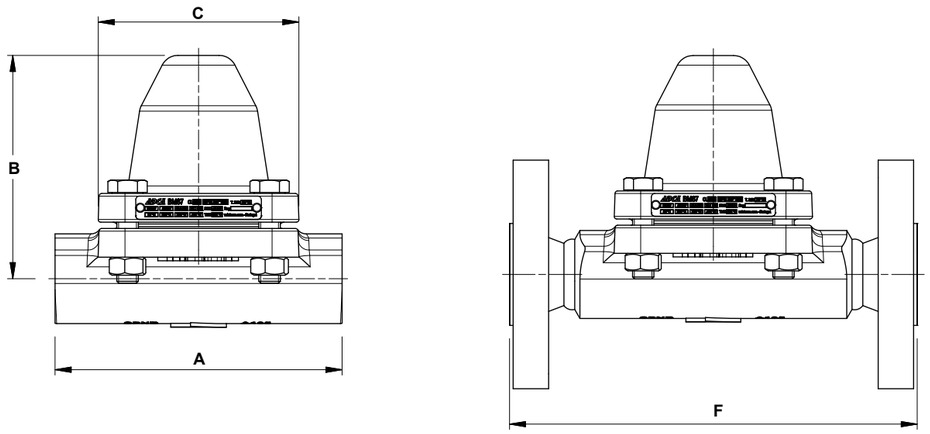
BODY LIMITING CONDITIONS		
FLANGED PN 63 / CLASS 600 *	FLANGED CLASS 300 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
63 bar	50 bar	50 ºC
48 bar	41,8 bar	250 ºC
43,5 bar	38,9 bar	300 ºC
29,1 bar	28,7 bar	425 ºC

PMO – Maximum operating pressure: 45 bar.
TMO – Maximum operating temperature: 425 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 63 or below, depending on the type of connection adopted. Rating PN 63 for threaded, SW and BW versions.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		4	6	8	10	15	20	25	30	40	45
BM87	1/2" to 1" A DN 15 to 25 A	150	230	280	320	390	430	480	500	580	590
BM87	1/2" to 1" B DN 15 to 25 B	1300	1600	1800	2000	2300	2660	2900	3100	3900	4100

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

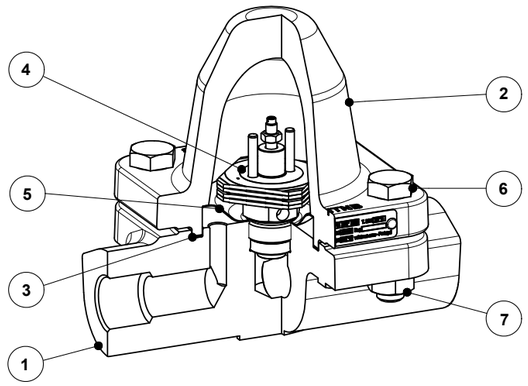


DIMENSIONS (mm)										
SIZE	THREADED / SW / BW *				PN 63		CLASS 300		CLASS 600	
	A	B	C	WEIGHT (kg)	F **	WEIGHT (kg)	F **	WEIGHT (kg)	F **	WEIGHT (kg)
1/2" – DN 15	160	125	112	6,2	210	8,3	230	7,6	230	7,8
3/4" – DN 20	160	125	112	6,1	230	10	230	8,6	230	8,9
1" – DN 25	160	125	112	6	230	11,2	230	9,1	230	9,4

* In case of BW connections please indicate pipe dimensions when ordering. Body limiting conditions may be restricted by the BW end wall thickness. Consult the manufacturer.
** Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A105 / 1.0432 (Equiv. P250GH)
2	Cover	A105 / 1.0432 (Equiv. P250GH)
3	* Gasket	Stainless steel / Graphite
4	* Bimetallic regulator	Corrosion resistant bimetal; Stainless steel
5	* Strainer screen	AISI 304 / 1.4301
6	Bolts	A193 Gr. B7
7	Nuts	A194 Gr. 2H

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM88

DESCRIPTION

The BM88 is a series of robust and efficient bimetallic steam traps and air vents. These steam traps are recommended for steam process applications where sensible heat can be recovered, such as steam tracing lines, drip points, storage tank coils and steam air venting. Specially designed for draining high pressure superheated steam lines and processes.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM88 – carbon steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 100.
Flanged ASME B16.5 Class 600.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Inline horizontal installation is recommended. See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	Category
1/2" to 1" – DN 15 to 25	SEP

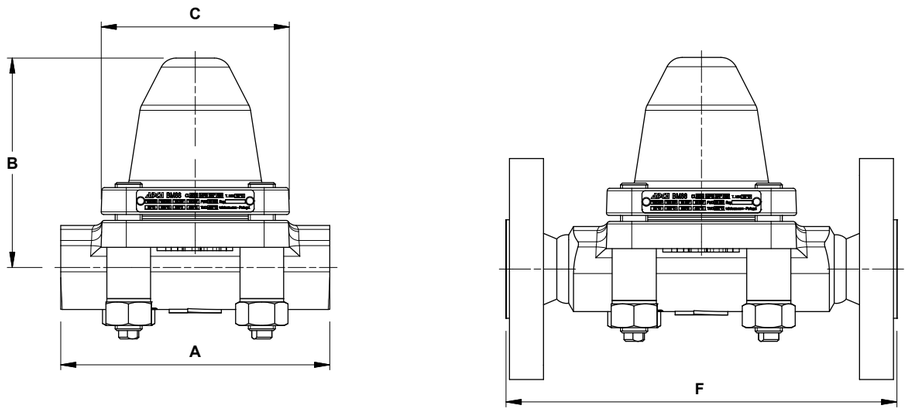
BODY LIMITING CONDITIONS		
FLANGED PN 100 *	FLANGED CLASS 600 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
100 bar	92,7 bar	250 ºC
97,6 bar	80,4 bar	350 ºC
88 bar	67,7 bar	450 ºC
64,2 bar	55,7 bar	500 ºC

PMO – Maximum operating pressure: 85 bar.
TMO – Maximum operating temperature: 500 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 100 or below, depending on the type of connection adopted. Rating PN 100 for threaded, SW and BW versions.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		4	6	8	10	15	20	25	30	40	50	60	70	85
BM88	1/2" to 1" A DN 15 to 25 A	360	420	490	510	600	650	700	710	790	810	850	900	910
BM88	1/2" to 1" B DN 15 to 25 B	1500	1750	2000	2200	2700	3000	3300	3600	4000	4500	4900	5300	5800

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

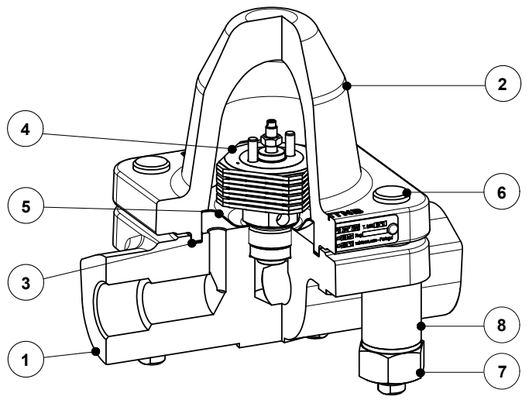


DIMENSIONS (mm)								
SIZE	THREADED / SW / BW *				PN 100		CLASS 600	
	A	B	C	WEIGHT (kg)	F **	WEIGHT (kg)	F **	WEIGHT (kg)
1/2" – DN 15	160	125	112	6,3	210	7,4	230	7,2
3/4" – DN 20	160	125	112	6,2	230	8,4	230	7,7
1" – DN 25	160	125	112	6,1	230	9,1	230	8,1

* In case of BW connections please indicate pipe dimensions when ordering. Body limiting conditions may be restricted by the BW end wall thickness. Consult the manufacturer.
** Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A182F22 / 1.7380 (Equiv. 10CrMo910)
2	Cover	A182F22 / 1.7380 (Equiv. 10CrMo910)
3	* Gasket	Stainless steel / Graphite
4	* Bimetallic regulator	Corrosion resistant bimetal; Stainless steel
5	* Strainer screen	AISI 304 / 1.4301
6	Studs	A193 Gr. B16
7	Nuts	A194 Gr. 4
8	Extension sleeves	A193 Gr. B16

* Available spare parts.



BIMETALLIC STEAM TRAPS AND AIR VENTS
BM89

DESCRIPTION

The BM89 is a series of robust and efficient bimetallic steam traps and air vents. These steam traps are recommended for steam process applications where sensible heat can be recovered, such as steam tracing lines, drip points, storage tank coils and steam air venting. Specially designed for draining high pressure superheated steam lines and processes.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM89 – carbon steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 160.
Flanged ASME B16.5 Class 900.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Inline horizontal installation is recommended.
See IMI – Installation and maintenance instructions.

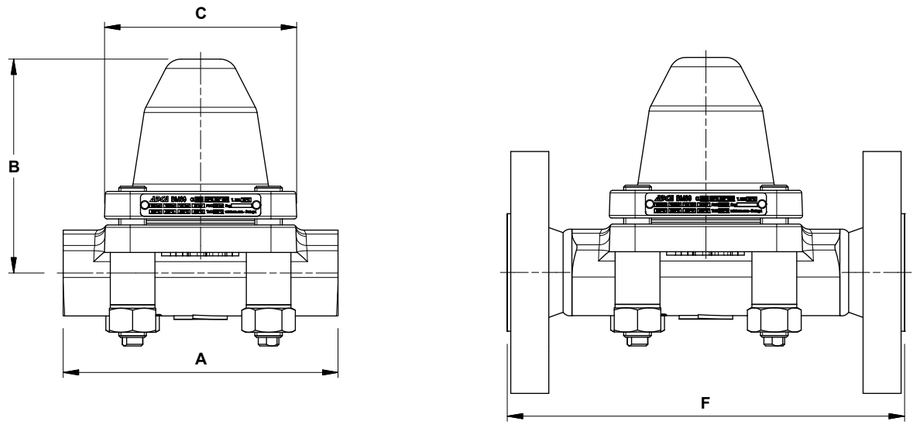
CE MARKING – GROUP 2 (PED – European Directive)	
PN 160	Category
1/2" to 1" – DN 15 to 25	SEP

BODY LIMITING CONDITIONS		
FLANGED PN 160 *	FLANGED CLASS 900 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
160 bar	128,6 bar	300 ºC
156,1 bar	120,7 bar	350 ºC
140,9 bar	101,4 bar	450 ºC
102,8 bar	83,4 bar	500 ºC
73,4 bar	64,9 bar	525 ºC

PMO – Maximum operating pressure: 110 bar.
TMO – Maximum operating temperature: 525 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 160 or below, depending on the type of connection adopted. Rating PN 160 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)															
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)													
		4	6	8	10	15	20	25	30	40	50	60	70	90	100	110
BM89	1/2" to 1" A DN 15 to 25 A	360	420	490	510	600	650	700	710	790	810	850	900	930	970	990
BM89	1/2" to 1" B DN 15 to 25 B	1500	1750	2000	2200	2700	3000	3300	3600	4000	4500	4900	5300	6000	6200	6500

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

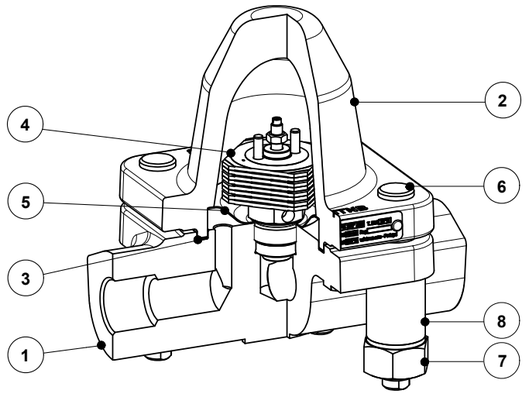


DIMENSIONS (mm)								
SIZE	THREADED / SW / BW *				PN 160		CLASS 900	
	A	B	C	WEIGHT (kg)	F **	WEIGHT (kg)	F **	WEIGHT (kg)
1/2" – DN 15	160	125	112	6,2	210	7,4	230	8,2
3/4" – DN 20	160	125	112	6,2	–	–	230	8,8
1" – DN 25	160	125	112	6,1	230	9,1	254	10,3

* In case of BW connections please indicate pipe dimensions when ordering. Body limiting conditions may be restricted by the BW end wall thickness. Consult the manufacturer.
** Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A182F22 / 1.7380 (Equiv. 10CrMo910)
2	Cover	A182F22 / 1.7380 (Equiv. 10CrMo910)
3	* Gasket	Stainless steel / Graphite
4	* Bimetallic regulator	Corrosion resistant bimetal; Stainless steel
5	* Strainer screen	AISI 304 / 1.4301
6	Studs	A193 Gr. B16
7	Nuts	A194 Gr. 4
8	Extension sleeves	A193 Gr. B16

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

BIMETALLIC STEAM TRAPS AND AIR VENTS
BM90

DESCRIPTION

The BM90 is a series of robust and efficient bimetallic steam traps and air vents. These steam traps are recommended for steam process applications where sensible heat can be recovered, such as steam tracing lines, drip points, storage tank coils and steam air venting. Specially designed for draining high pressure superheated steam lines and processes.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.
Built-in strainer.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM90 – carbon steel.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 250.
Flanged ASME B16.5 Class 1500.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: Inline horizontal installation is recommended. See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 250	Category
1/2" to 1" – DN 15 to 25	SEP

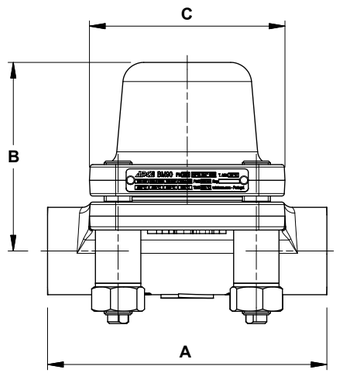
BODY LIMITING CONDITIONS	
FLANGED PN 250 / CLASS 1500 / THREADED / SW / BW ALLOWABLE PRESSURE	RELATED TEMPERATURE
160 bar	50 ºC / 450 ºC
138 bar	500 ºC
130 bar	510 ºC
108 bar	525 ºC

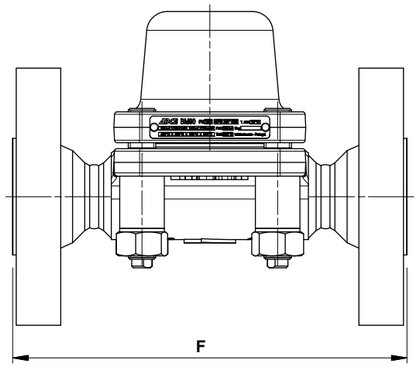
PMO – Maximum operating pressure: 160 bar.
TMO – Maximum operating temperature: 525 ºC.

We reserve the right to change the design and material of this product without notice.

FLOW RATE CAPACITY (kg/h)																	
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)															
		4	6	8	10	15	20	25	30	40	50	60	70	90	100	130	160
BM90	1/2" to 1" A DN 15 to 25 A	140	170	180	190	210	220	225	235	245	250	260	270	275	280	285	295
BM90	1/2" to 1" B DN 15 to 25 B	890	1100	1300	1450	1600	1800	2000	2200	2500	2750	3000	3200	3500	3900	4100	4500

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.



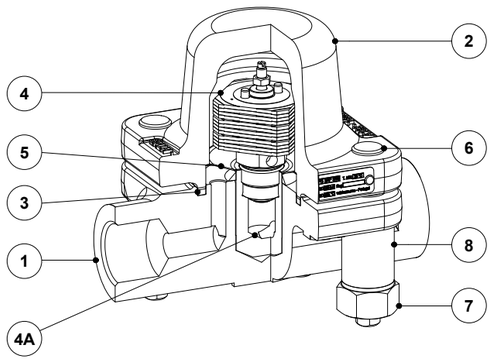


DIMENSIONS (mm)												
SIZE	THREADED / SW / BW *				PN 250				CLASS 1500			
	A	B	C	WEIGHT (kg)	B	C	F **	WEIGHT (kg)	B	C	F **	WEIGHT (kg)
1/2" – DN 15	160	108	112	7,3	108	112	230	9,6	108	112	230	8,9
3/4" – DN 20	160	108	112	7,3	–	–	–	–	108	112	230	9,6
1" – DN 25	160	108	112	7,1	108	112	230	10,8	108	112	254	11

* In case of BW connections please indicate pipe dimensions when ordering. Body limiting conditions may be restricted by the BW end wall thickness. Consult the manufacturer.
** Different face to face dimensions on request.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A182F22 / 1.7380 (Equiv. 10CrMo910)
2	Cover	A182F22 / 1.7380 (Equiv. 10CrMo910)
3	* Gasket	Stainless steel / Graphite
4	* Bimetallic regulator	Corrosion resistant bimetal; Stainless steel
4A	Deflector	Stainless steel
5	* Strainer screen	AISI 304 / 1.4301
6	Studs	A453 Gr. 660B
7	Nuts	A453 Gr. 660B
8	Extension sleeves	A453 Gr. 660B

* Available spare parts.



Tailor Made

BIMETALLIC STEAM TRAPS AND AIR VENTS BM–HC

DESCRIPTION

The BM–HC series bimetallic steam traps and air vents are simple and robust traps, recommended for large process applications.
They can be supplied with several bimetallic regulators achieving the requested flow rate.

MAIN FEATURES

Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.

OPTIONS: Complete stainless steel construction.
Different capacities and designs.

USE: Saturated and superheated steam.

AVAILABLE MODELS: BM24HC...; BM32HC...; BM35HC…etc.

SIZES: 11/2” to 3”; 5” ; DN 40 to DN 80; DN 125 .

CONNECTIONS: Flanged EN 1092-1 PN 63.
Flanged ASME B16.5 Class 900.

INSTALLATION: Vertical installation.
See IMI – Installation and maintenance instructions.

SIZING: Consult manufacturer.

CE MARKING – GROUP 2 (PED – European Directive)								
Rating	Model *	Category	Rating	Model *	Category	Rating	Model *	Category
PN 16	BM...HC04	SEP	PN 40	BM...HC04	1	PN 63	BM...HC04	1
	BM...HC05	SEP		BM...HC05	1		BM...HC05	1
	BM...HC06	SEP		BM...HC06	1		BM...HC06	1
	BM...HC08	1		BM...HC08	2		BM...HC08	2
	BM...HC10	2		BM...HC10	2		–	–

* All sizes belonging to the same model have the same category.

BODY LIMITING CONDITIONS *											
RATING	ALLOW. PRESS.	RELATED TEMP.	RATING	ALLOW. PRESS.	RELATED TEMP.	RATING	ALLOW. PRESS.	RELATED TEMP.	RATING	ALLOW. PRESS.	RELATED TEMP.
PN 16	16 bar	50 ºC	CLASS 150	16 bar	50 ºC	PN 40 / CLASS 300	40 bar	50 ºC	PN 63 / CLASS 600	63 bar	50 ºC
	14 bar	100 ºC		14 bar	100 ºC		37 bar	100 ºC		58 bar	100 ºC
	13 bar **	195 ºC		13 bar **	195 ºC		31 bar **	239 ºC		47 bar **	261 ºC
	12 bar	250 ºC		-	-		27 bar	300 ºC		43 bar	300 ºC

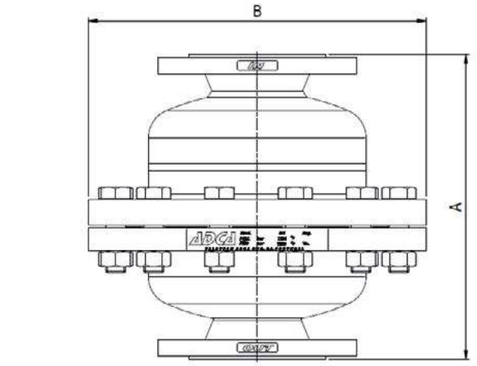
* Rating according to EN 1092-1:2018; ** Maximum operating pressure for saturated steam.
PMO – Maximum operating pressure: 63 bar; TMO – Maximum operating temperature: 300 ºC.
Minimum operating temp.: -10 ºC; Design code: AD – Merkblatt.

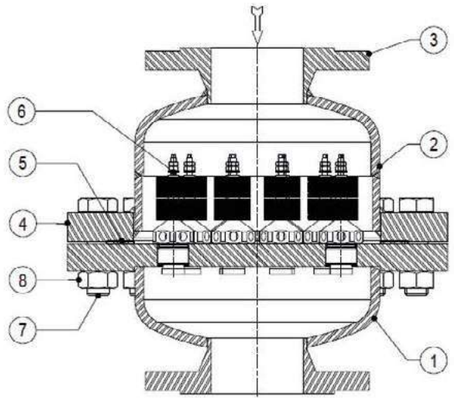
DIMENSIONS (mm)													
MODEL	SIZE (DN)			Max. nº of reg. *	PN 16			PN 40			PN 63		
	PN 16	PN 40	PN 63		A	B	WGT. **	A	B	WGT. **	A	B	WGT. **
BM (a) HC04-(b)	40 to 50	40 to 50	40 to 50	3	241	220	19,2	259	235	25	301	250	38,5
BM (a) HC05-(b)	50 to 65	50 to 65	50 to 65	6	242	250	24,3	281	270	35	325	295	51,3
BM (a) HC06-(b)	65 to 80	65 to 80	65 to 80	8	262	285	32,9	317	300	46,4	358	345	72,4
BM (a) HC08-(b)	65 to 80	65 to 80	65 to 80	14	311	340	49,6	367	375	82	413	415	111,7
BM (a) HC10-(b)	125	65 to 80	–	20	386	405	81,7	430	450	126,5	–	–	–

(a) Insert the regulator type, selected from a single steam trap regulator DN40–50 (BM24 or BM32) or DN15–25 (BM35, 45, 80 and 140);
(b) Insert the number of regulators according to the desired flow rate and maximum permissible number mentioned in the next column.
* Maximum number of regulators per model; ** Weights in kg.
How to order: BM32HC06-6 DN 80 PN 40 – High capacity bimetallic steam trap with six BM32 DN 40/50 regulators.
Remarks: The operating limit conditions can never be superior to those of the body, regardless of which regulators are chosen.
If the selected regulator is intended to work above the operating conditions mentioned in this catalog, please consult manufacturer for an alternative.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body cap	EN 10028-2 / P265GH / 1.0425
2	Tube cover	EN 10216-2 / P235GH / 1.0325
3	EN flanges	EN 10222-2 / P250GH / 1.0460
3	ASME flanges	ASTM A105 / 1.0432
4	Body flanges	EN 10222-2 / P250GH / 1.0460
5	* Gasket	Stainless steel / Graphite
6	* Regulator	Bimetallic
7	Studs	Steel 8.8
8	Nuts	Steel 8.8

* Available spare parts.





We reserve the right to change the design and material of this product without notice.

CONDENSATE DRAIN VALVES CDV32

DESCRIPTION

The CDV32 condensate drain valve automatically discharges air and condensate from steam systems during start-up. A compression spring keeps the valve open when the system is not pressurized. As soon as the operating pressure reaches the closing pressure to which the CDV is set, the valve closes. If the operating pressure drops below the closing set pressure, the spring force will cause the CDV32 to open once again.

MAIN FEATURES

Hand purging knob allowing operation with system under pressure for dirt removal.
Prevents vacuum and frost formation.
Built-in, easy-to-clean strainer.

USE: Saturated steam.

AVAILABLE MODELS: CDV32 – carbon steel.

SIZES: 1/2” to 3/4”; DN 15 to DN 20.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25 on request.

INSTALLATION: Vertical installation recommended.
When installed in horizontal lines, an outlet connecting pipe pointing downwards should be installed.
See IMI – Installation and maintenance instructions.

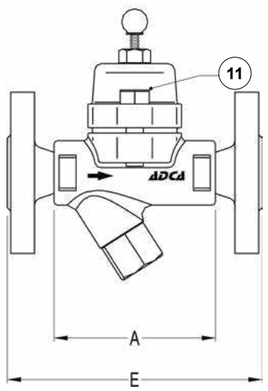
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2” to 3/4” – DN 15 to 20	SEP

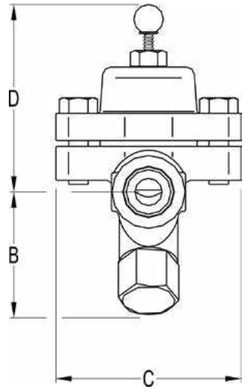
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMP.
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
40 bar	19,3 bar	50º C
35 bar	15,8 bar	150º C
30,4 bar	12,1 bar	250º C
27,6 bar	10,2 bar	300º C

Closing pressure: 1,5 bar.
PMO – Maximum operating pressure: 22 bar;
TMO – Maximum operating temperature: 250 ºC.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

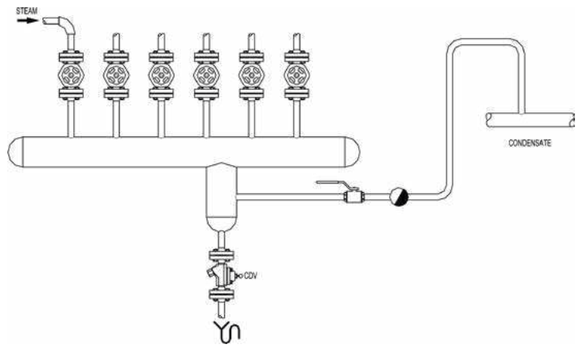
FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,1	0,2	0,3	0,4	0,5	0,6	0,8	1	1,5
CDV32	1/2” to 3/4” DN 15 to 20	220	280	380	420	470	520	585	630	780

We reserve the right to change the design and material of this product without notice.

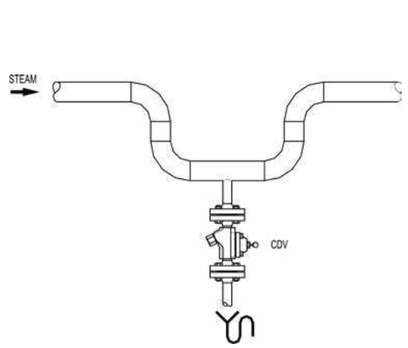




DIMENSIONS (mm)											
SIZE	THREADED / SW					PN 40		CLASS 150		CLASS 300	
	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	95	65	95	97	1,6	150	3,2	150	2,7	150	3,5
3/4" – DN 20	95	65	95	97	1,6	150	3,9	150	3,1	150	4,7



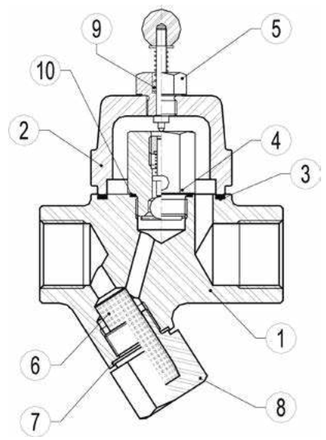
Draining a steam manifold with an elevated condensate line.



Draining a water pocket in outdoor plants, this installation also prevents freezing.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	P250GH / 1.0460
3	* Gasket	Stainless steel / Graphite
4	* Valve controller	AISI304 / 1.4301
5	* Hand purging knob	Plastic
6	* Strainer screen	AISI 304 / 1.4301
7	* Gasket	Stainless steel / Graphite
8	Strainer cover	A105 / 1.0432
9	* Gasket	AISI 304 / 1.4301
10	* Gasket	AISI 304 / 1.4301
11	Bolts	Steel 8.8

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

UNIVERSAL PIPELINE CONNECTORS
UCX41

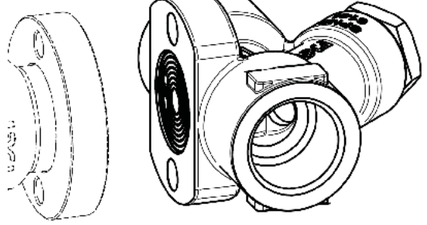
DESCRIPTION

The UCX series pipeline connectors are used in steam systems where a simple and economic maintenance program is desired.
Typical installations are drip service on steam lines, tracing applications and small process equipment.
The two-bolt flange connector allows for fast trap replacement without disturbing the pipelines.
The UCX connector fits the universal swivel connection steam traps.

MAIN FEATURES

Remains permanently in-line making the replacement of new traps easier and quicker.
Steam traps can swivel 360º, allowing any pipe orientation during installation.
The universal flange allows the trap to be positioned in the correct position, regardless of pipeline configuration.
Built-in strainer.

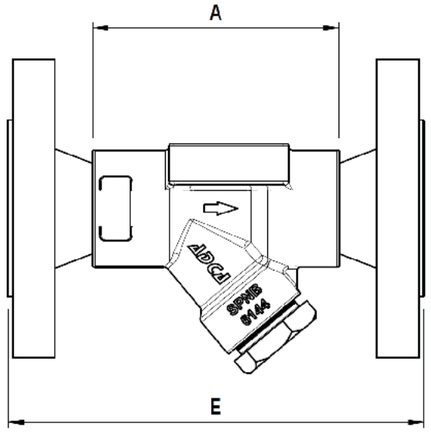
OPTIONS:	Blowdown valve.
USE:	Saturated and superheated steam.
AVAILABLE MODELS:	UCX41 – stainless steel.
SIZES:	1/2" to 1"; DN 15 to DN 25.
CONNECTIONS:	Female threaded ISO 7 Rp or NPT. Flanged EN 1092-1 PN 40. Flanged ASME B16.5 Class 150 or 300. Socket weld (SW) ASME B16.11. Butt weld (BW) ASME B16.25 on request.
INSTALLATION:	With the surface for swivel connection in a vertical plane (mechanical steam traps) or, alternatively, in an horizontal plane for thermostatic steam traps. See IMI – Installation and maintenance instructions.

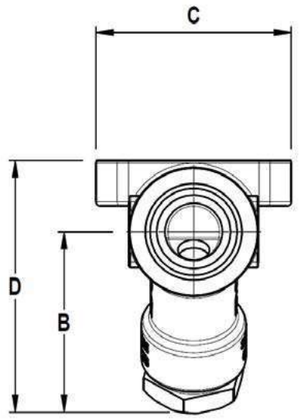


We reserve the right to change the design and material of this product without notice.

BODY LIMITING CONDITIONS				
THREADED / SW	FLANGED PN 40 *	FLANGED CLASS 150 **	FLANGED CLASS 300 **	RELATED TEMPERATURE
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
47,8 bar	40 bar	15,3 bar	39,9 bar	-10 / 50 ºC
40,9 bar	37,9 bar	13,3 bar	34,4 bar	100 ºC
34,4 bar	31,8 bar	11,1 bar	28,8 bar	200 ºC
30,6 bar	27,6 bar	9,7 bar	25,2 bar	300 ºC
28,6 bar	25,7 bar	6,5 bar	23,1 bar	400 ºC

* According to EN 1092-1:2018; ** According to EN 1759-1:2004.

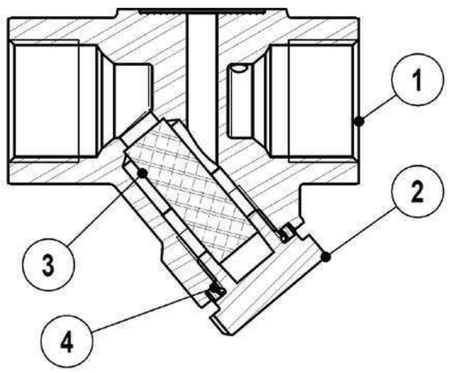




DIMENSIONS (mm)											
THREADED / SW						PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	80	63	68	88	1	150	2,4	150	2	150	2,4
3/4" – DN 20	80	63	68	88	1	150	3	150	2,5	150	3,3
1" – DN 25	95	63	68	88	1,1	160	3,6	160	3,1	160	3,8

MATERIALS		
POS. Nº	DESCRIPTION	MATERIAL
1	Body	A351 CF8 / 1.4308
2	Strainer cap	AISI 304 / 1.4301
3	* Strainer screen	AISI 304 / 1.4301
4	* Gasket	AISI 304 / 1.4301

* Available spare parts.



COMPACT TRAPPING STATION
CTS4U
(For use with universal swivel connector steam traps)

DESCRIPTION

The UniADCA CTS4U is a complete and compact steam trapping station designed to be used as an alternative to traditional multi-component trap stations, simplifying maintenance and reducing downtime and associated costs.
The swivel connector allows steam trap replacement in only a few minutes without disturbing the pipeline.
Compatible with "two-bolt" UniADCA universal steam traps and other universal steam traps with swivel connector.
Typical installations include drip service on steam lines, tracing, SKID's and small process equipment.

MAIN FEATURES

Built-in strainer and check valve.
Reduced downtime and costs due to easy in-line maintenance.
Safe depressurization through bleed valve or BDV.
Available with double upstream shut-off valves.
Universal steam traps can swivel 360°, allowing the steam trap to be fitted in the correct position, regardless of pipeline configuration.

OPTIONS: BDV – Blowdown valve.

USE: Saturated and superheated steam.

CTS4U

AVAILABLE MODELS:
CTS4U – stainless steel, with inlet and outlet shut-off valves.
CTS4UD – stainless steel, with double inlet shut--off valves.
CTS4UDB – stainless steel, with double inlet shut-off valves and bleed valve.

CTS4UD

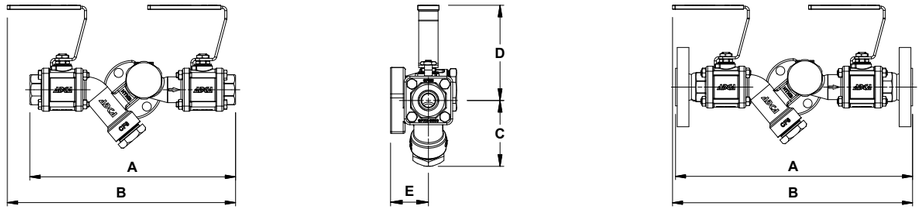
SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or Class 300.

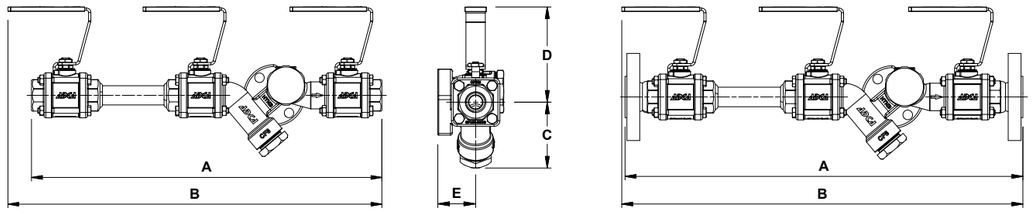
INSTALLATION: See IMI – Installation and maintenance instructions.

CTS4UDB

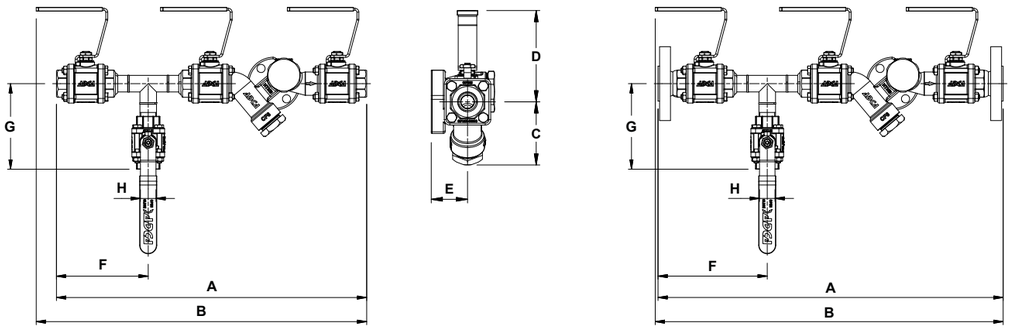
LIMITING CONDITIONS	
Body design conditions	PN 40
Maximum pressure for saturated steam	17,5 bar
Maximum operating temperature	230 ºC @ 10 bar
Minimum operating temperature	-10 ºC



DIMENSIONS (mm) – CTS4U														
	THREADED						PN 40			CLASS 150			CLASS 300	
SIZE	A	B	C	D	E	WGT. (kg)	A	B	WGT. (kg)	A	B	WGT. (kg)	A	WGT. (kg)
1/2" – DN 15	239	265	68	98	39	3	284	288	4,5	290	291	4	300	4,6
3/4" – DN 20	239	265	68	98	39	3	304	–	5,1	305	–	4,4	325	5,6
1" – DN 25	287	289	68	98	39	3,3	304	–	5,5	335	–	5	348	6,2

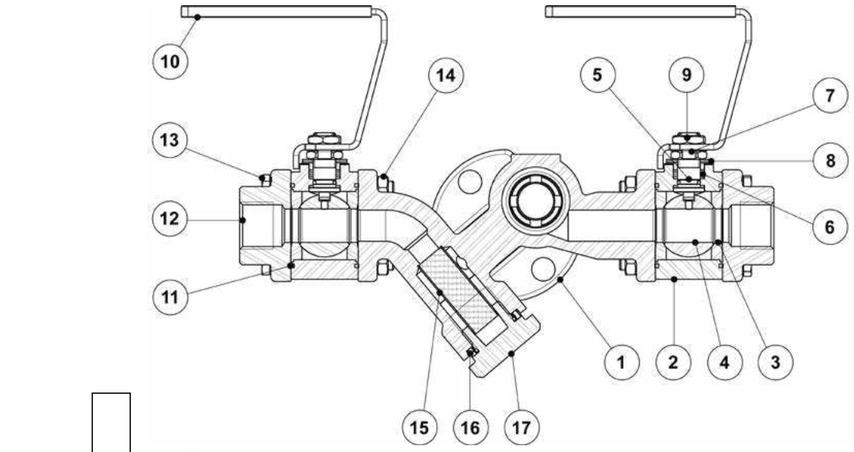


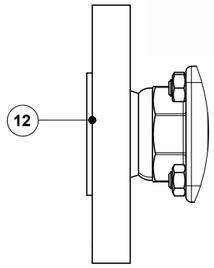
DIMENSIONS (mm) – CTS4UD														
	THREADED						PN 40			CLASS 150			CLASS 300	
SIZE	A	B	C	D	E	WGT. (kg)	A	B	WGT. (kg)	A	B	WGT. (kg)	A	WGT. (kg)
1/2" – DN 15	384	415	68	98	39	4	434	438	5,6	440	440	5	450	5,6
3/4" – DN 20	389	415	68	98	39	4	454	–	6,2	455	–	5,5	475	6,6
1" – DN 25	437	439	68	98	39	4,4	454	–	6,6	485	–	6	498	7,3

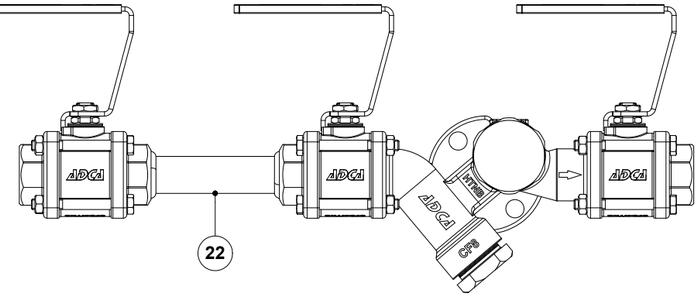


DIMENSIONS (mm) – CTS4UDB																			
	THREADED									PN 40				CLASS 150				CLASS 300		
SIZE	A	B	C	D	E	F	G	H	WGT. (kg)	A	B	F	WGT. (kg)	A	B	F	WGT. (kg)	A	F	WGT. (kg)
1/2" – DN 15	399	425	68	98	39	118	110	1/2"	4,8	444	448	140	6,3	450	451	143	5,7	460	148	6,3
3/4" – DN 20	399	425	68	98	39	118	110	1/2"	4,7	464	–	150	6,9	465	–	151	6,1	485	161	7,3
1" – DN 25	447	449	68	98	39	142	110	1/2"	5	464	–	150	7,2	495	–	166	6,7	508	172	7,9

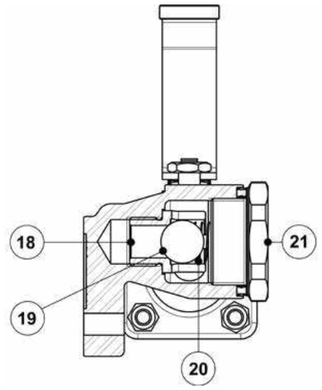
MATERIALS

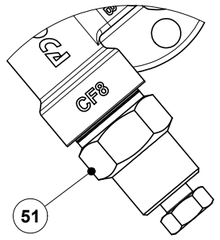




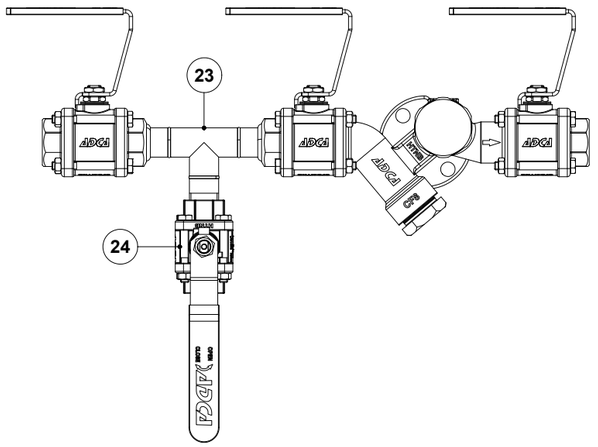


CTS4UD





BDV – Blowdown valve (optional)



CTS4UDB

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Main valve body	A351 CF8 / 1.4308
2	Ball valve body	A351 CF8 / 1.4308
3	* Seat	PTFE/GR
4	* Valve ball	AISI 316L / 1.4404
5	* Stem	AISI 316L / 1.4404
6	* Stem seals	PTFE/GR
7	* Lock washers	AISI 304 / 1.4301
8	* Spring washers	AISI 304 / 1.4301
9	Stem nut	Stainless steel A2-70
10	Handle	AISI 304 / 1.4301; Vinyl
11	Body seal	PTFE
12	Cap (threaded)	A351 CF8 / 1.4308
	Cap (flanged)	A351 CF8 / 1.4308; AISI 304 / 1.4301
13	Bolts	AISI 304 / 1.4301
14	Nuts	Stainless steel A2-70
15	* Strainer screen	AISI 304 / 1.4301
16	* Gasket	Stainless steel / Graphite
17	Strainer plug	AISI 304 / 1.4301
18	* Check valve seat	AISI 304 / 1.4301
19	* Check valve ball	AISI 304 / 1.4301
20	* Spring	AISI 302 / 1.4300
21	Check valve cover	AISI 304 / 1.4301
22	Spool piece	AISI 316L / 1.4404
23	Spool piece with drain	AISI 316L / 1.4404
24	Bleed valve M3i5	A351 CF8 / 1.4308
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts.

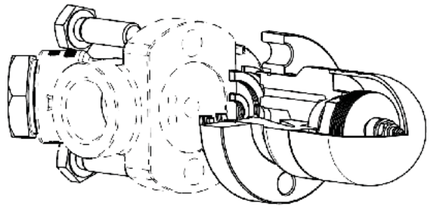
BIMETALLIC STEAM TRAP
UBS20
(For use with universal pipeline connectors)

DESCRIPTION

The UBS20 series bimetallic steam traps and air eliminators, completely in stainless steel, are maintenance free and sealed traps. Simple and robust, they are recommended for drip service, steam tracing applications and where condensate sensible heat can be recovered.
These traps fit the UCX universal connectors and CTS4U compact stations.

MAIN FEATURES

Sealed, non-maintainable.
Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water-hammer and vibrations.



OPTIONS: Different operating limits.

USE: Saturated and superheated steam.

AVAILABLE MODELS: UBS20 – stainless steel.

SIZES: According to the selected pipeline connector.

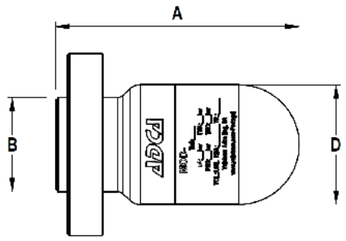
INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

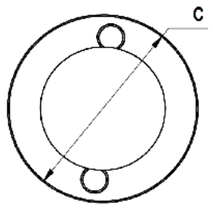
BODY LIMITING CONDITIONS *	
CLASS 300	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
39,9 bar	-10 / 50 ºC
34,4 bar	100 ºC
28,8 bar	200 ºC
25,2 bar	300 ºC
23,1 bar	400 ºC

PMO – Maximum operating pressure: 17 bar;
TMO – Maximum operating temperature: 250 ºC.
* According to EN 1759-1:2004.
Remark: the pipeline connector may restrict the operating conditions to a lower rating.

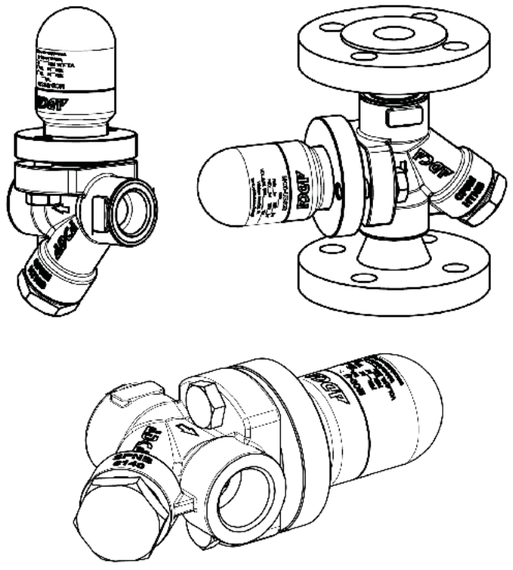
FLOW RATE CAPACITY (kg/h)										
MODEL	**DIFFERENTIAL PRESSURE (bar)**									
	0,5	**1**	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**
UBS20 (A)	225	350	490	650	720	795	820	850	880	900
UBS20 (B)	550	800	1100	1500	1750	1825	2000	2100	2175	2235

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.

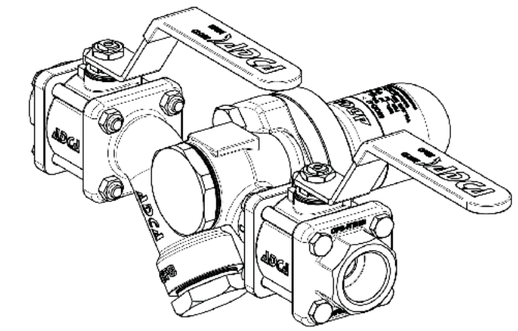




DIMENSIONS (mm)					
MODEL	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
UBS20	89	35	67	44	1,3



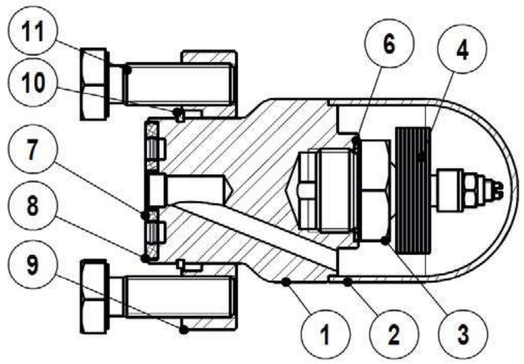
UBS steam trap connected to a UCX universal pipeline connector



UBS steam trap connected to a CTS4U compact station

MATERIALS		
POS. Nº	**DESCRIPTION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316 / 1.4401
3	Valve seat	AISI 304 / 1.4301
4	Discs	Bimetal
6	Gasket	Copper
7	* Inlet gasket	Stainless steel / Graphite
8	* Outlet gasket	Stainless steel / Graphite
9	Flange	AISI 316 / 1.4401
10	Retainer ring	Steel
11	Bolts	A193 Gr. B7

* Available spare parts.



THERMOSTATIC STEAM TRAP
UTS22
(For use with universal pipeline connectors)

DESCRIPTION

The UTS22 series thermostatic steam traps and air eliminators, completely in stainless steel, are maintenance free and sealed traps. They are specifically designed to be used on process equipment such as kettle cookers, sterilizers, food, chemical and laundry equipment. These traps fit the UCX universal connectors and CTS4U compact stations.

MAIN FEATURES

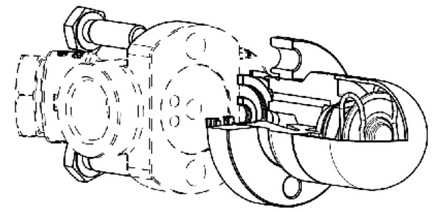
Sealed, non-maintainable.
Modulating discharge.
Discharges condensate close to steam temperature.
Thermostats for different sub cooling temperatures (5 ºC to 30 ºC).
Excellent air discharge.
Operates on moderate superheated steam.

USE: Saturated steam.

AVAILABLE MODELS: UTS22 – stainless steel.
UTS22LC – stainless steel, low capacity.

SIZES: According to the selected pipeline connector.

INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

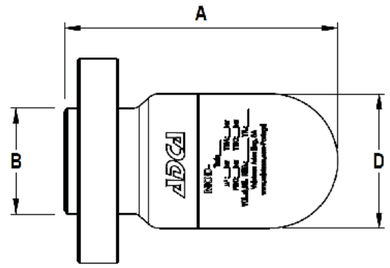


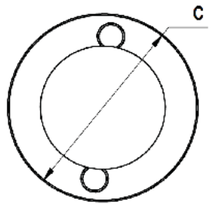
BODY LIMITING CONDITIONS *	
CLASS 300 **ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
39,9 bar	-10 / 50 ºC
34,4 bar	100 ºC
28,8 bar	200 ºC
25,2 bar	300 ºC
23,1 bar	400 ºC

PMO – Maximum operating pressure: 22 bar;
TMO – Maximum operating temperature: 250 ºC.
* According to EN 1759-1:2004.
Remark: the pipeline connector may restrict the operating conditions to a lower rating.

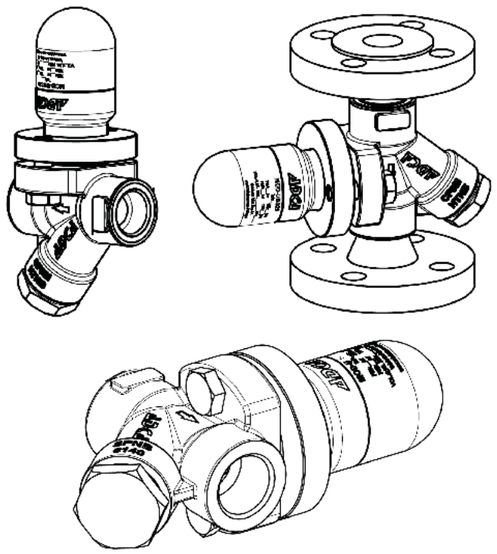
FLOW RATE CAPACITY (kg/h)															
MODEL	**DIFFERENTIAL PRESSURE (bar)**														
	0,2	**0,3**	**0,5**	**1**	**1,5**	**2**	**3**	**4**	**6**	**8**	**10**	**13**	**15**	**20**	**22**
UTS22	70	120	140	255	330	385	455	510	600	670	700	720	750	775	795
UTS22LC	45	55	70	95	125	135	180	200	270	315	330	360	370	405	415

Capacities shown refer to condensate at 10 ºC below saturated steam temperature (standard type S thermostat).
Thermostats for 5 ºC (type H) and 30 ºC (type L) also available.
Capacities for cold condensate discharge at 20 ºC are two to three times greater.

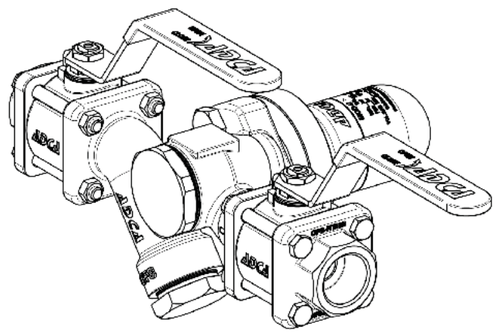




DIMENSIONS (mm)					
MODEL	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
UTS22	89	35	67	44	0,95



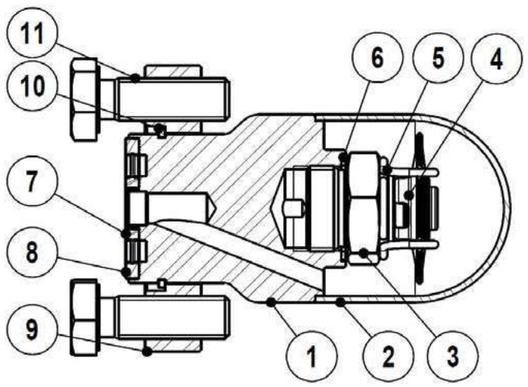
UTS steam trap connected to a UCX universal pipeline connector



UTS steam trap connected to a CTS4U compact station

MATERIALS		
POS. Nº	**DESCRIPTION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316 / 1.4401
3	Valve seat	AISI 304 / 1.4301
4	Thermostatic element	Stainless steel
5	Spring	AISI 302 / 1.4300
6	Gasket	Copper
7	* Inlet gasket	Stainless steel / Graphite
8	* Outlet gasket	Stainless steel / Graphite
9	Flange	AISI 316 / 1.4401
10	Retainer ring	Steel
11	Bolts	ASTM A193 Gr. B7

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

UniADCA

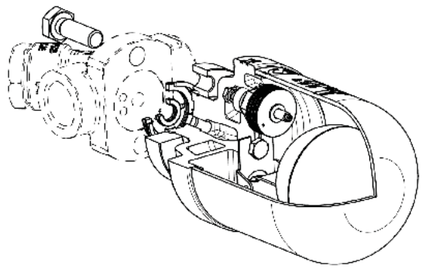
FLOAT AND THERMOSTATIC STEAM TRAPS
UFS32
(For use with universal pipeline connectors)

DESCRIPTION

The UFS32 series float and thermostatic (integral air vent) steam traps, completely in stainless steel, are maintenance free and sealed. They are specifically designed to work with low and medium pressure steam and all types of heating and process equipment.
Typical applications include unit heaters, heat exchangers, driers, jacketed vessels and all the applications where continuous drainage is essential.
These traps fit the UCX universal connectors and CTS4U compact stations.

MAIN FEATURES

Sealed, non-maintainable.
Modulating discharge.
Discharges condensate at steam temperature.
Unaffected by sudden or wide load and pressure changes.
Excellent air discharge (by thermostatic air vent).



USE: Saturated and superheated steam.

AVAILABLE MODELS: UFS32-4,5 , 10, 14, 21 and 32 – stainless steel.

SIZES: According to the selected pipeline connector.

INSTALLATION: Always in a horizontal plane with the “O” of the TOP inscription perfectly aligned with the vertical axis.
See IMI – Installation and maintenance instructions.

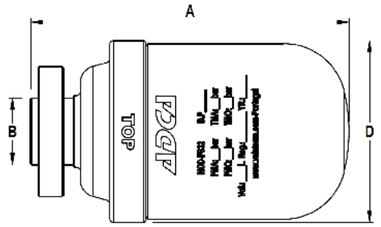
MAX. ΔP:
UFS32-4,5 – 4,5 bar
UFS32-10 – 10 bar
UFS32-14 – 14 bar
UFS32-21 – 21 bar
UFS32-32 – 32 bar

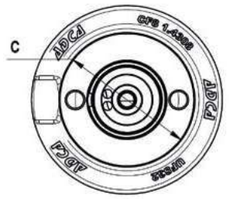
BODY LIMITING CONDITIONS *	
CLASS 300	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
47,8 bar	-10 / 50 ºC
40,9 bar	100 ºC
34,4 bar	200 ºC
30,6 bar	300 ºC
28,6 bar	400 ºC

PMO – Maximum operating pressure: 32 bar;
TMO – Maximum operating temperature: 245 ºC.
* According to EN 1759-1:2004.
Remark: the pipeline connector may restrict the operating conditions to a lower rating.

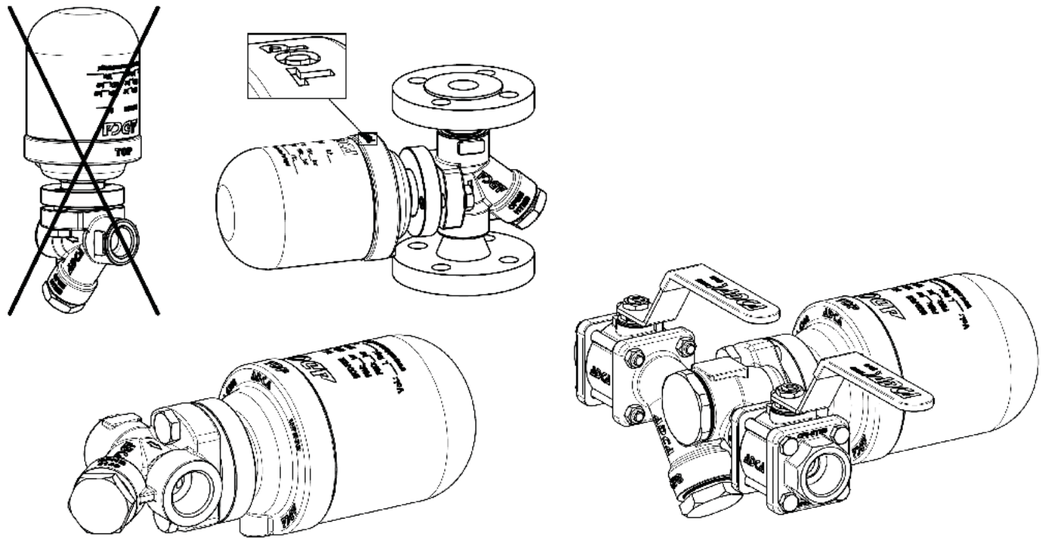
FLOW RATE CAPACITY (kg/h)																
MODEL	**DIFFERENTIAL PRESSURE (bar)**															
	0,5	**1**	**1,5**	**2**	**3**	**4,5**	**6**	**7**	**8**	**9**	**10**	**12**	**14**	**16**	**21**	**32**
UFS32 – 4,5	230	330	400	440	535	630	–	–	–	–	–	–	–	–	–	–
UFS32 – 10	150	200	250	280	340	400	460	495	520	550	595	–	–	–	–	–
UFS32 – 14	120	150	190	220	260	320	380	400	425	440	480	510	550	–	–	–
UFS32 – 21	60	80	90	115	135	160	190	200	220	230	240	260	270	290	300	–
UFS32 – 32	36	50	62	75	90	105	120	140	150	155	160	170	190	200	230	280

We reserve the right to change the design and material of this product without notice.





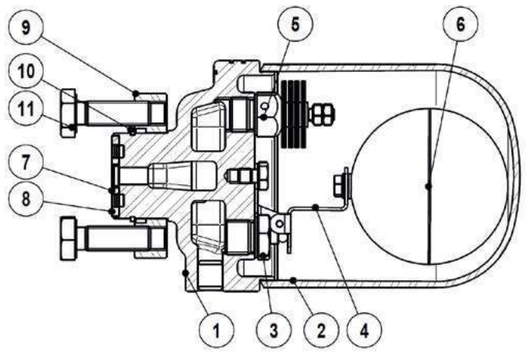
DIMENSIONS (mm)					
MODEL	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
UFS32	164	35	67	94	2,1



UFS steam trap connected to a UCX universal pipeline connector

UFS steam trap connected to a CTS4U compact station

MATERIALS		
POS. Nº	**DESCRIPTION**	**MATERIAL**
1	Body	A351 CF8 / 1.4308
2	Cover	AISI 304 / 1.4301
3	Valve seat	AISI 410 / 1.4006
4	Valve	AISI 440C / 1.4125
5	Air vent	Bimetallic
6	Float	AISI 301 / 1.4301
7	* Inlet gasket	Stainless steel / Graphite
8	* Outlet gasket	Stainless steel / Graphite
9	Flange	AISI 316 / 1.4401
10	Retainer ring	Steel
11	Bolts	ASTM A193 Gr. B7



* Available spare parts.

UniADCA

THERMODYNAMIC STEAM TRAP
UDT46
(For use with universal pipeline connectors)

DESCRIPTION

The UDT46 series thermodynamic steam traps, completely in stainless steel, are excellent for high pressure systems, including steam tracing applications.
The insulation cover ensures a consistent operation and makes them particularly suitable for applications where the weather conditions, such as rain and wind, may affect the normal operation.
These traps have only one moving part and offer a wide operating range, without adjustment.
These traps fit the UCX universal connectors and CTS4U compact stations.

MAIN FEATURES

Intermittent discharge.
Standard insulation cover.
Operates on superheated steam.
Replaceable seat and disc.
Unaffected by water hammer and vibrations.

USE: Saturated and superheated steam.

AVAILABLE MODELS: UDT46 – stainless steel.

SIZES: According to the selected pipeline connector.

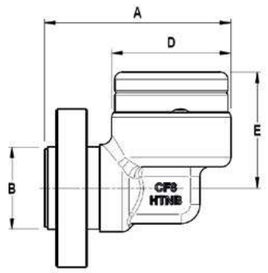
INSTALLATION: With the insullation cover pointing upwards. See IMI – Installation and maintenance instructions.

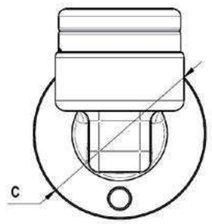
BODY LIMITING CONDITIONS *	
CLASS 300	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
47,8 bar	-10 / 50 ºC
40,9 bar	100 ºC
34,4 bar	200 ºC
30,6 bar	300 ºC
28,6 bar	400 ºC

PMO – Maximum operating pressure: 32 bar;
TMO – Maximum operating temperature: 245 ºC.
* According to EN 1759-1:2004.
Remark: the pipeline connector may restrict the operating conditions to a lower rating.

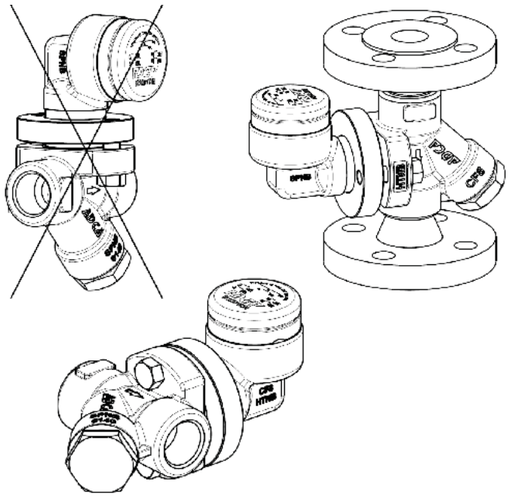
FLOW RATE CAPACITY (kg/h)												
MODEL	**DIFFERENTIAL PRESSURE (bar)**											
	1,5	**3**	**5**	**7**	**9**	**12**	**15**	**18**	**21**	**24**	**30**	**32**
UDT46 (Hot)	70	100	130	175	190	200	225	240	250	270	290	300
UDT46 (Cold)	170	230	300	335	390	435	485	520	575	600	645	695

Minimum working pressure: 1,5 bar; Maximum working backpressure: 80%.

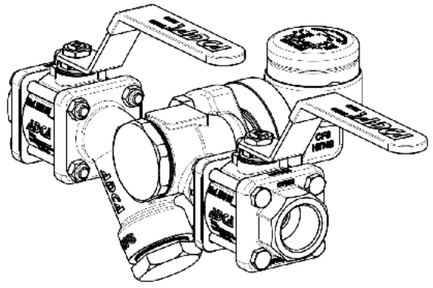




DIMENSIONS (mm)						
MODEL	A	B	C	D	E	WEIGHT (kg)
UDT46	78	35	67	50	49	1,1

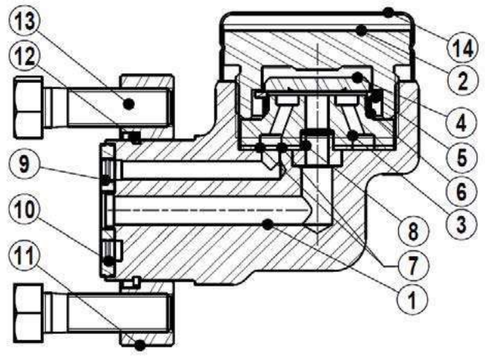


UDT46 steam trap connected to a UCX universal pipeline connector



UDT46 steam trap connected to a CTS4U compact station

MATERIALS		
POS. Nº	DESCRIPTION	MATERIAL
1	Body	A351 CF8 / 1.4308
2	Cover	AISI 304 / 1.4301 AISI 303 / 1.4305
3	Valve seat	Hardened stainless steel
4	Valve disc	Hardened stainless steel
5	Washer support	AISI 304 / 1.4301
6	Bimetallic ring	Bimetal
7	* Gasket	Stainless steel / Graphite
8	* Tube	AISI 304 / 1.4301
9	* Inlet gasket	Stainless steel / Graphite
10	* Outlet gasket	Stainless steel / Graphite
11	Flange	AISI 316 / 1.4401
12	Retainer ring	Steel
13	Bolts	ASTM A193 Gr. B7
14	Insulation cover	AISI 304 / 1.4301



* Available spare parts.

LRQA CERTIFIED ISO 9001

UniADCA

UNIVERSAL PIPELINE CONNECTORS UCX90

DESCRIPTION

The UCX series pipeline connectors are used in steam systems where a simple and economic maintenance program is desired.
Typical installations are drip service on steam lines, tracing applications and small process equipment.
The four-bolt flange connector allows for fast trap replacement without disturbing the pipelines.
The UCX connector fits the universal four-bolt swivel connection steam traps.

MAIN FEATURES

Remains permanently in-line making the replacement of new traps easier and quicker.
Steam traps can swivel 360º, allowing any pipe orientation during installation.
The universal flange allows the trap to be positioned in the correct position, regardless of pipeline configuration.
Built-in strainer.

OPTIONS: Blowdown valve.

USE: Saturated and superheated steam.

AVAILABLE MODELS: UCX90 – stainless steel.

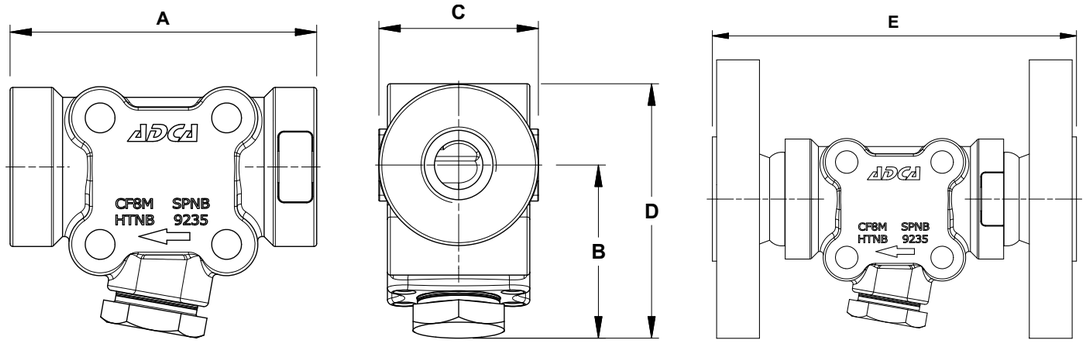
SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 100.
Flanged ASME B16.5 Class 600.
Socket weld (SW) ASME B16.11.

INSTALLATION: With the surface for swivel connection in a vertical plane (mechanical steam traps) or, alternatively, in an horizontal plane for thermostatic steam traps.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS		
FLANGED PN 100 * ALLOWABLE PRESSURE	FLANGED CLASS 600 ** ALLOWABLE PRESSURE	RELATED TEMP.
100 bar	100 bar	50 ºC
100 bar	92,7 bar	250 ºC
97,6 bar	80,4 bar	350 ºC
88 bar	67,7 bar	450 ºC

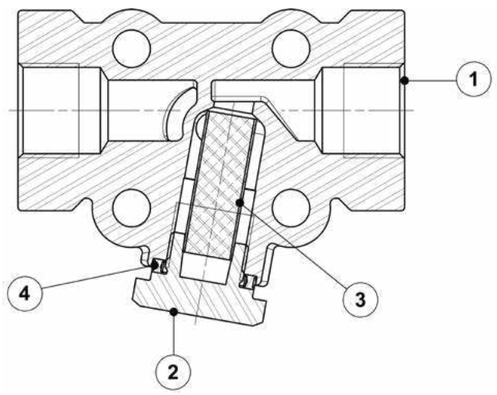
Operating pressure: 4 to 85 bar.
* Acc. to EN 1092-1:2018. ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 100 or below, depending on the type of connection adopted. Rating PN 100 for threaded and SW versions.



DIMENSIONS (mm)									
THREADED / SW						PN 100		CLASS 600	
SIZE	A	B	C	D	WEIGHT (kg)	E	WEIGHT (kg)	E	WEIGHT (kg)
1/2" – DN 15	108	60	56	88	2,1	165	4,4	185	3,8
3/4" – DN 20	108	60	68	88	2,1	170	6	200	4,9
1" – DN 25	108	60	68	88	2	185	7,1	200	5,5

MATERIALS		
POS. Nº	DESCRIPTION	MATERIAL
1	Body	A351 CF8M / 1.4408
2	Strainer cap	AISI 321 / 1.4541
3	* Strainer screen	AISI 304 / 1.4301
4	* Spiral wound gasket	Stainless steel / Graphite

* Available spare parts.



UNIVERSAL BIMETALLIC STEAM TRAPS
UBS90
(For use with four-bolt universal pipeline connectors)

DESCRIPTION

The UBS90 series bimetallic steam traps and air eliminators, completely in stainless steel, are maintenance free and sealed traps. Simple and robust, they are recommended for drip service, steam tracing applications and where condensate sensible heat can be recovered.
These traps fit the UCX90 four bolt universal connectors.

MAIN FEATURES

Sealed, non-maintainable.
Modulating discharge.
Discharges condensate below steam temperature.
Excellent air discharge.
Operates on superheated steam.
Unaffected by water hammer and vibrations.

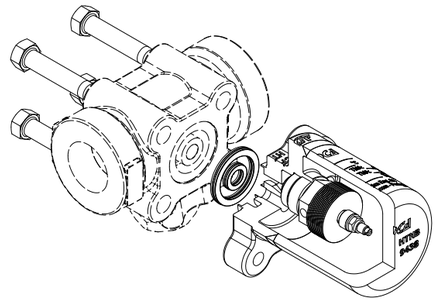
OPTIONS: Different operating limits.

USE: Saturated and superheated steam.

AVAILABLE MODELS: UBS90/4 and UBS90/6 – stainless steel.

SIZES: According to the selected pipeline connector.

INSTALLATION: With the bimetal column in a horizontal plane or pointing upwards.
See IMI – Installation and maintenance instructions.

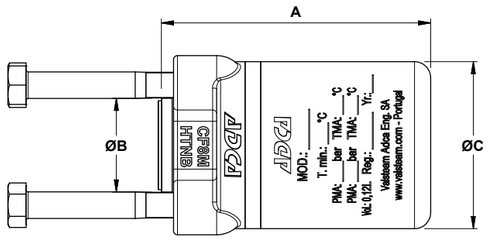


LIMITING CONDITIONS		
MODEL	MAX. OPERATING PRESSURE	RELATED TEMPERATURE
UBS90/4	45 bar	482 ºC
UBS90/6	62 bar	482 ºC

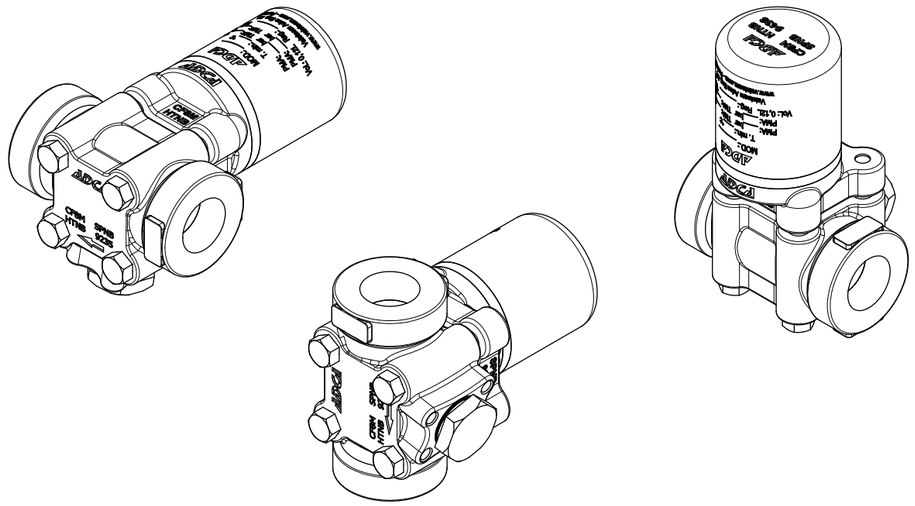
Operating pressure ranges:
UBS90/4 – 15 to 45 bar.
UBS90/6 – 25 to 62 bar.

FLOW RATE CAPACITY (kg/h)													
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		15	17	20	22	25	30	35	40	45	50	55	62
UBS90/4	1/2" to 1" A	400	430	460	480	500	550	570	580	590	–	–	–
UBS90/4	1/2" to 1" B	2400	2600	2760	2800	3000	3200	3600	4000	4200	–	–	–
UBS90/6	1/2" to 1" A	400	430	460	480	500	550	570	580	590	600	610	620
UBS90/6	1/2" to 1" B	2400	2600	2760	2800	3000	3200	3600	4000	4200	4700	5000	5400

A: Condensate discharge at 10 ºC below saturation temperature; **B:** Cold water capacity around 20 ºC.



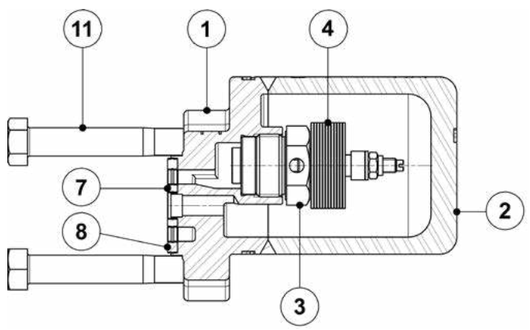
DIMENSIONS (mm)				
MODEL	A	B	C	WEIGHT (kg)
UBS90	100	35	62	1,7



UBS steam trap connected to a UCX universal pipeline connector

MATERIALS		
POS. Nº	DESCRIPTION	MATERIAL
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316 / 1.4401
3	Valve seat	AISI 304 / 1.4301
4	Discs	Bimetal
6	Gasket	Copper
7	* Inlet gasket	Stainless steel / Graphite
8	* Outlet gasket	Stainless steel / Graphite
9	Flange	AISI 316 / 1.4401
10	Retainer ring	Steel
11	Bolts	A193 Gr. B7

* Available spare parts.



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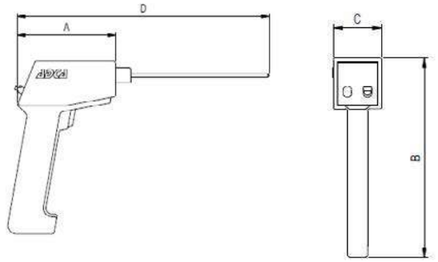
ULTRASONIC TRAP TESTER
UTT – 100

The UTT – Ultrasonic Trap Tester is a battery powered instrument that gives visible and audible indication of ultrasonic frequencies. It provides easy, accurate leak detection and mechanical inspection through advanced ultrasonic technology.
Before you begin testing, it is advisable to familiarize yourself with the basic components of your kit.

The UTT-100 consists of 3 main components:
1 – Pistol housing
2 – Contact (Stethoscope) module
3 – Headset



DIMENSIONS (mm)				
A	B	C	ØD	WGT. (kg)
114	200	48	292	1

SPECIFICATIONS	
Construction	Hand held ABS pistol type ultrasonic processor, stainless steel sensor enclosures
Circuitry	SMD/Solid State hybrid heterodyne receiver
Frequency Range	35 to 45 kHz
Indicator	10 segment LED bargraph (red)
Sensitivity Selection	8 position precision attenuation
Power	9 Volt Alkaline Battery
Low Battery Voltage Indicator	LED
Headset	Noise isolating type: double headset wired monophonic impedance; 16 ohms. Over 23 dB noise attenuation. Meets or exceeds ANSI specification and OSHA standards.
Transmitter	Patented warble tone transmission
Response Time	300 m. sec.
Ambient Operating Temperature Range	0° to 50°C
Relative Humidity	10 - 95% non condensing at up to 30°C
Storage Temperature	-18° to 54°C
Stethoscope (contact) module	Stainless steel plugin type with 140 mm stainless steel wave guide
Carrying case	Nylon cordura soft carrying case with die cut foam
Warranty	One year, parts/labour, excluding abuse (details available on request)

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Pressure Regulators

2 - Pressure regulators

Pressure reducing valves .....
Pressure sustaining valves .....
Pressure regulators' options .....

PRESSURE REDUCING VALVE
DIRECT ACTING
PRV25

DESCRIPTION

The ADCA PRV25 series of direct acting pressure reducing valves, are designed for use on steam, compressed air, water and other gases and liquids.
They are suitable for reducing steam pressure at the point of use on laundry machines, dyeing, food industries, sterilizers, etc.

MAIN FEATURES

Compact design.
Bellows specially designed for high durability.
Non-rising adjustment knob.
Lockable knob system.
Built-in strainer.

OPTIONS: Rising adjustment knob with lock nut.
Top cap (adjustment screw with cover).
Spring and dome load version.
Gauge connection on body.

USE: Saturated steam, compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS:
PRV25/2S – carbon steel construction, metal to metal sealing.
PRV25/2SG – carbon steel construction, soft sealing.
PRW25/2S – carbon steel construction, balanced soft sealing.
PRV25I – stainless steel construction, metal to metal sealing.
PRV25IG – stainless steel construction, soft sealing.
PRW25I – stainless steel construction, balanced soft sealing.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 25.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
A “Y” strainer should be installed upstream of the valve.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
DN 15 to 25	SEP

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LIMITING CONDITIONS			
Valve model	**PRV25/2S PRV25I**	**PRV25/2SG PRV25IG**	**PRW25/2S PRW25I**
Body design conditions	PN 25	PN 25	PN 25
Maximum upstream pressure	17 bar	17 bar	14 bar
Maximum downstream pressure	8,6 bar	8,6 bar	8,6 bar
Minimum downstream pressure	0,14 bar	0,14 bar	0,35 bar
Maximum design temperature	210 ºC	180 ºC	75 ºC
Maximum recommended reducing ratio	10:1	10:1	10:1
Maximum dome loading pressure	8,6 bar	8,6 bar	8,6 bar

FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/2" – DN 15**	**3/4" – DN 20**	**1" – DN 25**
Kvs	1,7	2,6	3,1

REGULATING RANGES				
SPRING COLOUR	**BLUE ***	**YELLOW ****	**GREEN**	**RED**
Spring loaded	0,35 – 1,7 bar	0,14 – 1,7 bar	1,4 – 4,0 bar	3,5 – 8,6 bar
Spring and dome loaded ***	0,35 – 1,7 bar	0,14 – 1,7 bar	1,4 – 4,0 bar	–

* Only applicable on the PRW models; ** Only applicable on the PRV models.
*** Ranges shown are related to adjustment spring loading forces. Total downstream pressure will correspond to the sum of the pressure resulting from the adjusted spring force and the loading pressure provided by the dome.

PRV25 OPTIONAL COVERS		
RISING ADJUSTMENT KNOB WITH LOCK NUT	**TOP CAP**	**SPRING AND DOME LOADED**

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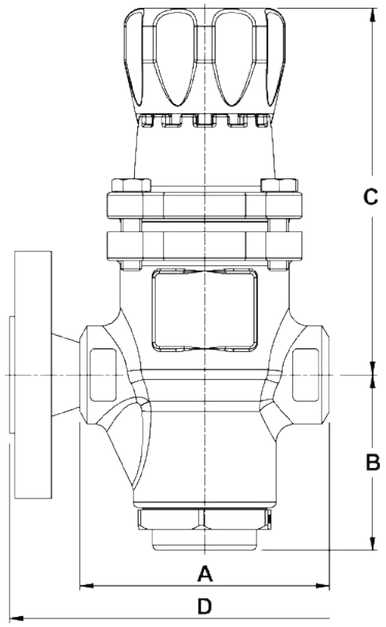
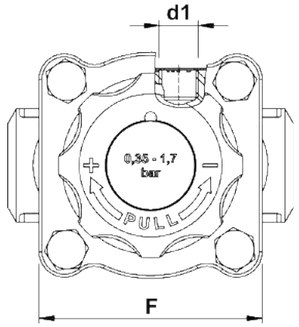
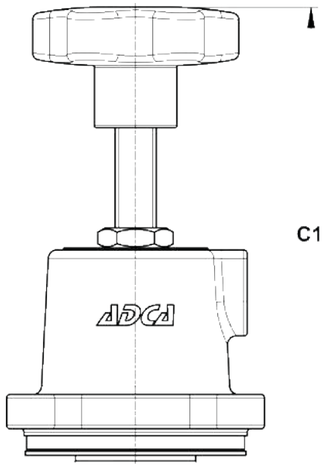
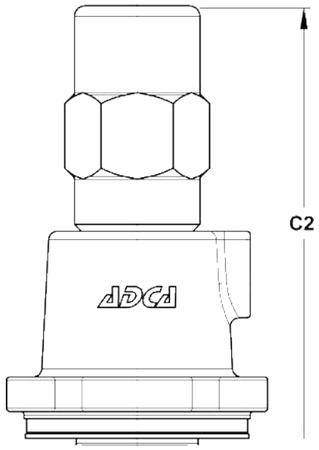


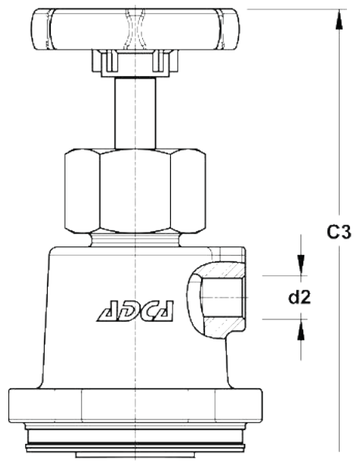




Rising adjustment knob (optional)



Top cap (optional)

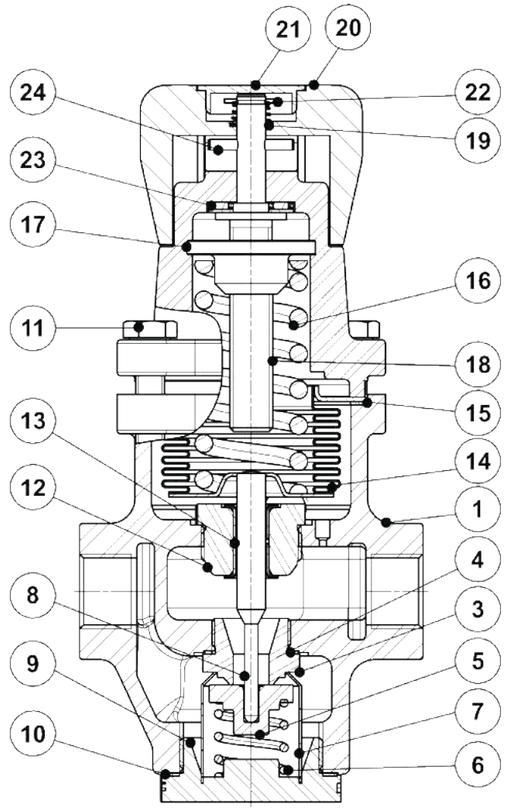


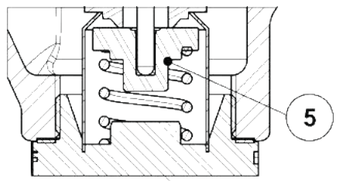
Spring and dome loaded (optional)

DIMENSIONS (mm)																
THREADED											PN 25		CLASS 150		CLASS 300	
SIZE	A	B	C	C1	C2	C3	d1 *	d2 **	F	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)
1/2" – DN 15	96	68,5	141	242	237	243	1/4"	1/4"	74	3	150	4,4	150	4	150	4,4
3/4" – DN 20	96	68,5	141	242	237	243	1/4"	1/4"	74	3	150	5	150	4,4	150	5,3
1" – DN 25	96	68,5	141	242	237	243	1/4"	1/4"	74	2,9	160	5,5	160	5,1	160	5,9

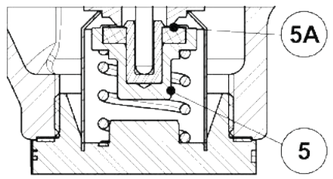
* Optional gauge connection; ** Loading gas dome connection.
Remarks: As standard, in versions manufactured with EN 1092-1 PN 16 flanges or ISO Rp threads, connections d1 and d2 are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, these connections are female threaded NPT.

LRQA CERTIFIED ISO 9001

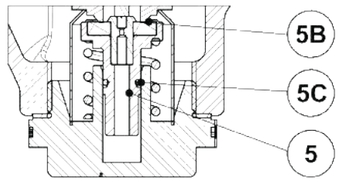




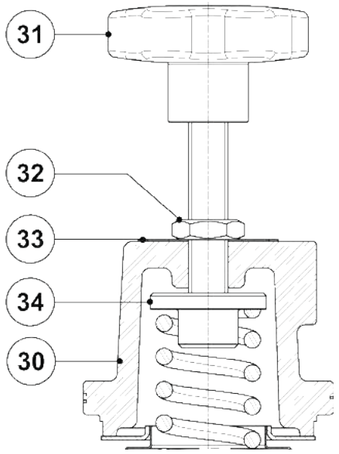
Metal to metal sealing



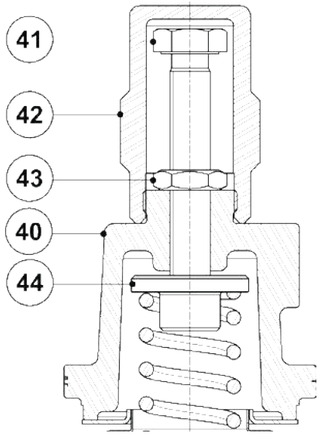
Soft sealing



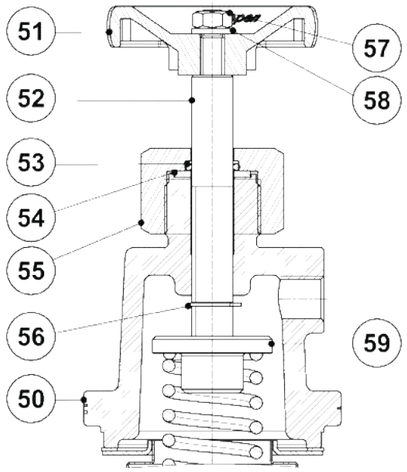
Balanced soft sealing



Rising adjustment knob (optional)



Top cap (optional)



Spring and dome loaded (optional)

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MATERIALS			
POS. Nº	**DESIGNATION**	**PRV25/2S**	**PRV25I**
1	Body	A216 WCB / 1.0619	A351 CF8M / 1.4408
2	Cover	A216 WCB / 1.0619	A351 CF8M / 1.4408
3	* Seat	AISI 316 / 1.4401	AISI 316 / 1.4401
4	* Gasket	Copper	Copper
5	* Valve	Hardened stainless steel	Hardened stainless steel
5A	* Valve head	PTFE / Graphite	PTFE / Graphite
5B	* Valve head	NBR	NBR
5C	* O-ring	NBR	NBR
6	* Valve return spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	* Strainer screen	AISI 304 / 1.4301	AISI 304 / 1.4301
8	Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
9	Bottom cap	A351 CF8M / 1.4408	A351 CF8M / 1.4408
10	* Cap gasket	Stainless steel / Graphite	Stainless steel / Graphite
11	Cover bolts	Steel 8.8	Stainless steel A2-70
12	* Guide bush	AISI 316 / 1.4401	AISI 316 / 1.4401
13	* Plain bearing	Bronze filled PTFE	Bronze filled PTFE
14	* Bellows	AISI 316 Ti / 1.4571	AISI 316 Ti / 1.4571
15	* Bellows gasket	Stainless steel / Graphite	Stainless steel / Graphite
16	* Adjustment spring	Steel	Steel
17	Top spring plate	Brass	Brass
18	Adjustment screw	AISI 304 / 1.4301	AISI 304 / 1.4301
19	Spring	AISI 302 / 1.4300	AISI 302 / 1.4300
20	Adjustment knob	Nylon	Nylon
21	Spring identification plate	Plastic	Plastic
22	Retaining washer	AISI 302 / 1.4300	AISI 302 / 1.4300
23	Bearing	Steel	Steel
24	Pin	AISI 304 / 1.4301	AISI 304 / 1.4301
30	Cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
31	Adjustment knob	Plastic	Plastic
32	Nut	Stainless steel A2-70	Stainless steel A2-70
33	Spring identification plate	Aluminium	Aluminium
34	Top spring plate	Brass	Brass
40	Cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
41	Adjustment screw	Stainless steel A2-70	Stainless steel A2-70
42	Top cap	AISI 303 / 1.4305	AISI 303 / 1.4305
43	Nut	Stainless steel A2-70	Stainless steel A2
44	Top spring plate	Brass	Brass
50	Cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
51	Adjustment knob	Plastic	Plastic
52	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
53	* O-ring	EPDM	EPDM
54	* Gasket	PTFE	PTFE
55	Tightening nut	AISI 303 / 1.4305	AISI 303 / 1.4305
56	Retaining ring	Stainless steel A2-70	Stainless steel A2-70
57	Washer	Stainless steel A2-70	Stainless steel A2-70
58	Nut	Stainless steel A2-70	Stainless steel A2-70
59	Top spring plate	Brass	Brass

* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

STEAM CAPACITY TABLE (kg/h)				
INLET (bar)	**OUTLET (bar)**	**SATURATED STEAM**		
		DN 15	**DN 20**	**DN 25**
2	**0,2 – 1**	75	110	132
	1,8	68	102	125
3	**0,3 – 1,5**	104	148	177
	2	97	141	170
	2,6	90	134	162
4	**0,4 – 2**	125	180	210
	2,5	118	171	201
	3,6	107	158	190
5	**0,5 – 2,5**	137	192	230
	3	134	189	222
	4,5	128	183	213
6	**0,6 – 3**	166	221	266
	4	154	212	256
	5,5	138	200	242
7	**0,7 – 3,5**	175	250	300
	4,5	168	242	290
	5,5	157	228	270
	6,3	148	216	253
8	**0,8 – 4**	222	300	357
	5	208	290	350
	6	189	271	330
	7,2	170	240	286
9	**0,9 – 4,5**	230	321	382
	6	209	300	363
	7	192	271	324
	8	172	241	285
10	**1 – 5**	238	341	408
	6	230	330	397
	7	215	307	363
	8,6	177	260	312
11	**1,1 – 5,5**	250	358	427
	6	244	348	415
	7	237	337	402
	8,6	206	296	356
12	**1,2 – 6**	265	375	449
	7	260	370	444
	8	246	350	421
	8,6	236	333	400
13	**1,3 – 6,5**	281	398	476
	7	279	391	470
	8	266	381	459
	8,6	257	367	440
15	**1,5 – 7,5**	300	424	508
	8,6	285	408	488
17	**1,7 – 8,6**	321	453	543

COMPRESSED AIR CAPACITY TABLE (Nm^3/h – 0 ºC – 1,013 bar)				
INLET (bar)	**OUTLET (bar)**	**COMPRESSED AIR**		
		DN 15	**DN 20**	**DN 25**
2	**0,2 – 1**	120	126	147
	1,8	109	112	135
3	**0,3 – 1,5**	157	169	195
	2	150	162	187
	2,6	142	153	178
4	**0,4 – 2**	196	203	243
	2,5	188	196	235
	3,6	170	181	219
5	**0,5 – 2,5**	208	222	253
	3	202	211	242
	4,5	197	203	235
6	**0,6 – 3**	240	251	298
	4	232	244	286
	5,5	225	230	266
7	**0,7 – 3,5**	269	282	337
	4,5	260	270	321
	5,5	245	255	300
	6,3	233	244	284
8	**0,8 – 4**	323	339	396
	5	315	330	383
	6	290	306	361
	7,2	258	270	318
9	**0,9 – 4,5**	347	363	424
	6	322	340	400
	7	293	309	364
	8	264	279	328
10	**1 – 5**	372	388	453
	6	354	375	438
	7	328	348	410
	8,6	280	296	348
11	**1,1 – 5,5**	387	404	474
	6	375	394	463
	7	362	383	451
	8,6	319	338	398
12	**1,2 – 6**	404	423	500
	7	398	418	492
	8	375	400	469
	8,6	358	380	448
13	**1,3 – 6,5**	428	447	530
	7	420	440	522
	8	411	431	510
	8,6	395	416	494
15	**1,5 – 7,5**	455	477	565
	8,6	439	463	546
17	**1,7 – 8,6**	486	510	604

WATER CAPACITY TABLE (m^3/h)			
D.P (bar)	**WATER**		
	DN 15	**DN 20**	**DN 25**
1,5	2,10	3,21	3,83
2	2,43	3,70	4,42
3	2,95	4,54	5,41
4	3,43	5,24	6,25
5	3,78	5,78	6,90
6	4,16	6,25	7,45
7	4,37	6,68	7,96
8	4,63	7,08	8,45
9	4,88	7,47	8,90
10	5,12	7,83	9,34
12	5,56	8,51	10,15

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IS PR25.10 E 01.20

PILOT OPERATED PRESSURE REDUCING VALVES
PRV47 and PRS47

DESCRIPTION

The ADCA PRV47 pilot operated pressure reducing valves are designed for use with steam, compressed air, nitrogen and other gases compatible with the construction materials.
The PRV47 can be installed in pressure reducing stations throughout all industries, and provide sensitive and accurate control even when inlet pressure fluctuations or relevant flow variations occur.

MAIN FEATURES

Precise control of downstream pressures from 0,07 bar to 17 bar.
Robust steel or stainless steel construction.
Suitable for dead end conditions.
Guided piston and valve stem.
Hardened plug.

OPTIONS: Soft sealing.
Low pressure top.
Dome loaded version.
Bottom cover drain connection.
Stellited plug and seat.
Internal sensing line.

USE: Saturated steam, compressed air and other gases (Group 2) compatible with the construction (except oxygen).

AVAILABLE MODELS: PRV47, PRV47E – steel versions for steam.
PRV47I, PRV47IE – stainless steel versions for steam (only available from DN 15 to DN 50).
PRV47G, PRV47GE – steel versions for compressed air and gases.
PRV47GI, PRV47GIE – stainless steel versions for compressed air and gases.
Suffix “E”: Version with solenoid valve for remote closure.
PRS: All models above are available with an extra sustaining valve pilot, e.g. PRS47G (see Fig. 8).

SIZES: 1/2” to 2” ; DN 15 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1/2” to 2”	DN 15 to 32 – 1/2” to 11/4”	SEP
–	DN 40 to 50 – 11/2” to 2”	1 (CE marked)

BODY LIMITING CONDITIONS					
PRV47		**PRV47i**			**RELATED TEMPERATURE**
CLASS 150 *	**PN 40 / CLASS 300 ****	**CLASS 150 ***	**PN 40**	**CLASS 300 ****	
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
19,3 bar	40 bar	15,3 bar	40 bar	39,9 bar	- 10 / 50 ºC
17,7 bar	37,1 bar	11,1 bar	37,9 bar	28,8 bar	100 ºC
12,5 bar	31 bar	10,4 bar	30,3 bar	27,1 bar	239 ºC
10,2 bar	28 bar	9,7 bar	27,6 bar	25,2 bar	300 ºC

Minimum working temperature: -10 ºC; * Rating according to EN 1759-1:2004; ** Rating according to EN 1092-1:2018.

LIMITING CONDITIONS			
Valve model	**PRV47**	**PRS47**	**PRV47E PRS47E**
Body design conditions	PN 40	PN 40	PN 40
Maximum upstream pressure (steam)	28 bar	17 bar	10 bar
Maximum upstream pressure	31 bar	17 bar	10 bar
Maximum downstream pressure	17 bar	17 bar	10 bar
Minimum downstream pressure *	0,35	0,35	0,35
Maximum operating temperature	250 ºC	250 ºC	180 ºC
Maximum reducing ratio	See capacity tables		
Rangeability	10:1	10:1	10:1
Maximum hydraulic factory valve body test	60 bar	60 bar	60 bar

* 0,07 bar with low pressure top (limited to 7 bar maximum inlet pressure).
Remark: Pressure and temperature limiting conditions may change if “G” version for compressed air and gases is chosen or soft sealing/piston rings are used.

REGULATING RANGES				
SPRING COLOUR	**GREEN w/ 1 diaphragm**	**BLUE w/ 1 diaphragm**	**RED w/ 2 diaphragms**	**BLACK w/ 2 diaphragms**
Regulating range	0,07 to 0,5 bar * 0,35 to 2 bar	1,5 to 5,5 bar	3,5 to 8,5 bar	7 to 17 bar

* With low pressure top.

DIMENSIONS

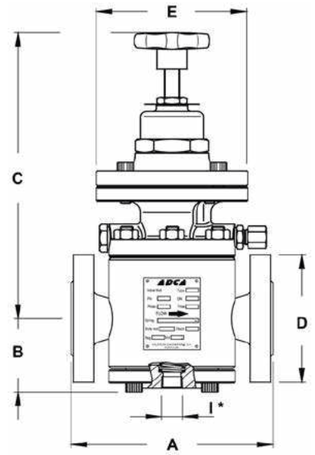

Fig. 1 - Valve with standard diaphragm

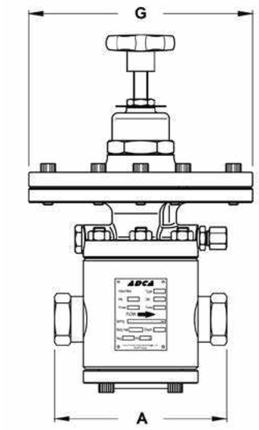

Fig. 2 - Valve with low pressure top

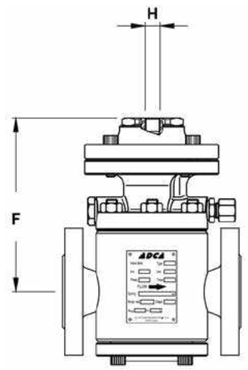

Fig. 3 - Dome loaded valve

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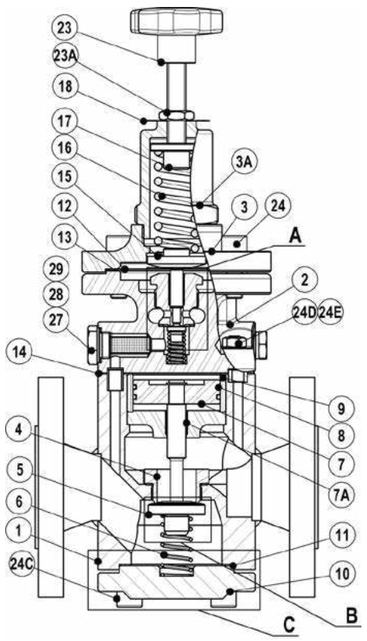
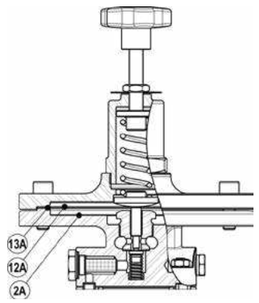
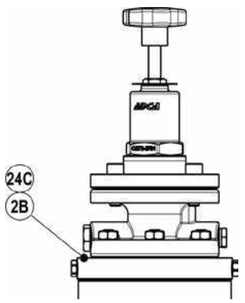
DIMENSIONS (mm)													
SIZE	A				B	C	D	E	F	G	H	I *	WEIGHT (kg)
	PN 40	CLASS 150	CLASS 300	THREADED									
DN 15 – 1/2”	150	184	190	140	56	275	95	120	162	195	1/4"	3/8”	13
DN 20 – 3/4”	150	184	194	140	56	287	105	120	174	195	1/4"	3/8”	13,5
DN 25 – 1”	160	184	197	150	56	287	115	120	174	195	1/4"	3/8”	14
DN 32 – 11/4”	180	-	-	170	68	299	140	120	186	195	1/4"	3/8”	18
DN 40 – 11/2”	200	222	235	190	75	307	150	130	194	195	1/4"	3/8”	22
DN 50 – 2”	230	254	267	230	84	323	165	160	210	195	1/4"	3/8”	31

* Optional drain connection for steam trapping. This drain connection does not replace the humidity separator, but can be useful if, e.g., the valve stops operating for long periods of time (see Fig.6).
Remarks: As standard, connections H and I, in valves manufactured with ASME B16.5 flanges, SW or NPT threads, are female threaded NPT. In valves manufactured with EN 1092-1 flanges or ISO 7 Rp threads, these connections are also female threaded ISO 7 Rp.

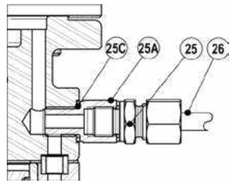




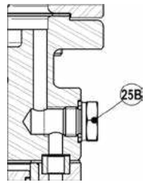
Low pressure top



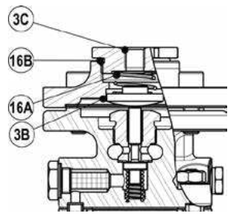
Adapting flange (DN50)



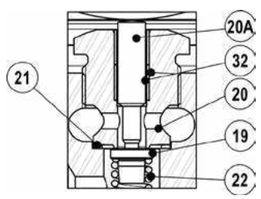
Standard version (External sensing)



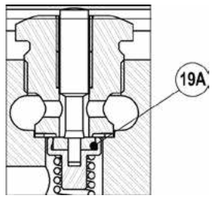
Optional version (Internal sensing)



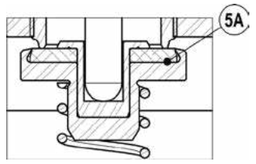
Dome loaded top



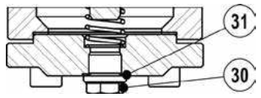
Detail A
Pilot valve



Detail A
Pilot valve (soft)



Detail B
Main valve (soft)



Detail C
Optional version with plug

MATERIALS			
POS. Nº	DESIGNATION	PRV47	PRV47I
1	Valve body	S355JR / 1.0045; P250GH / 1.0460	AISI 316 / 1.4401
2	Pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2A	Low pressure pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2B	Adapting flange	C45E / 1.1191	AISI 316 / 1.4401
3	Top cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3A	Spring cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3B	Top cover	C45E / 1.1191	AISI 316 / 1.4401
3C	Cover nut	C45E / 1.1191	AISI 316 / 1.4401
4	* Main valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
5	* Main valve plug	Hardened st. steel	Hardened st. steel
5A	* Main valve plug (soft)	AISI 316 w/ PTFE/GR; Rulon	AISI 316 w/ PTFE/GR; Rulon
6	* Main valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	* Piston	Bronze B62 / ASTMB148.97	Bronze B62 / ASTMB148.97
7A	Piston guide	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* Piston rings	Bronze / FKM / EPDM / NBR	Bronze / FKM / EPDM / NBR
9	Piston liner	AISI 304 / 1.4301	AISI 304 / 1.4301
10	Bottom cover	S355JR / 1.0045	AISI 316 / 1.4401
11	* Bottom cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
12	* Diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
12A	* Low pressure diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
13	* Diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
13A	* Low press. diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	* Pilot valve gasket	Stainless steel / Graphite	Stainless steel / Graphite
15	Lower spring carrier	Brass	Brass
16	* Adjustment spring	Steel	Steel
16A	Diaphragm spring	Stainless steel	Stainless steel
16B	O-ring	Viton	Viton
17	Top spring carrier	Brass	Brass
18	Spring ID plate	Aluminium	Aluminium
19	* Pilot valve plug	AISI 316 / 1.4401	AISI 316 / 1.4401
19A	* Pilot valve plug (soft)	PTFE/GR; Rulon, etc.	PTFE/GR; Rulon, etc.
20	* Pilot valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
20A	Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
21	* Pilot valve gasket	Copper	Copper / PTFE
22	* Pilot valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
23	Handwheel	Plastic / Stainless steel	Plastic / Stainless steel
23A	Locknut	AISI 304 / 1.4301	AISI 304 / 1.4301
24	Bolts	Steel 10.9	Stainless steel A2
24C	Bolts	Steel 10.9	Stainless steel A2
24D	Studs	34CrNiMo / 1.6582	AISI 316 / 1.4401
24E	Nuts	Steel 8.8	Stainless steel A2-70
25	Compression fitting	Plated carbon steel	Stainless steel
25A	Adapter	AISI 304 / 1.4301	AISI 304 / 1.4301
25B	Plug	AISI 304 / 1.4301	AISI 304 / 1.4301
25C	Gasket	Copper	Copper
26	Sensing pipe	Copper	Stainless steel
27	* Pilot valve strainer	AISI 304 / 1.4301	AISI 304 / 1.4301
28	Strainer nut	AISI 304 / 1.4301	AISI 304 / 1.4301
29	Gasket	Copper	Copper
30	Plug	AISI 316 / 1.4401	AISI 316 / 1.4401
31	Gasket	Copper	Copper
32	Plain bearing	Bronze / steel	Bronze / steel

* Available spare parts.

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MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
100	Sensing pipe	Copper or stainless steel
101	Compressed air supply	Copper or stainless steel
102	P10 air filter regulator	Polycarbonate
103	Solenoid valve	Brass or stainless steel
104	ADCA IS100 filter	AISI 316 / 1.4401
105	ADCA PS7 pressure sustaining valve	Carbon steel or stainless steel
106	Drain connection	Copper or stainless steel

PRV47 standard – for steam, compressed air and other gases (Fig. 4)

The high pressure upstream gas enters the main valve and the pilot valve. Compression of the regulating spring over the diaphragm causes the pilot valve to open, admitting regulated pressure to the piston chamber. The force exerted by the regulated pressure on top of the piston pushes it down which, in turn, opens the main valve. The downstream pressure is then transmitted through the sensing line, acting below the diaphragm.
Any downstream pressure increase deflects the diaphragm, and the pilot valve closes, thus shutting off regulated gas to the piston which, in turn, closes the main valve. When the desired downstream pressure is achieved, the valve opens again, repeating the process.

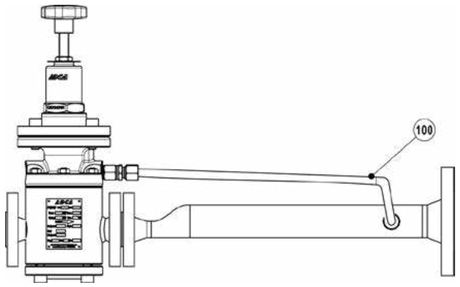

Fig. 4

The external sensing pipe (100) must always be connected unless the valve is supplied with internal sensing line. It should be fitted in the downstream pipe at a distance of, at least, 1 meter or 15 pipe diameters, whichever is greater, from the valve and other fittings. A spool piece can be supplied to house the sensing pipe.

Warning: Internal sensing is not recommended when:
- The reduced pressure is below 50% of the inlet pressure (mandatory for pressure reductions greater than 10:1);
- Instability of reduced pressure occurs;
- When a low pressure top assembly is fitted;
- In systems with difficult outlet pipe work conditions.

PRV47 dome loaded (Fig. 5)

The loading force is exerted on the pilot valve diaphragm by an external gas signal rather than by the regulating spring. This feature allows remote adjusting of the downstream set point pressure using a relieving gas pressure regulator or an I/P converter. Allows faster response to pressure changes and maintains outlet pressure more accurately under flowing conditions, when compared to the standard spring loaded version, minimizing droop.
The loading control pressure is approximately the same as the required outlet pressure (± 0,2 bar)

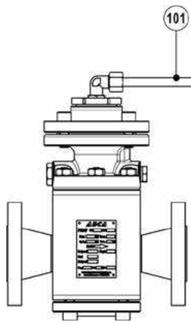

Fig. 5

PRV47 with drain connection (Fig. 6)

The optional drain connection is specially recommended for steam aplications where it is not possible to install a humidity separator close to the valve, when the valve is under no-flow static condition during large periods of time or for system cleaning during start up.

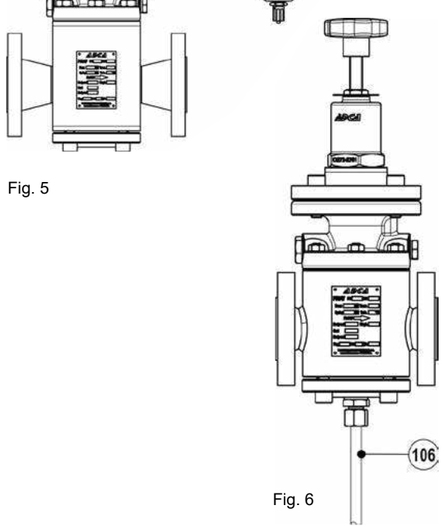

Fig. 6

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PRV47E with solenoid valve for remote closure (Fig. 7)

The PRV47E operates like the standard valve, but it allows remote closure, by means of a switch or timer. When the solenoid valve closes, the pressure signal to the pilot valve is interrupted, causing the main valve to close.

TECHNICAL DATA (SOLENOID VALVE)	
Body material	Brass or stainless steel
Maximum operating pressure	10 bar
Maximum operating temperature	180 ºC
Level of protection	IP 65
Rated voltage	230 V AC ±10%, 24 V DC ±10% *
Power consumption	12 VA ±10% (AC) , 12 W ±10% (DC)

* Others on request.

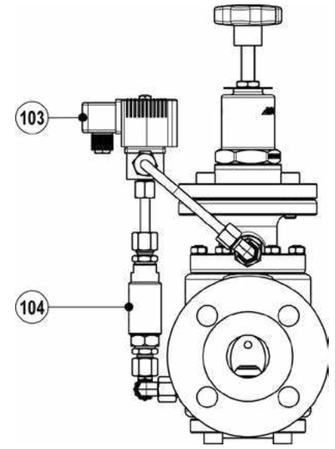

Fig. 7

PRS47 pressure reducing and sustaining valve (Fig. 8)

The PRS47 is a derivative of the PRV47 and consists in a combination between a pressure reducing valve and a pressure sustaining valve. While the pilot fitted on the main valve body controls downstream pressure, a secondary pilot valve (105), in this case a pressure sustaining valve, fitted on the side of the PRV controls the upstream pressure. The pressure sustaining valve is closed until the established set pressure is reached and so is the main valve, since there is no flow feeding its pilot. As soon as the set pressure is reached, the pressure sustaining valve opens, allowing flow to the PRV's pilot valve which, in turn, opens the main valve.

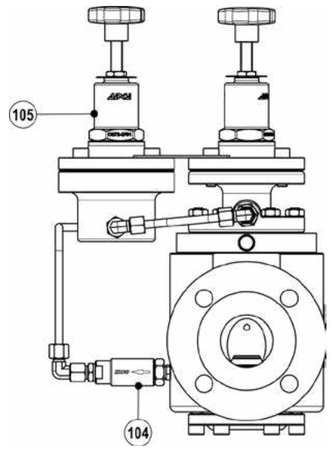

Fig. 8

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CAPACITY TABLE

INLET (barg)	OUTLET (barg)	SATURATED STEAM (kg/h)						COMPRESSED AIR (Nm³/h – 0 °C – 1,013 bar)					
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
0,7	0,35	40	75	125	190	280	480	15	31	50	70	111	191
1	0,4	45	95	160	240	355	620	16	33	51	79	113	194
	0,6	40	83	140	210	308	535	27	55	90	138	199	343
2	0,4 - 1	75	150	250	380	545	960	60	122	201	307	444	763
	1,2	65	138	230	345	515	900	54	109	180	276	399	686
	1,6	50	105	175	265	393	685	45	91	150	230	333	572
3	0,4 - 1,5	100	200	335	510	750	1310	120	240	300	460	666	1150
	2	85	170	290	450	660	1155	105	210	251	384	555	1050
	2,2	80	165	277	416	613	1050	48	93	152	232	334	570
	2,6	60	127	203	315	467	818	45	61	101	154	223	384
4	0,4 - 2	125	250	420	630	920	1580	150	238	499	739	1089	1825
	2,5	114	225	385	580	850	1465	135	208	449	568	978	1635
	3,2	92	183	309	482	708	1205	119	177	398	492	867	1444
	3,6	68	137	237	353	536	932	60	124	202	154	444	763
5	0,4 - 2	150	310	512	755	1114	1895	180	360	505	768	1110	1908
	3	144	295	488	743	1095	1835	165	330	556	691	997	1716
	4	115	225	373	578	846	1430	151	298	404	613	885	1526
	4,2	105	213	343	525	770	1342	136	285	383	582	840	1449
6	0,4 - 3	175	355	602	919	1358	2298	210	468	696	1046	1523	2580
	4	159	314	538	827	1217	2142	195	437	646	969	1412	2389
	5	119	250	411	637	941	1644	150	345	494	738	1079	1817
	5,2	109	217	360	568	839	1465	135	315	443	664	968	1627
7	0,4 - 3,5	197	410	670	1005	1540	2644	240	480	804	1200	1740	2989
	5	178	358	587	908	1345	2306	210	421	701	1046	1524	2640
	6	132	271	452	688	1027	1773	150	301	499	756	1104	1829
	6,2	122	251	416	635	934	1618	105	211	349	529	773	1280
8	0,4 - 4	225	471	778	1169	1759	3043	270	546	798	1353	1746	3411
	5	221	339	730	1118	1659	2884	265	516	747	1276	1635	3220
	6	192	385	639	976	1451	2513	225	449	710	1125	1635	2762
	7	146	293	481	732	1085	1887	180	361	600	892	1296	2184
	7,2	137	274	453	692	1011	1782	156	312	540	768	1128	1978
9	0,4 - 5	251	518	856	1325	1923	3358	301	612	1011	1507	2244	3789
	6	241	500	788	1222	1766	3095	270	553	910	1359	1980	3474
	7	206	398	679	1068	1559	2676	240	492	816	1230	1798	2970
	8	156	314	514	794	1142	2053	180	360	598	903	1288	2247
	8,2	145	292	483	741	1090	1888	165	329	547	826	1176	2056
10	0,4 - 5	275	561	944	1468	2127	3718	330	659	1116	1692	2412	4173
	6	272	551	917	1419	2074	3619	314	628	1065	1615	2301	3983
	7	252	508	838	1268	1871	3249	288	599	1004	1503	2202	3810
	8	213	431	722	1118	1659	2831	240	492	806	1212	1770	3022
	9	163	333	548	843	1244	2152	192	360	658	898	1350	2280
	9,2	150	298	493	756	1143	1929	181	342	628	852	1283	2165
12	1 - 6	330	680	1124	1732	2541	4407	390	792	1300	1978	2844	4917
	8	311	629	1023	1575	2332	4034	360	732	1219	1827	2622	4497
	10	265	533	812	1271	1867	3202	270	553	910	1359	1980	3474
	11	175	364	568	924	1350	2359	210	468	696	1046	1523	2580
15	1 - 8	408	839	1373	2138	3118	5403	480	972	1602	2427	3564	6072
	12	339	656	1068	1629	2441	4250	375	762	1272	1923	2784	4692
	14	199	401	662	1017	1503	2619	255	528	889	1332	1896	3398
17	1 - 9	425	863	1460	2178	3165	5343	540	912	1819	2737	3984	6618
	15	347	709	1190	1816	2694	4712	315	708	1179	1764	2520	4418
	16	207	416	717	1217	1608	2824	255	528	889	1332	1896	3398
20	1 - 12	541	4062	1774	2746	4001	6971	615	1254	2379	3153	4578	7911
	15	459	931	1552	2335	3476	6184	534	900	1799	2707	3940	6738
	17	391	648	988	1748	2840	4698	450	901	1497	2246	3336	5796
25	2,5 - 12	685	1337	2191	3360	4971	8392	780	1590	2689	3982	5790	9902
	15	680	1320	2183	3356	4877	8284	756	1530	2548	3828	5616	9600
	17	641	1256	2084	3156	4670	7866	720	1464	2412	3707	5130	9123
28	5 - 15	781	1521	3355	3864	5611	9862	870	1770	2910	4430	6390	10950
	17	763	1471	3259	3768	5506	9652	840	1724	2820	4320	6180	10680

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ORDERING CODES PRV47

Valve model	VR.47			S.	1			1	A	15	
PRV47 – steam (standard)	VR.47										
PRV47G – compressed air and gases	VR.47G										
Body material											
S355JR / 1.0045 or P250GH / 1.0460 carbon steel		(1)									
AISI 316 / 1.4401 stainless steel		I									
Options											
Standard valve for external sensing connection			(1)								
Valve with internal sensing line			O								
Solenoid valve for remote closure and external sensing connection **a)**			E								
Solenoid valve for remote closure with internal sensing line **a)**			EO								
Pressure sustaining / reducing for external sensing connection **b)**			S								
Pressure sustaining / reducing with internal sensing line **b)**			SO								
Pressure sustaining / reducing / solenoid for external sensing connection **a)**			Y								
Pressure sustaining / reducing / solenoid with internal sensing line **a)**			YO								
Diaphragm											
Standard diaphragm				S.							
Low pressure diaphragm				L.							
Regulating range											
Green spring – 0,35 to 2 bar – single diaphragm					1						
Blue spring – 1,5 to 5,5 bar – single diaphragm					2						
Red spring – 3,5 to 8,5 bar – double diaphragm					3						
Black spring – 7 to 17 bar – double diaphragm					4						
Dome loaded – 0,35 to 4 bar – single diaphragm **c)**					6						
Dome loaded – 2 to 17 bar – double diaphragm **c)**					7						
Piston rings d)											
Bronze						(1)					
FKM						V					
EPDM						E					
NBR						N					
Drain connection											
Standard valve							(1)				
Drain connection ISO 7 Rp 3/8”							D				
Valve sealing											
Standard metal to metal with hardened plug								1			
Stellited plug and seat								2			
Soft sealed with virgin PTFE **d)**								3			
Soft sealed with PTFE/GR **d)**								4			
Soft sealed with Rulon **d)**								5			
Soft sealed with FPM/Viton **d)**								6			
Pipe connection											
Threaded ISO 7 Rp									A		
Threaded NPT									C		
Socket weld (SW) ASME B16.11									H		
Flanged EN 1092-1 PN 40									N		
Flanged ASME B16.5 Class 150									U		
Flanged ASME B16.5 Class 300									V		
Size											
DN 15 or 1/2”										15	
DN 20 or 3/4”										20	
...											
Special valves / Extras											
Full description or additional codes have to be added in case of non-standard combination.											E

a) Solenoid valve voltage must be specified.
b) PS7 sustaining valve, see catalog for spring range.
c) The loading control pressure is approximately the same as the required downstream pressure (± 0,2 bar).
d) Valve limited to the materials maximum operating temperature. Contact manufacturer for more details.

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IS PRV47.10 E 07.19

PILOT OPERATED PRESSURE REDUCING VALVES
PRV57

DESCRIPTION

The ADCA PRV57 pilot operated pressure reducing valves are designed for use with steam, compressed air, nitrogen and other gases compatible with the construction materials.
The PRV57 can be installed in pressure reducing stations throughout all industries, and provide sensitive and accurate control even when inlet pressure fluctuations or relevant flow variations occur.

MAIN FEATURES

Precise control of downstream pressures from 0,07 bar to 17 bar.
Robust steel or stainless steel construction.
Suitable for dead end conditions.
Guided piston and valve stem.
Hardened plug.

OPTIONS: Soft sealing.
Low pressure top.
Dome loaded version.
Bottom cover drain connection.
Stellited plug and seat.
Internal sensing line.

USE: Saturated steam, compressed air and other gases compatible with the construction (except oxygen).

AVAILABLE MODELS:
PRV57, PRV57E – steel versions for steam.
PRV57i, PRV57iE – stainless steel versions for steam (only available from DN 15 to DN 50).
PRV57G, PRV57GE – steel versions for compressed air and gases.
PRV57Gi, PRV57GiE – stainless steel versions for compressed air and gases (only available from DN 15 to DN 50).
Suffix “E”: Version with solenoid valve for remote closure.
PRS: All models above are available with an extra sustaining valve pilot, e.g. PRS57G (see Fig. 8).

SIZES: DN 15 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1, on request.

INSTALLATION: Horizontal installation, see IMI – Installation and maintenance instructions.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 100	DN 40 to 100	1 (CE Marked)

BODY LIMITING CONDITIONS *				
PRV57		**PRV57i**		**RELATED TEMP.**
PN 16	**PN 40**	**PN 16**	**PN 40**	
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
16 bar	40 bar	16 bar	40 bar	-10 / 50 ºC
13,3 bar	33,3 bar	13,4 bar	33,7 bar	200 ºC
12,1 bar	30,4 bar	12,7 bar	31,8 bar	250 ºC
11 bar	27,6 bar	11,8 bar	29,7 bar	300 ºC

Minimum working temperature: -10 ºC.
* Ratings according to EN 1092-1:2018.

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LIMITING CONDITIONS						
Valve model	**PRV57**		**PRS57**		**PRV57E / PRS57E**	
Body design conditions	PN 16	PN 40	PN 16	PN 40	PN 16	PN 40
Maximum upstream pressure (steam)	13 bar	28 bar	13 bar	17 bar	10 bar	10 bar
Maximum upstream pressure	16 bar	31 bar	16 bar	17 bar	10 bar	10 bar
Maximum downstream pressure	13 bar	17 bar	16 bar	17 bar	10 bar	10 bar
Minimum downstream pressure *	0,35	0,35	0,35	0,35	0,35	0,35
Maximum operating temperature	250 ºC	250 ºC	250 ºC	250 ºC	180 ºC	180 ºC
Maximum reducing ratio	See capacity tables					
Rangeability	10:1	10:1	10:1	10:1	10:1	10:1
Maximum hydraulic factory valve body test	24 bar	60 bar	24 bar	60 bar	24 bar	60 bar

* 0,07 bar with low pressure top (limited to 7 bar maximum inlet pressure).
Remark: Pressure and temperature limiting conditions may change if “G” version for compressed air and gases is chosen or soft sealing/piston rings are used.

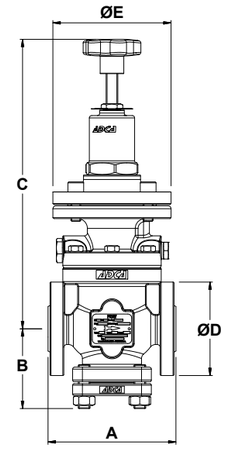

Fig. 1 - Valve with standard diaphragm

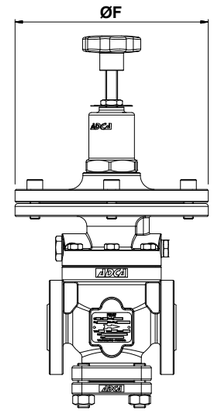

Fig. 2 - Valve with low pressure top

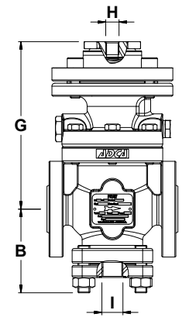

Fig. 3 - Dome loaded valve

DIMENSIONS (mm)										
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I ***	**WEIGHT (kg) ****
DN 15	130	88	294	95	120	195	166	1/4”	1/2”	10,5
DN 20	150	88	294	105	120	195	166	1/4”	1/2”	16
DN 25	160	88	294	115	120	195	166	1/4”	1/2”	17
DN 32	180	102	306	140	120	195	178	1/4”	1/2”	20
DN 40	200	108	314	150	120	195	186	1/4”	1/2”	24
DN 50	230	118	351	165	120	195	223	1/4”	1/2”	31
DN 65 ***	290	147	377	185	120	195	249	1/4”	1/2”	48
DN 80	310	152	392	200	120	195	264	1/4”	1/2”	53
DN 100	350	168	422	235	120	195	294	1/4”	1/2”	72

* Optional drain connection for steam trapping. This drain connection does not replace the humidity separator, but can be useful if, e.g., the valve stops operating for large periods of time (see Fig. 6).
** Approximated values, consult manufacturer for certified weights.
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.
Remarks: Connections H and I are threaded ISO 7 Rp. Others on request.

REGULATING RANGES				
SPRING COLOUR	**GREEN w/ 1 diaphragm**	**BLUE w/ 1 diaphragm**	**RED w/ 2 diaphragms**	**BLACK w/ 2 diaphragms**
Regulating range	0,07 to 0,5 bar * 0,35 to 2 bar	1,5 to 5,5 bar	3,5 to 8,5 bar	7 to 17 bar

* With low pressure top.

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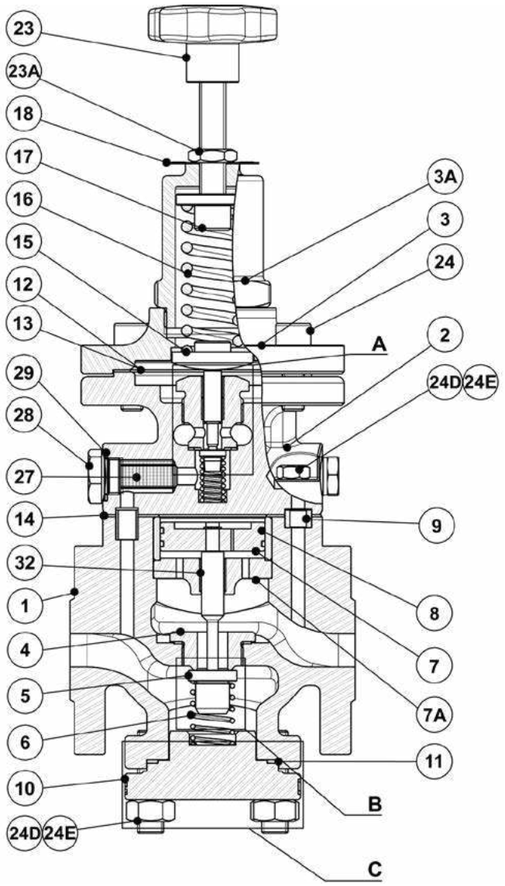
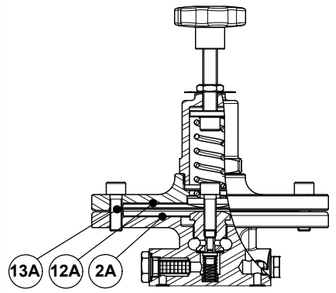
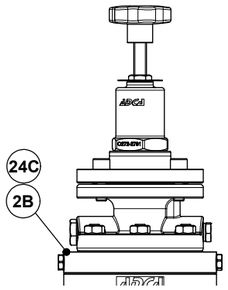
MATERIALS

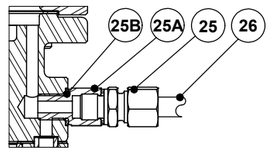




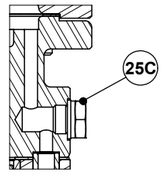
Low pressure top



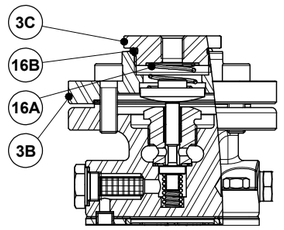
Adapting flange
(DN 50 and above)



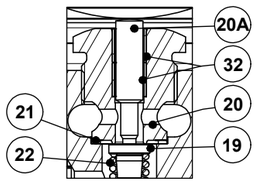
Standard version
External balanced



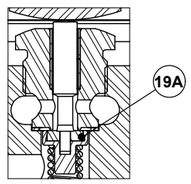
Optional version
Internal balanced



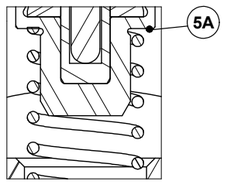
Dome loaded top



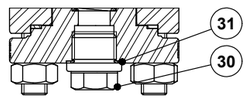
Detail A
Pilot valve



Detail A
Pilot valve (soft)



Detail B
Main valve (soft)



Detail C
Optional version with plug

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MATERIALS			
POS. Nº	**DESIGNATION**	**PRV57**	**PRV57i**
1	Valve body	A216 WCB / 1.0619	A351 CF8M / 1.4408
2	Pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2A	Low pressure pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2B	Adapting flange	C45E / 1.1191	AISI 316 / 1.4401
3	Top cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3A	Spring cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3B	Top cover	C45E / 1.1191	AISI 316 / 1.4401
3C	Cover nut	C45E / 1.1191	AISI 316 / 1.4401
4	* Main valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
5	* Main valve plug	Hardened st. steel	Hardened st. steel
5A	* Main valve plug (soft)	AISI 316 w/ PTFE/GR; Rulon	AISI 316 w/ PTFE/GR; Rulon
6	* Main valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	* Piston	Bronze B62 / ASTMB148.97	Bronze B62 / ASTMB148.97
7A	Piston guide	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* Piston Rings	Bronze / FKM / EPDM / NBR	Bronze / FKM / EPDM / NBR
9	Piston liner	AISI 304 / 1.4301	AISI 304 / 1.4301
10	Bottom cover	A216 WCB / 1.0619	A351 CF8M / 1.4408
11	* Bottom cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
12	* Diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
12A	* Low pressure diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
13	* Diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
13A	* Low press. diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	* Pilot valve gasket	Stainless steel / Graphite	Stainless steel / Graphite
15	Lower spring carrier	Brass	Brass
16	* Adjustment spring	Steel	Steel
16A	Diaphragm spring	Stainless steel	Stainless steel
16B	O-ring	Viton	Viton
17	Top spring carrier	Brass	Brass
18	Spring ID plate	Aluminium	Aluminium
19	* Pilot valve plug	AISI 316 / 1.4401	AISI 316 / 1.4401
19A	* Pilot valve plug (soft)	PTFE/GR; Rulon, etc.	PTFE/GR; Rulon, etc.
20	* Pilot valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
20A	Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
21	* Pilot valve gasket	Copper	Copper
22	* Pilot valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
23	Handwheel	Plastic / Stainless steel	Plastic / Stainless steel
23A	Locknut	AISI 304 / 1.4301	AISI 304 / 1.4301
24	Bolts	Steel 10.9	Stainless steel A2
24C	Bolts	Steel 10.9	Stainless steel A2
24D	Studs	34CrNiMo / 1.6582	AISI 316 / 1.4401
24E	Nuts	Steel 8.8	Stainless steel A2
25	Compression fitting	Plated carbon steel	Stainless steel
25A	Adapter	AISI 304 / 1.4301	AISI 304 / 1.4301
25B	Plug	AISI 304 / 1.4301	AISI 304 / 1.4301
25C	Gasket	Copper	Copper
26	Sensing pipe	Copper	Stainless steel
27	* Pilot valve strainer	AISI 304 / 1.4301	AISI 304 / 1.4301
28	Strainer nut	AISI 304 / 1.4301	AISI 304 / 1.4301
29	Gasket	Copper	Copper
30	Plug	AISI 316 / 1.4401	AISI 316 / 1.4401
31	Gasket	Copper	Copper
32	Plain bearing	Bronze / steel	Bronze / steel

* Available spare parts.

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MATERIALS		
POS.	**DESIGNATION**	**MATERIAL**
100	Sensing pipe	Copper or stainless steel
101	Compressed air supply	Copper or stainless steel
102	P10 air filter regulator	Polycarbonate
103	Solenoid valve	Brass or stainless steel
104	ADCA IS100 filter	AISI 316 / 1.4401
105	ADCA PS7 pressure sustaining valve	Carbon steel or stainless steel
106	Drain connection	Copper or stainless steel

PRV57 standard – for steam, compressed air or gases (Fig. 4)

The high pressure upstream gas enters the main valve and the pilot valve. Compression of the regulating spring over the diaphragm causes the pilot valve to open, admitting regulated pressure to the piston chamber. The force exerted by the regulated pressure on top of the piston pushes it down which, in turn, opens the main valve. The downstream pressure is then transmitted through the sensing line, acting below the diaphragm.
Any downstream pressure increase deflects the diaphragm, and the pilot valve closes, thus shutting off regulated gas to the piston which, in turn, closes the main valve. When the desired downstream pressure is achieved, the valve opens again, repeating the process.

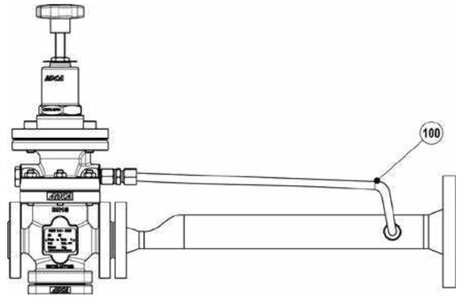

Fig. 4

The external sensing pipe (100) must always be connected unless the valve is supplied with internal sensing line. It should be fitted in the downstream pipe at a distance of, at least, 1 meter or 15 pipe diameters, whichever is greater, from the valve and other fittings. A spool piece can be supplied to house the sensing pipe.

Warning: Internal sensing is not recommended when:
- The reduced pressure is below 50% of the inlet pressure (mandatory for pressure reductions greater than 10:1);
- Instability of reduced pressure occurs;
- When a low pressure top assembly is fitted;
- In systems with difficult outlet pipe work conditions.

PRV57 Dome loaded (Fig. 5)

The loading force is exerted on the pilot valve diaphragm by an external gas signal rather than by the regulating spring. This feature allows remote adjusting of the downstream set point pressure using a relieving gas pressure regulator or an I/P converter. Allows faster response to pressure changes and maintains outlet pressure more accurately under flowing conditions, when compared to the standard spring loaded version, minimizing droop.
The loading control pressure is approximately the same as the required outlet pressure (± 0,2 bar).

PRV57 with drain connection (Fig. 6)

The optional drain connection is specially recommended for steam aplications where it is not possible to install a humidity separator close to the valve, when the valve is under no-flow static condition during large periods of time or for system cleaning during start up.

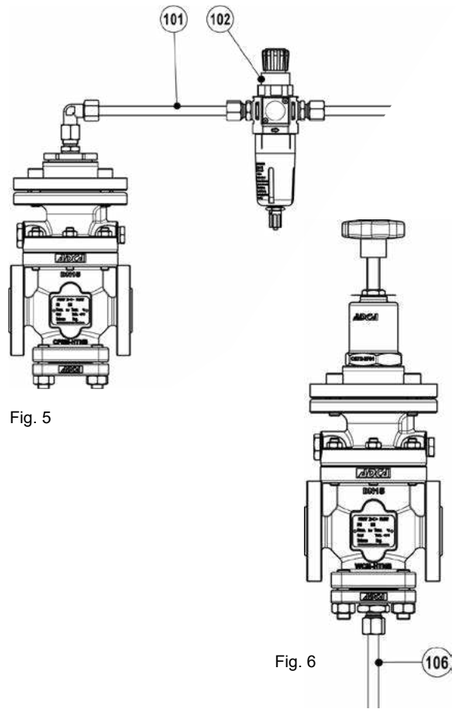

Fig. 5

Fig. 6

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PRV57E with solenoid valve for electric remote control (Fig. 7)

The PRV57E operates like the standard valve, but it allows remote closure, by means of a switch or timer. When the solenoid valve (103) closes, the pressure signal to the pilot valve is interrupted, causing the main valve to close.

TECHNICAL DATA (SOLENOID VALVE)	
Body material	Brass or stainless steel
Maximum operating pressure	10 bar
Maximum operating temperature	180 ºC
Level of protection	IP 65
Rated voltage	230 V AC ±10%, 24 V DC ±10% *
Power consumption	12 V A ±10% (AC) , 12 W ±10% (DC)

* Others on request.

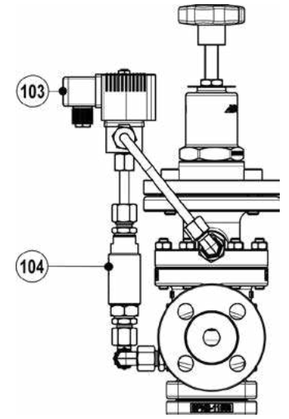

Fig. 7

PRS57 pressure reducing and sustaining valve (Fig. 8)

The PRS57 is a derivative of the PRV57 and consists in a combination between a pressure reducing valve and a pressure sustaining valve. While the pilot fitted on the main valve body controls downstream pressure, a secondary pilot valve (105), in this case a pressure sustaining valve, fitted on the side of the PRV controls the upstream pressure. The pressure sustaining valve is closed until the established set pressure is reached and so is the main valve, since there is no flow feeding its pilot. As soon as the set pressure is reached, the pressure sustaining valve opens, allowing flow to the PRV's pilot valve which, in turn, opens the main valve.

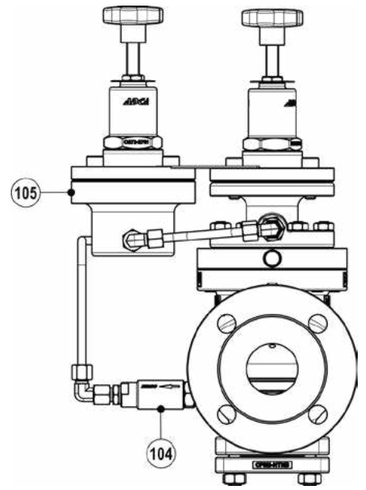

Fig. 8

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ADCA

CAPACITY TABLE

INLET (bar)	OUTLET (bar)	SATURATED STEAM (kg/h)									COMPRESSED AIR (Nm³/h – 0 °C – 1,013 bar)								
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
0,7	0,35	40	75	125	190	280	480	–	–	–	15	31	50	70	111	191	–	–	–
1	0,4	45	95	160	240	355	620	–	–	–	16	33	51	79	113	194	–	–	–
	0,6	40	83	140	210	308	535	–	–	–	27	55	90	138	199	343	–	–	–
2	0,4 - 1	75	150	250	380	545	960	1490	1880	3390	60	122	201	307	444	763	1490	1880	3390
	1,2	65	138	230	345	515	900	1335	1685	3022	54	109	180	276	399	686	1335	1685	3022
	1,6	50	105	175	265	393	685	–	–	–	45	91	150	230	333	572	–	–	–
3	0,4 - 1,5	100	200	335	510	750	1310	1980	2475	4358	120	240	300	460	666	1150	1980	2475	4358
	2	85	170	290	450	660	1155	1732	2175	3962	105	210	251	384	555	1050	1732	2175	3962
	2,2	80	165	277	416	613	1050	1585	1981	3616	48	93	152	232	334	570	1585	1981	3616
	2,6	60	127	203	315	467	818	–	–	–	45	61	101	154	223	384	–	–	–
4	0,4 - 2	125	250	420	630	920	1580	2530	3170	5696	150	238	499	739	1089	1825	2530	3170	5696
	2,5	114	225	385	580	850	1465	2328	2923	5249	135	208	449	568	978	1635	2328	2923	5249
	3,2	92	183	309	482	708	1205	1735	2179	3913	119	177	398	492	867	1444	1735	2179	3913
	3,6	68	137	237	353	536	932	–	–	–	60	124	202	154	444	763	–	–	–
5	0,4 - 2	150	310	512	755	1114	1895	3022	3765	6733	180	360	505	768	1110	1908	3022	3765	6733
	3	144	295	488	743	1095	1835	2869	3615	6486	165	330	556	691	997	1716	2869	3615	6486
	4	115	225	373	578	846	1430	2130	2675	4852	151	298	404	613	885	1526	2130	2675	4852
	4,2	105	213	343	525	770	1342	–	–	–	136	285	383	582	840	1449	–	–	–
6	0,4 - 3	175	355	602	919	1358	2298	3566	4453	8021	210	468	696	1046	1523	2580	3566	4453	8021
	4	159	314	538	827	1217	2142	3219	4012	7229	195	437	646	969	1412	2389	3219	4012	7229
	5	119	250	411	637	941	1644	2276	2870	5150	150	345	494	738	1079	1817	2276	2870	5150
	5,2	109	217	360	568	839	1465	–	–	–	135	315	443	664	968	1627	–	–	
7	0,4 - 3,5	197	410	670	1005	1540	2644	3959	4952	8911	240	480	804	1200	1740	2989	3959	4952	8911
	5	178	358	587	908	1345	2306	3513	4405	7921	210	421	701	1046	1524	2640	3513	4405	7921
	6	132	271	452	688	1027	1773	2764	3022	5416	150	301	499	756	1104	1829	2764	3022	5416
	6,2	122	251	416	635	934	1618	–	–	–	105	211	349	529	773	1280	–		
8	0,4 - 4	225	471	778	1169	1759	3043	4605	5745	10398	270	546	798	1353	1746	3411	4605	5745	10398
	5	221	339	730	1118	1659	2884	4305	5395	9704	265	516	747	1276	1635	3220	4305	5395	9704
	6	192	385	639	976	1451	2513	3761	4704	8467	225	449	710	1125	1635	2762	3761	4704	8467
	7	146	293	481	732	1085	1887	2727	3168	5695	180	361	600	892	1296	2184	2727	3168	5695
	7,2	137	274	453	692	1011	1782	–	–	–	156	312	540	768	1128	1978	–		
9	0,4 - 5	251	518	856	1325	1923	3358	5051	6334	11387	301	612	1011	1507	2244	3789	5051	6334	11387
	6	241	500	788	1222	1766	3095	4653	5794	10396	270	553	910	1359	1980	3474	4653	5794	10396
	7	206	398	679	1068	1559	2676	4060	5051	8961	240	492	816	1230	1798	2970	4060	5051	8961
	8	156	314	514	794	1142	2053	2671	3319	5991	180	360	598	903	1288	2247	2671	3319	5991
	8,2	145	292	483	741	1090	1888	–	–	–	165	329	547	826	1176	2056	–		
10	0,4 - 5	275	561	944	1468	2127	3718	5592	7031	12377	330	659	1116	1692	2412	4173	5592	7031	12377
	6	272	551	917	1419	2074	3619	5443	6830	12270	314	628	1065	1615	2301	3983	5443	6830	12270
	7	252	508	838	1268	1871	3249	4951	6187	10891	288	599	1004	1503	2202	3810	4951	6187	10891
	8	213	431	722	1118	1659	2831	4108	5149	9209	240	492	806	1212	1770	3022	4108	5149	9209
	9	163	333	548	843	1244	2152	2721	3466	6190	192	360	658	898	1350	2280	2721	3466	6190
	9,2	150	298	493	756	1143	1929	–	–	–	181	342	628	852	1283	2165	–	–	
12	1 - 6	330	680	1124	1732	2541	4407	6631	8216	14850	390	792	1300	1978	2844	4917	6631	8216	14850
	8	311	629	1023	1575	2332	4034	6090	7573	13862	360	732	1219	1827	2622	4497	6090	7573	13862
	10	265	533	812	1271	1867	3202	4503	5592	9903	270	553	910	1359	1980	3474	4503	5592	9903
	11	175	364	568	924	1350	2359	2920	3612	6536	210	468	696	1046	1523	2580	2920	3612	6536
15	1 - 8	408	839	1373	2138	3118	5403	8164	10393	18317	480	972	1602	2427	3564	6072	8164	10393	18317
	12	339	656	1068	1629	2441	4250	6385	7986	14356	375	762	1272	1923	2784	4692	6385	7986	14356
	14	199	401	662	1017	1503	2619	2968	3661	6438	255	528	889	1332	1896	3398	2968	3661	6438
17	1 - 9	425	863	1460	2178	3165	5343	9204	11360	20290	540	912	1819	2737	3984	6618	9204	11360	20290
	15	347	709	1190	1816	2694	4712	5870	7363	14855	315	708	1179	1764	2520	4418	5870	7363	14855
	16	207	416	717	1217	1608	2824	3598	4312	6330	255	528	889	1332	1896	3398	3598	4312	6330
20	1 - 12 (2 - 12)*	541	4062	1774	2746	4001	6971	10390	13363	23765	615	1254	2379	3153	4578	7911	10390	13363	23765
	15	459	931	1552	2335	3476	6184	9156	11382	20298	534	900	1799	2707	3940	6738	9156	11382	20298
	17	391	648	988	1748	2840	4698	6098	7628	9476	450	901	1497	2246	3336	5796	6098	7628	9476
25	2,5 - 12 (6 - 12)*	685	1337	2191	3360	4971	8392	12870	15845	29200	780	1590	2689	3982	5790	9902	12870	15845	29200
	15	680	1320	2183	3356	4877	8284	12690	15710	29010	756	1530	2548	3828	5616	9600	12690	15710	29010
	17	641	1256	2084	3156	4670	7866	12370	14860	27720	720	1464	2412	3707	5130	9123	12370	14860	27720
28	5 - 15 (6 - 15)*	781	1521	3355	3864	5611	9862	14870	18380	33164	870	1770	2910	4430	6390	10950	14870	18380	33164
	17	763	1471	3259	3768	5506	9652	14340	17770	32665	840	1724	2820	4320	6180	10680	14340	17770	32665

* Minimum outlet pressures for the sizes DN 65 to DN 100.

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LRQA CERTIFIED ISO 9001

ADCA

ORDERING CODES PRV57

Valve model	V57	X	X	S	1	X	X	1	L	15	
PRV57 – steam (standard)	V57										
PRV57G – compressed air and gases	V57G										
Construction material											
Carbon steel construction		X									
Stainless steel construction		I									
Options											
Standard valve for external sensing connection			XX								
Valve with internal sensing line			OX								
Solenoid valve for remote closure and external sensing connection **a)**			EX								
Solenoid valve for remote closure with internal sensing line **a)**			EO								
Pressure sustaining / reducing for external sensing connection **b)**			SX								
Pressure sustaining / reducing with internal sensing line **b)**			SO								
Pressure sustaining / reducing / solenoid for external sensing connection **a)**			YX								
Pressure sustaining / reducing / solenoid with internal sensing line **a)**			YO								
Diaphragm											
Standard diaphragm				S							
Low pressure diaphragm				L							
Regulating range											
Green spring 0,35 to 2 bar – single diaphragm					1						
Blue spring 1,5 to 5,5 bar – single diaphragm					2						
Red spring 3,5 to 8,5 bar – double diaphragm					3						
Black spring 7 to 17 bar – double diaphragm					4						
Dome loaded – 0,35 to 4 bar – single diaphragm **c)**					6						
Dome loaded – 2 to 17 bar – double diaphragm **c)**					7						
Piston rings											
Bronze						X					
FKM **d)**						V					
EPDM **d)**						E					
NBR **d)**						N					
Drain connection											
Standard valve							X				
Drain connection ISO 7 Rp 1/2”							D				
Valve sealing											
Standard metal to metal with hardened plug								1			
Stellited plug and seat								2			
Soft sealed with virgin PTFE **d)**								3			
Soft sealed with PTFE/GR **d)**								4			
Soft sealed with Rulon **d)**								5			
Soft sealed with FPM/Viton **d)**								6			
Pipe connection											
Flanged EN 1092-1 PN 16									L		
Flanged EN 1092-1 PN 40									N		
Size											
DN 15										15	
DN 20										20	
DN 25										25	
...											
Special valves / Extras											
Full description or additional codes have to be added in case of non-standard combination.											E

a) Solenoid valve voltage must be specified.
b) PS7 sustaining valve, see catalog for spring range.
c) The loading control pressure is approximately the same as the required downstream pressure (± 0,2 bar).
d) Valve limited to the materials maximum operating temperature. Contact manufacturer for more details.

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IS PRV57.10 E 01.21

PRESSURE REDUCING VALVE
RP45
(EN)

DESCRIPTION

The ADCA RP45 series pressure reducing valves are single seated, bellows sealed controllers that operate without auxiliary energy.
Designed for use with steam, compressed air, and other gases compatible with the construction.
These valves are particularly suitable for reducing steam pressure in all energy and process systems where pressures must be kept under control.

MAIN FEATURES

Specially designed high durability bellows, providing pressure balancing and frictionless plug stem.
Robust construction (fit-and-forget).
Suitable for use with high pressure turndowns.
Interchangeable actuators and adjustment springs.

OPTIONS: Soft sealing in PTFE/GR for use with steam.
Soft sealing in nitrile rubber for use with air and gases.
Low-noise flow divider.
Sensing pipe on body.

USE: Steam, compressed air and other gases compatible with the construction. Limited use with liquids. Consult manufacturer before installing the valve with liquids.

AVAILABLE MODELS: RP45G and RP45GT or N – SG iron.
RP45S and RP45ST or N – carbon steel.
RP45i and RP45iT or N – stainless steel (only available from DN 15 to DN 100).
Suffix T: soft sealed with PTFE/GR.
Suffix N: soft sealed with nitrile rubber.

SIZES: DN 15 to DN 150.

CONNECTIONS: RP45G – Flanged EN 1092-2 PN 16.
RP45S and RP45i – Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2 on request.

AVAILABLE ACTUATORS: A1, A10, A11, A12, A3, A4, B1, B3, B4 and C11 – carbon steel.
A2, A21, B2 and B21 – SG iron or carbon steel.
A1i, A10i, A11i, A12i, A2i, A21i, A3i and A4i – stainless steel.

INSTALLATION: See IMI – Installation and maintenance instructions.

RP45
DN 15 to DN 100

RP45i
DN 15 to DN 100

RP45
DN 125 and DN 150

RP45
DN 15 to DN 100
with sensing pipe
on body

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 150	DN 40 to 100	1 (CE marked)
–	DN 125 and 150	2 (CE marked)

LIMITING CONDITIONS									
Valve model	**RP45G RP45S**	**RP45S**	**RP45i**	**RP45GT RP45ST**	**RP45ST**	**RP45iT**	**RP45GN RP45SN**	**RP45SN**	**RP45iN**
Body design conditions	PN 16	PN 40	PN 40	PN 16	PN 40	PN 40	PN 16	PN 40	PN 40
Maximum upstream pressure	13 bar	25 bar	25 bar	13 bar	25 bar	25 bar	13 bar	25 bar	25 bar
Maximum downstream pressure (DN 15 to 100)	13 bar	18 bar	18 bar	13 bar	18 bar	18 bar	13 bar	18 bar	18 bar
Maximum downstream pressure (DN 125 and 150)	12 bar	16,5 bar	16,5 bar	12 bar	16,5 bar	16,5 bar	12 bar	16,5 bar	16,5 bar
Minimum downstream pressure	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar
Maximum operating temperature	200 ºC	250 ºC	250 ºC	200 ºC	200 ºC	200 ºC	80 ºC	80 ºC	80 ºC
Maximum reducing ratio	25:1	25:1	25:1	25:1	25:1	25:1	10:1	10:1	10:1
Rangeability	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1
Maximum hydraulic factory valve body test	24 bar	60 bar	60 bar	24 bar	60 bar	60 bar	24 bar	60 bar	60 bar

Remark: Other soft materials and temperature limits on request.

Actuator model	**A1 A1i**	**A10 A10i**	**A11 A11i**	**A12 A12i**	**A2 A2i**	**A21 A21i**	**A3 A3i**	**A4 A4i**	**B1**	**B2**	**B21**	**B3**	**B4**	**C11**
Maximum operating pressure (bar)	25	25	25	25	12	18	2,5	1,5	25	13	18	2,5	1,5	25
Maximum operating temperature	90 ºC *													

* The water seal pot must be installed in the sensing pipe when operating with steam or liquids at temperatures above 90 ºC.

FLOW RATE COEFFICIENTS (m³/h)										
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**
Kvs	4,8	6,9	9,1	11,8	14,4	26,5	51,5	79,5	129,5	150	204

SATURATED STEAM CAPACITY TABLE (kg/h)											
INLET (barg)	**SIZE**										
	DN 15	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**
0,5	51	68	90	118	186	300	460	800	1250	1500	1800
0,75	63	84	112	146	230	360	580	1000	1550	1750	2350
1	75	100	133	175	280	430	700	1200	1850	2250	3200
1,5	100	133	175	240	360	590	910	1600	2500	3000	4000
2	126	170	230	290	450	730	1160	2000	3050	3500	4700
2,5	150	200	260	350	550	880	1390	2400	3600	4500	6500
3	175	240	310	400	640	1010	1600	2700	4300	5500	8500
4	220	290	390	510	800	1300	2000	3400	5400	7000	10000
5	260	350	480	620	1000	1600	2500	4200	6500	8000	12000
6	330	440	580	760	1220	1930	3000	5100	8000	9500	14000
7	400	520	700	910	1430	2300	3600	6100	9500	11500	16000
8	450	600	800	1040	1670	2700	4100	7100	11000	13000	18000
9	500	670	880	1180	1800	2900	4600	7800	12000	15000	20000
10	560	750	980	1300	2000	3200	5100	8500	13500	17000	22000
12	680	900	1180	1540	2500	4000	6100	10500	16300	20000	25000
14	800	1050	1400	1850	2900	4700	7200	12600	19000	23000	29000
16	920	1230	1630	2150	3400	5500	8300	14600	22000	26000	33000
18	1040	1400	1860	2450	3800	6200	9500	16600	25000	30000	38000
20	1170	1540	2100	2700	4200	7000	10800	18600	28000	33000	42000
22	1330	1780	2350	3050	4900	7800	12200	21000	32000	36000	45000
24	1500	2000	2600	3400	5400	8700	13700	23500	36000	40000	48000
25	1600	2150	2800	3600	5700	9200	14500	25500	38000	42000	50000

Remark: For pressure ratios where P2 > 0,7 P1 and/or when the operating medium is superheated steam, a correction factor must be applied. See next page.

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IS RP45.12 E 04.20

CORRECTION FACTORS

Pressure ratio:
The capacities given in the “Saturated steam capacity table” are applicable in scenarios where P2 < 0,7 P1.
In the remaining scenarios a correction factor must be applied:

PRESSURE RATIO * P2 / P1	CORRECTION FACTOR f
≥ 0,7	1,25
≥ 0,8	1,6
≥ 0,9	2,25

* Pressure ratio in bar abs (barg + 1)

Superheated steam:
When the medium is superheated steam, instead of saturated steam, a correction factor must also be applied. The required mass flow must be multiplied by the following factor:

Vh, where Vh = specific volume of superheated steam, and
Vs Vs = specific volume of saturated steam.

ACTUATOR AND SPRING SELECTION TABLE

SIZE		ACTUATOR															
		A4 A4i		A3 A3i	A2 A2i	A21 A21i	A1 A1i		A10 A10i	A11 A11i	A12 A12i	B4	B3	B2	B21	B1	C11
DN 15	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
DN 20	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
DN 25	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
DN 32	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
DN 40	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
DN 50	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,9	2,0-4,2	4,3-6,9	7-8,5	–	10-18	8,6-13	–	–	–	–	–	–	–
	Spring Nº	67	61	61	61	61	64	–	61	64	–	–	–	–	–	–	–
DN 65	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,9	2,0-4,2	4,3-6,9	7-8,5	–	10-18	8,6-13	–	–	–	–	–	–	–
	Spring Nº	67	61	61	61	61	64	–	61	64	–	–	–	–	–	–	–
DN 80	Spring range (bar)	0,15-0,45	0,46-0,99	1,0-1,9	2,0-5,0	5,1-8,9	9-13	11-18	–	–	–	–	–	–	–	–	–
	Spring Nº	68	62	62	62	62	65	62	–	–	–	–	–	–	–	–	–
DN 100	Spring range (bar)	0,15-0,45	0,46-0,99	1,0-1,9	2,0-6,0	6,1-13,0	–	11-18	–	–	–	–	–	–	–	–	–
	Spring Nº	69	63	63	63	63	–	63	–	–	–	–	–	–	–	–	–
DN 125	Spring range (bar)	–	–	–	–	–	–	–	–	–	–	0,5-1,5	1,1-2,5	1,5-5,5	4-8,5	6-12	8-16,5
	Spring Nº	–	–	–	–	–	–	–	–	–	–	70	70	70	70	70	70
DN 150	Spring range (bar)	–	–	–	–	–	–		–	–	–	0,5-1,5	1,1-2,5	1,5-5,5	4-8,5	6-12	8-16,5
	Spring Nº	–	–	–	–	–	–		–	–	–	70	70	70	70	70	70

HOW TO SIZE (USING STEAM TABLE)

Example
Required saturated steam capacity: 300 kg/h; Upstream pressure: 3 bar; Required downstream pressure: 2 bar.

Solution:
First determine correction factor for pressure ratio: (2+1) / (3+1) = 0,75 → f = 1,25
Then multiply the given capacity: 300 × 1,25 = 375 kg/h
Afterwards, refer to the cell with the number “3” in the column “INLET” of the saturated steam capacity table. In that line, the values for selection of the pressure reducing valve size can be found. In this particular scenario, a value equal to or higher than 375 kg/h is required, and the right selection would be DN 32, with a capacity of 400 kg/h.
On the actuator and spring selection table, for a downstream pressure of 2 bar, the recommended actuator is the A2, and the regulating spring is Nº 60.

Remarks: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the actual flow required. Pipe sizing must also respect the maximum recommended flow velocities, according to the medium.

HOW TO SIZE (USING Kvs)

Please consult formulas on IS PV10.00 E or consult manufacturer.

HOW TO ORDER

RP45G DN 32 PN 16 valve complete with spring Nº 60, A2 actuator, condensate vessel and copper sensing pipe.

INSTALLATION

Horizontal installation with the actuator vertically, pointing downwards.
Installation with the actuator pointing upwards is possible only when the medium temperature is below 90 ºC.
The sensing pipe, if not fitted on the valve body, must be installed downstream of the valve at a minimum of 1 meter away or 15 pipe diameters.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

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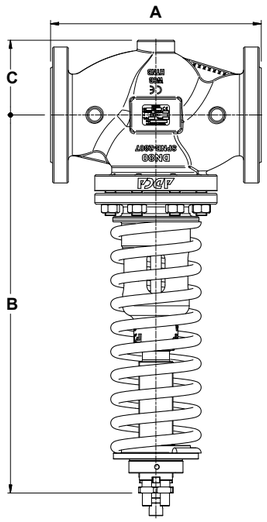
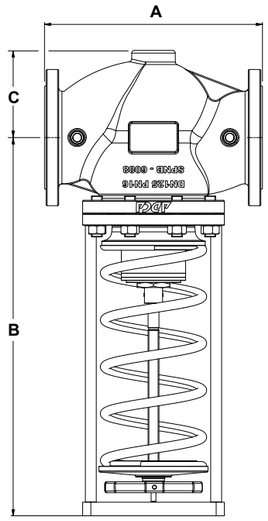
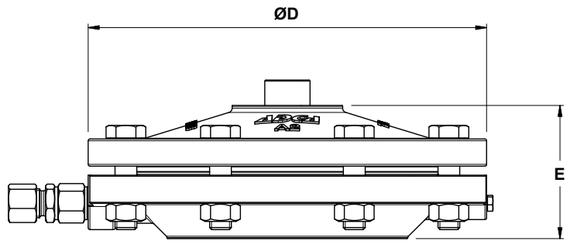


DN 15 to DN 100



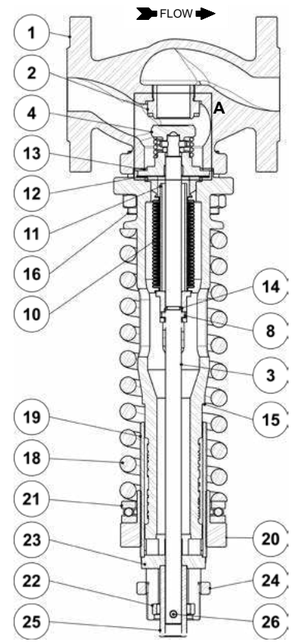
DN 125 to DN 150

DIMENSIONS – VALVE (mm)											
DIMENSION	SIZE										
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
A	130	150	160	180	200	230	290	310	350	400	480
B	366	366	371	377	384	470	495	556	597	694	710
C	–	–	–	–	–	85	100	110	130	160	180
WEIGHT (kg)	9,5	10,2	11,2	14	15,5	21,7	32,2	45,4	53,3	91,3	113

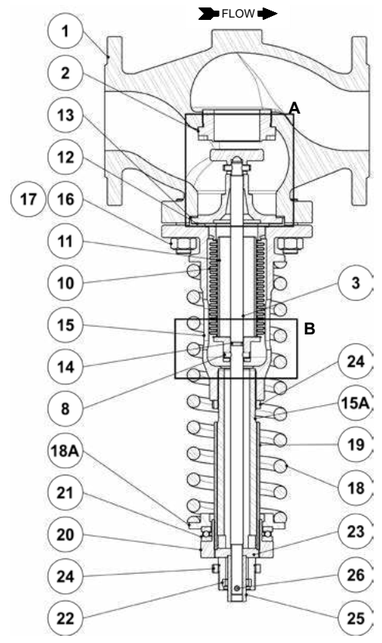


DIMENSIONS – ACTUATOR (mm)														
DIMENSION	ACTUATOR													
	A1 A1i	A10 A10i	A11 A11i	A12 A12i	A2 A2i	A21 A21i	A3 A3i	A4 A4i	B1	B2	B21	B3	B4	C11
ØD	172	172	172	172	220	220	282	340	172	220	220	283	340	145
E	67	67	67	67	74	74	71	81	80	86	86	88	98	93
WEIGHT (kg)	4,3	4,3	4,3	4,3	7,3	7,3	11,3	16,3	4,4	7,4	7,4	11,6	18,6	2,3

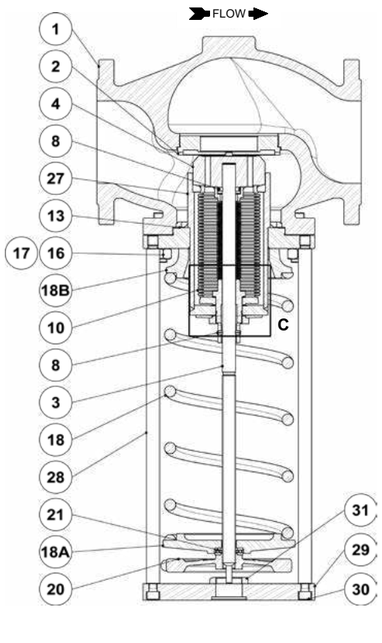
MATERIALS



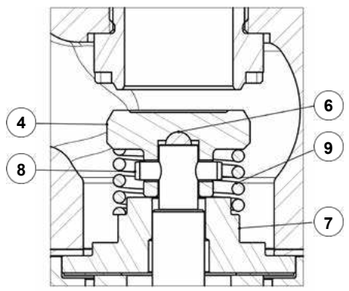
DN 15 to DN 50



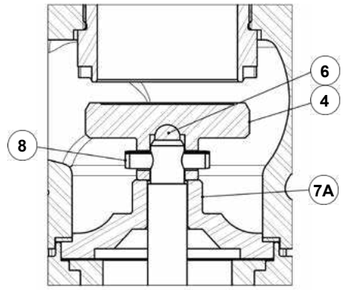
DN 65 to DN 100



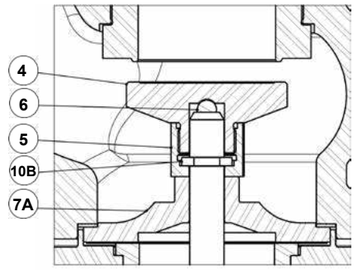
DN 125 and DN 150



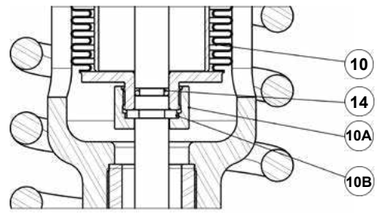
Detail A
(DN 15 to DN 40)



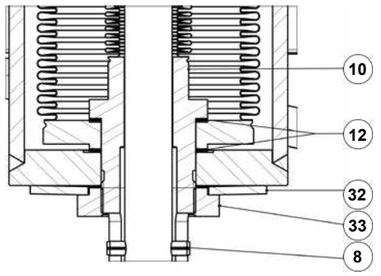
Detail A
(DN 50 and DN 65)



Detail A
(DN 80 and DN 100)



Detail B
(DN 80 and DN 100)



Detail C
(DN 125 and DN 150)

MATERIALS – VALVE			
POS. Nº	**DESIGNATION**	**DN 15 to DN 100**	**DN 125 to DN 150**
1	Valve body (RP45G)	GJS-400-15 / 0.7040	GJS-400-15 / 0.7040
	Valve body (RP45S)	A216 WCB / 1.0619	A216 WCB / 1.0619
	Valve body (RP45i)	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2	Seat	AISI 316 / 4.4401	AISI 316 / 4.4401
3	Stem	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Valve plug	AISI 420 / 1.4021	AISI 316 / 4.4401
5	Nut	AISI 316 / 1.4401	AISI 316 / 4.4401
6	Ball	AISI 440C / 1.4125	–
7	Stem guide	AISI 304 / 1.4301	–
7A	Stem guide	AISI 304 / 1.4301	–
8	Pin	AISI 301 / 1.4310	AISI 304 / 1.4301
9	Compensating spring	AISI 302 / 1.4300	–
10	* Bellows	AISI 316Ti / 1.4571	AISI 316 / 1.4401
10A	Nut	AISI 316 / 1.4401	–
10B	Split ring	AISI 316 / 1.4401	–
11	Guide tube	CuZn39Pb3	–
12	Bellows gasket	Stainless steel / Graphite	Stainless steel / Graphite
13	Body gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	O-ring	EPDM	–
15	Piston body (RP45G and RP45S)	A216 WCB / 1.0619	–
	Piston body (RP45i)	A351 CF8M / 1.4408	–
15A	Piston body extension (RP45G and RP45S)	P355T1 / 1.0421	–
	Piston body extension (RP45i)	AISI 304 / 1.4301	–
16	Studs (RP45G and RP45S)	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
	Studs (RP45i)	Stainless steel A2-70	–
17	Nuts (RP45G and RP45S)	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
	Nuts (RP45i)	Stainless steel A2-70	–
18	* Adjustment spring	Spring steel	Spring steel
18A	Lower spring plate (RP45G and RP45S)	C45E / 1.1191	A216 WCB / 1.0619
	Lower spring plate (RP45i)	AISI 304 / 1.4301	
18B	Upper spring plate	–	S235JG2R / 1.0038
19	Threaded tube	CuZn39Pb3	–
20	Spring adjusting nut (RP45G and RP45S)	C45E / 1.1191	A216 WCB / 1.0619
	Spring adjusting nut (RP45i)	AISI 304 / 1.4301	–
21	Ball bearing	Zinc plated steel	Zinc plated steel
22	Spacer (RP45G and RP45S)	S355JR / 1.0045	–
	Spacer (RP45i)	AISI 304 / 1.4301	–
23	Pressure star (RP45G and RP45S)	S235JR / 1.0038	–
	Pressure star (RP45i)	AISI 304 / 1.4301	–
24	Lock nut (RP45G and RP45S)	C45E / 1.1191	–
	Lock nut (RP45i)	AISI 303 / 1.4305	–
25	Pressure tube (RP45G and RP45S)	C45E / 1.1191	–
	Pressure tube (RP45i)	AISI 304 / 1.4301	–
26	Pin	AISI 303 / 1.4305	–
27	Bellows housing	–	S355JR / 1.0045
28	Pillars	–	C45E / 1.1191
29	Pillars flange	–	C45E / 1.1191
30	Bolts	–	Zinc plated steel
31	Stem nut	–	A351 CF8 / 1.4308
32	Belleville washer	–	P235GH / 1.0345
33	Tightening nut	–	S235JR / 1.0038

* Available spare parts.

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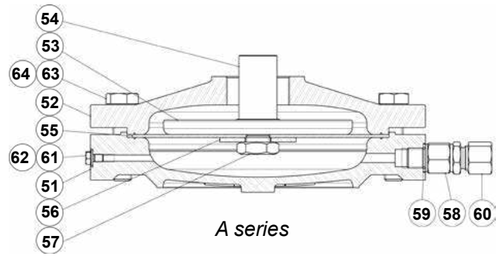
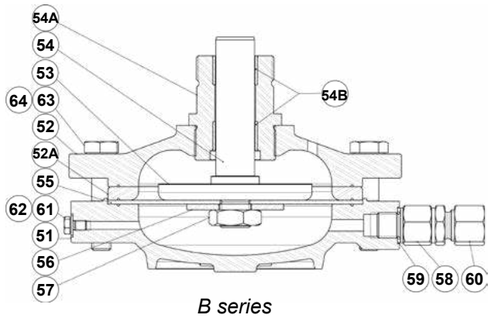
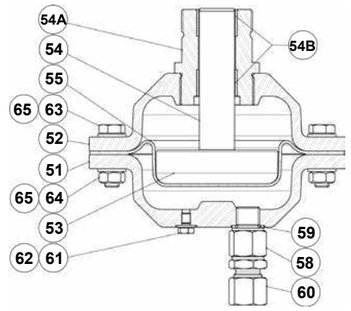


A series



B series



C series

MATERIALS – ACTUATOR							
POS. Nº	**DESIGNATION**	**A1 / A10 / A11 / A12 / A3 / A4**	**A2 / A21**	**A1i / A10i / A11i / A12i / A2i A21i / A3i / A4i**	**B1 / B3 / B4**	**B2 / B21**	**C11**
51	Lower diaph. chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	A351 CF8M /1.4408	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	S235JR / 1.0038
52	Upper diaph. chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	A351 CF8M /1.4408	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	S235JR / 1.0038
52A	Spacer ring	–	–	–	S355JR / 1.0045	S355JR / 1.0045	–
53	Pressure plate	A216 WCB / 1.0619	GJS-400-15 / 0.7040	A351 CF8M /1.4408 AISI 304 / 1.4301	S355JR / 1.0045	S355JR / 1.0045	C45E / 1.1191
54	Diaph. plate spindle	A216 WCB / 1.0619	GJS-400-15 / 0.7040	A351 CF8M /1.4408 AISI 304 / 1.4301	AISI 420 / 1.4021	AISI 420 / 1.4021	AISI 420 / 1.4021
54A	Guide	–	–	–	C45E / 1.1191	C45E / 1.1191	C45E / 1.1191
54B	* Plain bearing	–	–	–	Bronze	Bronze	Bronze
55	* Diaphragm	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Reinforced NBR
56	Washer	Copper	Copper	AISI 304 / 1.4301	Copper	Copper	–
57	Hex nut	CuZn39Pb3	CuZn39Pb3	AISI 304 / 1.4301	CuZn39Pb3	CuZn39Pb3	–
58	Flow restrictor	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305
59	Gasket	Copper	Copper	Copper	Copper	Copper	Copper
60	Compression fitting	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel	Zinc plated steel	AISI 304 / 1.4301	Zinc plated steel	Zinc plated steel	Zinc plated steel
62	Washer	Copper	Copper	AISI 304 / 1.4301	Copper	Copper	Copper
63	Bolts	Zinc plated steel	Zinc plated steel	AISI 304 / 1.4301	Zinc plated steel	Zinc plated steel	Zinc plated steel
64	Nuts	Zinc plated steel	Zinc plated steel	AISI 304 / 1.4301	Zinc plated steel	Zinc plated steel	Zinc plated steel
65	Washer	–	–	–	–	–	Zinc plated steel

* Available spare parts.

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PRESSURE REDUCING VALVE
RP45
(ASME)

DESCRIPTION

The ADCA RP45 series pressure reducing valves are single seated, bellows sealed controllers that operate without auxiliary energy.
Designed for use with steam, compressed air, and other gases compatible with the construction.
These valves are particularly suitable for reducing steam pressure in all energy and process systems where pressures must be kept under control.

MAIN FEATURES

Specially designed high durability bellows, providing pressure balancing and frictionless plug stem.
Robust construction (fit-and-forget).
Suitable for use with high pressure turndowns.
Interchangeable actuators and adjustment springs.

OPTIONS: Soft sealing in PTFE/GR for use with steam.
Soft sealing in nitrile rubber for use with air and gases.
Low-noise flow divider.
Sensing pipe on body.

USE: Steam, compressed air and other gases compatible with the construction. Limited use with liquids. Consult manufacturer before installing the valve with liquids.

AVAILABLE MODELS: RP45S and RP45ST or N – carbon steel.
Suffix T: soft sealed with PTFE/GR.
Suffix N: soft sealed with nitrile rubber.

SIZES: 1/2" to 6".

CONNECTIONS: Flanged ASME B16.5 Class 150 or 300.

AVAILABLE ACTUATORS: A1, A10, A11, A12, A3, A4, B1, B3, B4 and C11 – carbon steel.
A2, A21, B2 and B21 – SG iron or carbon steel.

INSTALLATION: See IMI – Installation and maintenance instructions.

RP45
1/2" to 4"

RP45
6"

RP45
1/2" to 4"
with sensing pipe on body

CE MARKING – GROUP 2 (PED – European Directive)		
Class 150	**Class 300**	**Category**
1/2" to 2"	1/2" to 1"	SEP
21/2" to 4"	11/2" to 4"	1 (CE marked)
6"	6"	2 (CE marked)

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LIMITING CONDITIONS						
Valve model	**RP45S**	**RP45S**	**RP45ST**	**RP45ST**	**RP45SN**	**RP45SN**
Body design conditions	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300
Maximum upstream pressure	13 bar	25 bar	13 bar	25 bar	13 bar	25 bar
Maximum downstream pressure (1/2" to 4")	13 bar	18 bar	13 bar	18 bar	13 bar	18 bar
Maximum downstream pressure (6")	12 bar	16,5 bar	12 bar	16,5 bar	12 bar	16,5 bar
Minimum downstream pressure	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar	0,15 bar
Maximum operating temperature	200 ºC	250 ºC	200 ºC	200 ºC	80 ºC	80 ºC
Maximum reducing ratio	25:1	25:1	25:1	25:1	10:1	10:1
Rangeability	10:1	10:1	10:1	10:1	10:1	10:1
Maximum hydraulic factory valve body test	24 bar	60 bar	24 bar	60 bar	24 bar	60 bar

Remark: Other soft materials and temperature limits on request.

Actuator model	**A1**	**A10**	**A11**	**A12**	**A2**	**A21**	**A3**	**A4**	**B1**	**B2**	**B21**	**B3**	**B4**	**C11**
Maximum operating pressure (bar)	25	25	25	25	12	18	2,5	1,5	25	13	18	2,5	1,5	25
Maximum operating temperature	90 ºC *													

* The water seal pot must be installed in the sensing pipe when operating with steam or liquids at temperatures above 90 ºC.

FLOW RATE COEFFICIENTS (m³/h)									
SIZE	**1/2"**	**3/4"**	**1"**	**11/2"**	**2"**	**21/2"**	**3"**	**4"**	**6"**
Kvs	4,8	6,9	9,1	14,4	26,5	51,5	79,5	129,5	204

SATURATED STEAM CAPACITY TABLE (kg/h)									
INLET (barg)	**SIZE**								
	1/2"	**3/4"**	**1"**	**11/2"**	**2"**	**21/2"**	**3"**	**4"**	**6"**
0,5	51	68	90	186	300	460	800	1250	1800
0,75	63	84	112	230	360	580	1000	1550	2350
1	75	100	133	280	430	700	1200	1850	3200
1,5	100	133	175	360	590	910	1600	2500	4000
2	126	170	230	450	730	1160	2000	3050	4700
2,5	150	200	260	550	880	1390	2400	3600	6500
3	175	240	310	640	1010	1600	2700	4300	8500
4	220	290	390	800	1300	2000	3400	5400	10000
5	260	350	480	1000	1600	2500	4200	6500	12000
6	330	440	580	1220	1930	3000	5100	8000	14000
7	400	520	700	1430	2300	3600	6100	9500	16000
8	450	600	800	1670	2700	4100	7100	11000	18000
9	500	670	880	1800	2900	4600	7800	12000	20000
10	560	750	980	2000	3200	5100	8500	13500	22000
12	680	900	1180	2500	4000	6100	10500	16300	25000
14	800	1050	1400	2900	4700	7200	12600	19000	29000
16	920	1230	1630	3400	5500	8300	14600	22000	33000
18	1040	1400	1860	3800	6200	9500	16600	25000	38000
20	1170	1540	2100	4200	7000	10800	18600	28000	42000
22	1330	1780	2350	4900	7800	12200	21000	32000	45000
24	1500	2000	2600	5400	8700	13700	23500	36000	48000
25	1600	2150	2800	5700	9200	14500	25500	38000	50000

Remark: For pressure ratios where P2 > 0,7 P1 and/or when the operating medium is superheated steam, a correction factor must be applied. See next page.

VALSTEAM ADCA

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IS RP45.13 E 04.20

CORRECTION FACTORS

Pressure ratio:
The capacities given in the “Saturated steam capacity table” are applicable in scenarios where P2 < 0,7 P1.
In the remaining scenarios a correction factor must be applied:

PRESSURE RATIO * P2 / P1	CORRECTION FACTOR f
≥ 0,7	1,25
≥ 0,8	1,6
≥ 0,9	2,25

* Pressure ratio in bar abs (barg + 1)

Superheated steam:
When the medium is superheated steam, instead of saturated steam, a correction factor must also be applied. The required mass flow must be multiplied by the following factor:

Vh, where Vh = specific volume of superheated steam, and
Vs Vs = specific volume of saturated steam.

ACTUATOR AND SPRING SELECTION TABLE

SIZE	ACTUATOR																
		A4		A3	A2	A21	A1		A10	A11	A12	B4	B3	B2	B21	B1	C11
1/2"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
3/4"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
1"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
11/2"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,6	1,7-3,8	3,9-5,5	5,6-8,2	–	–	8,3-13	10-18	–	–	–	–	–	–
	Spring Nº	66	60	60	60	60	60	–	–	60	60.1	–	–	–	–	–	–
2"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,9	2,0-4,2	4,3-6,9	7-8,5	–	10-18	8,6-13	–	–	–	–	–	–	–
	Spring Nº	67	61	61	61	61	64	–	61	64	–	–	–	–	–	–	–
21/2"	Spring range (bar)	0,15-0,49	0,5-0,99	1,0-1,9	2,0-4,2	4,3-6,9	7-8,5	–	10-18	8,6-13	–	–	–	–	–	–	–
	Spring Nº	67	61	61	61	61	64	–	61	64	–	–	–	–	–	–	–
3"	Spring range (bar)	0,15-0,45	0,46-0,99	1,0-1,9	2,0-5,0	5,1-8,9	9-13	11-18	–	–	–	–	–	–	–	–	–
	Spring Nº	68	62	62	62	62	65	62	–	–	–	–	–	–	–	–	–
4"	Spring range (bar)	0,15-0,45	0,46-0,99	1,0-1,9	2,0-6,0	6,1-13,0	–	11-18	–	–	–	–	–	–	–	–	–
	Spring Nº	69	63	63	63	63	–	63	–	–	–	–	–	–	–	–	–
6"	Spring range (bar)	–	–	–	–	–	–	–	–	–	–	0,5-1,5	1,1-2,5	1,5-5,5	4-8,5	6-12	8-16,5
	Spring Nº	–	–	–	–	–	–	–	–	–	–	70	70	70	70	70	70

HOW TO SIZE (USING STEAM TABLE)

Example
Required saturated steam capacity: 500 kg/h; Upstream pressure: 3 bar; Required downstream pressure: 2 bar.

Solution:
First determine correction factor for pressure ratio: (2+1) / (3+1) = 0,75 → f = 1,25
Then multiply the given capacity: 500 × 1,25 = 625 kg/h
Afterwards, refer to the cell with the number “3” in the column “INLET” of the saturated steam capacity table. In that line, the values for selection of the pressure reducing valve size can be found. In this particular scenario, a value equal to or higher than 625 kg/h is required, and the right selection would be 11/2", with a capacity of 640 kg/h.
On the actuator and spring selection table, for a downstream pressure of 2 bar, the recommended actuator is the A2, and the regulating spring is Nº 60.

Remarks: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the actual flow required. Pipe sizing must also respect the maximum recommended flow velocities, according to the medium.

HOW TO SIZE (USING Kvs)

Please consult formulas on IS PV10.00 E or consult manufacturer.

HOW TO ORDER

RP45S 11/2" Class 150 valve complete with spring Nº 60, A2 actuator, condensate vessel and copper sensing pipe.

INSTALLATION

Horizontal installation with the actuator vertically, pointing downwards.
Installation with the actuator pointing upwards is possible only when the medium temperature is below 90 ºC.
The sensing pipe, if not fitted on the valve body, must be installed downstream of the valve at a minimum of 1 meter away or 15 pipe diameters.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

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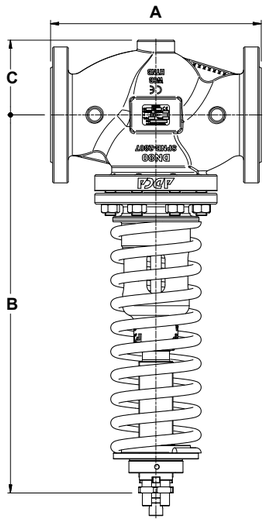
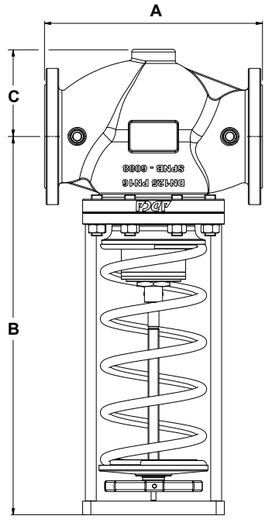


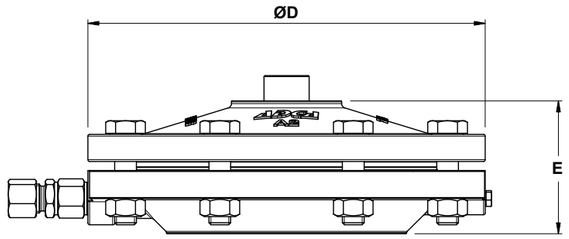
1/2" to 4"



6"

DIMENSIONS – VALVE (mm)									
DIMENSION		SIZE								
		1/2"	3/4"	1"	11/2"	2"	21/2"	3"	4"	6"
A	CLASS 150	184	184	184	222	254	276	298	352	451
	CLASS 300	190	194	197	235	267	292	318	368	473
B	CLASS 150	366	366	371	384	470	495	556	597	710
	CLASS 300	366	366	371	384	470	495	556	597	710
C	CLASS 150	44,5	49	54	65	85	100	110	130	180
	CLASS 300	47,5	58,5	62	78	85	100	110	130	180
WGT. (kg)	CLASS 150	8,9	9,2	10,4	14	20,5	29,9	42,2	55	113
	CLASS 300	9,3	10,2	11,8	16,8	22,8	33	47,5	62,9	129,4

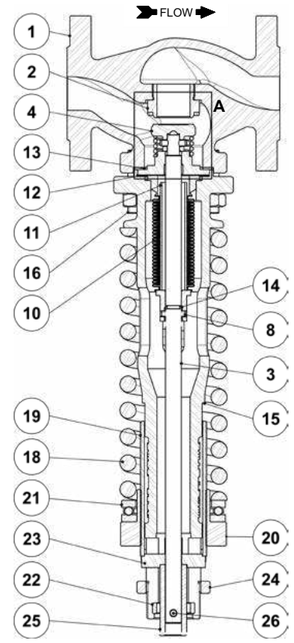
Remarks: In the beginning of year 2022 new face to face dimensions have been defined for some Class 150 valves. Valves may still be supplied with the previous face to face dimensions under request. Consult the manufacturer.



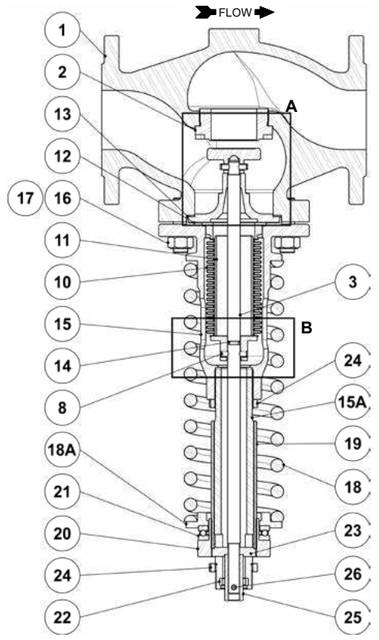
DIMENSIONS – ACTUATOR (mm)														
DIMENSION	ACTUATOR													
	A1	A10	A11	A12	A2	A21	A3	A4	B1	B2	B21	B3	B4	C11
ØD	172	172	172	172	220	220	282	340	172	220	220	283	340	145
E	67	67	67	67	74	74	71	81	80	86	86	88	98	93
WEIGHT (kg)	4,3	4,3	4,3	4,3	7,3	7,3	11,3	16,3	4,4	7,4	7,4	11,6	18,6	2,3

We reserve the right to change the design and material of this product without notice.

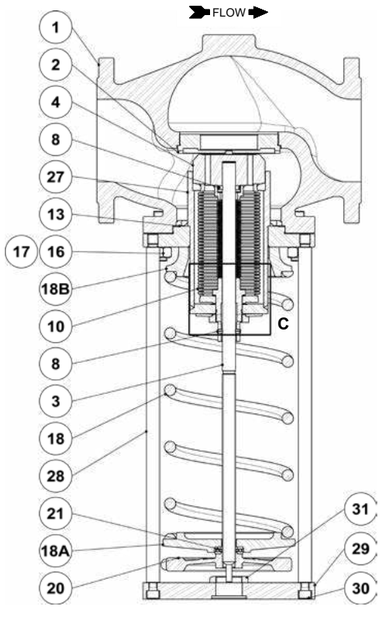
MATERIALS



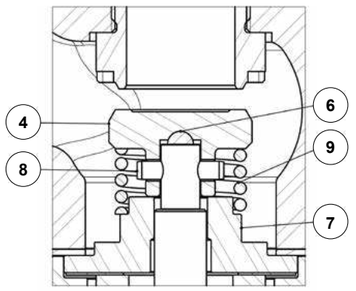
1/2" to 2"



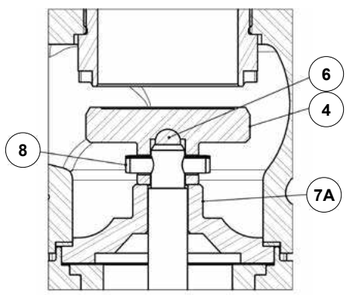
21/2" to 4"



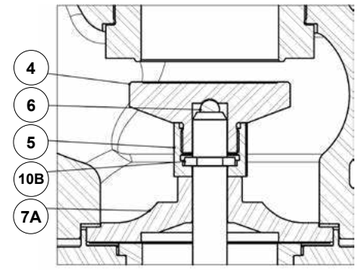
6"



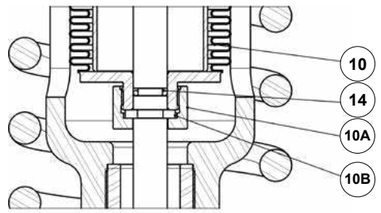
Detail A
(1/2" to 11/2")



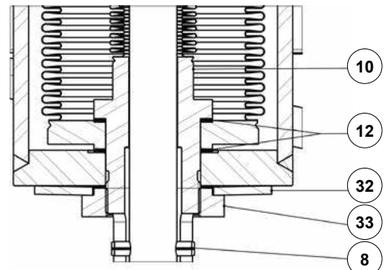
Detail A
(2" and 21/2")



Detail A
(3" and 4")



Detail B
(3" and 4")



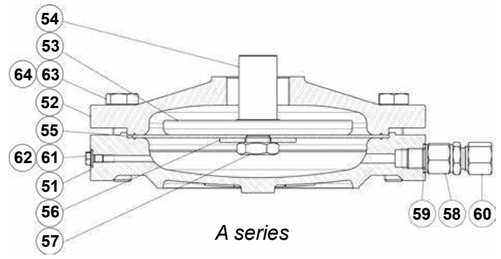
Detail C
(6")

We reserve the right to change the design and material of this product without notice.

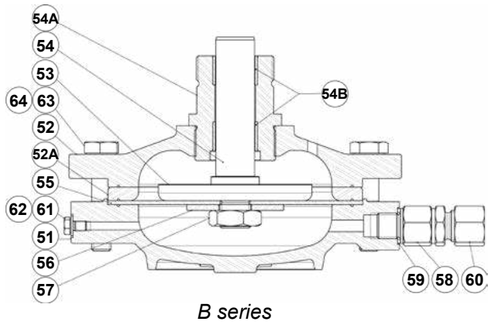
MATERIALS – VALVE			
POS. Nº	**DESIGNATION**	**1/2" to 4"**	**6"**
1	Valve body	A216 WCB / 1.0619	A216 WCB / 1.0619
2	Seat	AISI 316 / 4.4401	AISI 316 / 4.4401
3	Stem	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Valve plug	AISI 420 / 1.4021	AISI 316 / 4.4401
5	Nut	AISI 316 / 1.4401	AISI 316 / 4.4401
6	Ball	AISI 440C / 1.4125	–
7	Stem guide	AISI 304 / 1.4301	–
7A	Stem guide	AISI 304 / 1.4301	–
8	Pin	AISI 301 / 1.4310	AISI 304 / 1.4301
9	Compensating spring	AISI 302 / 1.4300	–
10	* Bellows	AISI 316Ti / 1.4571	AISI 316 / 1.4401
10A	Nut	AISI 316 / 1.4401	–
10B	Split ring	AISI 316 / 1.4401	–
11	Guide tube	CuZn39Pb3	–
12	Bellows gasket	Stainless steel / Graphite	Stainless steel / Graphite
13	Body gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	O-ring	EPDM	–
15	Piston body	A216 WCB / 1.0619	–
15A	Piston body extension	P355T1 / 1.0421	–
16	Studs	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
17	Nuts	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
18	* Adjustment spring	Spring steel	Spring steel
18A	Lower spring plate	C45E / 1.1191	A216 WCB / 1.0619
18B	Upper spring plate	–	S235JG2R / 1.0038
19	Threaded tube	CuZn39Pb3	–
20	Spring adjusting nut	C45E / 1.1191	A216 WCB / 1.0619
21	Ball bearing	Zinc plated steel	Zinc plated steel
22	Spacer	S355JR / 1.0045	–
23	Pressure star	S235JR / 1.0038	–
24	Lock nut	C45E / 1.1191	–
25	Pressure tube	C45E / 1.1191	–
26	Pin	AISI 303 / 1.4305	–
27	Bellows housing	–	S355JR / 1.0045
28	Pillars	–	C45E / 1.1191
29	Pillars flange	–	C45E / 1.1191
30	Bolts	–	Zinc plated steel
31	Stem nut	–	A351 CF8 / 1.4308
32	Belleville washer	–	P235GH / 1.0345
33	Tightening nut	–	S235JR / 1.0038

* Available spare parts.

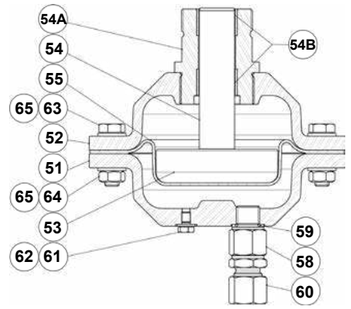
We reserve the right to change the design and material of this product without notice.



A series



B series



C series

MATERIALS – ACTUATOR						
POS. Nº	**DESIGNATION**	**A1 / A10 / A11 / A12 / A3 / A4**	**A2 / A21**	**B1 / B3 / B4**	**B2 / B21**	**C11**
51	Lower diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	S235JR / 1.0038
52	Upper diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	A216 WCB / 1.0619	GJS-400-15 / 0.7040 A216 WCB / 1.0619	S235JR / 1.0038
52A	Spacer ring	–	–	S355JR / 1.0045	S355JR / 1.0045	–
53	Pressure plate	A216 WCB / 1.0619	GJS-400-15 / 0.7040	S355JR / 1.0045	S355JR / 1.0045	C45E / 1.1191
54	Diaphragm plate spindle	A216 WCB / 1.0619	GJS-400-15 / 0.7040	AISI 420 / 1.4021	AISI 420 / 1.4021	AISI 420 / 1.4021
54A	Guide	–	–	C45E / 1.1191	C45E / 1.1191	C45E / 1.1191
54B	* Plain bearing	–	–	Bronze	Bronze	Bronze
55	* Diaphragm	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Neoprene reinforced polyamid	Reinforced NBR
56	Washer	Copper	Copper	Copper	Copper	–
57	Hex nut	CuZn39Pb3	CuZn39Pb3	CuZn39Pb3	CuZn39Pb3	–
58	Flow restrictor	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305	AISI 303 / 1.4305
59	Gasket	Copper	Copper	Copper	Copper	Copper
60	Compression fitting	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel
62	Washer	Copper	Copper	Copper	Copper	Copper
63	Bolts	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel
64	Nuts	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel	Zinc plated steel
65	Washer	–	–	–	–	Zinc plated steel

* Available spare parts.

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS RP45.13 E 04.20

WATER SEAL POT
POT

DESCRIPTION

The ADCA POT is specially designed to protect diaphragms, such as the ones installed in the RP45 pressure regulators, when the media temperature exceeds the diaphragm maximum operating temperature.

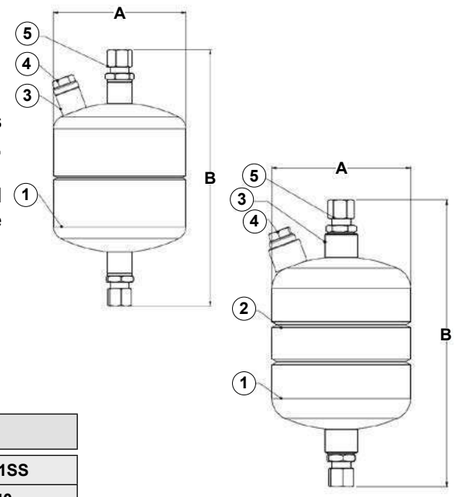
OPTIONS: Bigger sizes for special applications or when quick pressure or flow rate fluctuations are present.
Different sizes and materials.

USE: Water sealing in pressure regulators (e.g. RP45).

AVAILABLE MODELS:
POT-4S – PN 16, carbon steel.
POT-4SS – PN 16, stainless steel.
POT-41S – PN 40, carbon steel.
POT-41SS – PN 40, stainless steel.

CONNECTIONS: Female threaded ISO 7 Rp 3/8".
(Compression fittings – 3/8" x 10).

INSTALLATION: Connection to the steam pipe must be always depressurized when filling the vessel with water, in order to avoid the risk of scalding.
Please consult the IMI – Installation and maintenance instructions corresponding to the valve where it will be applied.



CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
3/8"	SEP

BODY LIMITING CONDITIONS *							
POT-4S		**POT-4SS**		**POT-41S**		**POT-41SS**	
PN 16		**PN 16**		**PN 40**		**PN 40**	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	16 bar	100 ºC	37 bar	100 ºC	37,9 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC	29,9 bar **	250 ºC
12 bar	250 ºC	12 bar	250 ºC	27 bar	300 ºC	27,6 bar	300 ºC

* Rating according to EN 1092-1:2018; ** PMO – Max. operating pressure for saturated steam.
Design code: AD-Merkblatt.

DIMENSIONS (mm)				
MODEL	**A**	**B**	**VOL. (L)**	**WGT. (kg)**
POT-4S	114	224	1,3	1,9
POT-4SS	114	226	1,3	1,9
POT-41S	114	232	1,3	2,8
POT-41SS	114	221	1,2	2,6

MATERIALS				
POS. Nº	**DESIGNATION**	**POT-4S**	**POT-4SS**	**POT-41S**
1	Heads	S235JR / 1.0038	A403 WP316L	EN 10028-2 / P265GH / 1.0425
2	Intermediate tube	–	A312 TP316L	EN 10216-2 / P235GH / 1.0325
3	Sockets	A105 / 1.0432	AISI 316 / 1.4401	S355JR / 1.0045
4	Plug	A105 / 1.0432	AISI 316 / 1.4401	A105 / 1.0432
5	Compression fitting	Fe/Zn – ISO 2081 – Cl. L	AISI 316Ti / 1.4571 – Cl. L	Fe/Zn – ISO 2081 – Cl. L

We reserve the right to change the design and material of this product without notice.

PRESSURE REDUCING VALVE STATION
RP45TW

DESCRIPTION

The ADCA RP45TW series pressure reducing station consists of two standard RP45 valves installed in parallel.
This system is particularly recommended for installations where a single valve cannot reach the maximum required flow rate or when the consumption variation is significant, being prudent to install two smaller valves instead of a single one in order to avoid oversizing.
This system is also recommended when it is vital that the steam supply is not interrupted.

OPERATION

Each valve operates individually, according to the description on the RP45 datasheet. This assembly also allows that one of the valves is regulated to a slightly different pressure than the other, avoiding oversizing problems when the consumption variation is significant. In this case, one of the valves remains closed, opening only when the consumption increase justifies it.

MAIN FEATURES

The main characteristic of this assembly is the use of an S252/F humidity separator (see IS 9.315 E) which, besides the separator function, also includes a strainer and has the particularity of having one inlet and two outlets.
Compact design.

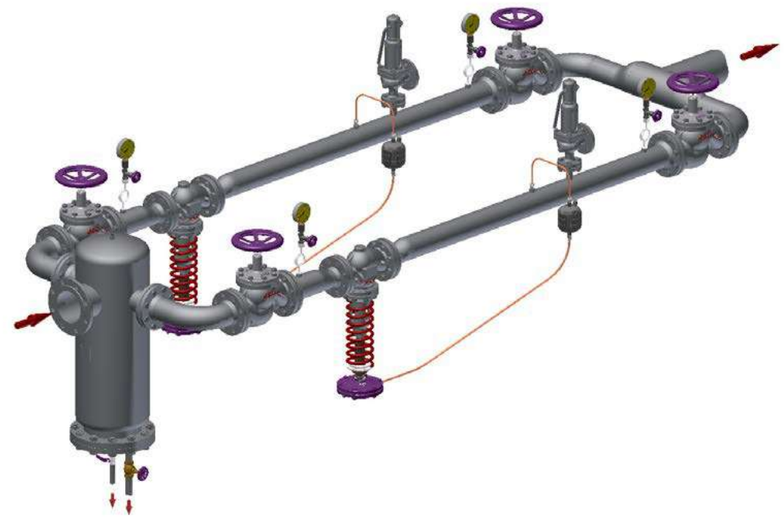
OPTIONS: Different valve combinations, fittings and designs.

USE: Steam, compressed air and other gases and liquids compatible with the construction.

SIZES: S252/F separator – DN 15 to DN 300.
Pressure regulator – DN 15 to DN 100.

CONNECTIONS: Flanged EN PN 16 or PN 40.
Flanged ASME Class 150 or Class 300.

INSTALLATION: Horizontal installation (see ADCR.05.4805).
Special designs on request.



We reserve the right to change the design and material of this product without notice.

PISTON SENSING PRESSURE REDUCING VALVE
P20P

DESCRIPTION

The ADCA P20P series pressure reducing valves are direct acting, spring loaded, piston sensing balanced plug regulators designed for use with nitrogen, compressed air, water and other gases and liquids compatible with the materials of construction.
Suitable for general purpose pressure reducing applications such as instrumentation systems and industrial equipment where small loads are involved.

MAIN FEATURES

Compact design.
Machined from bar stock materials.
Non-rising adjustment knob.
Ultrasonically cleaned and degreased.

OPTIONS: Different soft valves for water and gases.
Relieving – internal relief valve to allow reduce outlet pressure in a no-flow condition.
Relieving – captured vent below panel.
Panel mounting ring.
Bottom mounting.
1/4” outlet gauge connection on body.
Top cap (adjustment screw with cover).

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: P20P – stainless steel, piston sensing, low flow.

SIZES: 1/4”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 320	**Category**
1/4"	SEP

FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/4"**		
Kvs	0,043	0,22	0,62

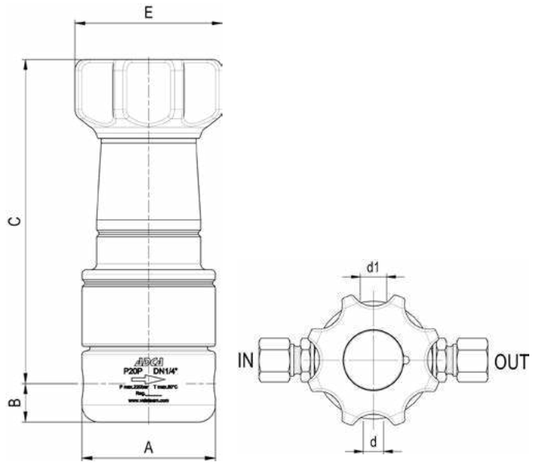
LIMITING CONDITIONS	
Valve model	**P20P**
Body design conditions	PN 320
Maximum upstream pressure	220 bar
Maximum downstream pressure	200 bar
Minimum downstream pressure	0,2 bar
Maximum design temperature *	80 ºC
Maximum recommended reducing ratio	40:1

* Others on request.

We reserve the right to change the design and material of this product without notice.

DIMENSIONS (mm)							
SIZE	**A**	**B**	**C**	**E**	**d ***	**d1 ***	**WEIGHT (kg)**
1/4"	59	17	143,5	69	1/8”	1/4"	2,5

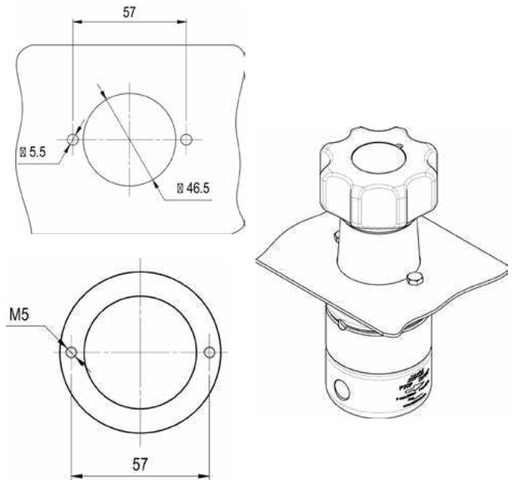
* Optional: Captured vent connection (d); Pressure gauge (d1).
Remark: all optional threaded connections are supplied in accordance with the main connections.



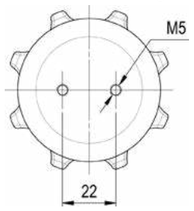
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316L / 1.4404
2	Top cover	AISI 316L / 1.4404
3	* Valve head	NBR; EPDM; PTFE; etc.
4	* Valve spring	AISI 302 / 1.4300
5	Pushrod	AISI 316L / 1.4404
6	* O-ring	NBR; EPDM; PTFE; etc.
7	Piston sleeve	AISI 316L / 1.4404
8	* O-ring	NBR; EPDM; etc.
9	* O-ring	NBR; EPDM; etc.
10	Piston	AISI 316L / 1.4404
11	* O-ring	NBR; EPDM; Viton; etc.
12	Spring plate	AISI 316L / 1.4404
13	* Adjustment spring	Spring steel
14	Top spring plate	AISI 316L / 1.4404
15	Adjustment screw	AISI 316L / 1.4404
16	Retaining washer	Stainless steel A2-70
17	* O-ring	NBR; etc.
18	Handwheel	Painted aluminium
19	** Panel mounting ring	AISI 316L / 1.4404
20	Bearing	Corrosion resistant steel
21	Ext. bowed shaft ring	Stainless steel
22	Cover nut	Plastic

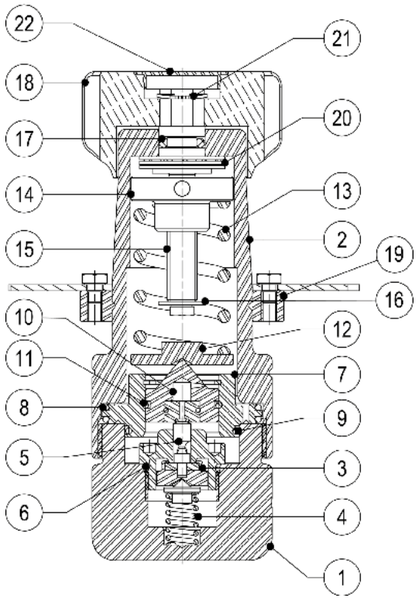
* Available spare parts; ** Optional.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

Panel mounting



Bottom mounting





We reserve the right to change the design and material of this product without notice.

ORDERING CODES P20P														
Valve model	**P20P**	**.**	**1**	**W**	**N**	**E**	**4**	**R**	**P**	**.**	**A**	**108**	
P20P – stainless steel piston sensing pressure reducing valve	**P20P**												
Regulating range													
Nº1 – 0,2 to 1,5 bar			**1**										
Nº2 – 0,3 to 3 bar			**2**										
Nº3 – 0,8 to 8 bar			**3**										
Nº4 – 1,5 to 15 bar			**4**										
Nº5 – 3 to 30 bar			**5**										
Nº6 – 5 to 50 bar			**6**										
Nº7 – 20 to 200 bar			**7**										
Application													
Water				**W**									
Gases				**G**									
Oxygen (degreased)				**O**									
Seal material a)													
NBR					**N**								
EPDM					**E**								
PTFE **b)**					**T**								
FPM / Viton					**V**								
Maximum inlet pressure													
80 bar						**E**							
220 bar						**F**							
Gauge port 1/4" c)													
Without gauge ports							**(1)**						
Gauge port on the left side (relative to the flow direction)							**4**						
Gauge port on the right side (relative to the flow direction)							**3**						
Gauge ports on both sides							**2**						
Relieving													
Non-relieving								**(1)**					
Relieving (only for non dangerous gases)								**R**					
Relieving with captured vent								**L**					
Panel mounting													
Without panel mounting ring									**(1)**				
With panel mounting ring									**P**				
Pipe connection													
Female threaded ISO 7 Rp											**A**		
Female threaded NPT ASME B1.20.1											**C**		
Size													
1/4" – Kvs 0,043												**108**	
1/4" – Kvs 0,22												**208**	
1/4" – Kvs 0,62												**308**	
Special valves / Extras													
Full description or additional codes have to be added in case of non-standard combination.													**E**

(1) Omitted if a standard valve is requested.
a) Valve limited to the materials' maximum operating temperature. Consult manufacturer for more details.
b) Valve seal only, other seals in Viton.
c) Gauge port can also be used as external sensing line.

DIAPHRAGM SENSING PRESSURE REDUCING VALVE P20D

DESCRIPTION

The ADCA P20D series pressure reducing valves are direct acting, spring loaded, diaphragm sensing balanced plug regulators designed for use with nitrogen, compressed air, water and other gases and liquids compatible with the materials of construction.
Suitable for general purpose pressure reducing applications such as instrumentation systems and industrial equipment where small loads are involved.

MAIN FEATURES

Compact design.
Non-rising adjustment knob.
Balanced valve plug.
Machined from bar stock materials or investment casting.
Ultrasonically cleaned and degreased.

OPTIONS: Different soft valves for water and gases.
1/4" outlet gauge connection on body.
Top cap (adjustment screw with cover).
Connection for external sensing line.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: P20D – stainless steel, diaphragm sensing.

SIZES: 1/4" to 1/2".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

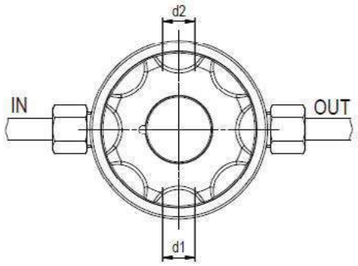
INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

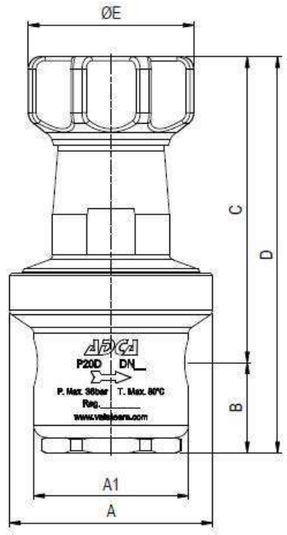
FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/4"**	**3/8"**	**1/2"**
Kvs	1,2	1,8	1,8

LIMITING CONDITIONS	
Valve model	**P20D**
Body design conditions	PN 63
Maximum upstream pressure	50 bar
Maximum downstream pressure	15 bar
Minimum downstream pressure	0,2 bar
Maximum design temperature *	80 ºC
Maximum recommended reducing ratio	40:1

* Others on request.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/4" to 1/2"	SEP

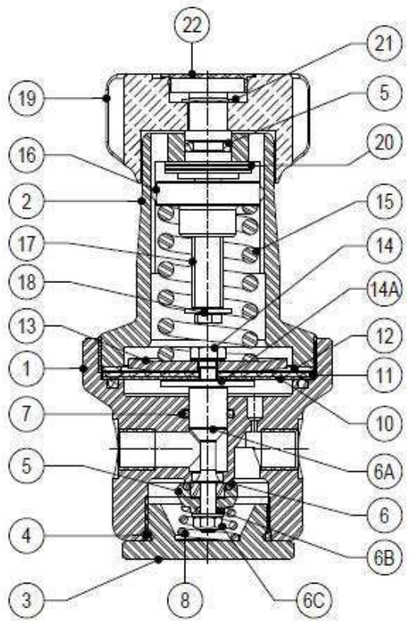




DIMENSIONS (mm)									
SIZE	**A**	**A1**	**B**	**C**	**D**	**E**	**d1 ***	**d2 ***	**WEIGHT (kg)**
1/4"	80	61	35,5	120,5	156	69	1/4"	1/4"	1,8
3/8”	80	61	35,5	120,5	156	69	1/4"	1/4"	1,8
1/2"	80	80	35,5	120,5	156	69	1/4"	1/4"	2,5

* Optional: Captured vent connection (d1); Pressure gauge (d2).
Remark: all optional threaded connections are supplied in accordance with the main connections.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316 / 1.4401; A351 CF8M / 1.4408
2	Top cover	AISI 316 / 1.4401; A351 CF8M / 1.4408
3	Seat cover	AISI 316 / 1.4401; A351 CF8M / 1.4408
4	* O-ring	NBR
5	* Piston valve	AISI 316 / 1.4401
6	* Valve head	NBR; EPDM; PTFE, etc.
6A	Pushrod	AISI 316 / 1.4401
6B	* O-ring	NBR
6C	Nut	Stainless steel A2-70
7	* O-ring	NBR; EPDM; PTFE, etc.
8	Valve spring	AISI 302 / 1.4300
10	* Diaphragm	PTFE
11	* Diaphragm	NBR
12	Gasket	Aluminium
13	Spring plate	AISI 304 / 1.4301
14	Bolt	Stainless steel A2-70
14A	Pusher disc	AISI 304 / 1.4301
15	* Adjustment spring	Spring steel
16	Top spring plate	Brass
17	Adjustment screw	AISI 304 / 1.4301
18	Retaining washer	Stainless steel A2-70
19	Handwheel	Aluminium painted
20	Bearing	Corrosion resistant steel
21	Ext. bowed shaft ring	Stainless steel
22	Cover nut	Plastic



* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

We reserve the right to change the design and material of this product without notice.

ORDERING CODES P20D													
Valve model	**P20**	**.**	**1**	**W**	**N**	**C**	**R**	**4**	**.**	**A**	**08**	
P20D – diaphragm sensing pressure reducing valve	**P20**											
Regulating range												
Nº1 – 0,2 to 1,5 bar			**1**									
Nº2 – 0,3 to 3 bar			**2**									
Nº3 – 0,8 to 8 bar			**3**									
Nº4 – 1,5 to 15 bar			**4**									
Application												
Water				**W**								
Gases				**G**								
Oxygen (degreased)				**O**								
Seal material a)												
NBR					**N**							
EPDM					**E**							
PTFE					**T**							
FPM / Viton					**V**							
Maximum inlet pressure												
30 bar						**C**						
50 bar **b)**						**D**						
Diaphragm												
Rubber/PTFE							**R**					
Gauge port 1/4” c)												
Without gauge ports								**(1)**				
Gauge port on the left side (relative to the flow direction)								**4**				
Gauge port on the right side (relative to the flow direction)								**3**				
Gauge ports on both sides								**2**				
Pipe connection												
Female threaded ISO 7 Rp										**A**		
Female threaded NPT ASME B1.20.1										**C**		
Size												
1/4"											**08**	
3/8"											**10**	
1/2"											**15**	
Special valves / Extras												
Full description or additional codes have to be added in case of non-standard combination.												**E**

(1) Omitted if a standard valve is requested.
a) Valve limited to the materials' maximum operating temperature. Consult manufacturer for more details.
b) 50 bar inlet available only with spring nº4.
c) Gauge port can also be used as external sensing line.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS P20D.01 E 13.13

DIAPHRAGM SENSING PRESSURE REDUCING VALVE
P20DS

DESCRIPTION

The ADCA P20DS series pressure reducing valves are direct acting, spring loaded, diaphragm sensing balanced plug regulators designed for use with steam, nitrogen, compressed air, water and other gases and liquids compatible with the materials of construction.
Particularly suitable for general purpose applications where low flow and high temperatures are involved.

MAIN FEATURES

Compact design.
Non-rising adjustment knob.
Machined from bar stock materials or investment casting.
Ultrasonically cleaned and degreased.

OPTIONS: Different soft valves for water and gases.
1/4” outlet gauge connection on body.
Top cap (adjustment screw with cover).
Connection for external sensing line.

USE: Steam, compressed air and other gases compatible with the construction.

AVAILABLE MODELS: P20DS – stainless steel, diaphragm sensing.

SIZES: 1/4” to 1/2".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

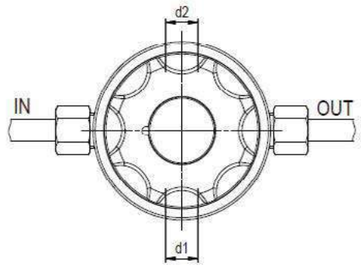
INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

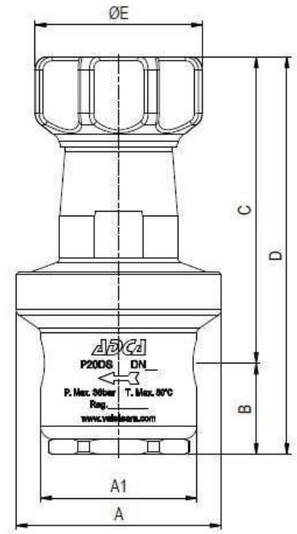
CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
1/4" to 1/2"	SEP

FLOW RATE COEFFICIENTS (m^3/h)			
SIZE	**1/4"**	**3/8"**	**1/2"**
Kvs	1,2	1,8	1,8

LIMITING CONDITIONS	
Valve model	**P20DS**
Body design conditions	PN 25
Maximum upstream pressure	14 bar
Maximum downstream pressure	8 bar
Minimum downstream pressure	0,2 bar
Maximum design temperature *	200 ºC
Maximum recommended reducing ratio	10:1

* Others on request.



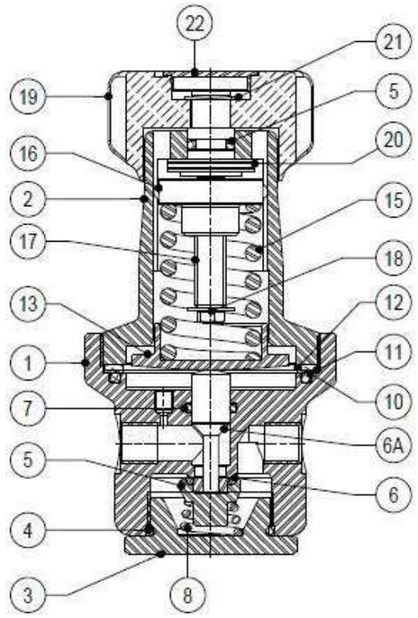


DIMENSIONS (mm)									
SIZE	**A**	**A1**	**B**	**C**	**D**	**E**	**d1 ***	**d2 ***	**WEIGHT (kg)**
1/4"	80	61	35,5	120,5	156	69	1/4"	1/4"	1,8
3/8”	80	61	35,5	120,5	156	69	1/4"	1/4"	1,8
1/2"	80	80	35,5	120,5	156	69	1/4"	1/4"	2,5

* Optional: Captured vent connection (d1); Pressure gauge (d2).
Remark: all optional threaded connections are supplied in accordance with the main connections.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316 / 1.4401; A351 CF8M / 1.4408
2	Top cover	AISI 316 / 1.4401; A351 CF8M / 1.4408
3	Seat cover	AISI 316 / 1.4401; A351 CF8M / 1.4408
4	* O-ring	Viton
5	* Piston valve	AISI 316 / 1.4401
6	* Valve head	Viton
6A	Pushrod	AISI 316 / 1.4401
7	* O-ring	Viton
8	Valve spring	AISI 302 / 1.4300
10	* Gasket	Compressed aramid fiber
11	* Diaphragm	AISI 301 / 1.4410
12	Gasket	Aluminium
13	Spring plate	AISI 304 / 1.4301
15	* Adjustment spring	Spring steel
16	Top spring plate	Brass
17	Adjustment screw	AISI 304 / 1.4301
18	Retaining washer	Stainless steel A2-70
19	Handwheel	Aluminium painted
20	Bearing	Corrosion resistant steel
21	Ext. bowed shaft ring	Stainless steel
22	Cover nut	Plastic

* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.



VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS P20DS.10 E 15.13

ORDERING CODES P20DS												
Valve model	**P20DS**	**.**	**1**	**S**	**N**	**S**	**4**	**.**	**A**	**08**	
P20DS – diaphragm sensing pressure reducing valve	**P20DS**										
Regulating range											
Nº1 – 0,2 to 1,5 bar			**1**								
Nº2 – 0,3 to 3 bar			**2**								
Nº3 – 0,8 to 8 bar			**3**								
Application											
Steam				**S**							
Gases				**G**							
Oxygen (degreased)				**O**							
Seal material a)											
NBR					**N**						
EPDM					**E**						
PTFE					**T**						
FPM / Viton					**V**						
Diaphragm											
Stainless steel						**S**					
Gauge port 1/4" b)											
Without gauge ports							**(1)**				
Gauge port on the left side (relative to the flow direction)							**4**				
Gauge port on the right side (relative to the flow direction)							**3**				
Gauge ports on both sides							**2**				
Pipe connection											
Female threaded ISO 7 Rp									**A**		
Female threaded NPT ASME B1.20.1									**C**		
Size											
1/4"										**08**	
3/8"										**10**	
1/2"										**15**	
Special valves / Extras											
Full description or additional codes have to be added in case of non-standard combination.											**E**

(1) Omitted if a standard valve is requested.
a) Valve limited to the materials' maximum operating temperature. Consult manufacturer for more details.
b) Gauge port can also be used as external sensing line.

DIAPHRAGM SENSING PRESSURE REDUCING VALVE
P7

DESCRIPTION

The ADCA P7 series pressure reducing valves are direct acting, spring loaded, diaphragm sensing balanced plug regulators designed for use with steam, nitrogen, compressed air, water and other gases and liquids compatible with the materials of construction.
Particularly suitable for general purpose applications where low flow and high temperatures are involved.
Also specifically recommended to operate as a pilot valve in combination with other pressure regulators.

MAIN FEATURES

Compact design.
Robust stainless steel diaphragm.
Precise milibar control.

OPTIONS: 1/4" gauge connection on body.
Top cap (adjustment screw with cover).
External sensing connection.
Low pressure top.
Dome loaded version.
Bar stock stainless steel construction.

USE: Steam, compressed air and other gases compatible with the construction.

AVAILABLE MODELS: P7SS – stainless steel, diaphragm sensing.

SIZES: 1/4" and 3/8".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

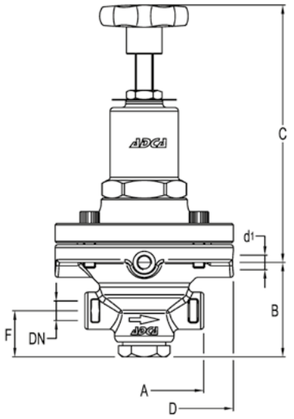
INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

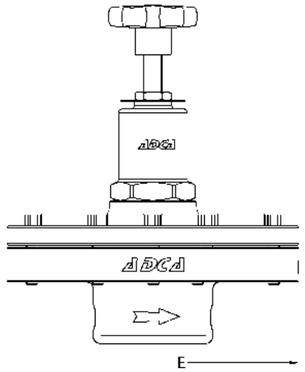
FLOW RATE COEFFICIENTS (m^3/h)		
SIZE	**1/4"**	**3/8"**
Kvs	1	1,1

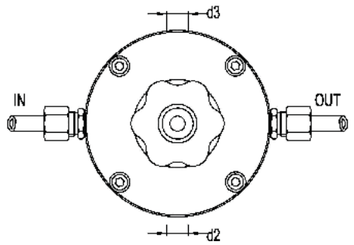
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/4" and 3/8"	SEP

LIMITING CONDITIONS	
Valve model	**P7SS**
Body design conditions	PN 40
Maximum upstream pressure (steam)	25 bar
Maximum upstream pressure (gases)	31 bar
Maximum downstream pressure	17 bar
Minimum downstream pressure *	0,35 bar
Maximum design temperature	300 ºC

* 0,07 bar with low pressure top (limited at 7 bar inlet). The low pressure diaphragm should be fitted for outlet pressures from 0,07 up to 0,5 bar.
Pressure and temperature limiting conditions may change if soft sealing is used.



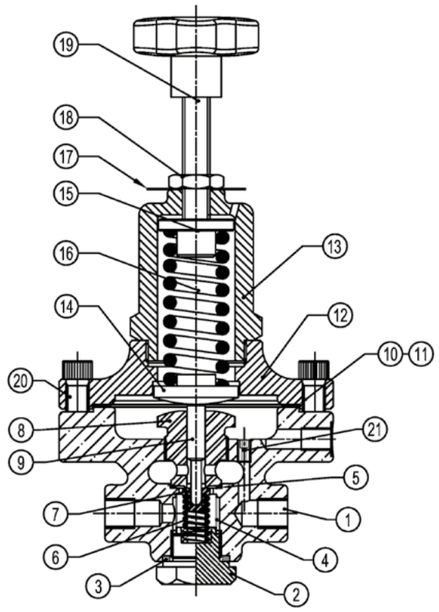




DIMENSIONS (mm)										
SIZE	**A**	**B**	**C**	**D**	**E ***	**F**	**d1 ****	**d2 *****	**d3 *****	**WEIGHT (kg)**
1/4"	80	63,5	185	120	195	31	1/8"	1/4"	1/4"	4,8
3/8"	80	63,5	185	120	195	31	1/8"	1/4"	1/4"	4,8

* Low pressure top (bar stock construction); ** Optional external sensing connection; *** Optional pressure gauge connections.
Remark: all optional threaded connections are supplied in accordance with the main connections.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316 / 1.4401; A351 CF8M / 1.4408
2	Plug	AISI 316 / 1.4401
3	* Gasket	Stainless steel / Graphite
4	* Strainer screen	AISI 304 / 1.4301
5	Gasket	Copper
6	* Spring	AISI 302 / 1.4300
7	* Valve head	AISI 420; EPDM; PTFE; etc.
8	* Pilot valve body	AISI 316 / 1.4401
9	* Pushrod	AISI 316 / 1.4401
10	* Diaphragm	AISI 301 / 1.4310
11	* Gasket	Stainless steel / Graphite
12	Top cover	A351 CF8 / 1.4308
13	Cover spring	A351 CF8 / 1.4308
14	Lower spring carrier	Brass
15	Upper spring carrier	Brass
16	* Adjustment spring	Spring steel
17	Spring id. plate	Aluminium
18	Locknut	Stainless steel A2-70
19	Handwheel	Plástico
20	Bolts	Stainless steel A2-70
21	Restrictor	Stainless steel A2-70



* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

REGULATING RANGES				
SPRING COLOUR	**GREEN w/ 1 diaphragm**	**BLUE w/ 1 diaphragm**	**RED w/ 2 diaphragms**	**BLACK w/ 2 diaphragms**
Regulating range	0,07 to 0,5 bar * 0,35 to 2 bar	1,5 to 5,5 bar	3,5 to 8,5 bar	7 to 17 bar

* With special low pressure top assembled.

We reserve the right to change the design and material of this product without notice.

ORDERING CODES P7										
Valve model	**P7SS**	**.**	**1**	**S**	**E**	**S**	**4**	**A**	**08**	
P7SS – stainless steel pilot pressure reducing valve	**P7SS**									
Regulating range										
Green spring – 0,35 to 2 bar – single diaphragm			**1**							
Blue spring – 1,5 to 5,5 bar – single diaphragm			**2**							
Red spring – 3,5 to 8,5 bar – double diaphragm			**3**							
Black spring – 7 to 17 bar – double diaphragm			**4**							
Dome loaded – 0,35 to 4 bar – single diaphragm **a)**			**6**							
Dome loaded – 2 to 17 bar – double diaphragm **a)**			**7**							
Application										
Steam				**S**						
Gases				**G**						
Seal material b)										
Metal to metal					**(1)**					
EPDM					**E**					
PTFE					**T**					
FPM / Viton					**V**					
Diaphragm										
Standard diaphragm						**S**				
Low pressure diaphragm						**L**				
Gauge port 1/4"										
Without gauge ports							**(1)**			
Gauge port on the left side (relative to the flow direction)							**4**			
Gauge port on the right side (relative to the flow direction)							**3**			
Gauge ports on both sides							**2**			
Pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT ASME B1.20.1								**C**		
Size										
1/4"									**08**	
3/8"									**10**	
Special valves / Extras										
Full description or additional codes have to be added in case of non-standard combination.										**E**

(1) Omitted if a standard valve is requested.
a) The loading control pressure is approximately the same as the required downstream set-point pressure (± 0,2 bar).
b) Valve limited to the materials' maximum operating temperature. Consult manufacturer for more details.
Remarks: The external sensing connection must be requested with the order, when required.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS P7.01 E 11.11

DIAPHRAGM SENSING PRESSURE REDUCING VALVE
PRV30SS
1/2" to 1" – DN 15 to DN 25

DESCRIPTION

The ADCA PRV30SS is a series of direct acting, spring-loaded, diaphragm sensing and balanced plug pressure reducing valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure reducing applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

MAIN FEATURES

Compact design.
Built-in strainer.
Balanced valve plug.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Self relieving.
Gauge connection on body.
Different soft valves for liquids and gases.
Dome-loaded version.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PRV30SS – stainless steel, diaphragm sensing.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/2" – DN 15**	**3/4" – DN 20**	**1" – DN 25**
Kvs	2,1	2,4	6,5

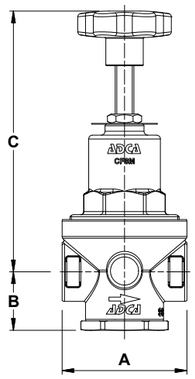
We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS				
Valve model	**PRV30SS**			
Body design conditions	Cl. 150	Cl. 300	PN 40	PN 63 *
Max. upstream pressure	16 bar	40 bar	40 bar	50 bar
Max. downstream pressure	15 bar			
Min. downstream pressure	0,2 bar			
Max. design temperature	80 ºC			
Max. recommended reducing ratio	40:1			
Maximum dome-loading pressure	15 bar			

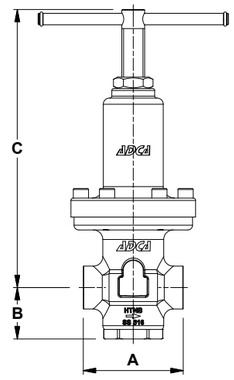
* Rating PN 63 for threaded versions.

OPTIONS

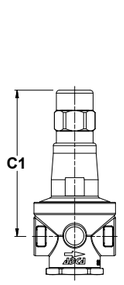
PRESSURE GAUGE	TOP CAP	DOME LOADED VERSION



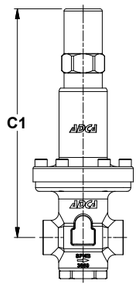
1/2" to 3/4" – DN 15 to DN 20

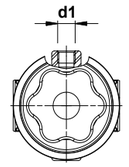


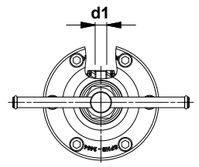
1" – DN 25



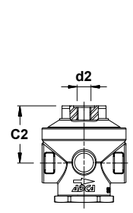
Optional top cap

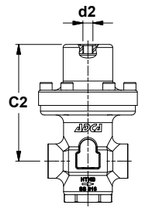






Optional pressure gauge connection





Optional dome-loaded version

DIMENSIONS (mm)														
	THREADED								PN 40		CLASS 150		CLASS 300	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**C2**	**d2**	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**
1/2" – DN 15	80	38	167	145	1/4"	55	1/4"	2,1	150	3,6	150	3	150	3,6
3/4" – DN 20	80	38	167	145	1/4"	55	1/4"	2	150	4,1	150	3,4	150	4,5
1" – DN 25	105	54	292	300	1/4"	153	1/4"	6,6	160	9,3	230	8,5	230	9,7

* Different face to face dimensions on request.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connections d1 and d2 are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, these connections are female threaded NPT.

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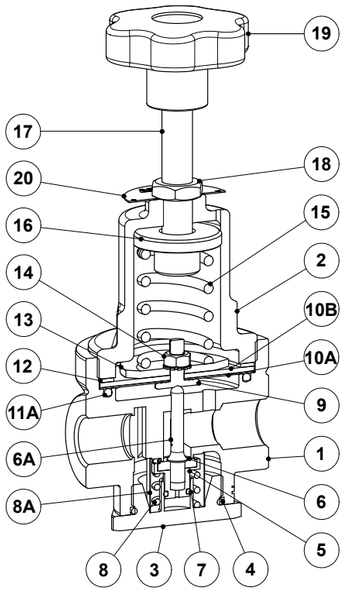
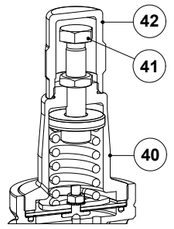
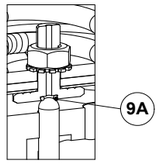
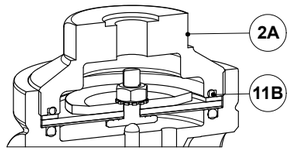




Optional top cap

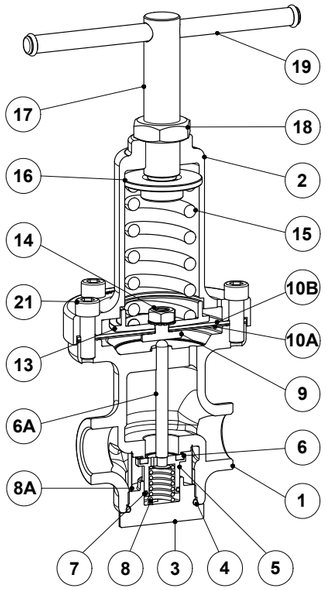


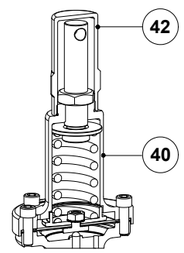
Optional relieving version



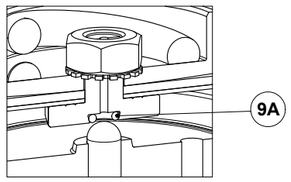
Optional dome-loaded version

1/2" to 3/4" – DN 15 to DN 20

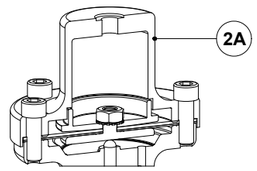




Optional top cap



Optional relieving version



Optional dome-loaded version

1" – DN 25

MATERIALS			
POS. Nº	**DESIGNATION**	**1/2" to 3/4" – DN 15 to DN 20**	**1" – DN 25**
1	Valve body	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2A	Cover	AISI 316L / 1.4404	AISI 316L / 1.4404
3	Bottom cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	* Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Valve head	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
6A	* Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
7	* Piston o-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
8	* Valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
8A	* Strainer screen	AISI 304 / 1.4301	AISI 304 / 1.4301
9	Pusher disc	AISI 304 / 1.4301	AISI 304 / 1.4301
9A	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
10A	* Lower diaphragm	PTFE	PTFE
10B	* Upper diaphragm	NBR	NBR
11A	* O-ring	NBR; EPDM; PTFE; FPM	–
11B	* O-ring	NBR; EPDM; PTFE; FPM	–
12	Gasket	Aluminium	–
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
14	Nut	Stainless steel A2-70	Stainless steel A2-70
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	AISI 316 / 1.4401
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	Plastic	AISI 304 / 1.4301
20	Spring id. plate	Aluminium	–
21	Bolts	–	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
41	Adjustment screw	Stainless steel A2-70	–
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

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ORDERING CODES PRV30SS														
Valve model	**R30**	**.**	**1**	**W**	**N**	**C**	**R**	**4**	**R**	**.**	**A**	**15**	
PRV30SS – diaphragm sensing pressure reducing valve	**R30**												
Regulating range													
Nº 1 – 0,2 to 1,5 bar			**1**										
Nº 2 – 0,3 to 3 bar			**2**										
Nº 3 – 0,8 to 8 bar			**3**										
Nº 4 – 1,5 to 15 bar			**4**										
0,2 to 15 bar (dome-loaded) **a)**			**A**										
Application													
Water				**W**									
Gases				**G**									
Oxygen (degreased)				**O**									
Seal material													
NBR					**N**								
EPDM					**E**								
PTFE **b)**					**T**								
FPM / Viton					**V**								
Maximum inlet pressure													
30 bar						**C**							
50 bar **c)**						**D**							
Diaphragm													
NBR / PTFE (only NBR in case of dome-loaded version)							**R**						
Gauge port 1/4”													
Without gauge ports								**(1)**					
Gauge port on the left side (relative to the flow direction)								**4**					
Gauge port on the right side (relative to the flow direction)								**3**					
Gauge ports on both sides								**2**					
Top cap and relieving													
Non-relieving									**(1)**				
Relieving (only for non-dangerous gases)									**R**				
Non-relieving with top cap (adjustment screw with cover)									**T**				
Relieving with top cap (adjustment screw with cover, only for non-dangerous gases)									**V**				
Dome-loaded top **d)**									**X**				
Pipe connection													
Female threaded ISO 7 Rp											**A**		
Female threaded NPT ASME B1.20.1											**C**		
Flanged EN 1092-1 PN 40											**N**		
Flanged ASME B16.5 Class 150											**U**		
Flanged ASME B16.5 Class 300											**V**		
Size													
1/2” or DN 15												**15**	
3/4" or DN 20												**20**	
1" or DN 25												**25**	
Special valves / Extras													
Full description or additional codes have to be added in case of non-standard combination.													**E**

(1) Omitted if a standard valve is requested.
a) The loading control pressure can be up to a maximum of 1,2 bar above the required downstream pressure.
b) All seals except piston o-ring, which is supplied in FPM/Viton or others on request.
c) Only available with spring nº 4.
d) This option must be chosen in case of dome-loaded version.

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DIAPHRAGM SENSING PRESSURE REDUCING VALVE
PRV30SS
1" to 2" – DN 25 to DN 50

DESCRIPTION

The ADCA PRV30SS is a series of direct acting, spring-loaded, diaphragm sensing and balanced plug pressure reducing valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure reducing applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

1" to 11/4" – DN 25 to DN 32

MAIN FEATURES

Compact design.
Built-in strainer.
Balanced valve plug.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Self relieving.
Gauge connection on body.
Different soft valves for liquids and gases.
Dome-loaded version.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PRV30SS – stainless steel, diaphragm sensing.

SIZES: 1" to 2"; DN 25 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT (only available from 11/4" to 2").
Flanged EN 1092-1 PN 40 (only available from DN 32 to DN 50) or PN 63.
Flanged ASME B16.5 Class 150 or 300 (only available from 11/4" to 2") or Class 600.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

11/2" to 2" – DN 40 to DN 50

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1" to 2" – DN 25 to 50	SEP

FLOW RATE COEFFICIENTS (m^3/h)				
SIZE	**1" – DN 25**	**11/4” – DN 32**	**11/2" – DN 40**	**2" – DN 50**
Kvs	6,5	7,2	12,7	13,7

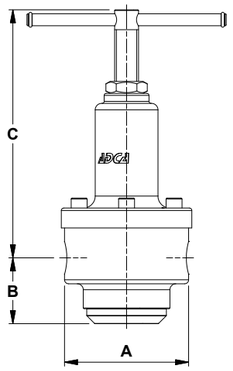
1" to 11/4" – DN 25 to DN 32 **11/2" to 2" – DN 40 to DN 50**

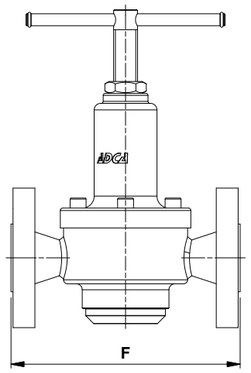
We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS					
Valve model	**PRV30SS**				
Body design conditions	Cl. 150	Cl. 300	Cl. 600	PN 40	PN 63 *
Max. upstream pressure	16 bar	40 bar	50 bar	40 bar	50 bar
Max. downstream pressure	15 bar				
Min. downstream pressure	0,2 bar				
Max. design temperature	80 °C				
Max. recommended reducing ratio	40:1				
Maximum dome-loading pressure	15 bar				

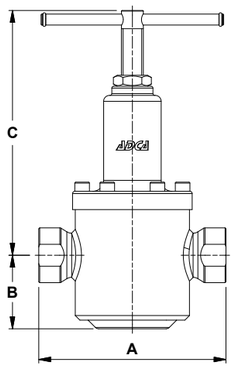
* Rating PN 63 for threaded versions.

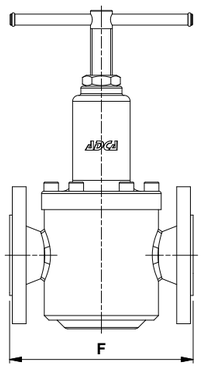
OPTIONS		
PRESSURE GAUGE	**TOP CAP**	**DOME LOADED VERSION**



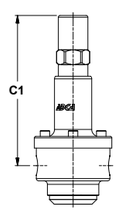


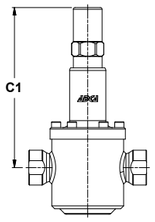
1" to 11/4" – DN 25 to DN 32



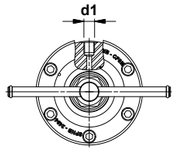


11/2" to 2" – DN 40 to DN 50

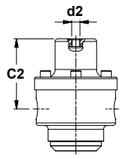


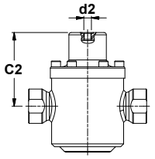


Optional top cap



Optional pressure gauge connection



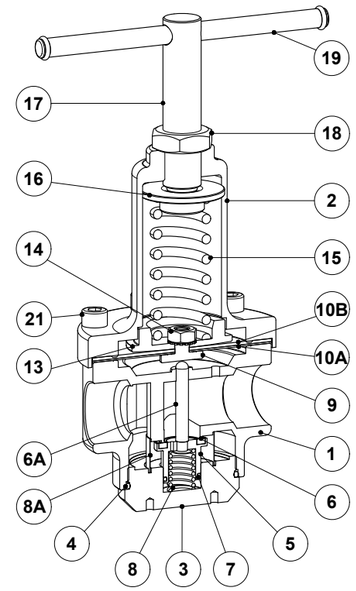


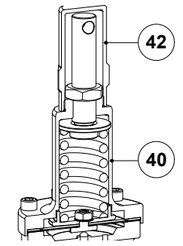
Optional dome-loaded version

DIMENSIONS (mm)																	
THREADED									**PN 40**		**PN 63**		**CLASS 150**		**CLASS 300**		**CLASS 600**	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**C2**	**d2**	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**
1" – DN 25 **	125	66	249	257	1/4"	110	1/4"	–	–	–	230	14,1	–	–	–	–	230	12,5
11/4" – DN 32	125	66	249	257	1/4"	110	1/4"	8,7	260	12,6	260	14,9	260	11,7	260	12,8	260	13,6
11/2" – DN 40	205	81	268	276	1/4"	129	1/4"	12,4	201	16,3	260	20,1	235	15,9	248	18,1	264	19,2
2" – DN 50	205	75	274	270	1/4"	123	1/4"	13,2	230	18,2	300	21,3	254	16,7	267	18,6	300	21

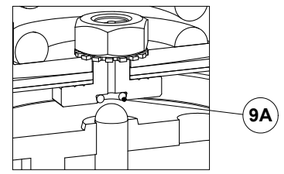
* Different face to face dimensions on request; ** Only available with PN 63 and Class 600 flanged connections.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connections d1 and d2 are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.

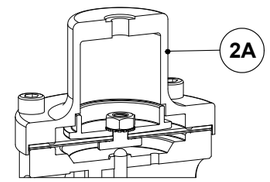




Optional top cap

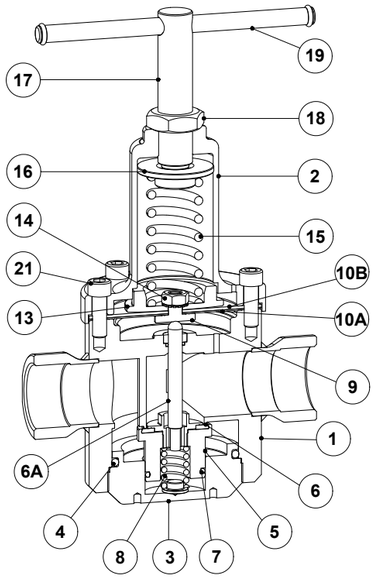


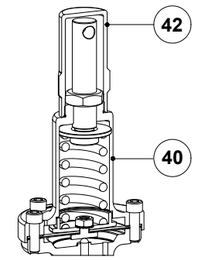
Optional relieving version



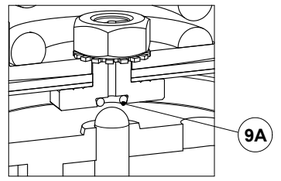
Optional dome-loaded version

1" to 11/4" – DN 25 to DN 32

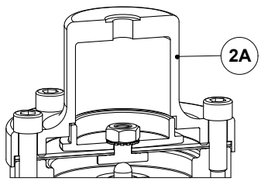




Optional top cap



Optional relieving version



Optional dome-loaded version

11/2" to 2" – DN 40 to DN 50

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IS PRV30.025 E 00.21

MATERIALS			
POS. Nº	**DESIGNATION**	**1" to 11/4" – DN 25 to DN 32**	**11/2" to 2" – DN 40 to DN 50**
1	Valve body	AISI 316 / 1.4401	AISI 316 / 1.4401
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2A	Cover	AISI 316 / 1.4401	AISI 316 / 1.4401
3	Bottom cover	AISI 316 / 1.4401	AISI 316 / 1.4401
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	* Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Valve head	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
6A	* Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
7	* Piston o-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
8	* Valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
8A	* Strainer screen	AISI 304 / 1.4301	–
9	Pusher disc	AISI 304 / 1.4301	AISI 304 / 1.4301
9A	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
10A	* Lower diaphragm	PTFE	PTFE
10B	* Upper diaphragm	NBR	NBR
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
14	Nut	Stainless steel A2-70	Stainless steel A2-70
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	Brass
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	AISI 304 / 1.4301	AISI 304 / 1.4301
21	Bolts	Stainless steel A2-70	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

ORDERING CODES PRV30SS													
Valve model	**R30**	**.**	**1**	**W**	**N**	**C**	**R**	**4**	**R**	**.**	**A**	**32**	
PRV30SS – diaphragm sensing pressure reducing valve	**R30**												
Regulating range													
Nº 1 – 0,2 to 1,5 bar			**1**										
Nº 2 – 0,3 to 3 bar			**2**										
Nº 3 – 0,8 to 8 bar			**3**										
Nº 4 – 1,5 to 15 bar			**4**										
0,2 to 15 bar (dome-loaded) **a)**			**A**										
Application													
Water				**W**									
Gases				**G**									
Oxygen (degreased)				**O**									
Seal material													
NBR					**N**								
EPDM					**E**								
PTFE **b)**					**T**								
FPM / Viton					**V**								
Maximum inlet pressure													
30 bar						**C**							
50 bar **c)**						**D**							
Diaphragm													
NBR / PTFE (only NBR in case of dome-loaded version)							**R**						
Gauge port 1/4”													
Without gauge ports								**(1)**					
Gauge port on the left side (relative to the flow direction)								**4**					
Gauge port on the right side (relative to the flow direction)								**3**					
Gauge ports on both sides								**2**					
Top cap and relieving													
Non-relieving									**(1)**				
Relieving (only for non-dangerous gases)									**R**				
Non-relieving with top cap (adjustment screw with cover)									**T**				
Relieving with top cap (adjustment screw with cover, only for non-dangerous gases)									**V**				
Dome-loaded top **d)**									**X**				
Pipe connection													
Female threaded ISO 7 Rp											**A**		
Female threaded NPT ASME B1.20.1											**C**		
Flanged EN 1092-1 PN 40											**N**		
Flanged EN 1092-1 PN 63											**O**		
Flanged ASME B16.5 Class 150											**U**		
Flanged ASME B16.5 Class 300											**V**		
Flanged ASME B16.5 Class 600											**W**		
Size													
1” or DN 25 (only available with PN 63 and Class 600 flanged connections)												**25**	
11/4" or DN 32												**32**	
11/2" or DN 40												**40**	
2" or DN 50												**50**	
Special valves / Extras													
Full description or additional codes have to be added in case of non-standard combination.													**E**

(1) Omitted if a standard valve is requested.
a) The loading control pressure can be up to a maximum of 1,2 bar above the required downstream pressure.
b) All seals except piston o-ring, which is supplied in FPM/Viton or others on request.
c) Only available with spring nº 4.
d) This option must be chosen in case of dome-loaded version.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PRV30.025 E 00.21

PISTON SENSING PRESSURE REDUCING VALVE
PRV31SS
1/2" to 1" – DN 15 to DN 25

DESCRIPTION

The ADCA PRV31SS is a series of direct acting, spring-loaded, piston sensing and balanced plug pressure reducing valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure reducing applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

MAIN FEATURES

Compact design.
Built-in strainer.
Balanced valve plug.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Self relieving.
Gauge connection on body.
Different soft valves for liquids and gases.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PRV31SS – stainless steel, piston sensing.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/2" – DN 15**	**3/4" – DN 20**	**1" – DN 25**
Kvs	3	3,5	7,5

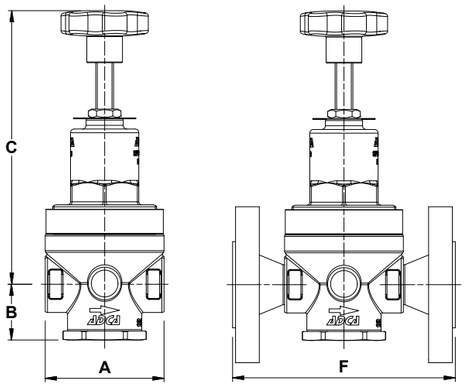
We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS				
Valve model	**PRV31SS**			
Body design conditions	Cl. 150	Cl. 300	PN 40	PN 63 *
Max. upstream pressure	16 bar	40 bar	40 bar	50 bar
Max. downstream pressure	50 bar			
Min. downstream pressure	3 bar			
Max. design temperature	80 ºC			
Max. recommended reducing ratio	40:1			

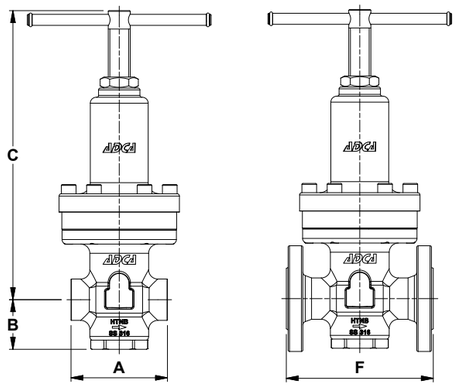
* Rating PN 63 for threaded versions.

OPTIONS

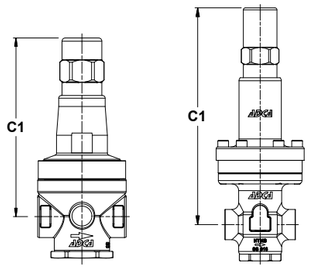
PRESSURE GAUGE	TOP CAP



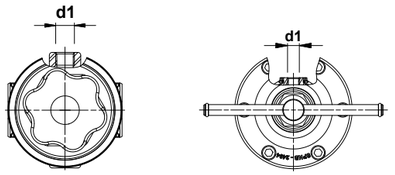
1/2" to 3/4" – DN 15 to DN 20



1" – DN 25



Optional top cap



Optional pressure gauge connection

DIMENSIONS (mm)												
	THREADED						**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**	**F ****	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**
1/2" – DN 15	80	38	184	162	1/4"	2,8	150	4,9	150	4,2	150	5,2
3/4" – DN 20	80	38	184	162	1/4"	2,7	150	5,4	150	4,6	150	5,6
1" – DN 25	105	54	315	322	1/4"	9,2	160	11,8	230	11,1	230	12,2

* Different face to face dimensions on request.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connection d1 is female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, this connection is female threaded NPT.

VALSTEAM ADCA

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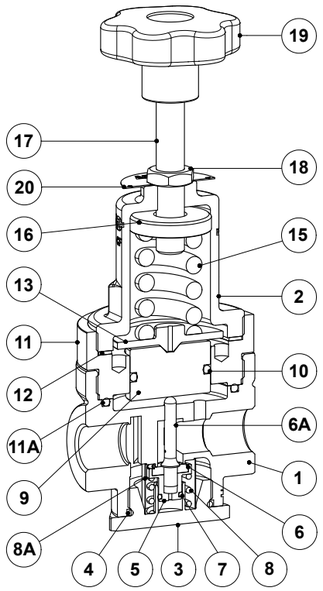
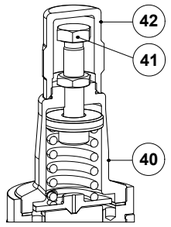
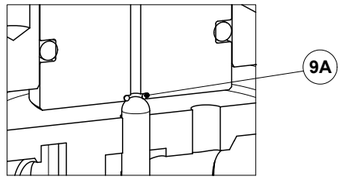
IS PRV31.015 E 01.21



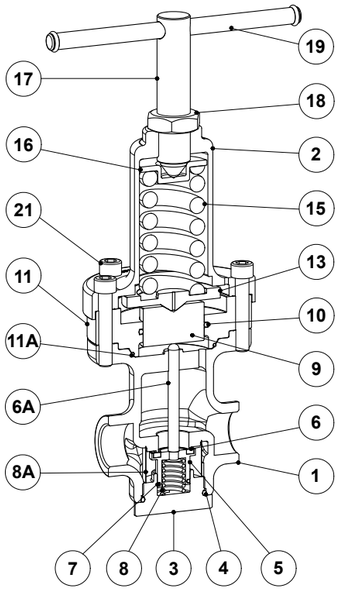


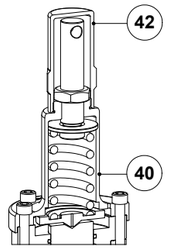
Optional top cap



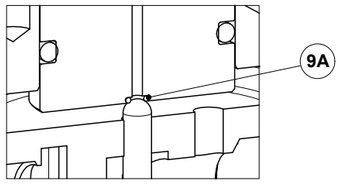
Optional relieving version

1/2" to 3/4" – DN 15 to DN 20





Optional top cap



Optional relieving version

1" – DN 25

MATERIALS			
POS. Nº	**DESIGNATION**	**1/2" to 3/4" – DN 15 to DN 20**	**1" – DN 25**
1	Valve body	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
3	Bottom cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	* Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Valve head	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
6A	* Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
7	* Piston o-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
8	* Valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
8A	* Strainer screen	AISI 304 / 1.4301	AISI 304 / 1.4301
9	Piston	AISI 304 / 1.4301	AISI 304 / 1.4301
9A	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
10	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
11	Piston sleeve	AISI 316 / 1.4401	AISI 316 / 1.4401
11A	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
12	Gasket	Aluminium	–
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	AISI 316 / 1.4401
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	Plastic	AISI 304 / 1.4301
20	Spring id. plate	Aluminium	–
21	Bolts	–	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
41	Adjustment screw	Stainless steel A2-70	–
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PRV31.015 E 01.21

ORDERING CODES PRV31SS												
Valve model	**R31**	**.**	**5**	**W**	**N**	**C**	**4**	**R**	**.**	**A**	**15**	
PRV31SS – piston sensing pressure reducing valve	**R31**											
Regulating range												
Nº 5 - 3 to 30 bar			**5**									
Nº 6 - 5 to 50 bar			**6**									
Application												
Water				**W**								
Gases				**G**								
Oxygen (degreased)				**O**								
Seal material												
NBR					**N**							
EPDM					**E**							
PTFE **a)**					**T**							
FPM / Viton					**V**							
Maximum inlet pressure												
30 bar						**C**						
50 bar						**D**						
Gauge port 1/4”												
Without gauge ports							**(1)**					
Gauge port on the left side (relative to the flow direction)							**4**					
Gauge port on the right side (relative to the flow direction)							**3**					
Gauge ports on both sides							**2**					
Top cap and relieving												
Non-relieving								**(1)**				
Relieving (only for non-dangerous gases)								**R**				
Non-relieving with top cap (adjustment screw with cover)								**T**				
Relieving with top cap (adjustment screw with cover, only for non-dangerous gases)								**V**				
Pipe connection												
Female threaded ISO 7 Rp										**A**		
Female threaded NPT ASME B1.20.1										**C**		
Flanged EN 1092-1 PN 40										**N**		
Flanged ASME B16.5 Class 150										**U**		
Flanged ASME B16.5 Class 300										**V**		
Size												
1/2” or DN 15											**15**	
3/4" or DN 20											**20**	
1" or DN 25											**25**	
Special valves / Extras												
Full description or additional codes have to be added in case of non-standard combination.												**E**

(1) Omitted if a standard valve is requested.
a) All seals except piston o-rings, which are supplied in FPM/Viton or others on request.

We reserve the right to change the design and material of this product without notice.

PISTON SENSING PRESSURE REDUCING VALVE
PRV31SS
1" to 2" – DN 25 to DN 50

DESCRIPTION

The ADCA PRV31SS is a series of direct acting, spring-loaded, piston sensing and balanced plug pressure reducing valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure reducing applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

1" to 11/4" – DN 25 to DN 32

MAIN FEATURES

Compact design.
Built-in strainer.
Balanced valve plug.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Self relieving.
Gauge connection on body.
Different soft valves for liquids and gases.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PRV31SS – stainless steel, piston sensing.

SIZES: 1" to 2"; DN 25 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

11/2" to 2" – DN 40 to DN 50

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1" to 2" – DN 25 to 50	SEP

FLOW RATE COEFFICIENTS (m³/h)				
SIZE	**1" – DN 25**	**11/4" – DN 32**	**11/2” – DN 40**	**2” – DN 50**
Kvs	7,5	8,2	14,4	15,4

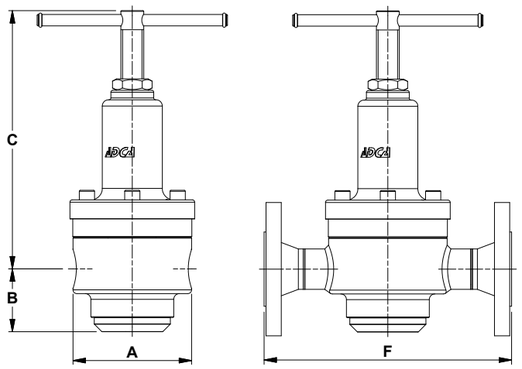
1" to 11/4" – DN 25 to DN 32 **11/2" to 2" – DN 40 to DN 50**

We reserve the right to change the design and material of this product without notice.

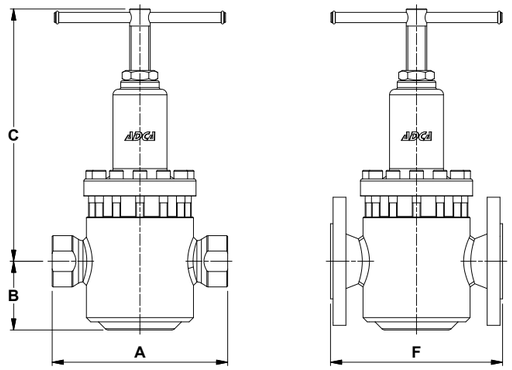
LIMITING CONDITIONS					
Valve model	**PRV31SS**				
Body design conditions	Cl. 150	Cl. 300	Cl. 600	PN 40	PN 63 *
Max. upstream pressure	16 bar	40 bar	50 bar	40 bar	50 bar
Max. downstream pressure	50 bar				
Min. downstream pressure	3 bar				
Max. design temperature	80 ºC				
Max. recommended reducing ratio	40:1				

* Rating PN 63 for threaded versions.

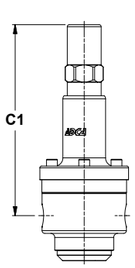
OPTIONS	
PRESSURE GAUGE	**TOP CAP**

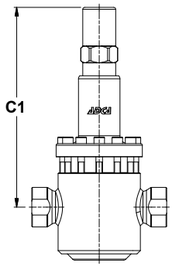


1" to 11/4" – DN 25 to DN 32

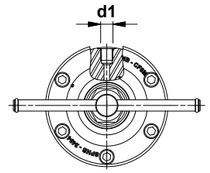


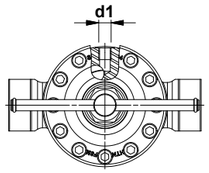
11/2" to 2" – DN 40 to DN 50





Optional top cap

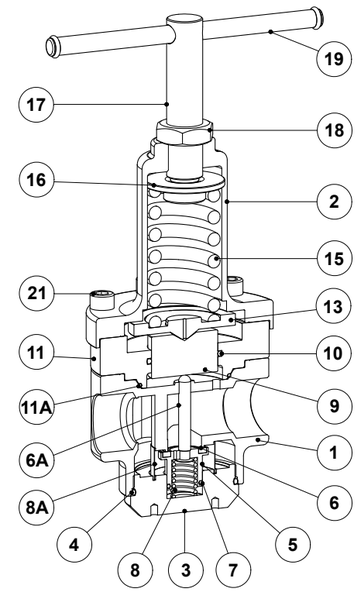


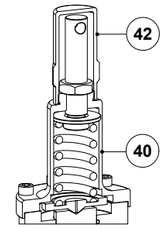


Optional pressure gauge connection

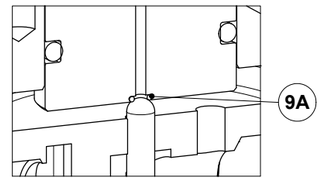
DIMENSIONS (mm)																
	THREADED						PN 40		PN 63		CLASS 150		CLASS 300		CLASS 600	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**
1" – DN 25 **	125	66	271	280	1/4"	–	–	–	230	16,3	–	–	–	–	230	14,7
11/4" – DN 32	125	66	271	280	1/4"	11	260	14,9	260	17,2	260	14	260	15,1	260	15,9
11/2" – DN 40	205	81	296	304	1/4"	14,7	201	18,3	260	22,3	235	18	248	20,2	264	21,2
2" – DN 50	205	75	302	310	1/4"	15,3	230	20,3	300	23,5	254	19	267	20,7	300	23,2

* Different face to face dimensions on request; ** Only available with PN 63 and Class 600 flanged connections.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connection d1 is female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, this connection is female threaded NPT.



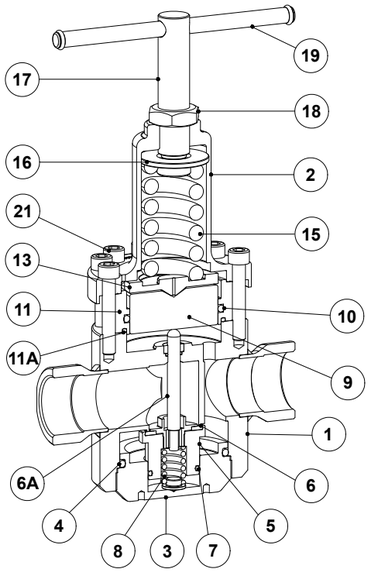


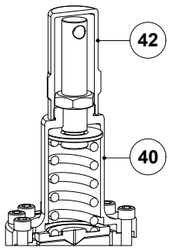
Optional top cap



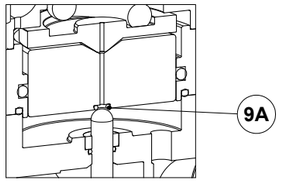
Optional relieving version

1" to 11/4" – DN 25 to DN 32





Optional top cap



Optional relieving version

11/2" to 2" – DN 40 to DN 50

MATERIALS			
POS. Nº	**DESIGNATION**	**1" to 11/4" – DN 25 to DN 32**	**11/2" to 2" – DN 40 to DN 50**
1	Valve body	AISI 316 / 1.4401	AISI 316 / 1.4401
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
3	Bottom cover	AISI 316 / 1.4401	AISI 316 / 1.4401
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	* Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Valve head	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
6A	* Pushrod	AISI 316 / 1.4401	AISI 316 / 1.4401
7	* Piston o-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
8	* Valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
8A	* Strainer screen	AISI 304 / 1.4301	–
9	* Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
9A	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
10	* O-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
11	Piston sleeve	AISI 316 / 1.4401	AISI 316 / 1.4401
11A	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	Brass
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	AISI 304 / 1.4301	AISI 304 / 1.4301
21	Bolts	Stainless steel A2-70	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

ORDERING CODES PRV31SS												
Valve model	**R31**	**.**	**5**	**W**	**N**	**C**	**4**	**R**	**.**	**A**	**15**	
PRV31SS – piston sensing pressure reducing valve	**R31**											
Regulating range												
Nº 5 - 3 to 30 bar			**5**									
Nº 6 - 5 to 50 bar **b)**			**6**									
Application												
Water				**W**								
Gases				**G**								
Oxygen (degreased)				**O**								
Seal material												
NBR					**N**							
EPDM					**E**							
PTFE **a)**					**T**							
FPM / Viton					**V**							
Maximum inlet pressure												
30 bar						**C**						
50 bar **b)**						**D**						
Gauge port 1/4”												
Without gauge ports							**(1)**					
Gauge port on the left side (relative to the flow direction)							**4**					
Gauge port on the right side (relative to the flow direction)							**3**					
Gauge ports on both sides							**2**					
Top cap and relieving												
Non-relieving								**(1)**				
Relieving (only for non-dangerous gases)								**R**				
Non-relieving with top cap (adjustment screw with cover)								**T**				
Relieving with top cap (adjustment screw with cover, only for non-dangerous gases)								**V**				
Pipe connection												
Female threaded ISO 7 Rp										**A**		
Female threaded NPT ASME B1.20.1										**C**		
Flanged EN 1092-1 PN 40										**N**		
Flanged EN 1092-1 PN 63										**O**		
Flanged ASME B16.5 Class 150										**U**		
Flanged ASME B16.5 Class 300										**V**		
Flanged ASME B16.5 Class 600										**W**		
Size												
1” or DN 25 (only available with PN 63 and Class 600 flanged connections)											**25**	
11/4" or DN 32											**32**	
11/2" or DN 40											**40**	
2" or DN 50											**50**	
Special valves / Extras												
Full description or additional codes have to be added in case of non-standard combination.												**E**

(1) Omitted if a standard valve is requested.
a) All seals except piston o-rings, which are supplied in FPM/Viton or others on request.
b) Not applicable to sizes 11/4" and DN32.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PRV31.025 E 02.21

PISTON SENSING PRESSURE REDUCING VALVE
PRV41

DESCRIPTION

The ADCA PRV41 series direct acting, spring-loaded piston sensing, balanced plug pressure reducing valves are designed for use on compressed air, water and other gases or liquids compatible with the materials of the construction.
They are suitable for pressure reducing stations at the point of use on different industrial applications.

MAIN FEATURES

Compact design.
Balanced plug.
Machined from bar stock materials.

OPTIONS: Different soft valves for water and gases.
Relieving – Internal relief valve to allow reduced outlet pressure in a no-flow condition.
1/4” outlet gauge connection on body.
Top cap (adjustment screw with cover).

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PRV41SS – stainless steel, piston sensing.

SIZES: 1/4" to 1/2"; DN 15.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40 to PN 320.
Flanged ASME B16.5 Class 150, 300 or 600.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.
A “Y” strainer should be installed upstream of the valve.

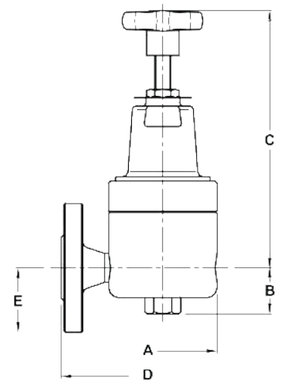
FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/4"**	**3/8”**	**1/2” – DN 15**
Kvs	0,7	0,8	0,9

LIMITING CONDITIONS	
Valve model	**PRV41SS**
Body design conditions	PN 320
Maximum upstream pressure	220 bar
Maximum downstream pressure	200 bar
Minimum downstream pressure	3 bar
Maximum design temperature *	80 ºC
Maximum recommended reducing ratio	40:1

* Others on request.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 320	**Category**
1/4" to 1/2" – DN 15	SEP

We reserve the right to change the design and material of this product without notice.

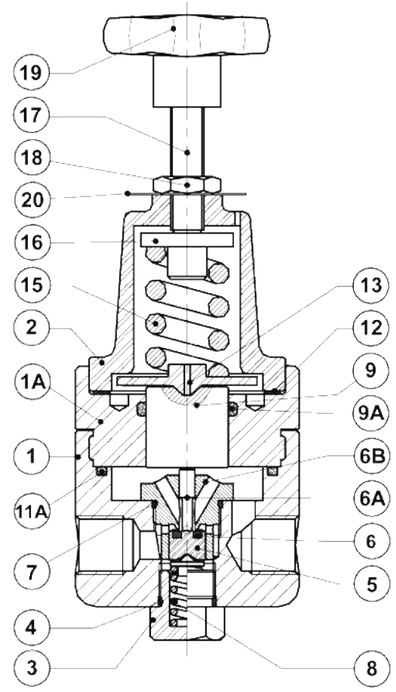


DIMENSIONS (mm)													
THREADED					**PN 40**			**PN 63/100**			**PN 250/320**		
SIZE	**A**	**B**	**C**	**WEIGHT (kg)**	**D ***	**E**	**WEIGHT (kg)**	**D ***	**E**	**WEIGHT (kg)**	**D ***	**E**	**WEIGHT (kg)**
1/4"	80	35	200	2,7	–	–	–	–	–	–	–	–	–
3/8”	80	35	200	2,7	–	–	–	–	–	–	–	–	–
1/2" – DN 15	80	35	200	2,7	150	47,5	4,1	210	52,5	5	230	65	7,3

* Different lenghts on request.
Remark: DN 15 PN 40 face to face dimmensions adopted as per DN 20.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316 / 1.4401
1A	Piston sleeve	AISI 316 / 1.4401
2	Top cover	AISI 316 / 1.4401
		A351 CF8M / 1.4408
3	Seat cover	AISI 316 / 1.4401
4	* O-ring	NBR
5	* Piston valve	AISI 316 / 1.4401
6	* Valve head	NBR ; EPDM ; PTFE; etc.
6A	Pushrod	AISI 304 / 1.4301
6B	* Valve seat	Hardened stainless steel
7	* O-ring	NBR; EPDM; PTFE; etc.
8	* Valve spring	AISI 302 / 1.4300
9	Piston	AISI 316 / 1.4401
9A	* O-ring	NBR; EPDM; Viton; etc.
11A	* O-ring	NBR; EPDM; PTFE; etc.
12	Gasket	Aluminium
13	Spring plate	AISI 304 / 1.4301
15	* Adjustment spring	Spring steel
16	Top spring plate	Brass
17	Adjustment screw	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70
19	Handwheel	Plastic
20	Spring id. plate	Aluminium

* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.



We reserve the right to change the design and material of this product without notice.

ORDERING CODES PRV41												
Valve model	**R41**	**.**	**5**	**W**	**N**	**E**	**4**	**R**	**.**	**A**	**08**	
PRV41SS – Piston sensing pressure reducing valve	**R41**											
Regulating range												
Nº5 – 3 to 30 bar			**5**									
Nº6 – 5 to 50 bar			**6**									
Nº7 – 20 to 200 bar			**7**									
Application												
Water				**W**								
Gases				**G**								
Oxygen (degreased)				**O**								
Seal material												
NBR					**N**							
EPDM					**E**							
PTFE **a)**					**T**							
FPM / Viton					**V**							
Maximum inlet pressure												
80 bar						**E**						
220 bar						**F**						
Gauge port 1/4”												
Without gauge ports							**(1)**					
Gauge port on the left side (relative to the flow direction)							**4**					
Gauge port on the right side (relative to the flow direction)							**3**					
Gauge ports on both sides							**2**					
Relieving												
Non-relieving								**(1)**				
Relieving (only for non dangerous gases)								**R**				
Pipe connection												
Female threaded ISO 7 Rp										**A**		
Female threaded NPT ASME B1.20.1										**C**		
Socket weld (SW) ASME B16.11										**H**		
Butt weld (BW) ASME B16.25										**I**		
Flanged EN 1092-1 PN 40										**N**		
Flanged EN 1092-1 PN 63										**O**		
Flanged EN 1092-1 PN 100										**P**		
Flanged EN 1092-1 PN 160										**Q**		
Flanged EN 1092-1 PN 250										**R**		
Flanged EN 1092-1 PN 320										**S**		
Flanged ASME B16.5 Class 150										**U**		
Flanged ASME B16.5 Class 300										**V**		
Flanged ASME B16.5 Class 600										**W**		
Size												
1/4"											**08**	
3/8”											**10**	
1/2” or DN 15											**15**	
Special valves / Extras												
Full description or additional codes have to be added in case of non-standard combination.												**E**

(1) Omitted if a standard valve is requested.
a) Valve seal only, other seals in Viton.

We reserve the right to change the design and material of this product without notice.

DIAPHRAGM SENSING PRESSURE REDUCING VALVE PS4

DESCRIPTION

The ADCA PS4 series direct acting, spring-loaded diaphragm sensing, pressure sustaining valves are designed for use on compressed air, water, and other gases or liquids compatible with the materials of the construction.
This valve main purpose is to maintain the upstream pressure under control. They are suitable for pressure sustaining applications where small loads are involved. They are also specifically recommended to operate as pilot valves in combination with other pressure regulators.

MAIN FEATURES

Compact design.
High sensibility external diaphragm sensing connection.

OPTIONS: Different soft valves for water and gases.
1/4” gauge connection on body.
Top cap (adjustment screw with cover).

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PS4S – carbon steel.
PS4I – wetted parts in stainless steel (complete stainless steel on request).

SIZES: 1/2” to 1”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: Horizontal installation.
A “Y” strainer should be installed upstream of the valve.
See IMI – Installation and maintenance instructions.

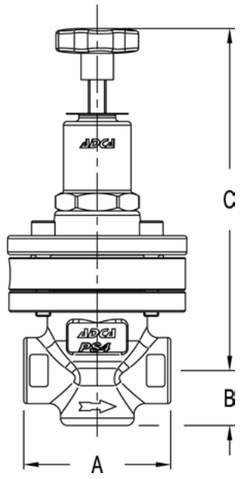
FLOW RATE COEFFICIENTS (m^3/h)			
SIZE	**1/2"**	**3/4"**	**1”**
Kvs	3,6	3,6	3,7

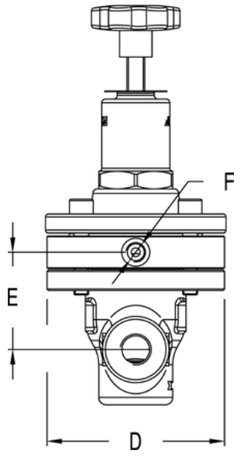
LIMITING CONDITIONS	
Valve model	**PS4**
Body design conditions	PN 40
Maximum upstream pressure	15 bar
Minimum upstream pressure	0,35 bar
Maximum design temperature *	80 ºC

* Others on request.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2" to 1"	SEP

We reserve the right to change the design and material of this product without notice.

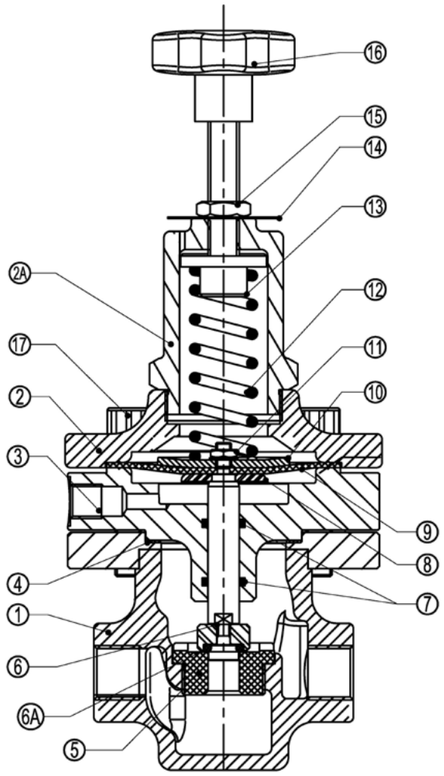




DIMENSIONS (mm)							
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**WEIGHT (kg)**
1/2"	100	37,5	247	120	66	1/4"	8,6
3/4"	100	37,5	247	120	66	1/4"	8,6
1”	100	37,5	247	120	66	1/4"	8,6

MATERIALS			
POS. Nº	**DESIGNATION**	**PS4S**	**PS4I**
1	Valve body	A216 WCB / 1.0619	A351 CF8M / 1.4408
2	Top cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2A	Cover spring	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3	Guide plate	S355JR / 1.0045	AISI 316 / 1.4401
4	* Gasket	Graphite; EPDM; PTFE	Graphite; EPDM; PTFE
5	* Valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Stem and plug	AISI 316 / 1.4401	AISI 316 / 1.4401
6A	* Valve sealing	NBR; EPDM; PTFE; etc.	NBR; EPDM; PTFE; etc.
7	* O-ring	NBR; EPDM; PTFE; etc.	NBR; EPDM; PTFE; etc.
8	Pusher disc	AISI 316 / 1.4401	AISI 316 / 1.4401
9	* Diaphragm	NBR; EPDM; PTFE; etc.	NBR; EPDM; PTFE; etc.
10	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
11	Nut	Stainless steel A2-70	Stainless steel A2-70
12	* Adjustment spring	Spring steel	Spring steel
13	Top spring plate	Brass	Brass
14	Spring Id. plate	Aluminium	Aluminium
15	Locknut	Stainless steel A2-70	Stainless steel A2-70
16	Handwheel	Plastic	Plastic
17	Bolts	Steel 8.8	Stainless steel A2-70

* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.



ORDERING CODES PS4										
Valve model	**PS4S**	**.**	**1**	**W**	**E**	**N**		**.A**	**15**	
PS4S – carbon steel pilot pressure sustaining valve	**PS4S**									
PS4I – stainless steel pilot pressure sustaining valve	**PS4I**									
Regulating range										
Green spring – 0,35 to 2 bar – single diaphragm			**1**							
Blue spring – 1,5 to 5,5 bar – single diaphragm			**2**							
Red spring – 3,5 to 8,5 bar – double diaphragm			**3**							
Black spring – 7 to 17 bar – double diaphragm			**4**							
Application										
Water				**W**						
Gases				**G**						
Seal material a)										
EPDM					**E**					
PTFE					**T**					
FPM / Viton					**V**					
Diaphragm										
NBR						**N**				
Gauge port 1/4” b)										
Without gauge ports							**(1)**			
Gauge port on the left side (relative to the flow direction)							**4**			
Gauge port on the right side (relative to the flow direction)							**3**			
Gauge ports on both sides							**2**			
Pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT ASME B1.20.1								**C**		
Size										
1/2"									**15**	
3/4”									**20**	
1”									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of non-standard combination.										**E**

(1) Omitted if a standard valve is requested.
a) Valve limited to the materials' maximum operating temperature. Contact manufacturer for more details.
b) Gauge port can also be used as external sensing line.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PS4.01 E 09.10

DIAPHRAGM SENSING PRESSURE SUSTAINING VALVE
PS7

DESCRIPTION

The ADCA PS7 series direct acting, spring-loaded diaphragm sensing pressure sustaining valves are designed for use on steam and compressed air and other gases compatible with the materials of construction.
They are suitable for pressure sustaining applications where very small loads are involved. They are also specifically recommended to operate as pilot valves in combination with other pressure regulators.

MAIN FEATURES

Compact design.
Stainless steel diaphragm.

OPTIONS: 1/8” gauge connection on body.
Top cap (adjustment screw with cover).
External sensing connection.
Low pressure top.
Dome loaded version.

USE: Steam, compressed air and other gases compatible with the construction.

AVAILABLE MODELS: PS7S – carbon steel.
PS7SS – stainless steel.

SIZES: 1/4” and 3/8”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

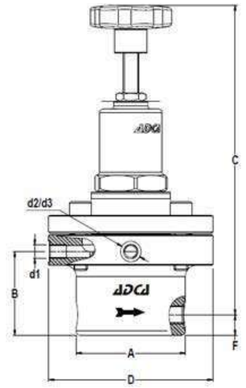
INSTALLATION: Horizontal installation.
A “Y” strainer should be installed upstream of the valve.
See IMI – Installation and maintenance instructions.

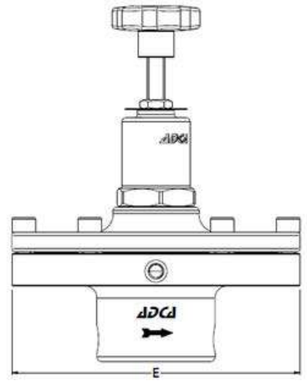
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/4" to 3/8"	SEP

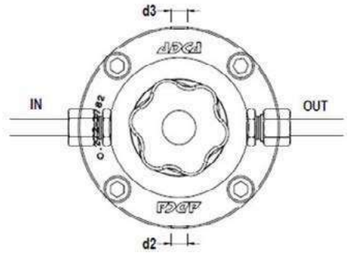
FLOW RATE COEFFICIENTS (m^3/h)		
SIZE	**1/4”**	**3/8”**
Kvs	0,8	0,8

LIMITING CONDITIONS	
Valve model	**PS7**
Body design conditions	PN 40
Maximum upstream pressure	17 bar
Minimum upstream pressure	0,35 bar
Maximum downstream pressure	17 bar
Maximum design temperature	300 ºC

* 0,07 bar with low pressure top (limited at 7 bar inlet). The low pressure diaphragm should be fitted for outlet pressures from 0,07 up to 0,5 bar.
Pressure and temperature limiting conditions may change if soft seating is used.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!





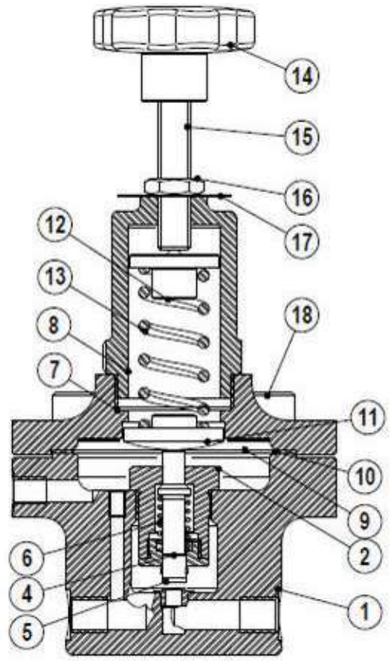


DIMENSIONS (mm)										
SIZE	**A**	**B**	**C**	**D**	**E ***	**F**	**d1 ****	**d2 *****	**d3 *****	**WEIGHT (kg)**
1/4"	80	61	225	120	195	15	1/8	1/8	1/8	4,8
3/8”	80	61	225	120	195	15	1/8	1/8	1/8	4,8

* Low pressure diaphragm; ** Optional sensing line connection; *** Optional pressure gauge connections. As standard, in ISO 7 Rp threaded version, these connections are female threaded ISO 7 Rp. In NPT threaded version, these connections are female threaded NPT.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	S355JR / 1.0045; AISI 316 / 1.4401
2	* Pilot valve body	A351 CF8 / 1.4308
4	Pushrod	AISI 316 / 1.4401
5	* Valve plug	AISI 420; EPDM; PTFE, etc.
6	* Spring	AISI 302 / 1.4300
7	Top cover	A351 CF8 / 1.4308
8	Spring cover	A351 CF8 / 1.4308
9	* Diaphragm	AISI 301 / 1.4310
10	* Gasket	Stainless steel / Graphite
11	Lower spring carrier	Brass
12	Top spring carrier	Brass
13	* Adjustment spring	Spring steel
14	Handwheel	Plastic
15	Adjustment screw	AISI 304 / 1.4301
16	Locknut	Stainless steel A2-70
17	Spring Id. plate	Aluminium
18	Bolts	Steel 10.9; Stainless steel A2-70

* Available spare parts.
Remarks: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.



REGULATING RANGES				
SPRING COLOUR	**GREEN w/ 1 diaphragm**	**BLUE w/ 1 diaphragm**	**RED w/ 2 diaphragms**	**BLACK w/ 2 diaphragms**
Regulating range	0,07 to 0,5 bar * 0,35 to 2 bar	1,5 to 5,5 bar	3,5 to 8,5 bar	7 to 17 bar

* With special low pressure top assembly.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PS7.01 E 11.10

ORDERING CODES PS7										
Valve model	**PS7S**	**.**	**1**	**W**	**E**	**N**		**.A**	**15**	
PS7S – Carbon steel pilot pressure sustaining valve	**PS7S**									
PS7SS – Stainless steel pilot pressure sustaining valve	**PS7SS**									
Regulating range										
Green spring – 0,35 to 2 bar – single diaphragm			**1**							
Blue spring – 1,5 to 5,5 bar – single diaphragm			**2**							
Red spring – 3,5 to 8,5 bar – double diaphragm			**3**							
Black spring – 7 to 17 bar – double diaphragm			**4**							
Application										
Steam				**S**						
Gases				**G**						
Seal material										
Metal to metal					**(1)**					
EPDM **a)**					**E**					
PTFE **a)**					**T**					
FPM / Viton **a)**					**V**					
Diaphragm										
Standard diaphragm						**S**				
Low pressure diaphragm						**L**				
Gauge port 1/8" b)										
Without gauge ports							**(1)**			
Gauge port on the left side (relative to the flow direction)							**4**			
Gauge port on the right side (relative to the flow direction)							**3**			
Gauge ports on both sides							**2**			
Pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT ASME B1.20.1								**C**		
Size										
1/4"									**08**	
3/8"									**10**	
Special valves / Extras										
Full description or additional codes have to be added in case of non-standard combination.										**E**

(1) Omitted if a standard valve is requested.
a) Valve limited to the materials' maximum operating temperature. Contact manufacturer for more details.
b) Gauge port can also be used as external sensing line.

We reserve the right to change the design and material of this product without notice.

DIAPHRAGM SENSING PRESSURE SUSTAINING VALVE PS30SS

DESCRIPTION

The ADCA PS30SS is a series of direct acting, spring-loaded, diaphragm sensing pressure sustaining valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure sustaining applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

1/2" to 3/4" – DN 15 to DN 20

MAIN FEATURES

Compact design.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Gauge connection on body.
Different soft valves for liquids and gases.
Dome-loaded version.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PS30SS – stainless steel, diaphragm sensing.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

1" – DN 25

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE COEFFICIENTS (m^3/h)			
SIZE	**1/2" – DN 15**	**3/4" – DN 20**	**1" – DN 25**
Kvs	2,1	2,4	6,5

1/2" to 3/4" – DN 15 to DN 20

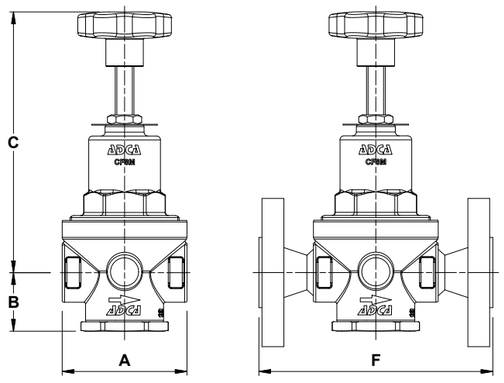
1" – DN 25

We reserve the right to change the design and material of this product without notice.

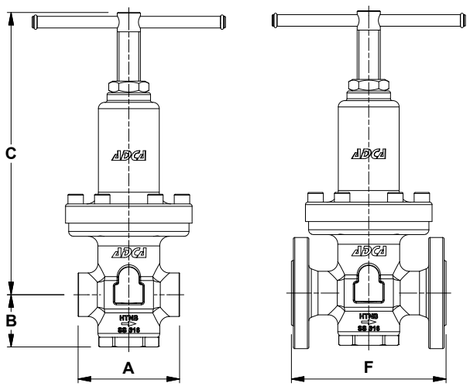
LIMITING CONDITIONS				
Valve model	**PS30SS**			
Body design conditions	Cl. 150	Cl. 300	PN 40	PN 63 *
Max. upstream pressure	15 bar			
Min. upstream pressure	0,2 bar			
Max. design temperature	80 ºC			
Maximum dome-loading pressure	15 bar			

* Rating PN 63 for threaded versions.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

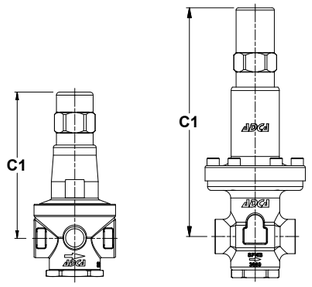
OPTIONS		
PRESSURE GAUGE	**TOP CAP**	**DOME LOADED VERSION**



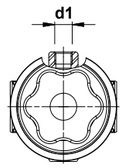
1/2" to 3/4" – DN 15 to DN 20



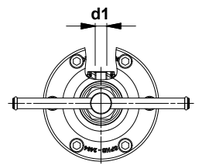
1" – DN 25

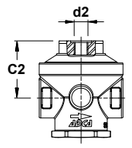


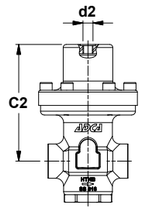
Optional top cap



Optional pressure gauge connection





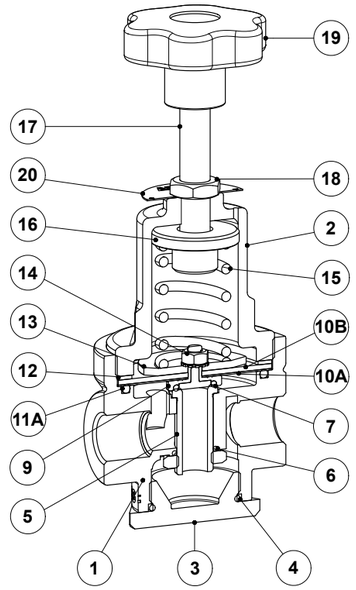


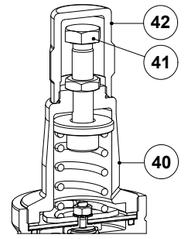
Optional dome-loaded version

DIMENSIONS (mm)														
THREADED									**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**C2**	**d2**	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**	**F ***	**WGT. (kg)**
1/2" – DN 15	80	38	167	145	1/4"	55	1/4"	2,1	150	3,6	150	2,9	150	3,9
3/4" – DN 20	80	38	167	145	1/4"	55	1/4"	2	150	4,1	150	3,3	150	4,3
1" – DN 25	105	54	292	300	1/4"	153	1/4"	6,6	160	9,3	230	8,5	230	9,7

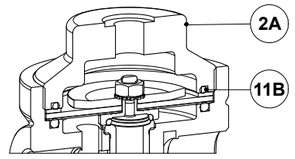
* Different face to face dimensions on request.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connections d1 and d2 are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.



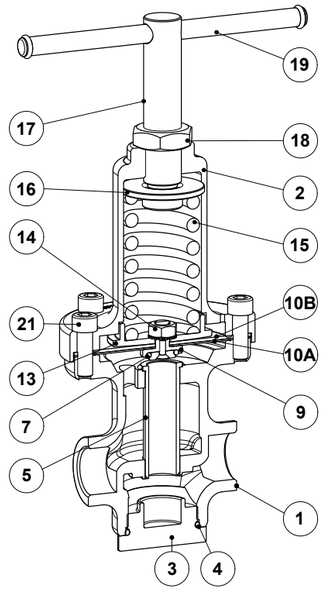


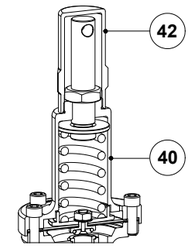
Optional top cap



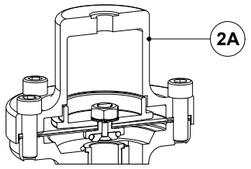
Optional dome-loaded version

1/2" to 3/4" – DN 15 to DN 20





Optional top cap



Optional dome-loaded version

1" – DN 25

We reserve the right to change the design and material of this product without notice.

MATERIALS			
POS. Nº	**DESIGNATION**	**1/2" to 3/4" – DN 15 to DN 20**	**1" – DN 25**
1	Valve body	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2A	Cover	AISI 316L / 1.4404	AISI 316L / 1.4404
3	Bottom cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	Valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* O-ring	NBR; EPDM; PTFE; FPM	–
7	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
9	Pusher disc	AISI 316 / 1.4401	AISI 316 / 1.4401
10A	* Lower diaphragm	PTFE	PTFE
10B	* Upper diaphragm	NBR	NBR
11A	* O-ring	NBR; EPDM; PTFE; FPM	–
11B	* O-ring	NBR; EPDM; PTFE; FPM	–
12	Gasket	Aluminium	–
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
14	Nut	Stainless steel A2-70	Stainless steel A2-70
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	AISI 316 / 1.4401
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	Plastic	AISI 304 / 1.4301
20	Spring id. plate	Aluminium	–
21	Bolts	–	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
41	Adjustment screw	Stainless steel A2-70	–
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

ORDERING CODES PS30SS													
Valve model	**PS30**	**.**	**1**	**W**	**N**	**C**	**R**	**4**	**R**	**.**	**A**	**15**	
PS30SS – diaphragm sensing pressure sustaining valve	**PS30**												
Regulating range													
Nº 1 – 0,2 to 1,5 bar			**1**										
Nº 2 – 0,3 to 3 bar			**2**										
Nº 3 – 0,8 to 8 bar			**3**										
Nº 4 – 1,5 to 15 bar			**4**										
0,2 to 15 bar (dome-loaded) **a)**			**A**										
Application													
Water				**W**									
Gases				**G**									
Oxygen (degreased)				**O**									
Seal material													
NBR					**N**								
EPDM					**E**								
PTFE **b)**					**T**								
FPM / Viton					**V**								
Maximum inlet pressure													
15 bar						**C**							
Diaphragm													
NBR / PTFE (only NBR in case of dome-loaded version)							**R**						
Gauge port 1/4”													
Without gauge ports								**(1)**					
Gauge port on the left side (relative to the flow direction)								**4**					
Gauge port on the right side (relative to the flow direction)								**3**					
Gauge ports on both sides								**2**					
Top cap and relieving													
Non-relieving									**(1)**				
Non-relieving with top cap (adjustment screw with cover)									**T**				
Dome-loaded top **c)**									**X**				
Pipe connection													
Female threaded ISO 7 Rp											**A**		
Female threaded NPT ASME B1.20.1											**C**		
Flanged EN 1092-1 PN 40											**N**		
Flanged ASME B16.5 Class 150											**U**		
Flanged ASME B16.5 Class 300											**V**		
Size													
1/2” or DN 15												**15**	
3/4" or DN 20												**20**	
1" or DN 25												**25**	
Special valves / Extras													
Full description or additional codes have to be added in case of non-standard combination.													**E**

(1) Omitted if a standard valve is requested.
a) The loading control pressure can be up to a maximum of 1,2 bar above the required downstream pressure.
b) All seals except piston o-ring, which is supplied in FPM/Viton or others on request.
c) This option must be chosen in case of dome-loaded version.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PS30.015 E 01.21

PISTON SENSING PRESSURE SUSTAINING VALVE
PS31SS

DESCRIPTION

The ADCA PS31SS is a series of direct acting, spring-loaded, piston sensing pressure sustaining valves.
These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.
They are suitable for pressure sustaining applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

MAIN FEATURES

Compact design.
Full stainless steel construction.
Various sealing options to meet compatibility requirements.

OPTIONS: Gauge connection on body.
Different soft valves for liquids and gases.
Top cap (adjustment screw with cover).
Degreased for oxygen application.

USE: Compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: PS31SS – stainless steel, piston sensing.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

1/2" to 3/4" – DN 15 to DN 20

1" – DN 25

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
1/2" to 1" – DN 15 to 25	SEP

FLOW RATE COEFFICIENTS (m³/h)			
SIZE	**1/2" – DN 15**	**3/4" – DN 20**	**1" – DN 25**
Kvs	3	3,5	7,5

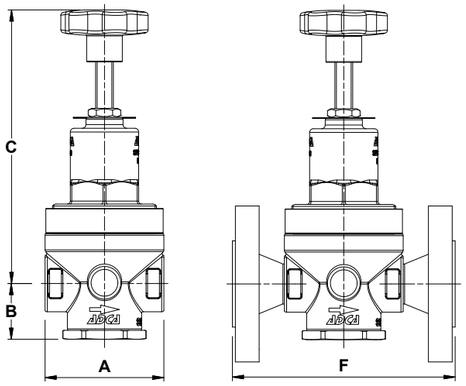
We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS				
Valve model	**PS31SS**			
Body design conditions	Cl. 150	Cl. 300	PN 40	PN 63 *
Max. upstream pressure	50 bar			
Min. upstream pressure	3 bar			
Max. design temperature	80 °C			

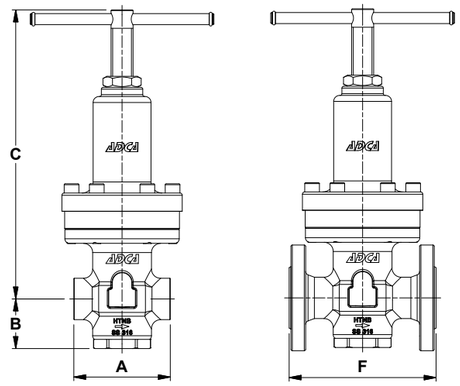
* Rating PN 63 for threaded versions.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

OPTIONS

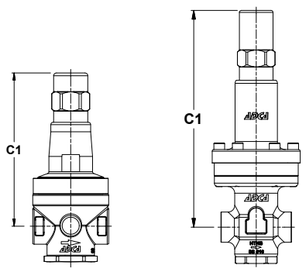
PRESSURE GAUGE	TOP CAP



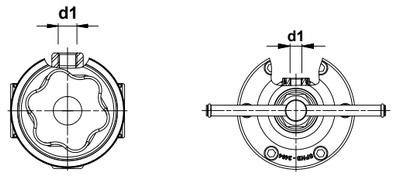
1/2" to 3/4" – DN 15 to DN 20



1" – DN 25



Optional top cap



Optional pressure gauge connection

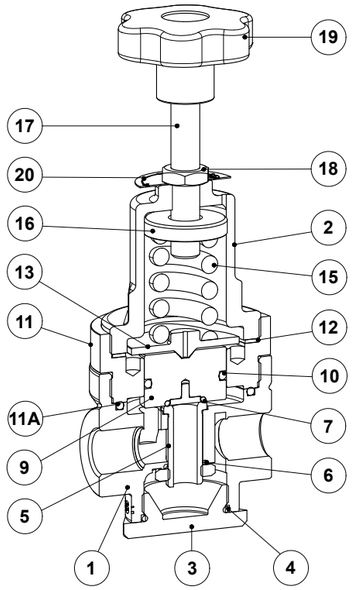
DIMENSIONS (mm)												
	THREADED						PN 40		CLASS 150		CLASS 300	
SIZE	**A**	**B**	**C**	**C1**	**d1**	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**	**F ***	**WEIGHT (kg)**
1/2" – DN 15	80	38	183	162	1/4"	2,8	150	4,3	150	3,6	150	4,6
3/4" – DN 20	80	38	183	162	1/4"	2,7	150	4,8	150	4	150	5
1" – DN 25	105	54	309	323	1/4"	8,8	160	11,5	230	10,7	230	11,9

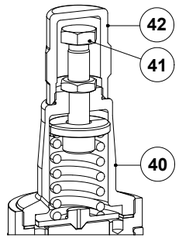
* Different face to face dimensions on request.
Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connection d1 is female threaded ISO 7 Rp. In versions with ASME B16.5 flanges or NPT threads, this connection is female threaded NPT.

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

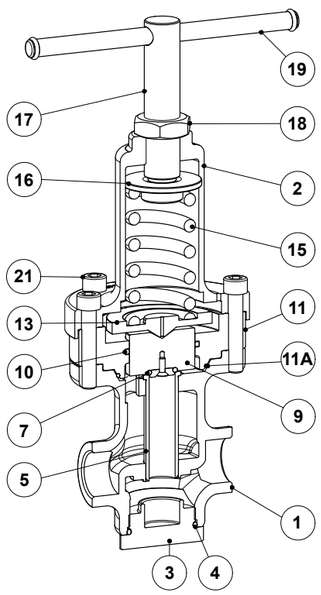
IS PS31.015 E 00.21

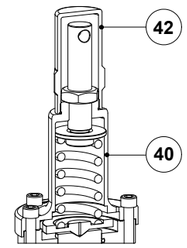




Optional top cap

1/2" to 3/4" – DN 15 to DN 20





Optional top cap

1" – DN 25

MATERIALS			
POS. Nº	**DESIGNATION**	**1/2" to 3/4" – DN 15 to DN 20**	**1" – DN 25**
1	Valve body	A351 CF8M / 1.4408	A351 CF8M / 1.4408
2	Spring cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
3	Bottom cover	A351 CF8M / 1.4408	A351 CF8M / 1.4408
4	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
5	Valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* O-ring	NBR; EPDM; PTFE; FPM	–
7	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
9	Piston	AISI 316 / 1.4401	AISI 316 / 1.4401
10	* Piston o-ring	NBR; EPDM; FPM	NBR; EPDM; FPM
11	Piston sleeve	AISI 316 / 1.4401	AISI 316 / 1.4401
11A	* O-ring	NBR; EPDM; PTFE; FPM	NBR; EPDM; PTFE; FPM
12	Gasket	Aluminium	–
13	Spring plate	AISI 304 / 1.4301	AISI 304 / 1.4301
15	* Adjustment spring	AISI 302 / 1.4300	AISI 302 / 1.4300
16	Top spring plate	Brass	AISI 316 / 1.4401
17	Adjustment stem	AISI 304 / 1.4301	AISI 304 / 1.4301
18	Locknut	Stainless steel A2-70	Stainless steel A2-70
19	Handwheel	Plastic	AISI 304 / 1.4301
20	Spring id. plate	Aluminium	–
21	Bolts	–	Stainless steel A2-70
40	Cover	AISI 316L / 1.4404	A351 CF8M / 1.4408
41	Adjustment screw	Stainless steel A2-70	–
42	Top cap	AISI 316L / 1.4404	AISI 316L / 1.4404

* Available spare parts.
Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PS31.015 E 00.21

ORDERING CODES PS31SS												
Valve model	**PS31**	**.**	**5**	**W**	**N**	**C**	**4**	**R**	**.**	**A**	**15**	
PS31SS – piston sensing pressure sustaining valve	**PS31**											
Regulating range												
Nº 5 - 3 to 30 bar			**5**									
Nº 6 - 5 to 50 bar			**6**									
Application												
Water				**W**								
Gases				**G**								
Oxygen (degreased)				**O**								
Seal material												
NBR					**N**							
EPDM					**E**							
PTFE **a)**					**T**							
FPM / Viton					**V**							
Maximum inlet pressure												
30 bar						**C**						
50 bar						**D**						
Gauge port 1/4”												
Without gauge ports							**(1)**					
Gauge port on the left side (relative to the flow direction)							**4**					
Gauge port on the right side (relative to the flow direction)							**3**					
Gauge ports on both sides							**2**					
Top cap and relieving												
Non-relieving								**(1)**				
Non-relieving with top cap (adjustment screw with cover)								**T**				
Pipe connection												
Female threaded ISO 7 Rp										**A**		
Female threaded NPT ASME B1.20.1										**C**		
Flanged EN 1092-1 PN 40										**N**		
Flanged ASME B16.5 Class 150										**U**		
Flanged ASME B16.5 Class 300										**V**		
Size												
1/2” or DN 15											**15**	
3/4" or DN 20											**20**	
1" or DN 25											**25**	
Special valves / Extras												
Full description or additional codes have to be added in case of non-standard combination.												**E**

(1) Omitted if a standard valve is requested.
a) All seals except piston o-ring, which is supplied in FPM/Viton or others on request.

PRESSURE SUSTAINING VALVE
PS46

DESCRIPTION

The ADCA PS46 series pressure sustaining valves are single seated, diaphragm or piston sensing bellows sealed controllers, that operate without auxiliary energy.
These valves are designed for use with steam, compressed air, and other gases compatible with the construction.
These valves are particularly suitable for sustaining steam pressure in all energy and process systems where minimum upstream pressures must be kept under control.

MAIN FEATURES

Specially designed high durability bellows, providing pressure balancing and frictionless plug stem.
Robust construction (fit-and-forget).
Interchangeable actuators and adjustment springs.

OPTIONS: Soft sealing in PTFE/GR for use with steam.
Soft sealing in nitrile rubber for use with air and gases.
Low-noise flow divider.
Sensing pipe on body.

USE: Steam, compressed air and other gases compatible with the construction. Limited use with liquids. Consult manufacturer before installing the valve with liquids.

AVAILABLE MODELS: PS46S and PS46ST or N – carbon steel.
Suffix T: soft sealed with PTFE/GR.
Suffix N: soft sealed with nitrile rubber.

SIZES: DN 15 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2 on request.

AVAILABLE ACTUATORS: A1A, A11A, A3A, A4A and P55 – carbon steel.
A2A and A21A – SG iron or carbon steel.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 100	DN 40 to 100	1 (CE marked)

PS46
with sensing pipe on body

LIMITING CONDITIONS						
Valve model	**PS46S**	**PS46S**	**PS46ST**	**PS46ST**	**PS46SN**	**PS46SN**
Body design conditions	PN 16	PN 40	PN 16	PN 40	PN 16	PN 40
Maximum upstream pressure	13 bar	18 bar	13 bar	18 bar	13 bar	18 bar
Maximum downstream pressure	13 bar	18 bar	13 bar	18 bar	13 bar	18 bar
Minimum upstream pressure	0,2 bar	0,2 bar	0,2 bar	0,2 bar	0,2 bar	0,2 bar
Maximum operating temperature	200 ºC	250 ºC	200 ºC	200 ºC	80 ºC	80 ºC
Maximum hydraulic factory valve body test	24 bar	60 bar	24 bar	60 bar	24 bar	60 bar

Remarks: Other soft materials and temperature limits on request.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

Actuator model	**A1A**	**A11A**	**A2A**	**A21A**	**A3A**	**A4A**	**P55**
Maximum operating pressure (bar)	25	25	12	18	2,5	1,5	25
Maximum operating temperature *	90 ºC						130 ºC

* A water seal pot must be installed in the sensing pipe when operating with steam or liquids at higher temperatures.

FLOW RATE COEFFICIENTS (m³/h)									
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**
Kvs	4,8	6,9	9,1	11,8	14,4	26,5	51,5	79,5	129,5

ACTUATOR AND SPRING SELECTION TABLE									
SIZE		**ACTUATOR**							
		A4A		**A3A**	**A2A**	**A21A**	**A1A**	**A11A**	**P55**
DN 15	Spring range (bar)	0,2-0,45	0,45-0,9	0,75-1,6	1,6-3,2	2,4-5	3,5-7	4,5-10	9-18
	Spring Nº	66	60	60	60	60	60	60	60
DN 20	Spring range (bar)	0,2-0,45	0,45-0,9	0,75-1,6	1,6-3,2	2,4-5	3,5-7	4,5-10	9-18
	Spring Nº	66	60	60	60	60	60	60	60
DN 25	Spring range (bar)	0,2-0,45	0,45-0,9	0,75-1,6	1,6-3,2	2,4-5	3,5-7	4,5-10	9-18
	Spring Nº	66	60	60	60	60	60	60	60
DN 32	Spring range (bar)	0,2-0,45	0,45-0,9	0,75-1,5	1,5-3	2,1-4,5	3-6,5	4,5-9	8-16
	Spring Nº	66	60	60	60	60	60	60	60
DN 40	Spring range (bar)	0,2-0,45	0,45-0,9	0,75-1,5	1,5-3	2,1-4,5	3-6,5	4,5-9	8-16
	Spring Nº	66	60	60	60	60	60	60	60
DN 50	Spring range (bar)	0,2-0,4	0,3-0,9	0,5-1,5	1-3,2	1,4-4,8	2,5-7	3-10	8-18
	Spring Nº	67	61	61	61	61	61	61	61
DN 65	Spring range (bar)	0,2-0,4	0,3-0,9	0,5-1,5	1-3,2	1,4-4,8	2,5-7	3-10	8-18
	Spring Nº	67	61	61	61	61	61	61	61
DN 80	Spring range (bar)	0,2-0,4	0,3-0,9	0,4-1,4	0,6-3	0,8-4,2	2-6	3-8	6-16
	Spring Nº	68	62	62	62	62	62	62	62
DN 100	Spring range (bar)	0,2-0,4	0,3-0,9	0,4-1,4	0,6-3	0,8-4,2	2-6	3-8	6-18
	Spring Nº	69	63	63	63	63	63	63	63

HOW TO SIZE (USING Kvs)

Please consult formulas on IS PV10.00 E or consult manufacturer.

ORDER REQUIREMENTS

Remarks: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the actual flow required. Pipe sizing must also respect the maximum recommended flow velocities, according to the medium.

HOW TO ORDER

PS46 DN 32 PN 16 valve complete with spring Nº 60, A2A actuator, condensate vessel and copper sensing pipe.

INSTALLATION

Horizontal installation with the actuator vertically, pointing downwards.
Installation with the actuator pointing upwards is possible only when the medium temperature is below 90 ºC.
The sensing pipe, if not fitted on the valve body, must be installed upstream of the valve at a minimum of 1 meter away or 15 pipe diameters.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

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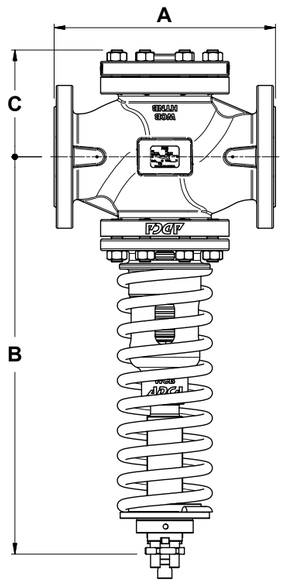
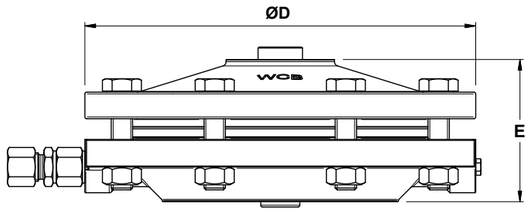
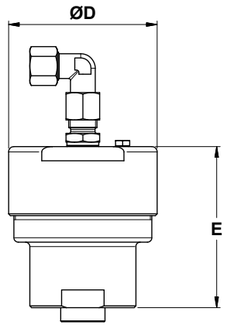
IS PS46.015 E 03.21



DIMENSIONS – VALVE (mm)									
DIMENSION	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
A	130	150	160	180	200	230	290	310	350
B	366	369	371	381	384	470	495	556	597
C	81	84	86	95	100	113	150	150	164
WEIGHT (kg)	10,4	11,8	12,3	15,2	18,6	24,6	41,1	55,1	69,8

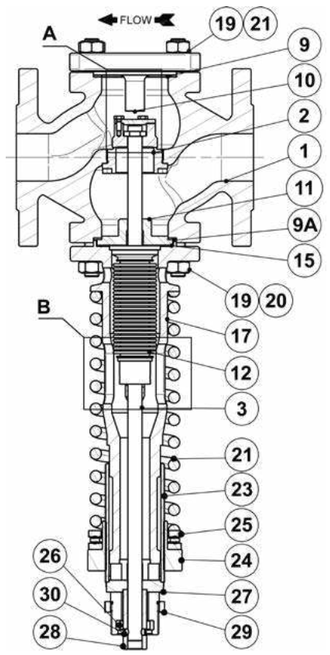




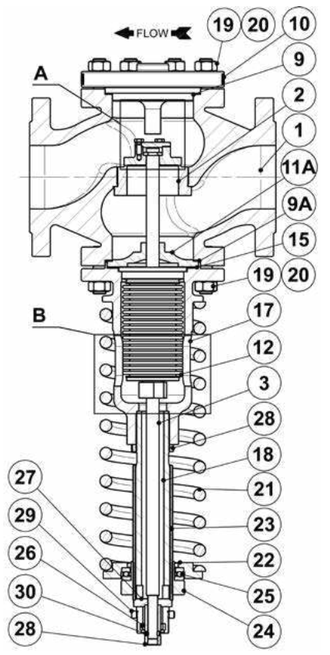
DIMENSIONS – ACTUATOR (mm)					
DIMENSION	ACTUATOR				
	A1A / A11A	A2A / A21A	A3A	A4A	P55
D	172	220	282	340	84
E	74	80	82	92	91
WEIGHT (kg)	5,8	10,2	12,6	18,3	2,7

LRQA CERTIFIED ISO 9001

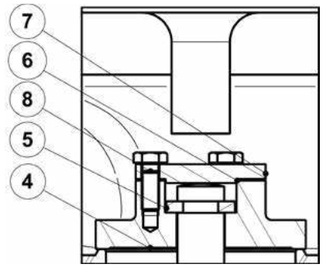
MATERIALS



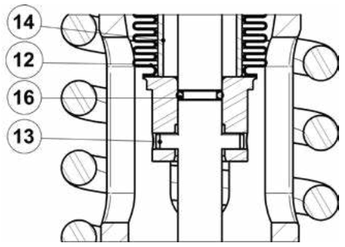
DN 15 – DN 50



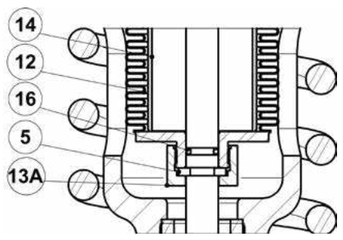
DN 65 – DN 100



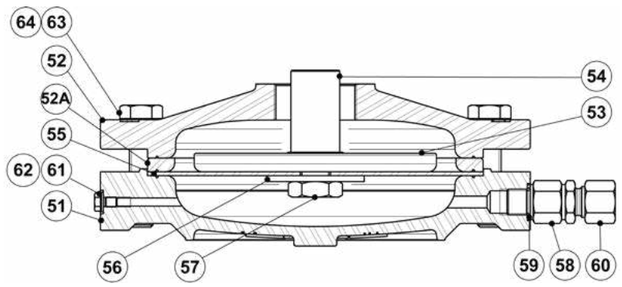
Detail A
(DN 15 - DN 100)



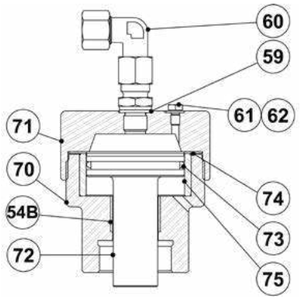
Detail B
(DN 15 - DN 65)



Detail B
(DN 80 - DN 100)



A series



P series

VALSTEAM ADCA
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IS PS46.015 E 03.21

MATERIALS – VALVE			
POS. Nº	**DESIGNATION**	**DN 15 to DN 50**	**DN 65 to DN 100**
1	Valve body	A216 WCB / 1.0619	A216 WCB / 1.0619
2	Seat	AISI 316 / 4.4401	AISI 316 / 4.4401
3	Stem	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Valve plug	AISI 420 / 1.4021	AISI 420 / 1.4021
5	Split ring	AISI 316 / 1.4401	AISI 316 / 4.4401
6	Gasket	Copper	Copper
7	Plug cover	AISI 316 / 1.4401	AISI 316 / 1.4401
8	Bolts	AISI 304 / 1.4301	AISI 304 / 1.4301
9	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
9A	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
10	Cover	A216 WCB / 1.0619	A216 WCB / 1.0619
11	Stem guide	AISI 304 / 1.4301	Bronze
12	Bellows	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571
13	Pin	AISI 301 / 1.4310	–
13A	Nut	–	AISI 316 / 1.4401
14	Guide tube	CuZn39Pb3	CuZn39Pb3
15	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
16	O-ring	EPDM	EPDM
17	Piston body	A216 WCB / 1.0619	A216 WCB / 1.0619
18	Piston body extension	–	P355T1 / 1.0421
19	Studs	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
20	Nuts	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
21	* Adjustment spring	Spring steel	Spring steel
22	Lower spring plate	–	C45E / 1.1191
23	Threaded tube	CuZn39Pb3	CuZn39Pb3
24	Spring adjusting nut	C45E / 1.1191	C45E / 1.1191
25	Ball bearing	Zinc plated steel	Zinc plated steel
26	Spacer	S355JR / 1.0045	S355JR / 1.0045
27	Pressure star	S235JR / 1.0038	S235JR / 1.0038
28	Pressure tube	C45E / 1.1191	C45E / 1.1191
29	Lock nut	C45E / 1.1191	C45E / 1.1191
30	Pin	AISI 303 / 1.4305	AISI 303 / 1.4305

MATERIALS – ACTUATORS			
POS. Nº	**DESIGNATION**	**A1A / A11A / A3A / A4A**	**A2A / A21A**
51	Lower diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040; A216 WCB / 1.0619
52	Upper diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040; A216 WCB / 1.0619
52A	Spacer ring	S355JR / 1.0045	S355JR / 1.0045
53	Pressure plate	A216 WCB / 1.0619	GJS-400-15 / 0.7040
54	Diaph. plate spindle	A216 WCB / 1.0619	GJS-400-15 / 0.7040
55	* Diaphragm	Neoprene reinforced polyamid	Neoprene reinforced polyamid
56	Washer	Copper	Copper
57	Hex nut	CuZn39Pb3	CuZn39Pb3
58	Flow restrictor	AISI 303 / 1.4305	AISI 303 / 1.4305
59	Gasket	Copper	Copper
60	Compression fitting	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel	Zinc plated steel
62	Washer	Copper	Copper
63	Bolts	Zinc plated steel	Zinc plated steel
64	Nuts	Zinc plated steel	Zinc plated steel

POS. Nº	DESIGNATION	P55
54B	Guide bushing	Steel
59	Gasket	Copper
60	Compression fitting	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel
62	Washer	Copper
70	Body	S235JR / 1.0038
71	Cover	S235JR / 1.0038
72	Piston	AISI 316 / 1.4401
73	* O-ring	EPDM
74	* Gasket	Stainless steel / Graphite
75	Piston sleeve	AISI 304 / 1.4301

* Available spare parts.

We reserve the right to change the design and material of this product without notice.

PRESSURE SUSTAINING VALVE PSW46B

DESCRIPTION

The ADCA PSW46B series pressure sustaining valves are single seated, diaphragm or piston sensing proportional controllers that operate without auxiliary energy.
Designed for use with water, compressed air and other liquids and gases compatible with the construction.

MAIN FEATURES

Pressure balancing through robust piston design.
Soft sealing to meet tight shut-off requirements.
Robust construction (fit-and-forget).
Interchangeable actuators and adjustment springs.

OPTIONS: Low-noise flow divider.
Sensing pipe on body.

USE: Water, compressed air and other liquids or gases compatible with the construction.

AVAILABLE MODELS: PSW46BS – carbon steel.

SIZES: DN 50 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2 on request.

AVAILABLE ACTUATORS: A1A, A11A, A3A, A4A and P55 – carbon steel.
A2A and A21A – SG iron or carbon steel.

INSTALLATION: See IMI – Installation and maintenance instructions.

With sensing pipe on body

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 50	–	SEP
DN 65 to 100	DN 50 to 100	1 (CE marked)

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LIMITING CONDITIONS		
Valve model	**PSW45BS**	**PSW45BS**
Body design conditions	PN 16	PN 40
Maximum upstream pressure	13 bar	18 bar
Maximum downstream pressure	13 bar	18 bar
Minimum upstream pressure	0,2 bar	
Maximum operating temperature	130 ºC	
Maximum hydraulic factory valve body test	24 bar	60 bar

Remark: Other soft materials and temperature limits on request.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

Actuator model	**A1A**	**A11A**	**A2A**	**A21A**	**A3A**	**A4A**	**P55**
Maximum operating pressure (bar)	25	25	12	18	2,5	1,5	25
Maximum operating temperature	90 ºC *						130 ºC

* A water seal pot must be installed in the sensing pipe when operating with liquids at higher temperatures.

FLOW RATE COEFFICIENTS (m³/h)				
SIZE	**DN 50**	**DN 65**	**DN 80**	**DN 100**
Kvs	26,5	51,5	79,5	129,5

ACTUATOR AND SPRING SELECTION TABLE									
SIZE	**ACTUATOR**								
		A4A		**A3A**	**A2A**	**A21A**	**A1A**	**A11A**	**P55**
DN 50	Spring range (bar)	0,2-0,4	0,3-0,9	0,5-1,5	1-3,2	1,4-4,8	2,5-7	3-10	8-18
	Spring Nº	67	61	61	61	61	61	61	61
DN 65	Spring range (bar)	0,2-0,4	0,3-0,9	0,5-1,5	1-3,2	1,4-4,8	2,5-7	3-10	8-18
	Spring Nº	67	61	61	61	61	61	61	61
DN 80	Spring range (bar)	0,2-0,4	0,3-0,9	0,4-1,4	0,6-3	0,8-4,2	2-6	3-8	6-16
	Spring Nº	68	62	62	62	62	62	62	62
DN 100	Spring range (bar)	0,2-0,4	0,3-0,9	0,4-1,4	0,6-3	0,8-4,2	2-6	3-8	6-18
	Spring Nº	69	63	63	63	63	63	63	63

HOW TO SIZE (USING Kvs)

Please consult formulas on IS PV10.00 E or consult manufacturer.

HOW TO ORDER

PSW46BS DN 80 PN 16 valve complete with spring Nº 62, A2 actuator with sensing pipe on body.

INSTALLATION

Horizontal installation with the actuator vertically, pointing downwards (recommended, especially for liquid service) or upwards.
The sensing pipe, if not fitted on the valve body, must be installed upstream of the valve at a minimum of 1 meter away or 15 pipe diameters.

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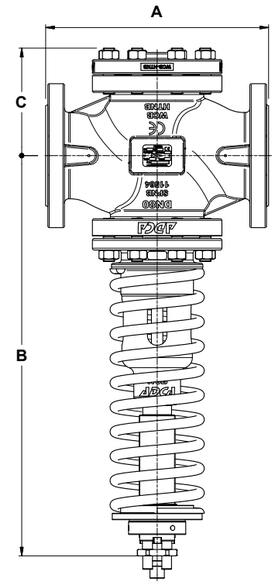
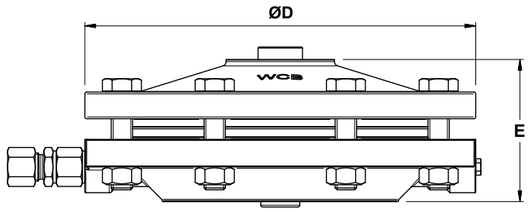
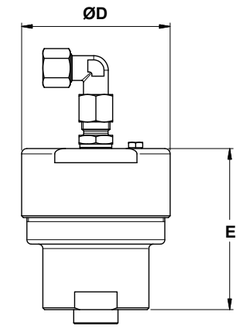


DIMENSIONS – VALVE (mm)				
DIMENSION	**SIZE**			
	DN 50	**DN 65**	**DN 80**	**DN 100**
A	230	290	310	350
B	470	495	556	597
C	113	150	150	164
WEIGHT (kg)	25,4	43,5	57,3	74,3





DIMENSIONS – ACTUATOR (mm)					
DIMENSION	**ACTUATOR**				
	A1A / A11A	**A2A / A21A**	**A3A**	**A4A**	**P55**
ØD	172	220	282	340	84
E	74	80	82	92	91
WEIGHT (kg)	5,8	10,2	12,6	18,3	2,7

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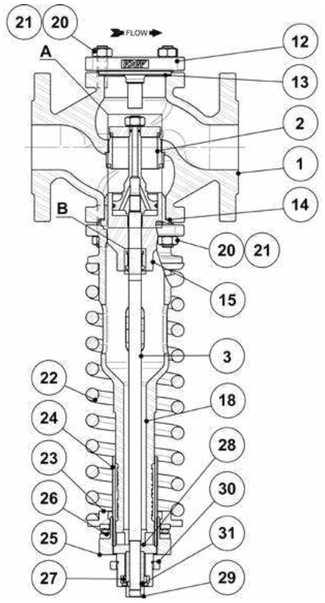
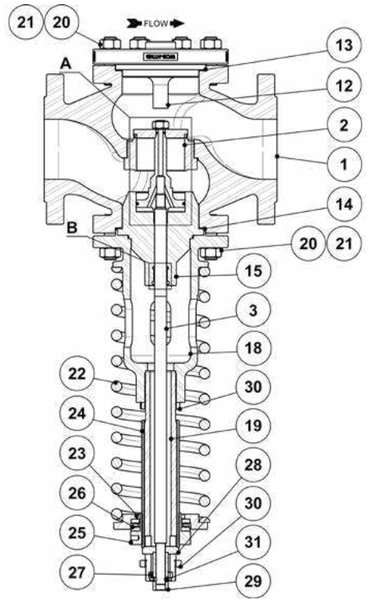
IS PSW46B.050 E 00.22

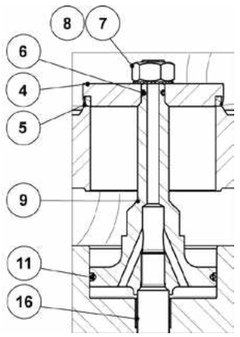
MATERIALS



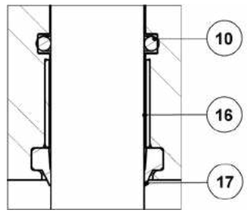
DN 50



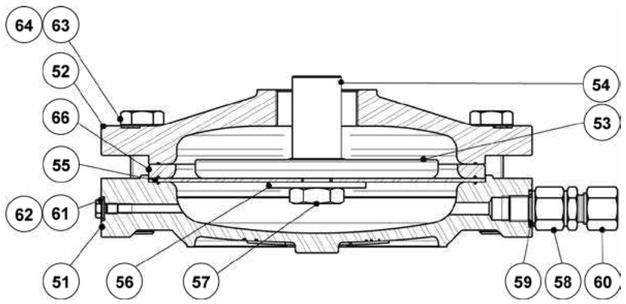
DN 65 to DN 100



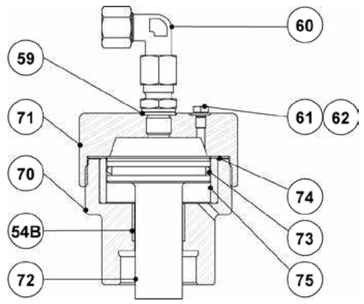
Detail A



Detail B



A series actuators



P series actuators

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MATERIALS – VALVE			
POS. Nº	**DESIGNATION**	**DN 50**	**DN 65 to DN 100**
1	Valve body	A216 WCB / 1.0619	A216 WCB / 1.0619
2	Seat	AISI 316 / 4.4401	AISI 316 / 4.4401
3	Stem	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Valve plug	AISI 316 / 4.4401	AISI 316 / 4.4401
5	Seal ring	EPDM	EPDM
6	O-ring	EPDM	EPDM
7	Nut	AISI 304 / 1.4301	AISI 304 / 1.4301
8	Washer	AISI 304 / 1.4301	AISI 304 / 1.4301
9	Piston	AISI 316 / 4.4401	AISI 316 / 4.4401
10	O-ring	EPDM	EPDM
11	O-ring	EPDM	EPDM
12	Cover	A216 WCB / 1.0619	A216 WCB / 1.0619
13	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
15	Guide tube	AISI 304 / 1.4301	AISI 304 / 1.4301
16	Guide bushing	Steel	Steel
17	Scraper	Viton	Viton
18	Piston body	A216 WCB / 1.0619	A216 WCB / 1.0619
19	Piston body extension	–	P355T1 / 1.0421
20	Studs	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
21	Nuts	Steel 8.8; EN 10269 steel	Steel 8.8; EN 10269 steel
22	Spring	Spring steel	Spring steel
23	Lower spring plate	C45E / 1.1191	C45E / 1.1191
24	Threaded tube	CuZn39Pb3	CuZn39Pb3
25	Spring adjusting nut	C45E / 1.1191	C45E / 1.1191
26	Ball bearing	Zinc plated steel	Zinc plated steel
27	Spacer	S355J2G3 / 1.0570	S355J2G3 / 1.0570
28	Pressure star	S235JR / 1.0038	S235JR / 1.0038
29	Pressure tube	C45E / 1.1191	C45E / 1.1191
30	Lock nut	C45E / 1.1191	C45E / 1.1191
31	Pin	AISI 303 / 1.4305	AISI 303 / 1.4305

* Available spare parts.

MATERIALS – ACTUATOR			
POS. Nº	**DESIGNATION**	**A1A / A11A / A3A / A4A**	**A2A / A21A**
51	Lower diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040; A216 WCB / 1.0619
52	Upper diaphragm chamber	A216 WCB / 1.0619	GJS-400-15 / 0.7040; A216 WCB / 1.0619
53	Pressure plate	A216 WCB / 1.0619	GJS-400-15 / 0.7040
54	Diaph. plate spindle	A216 WCB / 1.0619	GJS-400-15 / 0.7040
55	* Diaphragm	Neoprene reinforced polyamid	Neoprene reinforced polyamid
56	Washer	Copper	Copper
57	Hex nut	CuZn39Pb3	CuZn39Pb3
58	Flow restrictor	AISI 303 / 1.4305	AISI 303 / 1.4305
59	Gasket	Copper	Copper
60	Compression fitting	AISI 316Ti / 1.4571	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel	Zinc plated steel
62	Washer	Copper	Copper
63	Bolts	Zinc plated steel	Zinc plated steel
64	Nuts	Zinc plated steel	Zinc plated steel
66	Spacer ring	S355JR / 1.0045	S355JR / 1.0045

POS. Nº	DESIGNATION	P55
54B	Guide bushing	Steel
59	Gasket	Copper
60	Compression fitting	AISI 316Ti / 1.4571
61	Vent screw	Zinc plated steel
62	Washer	Copper
70	Body	S235JR / 1.0038
71	Cover	S235JR / 1.0038
72	Piston	AISI 316 / 1.4401
73	* O-ring	EPDM
74	* Gasket	Stainless steel / Graphite
75	Piston sleeve	AISI 304 / 1.4301

* Available spare parts.

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IS PSW46B.050 E 00.22

PILOT OPERATED PRESSURE SUSTAINING VALVES
PS47

DESCRIPTION

The ADCA PS47 pilot operated pressure sustaining valves are designed for use with steam, compressed air, nitrogen and other gases compatible with the construction materials.
The PS47 accurately senses upstream pressure and acts to precisely control it to a minimum or disperse excess presssure.

MAIN FEATURES

Precise control of upstream pressure from 0,07 bar to 17 bar.
Robust steel or stainless steel construction.
Guided piston and valve stem.
Hardened plug.

OPTIONS: Soft sealing.
Low pressure top.
Dome loaded version.
Bottom cover drain connection.
Stellited plug and seat.
External sensing connection.

USE: Saturated steam, compressed air and other gases (Group 2) compatible with the construction (except oxygen).

AVAILABLE MODELS:
PS47 – steel versions for steam.
PS47I – stainless steel versions for steam (only available from DN 15 to DN 50).
PS47G – steel versions for compressed air and gases.
PS47GI – stainless steel versions for compressed air and gases.

SIZES: 1/2” to 2”; DN 15 to DN 50.

CONNECTIONS:
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME B16.11.

INSTALLATION:
Horizontal installation.
See IMI – Installation and maintenance instructions.
In steam applications, a “Y” strainer, humidity separator and steam trap should be installed upstream of the valve.

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1/2” to 2”	DN 15 to 32 – 1/2” to 11/4”	SEP
–	DN 40 to 50 – 11/2” to 2”	1 (CE marked)

BODY LIMITING CONDITIONS					
PS47		**PS47i**			**RELATED TEMPERATURE**
CLASS 150 *	**PN 40 / CLASS 300 ****	**CLASS 150 ***	**PN 40**	**CLASS 300 ****	
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
19,3 bar	40 bar	15,3 bar	40 bar	39,9 bar	- 10 / 50 ºC
17,7 bar	37,1 bar	11,1 bar	37,9 bar	28,8 bar	100 ºC
12,5 bar	31 bar	10,4 bar	30,3 bar	27,1 bar	239 ºC
10,2 bar	28 bar	9,7 bar	27,6 bar	25,2 bar	300 ºC

Minimum working temperature: -10 ºC; * Rating according to EN 1759-1:2004; ** Rating according to EN 1092-1:2018.

LIMITING CONDITIONS	
Valve model	**PS47**
Body design conditions	PN 40
Maximum upstream pressure	17 bar
Minimum upstream pressure *	0,35
Maximum downstream pressure	17 bar
Maximum operating temperature	250 ºC
Maximum hydraulic factory valve body test	60 bar

* 0,07 bar with low pressure top (limited to 7 bar maximum inlet pressure).
Remak: Pressure and temperature limiting conditions may change if “G” version for compressed air and gases is chosen or soft sealing/piston rings are used.
Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!

REGULATING RANGES				
SPRING COLOUR	**GREEN w/ 1 diaphragm**	**BLUE w/ 1 diaphragm**	**RED w/ 2 diaphragms**	**BLACK w/ 2 diaphragms**
Regulating range	0,07 to 0,5 bar * 0,35 to 2 bar	1,5 to 5,5 bar	3,5 to 8,5 bar	7 to 17 bar

* With low pressure top.

DIMENSIONS

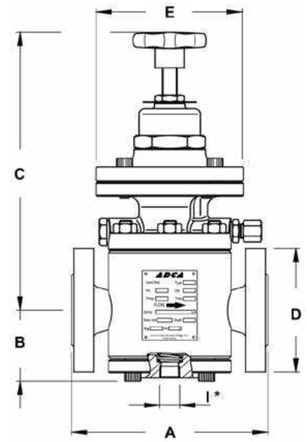

Fig. 1 - Valve with standard diaphragm

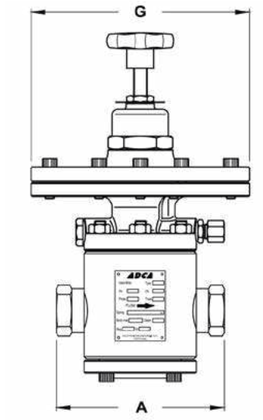

Fig. 2 - Valve with low pressure top

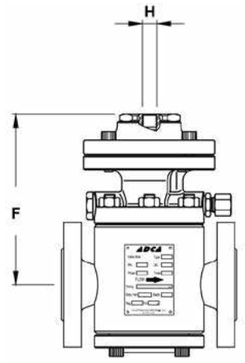

Fig. 3 - Dome loaded valve

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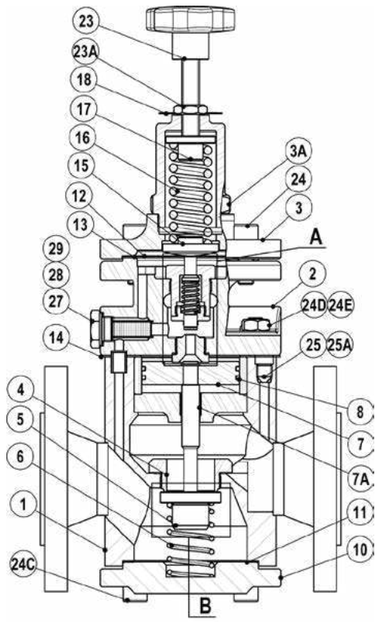
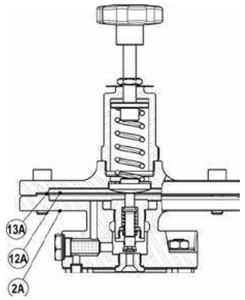
IS PS47.20 E 06.19

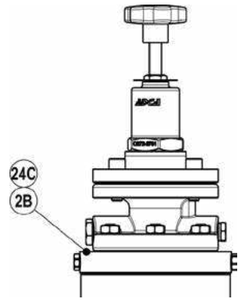
DIMENSIONS (mm)													
SIZE	A				B	C	D	E	F	G	H	I *	WEIGHT (kg)
	PN 40	CLASS 150	CLASS 300	THREADED									
DN 15 – 1/2”	150	184	190	140	56	275	95	120	162	195	1/4"	3/8”	13
DN 20 – 3/4”	150	184	194	140	56	287	105	120	174	195	1/4"	3/8”	13,5
DN 25 – 1”	160	184	197	150	56	287	115	120	174	195	1/4"	3/8”	14
DN 32 – 11/4”	180	-	-	170	68	299	140	120	186	195	1/4"	3/8”	18
DN 40 – 11/2”	200	222	235	190	75	307	150	130	194	195	1/4"	3/8”	22
DN 50 – 2”	230	254	267	230	84	323	165	160	210	195	1/4"	3/8”	31

* Optional drain connection for steam trapping. This drain connection does not replace the humidity separator, but can be useful if, e.g., the valve stops operating for long periods of time (see Fig.6).
Remarks: As standard, connections H and I, in valves manufactured with ASME B16.5 flanges, SW or NPT threads, are female threaded NPT. In valves manufactured with EN 1092-1 flanges or ISO 7 Rp threads, these connections are also female threaded ISO 7 Rp.

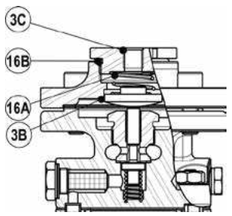




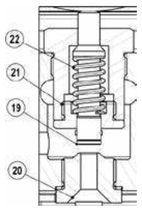
Low pressure top



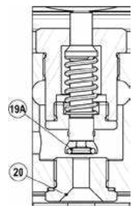
Adapting flange (DN50)



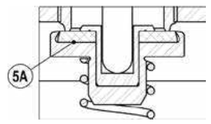
Dome loaded top



Detail A
Pilot valve



Detail A
Pilot valve (soft)



Detail B
Main valve (soft)

MATERIALS			
POS. Nº	DESIGNATION	PS47	PS47I
1	Valve body	S355JR / 1.0045; P250GH / 1.0460	AISI 316 / 1.4401
2	Pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2A	Low pressure pilot valve body	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2B	Adapting flange	C45E / 1.1191	AISI 316 / 1.4401
3	Top cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3A	Spring cover	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3B	Top cover	C45E / 1.1191	AISI 316 / 1.4401
3C	Cover nut	C45E / 1.1191	AISI 316 / 1.4401
4	* Main valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
5	* Main valve plug	Hardened st. steel	Hardened st. steel
5A	* Main valve plug (soft)	AISI 316 w/ PTFE/GR; Rulon	AISI 316 w/ PTFE/GR; Rulon
6	* Main valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	* Piston	Brass / Bronze	Brass / Bronze
7A	Piston guide	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* Piston Rings	Bronze / FKM / EPDM / NBR	Bronze / FKM / EPDM / NBR
9	Piston liner	AISI 304 / 1.4301	AISI 304 / 1.4301
10	Bottom cover	S355JR / 1.0045	AISI 316 / 1.4401
11	* Bottom cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
12	* Diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
12A	* Low pressure diaphragm	AISI 301 / 1.4310	AISI 301 / 1.4310
13	* Diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
13A	* Low press. diaphragm gasket	Stainless steel / Graphite	Stainless steel / Graphite
14	* Pilot valve gasket	Stainless steel / Graphite	Stainless steel / Graphite
15	Lower spring carrier	Brass	Brass
16	* Adjustment spring	Steel	Steel
16A	Diaphragm spring	Stainless steel	Stainless steel
16B	O-ring	Viton	Viton
17	Top spring carrier	Brass	Brass
18	Spring ID plate	Aluminium	Aluminium
19	* Pilot valve plug	AISI 316 / 1.4401	AISI 316 / 1.4401
19A	* Pilot valve plug (soft)	PTFE/GR; Rulon, etc.	PTFE/GR; Rulon, etc.
20	* Pilot valve seat	AISI 316 / 1.4401	AISI 316 / 1.4401
21	* Pilot valve body	A351 CF8 / 1.4308	Copper / PTFE
22	* Pilot valve spring	AISI 302 / 1.4300	AISI 302 / 1.4300
23	Handwheel	Plastic / Stainless steel	Plastic / Stainless steel
23A	Locknut	AISI 304 / 1.4301	AISI 304 / 1.4301
24	Bolts	Steel 10.9	Stainless steel A2
24C	Bolts	Steel 10.9	Stainless steel A2
24D	Studs	34CrNiMo / 1.6582	AISI 316 / 1.4401
24E	Nuts	Steel 8.8	Stainless steel A2-70
25	Socket set screw	Stainless steel	Stainless steel
25A	O-ring	Viton	Viton
26	Sensing pipe	Copper	Stainless steel
27	* Pilot valve strainer	AISI 304 / 1.4301	AISI 304 / 1.4301
28	Strainer nut	AISI 304 / 1.4301	AISI 304 / 1.4301
29	Gasket	Copper	Copper / PTFE

* Available spare parts.

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CAPACITY TABLE

INLET (barg)	OUTLET (barg)	SATURATED STEAM (kg/h)						COMPRESSED AIR (Nm³/h – 0 °C – 1,013 bar)					
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
0,7	0,35	40	75	125	190	280	480	15	31	50	70	111	191
1	0,4	45	95	160	240	355	620	16	33	51	79	113	194
	0,6	40	83	140	210	308	535	27	55	90	138	199	343
2	0,4 - 1	75	150	250	380	545	960	60	122	201	307	444	763
	1,2	65	138	230	345	515	900	54	109	180	276	399	686
	1,6	50	105	175	265	393	685	45	91	150	230	333	572
3	0,4 - 1,5	100	200	335	510	750	1310	120	240	300	460	666	1150
	2	85	170	290	450	660	1155	105	210	251	384	555	1050
	2,2	80	165	277	416	613	1050	48	93	152	232	334	570
	2,6	60	127	203	315	467	818	45	61	101	154	223	384
4	0,4 - 2	125	250	420	630	920	1580	150	238	499	739	1089	1825
	2,5	114	225	385	580	850	1465	135	208	449	568	978	1635
	3,2	92	183	309	482	708	1205	119	177	398	492	867	1444
	3,6	68	137	237	353	536	932	60	124	202	154	444	763
5	0,4 - 2	150	310	512	755	1114	1895	180	360	505	768	1110	1908
	3	144	295	488	743	1095	1835	165	330	556	691	997	1716
	4	115	225	373	578	846	1430	151	298	404	613	885	1526
	4,2	105	213	343	525	770	1342	136	285	383	582	840	1449
6	0,4 - 3	175	355	602	919	1358	2298	210	468	696	1046	1523	2580
	4	159	314	538	827	1217	2142	195	437	646	969	1412	2389
	5	119	250	411	637	941	1644	150	345	494	738	1079	1817
	5,2	109	217	360	568	839	1465	135	315	443	664	968	1627
7	0,4 - 3,5	197	410	670	1005	1540	2644	240	480	804	1200	1740	2989
	5	178	358	587	908	1345	2306	210	421	701	1046	1524	2640
	6	132	271	452	688	1027	1773	150	301	499	756	1104	1829
	6,2	122	251	416	635	934	1618	105	211	349	529	773	1280
8	0,4 - 4	225	471	778	1169	1759	3043	270	546	798	1353	1746	3411
	5	221	339	730	1118	1659	2884	265	516	747	1276	1635	3220
	6	192	385	639	976	1451	2513	225	449	710	1125	1635	2762
	7	146	293	481	732	1085	1887	180	361	600	892	1296	2184
	7,2	137	274	453	692	1011	1782	156	312	540	768	1128	1978
9	0,4 - 5	251	518	856	1325	1923	3358	301	612	1011	1507	2244	3789
	6	241	500	788	1222	1766	3095	270	553	910	1359	1980	3474
	7	206	398	679	1068	1559	2676	240	492	816	1230	1798	2970
	8	156	314	514	794	1142	2053	180	360	598	903	1288	2247
	8,2	145	292	483	741	1090	1888	165	329	547	826	1176	2056
10	0,4 - 5	275	561	944	1468	2127	3718	330	659	1116	1692	2412	4173
	6	272	551	917	1419	2074	3619	314	628	1065	1615	2301	3983
	7	252	508	838	1268	1871	3249	288	599	1004	1503	2202	3810
	8	213	431	722	1118	1659	2831	240	492	806	1212	1770	3022
	9	163	333	548	843	1244	2152	192	360	658	898	1350	2280
	9,2	150	298	493	756	1143	1929	181	342	628	852	1283	2165
12	1 - 6	330	680	1124	1732	2541	4407	390	792	1300	1978	2844	4917
	8	311	629	1023	1575	2332	4034	360	732	1219	1827	2622	4497
	10	265	533	812	1271	1867	3202	270	553	910	1359	1980	3474
	11	175	364	568	924	1350	2359	210	468	696	1046	1523	2580
15	1 - 8	408	839	1373	2138	3118	5403	480	972	1602	2427	3564	6072
	12	339	656	1068	1629	2441	4250	375	762	1272	1923	2784	4692
	14	199	401	662	1017	1503	2619	255	528	889	1332	1896	3398
17	1 - 9	425	863	1460	2178	3165	5343	540	912	1819	2737	3984	6618
	15	347	709	1190	1816	2694	4712	315	708	1179	1764	2520	4418
	16	207	416	717	1217	1608	2824	255	528	889	1332	1896	3398

Remarks: A pressure sustaining valve is usually sized to the minimum allowable pressure drop across the valve.

We reserve the right to change the design and material of this product without notice.

ORDERING CODES PS47

Valve model	PS.47			S.	1			1.	A	15	
PS47 – steam (standard)	PS.47										
PS47G – compressed air and gases	PS.47G										
Body material											
S355JR / 1.0045 or P250GH / 1.0460 carbon steel		(1)									
AISI 316 / 1.4401 stainless steel		I									
Options											
Standard valve with internal sensing line			(1)								
Valve for external sensing connection			B								
Diaphragm											
Standard diaphragm				S.							
Low pressure diaphragm				L.							
Regulating range											
Green spring – 0,35 to 2 bar – single diaphragm					1						
Blue spring – 1,5 to 5,5 bar – single diaphragm					2						
Red spring – 3,5 to 8,5 bar – double diaphragm					3						
Black spring – 7 to 17 bar – double diaphragm					4						
Dome loaded – 0,35 to 4 bar – single diaphragm **a)**					6						
Dome loaded – 2 to 17 bar – double diaphragm **a)**					7						
Piston rings b)											
Bronze						(1)					
FKM						V					
EPDM						E					
NBR						N					
Drain connection											
Standard valve							(1)				
Drain connection ISO 7 Rp 3/8”							D				
Valve sealing											
Standard metal to metal with hardened plug								1.			
Stellited plug and seat								2.			
Soft sealed with virgin PTFE **b)**								3.			
Soft sealed with PTFE/GR **b)**								4.			
Soft sealed with Rulon **b)**								5.			
Soft sealed with FPM/Viton **b)**								6.			
Pipe connection											
Threaded ISO 7 Rp									A		
Threaded NPT ASME B1.20.1									C		
Socket weld (SW) ASME B16.11									H		
Flanged EN 1092-1 PN 40									N		
Flanged ASME B16.5 Class 150									U		
Flanged ASME B16.5 Class 300									V		
Size											
DN 15 or 1/2”										15	
DN 20 or 3/4”										20	
...											
Special valves / Extras											
Full description or additional codes have to be added in case of non-standard combination.											E

a) The loading control pressure is approximately the same as the required upstream set-point pressure (± 0,2 bar).
b) Valve limited to the materials maximum operating temperature. Consult manufacturer for more details.

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IS PS47.20 E 06.19

Control Valves

3 - Control valves

Two-way control valves .....
Three-way control valves .....
On/off control valves .....
Blowdown valve .....
Pneumatic actuators .....
Electric actuators .....
Positioners .....
Other instrumentation .....
Overflow valves .....
Temperature regulators .....

TWO-WAY GLOBE CONTROL VALVES
V16/2
(EN)

DESCRIPTION

The ADCATrol V16/2 is a series of single seated, two-way globe control valves designed for simple process engineering and industrial applications with non-critical operating conditions.
These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control tasks.

MAIN FEATURES

Compact and cost-effective.
Modular design to meet process requirements.
Stem guided (up to DN 50) and post guided (from DN 65 to DN 100).
Parabolic plug design.
Stainless steel trim.

OPTIONS AND ACCESSORIES: Bonnet extension for high and low temperatures.
Various stem sealing options including bellows sealing.
Soft or stellited valve sealing.
Reduced bore trims.
Silencers.

USE: Saturated and superheated steam.
Hot and superheated water.
Air, gases and others.

AVAILABLE MODELS: V16/2G – SG iron.
V16/2S – carbon steel.
V16/2i – stainless steel.

SIZES: DN 15 to DN 100.

CONNECTIONS: V16/2G – Flanged EN 1092-2 PN 16.
V16/2S and V16/2i – Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 100	DN 40 to 100	1 (CE marked)

BODY LIMITING CONDITIONS

V16/2G **		V16/2S *				V16/2i *			
FLANGED PN 16		FLANGED PN 16		FLANGED PN 40		FLANGED PN 16		FLANGED PN 40	
ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.	ALLOW. PRESSURE	RELATED TEMP.
16 bar	-10 ºC / 50 ºC	16 bar	-10 ºC / 50 ºC	40 bar	-10 ºC / 50 ºC	16 bar	-10 ºC / 50 ºC	40 bar	-10 ºC / 50 ºC
14,7 bar	200 ºC	13,3 bar	200 ºC	33,3 bar	200 ºC	13,4 bar	200 ºC	33,7 bar	200 ºC
13,9 bar	250 ºC	12,1 bar	250 ºC	27,6 bar	300 ºC	12,7 bar	250 ºC	29,7 bar	300 ºC
12,8 bar	300 ºC	11 bar	300 ºC	25,7 bar	350 ºC	11,8 bar	300 ºC	28,5 bar	350 ºC
11,2 bar	350 ºC	10,2 bar	350 ºC	23,8 bar	400 ºC	11,4 bar	350 ºC	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018; ** Rating according to EN 1092-2:2007.

We reserve the right to change the design and material of this product without notice.

LRQA CERTIFIED ISO 9001

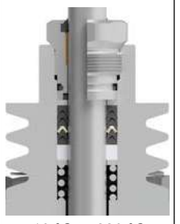
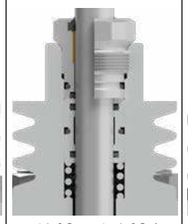
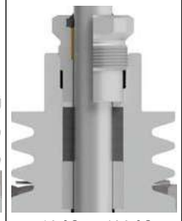
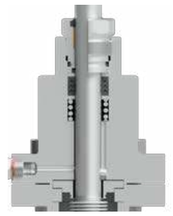
BONNET DESIGN

STANDARD	EXTENDED
-10 ºC to 250 ºC	Above 250 ºC

TRIM DESIGN

UNBALANCED TRIM

STEM SEALING

PTFE/GR V-RINGS (V1.2)	PTFE V-RINGS (V2.2)	EPDM (EP1)	GRAPHITE (G1)	BELLOWS	
				(BV1)	(BG1)
					
-10 ºC to 220 ºC	-10 ºC to 180 ºC	-10 ºC to 150 ºC *	-10 ºC to 400 ºC	- 60 ºC to 220 ºC **	- 60 ºC to 400 ºC **

* Up to 180 ºC in steam and hot water applications.
** Maximum operating pressure: 25 bar.

PLUG DESIGN

PARABOLIC

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class IV, acc. to IEC 60534-4

PARABOLIC (SOFT SEALING)

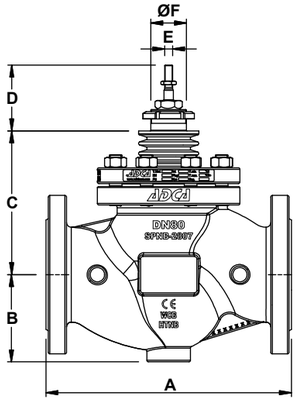
Sealing: PTFE/GR
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class VI, acc. to IEC 60534-4
Max. temp.: 200 ºC

FLOW RATE COEFFICIENTS – PARABOLIC PL AND EQP PLUGS

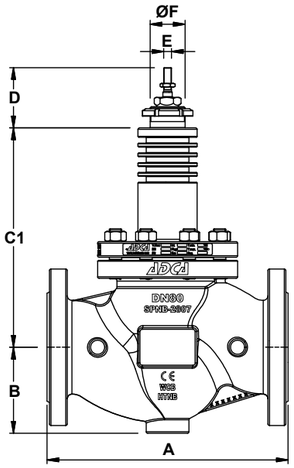
SIZE	Kvs (m³/h)										
	2,1	2,7	4	6,3	10	16	25	40	63	100	160
DN 15	●	●	●								
DN 20	●	●	●	●							
DN 25	●	●	●	●	●						
DN 32			●	●	●	●					
DN 40				●	●	●	●				
DN 50					●	●	●	●			
DN 65						●	●	●	●		
DN 80							●	●	●	●	
DN 100								●	●	●	●
SEAT Ø (mm)	12		15	19,2	25	32	38	48	65	76	96
STROKE (mm)	20								30		

For conversion Kvs = Cv (US) x 0,865.

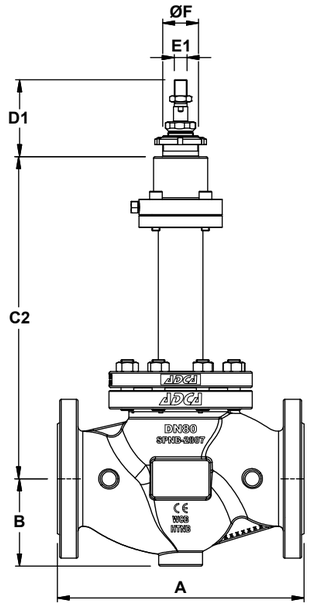
VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS V162E.015 E 03.21



Valve with standard bonnet



Valve with extended bonnet



Bellows sealed valve

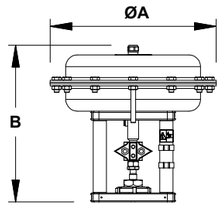
DIMENSIONS (mm)									
DIMENSION	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
A	130	150	160	180	200	230	290	310	350
B	52	53	58	70	75	85	100	110	130
C	104	104	109	109	113	125	176	182	194
C1	169	169	189	189	193	204	276	282	314
C2	295	295	298	298	303	303	415	421	424
D	77						82		
D1	77						92		
E	M10 x 1								
E1	M10 x 1						M16 x 1,5		
ØF	M40 x 1,5						M45 x 1,5		

Remarks: Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.

WEIGHTS (kg)									
	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
STANDARD	5,1	6	6,9	10	12,6	16,4	31,8	38,2	50,6
EXTENDED	5,8	6,7	7,6	10,9	13,9	17,6	32,5	38,9	51,1
BELLOWS	9,3	10,2	10,9	14,1	16,6	20,2	35,6	41,9	53,5

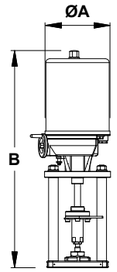
MAX. PERMISSIBLE ACTUATING THRUSTS (kN)									
	SIZE								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
MAX. THRUST	12								

We reserve the right to change the design and material of this product without notice.



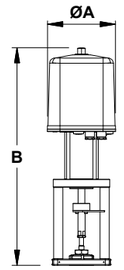
DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)								
DIMENSION	PA10	PA206	PA25	PA281	PA40	PA341	PA436	PA80
ØA	170	209	250	275	300	336	430	405
B	251	236	260	243	325	288	316 / 336 *	505
WEIGHT (kg)	6,3	6,2	10,1	9,6	18,7	14,3	24,4 / 28 *	50,4

* For actuators with spring ranges 1 to 2 bar, 1,5 to 3 bar and 2 to 4 bar.
For more information, please consult IS 3.70 and IS 3.70A – PA Linear pneumatic actuators.



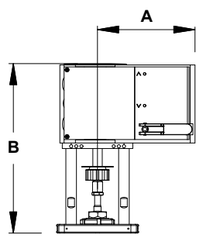
DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)					
DIMENSION	EL12	EL20	EL45	EL80	EL120
ØA	129	148	148	188	188
B	333	485	485	587	587
WEIGHT (kg)	2,1	8	8	13	13

For more information, please consult IS 3.72 – EL Linear electric actuators.



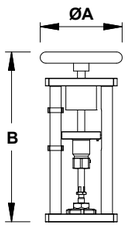
DIMENSIONS – ELR SERIES ELECTRIC ACTUATORS (mm)			
DIMENSION	ELR2.1	ELR2.2	ELR2.3
ØA	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

* With PEL electronic positioner.
For more information, please consult IS 3.73 – ELR Linear electric actuators fail safe.



DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)		
DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



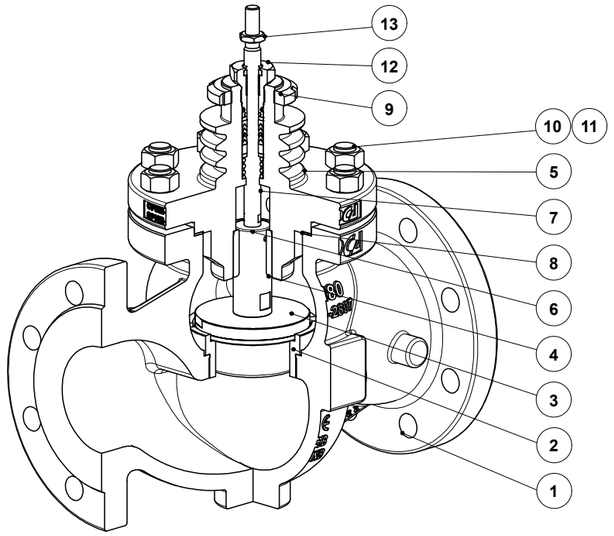
DIMENSIONS – MANUAL OPERATION HANDWHEEL (mm)	
DIMENSION	MAH
ØA	160
B	331
WEIGHT (kg)	5,6

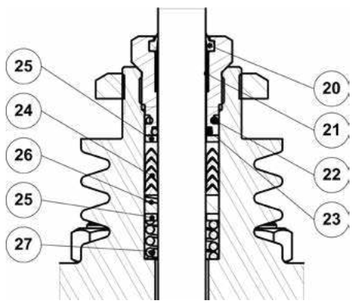
VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

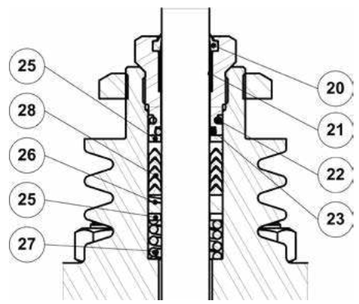
IS V162E.015 E 03.21

MATERIALS

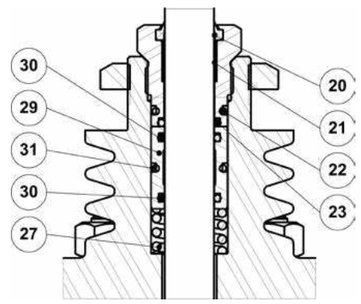




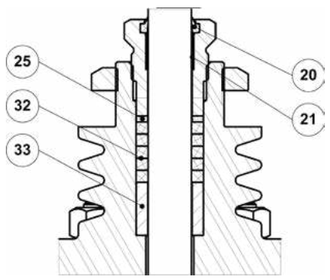
PTFE/GR V-Rings
(V1.2)



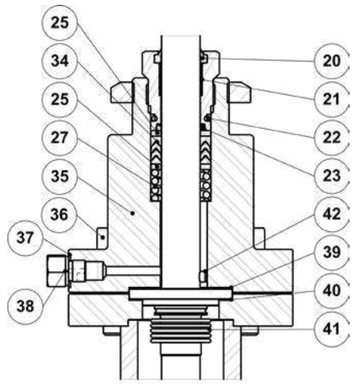
PTFE V-Rings
(V2.2)



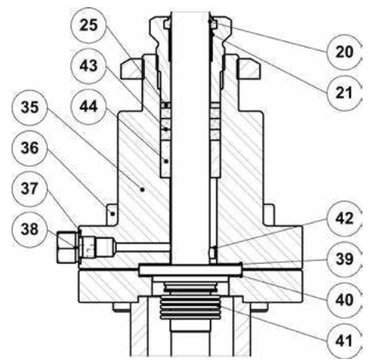
EPDM
(EP1)



Graphite
(G1)



Bellows sealing
(BV1)



Bellows sealing
(BG1)

LRQA CERTIFIED ISO 9001

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body (V16/2G)	GJS-400-15 / 0.7040
	Valve body (V16/2S)	A216 WCB / 1.0619
	Valve body (V16/2i)	A351 CF8M / 1.4408
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
4	Lower stem guide	Bronze CB1
5	Bonnet (V16/2G and V16/2S)	A351 CF8M / 1.4408; A216 WCB / 1.0619
	Bonnet (V16/2i)	A351 CF8M / 1.4408
6	* Post stem (DN 65 to DN 100)	AISI 316L / 1.4404
7	* Stem	AISI 316L / 1.4404
8	* Gasket	Stainless steel / Graphite
9	Lock nut	A351 CF8 / 1.4308
10	Nuts (V16/2G and V16/2S)	EN 10269 steel
	Nuts (V16/2i)	Stainless steel A2-70
11	Studs (V16/2G and V16/2S)	EN 10269 steel
	Studs (V16/2i)	Stainless steel A2-70
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 304 / 4.4301
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE; Graphite filled PTFE
25	Washer	AISI 304 / 1.4301
26	* Stem guide	Stainless steel filled PTFE
27	* Spring	AISI 302 / 1.4310
28	* Chevron packing set	PTFE
29	O-ring guide	AISI 304 / 1.4301
30	* O-ring	EPDM
31	* O-ring	EPDM
32	* Packing set	Expanded graphite
33	Packing spacer	AISI 304 / 1.4301
34	* Safety packing set	Graphite filled PTFE
35	Bellows bonnet (V16/2G and V16/2S)	A105 / 1.0432; AISI 316 / 1.4401
	Bellows bonnet (V16/2i)	AISI 316 / 1.4401
36	Bolts or studs and nuts (V16/2G and V16/2S)	EN 10269 steel
	Bolts or studs and nuts (V16/2i)	Stainless steel A2-70
37	Gasket	Copper
38	Compression fitting	AISI 316 / 1.4401
39	* Gasket	Stainless steel / Graphite
40	* Gasket	Stainless steel / Graphite
41	* Metal bellows	AISI 316Ti / 1.4571
42	* Locking pin	AISI 303 / 1.4305
43	* Safety packing set	Expanded graphite
44	Packing spacer	AISI 304 / 1.4301

* Available spare parts.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS V162E.015 E 03.21

ORDERING CODES V16/2 a)															
Valve model	**V1**	**2**	**G**	**S**	**1**	**U**	**1**	**1**	**1**	**E**	**FD**	**L**	**015**	
Globe control valve, two-way, straight body	**V1**													
Valve series														
Series 2		**2**												
Body material														
GJS-400-15 / 0.7040 SG iron			**G**											
A216 WCB / 1.0619 carbon steel			**S**											
A351 CF8M / 1.4408 stainless steel			**I**											
Bonnet design														
Standard				**S**										
Extended				**E**										
Trim design														
Unbalanced trim					**1**									
Flow direction														
Flow under the plug						**U**								
Flow over the plug						**O**								
Stem sealing														
PTFE/GR V-Rings (V1.2)							**1**							
Virgin PTFE V-Rings (V2.2)							**2**							
Graphite (G1)							**3**							
EPDM (EP1)							**4**							
Stainless steel bellows with PTFE/GR safety packing (BV1)							**8**							
Stainless steel bellows with graphite safety packing (BG1)							**9**							
Plug design														
Parabolic								**1**						
Valve sealing														
Metal to metal (class IV)									**1**					
Soft sealed with PTFE/GR (class VI)									**3**					
Stellited (class IV)									**4**					
Characteristic														
Equal percentage (EQP)										**E**				
Linear (PL)										**L**				
Flow rate coefficient														
Kvs 4											**FD**			
See table below for other Kvs value codes														
Pipe connection														
Flanged EN 1092-1/-2 PN 16												**L**		
Flanged EN 1092-1 PN 40												**N**		
Size														
DN 15													**015**	
DN 20													**020**	
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination														**E**

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.

FLOW RATE COEFFICIENT CODES											
Kvs	**2,1**	**2,7**	**4**	**6,3**	**10**	**16**	**25**	**40**	**63**	**100**	**160**
Code	R2	R1	FD	FE	FF	FG	FH	FI	FJ	FL	FM

TWO-WAY GLOBE CONTROL VALVES
V16/2
(ASME)

DESCRIPTION

The ADCATrol V16/2 is a series of single seated, two-way globe control valves designed for simple process engineering and industrial applications with non-critical operating conditions.
These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control tasks.

MAIN FEATURES

Compact and cost-effective.
Modular design to meet process requirements.
Stem guided (up to 2") and post guided (from 21/2" to 4").
Parabolic plug design.
Stainless steel trim.

OPTIONS AND ACCESSORIES: Bonnet extension for high and low temperatures.
Various stem sealing options including bellows sealing.
Soft or stellited valve sealing.
Reduced bore trims.
Silencers.

USE: Saturated and superheated steam.
Hot and superheated water.
Air, gases and others.

AVAILABLE MODELS: V16/2S – carbon steel.

SIZES: 1/2" to 4".

CONNECTIONS: Flanged ASME B16.5 Class 150 or 300.

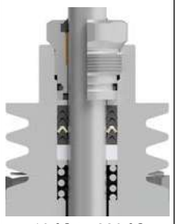
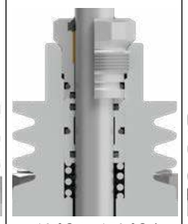
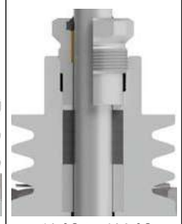
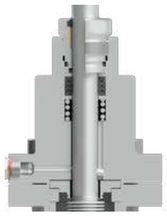
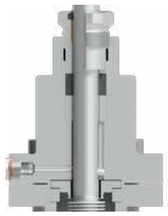
CE MARKING – GROUP 2 (PED – European Directive)		
Class 150	**Class 300**	**Category**
1/2" to 2"	1/2" to 1"	SEP
21/2" to 4"	11/2" to 4"	1 (CE marked)

BODY LIMITING CONDITIONS *			
CLASS 150		**CLASS 300**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
19,3 bar	-10 ºC / 50 ºC	50 bar	-10 ºC / 50 ºC
15,8 bar	150 ºC	43,9 bar	200 ºC
12,1 bar	250 ºC	36,9 bar	350 ºC
8,4 bar	350 ºC	34,6 bar	400 ºC

* Rating according to EN 1759-1:2004.

BONNET DESIGN	
STANDARD	**EXTENDED**
-10 ºC to 250 ºC	Above 250 ºC

TRIM DESIGN
UNBALANCED TRIM

STEM SEALING					
PTFE/GR V-RINGS (V1.2)	**PTFE V-RINGS (V2.2)**	**EPDM (EP1)**	**GRAPHITE (G1)**	**BELLOWS**	
				(BV1)	**(BG1)**
					
-10 ºC to 220 ºC	-10 ºC to 180 ºC	-10 ºC to 150 ºC *	-10 ºC to 400 ºC	- 60 ºC to 220 ºC **	- 60 ºC to 400 ºC **

* Up to 180 ºC in steam and hot water applications. ** Maximum operating pressure: 25 bar.

PLUG DESIGN	
PARABOLIC	**PARABOLIC (SOFT SEALING)**
Sealing: Metal to metal **Characteristic:** Equal percentage (EQP) or linear (PL) **Flow direction:** From below **Rangeability:** 50:1 (EQP) or 30:1 (PL) **Leakage:** Class IV, acc. to IEC 60534-4	**Sealing:** PTFE/GR **Characteristic:** Equal percentage (EQP) or linear (PL) **Flow direction:** From below **Rangeability:** 50:1 (EQP) or 30:1 (PL) **Leakage:** Class VI, acc. to IEC 60534-4 **Max. temp.:** 200 ºC

FLOW RATE COEFFICIENTS – PARABOLIC PL AND EQP PLUGS

SIZE	Kvs (m³/h)										
	2,1	2,7	4	6,3	10	16	25	40	63	100	160
1/2"	●	●	●								
3/4"	●	●	●	●							
1"	●	●	●	●	●						
11/2"				●	●	●	●				
2"					●	●	●	●			
21/2"						●	●	●	●		
3"							●	●	●	●	
4"								●	●	●	●
SEAT Ø (mm)	12		15	19,2	25	32	38	48	65	76	96
STROKE (mm)	20									30	

For conversion Kvs = Cv (US) x 0,865.

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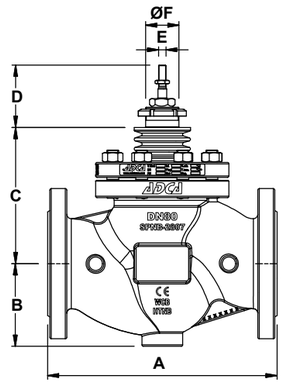
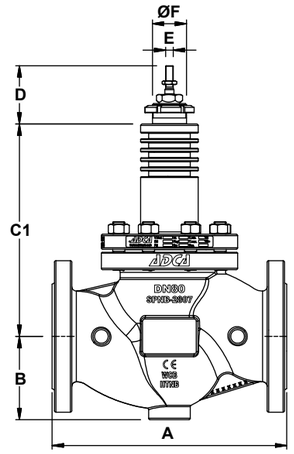
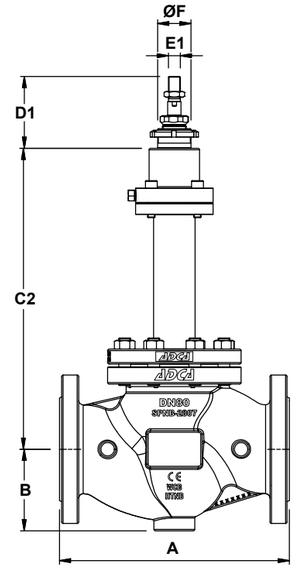


Valve with standard bonnet



Valve with extended bonnet



Bellows sealed valve

DIMENSIONS (mm)

DIMENSION		SIZE							
		1/2"	3/4"	1"	11/2"	2"	21/2"	3"	4"
A	CLASS 150	184 **a)**	184 **a)**	184	222	254	276	298	352
	CLASS 300	190 **a)**	194 **a)**	197	235	267	292	318	368
B	CLASS 150	44,5	49	54	65	85	100	110	130
	CLASS 300	47,5	58,5	62	78	85	100	110	130
C		85	85	90	115	125	176	175	190
C1		150	150	170	195	204	276	275	310
C2		314	314	322	317	317	415	442	451
D		77					82		
D1		77					92		
E		M10 x 1							
E1		M10 x 1					M16 x 1,5		
ØF		M40 x 1,5					M45 x 1,5		

a) With welded-on flanges.
Remark: In the beginning of year 2022 new face to face dimensions have been defined for some Class 150 valves. Valves may still be supplied with the previous face to face dimensions under request. Consult the manufacturer.

WEIGHTS (kg)

		SIZE							
		1/2"	3/4"	1"	11/2"	2"	21/2"	3"	4"
STANDARD	CLASS 150	4,5	5	6,1	11,1	15,2	29,4	35	50,6
	CLASS 300	4,9	6	7,5	13,9	17,5	32,5	40,3	58,5
EXTENDED	CLASS 150	5,2	5,7	6,8	12,4	16,4	30,1	35,7	51,1
	CLASS 300	5,6	6,7	8,2	15,2	18,7	33,2	41	59
BELLOWS	CLASS 150	8,7	9,2	10,2	15,1	19	33,2	38,7	53,5
	CLASS 300	9,1	10,2	11,6	17,9	21,3	36,3	44	61,4

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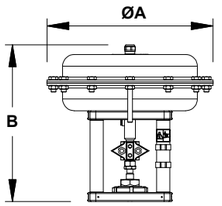
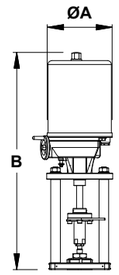
IS V162A.015 E 02.21

MAX. PERMISSIBLE ACTUATING THRUSTS (kN)								
	SIZE							
	1/2"	3/4"	1"	11/2"	2"	21/2"	3"	4"
MAX. THRUST	12							



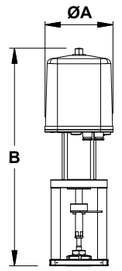
DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)								
DIMENSION	PA10	PA206	PA25	PA281	PA40	PA341	PA436	PA80
ØA	170	209	250	275	300	336	430	405
B	251	236	260	243	325	288	316 / 336 *	505
WEIGHT (kg)	6,3	6,2	10,1	9,6	18,7	14,3	24,4 / 28 *	50,4

* For actuators with spring ranges 1 to 2 bar, 1,5 to 3 bar and 2 to 4 bar.
For more information, please consult IS 3.70 and IS 3.70A – PA Linear pneumatic actuators.



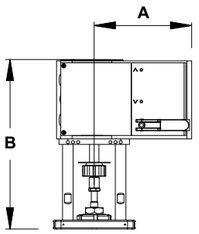
DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)					
DIMENSION	EL12	EL20	EL45	EL80	EL120
ØA	129	148	148	188	188
B	333	485	485	587	587
WEIGHT (kg)	2,1	8	8	13	13

For more information, please consult IS 3.72 – EL Linear electric actuators.



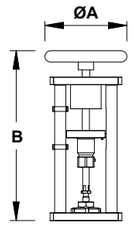
DIMENSIONS – ELR SERIES ELECTRIC ACTUATORS (mm)			
DIMENSION	ELR2.1	ELR2.2	ELR2.3
ØA	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

* With PEL electronic positioner.
For more information, please consult IS 3.73 – ELR Linear electric actuators fail safe.



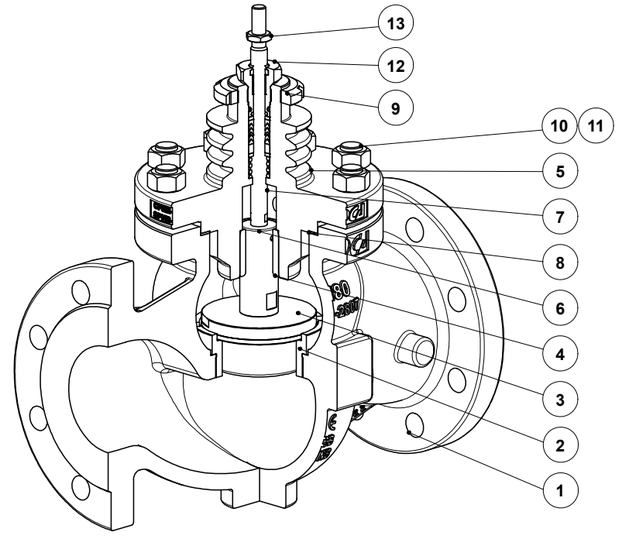
DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)		
DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

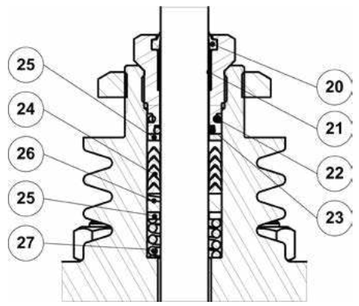
For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



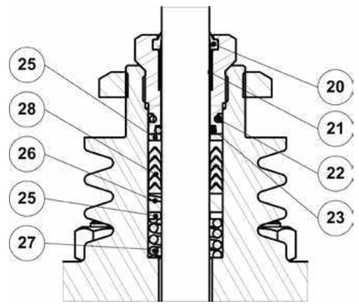
DIMENSIONS – MANUAL OPERATION HANDWHEEL (mm)	
DIMENSION	MAH
ØA	160
B	331
WEIGHT (kg)	5,6

MATERIALS

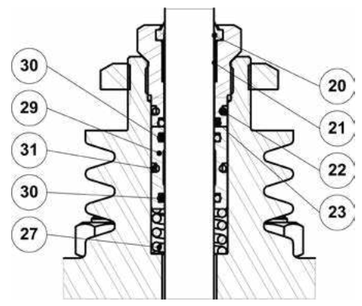




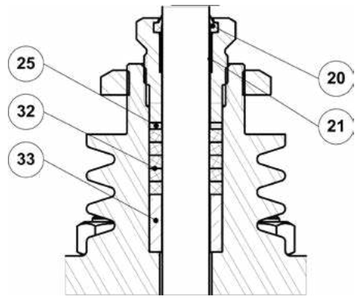
PTFE/GR V-Rings
(V1.2)



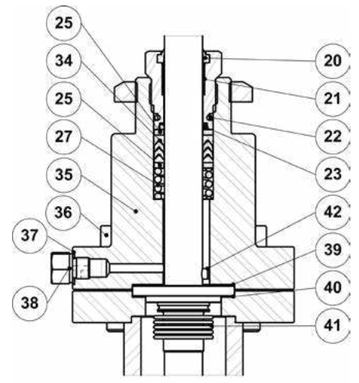
PTFE V-Rings
(V2.2)



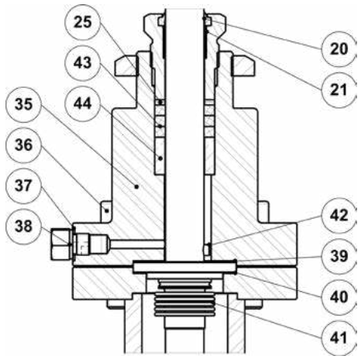
EPDM
(EP1)



Graphite
(G1)



Bellows sealing
(BV1)



Bellows sealing
(BG1)

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IS V162A.015 E 02.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	A216 WCB / 1.0619
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
4	Lower stem guide	Bronze CB1
5	Bonnet	A351 CF8M / 1.4408; A216 WCB / 1.0619
6	* Post stem (21/2" to 4")	AISI 316L / 1.4404
7	* Stem	AISI 316L / 1.4404
8	* Gasket	Stainless steel / Graphite
9	Lock nut	A351 CF8 / 1.4308
10	Nuts	EN 10269 steel
11	Studs	EN 10269 steel
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 304 / 4.4301
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE; Graphite filled PTFE
25	Washer	AISI 304 / 1.4301
26	* Stem guide	Stainless steel filled PTFE
27	* Spring	AISI 302 / 1.4310
28	* Chevron packing set	PTFE
29	O-ring guide	AISI 304 / 1.4301
30	* O-ring	EPDM
31	* O-ring	EPDM
32	* Packing set	Expanded graphite
33	Packing spacer	AISI 304 / 1.4301
34	* Safety packing set	Graphite filled PTFE
35	Bellows bonnet	A105 / 1.0432; AISI 316 / 1.4401
36	Bolts or studs and nuts	EN 10269 steel
37	Gasket	Copper
38	Compression fitting	AISI 316 / 1.4401
39	* Gasket	Stainless steel / Graphite
40	* Gasket	Stainless steel / Graphite
41	* Metal bellows	AISI 316Ti / 1.4571
42	* Locking pin	AISI 303 / 1.4305
43	* Safety packing set	Expanded graphite
44	Packing spacer	AISI 304 / 1.4301

* Available spare parts.

ORDERING CODES V16/2 a)														
Valve model	**V1**	**2**	**S**	**S**	**1**	**U**	**1**	**1**	**1**	**E**	**FD**	**U**	**015**	
Globe control valve, two-way, straight body	**V1**													
Valve series														
Series 2		**2**												
Body material														
A216 WCB / 1.0619 carbon steel			**S**											
Bonnet design														
Standard				**S**										
Extended				**E**										
Trim design														
Unbalanced trim					**1**									
Flow direction														
Flow under the plug						**U**								
Flow over the plug						**O**								
Stem sealing														
PTFE/GR V-Rings (V1.2)							**1**							
Virgin PTFE V-Rings (V2.2)							**2**							
Graphite (G1)							**3**							
EPDM (EP1)							**4**							
Stainless steel bellows with PTFE/GR safety packing (BV1)							**8**							
Stainless steel bellows with graphite safety packing (BG1)							**9**							
Plug design														
Parabolic								**1**						
Valve sealing														
Metal to metal (class IV)									**1**					
Soft sealed with PTFE/GR (class VI)									**3**					
Stellited (class IV)									**4**					
Characteristic														
Equal percentage (EQP)										**E**				
Linear (PL)										**L**				
Flow rate coefficient														
Kvs 4											**FD**			
See table below for other Kvs value codes														
Pipe connection														
Flanged ASME B16.5 Class 150												**U**		
Flanged ASME B16.5 Class 300												**V**		
Size														
1/2"													**015**	
3/4"													**020**	
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination														**E**

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.

FLOW RATE COEFFICIENT CODES											
Kvs	**2,1**	**2,7**	**4**	**6,3**	**10**	**16**	**25**	**40**	**63**	**100**	**160**
Code	R2	R1	FD	FE	FF	FG	FH	FI	FJ	FL	FM

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IS V162A.015 E 02.21

TWO-WAY GLOBE CONTROL VALVES
V25/2
(EN)

DESCRIPTION

The ADCATrol V25/2 is a series of single seated, two-way globe valves designed for process engineering and industrial applications, where events such as erosion, cavitation or flashing may occur.
These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control tasks.

MAIN FEATURES

Robust construction.
Modular design to meet process requirements.
Stainless steel trim.

OPTIONS AND ACCESSORIES:
Bonnet extension for high and low temperatures.
Various stem sealing options including bellows sealing.
Soft, stellited and high-performance metal valve sealing.
V-port guided and perforated plugs.
Low noise, anti-cavitation single and multi-stage trims.
Reduced bore trims including microflow.
Pressure balancing trims.
Silencers.

USE:
Saturated and superheated steam.
Hot and superheated water.
Air, gases and others.

AVAILABLE MODELS:
V25/2G – SG iron.
V25/2S – carbon steel.
V25/2i – stainless steel (only available from DN 15 to DN 100).

VALVE SIZES: DN 15 to DN 200.

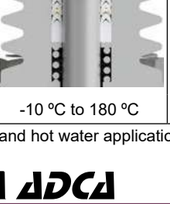
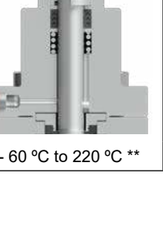
CONNECTIONS:
V25/2G – Flanged EN 1092-2 PN 16.
V25/2S and V25/2i – Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 200	DN 40 to 100	1 (CE marked)
–	DN 125 to 200	2 (CE marked)

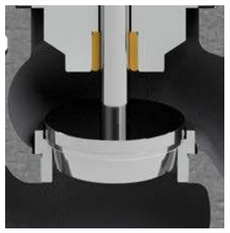
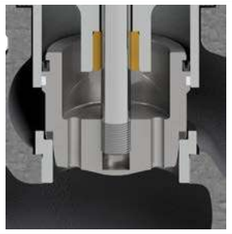
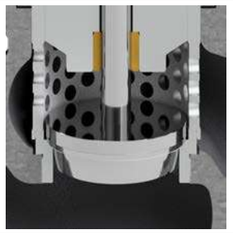
BODY LIMITING CONDITIONS									
V25/2G **		**V25/2S ***				**V25/2i ***			
FLANGED PN 16		**FLANGED PN 16**		**FLANGED PN 40**		**FLANGED PN 16**		**FLANGED PN 40**	
ALLOW. PRESSURE	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**
16 bar	-10 ºC / 50 ºC	16 bar	-10 ºC / 50 ºC	40 bar	-10 ºC / 50 ºC	16 bar	-10 ºC / 50 ºC	40 bar	-10 ºC / 50 ºC
14,7 bar	200 ºC	13,3 bar	200 ºC	33,3 bar	200 ºC	13,4 bar	200 ºC	33,7 bar	200 ºC
13,9 bar	250 ºC	12,1 bar	250 ºC	27,6 bar	300 ºC	12,7 bar	250 ºC	29,7 bar	300 ºC
12,8 bar	300 ºC	11 bar	300 ºC	25,7 bar	350 ºC	11,8 bar	300 ºC	28,5 bar	350 ºC
11,2 bar	350 ºC	10,2 bar	350 ºC	23,8 bar	400 ºC	11,4 bar	350 ºC	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018; ** Rating according to EN 1092-2:2007.

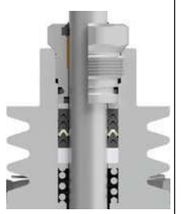
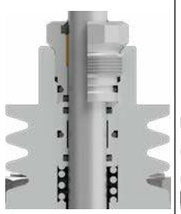
BONNET DESIGN

STANDARD	EXTENDED
	
-10 ºC to 250 ºC	Above 250 ºC

TRIM DESIGN

UNBALANCED TRIM	BALANCED TRIM	LOW NOISE (FD1)
		

STEM SEALING

PTFE/GR V-RINGS (V1.2)	PTFE V-RINGS (V2.2)	EPDM (EP1)	GRAPHITE (G1)	BELLOWS	
				(BV1)	(BG1)
					
-10 ºC to 220 ºC	-10 ºC to 180 ºC	-10 ºC to 150 ºC *	-10 ºC to 400 ºC	- 60 ºC to 220 ºC **	- 60 ºC to 400 ºC **

* Up to 180 ºC in steam and hot water applications; ** Maximum operating pressure: 25 bar.

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IS V252E.015 E 02.21

PLUG DESIGN

PARABOLIC

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class IV or Class V, acc. to IEC 60534-4

PARABOLIC (SOFT SEALING)

Sealing: PTFE/GR
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class VI, acc. to IEC 60534-4
Max. temp.: 200 ºC

PERFORATED

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From above (liquids) or from below (gases)
Rangeability: 40:1 (EQP) or 30:1 (PL)
Leakage: Class IV, acc. to IEC 60534-4

PARABOLIC MICROFLOW

Sealing: Metal to metal
Characteristic: Linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class IV or Class V, acc. to IEC 60534-4

V-PORT GUIDED

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class IV or Class V, acc. to IEC 60534-4

V-PORT GUIDED (SOFT SEALING)

Sealing: PTFE/GR *
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class VI, acc. to IEC 60534-4

* In soft sealing valves with seat Ø125 mm to Ø200 mm the PTFE/GR insert is placed on the seat rather than on the valve plug.

FLOW RATE COEFFICIENTS – PARABOLIC AND V-PORT GUIDED PL AND EQP PLUGS

SIZE	Kvs (m³/h)																			
	0,1 *	0,16 *	0,25 *	0,5 *	1	1,7	2,1	2,7	4	6,3	10	16	25	40	63	100	160	240	370	630
DN 15	●	●	●	●	●	●	●	●	●											
DN 20	●	●	●	●	●	●	●	●	●	●										
DN 25	●	●	●	●	●	●	●	●	●	●	●									
DN 32									●	●	●	●								
DN 40										●	●	●	●							
DN 50											●	●	●	●						
DN 65												●	●	●	●					
DN 80													●	●	●	●				
DN 100														●	●	●	●			
DN 125															●	●	●	●		
DN 150																●	●	●	●	
DN 200																		●	●	●
SEAT Ø (mm)	4				8		12		15	19,2	25	32	38	48	65	76	96	125	150	200
STROKE (mm)	20														30			50		60

* Microflow only available with linear characteristic.

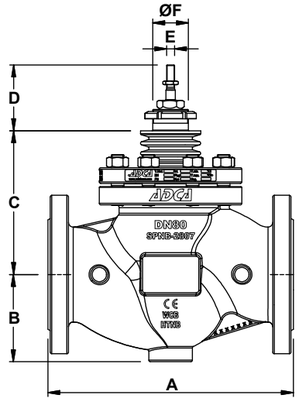
FLOW RATE COEFFICIENTS – PERFORATED PL PLUGS

SIZE	Kvs (m³/h)											
	2,5	4	6,3	10	25	36	50	63	120	180	300	450
DN 15	●											
DN 20	●	●										
DN 25	●	●	●									
DN 32	●	●	●	●								
DN 40		●	●	●	●							
DN 50			●	●	●	●						
DN 65				●	●	●	●					
DN 80					●	●	●	●				
DN 100						●	●	●	●			
DN 125							●	●	●	●		
DN 150								●	●	●	●	
DN 200										●	●	●
SEAT Ø (mm)	15	19,2	25	32	38	48	65	76	96	125	150	200
STROKE (mm)	20						30			50		60

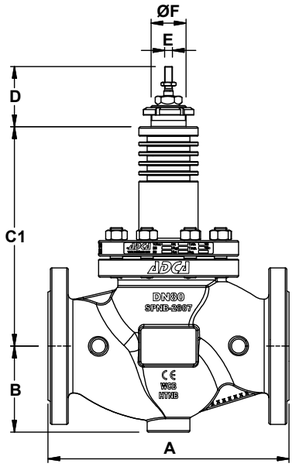
FLOW RATE COEFFICIENTS – PERFORATED EQP PLUGS

SIZE	Kvs (m³/h)											
	2,5	4	6,3	10	16	25	36	50	80	120	250	360
DN 15	●											
DN 20	●	●										
DN 25	●	●	●									
DN 32	●	●	●	●								
DN 40		●	●	●	●							
DN 50			●	●	●	●						
DN 65				●	●	●	●					
DN 80					●	●	●	●				
DN 100						●	●	●	●			
DN 125							●	●	●	●		
DN 150								●	●	●	●	
DN 200										●	●	●
SEAT Ø (mm)	15	19,2	25	32	38	48	65	76	96	125	150	200
STROKE (mm)	20							30		50		60

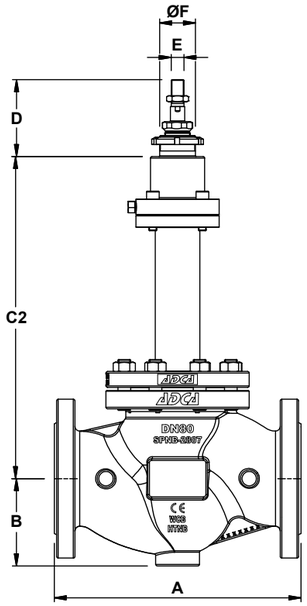
For conversion Kvs = Cv (US) x 0,865.



Valve with standard bonnet



Valve with extended bonnet



Bellows sealed valve

DIMENSIONS (mm)

DIMENSION	SIZE											
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
A	130	150	160	180	200	230	290	310	350	400	480	600
B	52	53	58	70	75	85	100	110	130	160	180	225
C	104	104	109	109	113	125	176	182	194	210	216	277
C1	169	169	189	189	193	204	276	282	314	315	320	400
C2	295	295	298	298	303	303	415	421	424	590	590	–
D	77						92			110	110	135
E	M10 x 1						M16 x 1,5					M27 x 1,5
ØF	M40 x 1,5						M45 x 1,5			M65 x 2		M80 x 2

Remark: Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2, on request.

WEIGHTS (kg)

	SIZE											
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
STANDARD	5,1	6	6,9	10	12,6	16,4	31,8	38,2	48,9	79,1	105,5	232,3
EXTENDED	5,8	6,7	7,6	10,9	13,9	17,6	32,5	38,9	49,4	81,5	107,3	237,6
BELLOWS	9,3	10,2	10,9	14,1	16,6	20,2	35,6	41,9	53,5	85,9	112,3	–

MAX. PERMISSIBLE ACTUATING THRUSTS (kN)

	SIZE											
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	125	150	200
MAX. THRUST	12						32,5			40,1		89,7

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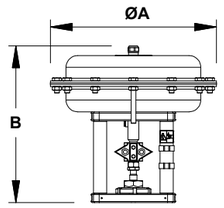
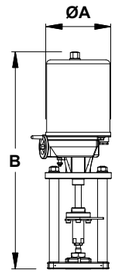


DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)

DIMENSION	PA10	PA206	PA25	PA281	PA40	PA341	PA436	PA80	PA80D	PA80T
ØA	170	209	250	275	300	336	430	405	405	405
B	251	236	260	243	325 / 360	323	351 / 371 *	505 / 515 / 545	741 / 771	967
WEIGHT (kg)	6,3	6,2	10,1	9,6	18,7	14,3	24,4 / 28 *	50,4 / 55,4 / 60	108 / 112	166

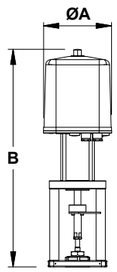
* For actuators with spring ranges 1 to 2 bar, 1,5 to 3 bar and 2 to 4 bar.
For more information, please consult IS 3.70 and IS 3.70A – PA Linear pneumatic actuators.



DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	EL12	EL20	EL45	EL80	EL120	EL250
ØA	129	148	148	188	188	216
B	333	485	485	587	587	683
WEIGHT (kg)	2,1	8	8	13	13	19

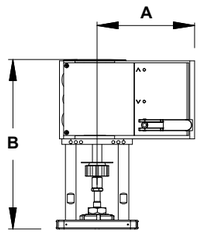
For more information, please consult IS 3.72 – EL Linear electric actuators.



DIMENSIONS – ELR SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	ELR2.1	ELR2.2	ELR2.3
ØA	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

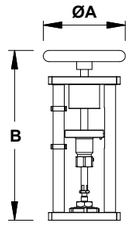
* With PEL electronic positioner.
For more information, please consult IS 3.73 – ELR Linear electric actuators fail safe.



DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)

DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



DIMENSIONS – MANUAL OPERATION HANDWHEEL (mm)

DIMENSION	MAH
ØA	160
B	331
WEIGHT (kg)	5,6

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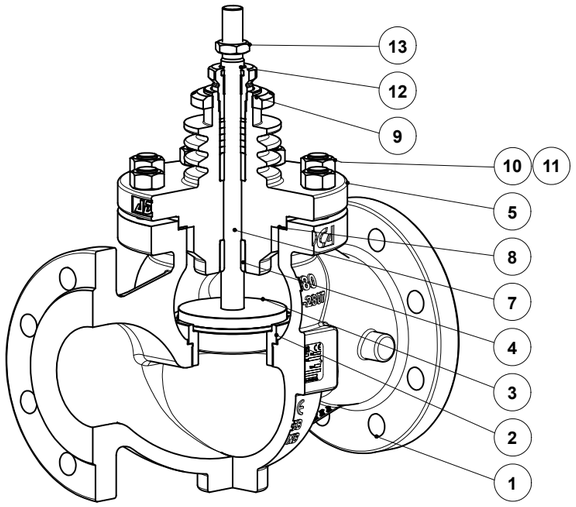
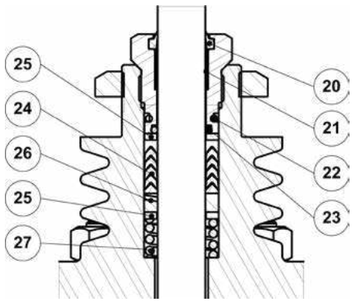
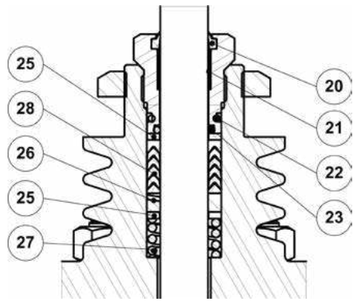
IS V252E.015 E 02.21

MATERIALS

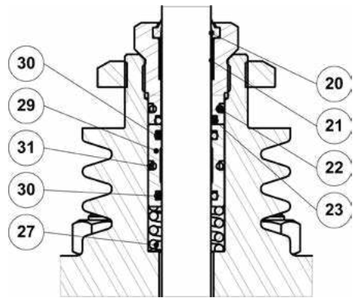




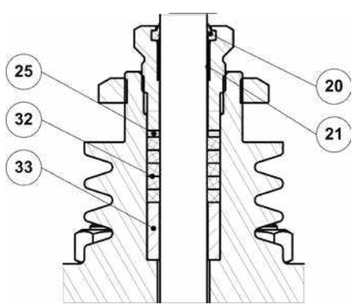
PTFE/GR V-Rings
(V1.2)



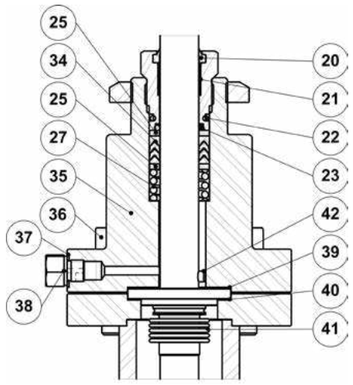
PTFE V-Rings
(V2.2)



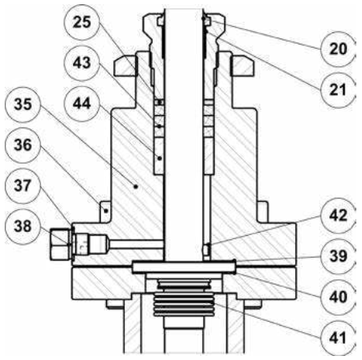
EPDM
(EP1)



Graphite
(G1)



Bellows sealing
(BV1)



Bellows sealing
(BG1)

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MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body (V25/2G)	GJS-400-15 / 0.7040
	Valve body (V25/2S)	A216 WCB / 1.0619
	Valve body (V25/2i)	A351 CF8M / 1.4408
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
4	Stem guide	Bronze CB1
5	Bonnet (V25/2G and V25/2S)	A351 CF8M / 1.4408; A216 WCB / 1.0619
	Bonnet (V25/2i)	A351 CF8M / 1.4408
7	* Stem	AISI 316 / 1.4401
8	* Gasket	Stainless steel / Graphite
9	Lock nut	A351 CF8 / 1.4308
10	Nuts (V25/2G and V25/2S)	EN 10269 steel
	Nuts (V25/2i)	Stainless steel A2-70
11	Studs (V25/2G and V25/2S)	EN 10269 steel
	Studs (V25/2i)	Stainless steel A2-70
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 302 / 1.4310
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE
25	Washer	AISI 304 / 1.4301
26	* Stem guide	Stainless steel filled PTFE
27	* Spring	AISI 302 / 1.4310
28	* Chevron packing set	PTFE; Graphite filled PTFE
29	O-ring guide	AISI 304 / 1.4301
30	* O-ring	EPDM
31	* O-ring	EPDM
32	* Packing set	Expanded graphite
33	* Packing spacer	AISI 304 / 1.4301
34	* Safety packing set	Graphite filled PTFE
35	Bellows bonnet (V16/2G and V16/2S)	A105 / 1.0432; AISI 316 / 1.4401
	Bellows bonnet (V16/2i)	AISI 316 / 1.4401
36	Bolts or studs and nuts (V16/2G and V16/2S)	EN 10269 steel
	Bolts or studs and nuts (V16/2i)	Stainless steel A2-70
37	Gasket	Copper
38	Compression fitting	AISI 316 / 1.4401
39	* Gasket	Stainless steel / Graphite
40	* Gasket	Stainless steel / Graphite
41	* Metal bellows	AISI 316Ti / 1.4571
42	* Locking pin	AISI 303 / 1.4305
43	* Safety packing set	Expanded graphite
44	Packing spacer	AISI 304 / 1.4301

* Available spare parts.

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We reserve the right to change the design and material of this product without notice.

ORDERING CODES V25/2 a)																
Valve model	**V2**	**2**	**G**	**S**	**1**	**U**	**1**	**1**	**1**	**E**	**FD**	**L**	**015**	
Globe control valve, two-way, straight body	**V2**													
Valve series														
Series 2		**2**												
Body material														
GJS-400-15 / 0.7040 SG iron			**G**											
A216 WCB / 1.0619 carbon steel			**S**											
A351 CF8M / 1.4408 stainless steel			**I**											
Bonnet design														
Standard				**S**										
Extended				**E**										
Trim design														
Unbalanced trim					**1**									
Balanced trim					**2**									
Unbalanced trim with FD1 low noise cage					**3**									
Balanced trim with FD1 low noise cage					**4**									
Flow direction														
Flow under the plug						**U**								
Flow over the plug						**O**								
Stem sealing														
PTFE/GR V-Rings (V1.2)							**1**							
Virgin PTFE V-Rings (V2.2)							**2**							
Graphite (G1)							**3**							
EPDM (EP1)							**4**							
Stainless steel bellows with PTFE/GR safety packing (BV1)							**8**							
Stainless steel bellows with graphite safety packing (BG1)							**9**							
Plug design														
Parabolic								**1**						
V-port guided (standard for sizes DN 125 to DN 200)								**2**						
Perforated								**3**						
Valve sealing														
Metal to metal (class IV)									**1**					
Metal to metal (class V)									**2**					
Soft sealed with PTFE/GR (class VI)									**3**					
Stellited (class IV)									**4**					
Characteristic														
Equal percentage (EQP)										**E**				
Linear (PL)										**L**				
Flow rate coefficient														
Kvs 4											**FD**			
See table below for other Kvs value codes														
Pipe connection														
Flanged EN 1092-1/-2 PN 16												**L**		
Flanged EN 1092-1 PN 40												**N**		
Size														
DN 15													**015**	
DN 20													**020**	
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination														**E**

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.

FLOW RATE COEFFICIENT CODES																
Kvs	**0,1**	**0,16**	**0,25**	**0,5**	**1**	**1,7**	**2,1**	**2,5 ***	**2,7**	**4**	**6,3**	**10**	**16**	**25**	**36 ***	**40**
Code	M4	M3	M2	M1	R4	R3	R2	PA	R1	FD	FE	FF	FG	FH	PB	FI
Kvs	**50 ***	**63**	**80 ***	**100**	**120 ***	**160**	**180 ***	**240**	**250 ***	**300 ***	**360 ***	**370**	**450 ***	**630**	**–**	**–**
Code	PC	FJ	PD	FL	PE	FM	PF	FN	PG	PH	PI	FO	PJ	FP	–	–

***** Only available with perforated plug design.

We reserve the right to change the design and material of this product without notice.

TWO-WAY GLOBE CONTROL VALVES
V25/2
(ASME)

DESCRIPTION

The ADCATrol V25/2 is a series of single seated, two-way globe valves designed for process engineering and industrial applications, where events such as erosion, cavitation or flashing may occur.
These valves can be assembled with pneumatic, hydraulic or electric actuators, for modulating and shut-off control tasks.

MAIN FEATURES

Robust construction.
Modular design to meet process requirements.
Stainless steel trim.

OPTIONS AND ACCESSORIES:
Bonnet extension for high and low temperatures.
Various stem sealing options including bellows sealing.
Soft, stellited and high-performance metal valve sealing.
V-port guided and perforated plugs.
Low noise, anti-cavitation single and multi-stage trims.
Reduced bore trims including microflow.
Pressure balancing trims.
Silencers.

USE:
Saturated and superheated steam.
Hot and superheated water.
Air, gases and others.

AVAILABLE MODELS: V25/2S – carbon steel.

VALVE SIZES: 1/2" to 6".

CONNECTIONS: Flanged ASME B16.5 Class 150 or 300.

CE MARKING – GROUP 2 (PED – European Directive)		
Class 150	**Class 300**	**Category**
1/2" to 2"	1/2" to 1"	SEP
21/2" to 6"	11/2" to 4"	1 (CE marked)
–	6"	2 (CE marked)

BODY LIMITING CONDITIONS *			
CLASS 150		**CLASS 300**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
19,3 bar	-10 ºC / 50 ºC	50 bar	-10 ºC / 50 ºC
15,8 bar	150 ºC	43,9 bar	200 ºC
12,1 bar	250 ºC	36,9 bar	350 ºC
8,4 bar	350 ºC	34,6 bar	400 ºC

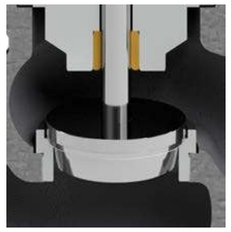
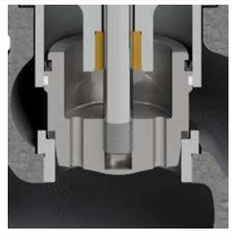
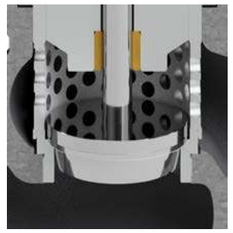
* Rating according to EN 1759-1:2004.

We reserve the right to change the design and material of this product without notice.

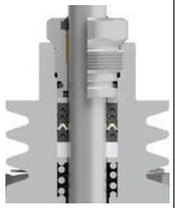
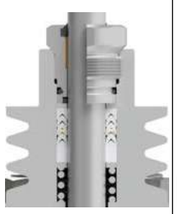
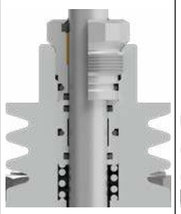
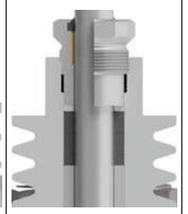
BONNET DESIGN

STANDARD	EXTENDED
-10 ºC to 250 ºC	Above 250 ºC

TRIM DESIGN

UNBALANCED TRIM	BALANCED TRIM	LOW NOISE (FD1)
		

STEM SEALING

PTFE/GR V-RINGS (V1.2)	PTFE V-RINGS (V2.2)	EPDM (EP1)	GRAPHITE (G1)	BELLOWS	
				(BV1)	(BG1)
					
-10 ºC to 220 ºC	-10 ºC to 180 ºC	-10 ºC to 150 ºC *	-10 ºC to 400 ºC	- 60 ºC to 220 ºC **	- 60 ºC to 400 ºC **

* Up to 180 ºC in steam and hot water applications; ** Maximum operating pressure: 25 bar.

PLUG DESIGN

PARABOLIC

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class IV or Class V, acc. to IEC 60534-4

PARABOLIC (SOFT SEALING)

Sealing: PTFE/GR
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 50:1 (EQP) or 30:1 (PL)
Leakage: Class VI, acc. to IEC 60534-4
Max. temp.: 200 ºC

PERFORATED

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From above (liquids) or from below (gases)
Rangeability: 40:1 (EQP) or 30:1 (PL)
Leakage: Class IV, acc. to IEC 60534-4

PARABOLIC MICROFLOW

Sealing: Metal to metal
Characteristic: Linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class IV or Class V, acc. to IEC 60534-4

V-PORT GUIDED

Sealing: Metal to metal
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class IV or Class V, acc. to IEC 60534-4

V-PORT GUIDED (SOFT SEALING)

Sealing: PTFE/GR *
Characteristic: Equal percentage (EQP) or linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class VI, acc. to IEC 60534-4

* In soft sealing valves with seat Ø125 mm to Ø150 mm the PTFE/GR insert is placed on the seat rather than on the valve plug.

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IS V252A.015 E 00.22

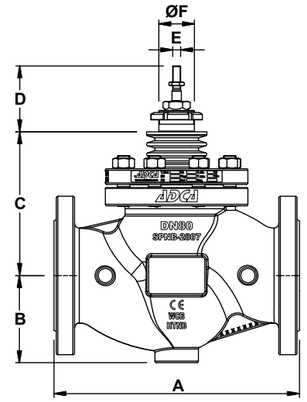
FLOW RATE COEFFICIENTS – PARABOLIC AND V-PORT GUIDED PL AND EQP PLUGS																			
SIZE	**Kvs (m³/h)**																		
	0,1 *	**0,16 ***	**0,25 ***	**0,5 ***	**1**	**1,7**	**2,1**	**2,7**	**4**	**6,3**	**10**	**16**	**25**	**40**	**63**	**100**	**160**	**240**	**370**
1/2"	●	●	●	●	●	●	●	●	●										
3/4"	●	●	●	●	●	●	●	●	●	●									
1"	●	●	●	●	●	●	●	●	●	●	●								
11/2"										●	●	●	●						
2"											●	●	●	●					
21/2"												●	●	●	●				
3"													●	●	●	●			
4"														●	●	●	●		
6"																●	●	●	●
SEAT Ø (mm)	4				8		12		15	19,2	25	32	38	48	65	76	96	125	150
STROKE (mm)	20															30		50	

* Microflow only available with linear characteristic.

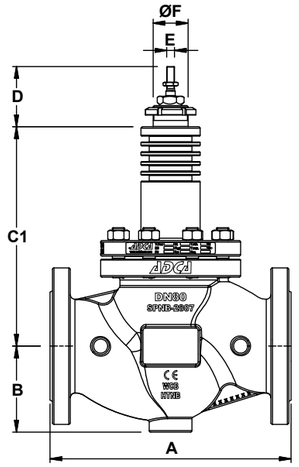
FLOW RATE COEFFICIENTS – PERFORATED PL PLUGS											
SIZE	**Kvs (m³/h)**										
	2,5	**4**	**6,3**	**10**	**25**	**36**	**50**	**63**	**120**	**180**	**300**
1/2"	●										
3/4"	●	●									
1"	●	●	●								
11/2"		●	●	●	●						
2"			●	●	●	●					
21/2"				●	●	●	●				
3"					●	●	●	●			
4"						●	●	●	●		
6"								●	●	●	●
SEAT Ø (mm)	15	19,2	25	32	38	48	65	76	96	125	150
STROKE (mm)	20						30			50	

FLOW RATE COEFFICIENTS – PERFORATED EQP PLUGS											
SIZE	**Kvs (m³/h)**										
	2,5	**4**	**6,3**	**10**	**16**	**25**	**36**	**50**	**80**	**120**	**250**
1/2"	●										
3/4"	●	●									
1"	●	●	●								
11/2"		●	●	●	●						
2"			●	●	●	●					
21/2"				●	●	●	●				
3"					●	●	●	●			
4"						●	●	●	●		
6"								●	●	●	●
SEAT Ø (mm)	15	19,2	25	32	38	48	65	76	96	125	150
STROKE (mm)	20							30		50	

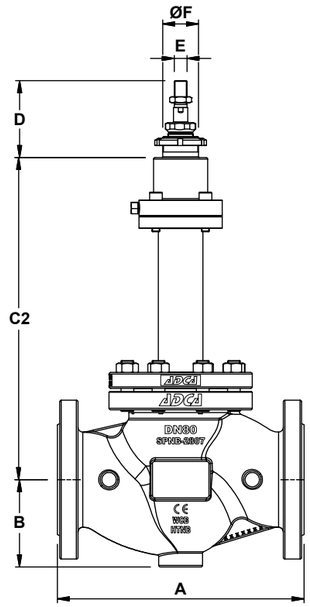
For conversion Kvs = Cv (US) x 0,865.



Valve with standard bonnet



Valve with extended bonnet



Bellows sealed valve

DIMENSIONS (mm)									
DIMENSION		**SIZE**							
		1/2"	**3/4"**	**1"**	**11/2"**	**2"**	**21/2"**	**3"**	**4"**	**6"**
A	**CLASS 150**	184 **a)**	184 **a)**	184	222	254	276	298	352	451
	CLASS 300	190 **a)**	194 **a)**	197	235	267	292	318	368	473
B	**CLASS 150**	44,5	49	54	65	85	100	110	130	182
	CLASS 300	47,5	58,5	62	78	85	100	110	130	182
C		85	85	90	115	125	176	175	190	216
C1		150	150	170	195	204	276	275	310	320
C2		314	314	322	317	317	415	442	451	590
D		77					92			110
E		M10 x 1					M16 x 1,5			
ØF		M40 x 1,5					M45 x 1,5			M65 x 2

a) With welded-on flanges.
Remark: In the beginning of year 2022 new face to face dimensions have been defined for some Class 150 valves. Valves may still be supplied with the previous face to face dimensions under request. Consult the manufacturer.

WEIGHTS (kg)									
		SIZE							
		1/2"	**3/4"**	**1"**	**11/2"**	**2"**	**21/2"**	**3"**	**4"**	**6"**
STANDARD	**CLASS 150**	4,5	5	6,1	11,1	15,2	30,9	36,5	52,5	103,1
	CLASS 300	4,9	6	7,5	13,9	17,5	34	41,9	60,5	119,3
EXTENDED	**CLASS 150**	5,2	5,7	6,8	12,4	16,4	31,6	37	53,2	109,8
	CLASS 300	5,6	6,7	8,2	15,2	18,7	34,7	42,5	61,2	121,1
BELLOWS	**CLASS 150**	8,7	9,2	10,2	15,1	19	34,7	39,5	55,6	114,8
	CLASS 300	9,1	10,2	11,6	17,9	21,3	37,8	45,5	63,5	126,1

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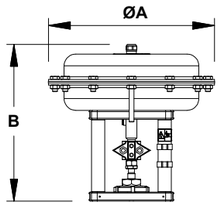
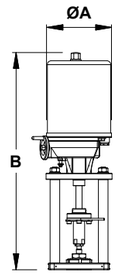
MAX. PERMISSIBLE ACTUATING THRUSTS (kN)									
	SIZE								
	1/2"	3/4"	1"	11/2"	2"	21/2"	3"	4"	6"
MAX. THRUST	12					32,5			40,1



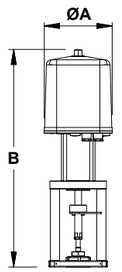
DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)										
DIMENSION	PA10	PA206	PA25	PA281	PA40	PA341	PA436	PA80	PA80D	PA80T
ØA	170	209	250	275	300	336	430	405	405	405
B	251	236	260	243	325 / 360	323	351 / 371 *	505 / 515 / 545	741 / 771	967
WEIGHT (kg)	6,3	6,2	10,1	9,6	18,7	14,3	24,4 / 28 *	50,4 / 55,4 / 60	108 / 112	166

* For actuators with spring ranges 1 to 2 bar, 1,5 to 3 bar and 2 to 4 bar.
For more information, please consult IS 3.70 and IS 3.70A – PA Linear pneumatic actuators.



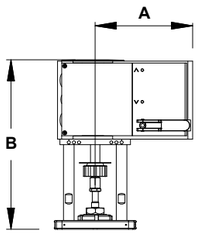
DIMENSIONS – EL SERIES ELECTRIC ACTUATORS (mm)						
DIMENSION	EL12	EL20	EL45	EL80	EL120	EL250
ØA	129	148	148	188	188	216
B	333	485	485	587	587	683
WEIGHT (kg)	2,1	8	8	13	13	19

For more information, please consult IS 3.72 – EL Linear electric actuators.



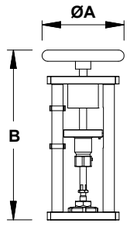
DIMENSIONS – ELR SERIES ELECTRIC ACTUATORS (mm)			
DIMENSION	ELR2.1	ELR2.2	ELR2.3
ØA	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

* With PEL electronic positioner.
For more information, please consult IS 3.73 – ELR Linear electric actuators fail safe.



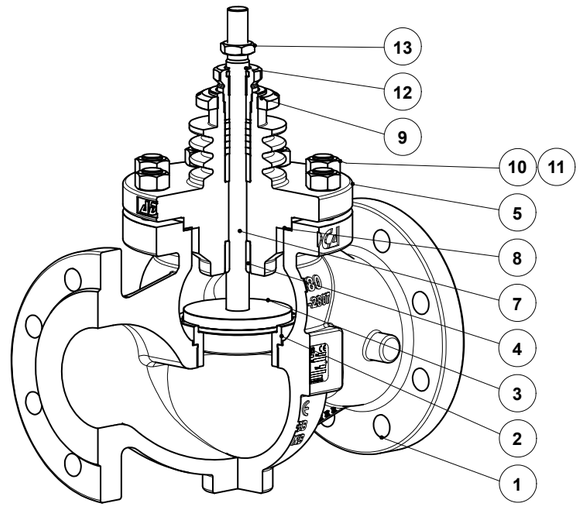
DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)		
DIMENSION	AVM234S	AVF234S
A	166	166
B	314	314
WEIGHT (kg)	4,1	4,1

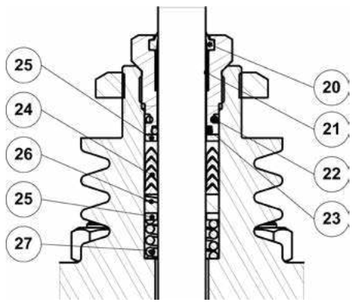
For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



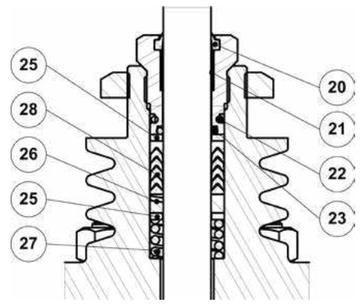
DIMENSIONS – MANUAL OPERATION HANDWHEEL (mm)	
DIMENSION	MAH
ØA	160
B	331
WEIGHT (kg)	5,6

MATERIALS

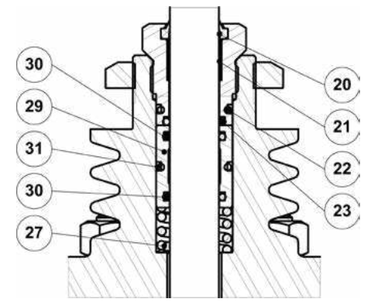




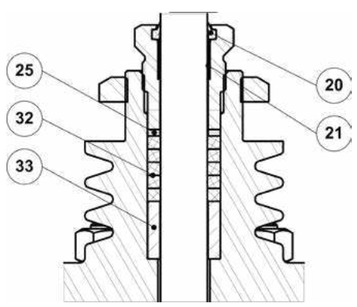
PTFE/GR V-Rings
(V1.2)



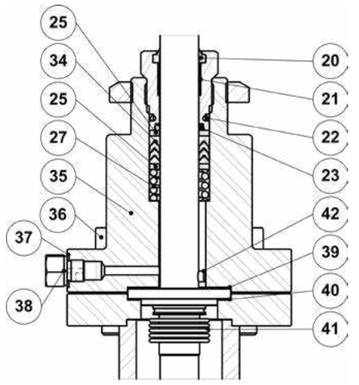
PTFE V-Rings
(V2.2)



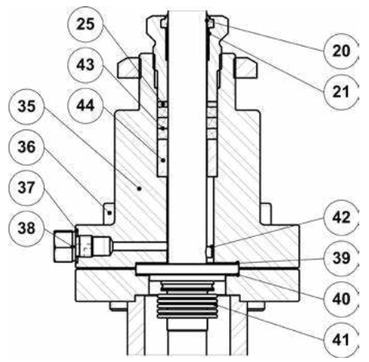
EPDM
(EP1)



Graphite
(G1)



Bellows sealing
(BV1)



Bellows sealing
(BG1)

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IS V252A.015 E 00.22

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	A216 WCB / 1.0619
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
4	Stem guide	Bronze CB1
5	Bonnet	A351 CF8M / 1.4408; A216 WCB / 1.0619
7	* Stem	AISI 316 / 1.4401
8	* Gasket	Stainless steel / Graphite
9	Lock nut	A351 CF8 / 1.4308
10	Nuts	EN 10269 steel
11	Studs	EN 10269 steel
12	* Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 302 / 1.4310
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE
25	Washer	AISI 304 / 1.4301
26	* Stem guide	Stainless steel filled PTFE
27	* Spring	AISI 302 / 1.4310
28	* Chevron packing set	PTFE; Graphite filled PTFE
29	O-ring guide	AISI 304 / 1.4301
30	* O-ring	EPDM
31	* O-ring	EPDM
32	* Packing set	Expanded graphite
33	* Packing spacer	AISI 304 / 1.4301
34	* Safety packing set	Graphite filled PTFE
35	Bellows bonnet	A105 / 1.0432; AISI 316 / 1.4401
36	Bolts or studs and nuts	EN 10269 steel
37	Gasket	Copper
38	Compression fitting	AISI 316 / 1.4401
39	* Gasket	Stainless steel / Graphite
40	* Gasket	Stainless steel / Graphite
41	* Metal bellows	AISI 316Ti / 1.4571
42	* Locking pin	AISI 303 / 1.4305
43	* Safety packing set	Expanded graphite
44	Packing spacer	AISI 304 / 1.4301

* Available spare parts.

ORDERING CODES V25/2 a)														
Valve model	**V2**	**2**	**S**	**S**	**1**	**U**	**1**	**1**	**1**	**E**	**FD**	**L**	**015**	
Globe control valve, two-way, straight body	**V2**													
Valve series														
Series 2		**2**												
Body material														
A216 WCB / 1.0619 carbon steel			**S**											
Bonnet design														
Standard				**S**										
Extended				**E**										
Trim design														
Unbalanced trim					**1**									
Balanced trim					**2**									
Unbalanced trim with FD1 low noise cage					**3**									
Balanced trim with FD1 low noise cage					**4**									
Flow direction														
Flow under the plug						**U**								
Flow over the plug						**O**								
Stem sealing														
PTFE/GR V-Rings (V1.2)							**1**							
Virgin PTFE V-Rings (V2.2)							**2**							
Graphite (G1)							**3**							
EPDM (EP1)							**4**							
Stainless steel bellows with PTFE/GR safety packing (BV1)							**8**							
Stainless steel bellows with graphite safety packing (BG1)							**9**							
Plug design														
Parabolic								**1**						
V-port guided (standard for size 6")								**2**						
Perforated								**3**						
Valve sealing														
Metal to metal (class IV)									**1**					
Metal to metal (class V)									**2**					
Soft sealed with PTFE/GR (class VI)									**3**					
Stellited (class IV)									**4**					
Characteristic														
Equal percentage (EQP)										**E**				
Linear (PL)										**L**				
Flow rate coefficient														
Kvs 4											**FD**			
See table below for other Kvs value codes														
Pipe connection														
Flanged ASME B16.5 Class 150												**U**		
Flanged ASME B16.5 Class 300												**V**		
Size														
1/2"													**015**	
3/4"													**020**	
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination														**E**

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.

FLOW RATE COEFFICIENT CODES														
Kvs	**0,1**	**0,16**	**0,25**	**0,5**	**1**	**1,7**	**2,1**	**2,5 ***	**2,7**	**4**	**6,3**	**10**	**16**	**25**
Code	M4	M3	M2	M1	R4	R3	R2	PA	R1	FD	FE	FF	FG	FH
Kvs	**36 ***	**40**	**50 ***	**63**	**80 ***	**100**	**120 ***	**160**	**180 ***	**240**	**250 ***	**300 ***	**370**	**–**
Code	PB	FI	PC	FJ	PD	FL	PE	FM	PF	FN	PG	PH	FO	–

* Only available with perforated plug design.

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IS V252A.015 E 00.22

PNEUMATIC CONTROL VALVES
PV25 (ANSI)
V25S globe control valves with linear actuators PA series

DESCRIPTION

The PV25 control valves are single seated, two-way body constructed with in-line straight connections. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA – direct action (air to close) or RA – reverse action (air to open). The PV25 valves have been designed to assure an accurate control in any process condition. Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve. Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator.
Metal to metal sealing as standard.

OPTIONS: Position transmitter 4-20 mA.
Pneumatic pilot positioner.
Electropneumatic pilot positioner.
Air filter regulator.
Top-work manual handwheel.
Stainless steel construction.
Soft sealing and stellite seat and plug.

USE: Saturated and superheated steam.
Hot and superheated water.
Air, gases and other non-corrosive fluids.
Group 1 fluids (consult factory).

AVAILABLE MODELS: PV25S cast steel.

VALVE SIZES: 1/2" to 6”.

CONNECTIONS: Flanged ANSI B16.5 Class 150 lb / 300 lb.

ACTUATORS: PA205, PA280, PA340, PA435.
ACTUATORS CONNECTIONS: 1/4" NPT-F.
CONTROL SIGNAL: 0,2 – 1bar; 0,4 – 1,2 bar; 0,4 – 2 bar.
MAX. AIR SUPPLY PRES.: 3,5 bar.

CE MARKING – GROUP 2 (PED – European Directive)		
ANSI 150 lb	**ANSI 300 lb**	**Category**
1/2" to 2”	1/2" to 1”	SEP
3” to 6”	11/2” to 4”	1 (CE Marked)
–	6”	2 (CE Marked)

AMBIENT TEMP.: -20 ºC to 70 ºC.

BONNET: Standard – up to 220 ºC;
Extended finned – above 220 ºC.

STEM SEALING: PTFE/GR V-Rings – up to 220 ºC.
Graphite – up to 400 ºC.
Stainless steel bellows.

PLUG TYPES: EQP – Equal percentage;
PL – Linear;
PT – On/Off.

PLUG DESIGN: Contoured;
V-ported;
Perforated (low noise, anti-cavitation);
Microflow.

PORT: Full port or reduced on request.

For more information, consult IS PV10.00 E – Technical information.

HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow of steam or water. Refer to the valve calculation data sheet or consult the factory.

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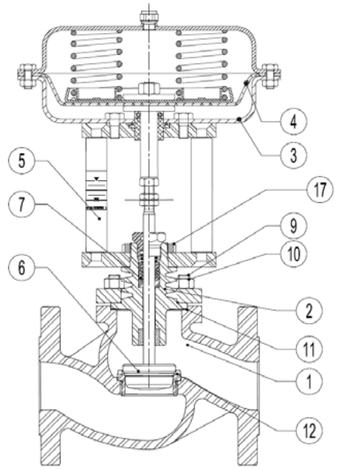
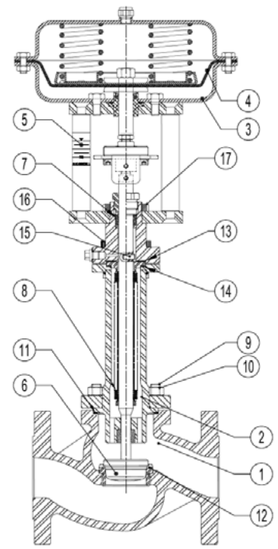
BODY LIMITING CONDITIONS			
ANSI 150 lb		**ANSI 300 lb**	
ALLOWABLE PRESSURES	**RELATED TEMPERATURES**	**ALLOWABLE PRESSURES**	**RELATED TEMPERATURES**
19,3 bar	-10 ºC / 50 ºC	50 bar	-10 ºC / 50 ºC
15,8 bar	150 ºC	43,9 bar	200 ºC
12,1 bar	250 ºC	36,9 bar	350 ºC
8,4 bar	350 ºC	34,6 bar	400 ºC

Note: Maximum temperatures limited to the valve packing selected.
Valves with soft seal, maximum allowable temperature: 200 ºC.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL V25S**
1	Valve body	ASTM A216WCB / 1.0619 GP240GH / 1.0619
2	Bonnet	CF8M / 1.4408 **
3	Actuator (Steel)	S235JR / 1.0038
	Actuator (Stainl. st.)	AISI 304 / 1.4301
4	* Diaphragm	NBR 70
5	Yoke (Steel)	C45E / 1.1191
	Yoke (Stainl. St.)	AISI 304 / 1.4301
6	* Valve plug	PTFE/GR; St. steel
7	* Standard packing	PTFE/GR
8	* Bellows	AISI 316Ti / 1.4571
9	Studs	34CrNiMo6 / 1.6582
10	Nuts	Steel 8.8
11	Gasket	Stainless steel / Graphite
12	Seat	Stainless steel
13	Gasket	Stainless steel / Graphite
14	Gasket	Stainless steel / Graphite
15	Straight pin	Stainless steel
16	Bolts	Steel 10.9
17	Lock nut	Stainless steel

* Available spare parts.; ** Except 6” version, completely in cast steel.





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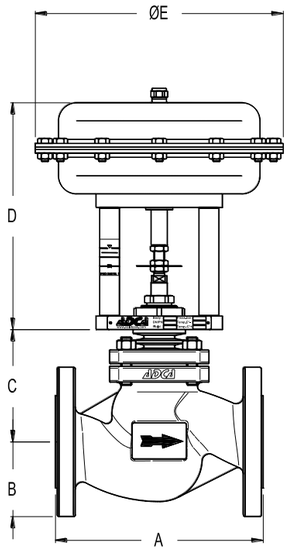
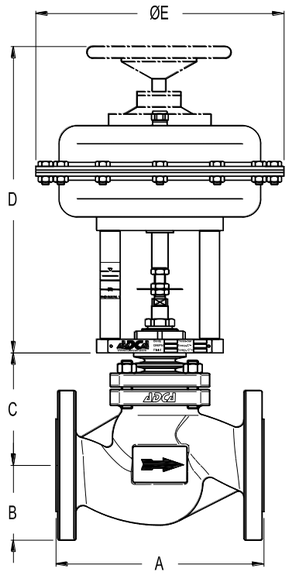
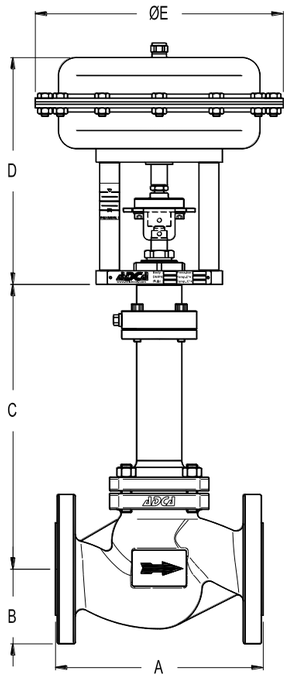
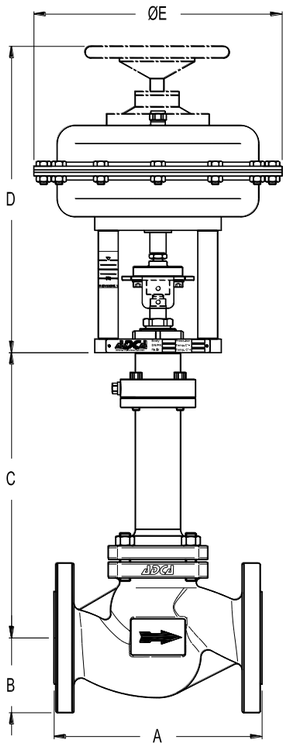
IS PV25G.52 E 04.17









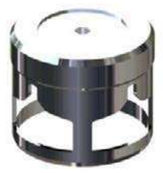
DIMENSIONS (mm) – VALVE BODY							
SIZE	A ANSI 150 lb	A ANSI 300 lb	B ANSI 150 lb	B ANSI 300 lb	C – BONNET (mm)		
					STANDARD	FINNED	BELLOWS
1/2"	184 **(a)**	190 **(a)**	44,5	47,5	85	150	290
3/4"	184 **(a)**	194 **(a)**	49	58,5	85	150	290
1”	184 **(a)**	197	54	62	90	170	295
11/2”	235	235	63,5	78	115	195	285
2”	267	267	76	82,5	125	215	285
3”	318	318	95	105	175	275	392
4”	368	368	114,5	127	190	310	400
6”	* 480	473	140	159	210	320	610

a) Welded-on flanges;
* Same lenght as EN PN16.

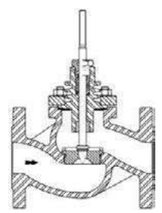
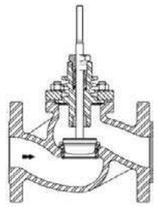
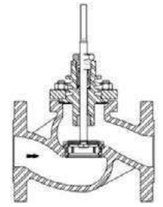
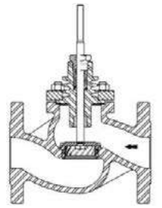
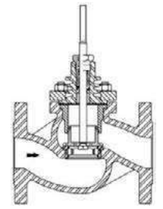
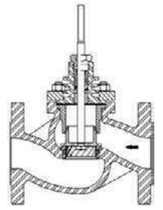
FLOW RATE COEFFICIENTS (m^3/h) & VALVE STROKES (mm)										
	SIZES									
	1/2"	3/4"	1”	11/4”	11/2”	2”	21/2”	3”	4”	6”
Kvs	3,8	5,1	9,4	–	22,2	40,1	–	89,7	136,7	316,1
STROKE	20	20	20	–	20	20	–	30	30	40 / 50

Perforated plugs have different flow rates, see IS PV 10.00 E – Technical Information.
For conversion Kvs = Cv (US) x 0,855.

DIMENSIONS – ACTUATOR			
TYPE	E (mm)	D (mm) 1/2" to 4" DA / RA	WGT . (kg)
PA205	210	235	6
PA280	275	240	10
PA340	335	265	15
PA435	430	295	25

PLUG DESIGN					
Microflow Linear PL	Countoured Equal % or Linear EQP – PL	V-Ported Equal Percentage EQP	V-Ported Linear PL	Perforated Equal Percentage EQP	Perforated Linear PL
					

V-Ported and perforated plugs are also available in balanced pressure version.

PLUG DESIGN					
Microflow Linear PL	Countoured Equal % or Linear EQP – PL	V-Ported EQP - PL	V-Ported Perforated EQP - PL	V-Ported Balanced EQP – PL	Perforated Balanced EQP - PL
					

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IS PV25G.52 E 04.17

MAX. PERM. PRESSURE DROP (bar) – N.C. (Fluid to open) – Reverse action actuator (air signal to open)								
ACTUATOR	CONTROL SIGNAL	SIZES						
		1/2"	3/4"	1"	11/2"	2"	3"	4"
PA205	0,2 ÷ 1 bar	6	6	5	–	–	–	–
	0,4 ÷ 1,2 bar	10	10	7	–	–	–	–
	0,4 ÷ 2 bar	12	12	9	–	–	–	–
PA280	0,2 ÷ 1 bar	28	26	16	6	3,5	–	–
	0,4 ÷ 1,2 bar	40	38	20	10	5	–	–
	0,4 ÷ 2 bar	50	45	25	12	6,5	–	–
PA340A	0,2 ÷ 1 bar	60	60	50	12	10	–	–
	0,4 ÷ 1,2 bar	80	80	60	16	13	–	–
	0,4 ÷ 2 bar	100	100	80	20	18	–	–
PA340B	0,2 ÷ 1 bar	–	–	–	–	–	2,5	1
	0,4 ÷ 1,2 bar	–	–	–	–	–	3,5	1,5
	0,4 ÷ 2 bar	–	–	–	–	–	4	2
PA435A	0,2 ÷ 1 bar	–	–	–	40	25	–	–
	0,4 ÷ 1,2 bar	–	–	–	48	30	–	–
	0,4 ÷ 2 bar	–	–	–	55	45	–	–
PA435B	0,2 ÷ 1 bar	–	–	–	–	–	5	3
	0,4 ÷ 1,2 bar	–	–	–	–	–	7	5
	0,4 ÷ 2 bar	–	–	–	–	–	8	6
	0,4 ÷ 2,4 bar	–	–	–	–	–	15	12

For valve size 6”, consult factory.
The pressure drop values are referred to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.
The actuator press. drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.
If higher differential pressures are required please consult PA45 pneumatic actuators catalogue.

MAX. PERM. PRESSURE DROP (bar) – N.O. (Fluid to open) – Direct action actuator (air signal to close)								
ACTUATOR	CONTROL SIGNAL	SIZES						
		1/2"	3/4"	1"	11/2"	2"	3"	4"
PA205	0,2 ÷ 1 bar	16	16	12	–	–	–	–
	0,4 ÷ 2 bar	25	24	16	–	–	–	–
PA280	0,2 ÷ 1 bar	–	–	19	8	4	–	–
	0,4 ÷ 2 bar	–	–	25	16	7	–	–
PA340A	0,2 ÷ 1 bar	–	–	–	16	10	–	–
	0,4 ÷ 2 bar	–	–	–	26	25	–	–
PA340B	0,2 ÷ 1 bar	–	–	–	–	–	3,5	1,5
	0,4 ÷ 2 bar	–	–	–	–	–	7	3
PA435B	0,2 ÷ 1 bar	–	–	–	–	–	5	3
	0,4 ÷ 2 bar	–	–	–	–	–	10	7,5

For valve size 6”, consult factory.
The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:
Actuator signal 0,2 to 1 bar :air supply 1,2 bar ; Actuator signal 0,4 to 2 bar : air supply 2,4 bar
The actuator press. drops given with closed valve for the actuator signal 0,4- 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

We reserve the right to change the design and material of this product without notice.

ORDERING CODES V25									
VALVE CODES	P	V	.25S	1	1	U	50	.X.	
Actuator type (1)									
Pneumatic actuator	P								
Electric actuator	E								
Group designation									
Globe valve, two-way, straight body		V							
Valve model									
ASTM A216 WCB body, stainless steel trim			.25S						
Stem sealing									
PTFE/GR V-Rings / Standard bonnet				1					
Virgin PTFE V-Rings / Standard bonnet				2					
Graphite / Standard bonnet				3					
Graphite / Finned bonnet				4					
Stainless steel bellows				8					
Valve plug									
EQP (equal percentage) – Soft (PTFE-GR)					1				
EQP (equal percentage) – Metal AISI 316 / 1.4401					3				
EQP (equal percentage) – Stellite					4				
PL (linear) – Soft (PTFE/GR)					6				
PL (linear) – Metal AISI 316 / 1.4401					7				
PL (linear) – Stellite					8				
PT (on-off) – Soft (PTFE/GR)					9				
PT (on-off) – Metal AISI 316 / 1.4401					10				
PT (on-off) – Stellite					11				
Pipe connection									
Flanged ANSI B16.5 150lb						U			
Flanged ANSI B16.5 300lb						V			
Size									
1/2”							15		
3/4"							20		
...									
Actuator								(1)	
Extras									
Full description or additional codes have to be added in case of non-standard combination.									E

ACTUATOR CODES (pneumatic) *	P.	5	R		18
Group designation					
Multi-spring, pneumatic linear actuator	P.				
Actuator size					
205		1			
280		3			
340A – From DN 15 to DN 50		5			
340B – From DN 65 to DN 100		6			
435A – From DN 15 to DN 50		7			
435B – From DN 65 to DN 100		8			
Actuator type					
Direct action (air to close)			D		
Reverse action (air to open)			R		
Actuator Construction					
Steel construction (painted) – standard				(2)	
Stainless steel construction				I	
Control signal					
0,2 – 1 bar (3/15 psi)					15
0,4 – 1,2 bar (6/18 psi)					18
0,4 – 2 bar (6/30 psi)					30
0,4 – 2,4 bar (6/35 psi)					35

→ To be introduced on “.X.”, if supplied in combination with the valve.

Example:

V25S valve model, EQP soft plug, PTFE/GR stem sealing, 2”, ANSI 150 lb, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.25S.11U50.5R18

REMARKS:
(1) – Indicate actuator type.
(2) – Omitted if the standard valve is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke. When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).

* For electric actuator ordering codes, consult our technical department

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IS PV25G.52 E 04.17

PNEUMATIC CONTROL VALVES
PV25 Threaded
V25 globe valves series with linear actuators PA series

DESCRIPTION

The PV25 control valves are single seated, two-way body constructed with in-line straight connections. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA - direct action (air to close) or RA- reverse action (air to open). The PV25 valves have been designed to assure an accurate control in any process condition. Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, steam, air, gas and other non-corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve.
Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator.
Metal to metal sealing as standard.

OPTIONS:	Position transmitter 4-20 mA. Pneumatic pilot positioner. Electropneumatic pilot positioner. Air filter regulator. Top-work manual handwheel. Stainless steel construction. Soft sealing and stellite seat and plug.
USE:	Saturated and superheated steam. Hot and superheated water. Air, gases and other non-corrosive fluids. Group 1 fluids (consult factory).
AVAILABLE MODELS:	PV25S – carbon steel. PV25I – stainless steel.
VALVE SIZES:	1/2" to 1”.
CONNECTIONS:	Threaded ISO or ANSI.
ACTUATORS:	PA205, PA280, PA340.
ACTUATORS CONNECTIONS:	1/4" NPT-F.
CONTROL SIGNAL:	0,2 – 1bar; 0,4 – 1,2 bar; 0,4 – 2 bar.
MAX. AIR SUPPLY PRES.:	3,5 bar.

AMBIENT TEMP.:	-20 ºC to 70 ºC.
BONNET:	Standard – up to 220 ºC; Extended finned – above 220 ºC.
STEM SEALING:	PTFE/GR V-Rings – up to 220 ºC. Graphite – up to 400 ºC. Stainless steel bellows.
PLUG TYPES:	EQP – Equal percentage; PL – Linear; PT – On/Off.
PLUG DESIGN:	Contoured; Perforated (low noise, anti-cavitation); Microflow.
PORT:	Full port or reduced on request.

CE MARKING – GROUP 2 (PED – European Directive)	
PN40	**Category**
1/2" to 1”	SEP

For more information, consult IS PV10.00 E – Technical information.

HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow of steam or water. Refer to the valve calculation data sheet or consult the factory.

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BODY LIMITING CONDITIONS			
V25S – PN40 *		**V25I – PN40 ***	
ALLOWABLE PRESSURE	**RELATED TEMP.**	**ALLOWABLE PRESSURE**	**RELATED TEMP.**
40 bar	-10 ºC / 50 ºC	**40 bar**	-10 ºC / 50 ºC
33,3 bar	200 ºC	**33,7 bar**	200 ºC
27,6 bar	300 ºC	**29,7 bar**	300 ºC
25,7 bar	350 ºC	**28,5 bar**	350 ºC
23,8 bar	400 ºC	**27,4 bar**	400 ºC

Note: Maximum temperatures limited to the valve packing selected.
Valves with soft seal, max. allowable temperature: 200 ºC.
* Rating according to EN1092-1:2018;

FLOW RATE COEFFICIENTS			
	SIZES		
	1/2”	**3/4"**	**1”**
Kvs	3,8	5,1	9,4

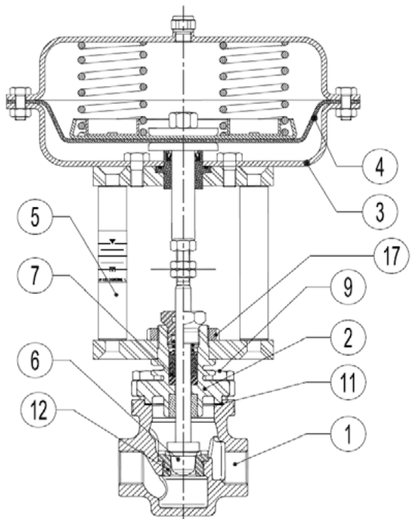
Kvs in m^3/h, see IS PV10.00 E ;
For conversion Kvs = Cv (US) x 0,855.

VALVE STROKES (mm)			
	SIZES		
	1/2"	**3/4"**	**1”**
STROKE	20	20	20

Perforated plug and on/off valves may have different strokes, please see technical information or consult factory.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	CF8M / 1.4408
2	Bonnet	CF8M / 1.4408
3	Actuator (Steel)	S235JR / 1.0038
	Actuator (Stainl. st.)	AISI 304 / 1.4301
4	* Diaphragm	NBR 70
5	Yoke (Steel)	C45E / 1.1191
	Yoke (Stainl. St.)	AISI 304 / 1.4301
6	* Valve plug	PTFE/GR; St. steel
7	* Standard packing	PTFE/GR
8	* Bellows	AISI 316Ti / 1.4571
9	Studs	A4-70
10	Nuts	A4-70
11	Gasket	Stainless steel / Graphite
12	Seat	Stainless steel
13	Gasket	Stainless steel / Graphite
14	Gasket	Stainless steel / Graphite
15	Straight pin	Stainless steel
16	Bolts	A4-70
17	Lock nut	Stainless steel

* Available spare parts.



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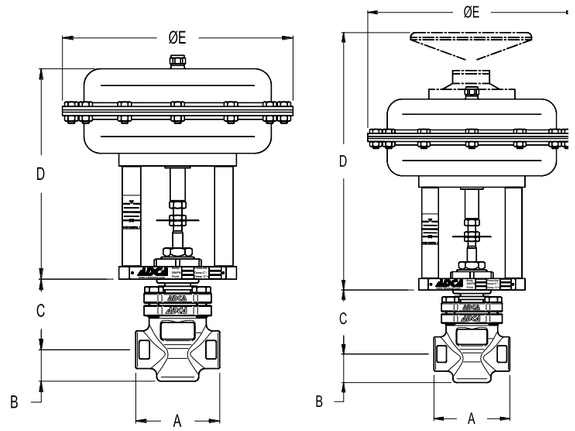
IS PV25I.60 E 15.16

DIMENSIONS – VALVE BODY					
SIZE	A (mm)	B (mm)	C (mm) – BONNET		
			STAND.	FINNED	BELLOWS
1/2"	100	37,5	85	150	275
3/4"	100	37,5	85	150	275
1”	100	37,5	85	165	275

DIMENSIONS – ACTUATOR			
TYPE	E (mm)	D (mm)	WEIGHT (kg)
PA205	210	235	6
PA280	275	245	10
PA340	335	265	15
PA435	430	295	25



MAX. PERM. PRESSURE DROP (bar) N.C. (Fluid to open) – Reverse action actuator (air signal to open)							
ACTUATOR	CONTROL SIGNAL	SIZES					
		1/2"	3/4"	1”	11/4”	11/2”	2”
PA205	0,2 ÷ 1 bar	6	6	5	–	–	–
	0,4 ÷ 1,2 bar	10	10	7	–	–	–
	0,4 ÷ 2 bar	12	12	9	–	–	–
PA280	0,2 ÷ 1 bar	28	26	16	–	–	–
	0,4 ÷ 1,2 bar	40	38	20	–	–	–
	0,4 ÷ 2 bar	50	45	25	–	–	–
PA340A	0,2 ÷ 1 bar	60	60	50	–	–	–
	0,4 ÷ 1,2 bar	80	80	60	–	–	–
	0,4 ÷ 2 bar	100	100	80	–	–	–

The pressure drop values refer to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.
The actuator pressure drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

MAX. PERM. PRESSURE DROP (bar) N.O. (Fluid to open) – Direct action actuator (air signal to close)							
ACTUATOR	CONTROL SIGNAL	SIZES					
		1/2"	3/4"	1”	11/4”	11/2”	2”
PA205	0,2 ÷ 1 bar	16	16	12	–	–	–
	0,4 ÷ 2 bar	25	24	16	–	–	–
PA280	0,2 ÷ 1 bar	–	–	19	–	–	–
	0,4 ÷ 2 bar	–	–	25	–	–	–
PA340A	0,2 ÷ 1 bar	–	–	–	–	–	–
	0,4 ÷ 2 bar	–	–	–	–	–	–

The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:
Actuator signal 0,2 to 1 bar : air supply 1,2 bar
Actuator signal 0,4 to 2 bar : air supply 2,4 bar
The actuator press. drops given with closed valve for the actuator signal 0,4- 2 bar are also valid for ON-OFF service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

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ORDERING CODES V25 - THREADED									
VALVE CODES	P	V	.25I	1	1	A	25	.X.	
Actuator type (1)									
Pneumatic actuator	P								
Electric actuator	E								
Group designation									
Globe valve, two-way, straight body		V							
Valve model									
PN40, two way, cast steel valve			.25S						
PN40, two way, complete stainless steel valve			.25I						
Stem sealing									
PTFE/GR V-Rings / Standard bonnet				1					
Virgin PTFE V-Rings / Standard bonnet				2					
Graphite / Standard bonnet				3					
Graphite / Finned bonnet				4					
Stainless steel bellows				8					
Valve plug									
EQP (equal percentage) – Soft (PTFE-GR)					1				
EQP (equal percentage) – Metal AISI 316 / 1.4401					3				
EQP (equal percentage) – Stellite					4				
PL (linear) – Soft (PTFE/GR)					6				
PL (linear) – Metal AISI 316 / 1.4401					7				
PL (linear) – Stellite					8				
PT (on-off) – Soft (PTFE/GR)					9				
PT (on-off) – Metal AISI 316 / 1.4401					10				
PT (on-off) – Stellite					11				
Pipe connection									
Threaded ISO 7/1 Rp						A			
Threaded NPT						C			
Size									
1/2"							15		
3/4"							20		
1”							25		
Actuator								(1)	
Extras									
Full description or additional codes have to be added in case of non-standard combination.									E

ACTUATOR CODES (pneumatic) *	P.	5	R		18
Group designation					
Multi-spring, pneumatic linear actuator	P.				
Actuator size					
205		1			
280		3			
340A – From DN 15 to DN 25		5			
Actuator type					
Direct action (air to close)			D		
Reverse action (air to open)			R		
Actuator Construction					
Steel construction (painted) – standard				(2)	
Stainless steel construction				I	
Control signal					
0,2 – 1 bar (3/15 psi)					15
0,4 – 1,2 bar (6/18 psi)					18
0,4 – 2 bar (6/30 psi)					30

⟶ To be introduced on “.X.”, if supplied in combination with the valve.

Example:

V25I valve model, EQP soft plug, PTFE/GR stem sealing, 1” BSP, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.25I.11A25.5R18

REMARKS:
(1) – Indicate actuator type.
(2) – Omitted if the standard valve is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke.
When ordering spares, always use that serial number. If the valve has non-standard extras the serial number also has an E (extras).

* For electric actuator ordering codes, consult our technical department.

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IS PV25I.60 E 15.16

PNEUMATIC CONTROL VALVES
PV40
(V40 globe valves series with linear actuators PA or EL series)

DESCRIPTION

The PV40 control valves are single seated, two-way body constructed with in-line straight connections. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA – direct action (air to close) or RA – reverse action (air to open). The PV40 valves have been designed to ensure an accurate control in any process condition. Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve.
Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator.
Metal to metal sealing as standard.

OPTIONS: Soft sealing.
Position transmitter.
Pneumatic pilot positioner.
Air filter regulator.
Top-work manual handwheel.

USE: Saturated and superheated steam.
Hot and superheated water.
Diathermic oil.
Air, gases and other no corrosive fluids.

AVAILABLE MODELS: PV40S and EV40S – steel.
PV40I and EV40I – stainless steel.

SIZES: 1/2” to 2”; DN 15 to DN 50.

CONNECTION: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Threaded connections on request.

PNEUMATIC ACTUATORS: PA205, PA280, PA340, PA435.

ACTUATOR CONN: 1/4” NPT-F.

CONTROL SIGNAL: 0,2 – 1bar; 0,4 – 1,2 bar; 0,4 – 2 bar.

ELECTRIC ACT.: Consult IS EL20.00 E.

MAX.AIR SUPPLY: 3,5 bar.

AMBIENT TEMP.: -20 ºC to 70 ºC.

BONNET: Standard – up to 220 ºC;
Extended finned – above 220 ºC.

STEM SEALING: PTFE/GR V-Rings – up to 220ºC;
Graphite – up to 300ºC.
Stainless steel bellows.

PLUG CHARACT.: EQP – equal percentage;
PL – linear;
PT – on/off.

PLUG DESIGN: Contoured;
Perforated (Low noise, anti-cavitation);
Microflow.

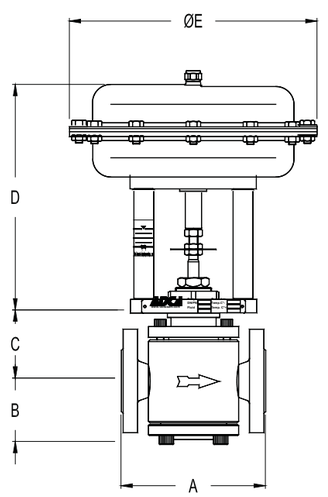
PORT: Full or reduced on request.

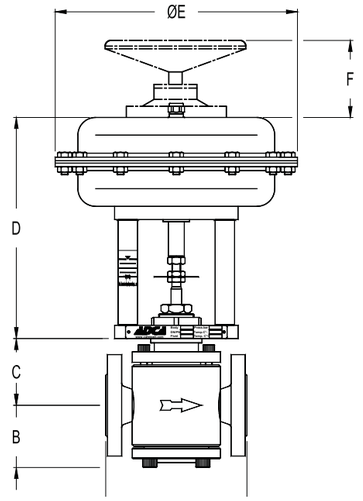
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
DN 15 to 32	SEP
DN 40 to 50	1 (CE Marked)

BODY LIMITING CONDITIONS				
V40S		**V40I**		
FLANGED PN 40 *		**FLANGED PN 40 ***	**FLANGED CLASS 300 ****	**RELATED TEMP.**
ALLOW. PRESSURE	**RELATED TEMP.**	**ALLOW. PRESSURE**	**ALLOW. PRESSURE**	
40 bar	50 ºC	40 bar	39,9 bar	50 ºC
33,3 bar	150 ºC	37,9 bar	34,4 bar	100 ºC
30,4 bar	250 ºC	30 bar	26,6 bar	250 ºC
27,6 bar	300 ºC	27,6 bar	25,2 bar	300 ºC

* Rating acc. to EN 1092-1:2018; ** Rating acc. to EN 1759-1:2004.
Remarks: Maximum temperatures limited to the valve packing selected.
Valves with soft seal, maximum allow. temp: 200 ºC.
PN 63 and PN 100 designs on request.

DIMENSIONS (mm)							
SIZE	**A PN40**	**A CLASS 150**	**A CLASS 300**	**B**	**C - BONNET**		
					STANDARD	**FINNED**	**BELLOWS**
1/2" – DN 15	150	184	190	71	75	140	267
3/4" – DN 20	150	184	194	71	75	140	267
1” – DN 25	160	184	197	71	75	140	267
11/4” – DN 32	180	–	–	75	83	163	285
11/2” – DN 40	200	222	235	82	96	163	285
2” – DN 50	230	254	267	97	100	182	298

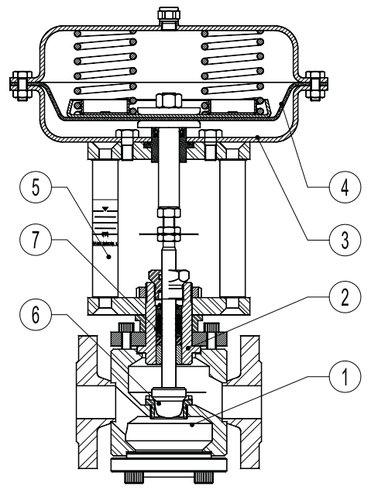




DIMENSIONS – PNEUMATIC ACTUATOR			
TYPE	**E (mm)**	**D (mm)**	**WEIGHT (kg)**
PA205	210	235	6
PA280	275	245	10
PA340	335	265	15
PA435	430	295	25

MATERIALS			
POS.	**DESIGNATION**	**PV40S**	**PV40I**
1	Valve body	S355JR / 1.0045	AISI 316 / 1.4401
2	Bonnet	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3	Actuator (Steel)	S235JR / 1.0038	S235JR / 1.0038
	Actuator (Stainl. st.)	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Diaphragm	NBR 70	NBR 70
5	Yoke (Steel)	C45E / 1.1191	C45E / 1.1191
	Yoke (Stainl. St.)	AISI 304 / 1.4301	AISI 304 / 1.4301
6	* Valve plug	PTFE/GR; St. steel	PTFE/GR; St. steel
7	* Standard packing	PTFE/GR	PTFE/GR

* Available spare parts.
For electric actuator materials and dimensions, consult IS EL 20.00 E.



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IS PV40S.50 E 14.16

VALVE STROKE (mm)						
TYPE	SIZES					
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
STROKE	20					

FLOW RATE COEFFICIENTS						
TYPE	SIZES					
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
Kvs	3,8	5,1	9,4	15,4	22,2	40,1

Kvs in m³/h, see IS PV10.00 E – Technical information;
For conversion Kvs = Cv (US) x 0,855.

MAX. PERM. PRESSURE DROP (bar) – N.C. (fluid to open) – Reverse action actuator (air signal to open)							
ACTUATOR	CONTROL SIGNAL	SIZES					
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
PA205	0,2 ÷ 1 bar	6	6	5	–	–	–
	0,4 ÷ 1,2 bar	10	10	7	–	–	–
	0,4 ÷ 2 bar	12	12	9	–	–	–
PA280	0,2 ÷ 1 bar	28	26	16	8	6	3,5
	0,4 ÷ 1,2 bar	40	38	20	12	10	5
	0,4 ÷ 2 bar	50	45	25	16	12	6,5
PA340A	0,2 ÷ 1 bar	60	60	50	20	12	10
	0,4 ÷ 1,2 bar	80	80	60	30	16	13
	0,4 ÷ 2 bar	100	100	80	40	20	18
PA435A	0,2 ÷ 1 bar	–	–	–	–	40	25
	0,4 ÷ 1,2 bar	–	–	–	–	48	30
	0,4 ÷ 2 bar	–	–	–	–	55	45

The pressure drop values are referred to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.
The actuator press. drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for on/off service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

MAX. PERM. PRESSURE DROP (bar) – N.O. (fluid to open) – Direct action actuator (air signal to close)							
ACTUATOR	CONTROL SIGNAL	SIZES					
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
PA205	0,2 ÷ 1 bar	16	16	12	5	–	–
	0,4 ÷ 2 bar	25	24	16	7,5	–	–
PA280	0,2 ÷ 1 bar	–	–	19	10	8	4
	0,4 ÷ 2 bar	–	–	25	20	16	7
PA340A	0,2 ÷ 1 bar	–	–	–	17	16	10
	0,4 ÷ 2 bar	–	–	–	28	26	25

The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:
Actuator signal 0,2 to 1 bar : air supply 1,2 bar
Actuator signal 0,4 to 2 bar : air supply 2,4 bar
The actuator press. drops given with closed valve for the actuator signal 0,4- 2 bar are also valid for on/off service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

ORDERING CODES V40									
VALVE CODES	P	V	.40S	1	1	A	15		
Actuator type									
Pneumatic actuator	P								
Electric actuator	E								
Group designation									
Globe valve, two way, straight body		V							
Valve model									
PN40 Steel body			.40S						
PN40 Stainless steel body			.40I						
Stem sealing									
PTFE/GR V-Rings / standard bonnet				1					
Virgin PTFE V-Rings / standard bonnet				2					
Graphite / standard bonnet				3					
Graphite / finned bonnet				4					
Stainless steel bellows				8					
Valve plug									
EQP (equal percentage) – Soft (PTFE/GR)					1				
EQP (equal percentage) – Metal AISI 316 / 1.4401					3				
EQP (equal percentage) – Stellite					4				
PL (linear) – Soft (PTFE/GR)					6				
PL (linear) – Metal AISI 316 / 1.4401					7				
PL (linear) – Stellite					8				
PT (on-off) – Soft (PTFE/GR)					9				
PT (on-off) – Metal AISI 316 / 1.4401					10				
PT (on-off) – Stellite					11				
Pipe connection									
Threaded ISO 7 Rp						A			
Flanged EN 1092-1 PN40						N			
Flanged ANSI B16.5 300 lb						V			
Size									
DN 15							15		
DN 20							20		
...									
Actuator								(1)	
Extras									
Full description or additional codes have to be added in case of non-standard combination.									E

ACTUATOR CODES (PNEUMATIC) *					
VALVE CODES	P.	1	D		15
Group designation					
Multi-spring, pneumatic linear actuator	P.				
Actuator size					
205		1			
280		3			
340A – From DN 15 to DN 50		5			
435A – From DN 15 to DN 50		7			
Actuator type					
Direct action (air to close)			D		
Reverse action (air to open)			R		
Actuator Construction					
Steel construction (painted) – standard				(2)	
Stainless steel construction				I	
Control signal					
0,2 – 1 bar (3/15 psi)					15
0,4 – 1,2 bar (6/18 psi)					18
0,4 – 2 bar (6/30 psi)					30

⟶ To be introduced on ".X.", if supplied in combination with the valve.

Example:

V40S valve model, EQP soft plug, PTFE/GR stem sealing, EN flanges, DN 15, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.40S11N50.5R18

REMARKS:
(1) – Indicate actuator.
(2) – Omitted if the standard valve is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke.
When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).

* For electric actuator ordering codes, consult our technical department.

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IS PV40S.50 E 14.16

THREE-WAY GLOBE CONTROL VALVES
V253

DESCRIPTION

The ADCATrol V253 is a series of three-way globe control valves designed to ensure accurate control in mixing or diverting general service applications.
These valves can be assembled with pneumatic, hydraulic or electric actuators and used with the most common process fluids such as water, superheated water, thermal oil, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Compact and cost-effective design.
Mixing and diverting versions.

OPTIONS AND ACCESSORIES: Various stem sealing options including bellows sealed versions.

USE: Hot and superheated water.
Thermal oil.
Saturated and superheated steam.
Air, gases and others.

AVAILABLE MODELS: V253G – SG iron.

SIZES: DN 15 to DN 150.

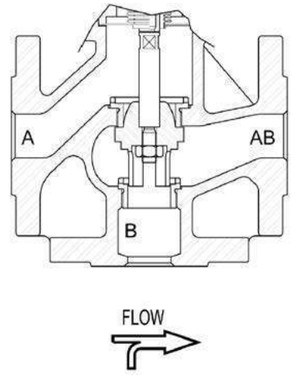
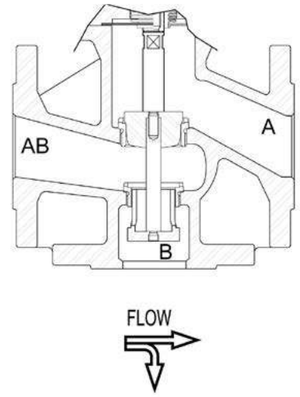
CONNECTIONS: Flanged EN 1092-2 PN 16 or PN 25.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-2, on request.

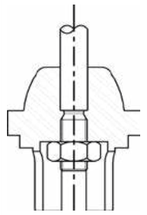
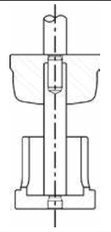
STEM SEALING: PTFE/GR V-Rings – up to 220 ºC.
Graphite packing – up to 350 ºC.
Stainless steel bellows – up to 350 ºC.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 25**	**Category**
DN 15 to 50	DN 15 to 40	SEP
DN 65 to 150	DN 50 to 125	1 (CE marked)
–	DN 150	2 (CE marked)

BODY LIMITING CONDITIONS *			
FLANGED PN 16		**FLANGED PN 25**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	-10 ºC / 120 ºC	25 bar	-10 ºC / 120 ºC
15,5 bar	150 ºC	24,3 bar	150 ºC
14,7 bar	200 ºC	23 bar	200 ºC
14,3 bar	220 ºC	22,5 bar	220 ºC
13,9 bar	250 ºC	21,8 bar	250 ºC
12,8 bar	300 ºC	20 bar	300 ºC
11,2 bar	350 ºC	17,5 bar	350 ºC

* Rating according to EN 1092-2:2007.

TRIM DESIGN	
MIXING	**DIVERTING**
	

PLUG DESIGN	
MIXING	**DIVERTING**
 **Sealing:** Metal to metal **Characteristic:** Linear (PL) **Rangeability:** 30:1 to 50:1 **Leakage:** Class IV, acc. to IEC 60534-4	 **Sealing:** Metal to metal **Characteristic:** Linear (PL) **Rangeability:** 30:1 **Leakage:** Class IV, acc. to IEC 60534-4

FLOW RATE COEFFICIENTS – MIXING PLUGS										
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**
Kvs (m³/h)	4	6,3	10	16	25	40	63	100	160	230	330
SEAT Ø *	20 / 15	20 / 15	25 / 20	32 / 25	40 / 32	50 / 40	65 / 50	80 / 65	100 / 80	125 / 120	150 / 140
STROKE (mm)	20						30			35	40

* Upper and lower seat diameters respectively.
For conversion, Kvs = Cv (US) x 0,865.

FLOW RATE COEFFICIENTS – DIVERTING PLUGS							
SIZE	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**
Kvs (m³/h)	12	20	27	50	83	123	190	250
SEAT Ø *	32 / 25	40 / 32	50 / 40	65 / 50	80 / 65	100 / 80	100 / 100	120 / 120
STROKE (mm)	20			30			35	40

* Upper and lower seat diameters respectively.
For conversion, Kvs = Cv (US) x 0,865.

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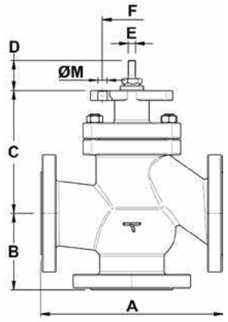
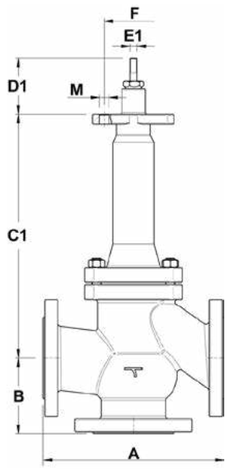
IS V253.10 E 00.21



Valve with
standard bonnet



Bellows
sealed valve

DIMENSIONS (mm)											
DIMENSION	SIZE										
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
A	130	150	160	180	200	230	290	310	350	400	480
B	65	70	75	80	90	100	120	130	150	200	210
C	143	157	151	158	163	166	209	209	217	319	334
C1	265	279	273	280	285	288	418	418	426	529	544
D	56										
D1	96										
E	M10										
E1	M12										
F	100										
M	17										

Remark: Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-2, on request.

WEIGHTS (kg)											
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
STANDARD	8	9	10	12,5	14	16	32	36	51	107	130
BELLOWS	10	11	11,5	14,5	16	19	36	40	54	95	125

MAX. PERMISSIBLE ACTUATING FORCES (kN)											
	SIZE										
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
STANDARD	12										
BELLOWS	16										

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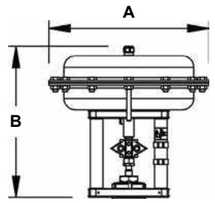
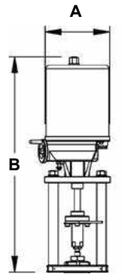


PA SERIES PNEUMATIC ACTUATORS

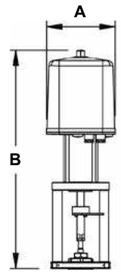
DIMENSIONS (mm)					
DIMENSION	PA206	PA281	PA341	PA436	PA80
A	209	275	336	430	405
B	236	243	323	291 / 311 *	505
WEIGHT (kg)	6,2	9,6	14,3	24,4 / 28 *	50,4

* For actuators with spring ranges 1 - 2 bar, 1,5 - 3 bar and 2 - 4 bar.



EL SERIES ELECTRIC ACTUATORS

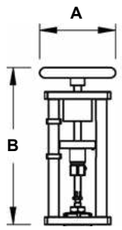
DIMENSIONS (mm)				
DIMENSION	EL12	EL20 – EL45	EL80 – EL120	EL250
A	129	148	188	216
B	333	485	587	683
WEIGHT (kg)	2,1	8	13	19



ELR SERIES ELECTRIC ACTUATORS

DIMENSIONS (mm)			
DIMENSION	ELR2.1	ELR2.2	ELR2.3
A	162	162	162
B	518 / 555 *	536 / 573 *	557 / 593 *
WEIGHT (kg)	8,7	9,3	10

* With PEL electronic positioner.



MANUAL OPERATION HANDWHEEL

DIMENSIONS (mm)	
DIMENSION	MAH
A	160
B	331
WEIGHT (kg)	5,6

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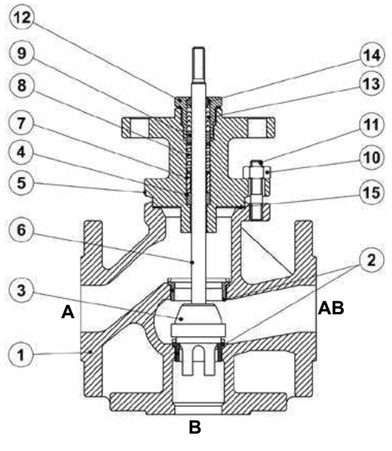
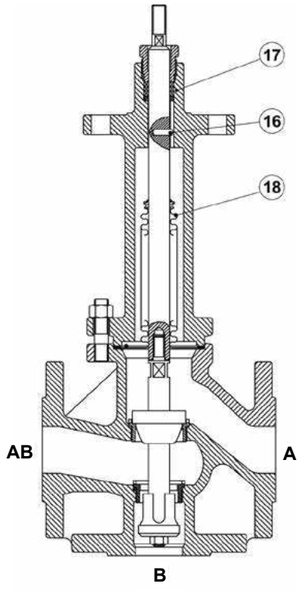
IS V253.10 E 00.21



Mixing valve with standard bonnet



Diverting bellows sealed valve

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-18-LT / 5.3103
2	* Seats	AISI 420 / 1.4021
3	* Valve plug	AISI 420 / 1.4021
4	Lower stem guide	Graphite filled PTFE
5	Bonnet	GJS-400-18-LT / 5.3103
6	* Stem	AISI 420 / 1.4021
7	Packing spacer	AISI 303 / 1.4305
8	Spring	AISI 301 / 1.4310
9	Upper stem guide	Graphite filled PTFE
10	Nuts	C35E / 1.1181
11	Studs	C35E / 1.1181
12	Packing nut	AISI 303 / 1.4305
13	* Chevron packing set	Graphite filled PTFE
14	Scraper ring	FPM
15	* Gasket	Stainless steel / Graphite
16	Locking pin	Stainless steel A2-70
17	* Safety packing set	Stainless steel / Graphite
18	* Metal bellows	AISI 316Ti / 1.4571

* Available spare parts.

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ORDERING CODES V253 a)								
Valve model	**V.23**	**G**	**M**	**1**	**7**	**L**	**15**	
Globe valve, three-way, straight body	**V.23**							
Body material								
GJS-400-18-LT / 0.7043 SG iron		**G**						
Trim design								
Mixing			**M**					
Diverting (only available for size DN 32 and above)			**D**					
Stem sealing								
PTFE/GR V-Rings / Standard bonnet				**1**				
Graphite / Standard bonnet				**3**				
Stainless steel bellows with graphite safety packing				**8**				
Valve plug								
Linear (PL) – metal to metal (class IV)					**7**			
Pipe connection								
Flanged EN 1092-2 PN 16						**L**		
Flanged EN 1092-2 PN 25						**M**		
Size								
DN 15							**15**	
DN 20							**20**	
...								
Special valves / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

a) Codification for valve only. For actuator codes, refer to the respective datasheet.

VALSTEAM ADCA
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IS V253.10 E 00.21

PNEUMATIC CONTROL VALVES
PV403 DN 15 – DN 50
(V403 globe valves series with linear actuators PA or EL series)

DESCRIPTION

The PV403 control valves are three-way valve body for mixing service. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA – direct action (air to close) or RA – reverse action (air to open). The V403 valves have been designed to assure an accurate control in any process condition. Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, diathermic oil, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Mixing or diverting control valve.
Standard packing or bellows sealed stem sealing.

OPTIONS: Soft sealing.
Position transmitter.
Pneumatic pilot positioner.
Air filter regulator.
Top-work manual handwheel.

USE: Hot and superheated water.
Diathermic oil.
Saturated and superheated steam.
Air, gases and other non-corrosive fluids.

AVAILABLE MODELS: PV403S and EV403S – steel.
PV403I and EV403I – stainless steel.

SIZES: DN 15 to DN 50.

CONNECTION: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or Class 300.
Threaded connections on request.

PNEUMATIC ACTUATORS: PA205, PA280, PA340, PA435.

ACTUATORS CONNECTION: 1/4" NPT-F.

CONTROL SIGNAL: 0,2 – 1bar; 0,4 – 1,2 bar; 0,4 – 2 bar.

ELECTRIC ACT.: Consult IS EL 20.00 E – Linear electric actuators.

MAX. AIR SUPPLY: 3,5 bar.

AMBIENT TEMP.: -20 ºC to 70 ºC.

BONNET: Standard – up to 220 ºC;
Extended finned – above 220 ºC.

STEM SEALING: PTFE/GR V-Rings – up to 220 ºC.
Graphite – up to 400 ºC.
Bellows sealed.

PLUG TYPE: Linear (PL).

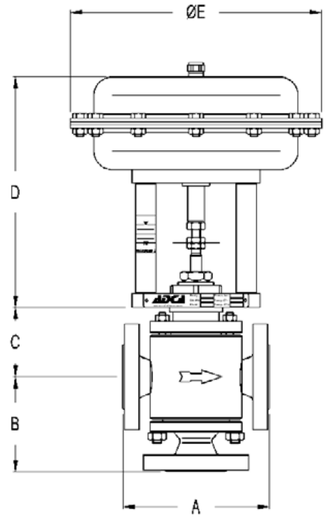
PORT: Full port.

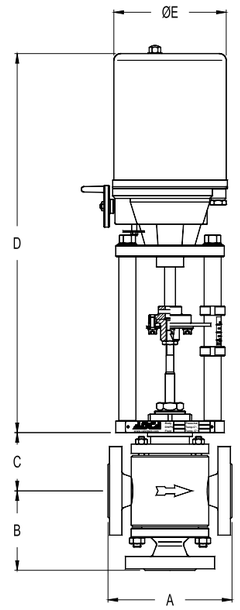
HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow of steam or water. Refer to the valve calculation data sheet or consult the factory.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
DN 15 to DN 40	SEP
DN 50	1 (CE Marked)

BODY LIMITING CONDITIONS *			
V403S		**V403I**	
ALLOW. PRESSURE	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**
25 bar	-10 / 50 ºC	23,6 bar	-10 / 100 ºC
20,8 bar	200 ºC	19,8 bar	200 ºC
19 bar	250 ºC	18,6 bar	250 ºC
17,2 bar	300 ºC	17,2 bar	300 ºC

* Rating according to EN 1092-1:2018;
Maximum temperature limited to the valve packing selected.
Valves with soft seal: max. allowable temperature: 200 ºC.





DIMENSIONS (mm)						
SIZE	**A PN 40**	**A CLASS 150**	**A CLASS 300**	**B**	**C - BONNET**	
					STANDARD PACKING	**BELLOWS SEALED**
1/2" – DN 15	150	184	190	100	75	267
3/4" – DN 20	150	184	194	103	75	267
1" – DN 25	160	184	197	103	75	267
11/4" – DN 32	180	–	–	110	83	285
11/2" – DN 40	200	222	235	110	96	285
2" – DN 50	230	254	267	130	100	298

DIMENSIONS – PNEUMATIC ACTUATOR			
TYPE	**E (mm)**	**D (mm)**	**WEIGHT (kg)**
PA205	210	235	6
PA280	275	245	10
PA340	335	265	15
PA435	430	295	25

DIMENSIONS – ELECTRIC ACTUATOR		
TYPE	**E (mm)**	**D (mm)**
EL12	130	340
EL20	145	458
EL45	145	458
EL80	188	517
EL120	188	517

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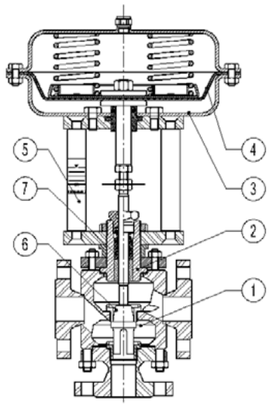
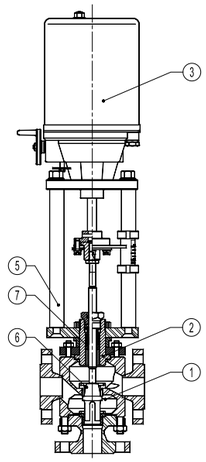
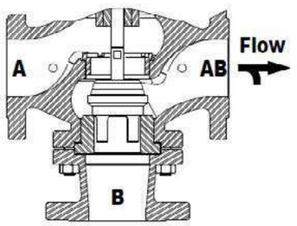
IS PV403.11 E 05.16

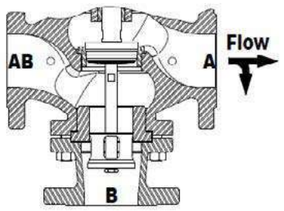




MATERIALS			
POS. Nº	**DESIGNATION**	**V403S**	**V403I**
1	Valve body	S355JR / 1.0045	AISI 316 / 1.4401
2	Bonnet	A351 CF8 / 1.4308	A351 CF8 / 1.4308
3	Pneum. actuator (steel)	S235JR / 1.0038	S235JR / 1.0038
	Pneum. actuator (st. steel)	AISI 304 / 1.4301	AISI 304 / 1.4301
	Electrical actuator casing	Aluminium	Aluminium
4	Diaphragm	NBR70	NBR70
5	Yoke (steel)	C45E / 1.1191	C45E / 1.1191
	Yoke (st. steel)	AISI 304/ 1.4301	AISI 304/ 1.4301
6	Valve plug	Stainless steel; PTFE/GR	Stainless steel; PTFE/GR
7	Standard packing	PTFE/GR	PTFE/GR



Mixing valve



Diverting valve

FAILURE POSITION DEPENDING ON VALVE DUTY			
Mixing valve		**Diverting valve**	
Direct action actuator (a)	**Reverse action actuator (b)**	**Direct action actuator (a)**	**Reverse action actuator (b)**
Port A to AB closes	Port B to AB closes	Port AB to B closes	Port AB to A closes

a) Retracted stem on air failure.
b) Extended stem on air failure.

We reserve the right to change the design and material of this product without notice.

VALVE STROKE (mm)						
	SIZES					
	DN 15	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**
STROKE	20					

FLOW RATE COEFFICIENTS						
	SIZES					
	DN 15	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**
Kvs	4	6,3	10	16	25	40

Kvs in m³/h, see IS PV10.00 E – Technical information.
For conversion Kvs = Cv (US) x 0,855.

MAX. PERM. PRESSURE DROP (bar) – N.C. (fluid to open) – Reverse action actuator (air signal to open)							
ACTUATOR	**CONTROL SIGNAL**	**SIZES**					
		DN 15	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**
PA205	**0,2 ÷ 1 bar**	6	6	5	–	–	–
	0,4 ÷ 1,2 bar	10	10	7	–	–	–
	0,4 ÷ 2 bar	12	12	9	–	–	–
PA280	**0,2 ÷ 1 bar**	28	26	16	8	6	3,5
	0,4 ÷ 1,2 bar	40	38	20	12	10	5
	0,4 ÷ 2 bar	50	45	25	16	12	6,5
PA340A	**0,2 ÷ 1 bar**	60	60	50	20	12	10
	0,4 ÷ 1,2 bar	80	80	60	30	16	13
	0,4 ÷ 2 bar	100	100	80	40	20	18
PA340B	**0,2 ÷ 1 bar**	–	–	–	–	–	–
	0,4 ÷ 1,2 bar	–	–	–	–	–	–
	0,4 ÷ 2 bar	–	–	–	–	–	–
PA435A	**0,2 ÷ 1 bar**	–	–	–	–	40	25
	0,4 ÷ 1,2 bar	–	–	–	–	48	30
	0,4 ÷ 2 bar	–	–	–	–	55	45

The pressure drop values refer to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.
The actuator pressure drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for on/off service with air supply at 2,4 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

VALSTEAM ADCA
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IS PV403.11 E 05.16

ORDERING CODES V403										
VALVE CODES	**P**	**V**	**.43S**	**M**	**1**	**6**	**N**	**15**	**.X.**	
Actuator type										
Pneumatic actuator	**P**									
Electric actuator	**E**									
Group designation										
Globe valve, three way		**V**								
Valve model										
Steel body			**.43S**							
Stainless steel body			**.43I**							
Flow										
Mixing				**M**						
Diverting (only available for DN 40 and above)				**D**						
Stem sealing										
PTFE/GR V-Rings / Standard bonnet					**1**					
Virgin PTFE V-Rings / Standard bonnet					**2**					
Graphite / Standard bonnet					**3**					
Graphite / Extended bonnet					**4**					
Stainless steel bellows					**8**					
Valve plug										
PL (linear) – Soft (PTFE/GR)						**6**				
PL (linear) – Metal AISI 316 / 1.4401						**7**				
Pipe connection										
Flanged EN 1092-1 PN 16/40							**N**			
Flanged ASME B16.5 Class 300							**V**			
Size										
DN 15								**15**		
DN 20								**20**		
...										
Actuator									**(1)**	
Extras										
Full description or additional codes have to be added in case of non-standard combination.										**E**

ACTUATOR CODES (PNEUMATIC) *					
VALVE CODES	**P.**	**1**	**D**		**15**
Group designation					
Multi-spring, pneumatic linear actuator	**P.**				
Actuator size					
205		**1**			
280		**3**			
340A – From DN 15 to DN 50		**5**			
435A – From DN 15 to DN 50		**7**			
Actuator type					
Direct action (air to close)			**D**		
Reverse action (air to open)			**R**		
Actuator Construction					
Steel construction (painted) – standard				**(2)**	
Stainless steel construction				**I**	
Control signal					
0,2 – 1 bar (3/15 psi)					**15**
0,4 – 1,2 bar (6/18 psi)					**18**
0,4 – 2 bar (6/30 psi)					**30**
0,4 – 2,4 (6/35 psi)					**35**

⟶ To be introduced on ".X.", if supplied in combination with the valve.

Example:

V403S mixing valve model, PL soft plug, PTFE/GR stem sealing, DN 50, complete with reverse action actuator signal 0,4 – 1,2 bar, size 340A steel:

Code: PV.43S.M16L50.5R18

REMARKS:
(1) – Indicate actuator.
(2) – Omitted if the standard actuator is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke.
When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).

* For electric actuator ordering codes, consult our technical department.

We reserve the right to change the design and material of this product without notice.

PNEUMATIC CONTROL VALVES
PV25 – ON-OFF
V25 globe valves series with linear actuators PA series

DESCRIPTION

The PV25 On-Off valves are single seated, two-way body constructed with in-line straight connections. The PA pneumatic actuator comprises a rubber diaphragm and multi-springs. Its action can be DA – direct action (air to close) or RA – reverse action (air to open).
Their wide application ranges allow the use of this valve with the most common process fluids such as water, superheated water, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve.
Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator.
Soft sealing as standard.

OPTIONS: Air filter regulator.
Top-work manual handwheel.
Stainless steel construction.

USE: Saturated and superheated steam.
Hot and superheated water.
Air, gases and other no corrosive fluids.

AVAILABLE MODELS: PV25G-OF – SG iron.
PV25I-OF – stainless steel.

VALVE SIZES: DN 15 to DN 100.

CONNECTION: Flanged EN 1092-1/-2 PN16.

PNEUMATIC ACTUATORS: PA205, PA280, PA340, PA435.

ACTUATOR CONN: 1/4" NPT-F.

ELECTRIC ACT.: Consult catalogue IS EL20.00 E.

HOW TO SELECT: Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow of steam or water. Refer to valve calculation data sheet or consult the factory.

MAX. AIR SUPPLY: 3,5 bar.

AMBIENT TEMP.: -20 ºC to 70 ºC

BONNET: Standard – up to 220 ºC;
Extended finned – above 220 ºC.

STEM SEALING: PTFE/GR V-Rings – up to 220 ºC.
Graphite – up to 300 ºC.

PLUG DESIGN: PT – On-off.

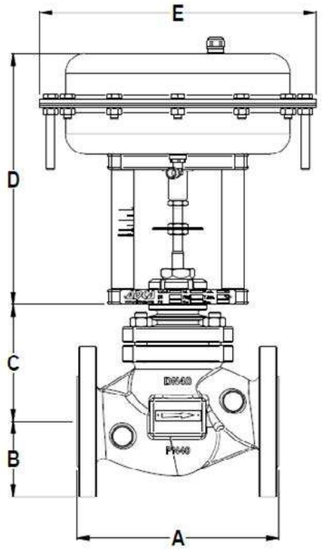
PORT: Full port.

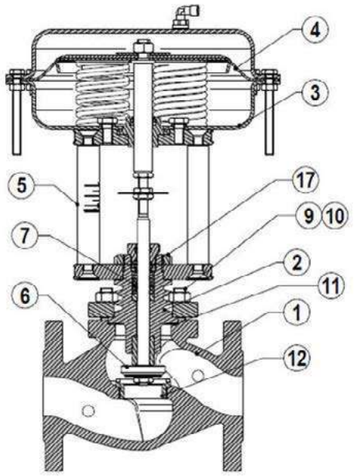
CE MARKING – GROUP 2 (PED – European Directive)	
PN16	**Category**
DN 15 to DN 50	SEP
DN 65 to DN 100	1 (CE Marked)

BODY LIMITING CONDITIONS			
PV25G-OF		**PV25I-OF**	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	-10 ºC / 120 ºC	16 bar	-10 ºC / 100 ºC
15,5 bar	150 ºC	14,5 bar	150 ºC
14,7 bar	200 ºC	13,4 bar	200 ºC
13,9 bar	250 ºC	12,7 bar	250 ºC
12,8 bar	300 ºC	11,8 bar	300 ºC

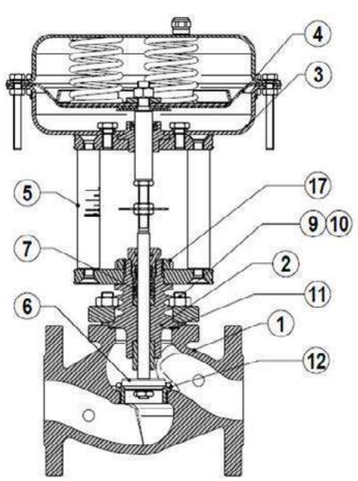
Note: Maximum temperatures limited to the valve packing selected. Valves with soft seal, maximum allow. temp: 200 ºC.

We reserve the right to change the design and material of this product without notice.





PV25 DA – Direct action



PV25 RA – Reverse action

DIMENSIONS – VALVE BODY

SIZE DN	A (mm)	B (mm)	C (mm) BONNET	
			STAND.	FINNED
15	130	48	85	150
20	150	53	85	150
25	160	58	90	170
32	180	70	110	190
40	200	75	115	195
50	230	83	125	215
65	290	93	175	275
80	310	100	175	275
100	350	118	190	310

DIMENSIONS – PNEUMATIC ACTUATOR

TYPE	E (mm)	D (mm)	WEIGHT (kg)
PA205	210	235	6
PA280	275	245	10
PA340	335	265	15
PA435	430	295	25

MATERIALS

POS. Nº	DESIGNATION	MATERIAL PV25G-OF	MATERIAL PV25I-OF
1	Valve body	GJS-400-15 / 0.7040	CF8M / 1.4408
2	Bonnet	CF8M / 1.4408	CF8M / 1.4408
3	Actuator (Steel)	S235JR / 1.0038	S235JR / 1.0038
	Actuator (Stainl. st.)	AISI 304 / 1.4301	AISI 304 / 1.4301
4	*Diaphragm	NBR 70	NBR 70
5	Yoke (Steel)	C45E / 1.1191	C45E / 1.1191
	Yoke (Stainl. St.)	AISI 304 / 1.4301	AISI 304 / 1.4301
6	*Valve plug (soft)	PTFE/GR; St. steel	PTFE/GR; St. steel
6	*Valve plug (metal)	AISI 316 / 1.4401	AISI 316 / 1.4401
7	*Standard packing	PTFE/GR	PTFE/GR
9	Studs	34CrNiMo6 / 1.6582	A4-70
10	Nuts	Steel 8.8	A4-70
11	Gasket	Stainless steel / Graphite	Stainless steel / Graphite
12	Seat	AISI 316 / 1.4401	AISI 316 / 1.4401
17	Lock nut	Stainless steel	Stainless steel

* Available spare parts.

FLOW RATE COEFFICIENTS

	SIZES								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
Kvs	3,8	5,1	9,4	15,4	22,2	40,1	63,4	89,7	136,7

Kvs in m^3/h. See IS PV10.00 E – Technical information; For conversion Kvs = Cv (US) x 0,855.

VALVE STROKE (mm)

	SIZES								
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
STROKE	5	5	7	8	10	13	17	20	25

We reserve the right to change the design and material of this product without notice.

LRQA CERTIFIED ISO 9001

MAX. PERM. PRESSURE DROP (bar) – Normally closed valve (fluid to open)
Reverse action actuator (air signal to open)

ACTUATOR	CONTROL SIGNAL	SIZES								
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
PA205	0 ÷ 2,4 bar	12	12	9	6,5	4	–	–	–	–
PA280A	0 ÷ 2,4 bar	25	25	25	16	12	6,5	–	–	–
PA280B	0 ÷ 2,4 bar	–	–	–	–	–	–	5,7	4	2
PA340A	0 ÷ 2,4 bar	–	–	–	25	20	18	–	–	–
PA340B	0 ÷ 2,4 bar	–	–	–	–	–	–	6,2	5	3

For valve sizes DN 125 and above, consult factory.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits

MAX. PERM. PRESSURE DROP (bar) – Normally closed valve (fluid to close)
Reverse action actuator (air signal to open)

ACTUATOR	CONTROL SIGNAL	SIZES								
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
PA205	0 ÷ 1 bar	25	25	25	25	25	15	–	–	–
PA280B	0 ÷ 1 bar	–	–	–	–	–	–	21	14	7
PA340B	0 ÷ 1 bar	–	–	–	–	–	–	25	19	12

Remarks: Not recommended for water and other liquids if fluid direction is over the plug (fluid to close).
Pressure drop values refer to closed valves.

MAX. PERM. PRESSURE DROP (bar) – Normally open valve (fluid to open)
Direct action actuator (air signal to close)

ACTUATOR	CONTROL SIGNAL	SIZES								
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
PA205	0 ÷ 1 bar	25	25	25	25	17	14,5	–	–	–
PA280A	0 ÷ 1 bar	–	–	–	–	25	24	–	–	–
PA280B	0 ÷ 1 bar	–	–	–	–	–	–	13	7,5	4
PA340B	0 ÷ 1 bar	–	–	–	–	–	–	25	16	10

For valve sizes DN125 and above, consult factory.
The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:
Actuator signal 0,2 to 1 bar: air supply at 3,5 bar.
Special spring drops available on request.
The pressure drop values must be used within the body rating limits.
For electric actuator selection see catalogue IS EL.20.00 E or consult factory.

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS PV25OF.70 E 03.17

ORDERING CODES V25 – ON-OFF									
VALVE CODES	**P**	**V**	**.25G**	**1**	**9**	**L**	**50**	**.X.**	
Actuator type (1)									
Pneumatic actuator	**P**								
Electric actuator	**E**								
Group designation									
Globe valve, two-way, straight body		**V**							
Valve model									
GJS-400-15 body, stainless steel trim			**.25G**						
CF8M body, stainless steel trim			**.25I**						
Stem sealing									
PTFE/GR V-Rings / Standard bonnet				**1**					
Virgin PTFE V-Rings / Standard bonnet				**2**					
Graphite / Standard bonnet				**3**					
Graphite / Finned bonnet				**4**					
Valve plug									
PT (on-off) – Soft (PTFE/GR)					**9**				
PT (on-off) – Metal AISI 316 / 1.4401					**10**				
Pipe connection									
Flanged EN 1092 PN16						**L**			
Size									
DN 15							**15**		
DN 20							**20**		
...									
Actuator								**(1)**	
Extras									
Full description or additional codes have to be added in case of non-standard combination									**E**

ACTUATOR CODES (pneumatic) *	P.	5	R		15
Group designation					
Multi-spring, pneumatic linear actuator	**P.**				
Actuator size					
205		**1**			
280		**3**			
340A – From DN 15 to DN 50		**5**			
340B – From DN 65 to DN 100		**6**			
Actuator type					
Direct action (air to close)			**D**		
Reverse action (air to open)			**R**		
Actuator Construction					
Steel construction (painted) – standard				**(2)**	
Stainless steel construction				**I**	
Control signal					
0 – 1 bar (0/15 psi)					**15**
0 – 2,4 bar (0/35 psi)					**35**

⟶ To be introduced on ".X.", if supplied in combination with the valve.

Example:

V25G valve model, PT (on-off) soft plug, PTFE/GR stem sealing, DN 50, complete with reverse action actuator signal 0 – 1 bar, size 340A steel:

Code: PV.25G.19L50.5R15

REMARKS:
(1) – Indicate actuator type.
(2) – Omitted if the standard valve is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke. When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).

* For electric actuators ordering codes, please consult our technical department

We reserve the right to change the design and material of this product without notice.

PNEUMATIC ON/OFF GLOBE VALVES
PPV15
(EN)

DESCRIPTION

The ADCATrol PPV15 is a series of single seated, two-way pneumatic on/off globe valves with piston actuator. These valves are suitable for use with the most common process fluids such as steam, water, superheated water, air, neutral gases and oils.

MAIN FEATURES

Easy to service.
Compact and cost-effective.
Class VI shut-off with PTFE/GR soft sealing up to 200 ºC.
Robust and compact piston actuator with 360º rotation.
Ambient temperature from -10 ºC to 80 ºC.

OPTIONS AND ACCESSORIES: M26 x 1,5 threaded connection on actuator. Solenoid valves and limit switches.

USE: Saturated steam. Hot and superheated water. Air, gases and others.

AVAILABLE MODELS: PPV15G – SG iron. PPV15S – carbon steel. PPV15i – stainless steel.

SIZES: DN 15 to DN 50.

CONNECTIONS: PPV15G – Flanged EN 1092-2 PN 16. PPV15S and PPV15i – Flanged EN 1092-1 PN 16 or PN 40.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
–	DN 40 to 50	1 (CE marked)

BODY LIMITING CONDITIONS

PPV15G **		PPV15S *				PPV15i *			
FLANGED PN 16		FLANGED PN 16		FLANGED PN 40		FLANGED PN 16		FLANGED PN 40	
ALLOW. PRESSURE	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**	**ALLOW. PRESSURE**	**RELATED TEMP.**
16 bar	-10 ºC/50 ºC	16 bar	-10 ºC/50 ºC	40 bar	-10 ºC/50 ºC	16 bar	-10 ºC/50 ºC	40 bar	-10 ºC/50 ºC
14,7 bar	200 ºC	13,3 bar	200 ºC	33,3 bar	200 ºC	13,4 bar	200 ºC	33,7 bar	200 ºC
13,9 bar	250 ºC	12,1 bar	250 ºC	27,6 bar	300 ºC	12,7 bar	250 ºC	29,7 bar	300 ºC
12,8 bar	300 ºC	11 bar	300 ºC	25,7 bar	350 ºC	11,8 bar	300 ºC	28,5 bar	350 ºC
11,2 bar	350 ºC	10,2 bar	350 ºC	23,8 bar	400 ºC	11,4 bar	350 ºC	27,4 bar	400 ºC

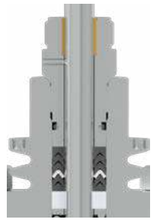
* Rating according to EN 1092-1:2018; ** Rating according to EN 1092-2:2007.

We reserve the right to change the design and material of this product without notice.

LRQA CERTIFIED ISO 9001

STEM SEALING

PTFE/GR V-RINGS (V1.2)



-10 ºC to 220 ºC

PLUG DESIGN

PARABOLIC (SOFT SEALING)

Sealing: PTFE/GR
Characteristic: Quick-opening (On/Off)
Flow direction: From below
Leakage: Class VI, acc. to IEC 60534-4
Max. temp.: 200 ºC

FLOW RATE COEFFICIENTS (m³/h)

	SIZES					
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
Kvs	5,1	6,3	10	16	25	40
SEAT Ø (mm)	19,2	19,2	25	32	38	48
STROKE (mm)	5	8	8	10	10	12,5

For conversion Kvs = Cv (US) x 0,865.

PPV15 – PPI SERIES ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

VALVE SIZE	ACTUATOR MODEL	MAX. PERMISSIBLE PRESSURE DROP (bar)									AIR SUPPLY PRESSURE (bar)			
		AIR TO OPEN (stem extends by spring force)	AIR TO CLOSE (stem retracts by spring force)								AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force)	
			AIR SUPPLY PRESSURE (bar)											
			1	2	3	4	5	6	7	8	MIN.	MAX.	MIN.	MAX.
DN 15	PPI63 (30cm²)	22	2,5	9,7	17	24,2	31,5	38,7	46	53,2	5	8	1	8
DN 20	PPI63 (30cm²)	22	2,5	9,7	17	24,2	31,5	38,7	46	53,2	5			
DN 25	PPI63 (30cm²)	12	1,4	5,6	9,9	14,2	18,5	22,8	27	31,3	5			
	PPI90 (60cm²)	28	3,1	11,6	20,2	28,8	37,3	45,9	54,4	63	5,5			
DN 32	PPI63 (30cm²)	8	0,8	3,4	6	8,6	11,2	13,8	16,4	19,1	5			
	PPI90 (60cm²)	21	1,8	7	12,3	17,5	22,7	27,9	33,2	38,4	5,5			
DN 40	PPI90 (60cm²)	15	1,3	5	8,7	12,4	16,1	19,8	23,5	27,2	5,5			
DN 50	PPI90 (60cm²)	9	0,8	3,1	5,4	7,7	10	12,4	14,7	17	6			

ACCESSORIES

SOLENOID VALVE	INDUCTIVE LIMIT SWITCH	LIMIT SWITCH BOX

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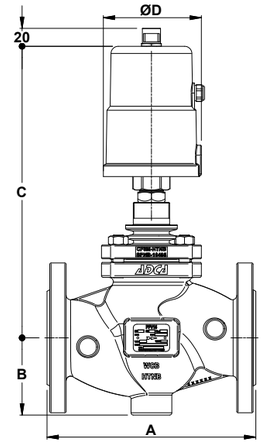
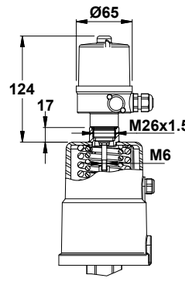
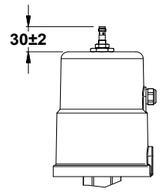




Limit switch box

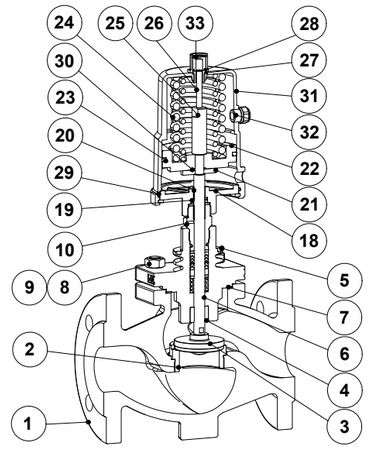


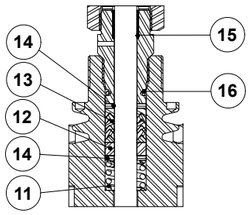
Inductive limit switch

DIMENSIONS (mm)

SIZE	A	B	PPI63			PPI90		
			C	ØD	WEIGHT (kg)	C	ØD	WEIGHT (kg)
DN 15	130	52	246	75	6,4	–	–	–
DN 20	150	53	246	75	7,2	–	–	–
DN 25	160	58	251	75	7,6	306	106	9,6
DN 32	180	70	251	75	10,5	304	106	12,7
DN 40	200	75	–	–	–	309	106	15,3
DN 50	230	85	–	–	–	321	106	18,9

MATERIALS





PTFE/GR V-Rings (V1.2)

VALSTEAM ADCA

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IS PPV15E.015 E 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body (PPV15G)	GJS-400-15 / 0.7040
	Valve body (PPV15S)	A216 WCB / 1.0619
	Valve body (PPV15i)	A351 CF8M / 1.4408
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404; Graphite filled PTFE
4	Stem guide	Bronze CB1
5	Bonnet (PPV15G and PPV15S)	A351 CF8M / 1.4408; A216 WCB / 1.0619
	Bonnet (PPV15i)	A351 CF8M / 1.4408
6	* Stem	AISI 316L / 1.4404
7	* Gasket	Stainless steel / Graphite
8	Nuts (PPV15G and PPV15S)	EN 10269 steel
	Nuts (PPV15i)	Stainless steel A2-70
9	Studs (PPV15G and PPV15S)	EN 10269 steel
	Studs (PPV15i)	Stainless steel A2-70
10	* Packing nut	AISI 303 / 1.4305
11	Spring	AISI 302 / 1.4310
12	* Stem guide	Stainless steel filled PTFE
13	* Chevron packing set	PTFE; Graphite filled PTFE
14	Washer	AISI 304 / 1.4301
15	* Plain bearing	Bronze / PTFE
16	* O-ring	EPDM
18	Actuator body	A351 CF8M / 1.4408
19	* O-ring	NBR
20	* Plain bearing	Bronze / PTFE
21	Plate	AISI 304 / 1.4301
22	Piston	Alluminium
23	* O-ring	NBR
24	Spring	AISI 302 / 1.4310
25	Rod	Alluminium
26	Indicator rod	Plastic
27	* O-ring	NBR
28	* O-ring	NBR
29	* O-ring	NBR
30	* O-ring	NBR
31	Actuator cover	A351 CF8 / 1.4308
32	Silencer	Brass; Plastic
33	Visual position indicator	A351 CF8 / 1.4308; Acrylic

* Available spare parts.

ORDERING CODES PPV15														
Valve model	**PPV**	**1**	**G**	**U**	**1**	**3**	**06**	**I**	**R**	**X**	**L**	**15**		
Pneumatic on/off globe valve, two-way, straight body	**PPV**													
Valve series														
Series 1		**1**												
Body material														
GJS-400-15 / 0.7040 SG iron			**G**											
A216 WCB / 1.0619 carbon steel			**S**											
A351 CF8M / 1.4408 stainless steel			**I**											
Flow direction														
Flow under the plug				**U**										
Stem sealing														
PTFE/GR V-Rings (V1.2)					**1**									
Valve sealing														
Soft sealed with PTFE/GR (class VI)						**3**								
Actuator model														
PPI63 (30 cm²)							**06**							
PPI90 (60 cm²)							**09**							
Actuator construction														
Stainless steel construction								**I**						
Actuator direction of action														
Air to open (stem extends by spring force)									**R**					
Air to close (stem retracts by spring force)									**D**					
Options														
None										**X**				
M26 x 1,5 threaded connection on actuator **a)**										**T**				
Pipe connection														
Flanged EN 1092-1/-2 PN 16											**L**			
Flanged EN 1092-1 PN 40											**N**			
Size														
DN 15												**15**		
DN 20												**20**		
...														
Special valves / Extras														
Full description or additional codes have to be added in case of a non-standard combination														**E**

a) Required for the assembly of top mounted limit switch box.

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IS PPV15E.015 E 01.21

PNEUMATIC CONTROL VALVES
PNEUMATIC ANGLE TYPE INTERCEPTION VALVE
PAV21

DESCRIPTION

The PAV series angle seat interception valves are designed for use with steam, gases and other fluids used in the process industry. They are the efficient solution to fluid interception in applications where flexibility and affordable cost are required.

MAIN FEATURES

Stainless steel body with high coefficient of flow.
Resistance to corrosion.
Low air consumption.
Nylon rotational servo control.
Self-centering plug with soft sealing.
Live loading packing gland.

OPTIONS AND ACCESSORIES: Pilot solenoid valves.
Inductive travel switch.

USE: Saturated steam, water and other fluids compatible with the construction.

AVAILABLE MODELS: PAV21 – pneumatic angle valve.

SIZES: 1/2” to 2”.

CONNECTIONS: Female threaded ISO 7 Rp.

AVAILABLE ACTUATORS: PPI-63 (stainless steel).
PPI-90 (stainless steel).

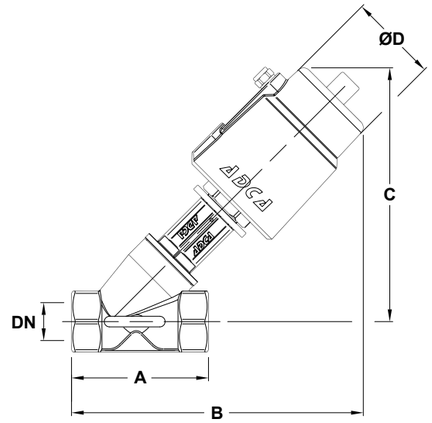
ACTUATORS CONNECTIONS: PPI-63: 1/8” NPT.
PPI-90: 1/4” NPT.

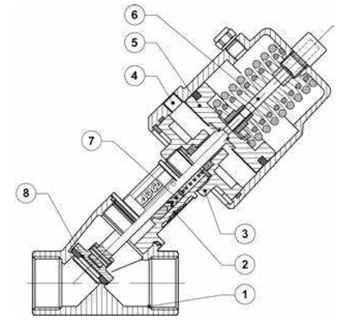
AIR SUPPLY PRESURE: 5 to 8 bar.

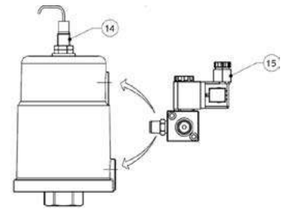
AMBIENT TEMP.: -10 ºC to 80 ºC.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2” to 2”	SEP

LIMITING CONDITIONS	
Valve model	**PAV21**
Body design conditions	PN 16
Max. working temperature	200 ºC
Min. working temperature	- 10 ºC







DIMENSIONS (mm)								
SIZE	**A**	**B**	**W/ PPI-63**			**W/ PPI-90**		
			C	**ØD**	**WGT. (kg)**	**C**	**ØD**	**WGT. (kg)**
1/2”	68	174	155	75	1,35	155	110	2,4
3/4”	75	182	158	75	1,45	158	110	2,5
1”	90	190	166	75	1,65	166	110	2,7
11/4”	116	261	227	75	2,3	227	110	3,3
11/2”	116	265	229	75	2,55	229	110	3,5
2”	138	282	238	75	3,6	238	110	4,7

TRAVEL SWITCH

The travel switch provides an electrical signal that indicates either the open or closed position of the valve. This signal is given by a non-contact electronic inductive proximity sensor.

FLOW RATE COEFFICIENTS						
SIZE	**1/2”**	**3/4”**	**1”**	**11/4”**	**11/2”**	**2”**
Kvs	4,8	9,5	18	23,2	32,7	52,6

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body	A351 CF8M / 1.4408
2	Bonnet	A351 CF8 / 1.4308
3	Actuator flange	A351 CF8 / 1.4308
4	Actuator cover	A351 CF8 / 1.4308
5	Piston	Aluminium
6	Indication stem	Plastic
7	* Packing	PTFE/GR
8	* Valve plug	AISI 316 / 1.4401; PTFE/GR
14	** Travel switch	Metal
15	** SV32C solenoid valve	Aluminium alloy

* Available spare parts.
** Optional.

MAX. PERM. PRESSURE DROP (bar) – N.C. (fluid to open) – Reverse action actuator (air signal to open)							
ACTUATOR	**AIR SUPPLY**	**VALVE SIZE**					
		1/2"	**3/4"**	**1”**	**11/4”**	**11/2”**	**2”**
PPI-63	**5 – 8 bar**	16	16	14	-	-	-
PPI-90	**5 – 8 bar**	-	-	-	16	16	10

Remark: waterhammer free design.

MAX. PERM. PRESSURE DROP (bar) – N.C. (fluid to close) – Reverse action actuator (air signal to open)							
ACTUATOR	**AIR SUPPLY**	**VALVE SIZE**					
		1/2"	**3/4"**	**1”**	**11/4”**	**11/2”**	**2”**
PPI-63	**5 – 8 bar**	16	16	16	-	-	-
PPI-63	**6 – 8 bar**	16	16	16	-	-	-
PPI-63	**7 – 8 bar**	16	16	16	-	-	-
PPI-90	**5 – 8 bar**	-	-	-	16	-	-
PPI-90	**6 – 8 bar**	-	-	-	16	16	-
PPI-90	**7 – 8 bar**	-	-	-	16	16	16

Remark: not recommended when controlling liquids at high speed due to waterhammer occurrence

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IS PAV21.01 E 10.09

ORDERING CODES PAV21								
VALVE CODES	**PAV**	**.21**	**1**	**A**	**15**	**A**	**.X.**	
Group designation								
Pneumatic on/off angle valve	**PAV**							
Valve model								
Two way straight design, stainless steel construction		**.21**						
Valve plug								
PT (on/off) – Soft (PTFE/GR)			**1**					
Pipe connection								
Female threaded ISO 7/1 Rp				**A**				
Size								
1/2”					**15**			
3/4”					**20**			
...								
Fluid direction								
Fluid enters above the seat						**A**		
Fluid enters below the seat						**B**		
Actuator							**(1)**	
Extras								
Full description or additional codes have to be added in case of non-standard combination.								**E**

ACTUATOR CODES (PNEUMATIC)				
VALVE CODES	**PI.**	**.63**	**.D**	
Group designation				
Piston linear actuator	**PI.**			
Actuator type				
PPI-63		**.63**		
PPI-90		**.90**		
Actuator type				
Direct action (air to close)			**.D**	
Reverse action (air to open)			**.R**	
Actuator Construction				
Stainless steel construction				**(2)**

⟶ To be introduced on “.X.”, if supplied in combination with the valve.

Example:

PAV valve, on/off soft plug, 1/2”, fluid entering above the seat, complete with reverse action stainless steel actuator:

Code: PAV.211A15A.90.R

REMARKS:
(1) – Indicate actuator.
(2) – Omitted if the standard valve is selected.

ADCATrol control valves are identified by a serial number on a nameplate, located on the actuator yoke.
When ordering spares, always use that serial number. If the valve has non-standard extras the serial number has also an E (extras).

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TDS BLOWDOWN CONTROL VALVES
VPC26

DESCRIPTION

When a steam boiler is in operation there is continuous evaporation of boiler water which causes an undesirable increase in TDS (Total Dissolved Solids) concentration. A typical problem that results from this is water foaming, which leads to reduced boiler performance and wet steam. Furthermore, dissolved and suspended solids will carry over into the steam lines, contaminating valves, tubes, heat exchangers and steam traps, leading to corrosion, scaling and erosion. For these reasons, a certain amount of boiler water must be discharged continuously or periodically to ensure TDS concentration is kept within the recommended parameters.
The ADCATrol VPC26 is a control valve specially designed for this purpose and features a multi-stage trim to progressively reduce the energy of the fluid. This makes it ideal for discharge of boiler blowdown at high differential pressures where flashing is a concern.
The valve is suitable for both continuous and on/off TDS control via a PA series reverse action pneumatic actuator or AV series fail-safe spring return actuator.

MAIN FEATURES

Minimized vibrations due to continuous stem guiding.
Seat and plug sealing surfaces are protected fom erosion at low stroke positions.
Compact and modular design.
Multi stage trim for controlled velocity and pressure drop.
Hardened stainless steel trim with stellite faced plug and seat.
Tool-free quick exchangeable clamped-in seats, allowing fast and easy inline maintenance procedures.

OPTIONS AND ACCESSORIES: Sample valve bottom connection.
NV400B sample valve.
Blowdown controllers.
TDS probes.

USE: TDS blowdown control in steam boilers and other applications with high pressure drops and low flow rates where cavitation and flashing phenomenon are likely to occur.

AVAILABLE MODELS: VPC26S – carbon steel.
VPC26i – stainless steel.

SIZES: 1/2" to 11/2"; DN 15 to DN 40.

CONNECTIONS: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 300.

AVAILABLE ACTUATORS: PA10 linear pneumatic actuator.
AVF234S linear electric actuator.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2" to 1" – DN 15 to 25	SEP
11/2" – DN 40	1 (CE marked)

We reserve the right to change the design and material of this product without notice.

BODY LIMITING CONDITIONS					
VPC26S				VPC26i	
FLANGED PN 40 *		FLANGED CLASS 300 **		FLANGED PN 40 *	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
40 bar	-10 / 50 ºC	50 bar	-10 / 50 ºC	40 bar	-10 ºC / 50 ºC
33,3 bar	200 ºC	43,9 bar	200 ºC	33,7 bar	200 ºC
27,6 bar	300 ºC	36,9 bar	350 ºC	29,7 bar	300 ºC
25,7 bar	350 ºC	34,6 bar	400 ºC	28,5 bar	350 ºC
23,8 bar	400 ºC	–	–	27,4 bar	400 ºC

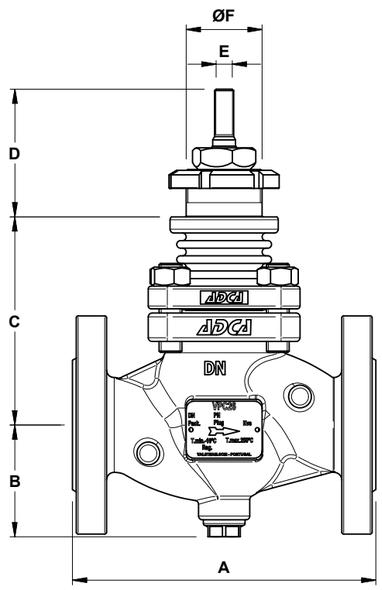
* Rating according to EN 1092-1:2018; ** Rating according to EN 1759-1:2004.

STEM SEALING
PTFE/GR V-RINGS (V1.2)
-10 ºC to 250 ºC

FLOW RATE COEFFICIENTS (m^3/h)				
SIZE	1/2" – DN 15	3/4" – DN 20	1" – DN 25	11/2" – DN 40
Kvs	1,2	1,2	1,2	1,8
STROKE	6			8

For conversion Kvs = Cv (US) x 0,865.

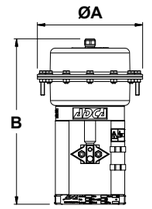
DIMENSIONS



DIMENSIONS (mm)					
DIMENSION		SIZE			
		1/2" – DN 15	3/4" – DN 20	1" – DN 25	11/2" – DN 40
A	EN	130	150	160	200
	ASME	190 *	194 *	197	235
B		61	61	61	70
C		104	104	109	193
D		70	70	70	70
E		M10 x 1			
ØF		M40 x 1,5			
G **		3/8"			

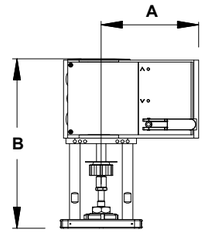
* With welded-on flanges.
** As standard, in versions with EN flanges, this connection is female threaded ISO 228. In versions with ASME flanges, this connection is female threaded NPT.

WEIGHTS (kg)				
	SIZE			
	1/2" – DN 15	3/4" – DN 20	1" – DN 25	11/2" – DN 40
EN	5,3	6,1	6,9	12,6
ASME	5,3	6,2	7,4	13,8



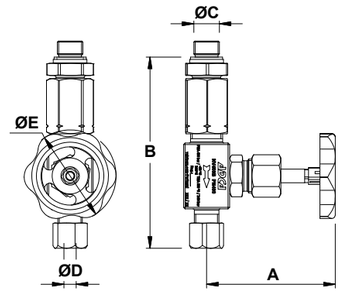
DIMENSIONS – PA SERIES PNEUMATIC ACTUATORS (mm)	
DIMENSION	PA10
ØA	170
B	251
WEIGHT (kg)	6,3

For more information, please consult IS 3.05 – PA Linear pneumatic actuators.



DIMENSIONS – AV SERIES ELECTRIC ACTUATORS (mm)	
DIMENSION	AVF234S
A	166
B	289
WEIGHT (kg)	4,1

For more information, please consult IS 3.74 – AVM234S-AVF234S Linear electric actuators.



DIMENSIONS – NV400B SAMPLE VALVE (mm)	
DIMENSION	NV400B
A	90 (maximum)
B	125
ØC	3/8"
ØD	8
ØE	60
WEIGHT (kg)	0,63

For more information, please consult IS 4.90 – NV400 Needle valves.

VALSTEAM ADCA
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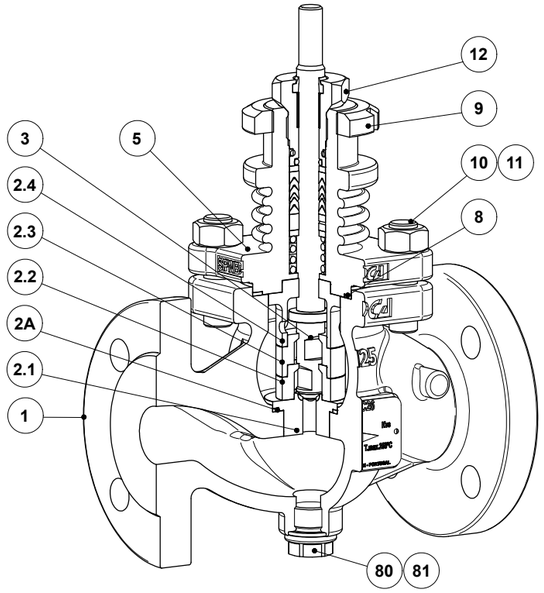
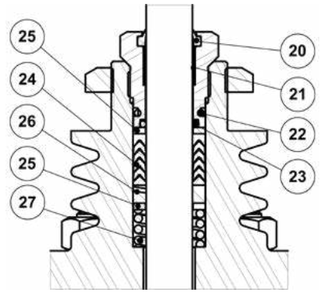
IS VPC26.01 E 03.20





PTFE/GR V-Rings (V1.2)

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body (VPC26S)	A216 WCB / 1.0619
	Valve body (VPC26i)	A351 CF8M / 1.4408
2A	* Seat gasket	Stainless steel / Graphite
2.1	* Seat	AISI 316L / 1.4404 stellite faced
2.2	Lower guide sleeve	Hardened stainless steel
2.3	Intermediate guide sleeve	Hardened stainless steel
2.4	Upper guide sleeve	Hardened stainless steel
3	* Valve plug	AISI 316L / 1.4404 stellite faced
5	Bonnet	A351 CF8 / 1.4308
8	* Gasket	Stainless steel / Graphite
9	Actuator lock nut	A351 CF8 / 1.4308
10	Nuts (VPC26S)	EN 10269 steel
	Nuts (VPC26i)	Stainless steel A2-70
11	Studs (VPC26S)	EN 10269 steel
	Studs (VPC26i)	Stainless steel A2-70
12	Packing nut	AISI 303 / 1.4305
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE; Graphite filled PTFE
25	Washer	AISI 304 / 1.4301
26	Stem guide	Stainless steel filled PTFE
27	Spring	AISI 302 / 1.4300
80	* Gasket	Copper
81	Plug	AISI 316 / 1.4401

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ORDERING CODES VPC26 a)									
Valve model	**VPC26**	**1**	**S**	**XX**	**1**	**A3**	**N**	**15**	
TDS blowdown control valve, two way, straight body	**VPC26**								
Valve series									
Series 1		**1**							
Body material									
A216 WCB / 1.0619 carbon steel			**S**						
A351 CF8M / 1.4408 stainless steel			**I**						
Versions									
Valve without sample valve bottom connection				**XX**					
Valve with sample valve bottom connection and plug				**BX**					
Stem sealing									
PTFE/GR V-Rings (V1.2)					**1**				
Flow rate coefficient									
Kvs 1,2 (available only for 1/2" to 1" and DN 15 to DN 25)						**A3**			
Kvs 1,8 (available only for 11/2" and DN 40)						**A4**			
Pipe connection									
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 300 **b)**							**V**		
Size									
1/2" or DN 15								**15**	
3/4" or DN 20								**20**	
1" or DN 25								**25**	
11/2" or DN 40								**40**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

a) Codification for valve only. For actuator codes, refer to the appropriate information sheet.
b) Not available with A351 CF8M / 1.4408 stainless steel body (VPC26i).

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INTERMITTENT BLOWDOWN VALVES
VPA26/2

DESCRIPTION

The VPA26/2 series of blowdown valves are specially designed for application on steam boilers, to remove sludge sediments which naturally settle on the bottom of the boiler. These intermittent valves operate manually or automatically with timed control.
Available with diaphragm actuator and/or manual operation lever.

MAIN FEATURES

High quality hardened valve seat and plug.
Manual or automatic intermittent timed control.
Lockable in open position if supplied with manual operation lever.
Practical foot operated lever.
Maintenance free stem sealing.
Tool-free quick exchangeable clamped-in seats, allowing fast and easy inline maintenance procedures.

OPTIONS AND ACCESSORIES: Air filter regulator.
Solenoid valve with timer control unit.
Blowdown controllers.
Mechanical limit switches.
Inductive limit switch box.
Water actuated version.

USE: Intermittent blowdown of steam boilers.

AVAILABLE MODELS: VPA26/2S – carbon steel.
VPA26/2i – stainless steel.

SIZES: 3/4" to 2" – DN 20 to DN 50.

CONNECTIONS: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 300.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
3/4" to 1" – DN 20 to 32	SEP
11/2" to 2" – DN 40 to 50	1 (CE Marked)

BODY LIMITING CONDITIONS					
VPA26/2S				**VPA26/2i**	
FLANGED PN 40 *		**FLANGED CLASS 300 ****		**FLANGED PN 40 ***	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
40 bar	-10 ºC/50 ºC	50 bar	-10/50 ºC	40 bar	-10 ºC/50 ºC
33,3 bar	200 ºC	43,9 bar	200 ºC	33,7 bar	200 ºC
30,4 bar	250 ºC	36,9 bar	350 ºC	31,8 bar	250 ºC
27,6 bar	300 ºC	34,6 bar	400 ºC	29,7 bar	300 ºC
23,8 bar	400 ºC	–	–	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018; ** Rating according to EN 1759-1:2004.

STEM SEALING
PTFE/GR V-RINGS (V1.2)

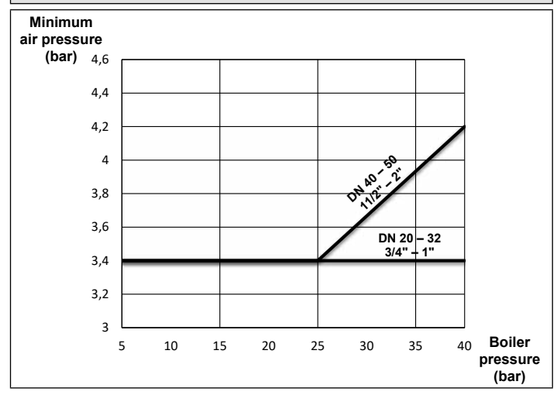
-10 ºC to 250 ºC

ACTUATOR DATA	
DIAPHRAGM AREA	100 cm²
SPRING RANGE	2 to 3,2 bar
STROKE	12 mm
AMBIENT TEMPERATURE	-20 ºC to 80 ºC

FLOW RATE COEFFICIENTS (m³/h)					
	SIZES				
	3/4" – DN 20	**1" – DN 25**	**DN 32**	**11/2" – DN 40**	**2" – DN 50**
Kvs	6,3	6,3	6,3	16	16

For conversion Kvs = Cv (US) x 0,865.

PERMISSIBLE DIFFERENTIAL PRESSURES (bar)



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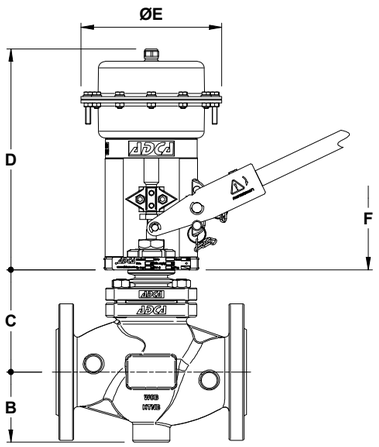

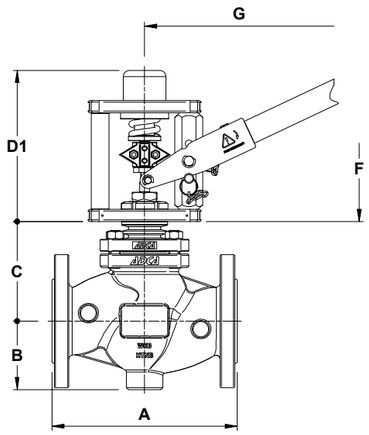

DIMENSIONS (mm)

DIMENSION		SIZE				
		3/4" – DN 20	1" – DN 25	DN 32	11/2" – DN 40	2" – DN 50
A	EN	150	160	180	200	230
	ASME	194 **a)**	197	–	235	267
B		53	53	58	70	75
C		104,5	104,5	109,5	109,5	113
D		267				
D1		188				
ØE		170				
HAND LEVER	F	216			297	
	G	415			655	
FOOT LEVER	F	211				
	G	417				

a) With welded-on flanges.

WEIGHTS (kg)

	SIZE				
	3/4" – DN 20	1" – DN 25	DN 32	11/2" – DN 40	2" – DN 50
EN a)	12,5	13,4	16,1	19	22,7
EN b)	11,5	12,4	15,5	20,5	24,3
ASME a)	12,5	14,2	–	20,4	23,9
ASME b)	11,6	12,9	–	21,8	25,5

a) Valve with pneumatic actuator only; **b)** Valve with hand lever only.

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OPTIONS AND ACCESSORIES

VALVE WITH PNEUMATIC ACTUATOR ONLY

VALVE WITH PNEUMATIC ACTUATOR AND MANUAL OPERATION LEVER

VALVE WITH MANUAL OPERATION LEVER ONLY

SOLENOID VALVE AND AIR FILTER REGULATOR

INDUCTIVE LIMIT SWITCH BOX

MECHANICAL LIMIT SWITCHES

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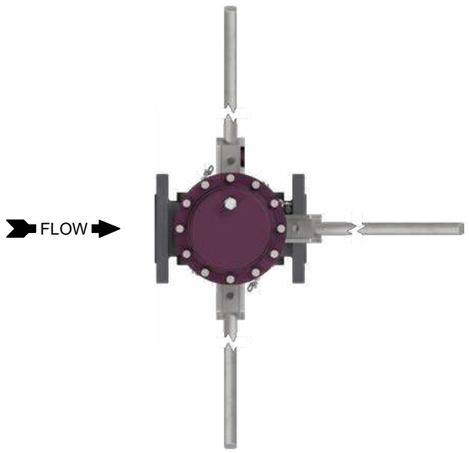
MANUAL OPERATION LEVER VERSIONS

HAND LEVER	FOOT LEVER

LEVER ORIENTATION

2 (left)

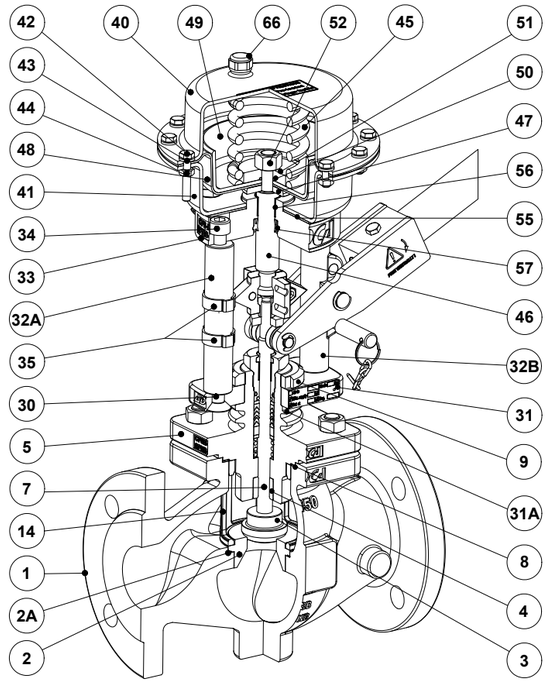


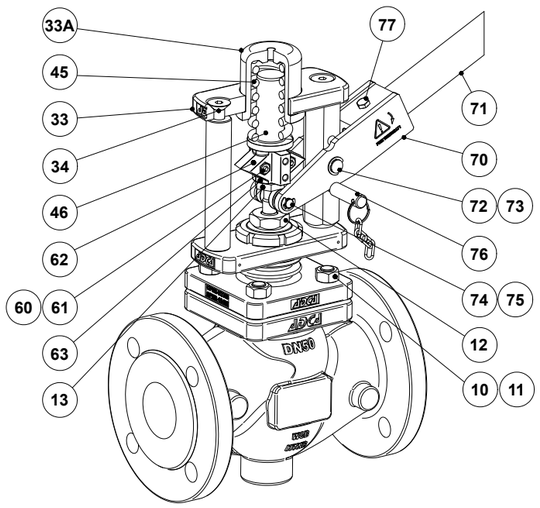
1 (standard)

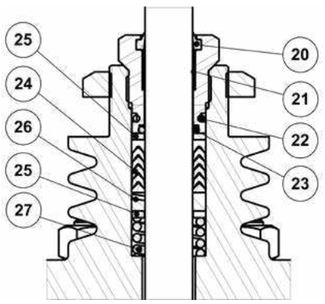
3 (right)

The manual operation lever can be supplied with different orientations to better suit the valve's installation position. Orientations not shown in the image above are available under request.

MATERIALS







PTFE/GR V-Rings (V1.2)

VALSTEAM ADCA
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MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Valve body (VPA26/2S)	A216 WCB / 1.0619
	Valve body (VPA26/2i)	A351 CF8M / 1.4408
2	* Seat	Hardened stainless steel
2A	* Seat gasket	Stainless steel / Graphite
3	* Valve plug	Hardened stainless steel
4	Lower stem guide	Bronze CB1
5	Bonnet	A351 CF8M / 1.4408
7	* Stem	AISI 316L / 1.4404
8	* Gasket	Stainless steel / Graphite
9	Actuator lock nut	A351 CF8 / 1.4308
10	Nuts (VPA26/2S)	EN 10269 steel
	Nuts (VPA26/2i)	Stainless steel A2-70
11	Studs (VPA26/2S)	EN 10269 steel
	Studs (VPA26/2i)	Stainless steel A2-70
12	Packing nut	AISI 303 / 1.4305
13	Lock nut	AISI 304 / 1.4301
14	Seat retainer	A351 CF8M / 1.4408
20	* Scraper ring	Viton; NBR
21	* Plain bearing	Bronze / PTFE
22	* O-ring	EPDM
23	* O-ring	Viton
24	* Chevron packing set	PTFE; Graphite filled PTFE
25	Washer	AISI 304 / 1.4301
26	Stem guide	Stainless steel filled PTFE
27	Spring	AISI 302 / 1.4300
30	Bolts (steel)	Zinc plated steel
	Bolts (stainless steel)	Stainless steel A2-70
31	Lower actuator flange	A351 CF8 / 1.4308
31A	Cylindrical pin	AISI 303 / 1.4305
32A	Yoke column (steel)	C45E / 1.1191
	Yoke column (stainless steel)	AISI 303 / 1.4305
32B	Yoke lever column (steel)	C45E / 1.1191
	Yoke lever column (stainless steel)	A351 CF8 / 1.4308
33	Upper actuator flange	A351 CF8 / 1.4308
33A	Upper spring carrier	C45E / 1.1191
34	Bolts	Zinc plated steel
35	Crimp clamps	Zinc plated steel
40	Upper actuator cover	DD13 / 1.0335
41	Lower actuator cover	DD13 / 1.0335
42	Bolts (steel)	Zinc plated steel
	Bolts (stainless steel)	Stainless steel A2-70
43	Washers (steel)	Zinc plated steel
	Washers (stainless steel)	AISI 304 / 1.4301
44	Nuts (steel)	Zinc plated steel
	Nuts (stainless steel)	Stainless steel A2-70
45	Spring	Spring steel
46	Actuator stem	AISI 316 / 1.4401

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MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
47	Lower diaphragm disc	C45E / 1.1191
48	Diaphragm	Reinforced NBR
49	Diaphragm plate	DD13 / 1.0335
50	* O-ring	NBR
51	Spring guide	AISI 304 / 1.4301
52	Nut	Zinc plated steel
53	Bolts	Zinc plated steel
54	Washers	Zinc plated steel
55	* Gasket	NBR
56	* Plain bearing	Steel / PTFE
57	* Seal ring	Polyurethane
60	Bolts (steel)	Zinc plated steel
	Bolts (stainless steel)	Stainless steel A2-70
61	Nuts (steel)	Zinc plated steel
	Nuts (stainless steel)	Stainless steel A2-70
62	Coupling / travel indicator	A351 CF8 / 1.4308
63	Adapter	AISI 304 / 1.4301
65	Fitting	Zinc plated steel; plastic
66	Vent plug	Brass; plastic
70	Lever	AISI 316 / 1.4401
71	Hand lever handle	AISI 304 / 1.4301
	Foot lever handle	S235JR / 1.0038
72	Lever axis shaft	AISI 304 / 1.4301
73	Elastic ring	AISI 304 / 1.4301
74	Roller	AISI 304 / 1.4301
75	Elastic ring	AISI 304 / 1.4301
76	Lever locking pin	AISI 304 / 1.4301
77	Lever fixing bolt	Stainless steel A2-70

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ORDERING CODES VPA26/2											
Valve model	**VP26**	**2**	**S**	**AX**	**0**	**SX**	**1**	**FE**	**N**	**20**	
Intermittent bottom blowdown valve, two way, straight body	**VP26**										
Valve series											
Series 2		**2**									
Body material											
A216 WCB / 1.0619 carbon steel			**S**								
A351 CF8M / 1.4408 stainless steel			**I**								
Versions											
Valve with actuator only				**AX**							
Valve with actuator and hand lever				**AH**							
Valve with actuator and foot lever				**AF**							
Valve with hand lever only				**XH**							
Valve with foot lever only				**XF**							
Lever orientation											
Without lever					**0**						
Standard position					**1**						
Lever rotated 90º to the left (relative to the flow direction)					**2**						
Lever rotated 90º to the right (relative to the flow direction)					**3**						
Actuator											
Steel construction						**SX**					
Stainless steel construction						**IX**					
Steel construction – water actuated						**SW**					
Stainless steel construction – water actuated						**IW**					
Without actuator						**XX**					
Stem sealing											
PTFE/GR V-rings (V1.2)							**1**				
Flow rate coefficient											
Kvs 6,3 (available only for 3/4" to 1" and DN 20 to DN 32)								**FE**			
Kvs 16 (available only for 11/2" to 2" and DN 40 to DN 50)								**FG**			
Pipe connection											
Flanged EN 1092-1 PN 40									**N**		
Flanged ASME B16.5 Class 300 **a)**									**V**		
Size											
3/4" or DN 20										**20**	
1" or DN 25										**25**	
DN 32										**32**	
11/2" or DN 40										**40**	
2" or DN 50										**50**	
Special valves / Extras											
Full description or additional codes have to be added in case of a non-standard combination											**E**

a) Not available with A351 CF8M / 1.4408 stainless steel body (VPA26/2i).

LINEAR PNEUMATIC ACTUATORS
PA
(100 cm² to 2400 cm²)

DESCRIPTION

PA series pneumatic multi-spring actuators with rolling diaphragm, offering decreased hysterisis and good linearity throughout the operating range. Available in air to close and air to open versions, for modulating and on/off services.

MAIN FEATURES

Multi-spring compact design.
Actuators with rolling diaphragm.
High spring thrusts and stroking speeds.
Strokes up to 60 mm.
Sizes from 100 cm² to 2400 cm².
Yoke and stem coupling with mounting according to NAMUR (DIN IEC 60534-6-1).
Operation temperature range from -20 ºC to 80 ºC.

OPTIONS AND ACCESSORIES: Top mounted handwheel.
Stroke limiter.
Stainless steel construction.
Positioners, limit switches, I/P converters, volume boosters, feedback units and others.

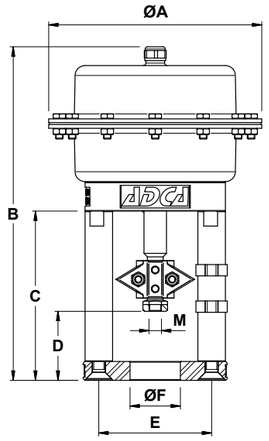
USE: Actuation of ADCATrol control valves, or others on request.

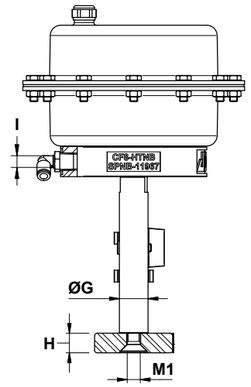
AVAILABLE MODELS: PA10, PA25, PA40, PA80, PA80D and PA80T – mild steel.
PA10i, PA25i and PA40i – stainless steel.

SPRING RANGES AND ACTUATOR THRUSTS

ACTUATOR MODEL	DIAPHRAGM AREA (cm²)	RATED STROKE (mm)	SPRING RANGE (bar)	SPRING QTY.	SPRING FORCE AT 0 mm TRAVEL (N)	SPRING FORCE AT RATED TRAVEL (N)	ACTUATOR FORCE (N) IN RELATION TO MOTIVE AIR PRESSURE (bar)							MAX. AIR SUPPLY (bar)
							1,4	2	3	3,5	4	5	6	
PA10	100	20	0,2 - 1 **a)**	1	200	1000	400	1000	2000	2500	3000	4000	5000	6
			1 - 2	1	1000	2000	-	-	1000	1500	2000	3000	4000	
			2 - 4	1	2000	4000	-	-	-	-	-	1000	2000	
PA25	250	20	0,2 - 1 **a)**	4	500	2500	1000	2500	5000	6250	7500	10000	12500	
			0,4 - 2 **a)**	8	1000	5000	-	-	2500	3750	5000	7500	10000	
			1 - 2	4	2500	5000	-	-	2500	3750	5000	7500	10000	
			1,5 - 3	6	3750	7500	-	-	-	1250	2500	5000	7500	
			2 - 4	8	5000	10000	-	-	-	-	-	2500	5000	
PA40	400	30	0,2 - 1 **a)**	4	800	4000	1600	4000	8000	10000	12000	16000	20000	
			0,4 - 2 **a)**	8	1600	8000	-	-	4000	6000	8000	12000	16000	
			1 - 2	4	4000	8000	-	-	4000	6000	8000	12000	16000	
			1,5 - 3	6	6000	12000	-	-	-	2000	4000	8000	12000	
			2 - 4	8	8000	16000	-	-	-	-	-	4000	8000	
PA80	800	30 60	0,2 - 1 **a)**	4	1600	8000	3200	8000	16000	20000	24000	32000	40000	
			0,4 - 2 **a)**	8	3200	16000	-	-	8000	12000	16000	24000	32000	
			1 - 2	4	8000	16000	-	-	8000	12000	16000	24000	32000	
			1,5 - 3	6	12000	24000	-	-	-	4000	8000	16000	24000	
			2 - 4	8	16000	32000	-	-	-	-	-	8000	16000	
PA80D	1600	60	0,2 - 1 **a)**	8	3200	16000	6400	16000	32000	40000	48000	64000	80000	
			0,4 - 2 **a)**	16	6400	32000	-	-	16000	24000	32000	48000	64000	
			1 - 2	8	16000	32000	-	-	16000	24000	32000	48000	64000	
			1,5 - 3	12	24000	48000	-	-	-	8000	16000	32000	48000	
			2 - 4	16	32000	64000	-	-	-	-	-	16000	32000	
PA80T b)	2400	60	0,2 - 1 **a)**	12	4800	24000	9600	24000	48000	60000	72000	96000	120000	
			0,4 - 2 **a)**	24	9600	48000	-	-	24000	36000	48000	72000	96000	
			1 - 2	12	24000	48000	-	-	24000	36000	48000	72000	96000	
			1,5 - 3	18	36000	72000	-	-	-	12000	24000	48000	72000	
			2 - 4	24	48000	96000	-	-	-	-	-	24000	48000	

a) Actuator with 25% additional possible spring compression, allowing setting of 0,4 - 1,2 bar (0,2 - 1 bar) and 0,8 - 2,4 (0,4 - 2 bar) operating ranges.

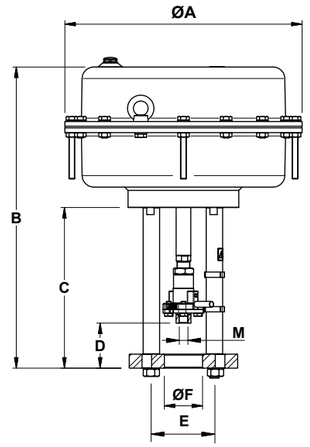


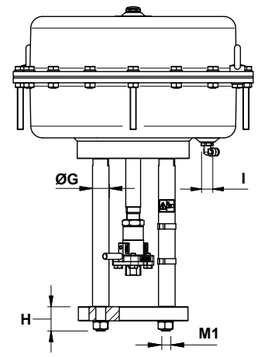


DIMENSIONS (mm)

MODEL	ØA	B	C	D	E	ØF	ØG	H	I	M *	M1	WEIGHT (kg)
PA10	170	251	135	55	90	40,5	22	15	G1/4"	M10 x 1	M10	6,3
PA25	250	260	135	55	90	40,5	22	15	G1/4"	M10 x 1	M10	10,1
PA40	300	325 / 360	160 / 195	68	100 / 110	40,5 / 45	22	15	G1/4"	M10 x 1 / M16 x 1,5	M10	18,7 / 19,2

* Depending on valve stem thread. Can be course or fine thread. Other dimensions on request.
Remarks: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.
Mild steel and stainless steel construction share the same dimensions.

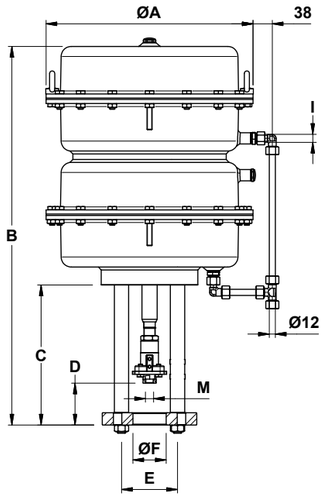


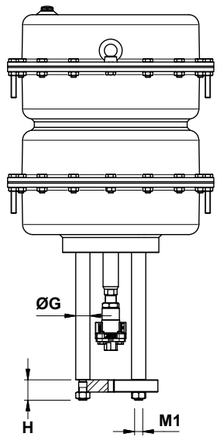


DIMENSIONS (mm)

MODEL	ØA	B	C	D	E	ØF	ØG	H	I	M *	M1	WEIGHT (kg)
PA80	405	505 / 515 / 545	265 / 274 / 304	70 / 87 / 113	110 / Ø155	45 / 65 / 80	22 / 28	30 / 40	G 3/8"	M16 x 1,5 / M27 x 1,5	M16	50,4 / 55,4 / 59,3

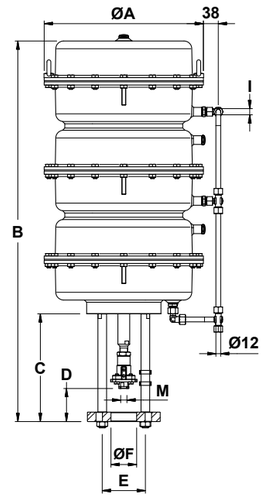
* Depending on valve stem thread. Can be course or fine thread. Other dimensions on request.
Remarks: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.

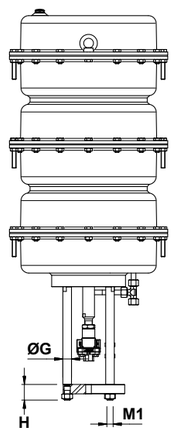




DIMENSIONS (mm)												
MODEL	**ØA**	**B**	**C**	**D**	**ØE**	**ØF**	**ØG**	**H**	**I**	**M ***	**M1**	**WEIGHT (kg)**
PA80D	405	741 / 771	274 / 304	87 / 113	155	65 / 80	28	40	G 3/8"	M16 x 1,5 / M27 x 1,5	M16	107,7 / 111,6

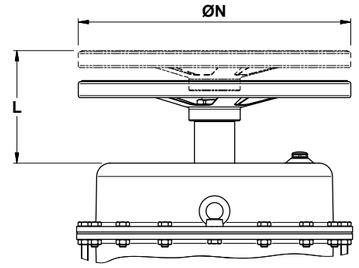
* Depending on valve stem thread. Can be course or fine thread. Other dimensions on request.
Remarks: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.



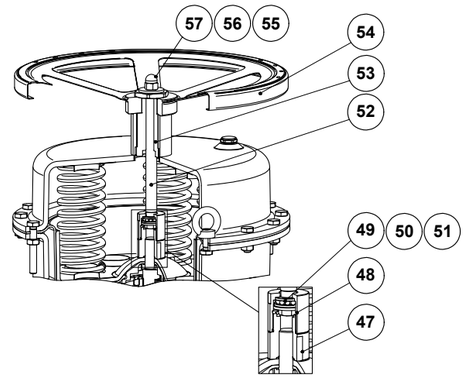


DIMENSIONS (mm)												
MODEL	**ØA**	**B**	**C**	**D**	**ØE**	**ØF**	**ØG**	**H**	**I**	**M ***	**M1**	**WEIGHT (kg)**
PA80T	405	967 / 997	274 / 304	87 / 113	155	65 / 80	28	40	G 3/8"	M16 x 1,5 / M27 x 1,5	M16	162 / 166

* Depending on valve stem thread. Can be course or fine thread. Other dimensions on request.
Remarks: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.

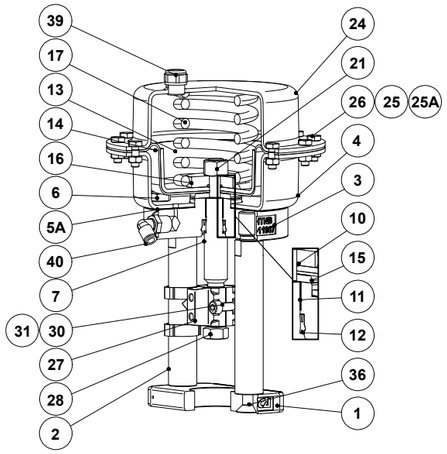


DIMENSIONS – ACTUATOR WITH TOP MOUNTED HANDWHEEL (mm)		
MODEL	**ØN**	**L**
PA10	250	106
PA25	250	106
PA40	300	111
PA80	400	156
PA80D / PA80T	Consult manufacturer	

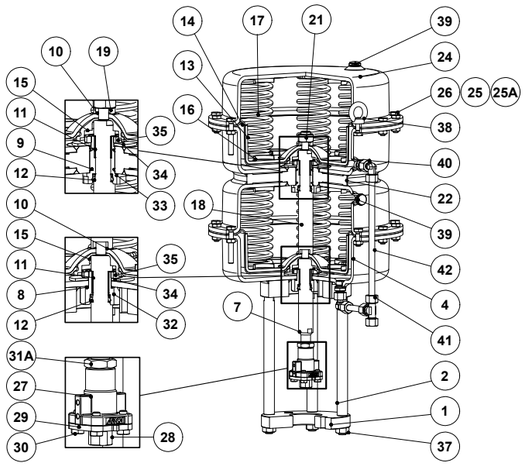


MATERIALS – ACTUATOR WITH TOP MOUNTED HANDWHEEL		
POS. Nº	**DESIGNATION**	**MATERIAL**
47	Nut	AISI 316 / 1.4401
48	Nut	AISI 316 / 1.4401
49	Plain bearing	Steel / PTFE
50	Washer	Zinc plated steel
51	Bolt	AISI 304 / 1.4301
52	Stem	AISI 316 / 1.4401
53	Spindle	AISI 304 / 1.4301
54	Handwheel	Steel
55	Washer	Zinc plated steel
56	Locknut	C45E / 1.1191
57	Nut	AISI 304 / 1.4301

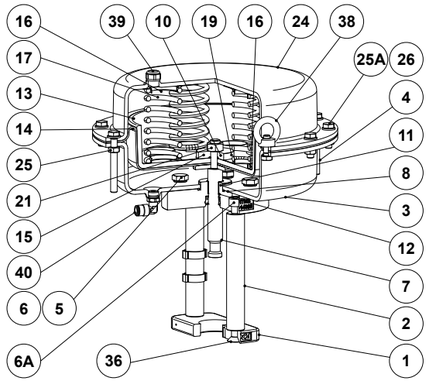
MATERIALS



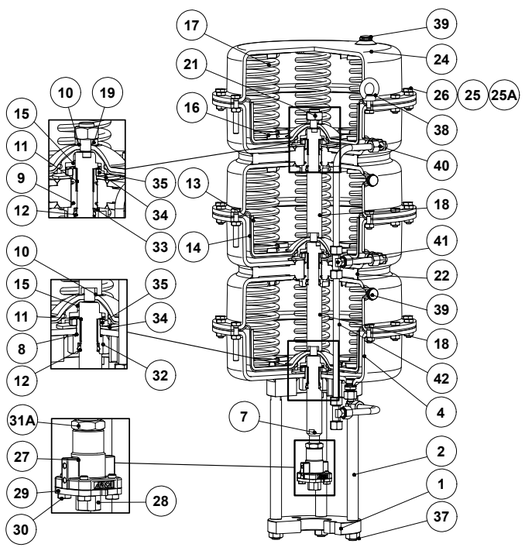
PA10



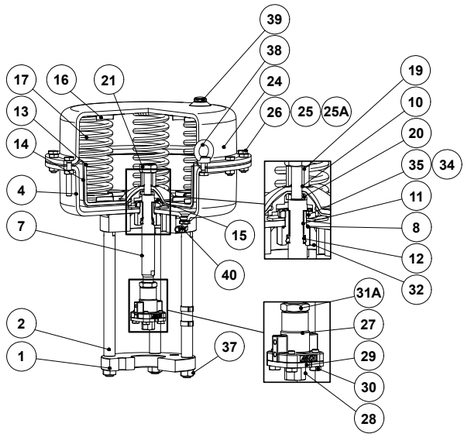
PA80D



PA25 and PA40



PA80T



PA80

MATERIALS			
POS. Nº	**DESIGNATION**	**PA10, PA25 and PA40**	**PA10i, PA25i and PA40i**
1	Lower actuator flange	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2	Yoke columns	C45E / 1.1191	AISI 304 / 1.4301
3	Upper actuator flange	A351 CF8 / 1.4308	A351 CF8 / 1.4308
4	Lower actuator cover	DD13 / 1.0335	AISI 304 / 1.4301
5	Washers	Zinc plated steel	Zinc plated steel
5A	Gasket	NBR	NBR
6	Bolts	Zinc plated steel	Stainless steel A2-70
6A	Bolts	–	–
7	Actuator stem	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* O-ring	NBR	NBR
10	* O-ring	NBR	NBR
11	* Plain bearing	Steel / PTFE	Steel / PTFE
12	* Seal ring	Polyurethane	Polyurethane
13	Diaphragm plate	DD13 / 1.0335	DD13 / 1.0335
14	* Diaphragm	Reinforced NBR	Reinforced NBR
15	Diaphragm disk	C45E / 1.1191	C45E / 1.1191
16	Spring guide	AISI 304 / 1.4301	AISI 304 / 1.4301
17	* Springs	Spring steel	Spring steel
19	Spacer	AISI 316 / 1.4401	AISI 312 / 1.4401
21	Nut	Zinc plated steel	Zinc plated steel
24	Upper actuator cover	DD13 / 1.0335	AISI 304 / 1.4301
25	Nuts	Zinc plated steel	Stainless steel A2-70
25A	Washers	Zinc plated steel	Stainless steel A2-70
26	Bolts	Zinc plated steel	Stainless steel A2-70
27	Coupling / Travel indicator	A351 CF8 / 1.4308	A351 CF8 / 1.4308
28	Adaptor	AISI 304 / 1.4301	AISI 304 / 1.4301
30	Bolts	Zinc plated steel	Stainless steel A2-70
31	Nuts	Zinc plated steel	Stainless steel A2-70
36	Bolts	Zinc plated steel	Stainless steel A2-70
38	Eyebolts	Zinc plated steel	AISI 304 / 1.4301
39	Vent plug	Brass; Plastic	Brass; Plastic
40	Fitting	Zinc plated steel; Plastic	Zinc plated steel; Plastic

* Available spare parts.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PA10.008 E 02.21

MATERIALS				
POS. Nº	**DESIGNATION**	**PA80**	**PA80D**	**PA80T**
1	Lower actuator flange	S235JR / 1.0038	S235JR / 1.0038	S235JR / 1.0038
2	Yoke columns	C45E / 1.1191	C45E / 1.1191	C45E / 1.1191
4	Lower actuator cover	DD13 / 1.0335	DD13 / 1.0335	DD13 / 1.0335
7	Actuator stem	AISI 316 / 1.4401	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* O-ring	NBR	NBR	NBR
9	* O-ring	–	NBR	NBR
10	* O-ring	NBR	NBR	NBR
11	* Plain bearing	Steel / PTFE	Steel / PTFE	Steel / PTFE
12	* Seal ring	Polyurethane	Polyurethane	Polyurethane
13	Diaphragm plate	DD13 / 1.0335	DD13 / 1.0335	DD13 / 1.0335
14	* Diaphragm	Reinforced NBR	Reinforced NBR	Reinforced NBR
15	Diaphragm disk	S355JR / 1.0045	S355JR / 1.0045	S355JR / 1.0045
16	Spring guide	DC01 / 1.0330	DC01 / 1.0330	DC01 / 1.0330
17	* Springs	Spring steel	Spring steel	Spring steel
18	Intermediate actuator stem	–	AISI 316 / 1.4401	AISI 316 / 1.4401
19	Spacer	AISI 316 / 1.4401	AISI 316 / 1.4401	AISI 316 / 1.4401
20	Spacer	AISI 316 / 1.4401	–	–
21	Nut	Zinc plated steel	Zinc plated steel	Zinc plated steel
22	Intermediate cover	–	DD13 / 1.0335	DD13 / 1.0335
24	Upper actuator cover	DD13 / 1.0335	DD13 / 1.0335	DD13 / 1.0335
25	Nuts	Zinc plated steel	Zinc plated steel	Zinc plated steel
25A	Washers	Zinc plated steel	Zinc plated steel	Zinc plated steel
26	Bolts	Zinc plated steel	Zinc plated steel	Zinc plated steel
27	Coupling / Travel indicator	A351 CF8 / 1.4308	A351 CF8 / 1.4308	A351 CF8 / 1.4308
28	Adaptor	AISI 304 / 1.4301	AISI 304 / 1.4301	AISI 304 / 1.4301
29	Coupling flange	AISI 304 / 1.4301	AISI 304 / 1.4301	AISI 304 / 1.4301
30	Bolts	Zinc plated steel	Zinc plated steel	Zinc plated steel
31A	Nut	Zinc plated steel	Zinc plated steel	Zinc plated steel
32	* Stem guide	AISI 316L / 1.4404	AISI 316L / 1.4404	AISI 316L / 1.4404
33	Intermediate stem guide	–	AISI 316L / 1.4404	AISI 316L / 1.4404
34	* Belleville washer	Spring steel	Spring steel	Spring steel
35	Stem guide lock nut	C45E / 1.1191	C45E / 1.1191	C45E / 1.1191
37	Nuts	Zinc plated steel	Zinc plated steel	Zinc plated steel
38	Eyebolts	Zinc plated steel	Zinc plated steel	Zinc plated steel
39	Vent plug	Brass; Plastic	Brass; Plastic	Brass; Plastic
40	Fitting	Zinc plated steel	Zinc plated steel	Zinc plated steel
41	Compression fitting	–	Zinc plated steel	Zinc plated steel
42	Tube	–	AISI 304 / 1.4301	AISI 304 / 1.4301

* Available spare parts.

ACCESSORIES

AIR FILTER REGULATOR

SOLENOID VALVE

INDUCTIVE LIMIT SWITCH BOX

MECHANICAL LIMIT SWITCHES

POSITION FEEDBACK UNIT

I/P CONVERTER

POSITIONERS *

PNEUMATIC

ELECTROPNEUMATIC

INTELLIGENT ELECTROPNEUMATIC

* Different models are available within each category.

ORDERING CODES PA									
Group designation	**PA**	**010**	**S**	**R**	**2**	**A**	**XX**	**A1**	
PA series linear pneumatic actuators	**PA**								
Actuator model									
PA10 (100 cm²)		**010**							
PA25 (250 cm²)		**025**							
PA40 (400 cm²)		**040**							
PA80 (800 cm²)		**080**							
PA80D (1600 cm²)		**80D**							
PA80T (2400 cm²)		**80T**							
Actuator construction									
Mild steel construction (standard)			**S**						
Stainless steel construction			**I**						
Direction of action									
Air to open (stem extends by spring force)				**R**					
Air to close (stem retracts by spring force)				**D**					
Rated stroke									
20 mm					**2**				
30 mm					**3**				
60 mm					**6**				
Spring range a)									
0,2 – 1 bar						**A**			
0,4 – 2 bar						**B**			
1 – 2 bar						**D**			
1,5 – 3 bar						**G**			
2 – 4 bar						**I**			
Options									
None							**XX**		
Top mounted handwheel **b)**							**HX**		
Stroke limiter							**LX**		
Yoke design and coupling									
ADCATrol VPC26, V16/2 and V25/2 series (DN 15 to DN 50 – 1/2" to 2")								**A1**	
ADCAPure V926H, V926A (1/2" to 21/2") and V928 series (DN 15 to DN 50)								**A3**	
ADCATrol V16/2 series (DN 65 to DN 100 – 21/2" to 4")								**B1**	
ADCATrol V25/2 series (DN 65 to DN 100 – 21/2" to 4")								**B2**	
ADCAPure V926H (3" and 4") and V928 series (DN 65 to DN 100)								**B3**	
ADCATrol V25/2 series (DN 125 to DN 150 – 5" to 6")								**C2**	
ADCATrol V25/2 series (DN 200 – 8")								**D2**	
Other ADCATrol valves **c)**								**XX**	
Special versions / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

a) Not every spring range/stroke combination is available for each actuator model.
b) Not available in actuators with stainless steel construction (e.g. PA10i).
c) Exact model and size must be specified – consult the manufacturer.
How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.00 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.

LINEAR PNEUMATIC ACTUATORS PA206, PA281, PA341 and PA436 (140 cm² to 700 cm²)

DESCRIPTION

PA series pneumatic multi-spring actuators with rolling diaphragm, offering decreased hysterisis and good linearity throughout the operating range. Available in air to close and air to open versions, for modulating and on/off services.

MAIN FEATURES

Multi-spring compact design.
Actuators with rolling diaphragm.
High spring thrusts and stroking speeds.
Strokes up to 30 mm.
Sizes from 140 cm² to 700 cm².
Yoke and stem coupling with mounting according to NAMUR (DIN IEC 60534-6-1).
Operation temperature range from -20 ºC to 80 ºC.

OPTIONS AND ACCESSORIES: Top mounted handwheel.
Stroke limiter.
Stainless steel construction.
Positioners, limit switches, I/P converters, volume boosters, feedback units and others.

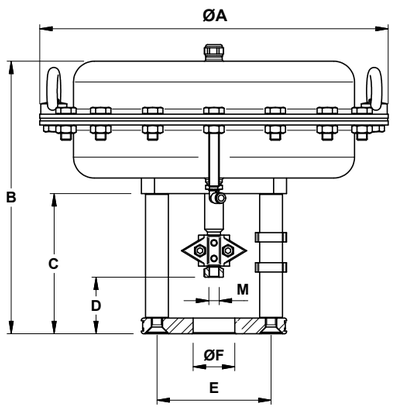
USE: Actuation of ADCATrol control valves, or others on request.

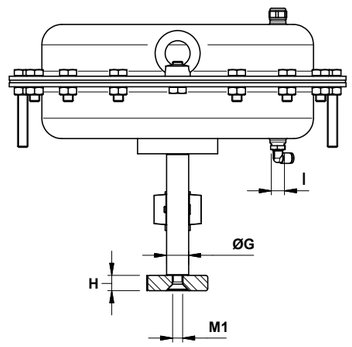
AVAILABLE MODELS: PA206, PA281, PA341 and PA436 – mild steel.
PA206i, PA281i, PA341i and PA436i – stainless steel.
For other models, please consult IS PV3.70 – PA linear pneumatic actuators.

SPRING RANGES AND ACTUATOR THRUSTS

ACTUATOR MODEL	DIAPHRAGM AREA (cm²)	RATED STROKE (mm)	SPRING RANGE (bar)	SPRING QTY.	SPRING FORCE AT 0 mm TRAVEL (N)	SPRING FORCE AT RATED TRAVEL (N)	ACTUATOR FORCE (N) IN RELATION TO MOTIVE AIR PRESSURE (bar)							MAX. AIR SUPPLY (bar)
							1,4	2	3	3,5	4	5	6	
PA206	140	20	0,2 - 1 **a)**	1	280	1000	560	1400	2800	3500	-	-	-	3,5
			1 - 3 **b)**	2	1400	4200	-	-	-	700	-	-	-	
PA281	300	20	0,2 - 1 **a)**	4	600	3000	1200	3000	6000	7500	-	-	-	
			0,4 - 2 **a)**	8	1200	6000	-	-	3000	4500	-	-	-	
			0,8 - 1,6	4	2400	4200	-	1200	4200	5700	-	-	-	
			1,2 - 2,4	6	3600	7200	-	-	1800	3300	-	-	-	
			1,6 - 3,2	8	4800	9600	-	-	-	900	-	-	-	
PA341	445	30	0,2 - 1 **a)**	4	890	4450	1780	4450	8900	11125	-	-	-	
			0,4 - 2 **a)**	8	1780	8900	-	-	4450	6675	-	-	-	
			0,6 - 1,4	4	2670	6230	-	2670	7120	9345	-	-	-	
			0,9 - 2,1	6	4005	9345	-	-	4005	6230	-	-	-	
			1,2 - 2,8	8	5340	12460	-	-	-	3115	-	-	-	
PA436	700	30	0,2 - 1 **a)**	4	1400	7000	2800	7000	14000	17500	-	-	-	
			0,4 - 2 **a)**	8	2800	14000	-	-	7000	10500	-	-	-	
			1 - 2	4	7000	14000	-	-	7000	10500	-	-	-	
			1,5 - 3	6	10500	21000	-	-	-	3500	-	-	-	
			2 - 4	8	14000	28000	-	-	-	-	-	7000	14000	6

a) Actuator with 25% additional possible spring compression, allowing setting of 0,4 - 1,2 bar (0,2 - 1 bar) and 0,8 - 2,4 (0,4 - 2 bar) operating ranges.
b) Not available in air to close, “stem retracts by spring force” version.





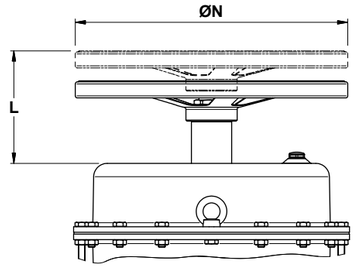
DIMENSIONS (mm)

MODEL	ØA	B	C	D	E	ØF	ØG	H	I	M *	M1	WEIGHT (kg)
PA206	209	236	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	6,5
PA281	275	243	135	55	110	40	22	15	G 1/4"	M10 x 1	M10	10
PA341	336	288 / 323	160 / 195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	16
PA436	430	316 / 351 336 / 371 **	160 / 195	68	110	45	22	15	G 1/4"	M10 x 1 / M16 x 1,5	M10	27 31 **

* Depending on valve stem thread. Can be course or fine thread. Other dimensions on request.
** Actuators with spring ranges 1 - 2 bar, 1,5 - 3 bar and 2 - 4 bar.
Remarks: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.
Mild steel and stainless steel construction share the same dimensions.

We reserve the right to change the design and material of this product without notice.

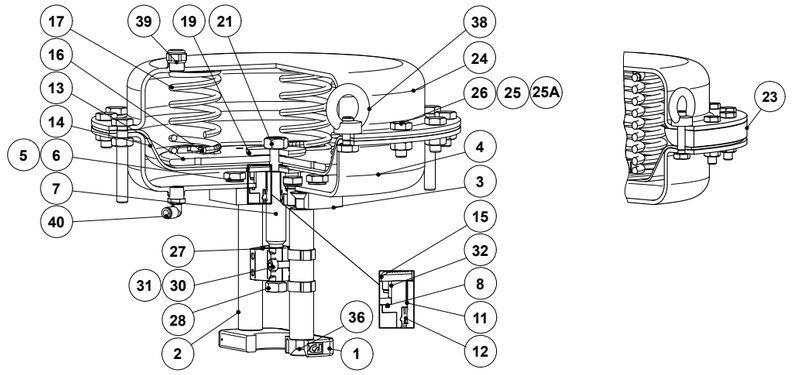
LRQA CERTIFIED ISO 9001

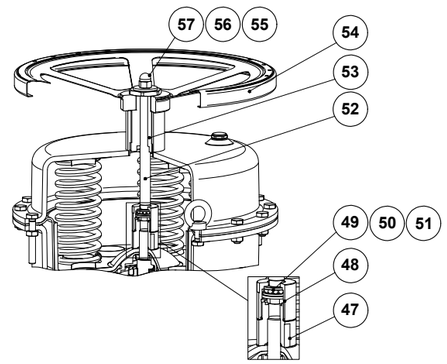


DIMENSIONS – ACTUATOR WITH TOP MOUNTED HANDWHEEL (mm)

MODEL	ØN	L
PA206	250	106
PA281	250	106
PA341	300	111
PA436	400	156

MATERIALS





We reserve the right to change the design and material of this product without notice.

MATERIALS			
POS. Nº	**DESIGNATION**	**PA206, PA281, PA341 and PA436**	**PA206i, PA281i, PA341i and PA436i**
1	Lower actuator flange	A351 CF8 / 1.4308	A351 CF8 / 1.4308
2	Yoke columns	C45E / 1.1191	AISI 304 / 1.4301
3	Upper actuator flange	C45E / 1.1191	A351 CF8 / 1.4308; AISI 304 / 1.4301
4	Lower actuator cover	DD12 / 1.0398	AISI 304 / 1.4301
5	Washers	Zinc plated steel	Zinc plated steel
6	Bolts	Zinc plated steel	Stainless steel A2-70
7	Actuator stem	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* O-ring	NBR	NBR
11	* Plain bearing	Steel / PTFE	Steel / PTFE
12	* Seal ring	Polyurethane	Polyurethane
13	Diaphragm plate	S235JR / 1.0038	S235JR / 1.0038
14	* Diaphragm	Reinforced NBR	Reinforced NBR
15	Diaphragm disk	C45E / 1.1191	C45E / 1.1191
16	Spring guide	C45E / 1.1191	C45E / 1.1191
17	* Springs	Spring steel	Spring steel
19	Spacer	C45E / 1.1191	C45E / 1.1191
21	Nut	Zinc plated steel	Zinc plated steel
23	Cover spacer	Aluminium	Aluminium
24	Upper actuator cover	DD12 / 1.0398	AISI 304 / 1.4301
25	Nuts	Zinc plated steel	Stainless steel A2-70
25A	Washers	Zinc plated steel	Stainless steel A2-70
26	Bolts	Zinc plated steel	Stainless steel A2-70
27	Coupling / Travel indicator	A351 CF8 / 1.4308	A351 CF8 / 1.4308
28	Adaptor	AISI 304 / 1.4301	AISI 304 / 1.4301
30	Bolts	Zinc plated steel	Stainless steel A2-70
31	Nuts	Zinc plated steel	Stainless steel A2-70
32	* Stem guide	AISI 304 / 1.4301	AISI 304 / 1.4301
36	Bolts	Zinc plated steel	Stainless steel A2-70
38	Eyebolts	Zinc plated steel	AISI 304 / 1.4301
39	Vent plug	Brass; Plastic	Brass; Plastic
40	Fitting	Zinc plated steel; Plastic	Zinc plated steel; Plastic
47	Nut	AISI 316 / 1.4401	AISI 316 / 1.4401
48	Nut	AISI 316 / 1.4401	AISI 316 / 1.4401
49	Plain bearing	Steel / PTFE	Steel / PTFE
50	Washer	Zinc plated steel	Zinc plated steel
51	Bolt	AISI 304 / 1.4301	AISI 304 / 1.4301
52	Stem	AISI 316 / 1.4401	AISI 316 / 1.4401
53	Spindle	AISI 304 / 1.4301	AISI 304 / 1.4301
54	Handwheel	Steel	Steel
55	Washer	Zinc plated steel	Zinc plated steel
56	Locknut	C45E / 1.1191	C45E / 1.1191
57	Nut	AISI 304 / 1.4301	AISI 304 / 1.4301

* Available spare parts.

ACCESSORIES

AIR FILTER REGULATOR

SOLENOID VALVE

INDUCTIVE LIMIT SWITCH BOX

MECHANICAL LIMIT SWITCHES

POSITION FEEDBACK UNIT

I/P CONVERTER

POSITIONERS *

PNEUMATIC

ELECTROPNEUMATIC

INTELLIGENT ELECTROPNEUMATIC

* Different models are available within each category.

ORDERING CODES PA									
Group designation	**PA**	**206**	**S**	**R**	**2**	**A**	**XX**	**A1**	
PA series linear pneumatic actuators	**PA**								
Actuator model									
PA206 (140 cm²)		**206**							
PA281 (300 cm²)		**281**							
PA341 (445 cm²)		**341**							
PA436 (700 cm²)		**436**							
Actuator construction									
Mild steel construction (standard)			**S**						
Stainless steel construction			**I**						
Direction of action									
Air to open (stem extends by spring force)				**R**					
Air to close (stem retracts by spring force)				**D**					
Rated stroke									
20 mm					**2**				
30 mm					**3**				
Spring range a)									
0,2 – 1 bar						**A**			
0,4 – 2 bar						**B**			
0,6 – 1,4 bar						**J**			
0,8 – 1,6 bar						**C**			
0,9 – 2,1 bar						**K**			
1 – 2 bar						**D**			
1 – 3 bar						**E**			
1,2 – 2,4 bar						**F**			
1,2 – 2,8 bar						**L**			
1,5 – 3 bar						**G**			
1,6 – 3,2 bar						**H**			
2 – 4 bar						**I**			
Options									
None							**XX**		
Top mounted handwheel **b)**							**HX**		
Stroke limiter							**LX**		
Yoke design and coupling									
ADCATrol VPC26, V16/2 and V25/2 series (DN 15 to DN 50 – 1/2" to 2")								**A1**	
ADCAPure V926H, V926A (1/2" to 21/2") and V928 series (DN 15 to DN 50)								**A3**	
ADCATrol V16/2 series (DN 65 to DN 100 – 21/2" to 4")								**B1**	
ADCATrol V25/2 series (DN 65 to DN 100 – 21/2" to 4")								**B2**	
ADCAPure V926H (3" and 4") and V928 series (DN 65 to DN 100)								**B3**	
Other ADCATrol valves **c)**								**XX**	
Special versions / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

a) Not every spring range/stroke combination is available for each actuator model.
b) Not available in actuators with stainless steel construction (e.g. PA206i).
c) Exact model and size must be specified – consult the manufacturer.
How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.00 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.

LINEAR ELECTRIC ACTUATORS EL (1,2 kN to 25 kN)

DESCRIPTION

The EL series linear electric actuators are designed for operation of control valves in modulating and on/off services in process engineering and industrial applications. The self-locking stem nut is driven by an electric motor via a gearing.
Load-dependent switches and/or mechanical limit switches define the stops for the end positions.

MAIN FEATURES

Modular retrofittable design.
24 V AC, 115 V AC, 230 V AC, 400 V AC 50/60 Hz and 24 V DC supply voltages.
Manual operation with disengagement of the actuator motor.
IP 65 (EL12 IP 43) protection.
Valve protection against excessive force due to load-dependent seating.
Mounting to valves made via yoke or mounting flange DIN 3358, enabling easy connection to all types of valves. Standard version is suitable for ADCATrol valves.
Defined closing force in the end positions leading to tight valve shut-off.
Stall proof synchronous motors (or brake motors for higher positioning forces) ensure highest positioning accuracy.
Mechanical stroke indication via anti-rotation bar.
Exact, backlash-free measurement of actual valve stroke by direct coupling to the valve stem.
Universally usable actuators due to control via 3-point-step controllers, analogue input signals (0 to 10 V, 0(4) to 20 mA), or fieldbus systems.
Limit switches are easily adjustable for stroke limitation or as signal for intermediate positions.

OPTIONS AND ACCESSORIES:
Electronic positioner.
Additional limit switches.
Potentiometers e.g. for 3-point-step control in closed loop.
0(4) to 20 mA electronic position feedback units.
Heating resistor.
Special coatings and finishes for aggressive environments.

USE: Actuation of ADCATrol control valves, or others on request.

AVAILABLE MODELS: EL12, EL20, EL45, EL80, EL120 and EL250.

TECHNICAL DATA

MODEL	EL12	EL20	EL45	EL45.1	EL45.2
Positioning force (kN)	1,2	2,0	4,5	4,5	4,5
Positioning speed (mm/min / mm/s) a)	8 / 0,14	15 / 0,25	17 / 0,28	25 / 0,4	50 / 0,8
Power consumption – 230 V (W)	4	6,6	28	28	32
Nominal current – 230 V (A)	0,017	0,029	0,135	0,135	0,160
Type of motor b)	Syn	Syn	Asyn	Asyn	Asyn
Motor protection c)	B				
Maximum stroke (mm)	35	50 (75 on request)			
Supply voltages d)	24 V / 115 V / 230 V / 400 V 50/60 Hz, 24 V DC				
Type of duty acc. to IEC 34-1	S1 – 100%		S4 – 30% c.d.f. 600 c/h		
Cable entry	3 x M16 x 1,5	2 x M16 x 1,5 and 1 dummy plug M16 x 1,5			
Electrical connection	Inside terminal board, terminal configuration according to electric connection wiring diagram				
Switch off in end position	2 load dependent switches, max. 250 V AC, rating for resistive load: max. 5 A, for inductive load: max. 3 A				
Mounting position	As desired, except downward position				
Ambient temperature	- 20 ºC to 60 ºC				
Lubricant for gearing	Klüber Mickrolube GL 261 grease				
Position indicator	By anti-rotation bar				
Manual adjustment	Crank handle	Side handwheel			
Enclosure protection acc. to EN 60529	IP 43	IP 65			
Trapezoidal thread	Tr 8 x 1,5	Tr 14 x 3			
Connection type	EN ISO 5210 F05				

MODEL	EL80	EL80.1	EL80.2	EL120	EL120.1	EL120.2
Positioning force (kN)	8,0			12		
Positioning speed (mm/min / mm/s) a)	13,5 / 0,2	25 / 0,4	50 / 0,8	13,5 / 0,2	25 / 0,4	50 / 0,8
Power consumption – 230 V (W)	25	34	152	25	34	152
Nominal current – 230 V (A)	0,11	0,15	0,78	0,11	0,15	0,78
Type of motor b)	Syn	Syn	Asyn	Syn	Syn	Asyn
Motor protection c)	B	B	T	B	B	T
Maximum stroke (mm)	80					
Supply voltages d)	24 V / 115 V / 230 V / 400 V 50/60 Hz, 24 V DC					
Type of duty acc. to IEC 34-1	S4 – 30% c.d.f. 600 c/h					
Cable entry	2 x M16 x 1,5 and 1 dummy plug M16 x 1,5					
Electrical connection	Inside terminal board, terminal configuration according to electric connection wiring diagram					
Switch off in end position	2 load dependent switches, max. 250 V AC, rating for resistive load: max. 5 A, for inductive load: max. 3 A					
Mounting position	As desired, except downward position					
Ambient temperature	- 20 ºC to 60 ºC					
Lubricant for gearing	Klüber Mickrolube GL 261 grease					
Position indicator	By anti-rotation bar					
Manual adjustment	Side handwheel					
Enclosure protection acc. to EN 60529	IP65					
Trapezoidal thread	Tr 20 x 3					
Connection type	DIN 3210 G0					

MODEL	EL 250.1	EL 250.2
Positioning force (kN)	25	
Positioning speed (mm/min / mm/s) a)	25 / 0,4	50 / 0,8
Power consumption – 230 V (W)	157	218
Nominal current – 230 V (A)	0,73	1,0
Type of motor b)	Asyn	
Motor protection c)	T	
Maximum stroke (mm)	100	
Supply voltages d)	24 V / 115 V / 230 V / 400 V 50/60 Hz, 24 V DC	
Type of duty acc. to IEC 34-1	S4 – 30% c.d.f. 600 c/h	
Cable entry	2 x M20 x 1,5 and 1 dummy plug M16 x 1,5	
Electrical connection	Inside terminal board, terminal configuration according to electric connection wiring diagram	
Switch off in end position	2 load dependent switches, max. 250 V AC, rating for resistive load: max. 5 A, for inductive load: max. 3 A	
Mounting position	As desired, except downward position	
Ambient temperature	- 20 ºC to 60 ºC	
Lubricant for gearing	Klüber Mickrolube GL 261 grease	
Position indicator	By anti-rotation bar	
Manual adjustment	Side handwheel	
Enclosure protection acc. to EN 60529	IP 65	
Trapezoidal thread	Tr 26 x 5	
Connection type	DIN 3210 G0	

a) At 60 Hz, the positioning speed and input power increase by 20%.
b) Syn – synchronous motor; Asyn – asynchronous motor.
c) B – stallproof motor; T – thermoswitch for temperature monitoring.
d) Other supply voltages on request.

OPTIONS AND ACCESSORIES

DESIGNATION	DESCRIPTION
FG	Switching and signaling unit (teletransmitter assembly). The FG unit is the base necessary for the assembly of all remaining options.
WE	Additional limit switches for signaling end positions or intermediate positions, freely adjustable, max. 250 V AC, rating for resistive load max. 5 A, for inductive load max. 3 A, max. 2 switches for EL20 and EL45, max. 4 switches for EL80 and EL120.
WE-G	Additional limit switches for signaling end positions or intermediate positions, freely adjustable, with gold-plated contacts for low voltage, max. 30 V AC, rating for resistive load max. 0,1 A, max. 2 switches for EL20 and EL45, max. 4 switches for EL80 and EL120.
POT	Potentiometer 100/130/200/500/1000/5000 Ohms or 10 kOhms Linearity error £ 0.5 %, max. 1.5 W, contact current 30 mA max. 2 pieces
ESR100	Electronic position feedback 2/3-wire unit. Remark: Includes POT 5000 Ohms. Inductive travel measuring, output 0(4) to 20 mA. Connection 24 V DC (not possible for EL12).
PEL100	Electronic positioner for actuator control. Remark: Includes FG teletransmitter assembly and POT 1000 Ohms. Input 0 to 10 V, 0(4) to 20, output 0 to 10 V, 0(4) to 20 mA. Supply voltage 24, 115, 230 V 50/60 Hz.
PEL200	Intelligent electronic positioner for actuator control. Remark: Includes FG teletransmitter assembly and POT 1000 Ohms. Input 0 to 10 V, 0(4) to 20 mA, output 0 to 10 V, 0(4) to 20 mA. Supply voltage 24, 115, 230 V 50/60 Hz.
HZ/WP	Heating resistor with thermoswitch against moisture with automatic temperature regulation, max. 15 Watts Supply voltage 24, 115, 230 V 50/60 Hz
STALA / FLA	Yoke for adaptation to valves. Refer to dimension sheet.
ZFLA	Mounting flange with central attachment Mxx. Refer to dimensions sheet (thrust rod must be secured against revolving).
KS	Compact plug 10/24 poles with additional housing at actuator voltages ≤ 500 V.
LA-TR	Special finish coating for use in the tropics (“tropics coating”).
A-IP65	Version IP 65: with bellows at thrust rod and metal cover with seal (for EL12)
A-FAB	Version with bellows at thrust rod (for EL20, 45, 80 and 120).

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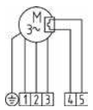
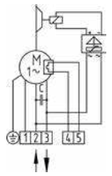
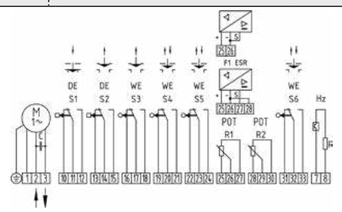
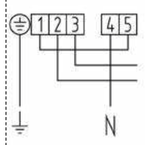
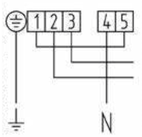
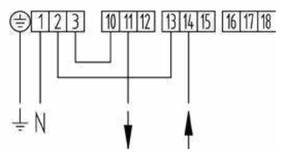
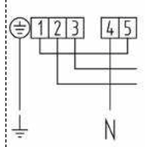
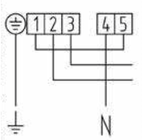
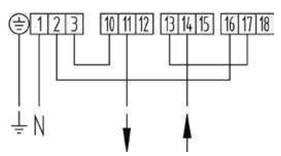
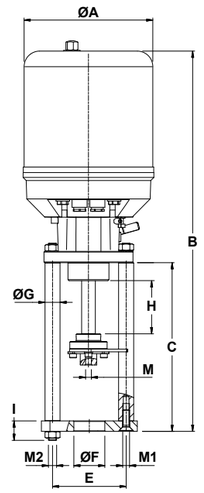
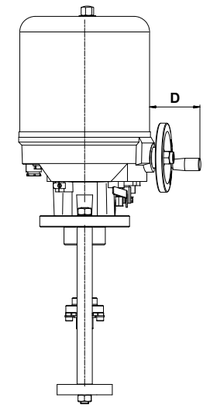
IS EL20.00 E 03.21

ELECTRICAL CONNECTIONS

3 ~ ASYNCHRONOUS MOTOR WITH BRAKE AND THERMOSWITCH	1 ~ ASYNCHRONOUS MOTOR WITH BRAKE AND THERMOSWITCH	SYNCHRONOUS MOTOR WITH THERMOSWITCH	SYNCHRONOUS MOTOR	BASIC WIRING DIAGRAM INCLUDING OPTIONS
				
				Switch-off in both end positions is made via two load-dependant switches, e.g. two-way valves with upper stroke limit and three-way mixing valves.
				Switch-off in the lower end position is made via a load-dependent switch and on the upper end position via a mechanical limit switch, e.g. two-way valves without upper stroke limit.
				Control of three-phase actuators with thermoswitch. Switch off in end position is made via two load-dependant switches to control e.g. three-way mixing valves. Remarks: For motors without thermoswitch, the wiring to terminal 4 and 5 is not applicable.
				Control of three-phase actuators with thermoswitch. Switch off in end position is made via a load-dependent switch and a mechanical limit switch to control e.g. two-way valves without upper stop. Remarks: For motors without thermoswitch, the wiring to terminal 4 and 5 is not applicable.

WE – Limit switch
HZ – Heater with thermoswitch
POT – Potentiometer
ESR – Electronic position feedback
PEL – Electronic positioner
WSE – External reversing contactor unit
REG – Process controller





DIMENSIONS (mm)

MODEL	Ø A	B	C	D	E	Ø F	Ø G	H	I	M *	M1	M2	WGT. (kg)
EL12	129	315	175	–	100	40	16	35	–	M10	M10	–	2,1
EL20 / EL45	148	474	205	42	100 / 110	40 / 45	22	50	41	M10 / M16	M10	M16	8
EL80 / EL120	188	572	245	70	100 / 110	40 / 45	22	80	41	M10 / M16	M10	M16	13
EL250	216	668	260	70	125	45 / 65	22	100	41	M16 / M20	–	M16	19

* Depending on valve stem thread. Can be course or fine thread.
Remark: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.

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IS EL20.00 E 03.21

ORDERING CODES EL								
Group designation	**E**	**12**	**1**	**X**	**X**	**X**	**A1**	
EL series linear electric actuator	**E**							
Actuator model								
EL12		**12**						
EL20		**20**						
EL45		**40**						
EL45.1		**41**						
EL45.2		**42**						
EL80		**60**						
EL80.1		**61**						
EL80.2		**62**						
EL120		**70**						
EL120.1		**71**						
EL120.2		**72**						
EL250		**80**						
EL250.1		**81**						
EL250.2		**82**						
Supply voltage								
230 V AC 50/60 Hz			**1**					
115 V AC 50/60 Hz			**2**					
24 V AC 50/60 Hz			**3**					
24 V DC			**4**					
400 V AC 3~ 50/60 Hz			**5**					
Electronic positioner and teletransmitter assembly								
Without FG teletransmitter assembly and electronic positioner				**X**				
FG teletransmitter assembly				**T**				
PEL100 electronic positioner				**P**				
PEL200 intelligent electronic positioner				**I**				
Limit switches								
Without additional limit switches					**X**			
One additional WE limit switch					**1**			
Two additional WE limit switches					**2**			
Position feedback unit								
Without position feedback unit						**X**		
ESR100 electronic position feedback unit						**F**		
Yoke design and coupling								
ADCATrol V16/2 and V25/2 series (DN 15 to DN 50 – 1/2” to 2”)							**A1**	
ADCAPure V926H, V926A (1/2” to 21/2”) and V928 series (DN 15 to DN 50) **a)**							**A3**	
ADCATrol V16/2 series (DN 65 to DN 100 – 3” to 4”)							**B1**	
ADCATrol V25/2 series (DN 65 to DN 100 – 3” to 4”)							**B2**	
ADCAPure V926H (3” and 4”) and V928 series (DN 65 to DN 100) **a)**							**B3**	
ADCATrol V25/2 series (DN 125 to DN 150 – 5’’ to 6”)							**C2**	
ADCATrol V25/2 series (DN 200 – 8’’)							**D2**	
Other ADCATol valves **b)**							**XX**	
Special versions / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

a) Require an additional WE limit switch for switching off in the upper end position. Except V928MV, V928MH and V928D.
b) Exact model and size must be specified – consult the manufacturer.
Remark: Options and accessories not mentioned in the ordering codes table must be requested separately, e.g.: E.201XXXA1 fitted with HZ/WP heating resistor with thermoswitch.
How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.00 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.

LINEAR ELECTRIC ACTUATORS WITH FAIL-SAFE FUNCTION ELR

DESCRIPTION

The ELR series linear electric actuators are designed for operation of control valves in modulating and on/off services in process engineering and industrial applications. The self-locking stem nut is driven by an electric motor via a gearing.
Load-dependent switches and/or mechanical limit switches define the stops for the end positions.
In case of power failure, the electric linear actuator runs into the respective fail-safe position by spring force (thrust rod either extended or retracted).
In modulating duty, the end position seating is made via mechanical limit switches.

MAIN FEATURES

Modular retrofittable design.
24 V AC, 115 V AC, 230 V AC, 400 V AC 50/60 Hz and 24 V DC supply voltages.
Electric manual operation with OPEN/CLOSE buttons.
IP 54 protection.
Valve protection against excessive force due to load-dependent seating.
Mounting to valves made via yoke or mounting flange DIN 3358, enabling easy connection to all types of valves. Standard version is suitable for ADCATrol valves.
Defined closing force in the end positions leading to tight valve shut-off.
Stall proof synchronous motors (or brake motors for higher positioning forces) ensure highest positioning accuracy.
Mechanical stroke indication via anti-rotation bar.
Exact, backlash-free measurement of actual valve stroke by direct coupling to the valve stem.
Universally usable actuators due to control via 3-point-step controllers, analogue input signals (0 to 10 V, 0(4) to 20 mA), or fieldbus systems.
Limit switches are easily adjustable for stroke limitation or as signal for intermediate positions.

OPTIONS AND ACCESSORIES:
Electronic positioner.
Additional limit switches.
Potentiometers e.g. for 3-point-step control in closed loop.
0(4) to 20 mA electronic position feedback units.
Heating resistor.
Special coatings and finishes for aggressive environments.

USE: Actuation of ADCATrol control valves, or others on request.

AVAILABLE MODELS: ELR2.1, ELR2.2 and ELR2.3.

TECHNICAL DATA

MODEL	ELR 2.1	ELR 2.2	ELR 2.3
Positioning force – CLOSED (kN) a)	≥ 0,9	≥ 2,2	≥ 2,2
Positioning force – OPEN (kN) a)	≤ 5,3	≤ 4,0	≤ 4,0
Maximum stroke (mm)	35	35	46
Positioning speed modulating duty (mm/min / mm/s) b)	17,5 / 0,29		
Positioning speed in case of power failure Fail-safe function (mm/s)	~4,1		
Power consumption (230 V) motor (W)	8,5		
Power consumption (230 V) magnet (W)	15		
Type of motor c)	Syn		
Motor protection d)	B		
Supply voltages e)	24 V / 115 V / 230 V 50/60 Hz		
Closing direction (Fail-safe function)	Extending thrust rod or retracting thrust rod		
Cable entry	2 x M16 x 1,5 and 2 dummy plugs M20 x 1,5		
Type of duty acc. to IEC 34-1	S1 – 100% c.d.f., S4 – 30% c.d.f. 1200 c/h		
Electrical connection	Inside terminal board, terminal configuration according to electrical connection wiring diagram		
Switch off in end position	2 limit switches, max. 250 V AC, rating for resistive load, max. 10 A, for inductive load, max. 10 A		
Mounting position	Any, except downward		
Ambient temperature	-20 ºC to 50 ºC		
Lubricant for gearing	Renolit AL-WIK 260 X		
Position indicator	By anti-rotation bar		
Manual adjustment	Electrical adjustment via push buttons (only possible when voltage is present)		
Enclosure protection acc. to EN 60529	IP 54		
Connection type	EN ISO 5210 F05 (also refer to options)		
Test / approvals	Actuator has been tested by TÜV (German Technical control board) according to DIN 32730 (safety functions for water and steam in heating systems)		

a) Force depends on valve stroke according to Chart 1.
b) At 60 Hz, the positioning speeds and input power increase by 20%.
c) Other supply voltages on request.
d) Syn– synchronous motor; Asyn – asynchronous motor.
e) B – stallproof motor; T – thermoswitch for temperature monitoring.

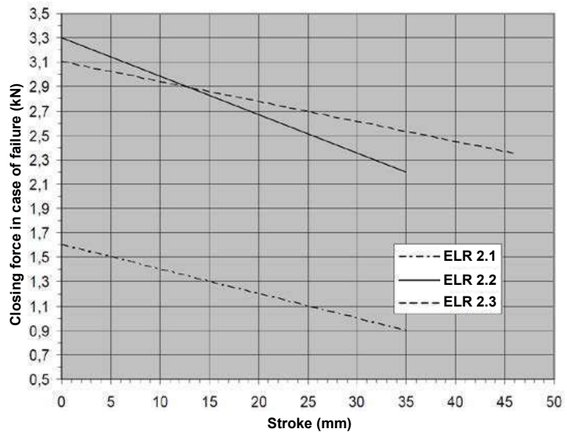


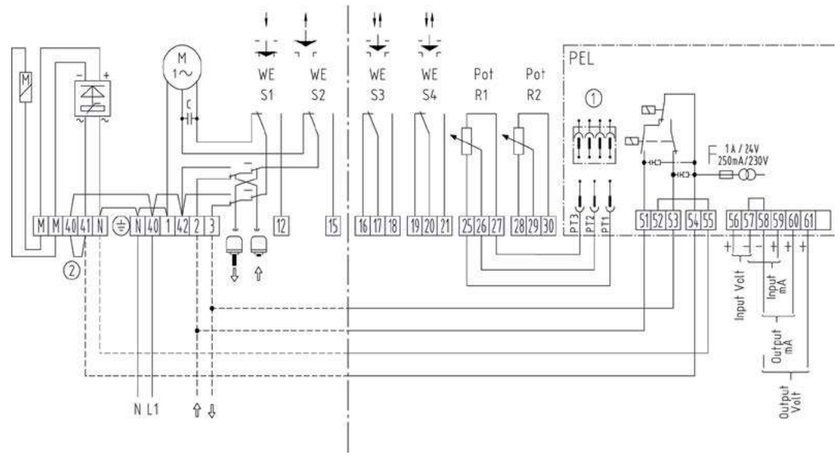
Chart 1 – Closing force according to valve stroke.

We reserve the right to change the design and material of this product without notice.

OPTIONS AND ACCESSORIES	
DESIGNATION	**DESCRIPTION**
FG	Switching and signaling unit (teletransmitter assembly). The FG unit is the base necessary for the assembly of all remaining options.
WE	Additional limit switches for signaling end positions or intermediate positions, freely adjustable, max. 250 V AC, rating for resistive load max. 5 A, for inductive load max. 3 A, max. 2 switches for EL20 and EL45, max. 4 switches for EL80 and EL120.
WE-G	Additional limit switches for signaling end positions or intermediate positions, freely adjustable, with gold-plated contacts for low voltage, max. 30 V AC, rating for resistive load max. 0.1 A, max. 2 switches for EL20 and EL45, max. 4 switches for EL80 and EL120.
POT	Potentiometer 100/130/200/500/1000/5000 Ohms or 10 kOhms Linearity error £ 0.5 %, max. 1.5 W, contact current 30 mA max. 2 pieces
ESR100	Electronic position feedback 2/3-wire unit. Remark: Includes POT 5000 Ohms. Inductive travel measuring, output 0(4) to 20 mA. Connection 24 V DC (not possible for EL12).
PEL100	Electronic positioner for actuator control. Remark: Includes FG teletransmitter assembly and POT 1000 Ohms. Input 0 to 10 V, 0(4) to 20 mA, output 0 to 10 V, 0(4) to 20 mA. Supply voltage 24, 115, 230 V 50/60 Hz.
PEL200	Intelligent electronic positioner for actuator control. Remark: Includes FG teletransmitter assembly and POT 1000 Ohms. Input 0 to 10 V, 0(4) to 20 mA, output 0 to 10 V, 0(4) to 20 mA. Supply voltage 24, 115, 230 V 50/60 Hz.
STALA / FLA	Yoke for adaptation to valves. Refer to dimension sheet.
KUP-EL2	Elastic thrust rod coupling effective on both sides.
LA-TR	Special finish coating for use in the tropics (“tropics coating”).

ELECTRICAL CONNECTIONS

BASIC WIRING DIAGRAM | **OPTIONS**



WE – Limit switch
HZ – Heater with thermoswitch
POT – Potentiometer
ESR – Electronic position feedback
PEL – Electronic positioner

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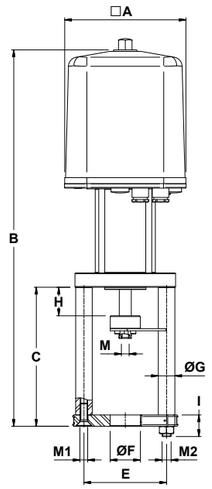
IS ELR21.00 E 01.21



DIMENSIONS (mm)												
MODEL	**□A**	**B**	**C**	**E**	**Ø F**	**Ø G**	**H**	**I**	**M ***	**M1**	**M2**	**WEIGHT (kg)**
ELR2.1	162	497 / 515 **	170	100 / 110	40 / 45	22	35	41	M10	M10	M16	8,7
ELR2.2	162	518 / 555 **	170	100 / 110	40 / 45	22	35	41	M10	M10	M16	9,3
ELR2.3	162	539 / 575 **	170	100 / 110	40 / 45	22	46	41	M10	M10	M16	10

* Depending on valve stem thread. Can be course or fine thread.
** With PEL electronic positioner
Remark: Stem coupling, yoke dimensions and design may vary depending on the ADCATrol control valve model. Refer to its corresponding information sheet or consult the manufacturer.

ORDERING CODES ELR								
Group designation	**E**	**2A**	**1**	**X**	**X**	**X**	**A1**	
EL series linear electric actuator	**E**							
Actuator model								
ELR2.1		**2A**						
ELR2.2		**2B**						
ELR2.3		**2C**						
Supply voltage								
230 V AC 50/60 Hz			**1**					
115 V AC 50/60 Hz			**2**					
24 V AC 50/60 Hz			**3**					
24 V DC			**4**					
400 V AC 3~ 50/60 Hz			**5**					
Electronic positioner and teletransmitter assembly								
Without FG teletransmitter assembly and electronic positioner				**X**				
FG teletransmitter assembly				**T**				
PEL100 electronic positioner				**P**				
PEL200 intelligent electronic positioner				**I**				
Limit switches								
Without additional limit switches					**X**			
One additional WE limit switch					**1**			
Two additional WE limit switches					**2**			
Position feedback unit								
Without position feedback unit						**X**		
ESR100 electronic position feedback unit						**F**		
Yoke design and coupling								
ADCATrol V16/2 and V25/2 series (DN 15 to DN 50 – 1/2” to 2”)							**A1**	
ADCATrol V16/2 series (DN 65 to DN 100 – 3” to 4”)							**B1**	
ADCATrol V25/2 series (DN 65 to DN 100 – 3” to 4”)							**B2**	
ADCATrol V25/2 series (DN 125 to DN 150 – 5’’ to 6”)							**C2**	
ADCATrol V25/2 series (DN 200 – 8’’)							**D2**	
Other ADCATrol valves **a)**							**XX**	
Special versions / Extras								
Full description or additional codes have to be added in case of a non-standard combination								**E**

a) Exact model and size must be specified – consult the manufacturer.
Remark: Options and accessories not mentioned in the ordering codes table must be requested separately, e.g.: E.2A1TXXA1 with special LA-TR finish coating.
How to size: For selection of suitable actuator to use with ADCATrol control valves, consult IS PV15.00 – Maximum permissible pressure drops for ADCATrol control valves – or consult the manufacturer.

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IS ELR21.00 E 01.21

LINEAR ELECTRIC ACTUATORS
AVF234S and AVM234S

DESCRIPTION

The AVM234S / AVF234S valve actuators offer automatic adaptation to the stroke of the valve, precision activation and high energy efficiency with minimal operating noise.
Ideal for use with any DSH series direct steam injection humidifier and in TDS (Total Dissolved Solids) control systems VCP blowdown valves.
In case of power failure/interruption, the AVF234S actuator runs, spring driven, into its respective fail-safe position (thrust rod extended). In modulating duty, the end position seating is made via limit switches.

MAIN FEATURES

IP 66 protection.
Automatic detection of control signal with LED indications.
Adjustable characteristic curve (linear, quadratic and equal-percentage) and running time via DIP switch.
Automatic adaptation to valve stroke.
Manual operation with disengagement of the actuator motor.
Mechanical stroke indication.
Spring-return feature (AVF234S).
Switching input (2-point or 3-point-step control) or analog input (0...10 V or 4...20 mA).

OPTIONS AND ACCESSORIES:
Split-range unit for adjusting sequences.
230 V AC and 100 V AC power supply modules.
Auxiliary change over contacts.
Potentiometers, e.g. for 3-point-step in closed loop.
Adapters for high temperature conditions.

USE:
Actuation of V series ADCATrol control valves, or others on request.

AVAILABLE MODELS:
AVM234S.
AVF234S - Fail-safe with spring-return.

TECHNICAL DATA

ACTUATOR MODEL	AVM234S	AVF234S
Power supply	230 V 50/60 Hz / 110 V 50/60 Hz / 24 V 50/60 Hz / 24 V DC	
Power consumption a)	10 W (20 VA) for 24 V 50/60 Hz and 24 V DC; 13 W (28 VA) for 230 V 50/60 Hz	
Running time of motor mm/min (mm/s)	10 (0,17), 15 (0,25), 30 (0,50)	
Running time of spring b)	-	15…30 s
Actuating power	2,5 kN	2 kN
Response time for 3-point-step	200 ms	
Number of spring returns	-	>40,000
Actuator stroke	0…49 mm	0…40 mm
Housing material	Fire-retardant plastic	

a) Choose transformer for this value, otherwise malfunctions may occur.
b) Return time equates to stroke of 14...40 mm and does not depend on set running time.

POSITIONER	
Control signal 1	0...10 V, Ri=100 kΩ
Control signal 2	4...20 mA, Ri=50 Ω
Positional feedback 0-10V	0...10 V; load > 2,5 kΩ
Starting point U0	0 V or 10 V
Control span ΔU	10 V
Switching range Xsh	300 mV

AMBIENT CONDITIONS	
Admissible ambient temperature	-10…55 ºC
Admissible ambient humidity	< 95% rh, no condensation
Temperature of medium c)	Max. 130 ºC (180 ºC or 200 ºC with accessories)

c) Adaptor needed for higher temperatures (180 ºC or 200 ºC) (see accessories and options).

STANDARDS AND DIRECTIVES	
Type of protection	IP66 (EN 60529)
Protection class	III (IEC 60730)
EMC Directive 2014/30/EU d)	EN 61000-6-2, EN 61000-6-4
Low-voltage directive 2014/35/EU	EN 60730-1, EN 60730-2-14
Over-voltage categories	III
Degree of contamination	III

d) EN 61000-6-2: HF immunity, limitation of feedback signal between 80 MHz and 1000 MHz criterion B, otherwise criterion A.

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OPTIONS AND ACCESSORIES

OPTIONS AND ACCESSORIES	TYPE
Split-range unit for adjusting sequences, fitted in separate junction box	313529 001
Module for 2-point/3-point and analogue activation; additional power 2 VA; 230 V AC ± 15% supply voltage	372332 001
Module for 2-point/3-point and analogue activation; additional power 2 VA; 100 V AC ± 15% supply voltage	372332 002
Aux. change-over contacts 12...250 V ac; Infinitely variable, min. 100 mA and 12 V permissible load 6(2) **a)**	372333 001
Aux. change-over contacts 12...250 V ac; Gold plated, from 1 mA, to max. 30 V, wider range 3(1) **a)**	372333 002
Potentiometer 2 kΩ 1 W 24 V	372334 001
Potentiometer 130 Ω 1 W 24 V	372334 002
Potentiometer 1 kΩ 1 W 24 V	372334 006
Adapter required when the temperature of the medium is 130…180 ºC	372336 180
Adapter required when the temperature of the medium is 180…240 ºC	372336 240

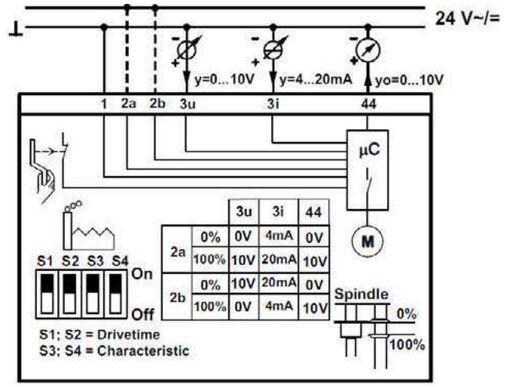
a) Two contacts each.

ELECTRICAL CONNECTIONS

BASIC WIRING DIAGRAMS

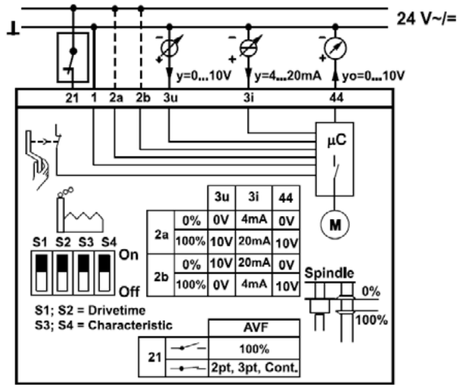
AVM234S

ANALOG 0...10 V / 4...20 mA INPUT



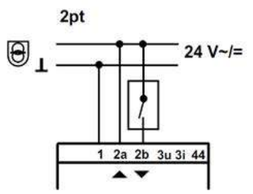
AVF234S

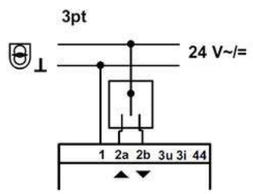
ANALOG 0...10 V / 4...20 mA INPUT



AVM234S

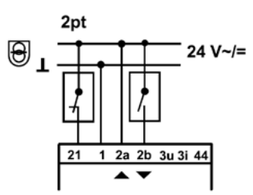
2-POINT / 3-POINT STEP SWITCHING INPUT

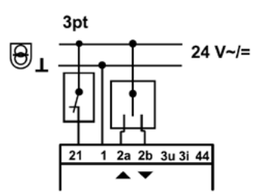




AVF234S

2-POINT / 3-POINT STEP SWITCHING INPUT

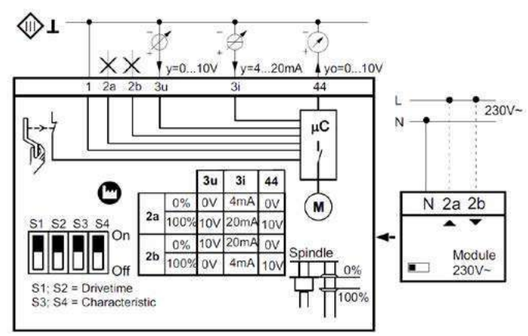




OPTIONS AND ACCESSORIES WIRING DIAGRAMS

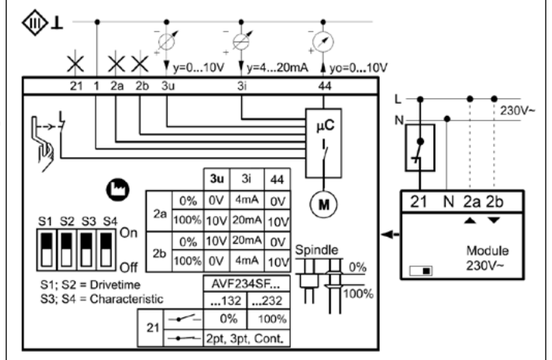
AVM234S

ANALOG 0...10 V / 4...20 mA INPUT a)



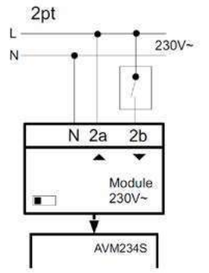
AVF234S

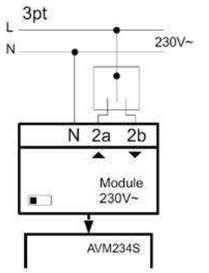
ANALOG 0...10 V / 4...20 mA INPUT a)



AVM234S

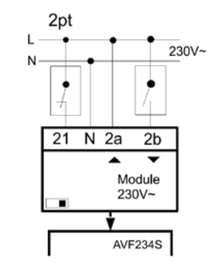
2-POINT / 3-POINT STEP SWITCHING INPUT a)

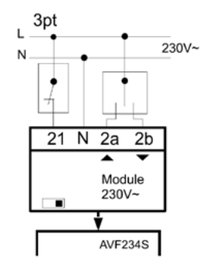




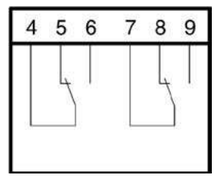
AVF234S

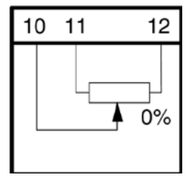
2-POINT / 3-POINT STEP SWITCHING INPUT a)



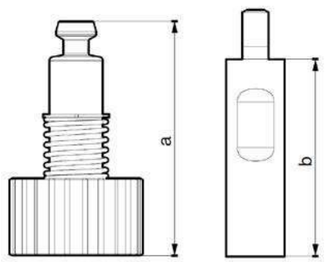


AUXILIARY CONTACTS AND POTENTIOMETERS b)





HIGH TEMPERATURE ADAPTERS c)



TYPE	T (ºC)	a (mm)	b (mm)
372336 180	180	69.4	60
372336 240	200	109.4	100

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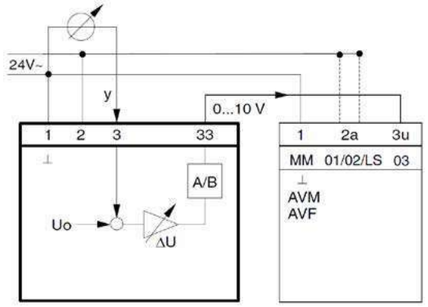
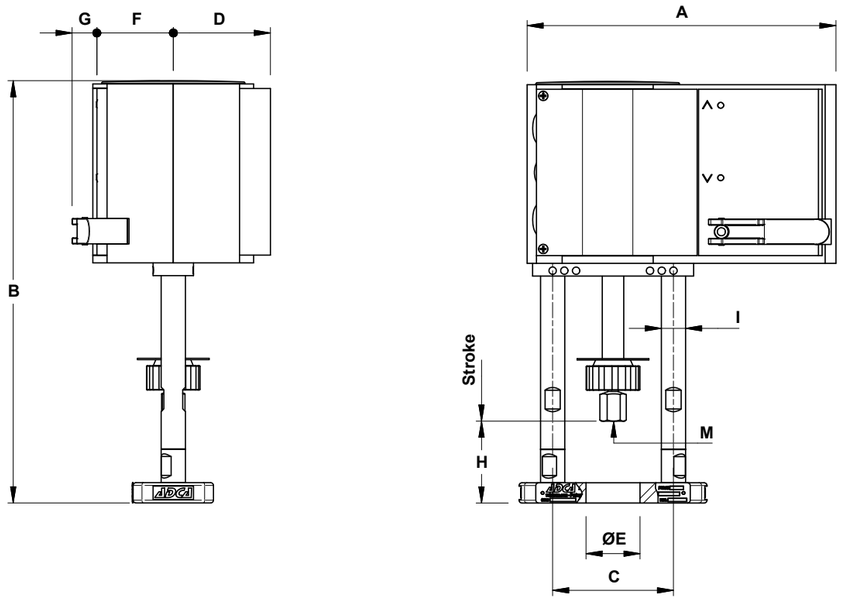
OPTIONS AND ACCESSORIES WIRING DIAGRAMS

AVM234S	AVF234S

SPLIT RANGE UNIT d)



a) Using accessory type 372332 001. Same connections apply for the 100 V AC modules (type 372332 002).
b) Accessories type 372333 001, 372333 002, 372334 001, 372334 002 and 372334 006.
c) Accessories type 372336 180 and 372336 240.
d) Accessory type 313529 001.



DIMENSIONS (mm)

MODEL	A	B	C	D	Ø E	F	G	H	I	M	WEIGHT (kg)
AVM234S AVF234S	230	314	90	72	40	57	18	37	18	M10	4,1

LRQA CERTIFIED ISO 9001

TYPE OF CHARACTERISTIC CURVES

Desired character. curve	Switch coding	Characteristic curve for valve	Characteristic curve for drive	Effective on valve
Equal percentage	1 2 3 4 On Off	v Stroke	Stroke Signal	v̄ = % Signal
Quadratic	1 2 3 4 On Off	v̄ Stroke	Stroke Signal	v̄ x^2 Signal
Linear	1 2 3 4 On Off	v̄ Stroke	Stroke Signal	v̄ lin Signal
Equal percentage	1 2 3 4 On Off	v̄ Stroke	Stroke Signal	v̄ = % Signal
Linear	1 2 3 4 On Off	v̄ Stroke	Stroke Signal	v̄ lin Signal

= factory setting

MOTOR RUNNING TIME SELECTION GUIDE

Run time per mm	Switch coding	Run time for 14 mm stroke	Run time for 20 mm stroke	Run time for 40 mm stroke
2s	1 2 3 4 On Off	28s ± 1	40s ± 1	80s ± 4
4s	1 2 3 4 On Off	56s ± 2	80s ± 4	160s ± 4
6s	1 2 3 4 On Off / On Off	84s ± 4	120s ± 4	240s ± 8

= factory setting

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ELECTRO-PNEUMATIC POSITIONERS
PE986

DESCRIPTION

The ADCATrol PE986 is an electro-pneumatic positioner used for direct operation of pneumatic linear or rotary actuators by means of electrical controllers or control systems with a 4 to 20 mA, 2 to 10 V or split ranges output.
The positioner features a compact design and a modular construction which allows easy attachment of options such as limit switches, analog feedback modules, manifolds, volume boosters, amongst others.

MAIN FEATURES

Compact and flexible design.
Mounting onto any linear or rotary actuator.
Single or double acting.
Supply pressure up to 6 bar.
Adjustable amplification and damping.
Independent adjustment of stroke range and zero position.
Resistant to vibration effect in all directions.
ATEX approval (Ex ia).

OPTIONS AND ACCESSORIES

Module for analog position feedback.
Digital position feedback with inductive switches (two or three-wire system).
Digital position feedback with microswitches.
Attachment kit for linear actuators acc. to IEC 534/NAMUR.
Attachment kit with rotary adaptor for rotary actuators acc. to VID/VDE 3845.
Connection manifold with gauges.
ATEX approval (Ex d): Version PE983.
Volume boosters.

TECHNICAL DATA

GENERAL	
Material	Housing: Alluminium finished with DD-varnish black Mounting bracket: Alluminium Moving parts of feedback system: AISI 303 /1.4305 or AISI 316Ti / 1.4571
IP rating	Protection class IP 54 (IP 65 on request)
Pneumatic connections	Female threaded ISO 228 G 1/8”
Electrical connections	M20 x 1,5 Cable glands Screw terminals: max. 2.5 mm²
Weight	Single acting: approx. 1,5 kg Double acting: approx. 1,8 kg Attachment kit: For diaphragm actuators: approx. 0,3 kg For rotary actuators: approx. 0,5 kg

AMBIENT CONDITIONS	
Ambient temperature	-40 ºC to 80 ºC
Relative humidity	Up to 100%
Operating conditions	According to IEC 654-1; The device can be operated at a class D2 location
Transport and storage temperature	-50 ºC to 80 ºC
Storage conditions	According to IEC 60 721-3-1: 1K5, 1B1, 1C2, 1S3, 1M2

ELECTROMAGNETIC COMPATIBILITY (EMC)	
Operating conditions	Industrial environment
Immunity	According to EN 61326 and EN 61000-6-2
Emission	According to EN 61326, Class A and EN 61000-6-3

Remark: NAMUR recommendation fulfilled

CE MARKING	
Electromagnetic compatibility	89/336/EWG
Low-voltage regulation	73/23/EWG not applicable

CAPACITY AT MAXIMUM DEVIATION (Nl/h)

AIR PRESSURE SUPPLY	1,4 bar	2 bar	4 bar	6 bar
Without booster	2700	3500	5500	7500
With booster LEXG-FN/GN	18000	24000	40000	55000
With booster LEXG-HN	38000	48000	80000	110000

INPUT SIGNAL	
Signal range	4 to 20 mA or 2 to 10 V
Input resistance	< 200 Ω at 20 ºC
Stroke range	20 to 100% of the nominal operating range
Angular range	Linear: 30 º to 120 º Equal percentage: 90 º; from 70 º linear

OUTPUT SIGNAL	
Output to actuator	0 to 100 % supply air pressure

AIR SUPPLY *	
Air supply pressure	1,4 to 6 bar (20 to 90 psig)
Solid particle size and density	Class 2
Oil rate	Class 3
Pressure dew point	10K below ambient temperature

* According to ISO 8573-1.
Remark: For air supply, we recommend the ADCA P10 filter regulator.

AIR CONSUMPTION	
Single acting	Air supply 1.4 bar (20 psig) 200 Nl/h (7,1 scfh)
	Air supply 3.0 bar (45 psig) 400 Nl/h (12,4 scfh)
	Air supply 6.0 bar (90 psig) 600 Nl/h (21,2 scfh)
Double acting	Air supply 1.4 bar (20 psig) 350 Nl/h (10,6 scfh)
	Air supply 3.0 bar (45 psig) 550 Nl/h (17,7 scfh)
	Air supply 6.0 bar (90 psig) 750 Nl/h (33,5 scfh)

AIR OUTPUT
Load effect *
-3 % for delivery flow 2350 Nl/h (83 scfh)
+3 % for exhausted flow 1900 Nl/h (67 scfh)

* Measured with air supply 1,4 bar and 50% of the signal range.

RESPONSE CHARACTERISTIC *	
Amplification	Adjustable
Sensitivity	< 0,1% F.S.
Non-linearity (terminal based adjustment)	< 1,0 % F.S.
Hysteresis	< 0,3 % F.S.
Supply air dependency	< 0,3 % / 0,1 bar
Temperature effect	< 0,5 % / 10 K

* Data based on the following parameters: stroke 30 mm, feedback lever 117,5 mm, max. amplification, air supply pressure 3 bar.

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IS PE986.10 E 00.20

OPTIONS AND ACCESSORIES

INDUCTIVE LIMIT SWITCH (TWO-WIRE SYSTEM)

Input	Stroke / angle from actuator via positioner feedback lever
Output	2 inductive proximity sensors acc. to DIN 19 234 resp. NAMUR for connection to a switching amplifier with an intrinsically safe control circuit **a)**
Current consumption	Vane clear: > 3 mA Vane interposed: < 1 mA
Supply voltage	DC 8 V, Ri approx. 1 kΩ
Residual ripple	< 5 %
Permissible line resistance	< 100 Ω
Response characteristic b)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 1 % Switching point repeatability: < 0,2 % EMC: according to EN 60 947-5-2

a) For the standard version one switching amplifier is required. For the security version fail-safe amplifier for each inductive proximity sensor is required; Operating mode minimum (= low) / maximum (= high) selectable by adjustment of switch vanes; Operating mode normally closed circuit / normally open circuit selectable at switch amplifier output.
b) For feedback lever effective length 117,5 mm (4,63 in), stroke 30 mm (1,28 in) and maximum gain.

LIMIT SWITCH ASSEMBLY WITH MICROSWITCHES

Input	Stroke / angle from actuator via positioner feedback lever
Output	2 micro switches **d)**
Connected load, alternating current	Switching capacity: max. 250 VA Switching voltage: max. 250 V Switching current with ohmic resistance: max. 5 A Inductive resistance: max. 2 A Bulb, metal filament: max. 0,5 A
Connected load, direct current (refer to the following table)	

Switching voltage, max. (V)	Ohmic load (A)	Inductive load (A)
30	5	3
50	1	1
75	0,75	0,75
125	0,5	0,03
250	0,25	0,03

Response characteristic d)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 2,5 % Switching point repeatability: < 0,2 %

d) For feedback lever effective length 117,5 mm (4,63 in), stroke 30 mm (1,28 in) and maximum gain.

INDUCTIVE LIMIT SWITCH (THREE-WIRE SYSTEM)

Input	Stroke / angle from actuator via positioner feedback lever
Output	2 inductive proximity sensors, three-wire system, LED indication, contact, pnp **b)**
Supply voltage U_S	DC 10 to 30 V
Residual ripple	± 10 %, U_S = 30 V
Switching frequency	2 kHz
Constant current	100 mA
Response characteristic c)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 1 % Switching point repeatability: < 0.2 %

b) Operating mode minimum (= low) / maximum (= high) selectable by adjustment of switch vanes; Contact closed within the positive range.
c) For feedback lever effective length 117,5 mm (4,63 in), stroke 30 mm (1,28 in) and maximum gain.

CONNECTION MANIFOLD WITH GAUGES

Indicating range	Stroke / angle from actuator via positioner feedback lever
Error limit	class 1.6
Pneumatic connections	Female threads Q1/4-18 NPT according to DIN 45 141

ANALOG POSITION FEEDBACK

Sensor	Resistive precision conductive plastic element
Input	Stroke/angle from actuator via position feedback lever; Stroke range: 8 to 100 mm (0,3 to 4 in) Angular range: 60 ° to 120 °
Output	Two-wire system Signal range: 4 to 20 mA
Permitted load	R_{Bmax} = (U_S - 12 V) / 0,02A (U_S = Supply voltage)
Power supply	Supply voltage: DC 12 to 36 V Permitted ripple: < 10 % p.p. Supply voltage dependency: < 0,2 %
Response characteristic e)	Non-linearity with terminal based setting: < 1,0 % F.S Hysterisis: < 0,5 % F.S. External resistance dependency: < 0,2 % / $R_{B\,max}$ Temperature effect: < 0,3 % / 10 K

e) For feedback lever effective length 117,5 mm (4,63 in), stroke 30 mm (1,28 in) and maximum gain.

COMMON DATA FOR OPTIONS AND ACCESSORIES

GENERAL

IP rating	Protection class IP 54; IP 65 on request
Mounting	Attachment to positioner
Electrical connections	Line entry: 1 or 2 cable glands M20 x 1,5 or 1/2"-14 NPT (others with Adapter AD-...) Cable diameter: 6 to 12 mm (0,24 to 0,47 in) Screw terminals: max. 2.5 mm² (AWG14) Optionally: Threaded gland made of AISI 303 (1.4305)
Materials	Base plate: galvanized steel Control vane: alluminium Setting mechanism: fibre glass-reinforced polyamide

AMBIENT CONDITIONS

Ambient temperature f)	-25 to 80 ºC
Relative humidity	Up to 100%
Operating conditions	According to IEC 654-1; The device can be operated at a class D2 location
Transport and storage temperature	-40 ºC to 80 ºC

f) Refer to the section "Explosion protection", in page 5, with respect to explosion-protected equipment; -40 ºC to 80 ºC for the fail-safe version of inductive limit switch.

SAFETY REQUIREMENTS

SAFETY

Acc. to EN 61 010-1 (resp. IEC 1010-1)	safety class III, pollution degree 2, overvoltage category I
Limit Switch (accessory equipment)	safety class II, pollution degree 2, overvoltage category II

EXPLOSION PROTECTION TYPE Ex ia/ib

Basic device type	AI 633
Type of protection	II 2 G Ex ib/ia IIB/IIC T4/T6
Cerificate of conformity	PTB 02 ATEX 2153

For operation in certified intrinsically safe circuits with the following maximum values of input circuit:
U_i: 30 V
I_i: 150 mA
P_i: refer to the following table:

P_i (W)	T6 (ºC)	T4 (ºC)
2	40	90
1,5	50	90
1	57,5	90

Internal inductance	Negligible
Internal capacitance	Negligible

The control circuit is galvanically separate from earth and all other electric circuits.

EXPLOSION PROTECTION ZONE 2 *

It is recommended that the instrument version for protection type Ex ia is used. In the Federal Republic of Germany, these instruments may be operated in Zone 2 with non-intrinsically safe circuits if the operating values do not exceed the maximum reference values.

EXPLOSION PROTECTION ACCORDING TO FM AND CSA *

Electro-pneumatic positioner type BIM 633
Intrinsically safe, Class I, Division 1,
Groups A, B, C, D, hazardous locations.

* National installation regulations must be observed.

LIMIT SWITCH

Type of protection intrinsic safety Ex ib/ia IIB/IIC with the following maximum values:

U_i: 16 V
I_i: 25 mA
P_i: 64 mW
Internal inductance: 100 µH
Internal capacitance: 30 nF

The signal circuits are galvanically separate from earth, from each other and from all other electric circuits.

POSITION TRANSMITTER

Type of protection intrinsic safety Ex ib/ia IIB/IIC with the following maximum values:

For temperature class T4 and a maximally permissible outside ambient temperature of 80 °C:
U_i: 30 V
I_i: 130 mA
P_i: 0,9 W

For temperature class T4 and a maximally permissible outside ambient temperature of 60 °C:
U_i: 22 V
I_i: 66 mA
P_i: 0,5 W

The effective internal inductance Li left amounts to 9 µH, the effective capacity Ci against earth amounts to 10 nF and/or differential 6 nF. The supply and signal circuits are galvanically separate from earth and from all other electric circuits.

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IS PE986.10 E 00.20

ELECTRO-PNEUMATIC POSITIONERS
PI991

DESCRIPTION

The ADCATrol PI991 is a digital intelligent electronically configurable positioner with communication capabilities, designed for mounting to pneumatic linear or rotary actuators. Communication protocols include analog (4 to 20 mA) with or without superimposed HART communication, PROFIBUS PA and FOUNDATION Fieldbus-H1.
The advanced diagnostic can be partially shown on the local LCD of the positioner or fully on a PC or a DCS workstation with a DTM based software (VALcare or Valve Monitor).
The PI991 also has the capability to control a Partial Stroke Test (PST) that offers to operators a tool to identify the trouble-proof function of ESD (Emergency Shut Down) valves.

MAIN FEATURES

Low operating cost.
Compact and flexible design.
Easy to comission with user-friendly interface.
Status and diagnostic messages displayed on LCD.
Integrated mechanical position indicator.
Mounting onto any linear or rotary actuator.
Single or double acting.

OPTIONS AND ACCESSORIES

HART, Profibus PA or FOUNDATION Fieldbus-H1 communication.
SIL3 certification.
ATEX, FM, CSA and IECEx approvals.
Stainless Steel housing for Offshore or Food and Beverage applications.
Module for analog position feedback.
Binary inputs and outputs.
Digital position feedback with inductive switches (two or three-wire system).
Digital position feedback with microswitches.
Positioner with remote sensor.
Sensors for supply air pressure and output pressure.
Attachment kit for linear actuators acc. to IEC 534/NAMUR and rotary actuators acc. to VDI/VDE 3845.
Connection manifold with gauges.
Infrared Interface for wireless communication.
Partial Stroke Test (PST) for Emergency Shut Down applications.

TECHNICAL DATA

GENERAL	
Material	Housing: AISI 316L / 1.4404 st. steel, 1,25 mm thick
IP rating	Protection class IP 66 NEMA 4X
Impact Resistance	7 Joule acc. to EN 50014
Pneumatic connections	Female threaded ISO 228 G 1/4”
Electrical connections	M20 x 1,5 Cable glands Screw terminals: max. 2.5 mm²
Weight	Complete positioner: 3,5 kg

AMBIENT CONDITIONS	
Ambient temperature	-40 °C to 80 °C

AIR SUPPLY	
Air supply pressure	1,4 to 6 bar *
Supply air quality	According to ISO 8573-1
Max. particle size and density	Class 2
Max. oil contents	Class 3

* 1,4 to 7 bar with spool valve.

HART COMMUNICATION (TWO-WIRE SYSTEM)	
Reverse polarity protection	built-in standard feature
Signal range	4 to 20 mA
Operating range	3.6 to 21 mA
Voltage	12 to 36 V DC (unloaded circuit)
Maximum load	420 Ohms (8.4 V at 20 mA)
Communication signal	HART, 1200 Baud, FSK modulated on 4 to 20 mA

PROFIBUS-PA	
Data transfer	acc. to PROFIBUS- PA profile class B based on EN 50170 and DIN 19245 part 4

FOXCOM COMMUNICATION (DIGITAL OPERATING MODE)	
Input signal	digital
Supply voltage	13 to 36 V DC
Supply current	~ 9 mA at 24 V DC
Communication signal	FoxCom digital, 4800 Baud, FSK modulated on supply Voltage

INPUT SIGNAL	
Stroke range	8 to 260 mm
Angular range	Up to 95º

Remark: All “intelligent” versions are suplied with micro controller.

RESPONSE CHARACTERISTIC	
Sensitivity	< 0,1% of travel span
Non-linearity (terminal based adjustment)	< 0,4 % of travel span
Hysteresis	< 0,3 % of travel span
Supply air dependency	< 0,1 % / 1 bar
Temperature effect	< 0,3 % / 10 K
Mechanical effect	10 to 60 Hz up to 0,14 mm, 60 to 500 Hz up to 2 g: < 0,25 % of travel span

FIELDBUS COMMUNICATION (ACC. TO FISCO)	
Input signal	digital fieldbus
Supply voltage	9 to 32 V DC
Operating current	10.5 mA ±0.5 mA (base current)
Current amplitude	±8 mA
Fault current	base current +0 mA (+4 mA by means of independent FDE-safety circuit)

FOUNDATION FIELDBUS H1	
Data transfer	FF Specification Rev. 1.4, Link-Master (LAS)
Function blocks	AO, PID, Transducer, Resource, 2 x DI, DO

WITHOUT COMMUNICATION (4 TO 20 MA - TWO-WIRE SYSTEM)	
Reverse polarity protection	built-in standard feature
Signal range	4 to 20 mA
Operating range	3,8 to 21,5 mA
Voltage	DC 8 to 36 V (unloaded circuit)
Maximum load	300 Ohms (6 V at 20 mA)

Remarks: For full product specifications, including requirements for use in potentially explosive atmospheres, different communication protocols (Profibus PA and FOUNDATION Fieldbus-H1) and others, please consult.

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IS PI991.10 E 05.11

ELECTRO-PNEUMATIC POSITIONERS
TZIDC

DESCRIPTION

The ADCATrol TZIDC is a digital intelligent electronically configurable positioner with communication capabilities designed for mounting to pneumatic linear or rotary actuators. It features a small and compact design, a modular construction, and an excellent cost-performance ratio.
Fully automatic determination of the control parameters and adaptation to the final control element yield considerable time savings and an optimal control behaviour.

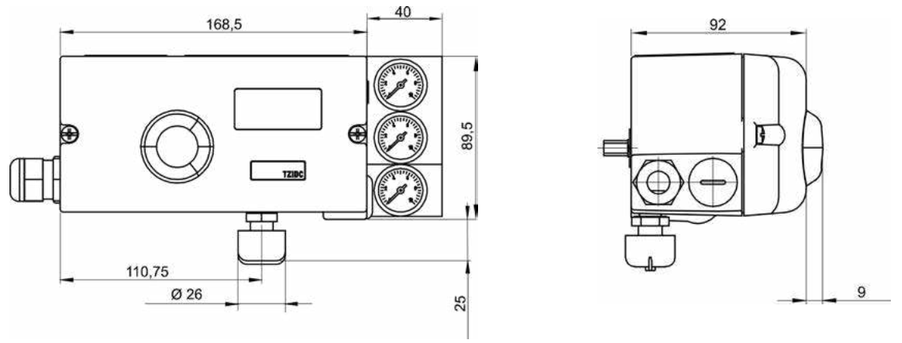
MAIN FEATURES

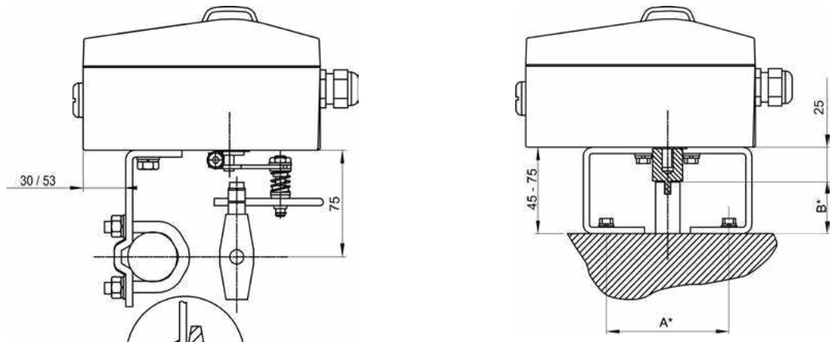
Low operating cost.
Compact and flexible design.
Easy to comission with user-friendly interface.
Increased shock and vibration resistance with gearless sensor activation.
Reliable and efficient, with integrated maintenance-friendly air filters.
Automatic adjustment of control parameters during operation.
Integrated mechanical position indicator.
Wide operating temperature range (- 40 º to 85 ºC).
Mounting onto any linear or rotary actuator.
Single or double acting.

OPTIONS AND ACCESSORIES

HART, Profibus PA or FOUNDATION Fieldbus-H1 communication.
ATEX, FM, CSA, GOST and IECEx approvals.
SIL2 certification.
Module for analog position feedback.
Digital position feedback with inductive proximity switches.
Digital position feedback with 24 V microswitches.
Positioner with remote sensor.
Attachment kit for linear actuators acc. to IEC 534/NAMUR and rotary actuators acc. to VDI/VDE 3845.
Connection manifold with gauges.
PC adapters for communication.
PC software for remote configuration and operation.

DIMENSIONS (mm)





* Dimensions A and B are dependent on the rotary actuator.

TECHNICAL DATA

GENERAL	
Material	Aluminum with ≤ 0.1% copper
IP rating	Protection class IP 65 (IP 66 on request) NEMA 4X
Surface	Electrostatic dipping varnish with epoxy resin, stove-hardened
Pneumatic connections	Female threaded ISO 228 G 1/4”
Electrical connections	M20 x 1,5 Cable glands Screw terminals: max. 1.0 mm² for options max. 2.5 mm² for bus connector
Weight	1,7 kg
Mounting orientation	Any

DIRECTIVES AND COMMUNICATION	
Directives	Compliant with: - EMC directive 2004/108/EC from 12/2004 - EC Directive for CE conformity marking
Communication	- HART® protocol 5.9 as standard, optionally HART® protocol 7.4 - Profibus PA - FOUNDATION Fieldbus H1 - Local connector for LCI (not in explosion protection area) - HART communication via 20 mA signal line with (optional) FSK modem

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TRAVEL	
Rotation angle	
Measuring range	270º
Working range (Fig.1)	Linear actuators: min. 25º, max. 45º
	Rotary actuators: min. 25º, max. <270º
Travel limit	Min. and max. limits, freely configurable between 0 to 100 % of total travel (min. range > 20 %)
Travel prolongation	Range of 0 to 200 s, separately for each direction
Dead band time limit	Setting range of 0 to 200 s (monitoring parameter for control until the deviation reaches the dead band)

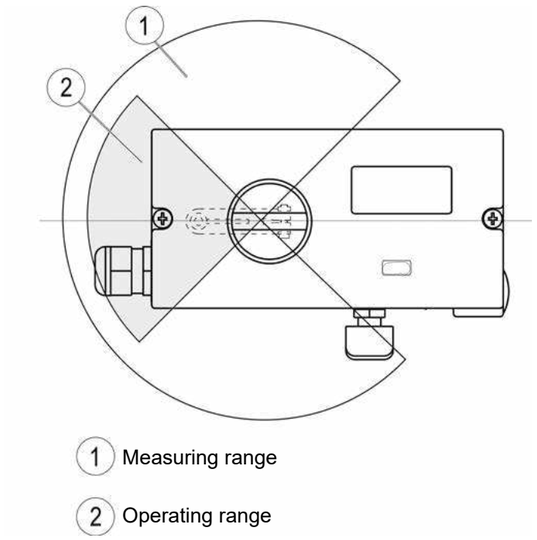


Fig. 1 – Measuring and operating ranges

TRANSMISSION DATA AND CONTRIBUTING FACTORS	
Output Y1	
Increasing	Increasing setpoint signal 0 to 100% Increasing pressure at output
Decreasing	Increasing setpoint signal 0to100% Decreasing pressure at output
Action (setpoint signal)	
Increasing	Signal 4 to 20 mA = Position 0 to 100%
Decreasing	Signal 20 to 4 mA = Position 0 to 100%
Characteristic curve (travel = f {setpoint signal}) *	
Deviation	≤ 0.5 %
Tolerance band	0,3 to 10 %, adjustable
Dead band	0,1 to 10 %, adjustable
Resolution (A/D conversion)	> 16,000 steps
Sample rate	20 ms
Influence of ambient temp.	≤ 0.5 % per 10 K
Reference temperature	20 ºC
Influence of vibration	≤ 1 % to 10 g and 80 Hz
Seismic vibration	Meets requirements of DIN/IEC 68-3-3 Class III for strong and strongest earthquakes

* Linear, equal percentage 1:25 or 1:50 or 25:1 or 50:1 and freely configurable with 20 reference points

AMBIENT CONDITIONS	
Ambient temperature	
During operation, storage and transport	- 40 ºC to 85 ºC - 25 ºC to 85 ºC - 40 ºC to 100 ºC *
Relative humidity	
Operation (closed housing and air supply switched on)	95 % (annual average), condensation permissible
Transport and storage	75% (annual average), non-condensing.

* Increased temperature range only with TZIDC Remote Sensor.

AIR SUPPLY *	
Instrument air	
Purity	Max. particle size: 5 µm Max. particle density: 5 mg / m³
Oil content	Max. concentration: 1 mg / m³
Pressure dew point	10 K below operating temp
Supply pressure **	1.4 to 6 bar
Air consumption ***	< 0.03 kg/h / 0.015 scfm

* Free of oil, water and dust, according to DIN/ISO 8573-1. Pollution and oil content according to Class 3.
** Do not exceed the maximum operating pressure of the actuator!
*** Independent of supply pressure.

SAFETY INTEGRITY LEVEL	
TZDIC meets the following requirements	- Functional safety acc. to IEC 61508 - Explosion protection (depending on the model) - Electromagnetic compatibility acc. to EN 61000

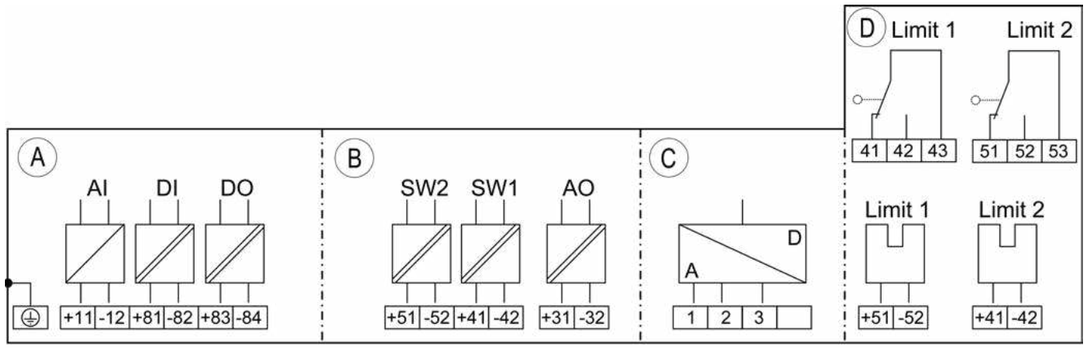
Without the input signal, the pneumatic module in the positioner vents the drive and the installed spring in it moves the valve to a predetermined end position (OPEN or CLOSED).

SIL specific safety-related characteristics

Device	SFF	PFDav	$\lambda_{dd} + \lambda_s$	λ_{du}
TZDIC with supply current 0 mA	94%	1.76 x 10^{-4}	651 FIT	40 FIT

Remarks: Applies to applications with single-acting and depressurizing pneumatics.

ELECTRICAL CONNECTIONS
Positioner / TZIDC control unit connections



A Basic device
B Options
C Connection TZIDC Remote Sensor / remote position sensor (only for TZIDC Control Unit version)
D Limit value monitor with proximity switches or microswitches (not for TZIDC Control Unit version)

TERMINALS	
TERMINAL	**DESCRIPTION**
+11 / -12	Analog input
+81 / -82	Binary input DI
+83 / -84	Binary output DO2
+51 / -52	Digital feedback SW1 (optional module)
+41 / -42	Digital feedback SW2 (optional module)
+31 / -32	Analog feedback AO (optional module)
1 / 2 / 3	TZDIC remote sensor *
+51 / -52	Limit switch Limit 1 with proximity switch (optional)
+41 / -42	Limit switch Limit 2 with proximity switch (optional)
41 / 42 / 43	Limit switch Limit 1 with microswitch (optional)
51 / 52 / 53	Limit switch Limit 2 with microswitch (optional)

* Only for options TZIDC Remote Sensor or TZIDC for remote position sensor.

Remarks: The TZIDC can be fitted either with proximity switches or microswitches as limit switches. It is not possible to combine both variants. For the version TZIDC Control Unit with TZIDC Remote Sensor, the limit switches are located in the TZIDC Remote Sensor.

ANALOG INPUT SIGNAL	
Set point signal (two-wire technology)	
Terminals	+11 / -12
Nominal operating range	4 to 20 mA
Split range config.	between 20 to 100% of the nominal operating range can be parameterized
Operating range limits	3.8 to 50 mA
Load voltage	9.7 V at 20 mA
Impedance	485 Ω at 20 mA

DIGITAL INPUT

Input for the following functions:
- no function
- move to 0%
- move to 100%
- hold previous position
- block local configuration
- block local configuration and operation
- block any access (local or via PC)

Binary output DO *	
Terminals	+83 / -84
Supply voltage	5 to 11 V DC (Control circuit in accordance with DIN 19234 / NAMUR)
Output “logical 0”	> 0,35 mA to < 1,2 mA
Output “logical 1”	> 2,1 mA
Direction of action	Configurable “logical 0” or “logical 1”

* Output configurable as alarm output by software.

Binary input DI	
Terminals	+81 / -82
Supply voltage	24 V DC (12 to 30 V DC)
Input “logical 0”	0 to 55 V DC
Input “logical 1”	11 to 30 V DC
Input current	Maximum 4 mA

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IS TZIDC.10 E 01.20

OPTIONAL MODULES

MODULE FOR ANALOG FEEDBACK AO *	
Terminals	+31 / -32
Signal range	4 to 20 mA (split ranges can be parameterized)
Supply voltage (two-wire technology)	24 V DC (11 to 30 V DC)
Characteristic curve	Rising or falling (configurable)
Deviation	< 1 %

Remarks: Without any signal from the positioner (e.g. “no power”, “initializing”, or in the event of an error), the module sets the output to >20 mA (alarm level).

MODULE FOR DIGITAL FEEDBACK SW1, SW2 *	
Terminals	+41 / -42 and +51 / -52
Supply voltage	5 to 11 V DC (Control circuit in accordance with DIN 19234 / NAMUR)
Output “logical 0”	< 1.2 mA
Output “logical 1”	> 2.1 mA
Direction of action	Configurable “logical 0” or “logical 1”
Description	2 software switches for binary position feedback (position adjustable within the range of 0 to 100 %, ranges cannot overlap).

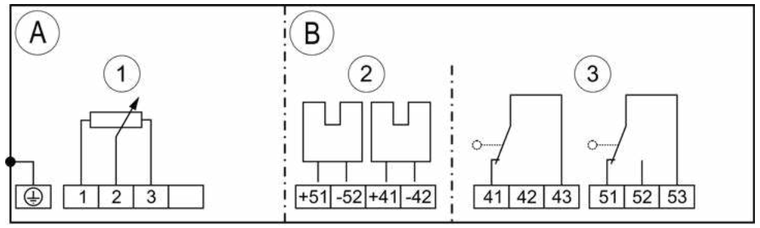
* The module for analog feedback and the module for digital feedback have separate slots and can be used together.

Assembly kits for limit monitor: Two proximity switches or microswitches for independent signaling of the actuator position, switching points are adjustable between 0 to 100%

LIMIT MONITOR WITH PROXIMITY SWITCHES 1, 2		
Terminals	+41 / -42 and +51 / -52	
Supply voltage	5 to 11 V DC (Control circuit in accordance with DIN 19234 / NAMUR)	
Direction of action	Metal tag in proximity switch	Metal tag outside proximity switch
Type SJ2-SN (NC)	< 1.2 mA	> 2.1 mA

LIMIT MONITOR WITH 24V MICROSWITCHES 1, 2	
Terminals	+41 / -42 and +51 / -52
Supply voltage	Maximum 24 V AC/DC
Load rating	Maximum 2 A
Contact surface	10 µm Gold (AU)

TZIDC Remote sensor electrical connections



A Basic device
B Options
1 Position sensor
2 Limit monitor with proximity switches (optional)
3 Limit monitor with microswitches (optional)

TERMINALS	
TERMINAL	**DESCRIPTION / CONNECTION**
1 / 2 / 3	TZIDC control unit
+51 / -52	Proximity switches Limit 1 (optional)
+41 / -42	Proximity switches Limit 2 (optional)
41 / 42 / 43	Microswitches Limit 1 (optional)
51 / 52 / 53	Microswitches Limit 2 (optional)

Remarks: The TZIDC Remote Sensor can be fitted either with proximity switches or microswitches as limit switches. It is not possible to combine both variants.

Remark: For full product specifications, including requirements for use in potentially explosive atmospheres, different communication protocols (Profibus PA and FOUNDATION Fieldbus-H1) and others, please consult.

PNEUMATIC POSITIONERS
PP981

DESCRIPTION

The ADCATrol PP981 is a pneumatic positioner used for direct operation of pneumatic linear or rotary actuators by means of pneumatic controllers with a 0,2 to 1 bar proportional control signal. The positioner compares the output signal from a controller with the position feedback, and varies a pneumatic output signal to the actuator accordingly. The actuator position is therefore guaranteed for any controller output signal and the effects of varying differential pressure.
The positioner features a compact design and a modular construction which allows easy attachment of options such as limit switches, analog feedback modules, manifolds, volume boosters, amongst others.

MAIN FEATURES

Compact and flexible design.
Mounting onto any linear or rotary actuator.
Single or double acting.
Supply pressure up to 6 bar.
Adjustable amplification and damping.
Independent adjustment of stroke range and zero position.
Resistant to vibration effect in all directions.
ATEX approvals.

OPTIONS AND ACCESSORIES

Module for analog position feedback.
Digital position feedback with inductive switches (two or three-wire system).
Digital position feedback with microswitches.
Attachment kit for linear actuators acc. to IEC 534/NAMUR.
Attachment kit with rotary adaptor for rotary actuators acc. to VID/VDE 3845.
Connection manifold with gauges.
Volume boosters.

TECHNICAL DATA

GENERAL	
Material	Housing: Aluminium finished with DD-varnish grey blue; Cover: impact resistant polyester grey blue; Moving parts of feedback system: AISI 303 /1.4305 or AISI 316Ti / 1.4571 Mounting bracket: AISI 304 / 1.4301
IP rating	Protection class IP 54 (IP 65 on request)
Pneumatic connections	Female threaded ISO 228 G 1/8”
Weight	Single acting without gauges: approx. 0,7 kg Single acting with gauges: approx. 0,8 kg Double acting: approx. 0,9 kg Attachment kit: For linear actuators: approx. 0,3 kg For rotary actuators: approx. 0,5 kg

AMBIENT CONDITIONS	
Ambient temperature	-40 ºC to 80 ºC
Relative humidity	Up to 100%
Operating conditions	According to IEC 654-1; The device can be operated at a class D2 location
Transport and storage temperature	-50 ºC to 80 ºC

RESPONSE CHARACTERISTIC *	
Amplification	Adjustable
Sensitivity	< 0,1% F.S.
Non-linearity (terminal based adjustment)	< 1,0 % F.S.
Hysteresis	< 0,3 % F.S.
Supply air dependency	< 0,2 % / 0,1 bar
Temperature effect	< 0,3 % / 10 K

* Data based on the following parameters: stroke 30 mm, feedback lever 117,5 mm, max. amplification, air supply pressure 3 bar.

GAUGES	
Indication range	
Input	0 to 1,6 bar
Output	0 to 10 bar
Error limit	Class 1.6

INPUT SIGNAL	
Signal range	0,2 to 1 bar or split range down to ∆w 0,2 bar
Stroke range	8 to 100 mm
Angular range	Linear: 30 º to 120 º Equal percentage: 90 º; from 70 º linear

OUTPUT SIGNAL	
Output to actuator	0 to 100 % supply air pressure

AIR SUPPLY	
Air supply pressure	1,4 to 6 bar
Supply air	Free of oil, dust or water, according to IEC 654-2

AIR CONSUMPTION	
Single acting	With 1,4 bar air supply: 200 Nl/h
	With 3 bar air supply: 400 Nl/h
	With 6 bar air supply: 600 Nl/h
Double acting	With 1,4 bar air supply: 350 Nl/h
	With 3 bar air supply: 550 Nl/h
	With 6 bar air supply: 750 Nl/h

AIR OUTPUT
Load effect *
-3 % for delivery flow 2350 Nl/h
+3 % for exhausted flow 1900 Nl/h

* Measured with air supply 1,4 bar and 50% of the signal range.

CAPACITY AT MAXIMUM DEVIATION (Nl/h)				
AIR SUPPLY PRESSURE	**1,4 bar**	**2 bar**	**4 bar**	**6 bar**
Without booster	2700	3500	5500	7500
With booster LEXG-FN/GN	18000	24000	40000	55000
With booster LEXG-HN	38000	48000	80000	110000

We reserve the right to change the design and material of this product without notice.

OPTIONS AND ACCESSORIES

INDUCTIVE LIMIT SWITCH (TWO-WIRE SYSTEM)	
Input	Stroke / angle from actuator via positioner feedback lever
Output	2 inductive proximity sensors acc. to DIN 19 234 resp. NAMUR for connection to a switching amplifier with an intrinsically safe control circuit **a)**
Current consumption	Vane clear: > 3 mA Vane interposed: < 1 mA
Supply voltage	DC 8 V, Ri approx. 1 kΩ
Residual ripple	< 5 %
Permissible line resistance	< 100 Ω
Response characteristic b)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 1 % Switching point repeatability: < 0,2 %
Explosion protection c)	Type of protection: II 2 G EEx ib/ia IIB/IIC T4/T6 Certificate of conformity: PTB 02 ATEX 2153 For operation in certified intrinsically safe circuits with the following maximum values: Umax: 16 V Imax: 25 mA Pmax: 64 mW Internal inductance: 100αH Internal capacitance: 30 nF
Ambient temperature	Temperature class T6: - 40 to 65 °C T1 to T5: - 40 to 80 °C

a) For the standard version one switching amplifier is required. For the security version, a fail-safe amplifier for each inductive proximity sensor is required; Operating mode minimum (= low) / maximum (= high) selectable by adjustment of switch vanes; Operating mode normally closed circuit / normally open circuit selectable at switch amplifier output.
b) For feedback lever effective length 117,5 mm, stroke 30 mm (1,28 in) and maximum gain.
c) National installation regulations must be observed;
For retrofitting the product must be tested by a qualified inspector as a special version in accordance with ElexV.

LIMIT SWITCH ASSEMBLY WITH MICROSWITCHES	
Input	Stroke / angle from actuator via positioner feedback lever
Output	2 micro switches **f)**
Connected load, alternating current	Switching capacity: max. 250 VA Switching voltage: max. 250 V Switching current with ohmic resistance: max. 5 A Inductive resistance: max. 2 A Bulb, metal filament: max. 0,5 A
Connected load, direct current (refer to the following table)	

Switching voltage, max. (V)	Ohmic load (A)	Inductive load (A)
30	5	3
50	1	1

Response characteristic g)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 2,5 % Switching point repeatability: < 0,2 %

f) Operating mode minimum (= low) / maximum (= high) selectable by adjustment of switch vanes; Contact closed within the positive range.
g) For feedback lever effective length of 117,5 mm, stroke 30 mm and maximum gain.

INDUCTIVE LIMIT SWITCH (THREE-WIRE SYSTEM)	
Input	Stroke / angle from actuator via positioner feedback lever
Output	2 inductive proximity sensors, three-wire system, LED indication, contact, pnp **d)**
Supply voltage U_S	DC 10 to 30 V
Residual ripple	± 10 %, U_S = 30 V
Switching frequency	2 kHz
Constant current	100 mA
Response characteristic e)	Gain: continuously adjustable from 1:1 to approx. 7:1 Switching differential: < 1 % Switching point repeatability: < 0,2 %

d) Operating mode minimum (= low) / maximum (= high) selectable by adjustment of switch vanes; Contact closed within the positive range.
e) For feedback lever effective length 117,5 mm, stroke 30 mm and maximum gain.

ANALOG POSITION FEEDBACK	
Sensor	Resistive precision conductive plastic element.
Input	Stroke/angle from actuator via position feedback lever; Stroke range: 15 to 80 mm (< 15 mm on request) Angular range: 60º to 120º
Output	Two-wire system; Signal range: 4 to 20 mA
Permitted load	R_{Bmax} = (U_S - 12 V) / 0,02A (U_S = Supply voltage)
Power supply	Supply voltage: DC 12 to 36 V Permitted ripple: < 10 % p.p. Supply voltage dependency: < 0,2 %
Response characteristic h)	Non-linearity with terminal based setting: < 1,0 % F.S Hysterisis: < 0,5 % F.S. External resistance dependency: < 0,2 % / $\Delta R_{B\,max}$ Temperature effect: < 0,3 % / 10 K
Explosion protection i)	Type of protection: II 2 G EEx ib/ia IIB/IIC T4/T6 Certificate of conformity: PTB 02 ATEX 2153 For operation in certified intrinsically safe circuits with the following maximum values: Umax: T4: 30 V; T6: 22 V Imax: T4: 130 mA ; T6: 66 mA Pmax: T4: 0,9 W ; T6: 0,5 W Internal inductance: 9 µH Internal capacitance: to earth 10 nF or 6 nF differential
Ambient temperature	Temperature class T6: - 40 to 40 °C Temperature class T5: - 40 to 55 °C Temperature class T4: - 40 to 80 °C

h) For feedback lever effective length of 117,5 mm, stroke 30 mm and maximum gain.
i) National installation regulations must be observed; For retrofitting the product must be tested by a qualified inspector as a special version in accordance with ElexV.

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IS PP981.10 E 13.08

COMMON DATA FOR OPTIONS AND ACCESSORIES	

GENERAL	
IP rating	Protection class IP 54; IP 65 on request
Mounting	Attachment to positioner
Electrical connections	Line entry: 1 or 2 cable glands M20 x 1,5 (others with Adapter AD-...) Cable diameter: 6 to 12 mm Screw terminals: max. 2.5 mm² (AWG14)
Materials	Base plate: galvanized steel Control vane: alluminium Setting mechanism: fibre glass-reinforced polyamide

AMBIENT CONDITIONS	
Ambient temperature j)	- 25 to 80 ºC; - 40 to 80 ºC
Relative humidity	Up to 100%
Operating conditions	According to IEC 654-1; The device can be operated at a class D2 location
Transport and storage temperature	- 40 ºC to 80 ºC

j) Without explosion protection; - 40 to 80 °C for the fail-safe version of inductive limit switch.

CE MARKING	
Electromagnetic compatibility	89/336/EWG
Low-voltage regulation	w/o Ex: 73/23/EWG (with Ex: not applicable)

ELECTROMAGNETIC COMPATIBILITY (EMC)	
Operating conditions	Industrial environment
Immunity	Acc. to NAMUR recommendation NE21, EN 61326 and EN 61000-6-2
Emission	According to EN 55011, Group 1, Class A and EN 61000-6-2

SAFETY	
Acc. to DIN EN 61010-1 (DIN IEC 61010-1) (VDE 0411 part 1)	safety class III; over voltage category I; internal fuses: none; external fuses: Limitation of power supplies for fire protection has to be observed due to EN 61010-1 9.3.

FIELD I TO P CONVERTER
PC25

DESCRIPTION

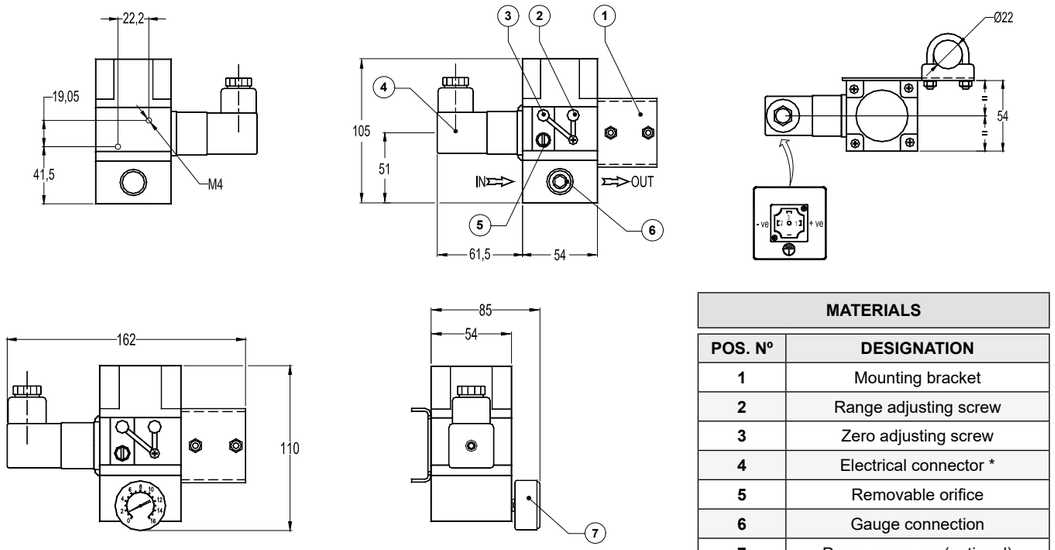
Instrument that converts a standard DC signal to a standard pneumatic signal, for the change-over from electrical controllers to pneumatic control valves, or from electrical measuring system to pneumatic controllers.
The PC25 is a force balance device, which converts a 4 to 20 mA input signal into a proportional 0,2 to 1 bar or 0,4 to 1,2 bar output signal, with a respective supply pressure of 1,7 to 5 bar.

MAIN FEATURES

Particularly compact design.
Good dynamic response.
Immune to mechanic vibrations.
Low maintenance and low consumption.
High reliability.
Adjustable output measuring span.

TECHNICAL DATA		
PNEUMATIC	Output pressure:	Ranges: 0,2 to 1 bar; 0,4 to 1,2 bar.
	Air supply:	Oil free and dry air, filtered to 5 microns, 1,7 to 5 bar.
	Flow capacity:	Up to 300 nL/min forward flow, 150 nL/min relief.
	Air consumption:	Usually 1,4 L/min.
	Linearity:	Maximum 0,5% of span.
	Hysteresis:	Maximum 0,35% of span.
	Response time:	Usually less than 0,5 seconds (depending on input for 10 % to 90% step change in outlet pressures) into a 10cc load.
	Temperature sensitivity:	< 0,1 % span/ºC for span and zero over operating range.
	Supply sensitivity:	Better than 0,075% span output change per % supply pressure change.
	Port size:	1/4” NPT.
GENERAL	Operating temperature:	- 40 ºC to 85 ºC.
	IP Rating:	IP 65 in normal position.
	Electromagnetic compatibility:	This is a passive electro-pneumatic instrument and is unaffected by interfering high frequency signals.
	Construction materials:	Zinc diecasting passivated and epoxy paint, nitrile diaphragms, Be2Cu flapper nozzle and supply valve.
	Weight:	825 g.
	Mounting position:	Integral surface mounting bracket provided for vertical mounting.
	Vibrating effect:	< 5% of span: 4 mm 5 to 15 Hz & 2g sine 15 to 150 Hz, vertical, horizontal and inverted, in accordance with ISA-S75.13-1996.
ELECTRIC	Input signal:	4 to 20 mA.
	Failure model:	Output pressure fails to bleed pressure when electrical supply.
	Connections:	30 mm square connector DN 43650.
	Span/zero:	Adjustable 20% output range.
	Input impedance:	11 kOhms for a 0 to 10 V.

DIMENSIONS



Assembling with pressure gauge (on request).

MATERIALS	
POS. Nº	**DESIGNATION**
1	Mounting bracket
2	Range adjusting screw
3	Zero adjusting screw
4	Electrical connector *
5	Removable orifice
6	Gauge connection
7	Pressure gauge (optional)
8	ADCA P10 regulator

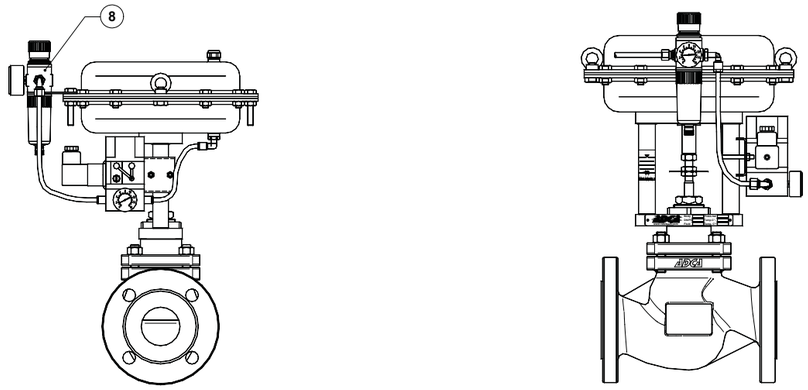
* 4 different positions possible.

CALIBRATION

When the instrument is first installed or after a long downtime period, a moderate zero shift is normal. This is due to the rubber diaphragms which are stretched by the internal springs. After a few operations, the instrument will settle into its normal operating condition. In these circumstances, instruments should be put to work by alternately applying zero and full scale signals several times. Zero calibration should then be carried out.
Adjust zero control nº 2 (anti-clockwise) to give minimum required output pressure.
Adjust range control nº 3 (anti-clockwise) to give maximum required output pressure.

Note: Reverse acting operation.
About 20 turns of the zero screw may be required to reset the zero point.

TYPICAL INSTALLATION



AIR FILTER REGULATOR P10

DESCRIPTION

The P10 air filter regulators are used to remove both solid and liquid impurities from the air and to regulate the output pressure to the required value for general purpose pneumatic systems.
The filter bowl is transparent, allowing easy monitoring of the condensate level.

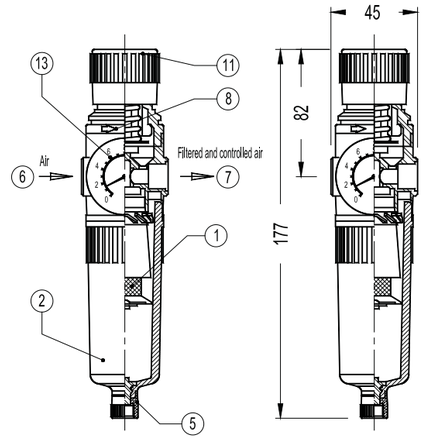
MAIN FEATURES

Self relieving.
Compact combined filter/regulator.
5 micron large surface area element.
Manual and automatic condensate exhaustion are easier when there is no pressure.
Pressure gauge D.42 x 1/8”
Mounting bracket.

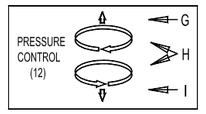
USE: Pneumatic systems.

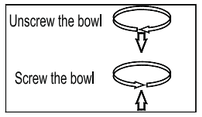
AVAILABLE MODELS: P10 – alluminium and polycarbonate.

SIZE AND CONNECTION: Female threaded ISO 7 Rp 1/4”.



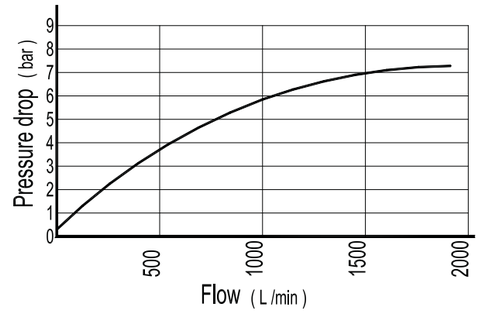
LIMITING CONDITIONS	
Valve model	**P10**
Maximum upstream pressure	12 bar
Maximum downstream pressure	10 bar
Minimum downstream pressure	0,5 bar
Maximum design temperature	60 ºC
Minimum operating temperature	-10 ºC





MATERIALS	
POS. Nº	**DESIGNATION**
1	Filtering element
2	Bowl (with bowl guard included)
5	Exhaust ring
6	Air inlet connection
7	Low pressure air outlet
8	Flow indicator arrow
11	Pressure regulating knob
13	Pressure gauge

* Available spare parts.



UNIVERSAL PROCESS CONTROLLER
UC-820

DESCRIPTION

The UC-820 is a digital universal controller used in the automation of industrial processes. It is ideally suited for use with our range of instrumentation, electric and pneumatic control valves and other electrical equipments.
The controller includes a set of universal type inputs for RTD, thermocouple (TC), logic (binary) and analog inputs. The controller has options for relay, open-collector (OC) and analog outputs using the innovative SMART PID algorithm.

MAIN FEATURES

- Universal measuring input: Resistance thermometer (RTD), thermocouples (TC), 0/4 to 20 mA and 0 to 5/10 V.
- Binary input control.
- Set point value: constant, programmed or from the additional analog input.
- On/off, PID, PID three-step and two-step control (valve control) or PID of heating-cooling type.
- 2 NO relay outputs and 2 other outputs of choice between relay, OC or analog outputs (0/4 to 20 mA or 0 to 10 V).
- Soft-start function.
- 8 types of alarm functions.
- 24 V DC loop power supply output.
- Signal retransmission.
- “Gain scheduling” function.
- Timer function.
- Auto-tuning using the smart PID algorithm.
- Measurement of heating current and monitoring of heater overheating or shortening of the control element.
- Galvanically isolated inputs and outputs.
- Password protection.
- Fully programmable from the front panel.
- RS-485 Modbus RTU communication.
- IP rating IP 65.

We reserve the right to change the design and material of this product without notice.

TECHNICAL DATA

GENERAL	
Supply Voltage	85 to 253 V AC/DC or 20 to 40 V AC/DC
Ambient temperature	0 to 50 ºC
Storage temperature	- 20 to 70 ºC
Humidity	< 85% without condensation
Operating Position	Any

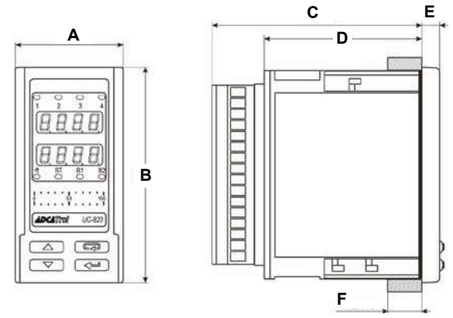
EXTERNAL FEATURES	
Readout field	2 x 4 digits; Digit height: 10 mm; Colors: red and green
Weight	< 0.2 kg
IP rating	From frontal side: IP 65; From rear side: IP 20
Bargraph	2 x 21 points; Colors: red and green

INPUT		
TYPE	**RANGE**	**ERROR**
PT100	- 200 to 850 ºC	0,2%
PT1000	- 200 to 850 ºC	0,2%
Fe-CuNi (J)	- 100 to 1200 ºC	0,3%
Cu-CuNi (T)	- 100 to 400 ºC	0,3%
NiCr-NiAl (K)	- 100 to 1372 ºC	0,3%
PtRh10-Pt (S)	0 to 1767 ºC	0,5%
PtRh13-Pt (R)	0 to 1767 ºC	0,5%
PtRh30-PtRh6 (B)	200 to 1767 ºC	0,5%
NiCr-CuNi (E)	- 100 to 1000 ºC	0,3%
NiCrSi-NiSi (N)	- 100 to 1300 ºC	0,3%
Chromel-kopel (L)	- 100 to 800 ºC	0,3%
Current channels (I)	0/4 to 20 mA	0,2% +/-1 digit
Voltage channels (U)	0 to 5/10 V	0,2% +/-1 digit
Binary	Voltageless	

OUTPUT		
TYPE	**PROPERTIES**	**LOAD CAPACITY**
Relay (voltageless)	NO contacts	2 A/ 230 V AC
OC open-collector	0/5 V	Max. 40 mA
Continuous voltage	0 to 10 V	Rload ≥ 1kΩ
Continuous current	0/4 to 20 mA	Rload ≤ 500Ω
Transducer supply output	24 V DC	Max. 30 mA

DIGITAL INTERFACE	
Interface type	RS-485
Protocol	Modbus RTU 8N2, 8E1, 8O1, 8N1
Baud rate	4.8, 9.6, 19.2, 38.4, 57.6 kbit/s

SAFETY AND COMPATIBILITY REQUIREMENTS	
Electromagnetic compatibility	Noise immunity acc. to EN 61000-6-2
	Noise emissions acc. to EN 61000-6-4
Pollution level	Level 2 acc. to EN 61010-1
Installation category	Cat. III acc. to EN 61010-1
Maximal phase-to-earth operating voltage	Supply / Output circuits: 300 V; Input circuits: 50 V acc. to EN 61010-1



DIMENSIONS (mm)						
MODEL	**A**	**B**	**C**	**D**	**E**	**F**
UC-820	48	96	93 (max.)	70	8	15 (max.)

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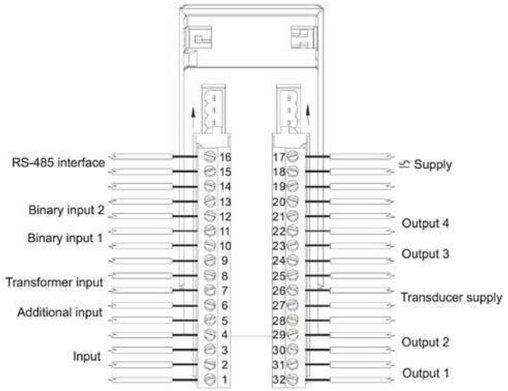
IS UC820.10 E 07.17

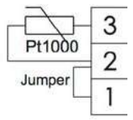
ELECTRICAL CONNECTIONS

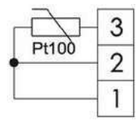
TERMINALS



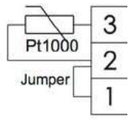
CONNECTION OF INPUT SIGNALS

PT100 (2 AND 3 WIRE SYSTEM)

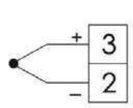




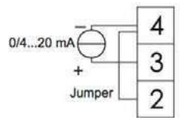
PT1000



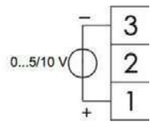
THERMOCOUPLE



CURRENT INPUT

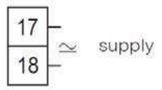


VOLTAGE INPUT

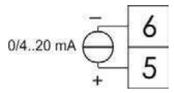


OTHER CONNECTIONS

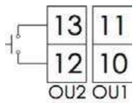
POWER SUPPLY



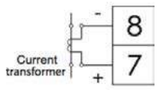
ADDITIONAL ANALOG INPUT SIGNAL



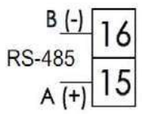
BINARY INPUT 1 AND 2



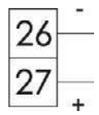
CURRENT TRANSFORMER INPUT



RS-485 INTERFACE

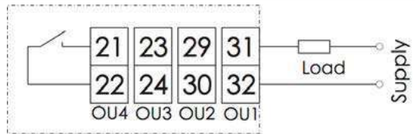


TRANSDUCER SUPPLY 24V

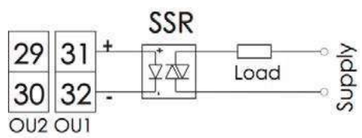


CONTROL/ALARM OUTPUT SIGNALS

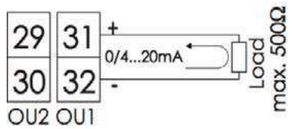
OUTPUT 1, 2, 3, 4: RELAY



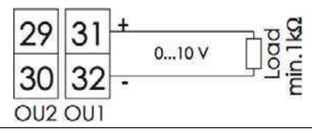
OUTPUT 1, 2: VOLTAGE 0/5 V (SSR)



OUTPUT 1, 2: CONT. CURRENT 0/4 to 20 mA



OUTPUT 1, 2: CONT. VOLTAGE 0 to 10 V



ORDERING CODES UC-820					
Group designation	**UC820**	**.1**	**3**	**1**	**.1**
Universal process controller	**UC820**				
Output 1					
Relay		**.1**			
OC open collector (0/5 V)		**.2**			
Continuous current (0/4 to 20 mA)		**.3**			
Continuous voltage (0 to 10 V)		**.4**			
Output 2					
Relay **a)**			**1**		
OC open-collector (0/5 V)			**2**		
Continuous current (0/4 to 20 mA)			**3**		
Continuous voltage (0 to 10 V)			**4**		
Transducer Supply 24 V					
None				**0**	
Supply for transducers 24 V DC 1 W				**1**	
Power Supply					
85 to 253 V AC/DC					**.1**
20 to 40 V AC/DC					**.2**

a) Only when a relay or OC voltage output is selected on output 1.

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IS UC820.10 E 07.17

UNIVERSAL DISPLAY
UD-720

DESCRIPTION

The UD-720 is a programmable digital panel display used for the measurement of standard sensor and analog signals applied in automation. It is ideally suited for use with our range of instrumentation such as pressure transmitters, temperature probes and TDS controllers.

MAIN FEATURES

- Measuring inputs for resistance thermometer (RTD), thermocouples (TC), 0/4 to 20 mA, 0 to 10 V, 0 to 60 mV and resistance (Ω).
- 2 NO relay alarm outputs (standard) plus 2 change-over relay alarms (optional).
- 6 types of alarm functions.
- 24 V DC loop power supply output.
- 0/4 to 20 mA and 0 to 10 V outputs for retransmission of any of the measured inputs (optional).
- Three color display (14 mm high) with programmable color settings based on the measured value.
- 21-point individual characteristic function for input rescaling and conversion.
- Galvanically isolated inputs and outputs.
- Password protection.
- Fully programmable from the front panel.
- RS-485 Modbus RTU communication (optional).
- IP rating IP 65.

TECHNICAL DATA

GENERAL	
Supply Voltage	85 to 253 V AC/DC or 20 to 40 V AC, 20 to 60 V DC
Temperature	Ambient: - 25 to 55 ºC; Storage: - 30 to 70 ºC
Humidity	< 85% without condensation
Operating position	Any
External magnetic field	0 to 400 A/m

EXTERNAL FEATURES	
Readout field	5 digit display; Digit height: 14 mm; Colors: red, green and orange
IP rating	From frontal side: IP 65; From rear side: IP 10

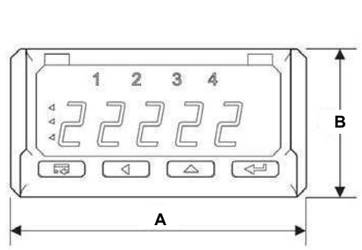
INPUT *		
TYPE	**RANGE**	**CLASS**
PT100	-200 to 850 ºC	0.1
PT500	-200 to 850 ºC	0.1
PT1000	-200 to 850 ºC	0.1
Fe-CuNi (J)	-100 to 1200 ºC	0.1
NiCr-NiAl (K)	-100 to 1372 ºC	0.1
PtRh10-Pt (S)	0 to 1767 ºC	0.1
PtRh13-Pt (R)	0 to 1767 ºC	0.1
NiCr-CuNi (E)	-100 to 1000 ºC	0.1
NiCrSi-NiSi (N)	-100 to 1300 ºC	0.1
Current input (I)	-20 to 20 mA	0.1
Voltage input (U)	-10 to 10 V	0.1
mV input (mV)	0 to 60 mV	0.1

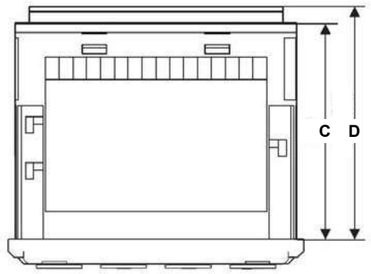
* Additional errors:
Due to automatic compensation of the reference junction temperature: ≤ 1°C.
Due to automatic compensation of the cable resistance for RTDs: ≤ 0.5°C.
Due to automatic compensation of the cables for resistance measurement: ≤ 0.2 Ω.
From temperature changes: 100% of the class / 10 K.

OUTPUT		
TYPE	**PROPERTIES**	**LOAD CAPACITY**
Relay (voltageless)	NO contacts	0.5 A / 230 V AC
	Change-over contacts	0.5 A / 230 V AC
OC open-collector	Passive NPN	Max. 30 V DC, 30 mA
Continuous voltage	0 to 10 V	Rload ≥ 500 Ω
Continuous current	0/4 to 20 mA	Rload ≤ 500 Ω
Transducer supply	24 V DC	Max. 30 mA

DIGITAL INTERFACE	
Interface type	RS-485
Protocol	Modbus RTU 8N2, 8E1, 8O1, 8N1
Baud rate	4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbit/s

SAFETY AND COMPATIBILITY REQUIREMENTS	
Electromagnetic Compatibility	Noise immunity acc. to EN 61000-6-2
	Noise emissions acc. to EN 61000-6-4
Pollution level	Level 2 acc. to EN 61010-1
Installation category	Cat. III acc. to EN 61010-1
Maximal phase-to-earth operating voltage	Supply circuit: 300 V; Remaining circuits: 50 V acc. to EN 61010-1
Altitude above sea level	< 2000 m acc. to EN 61010-1





DIMENSIONS (mm)					
MODEL	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
UD-720	96	48	67	93 (Max.)	< 0.2 kg

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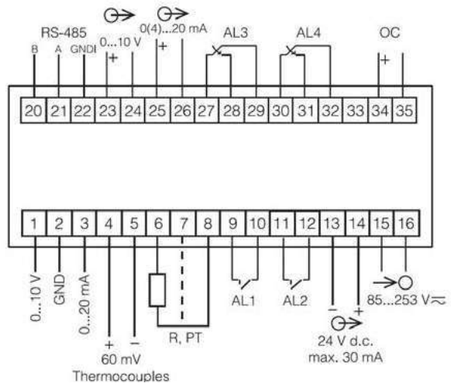
IS UD720.10 E 07.17

TERMINALS



ORDERING CODES UD-720

Group designation	UD720	.1	.0
UD-720 universal display	**UD720**		
Power Supply			
85 to 253 V AC/DC		**.1**	
20 to 40 V AC, 20 to 60 V DC		**.2**	
Additional Outputs			
No additional outputs			**.0**
OC open-collector output, RS-485 and analog outputs			**.1**
OC open-collector output, RS-485, analog outputs and 2 change-over relay outputs			**.2**

TEMPERATURE SENSORS
TRPT1

DESCRIPTION

The TRPT1 Pt100 resistance temperature sensors are specially designed for general industrial use. The sensing element is an RTD three wire device according to EN 60751 Class A.
The sensor consists of a probe, a connection head and a measurement insert. The probe is made of austenitic stainless steel and the connection head is made of aluminium. The supply lines to the measurement insert are insulated from each other and from the probe tube with a ceramic insulator.
The sensor can be connected directly to a temperature indicator or controller that has a three wire Pt100 input.

MAIN FEATURES

Head type B-KNE.
Three wire sensing element.
Fast response time.
Easy to install.

OPTIONS: Special designs under request.
Transmitter assembly 4 to 20 mA output.
ATEX approved version.
Clamping connection hygienic sensor.
Higher operating limits.
Special design for air temperature measurements.

USE: Measurement in pipelines and vessels.

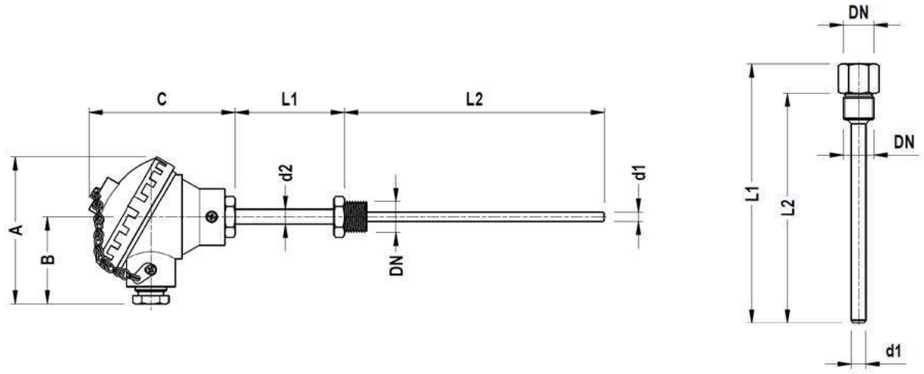
AVAILABLE MODELS: TRPT1 – simple sensor.
TRPT1T – sensor and transmitter.

SIZES AND CONNECTIONS: 1/2” male threaded ISO 228.

INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

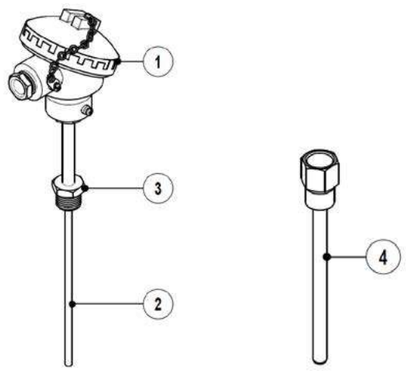
LIMITING CONDITIONS	
Operating temperatures (Class A)	- 10 ºC to 300 ºC
Max. operating conditions	36,5 bar @ 400 ºC
Ambient temperature	- 20 ºC to 80 ºC

TECHNICAL DATA		
TYPE	**TRPT1**	**TRPT1T**
Enclosure	KNE	KNE
Enclosure protection according to EN60529: 1991/A1:20	IP 66	IP 66
Electrical connection	M20 x 1,5	M20 x 1,5
Available standard ranges	-10 to 300 ºC	-10 to 300 ºC Other ranges programmable
Output	Pt100 to EN 60751 – Class A	Loop powered 4 to 20 mA
Supply	–	10 to 30 V DC
Maximum loop resistance	–	681 Ohm at 24 V DC 954 Ohm at 30 V DC
Transmiter – Thermal drift measurement deviation	–	Input 0,06 ºC / 10 ºC Output 0,02% of span / 10 ºC
Maximum values for connection of the current loop circuit (+ and – connections)	–	Uo = 30 V DC Pi = 800 mW



DIMENSIONS (mm)														
TEMPERATURE SENSOR										**THERMOWELL**				
MODEL	**A**	**B**	**C**	**L1**	**L2**	**DN**	**d1**	**d2**	**WGT. (kg)**	**SIZE**	**L1**	**L2**	**d1**	**WGT. (kg)**
TRPT1 – 100	99	59	99	74	115	1/2”	6	10	0,47	1/2"	129	109	10	0,11
TRPT1 – 150	99	59	99	74	165	1/2”	6	10	0,48	1/2"	179	159	10	0,13

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Head	Aluminium alloy
2	Probe	AISI 316L / 1.4404
3	Process connection	AISI 316 / 1.4401
4	Thermowell (pocket)	AISI 316 / 1.4401



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PRESSURE TRANSMITTER
PCS1

DESCRIPTION

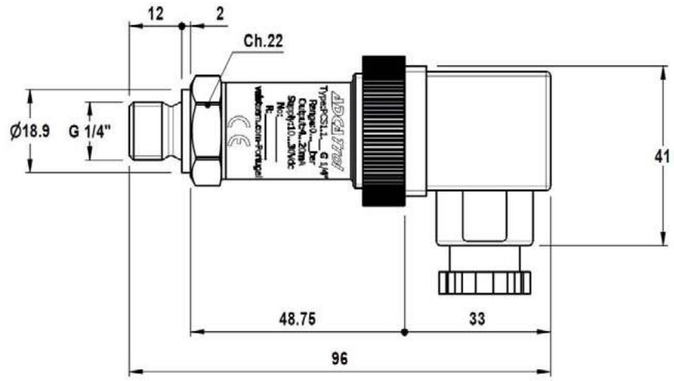
The PCS1 series pressure transmitters are suitable for all industrial applications, specially in severe conditions where high temperatures, pressure peaks and high levels of shock and vibrations are present. They are extremely robust and reliable, thanks to their state of the art SMD electronics and compact all stainless steel construction.

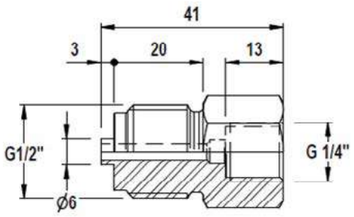
MAIN FEATURES

Very compact size.
All stainless steel construction.
Extended process media temperature from - 40 ºC to 125 ºC.
2-wire 4 – 20 mA current loop output.
G 1/4’’ pressure port with embedded o-ring.
Available in multiple pressure ranges.
Accuracy: < 0.5% of full scale.
Fast response (< 1 ms).
Capable of withstanding high levels of mechanical shock and vibrations.

OPTIONS: Siphons and connector fitting adaptors for ADCA GS series siphons.
M12 electrical connection (IP67 protection class).

DIMENSIONS (mm)





Connection fitting adaptor for ADCA GS series siphons (optional)

PRESSURE RANGES (bar)									
RANGE	**0...6**	**0...10**	**0...16**	**0...25**	**0...40**	**0...100**	**0...250**	**0...400**	**0...600**
Overpressure	12	20	32	50	80	200	500	800	1200
Burst pressure	24	40	64	100	160	400	1000	1500	1500

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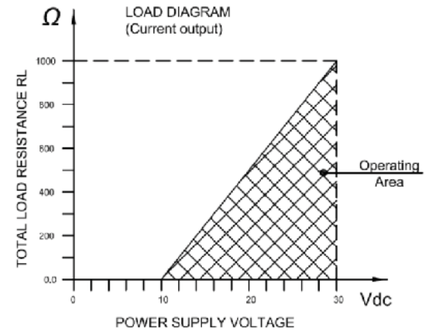
Produced in accordance with Sound Engineering Practices of the European PED - Pressure Equipment Directive.

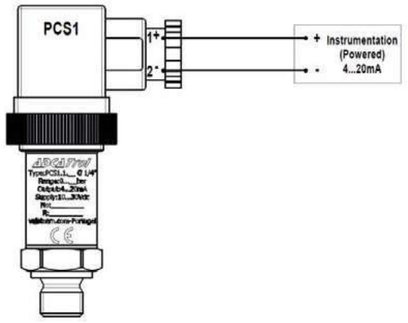
TECHNICAL DATA	
Non linearity (BFSL)	±0.15% FS; ±0.25% FS (max)
Hysteresis	±0.1% FS; ±0.15% FS (max)
Repeatability	±0.025% FS; ±0.05% FS (max)
Zero offset tolerance	±0.15% FS; ±0.25% FS (max)
Span offset tolerance	±0.15% FS; ±0.25% FS (max)
Accuracy at room temperature **a)**	< ±0.5% FS
Pressure ranges **b)**	See table
Resolution	Infinite
Overpressure (without degrading performance)	See table
Pressure containment (burst test)	See table
Pressure media	Fluids compatible with stainless steel AISI 430F and 17-4 PH
Housing	Stainless steel AISI 304
Power supply	10...30 V DC
Dielectric strength	250 V DC
Zero output signal	4 mA
Full scale output signal	20 mA
Allowed load	See load diagram
Long term stability	<0.2% FS/per year
Operating temperature range (process)	-40...+125 ºC (-40...+257 ºF)
Operating temperature range (ambient)	-40...+105 ºC (-40...+221 ºF)
Compensated temperature range	-20...+85 ºC (-40...+185 ºF)
Storage temperature range	-40...+125 (-40...+257 ºF)
Temperature effects over compensated range (zero)	±0.01% FS/ºC; ±0.02% FS/ºC (max)
Temperature effects over compensated range (span)	±0.01% FS/ºC; ±0.02% FS/ºC (max)
Response time (10...90% FSO)	< 1 ms
Warm-up time **c)**	< 30 s
Mounting position effects	Negligible
Humidity	100% RH non-condensing
Weight	80 g to 120 g nominal
Mechanical shock	100 g / 11 ms according to IEC 60068-2-27
Vibrations	20 g max at 10...2000 Hz according to IEC 60068-2-6
Type of protection	IP 65 / IP 67
Output short circuit and reverse polarity protection	Yes
EC Conformity	According to directive 2014/30/EU

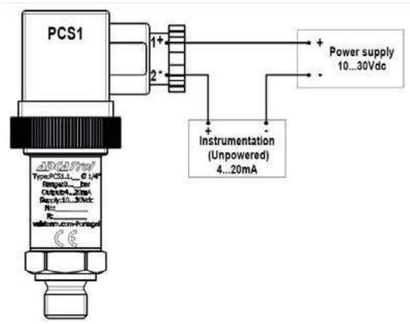
FS = Full Scale.
a) Including Non-linearity, Hysteresis, Repeatability, Zero-offset and Span-offset (acc. to IEC 61298-2).
b) The operating pressure range is intended from 0.5% to 100% FS.
c) Time within which the rated performance is achieved.

LOAD DIAGRAM



WIRING DIAGRAMS





ORDERING CODES PCS1			
Group Designation	**PCS1**	**.1**	**.10**
Pressure transmitter	**PCS1**		
Electrical Connections			
4-pin DIN connector (EN 175301-803 Form A) IP 65 **a)**		**.1**	
Measurement Range			
0...6 bar			**.6**
0...10 bar			**.10**
0...16 bar			**.16**
0...25 bar			**.25**
0...40 bar			**.40**
0...100 bar			**.100**
0...250 bar			**.250**
0...400 bar			**.400**
0...600 bar			**.600**

a) 4-pin male M12x1 connector IP 67 is available under special request.

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DIRECT SOLENOID VALVE
SV32

DESCRIPTION

3/2 way solenoid valves are available as single station units and they are designed for use with compressed air, mainly applied where on-off control is required with pneumatic actuators.

OPTIONS: Other versions under request.

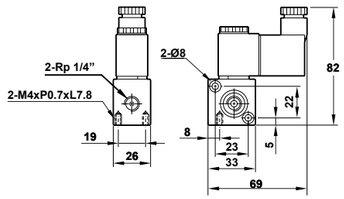
USE: Pneumatic actuator control, among others.

AVAILABLE MODELS: SV32C – direct acting.
SV32H – pilot operated.

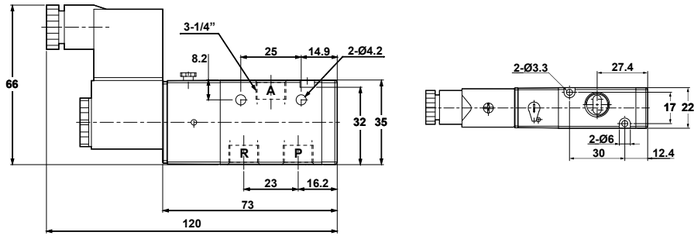
SIZES AND CONNECTIONS: 1/4” female threaded ISO 7 Rp.

INSTALLATION: In any position.
See IMI – Installation and maintenance instructions.

DIMENSIONS



SV32C



SV32H

TECHNICAL DATA		
TYPE	**SV32C**	**SV32H**
Body material	Aluminium alloy	
Sectional area	1,5 mm²	16 mm²
Action	Direct acting with spring return	Internal pilot
Operating pressure	0 to 8 bar	
Maximum proof pressure	10 bar	
Ambient temperature	-10 ºC to 60 ºC	
Duty cycle	100% ED	
Coil type	DIN	
Protection class	IP 65 (DIN 40 050)	
Insulation class	F	
Voltage tolerance	±10%	
Standard voltages	220 V AC, 110 V AC, 24 V DC	
Net weight	0,16 kg	0,18 kg

TDS CONTROLLER
FOR STEAM GENERATORS
(AUTOMATIC PURGE OF DISSOLVED SOLIDS)
BCS-211

DESCRIPTION AND OPERATION

The ADCATrol BCS-211 controller is part of the dissolved solids (TDS) control system used in steam boilers. This system is composed by a SPS series conductivity probe, a BCS-211 controller, a VPC series TDS blowdown control valve and, in case of need, a UC-820 universal process controller for PID control.

The BCS-211 controller continuously measures, at the electrode rod in the measuring cell, the electrical conductivity of the boilers’ water, which is closely related to the level of TDS. The value measured is then compared with the set point of the controller. If that value exceeds the set point, the controller opens the blowdown valve using its relay (on/off) output (lighting up the “Alarm” indicator lamp).

If the measured value drops below 78% of the set point, the controller relay is energized, closing the blowdown valve (the “Alarm” indicator lamp turns off).

A modulating (PID) control may be achieved by using the BCS-211 4 to 20 mA transmitter output in conjunction with a UC-820 universal process controller.

MAIN FEATURES

- Compatible with both SPS-21 and SPS-33 series conductivity probes.
- Relay (on/off) output and 4 to 20 mA transmitter output.
- Standard 35 mm rail fixation according to DIN EN 50022 or directly screwed to chassis plate.
- Allows quick performance tests by pressing and holding the “TEST K” button.

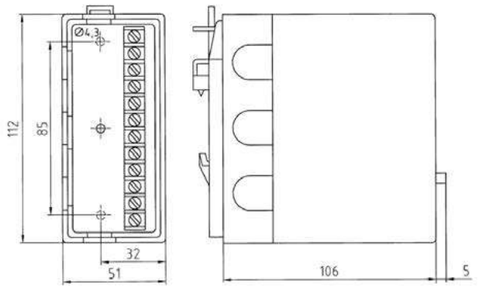
AVAILABLE MODELS:

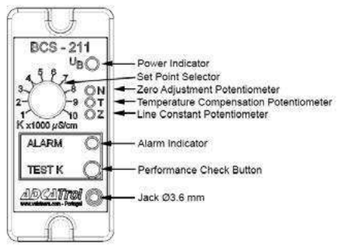
BCS-211 – 0 to 10000 µs/cm.
BCS-211B – 0 to 1000 µs/cm.

TECHNICAL DATA	
TYPE	**BCS-211**
Component mark	TUV ID: 0000006175
CE mark	0035 *
Supply voltages	230 V +/- 15% 50/60 Hz
Input	ca, 4,5 VA
Fuse	80 mA/T
Relay output	max. 250 V AC; max. 5 A
Transmitter output	4 to 20 mA
Electrical conductivity range of the liquid	0 µS/cm to 10 000 µS/cm 0 µS/cm to 1 000 µS/cm **
Adjustable conductivity set point value at 25 ºC	1 000 µS/cm to 10 000 µS/cm 100 µS/cm to 1 000 µS/cm **
Protection as per DIN EN 60529	IP 40 ***
Ambient temperature	0 ºC to 60 ºC

* According to PED directive annex VII (Module B+D, category II).
** Version available upon request (BCS-211B).
*** According to German regulations Vd TUV – Wasserstand 100, 4,90 a protection of IP 54 has to be maintained in the boiler area.

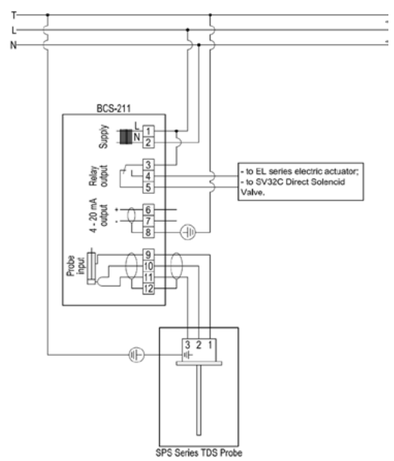
DIMENSIONS AND FUNCTIONS



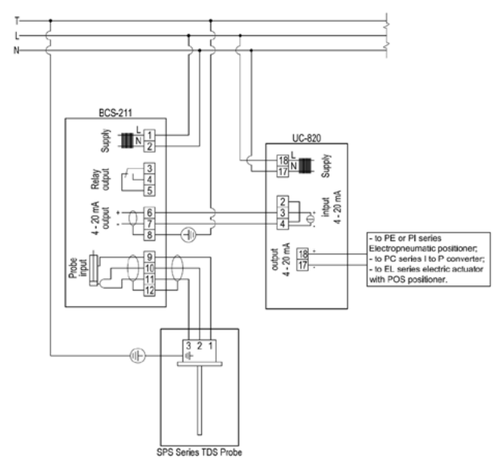


WIRING DIAGRAMS

RELAY ON/OFF OUTPUT



TRANSMITTER 4 to 20 mA OUTPUT



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TYPICAL INSTALLATIONS

RELAY (ON/OFF) OUTPUT

FIG. 1 – DIRECT BOILER CONDUCTIVITY MEASUREMENT (USING SPS-33 PROBE)

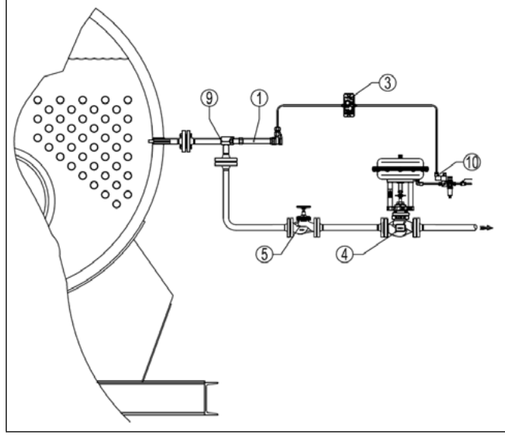
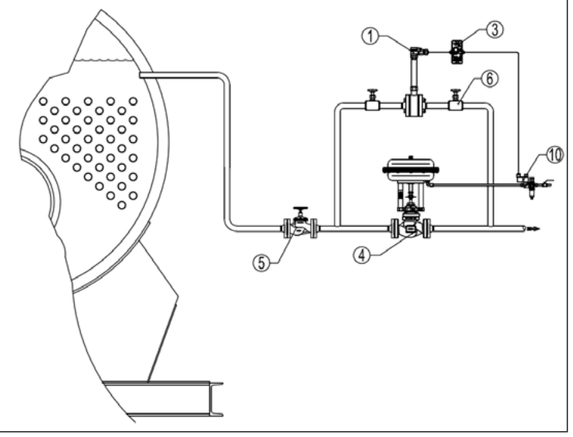


FIG. 2 – INLINE CONDUCTIVITY MEASUREMENT (USING SPS-21 PROBE)



TRANSMITTER (4 to 20mA) OUTPUT

FIG. 3 – DIRECT BOILER CONDUCTIVITY MEASUREMENT (USING SPS-33 PROBE)

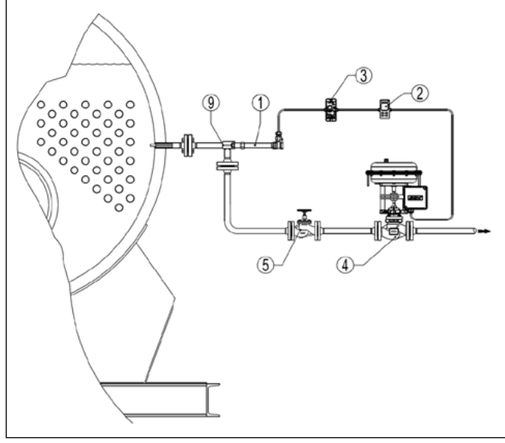
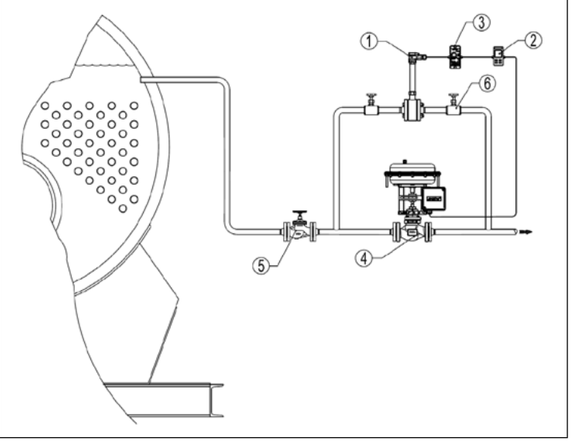


FIG. 4 – INLINE CONDUCTIVITY MEASUREMENT (USING SPS-21 PROBE)



MATERIALS	
POS. Nº	**DESIGNATION**
1	ADCATrol SPS-33 (fig. 1 and fig. 3) and SPS-21 (fig.2 and fig.4)
2	ADCATrol UC-820 universal process controller
3	ADCATrol BCS-211 TDS controller
4	ADCATrol VPC series TDS blowdown control valve
5	ADCA VF bellow sealed globe valve
6	ADCA NV400 needle valve
9	Tee piece type F-3220
10	SV32C direct solenoid valve

* Available spare parts.

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IS BCS.211 E 14.16

BLOWDOWN CONTROLLER
BCS220

DESCRIPTION

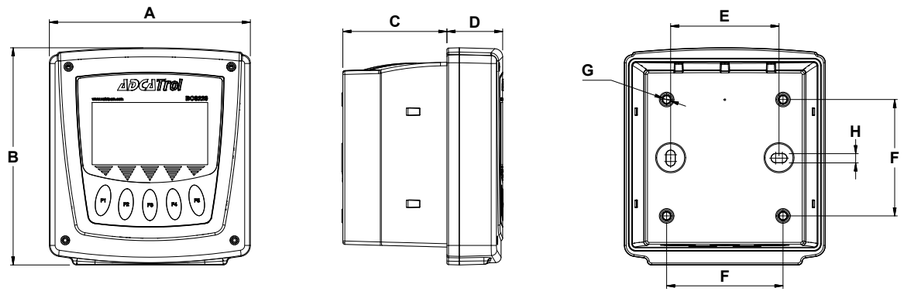
The ADCATrol BCS220 is a blowdown controller specially designed for use with steam boilers. The device takes care of both TDS and intermittent blowdown controls.
TDS (Total Dissolved Solids) is controlled through measurement of the boiler water electrical conductivity and intermittent control is performed via a blowdown timer.
The device utilizes a clear multifunction LCD to display measured conductivity, temperature, operational alarm status and provide an intuitive user interface. The device is IP 66 rated NEMA 4X and can be panel, surface/wall and pipe mounted.

MAIN FEATURES

TDS and intermittent blowdown control in one single device.
Displays conductivity, resistivity, PPM and temperature units.
Programmable cell constant.
Versatile IP 66 NEMA 4X (144 x 144 mm) enclosure design.
Large informative 3,75'' LCD backlit display.
Simple intuitive menu structure with soft tactile function buttons.
Software upgradable via SD card slot – Future proof.
Volt-free outputs with multiple alarm function options.
0(4) to 20 mA analog output for remote monitoring purposes with features including adjustable scaling, selectable on-error states and loop fault detection.
Digital input suitable for connection to the boiler stand-by/burner contact, to reduce energy waste.

OPTIONS AND ACCESSORIES: Panel mounting kit.
Pipe mounting kit (50 to 100 mm pipe OD).

AVAILABLE MODELS: BCS220 – 90 to 265 V AC power supply.
BCS220-LV – 12 to 30 V DC power supply.



DIMENSIONS (mm)									
MODEL	A	B	C	D	E	F	G	H	WEIGHT (kg)
BCS220 BCS220-LV	150	161	77	42	80	86	M4	6,8	0,8

TECHNICAL DATA

GENERAL	
Supply voltage	90 to 265 V AC, 10 W max. (standard model) 12 to 30 V DC, 5 W max. (LV model)
IP rating	IP 66 NEMA 4X
Material	Housing in PC/ABS
Ambient temperature	-20 to +55 °C
Ambient humidity	5 to 95 %, non condensing
Front panel	144 x 144 mm (cutout: 138 x 138 mm)
Display	3,75" 240 x 128 dot LCD module *
Language	English, Portuguese, French, Spanish and Italian

* Backlight can be set to flash to indicate the instruments alarm status.

INPUTS AND OUTPUTS	
Digital inputs	1 NO/NC contact input
Relay outputs	2 NO volt free contacts 5A @ 30 V DC / 5A @ 250 V AC
Analog output *	0(4) to 20 mA, 750 ohms max., fully isolated to 2 kV
MicroSD card interface	SD, SDHC and SDXC-FAT32 cards supported

* Expandable across operating range. Includes loop fault detection.

CONDUCTIVITY, TDS AND RESISTIVITY	
Measuring ranges *	0 to 99,99 µS/cm up to 0 to 999,9 mS/cm (K= 0,01 to 10,0) 0 to 99,99 KΩ/cm up to 0 to 9,999 MΩ/cm (K= 0,01 to 1,0) 0 to 99,99 ppm up to 0 to 99,99 ppt
Cell constant adjustment	Fully adjustable from 0,005 to 15
Cell constant calibration	± 50% of nominal cell constant
Range selection	Internal single or auto range
Conductivity accuracy	± 0,5% of range
Linearity	± 0,1% of range
Repeatability	± 0,1% of range
Operator adjustment (conductivity)	± 10 % slope (gain) adjustment for solution calibration
Sensor input filter	Adjustable filter that averages the sensor input over a user selectable time (10 sec. to 5 min.)

* See conductivity, TDS and resistivity range tables for further information.

TEMPERATURE COMPENSATION	
Range of temperature measurement	50 °C to 300 °C
Temperature accuracy	± 0,5 °C
Temperature sensor	Pt100 or Pt1000 RTD (2,3 or 4 wire)
Temperature compensation type	Automatic or manual (- 0 to 9,99 %/°C)
Temperature compensation base	Selectable at 20 °C or 25 °C
Range of temperature compensation	-10 °C to +300°C

DIRECTIVES	
Electromagnetic compatibility directive	2014/30/EU using EN 61326-1:2013
Low voltage directive	2014/35/EU using EN 61010-1:2010
RoHS directive	2011/65/EU using EN 50581:2012

CONDUCTIVITY RANGE				
	Nominal cell constant			
Conductivity range	0,01	0,1	1	10
0 to 9,999 µS/cm	●	●		
0 to 99,99 µS/cm	●	●	●	
0 to 999,9 µS/cm		●	●	●
0 to 9999 µS/cm			●	●
0 to 99,99 mS/cm *			●	●
0 to 999,9 mS/cm *				●

* Maximum measurement range will be limited by the solution temperature. With the temperature compensation slope set to 2%/°C the range will derate linearly from full scale at 25°C to 50% of scale at 100°C.

TOTAL DISSOLVED SOLIDS RANGE				
	Nominal cell constant			
TDS range	0,010	0,1	1	10
0 to 9,999 ppm	●	●		
0 to 99,99 ppm	●	●	●	
0 to 999,9 ppm		●	●	●
0 to 9999 ppm			●	●
0 to 99,99 ppt				●

RESISTIVITY RANGE				
	Nominal cell constant			
Resistivity range	0,010	0,1	1	10
0 to 99,99 kΩ-cm		●	●	
0 to 999,9 kΩ-cm	●	●		
0 to 9,999 MΩ-cm	●	●		
0 to 99,99 MΩ-cm	●			

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IS BCS220.00 E 01.21

CONDUCTIVITY PROBE
SPS21

DESCRIPTION

The ADCATrol SPS21 conductivity probe is typically used in steam applications to measure the conductivity of superheated boiler water, condensate or feedwater. The probe is used in conjunction with an ADCATrol BCS controller and a VPC series TDS blowdown control valve.
Water contains impurities in the form of dissolved solids and solids in suspension, whose concentration increases during vaporization. Water treatment can reduce impurities to a certain degree, however these are not completely eliminated and, in certain conditions, might even increase. As steam production starts, there is an undesirable increase in boiler water TDS (Total Dissolved Solids) concentration. If not taken care of, the high concentration can lead to problems such as water foaming, reduced boiler performance and wet steam. Contamination of the steam may occur, resulting in system damage further ahead, such as corrosion, scaling, salt incrustations on heat transfer surfaces, among other problems.
Furthermore, the high concentration is harmful and is not acceptable in applications where steam is used for treatment of food, drinks and in sterilization processes.
For these reasons, a certain amount of boiler water must be discharged continuously or periodically to ensure TDS concentration is kept within the recommended parameters.

MAIN FEATURES

Compact stainless steel construction.
IP 65 protection.
Wide ambient temperature range up to 100 ºC.

OPTIONS AND ACCESSORIES: Sensor chamber for sandwiching between flanges as per EN 1092-1 or ASME B16.5.

USE: Measure conductivity of superheated boiler water, condensate and feedwater.

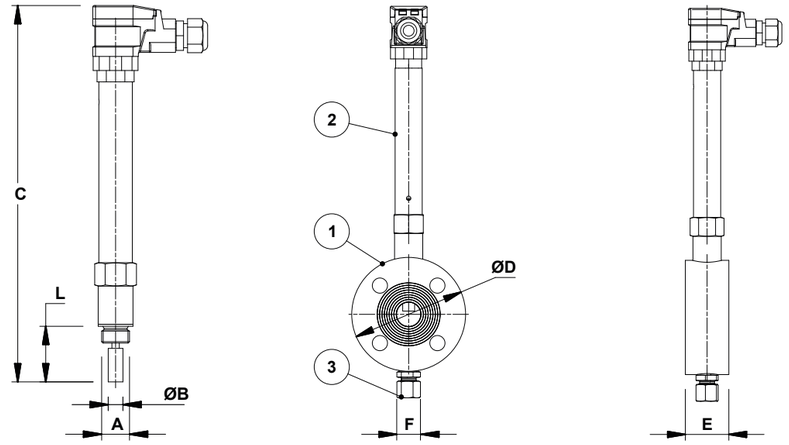
AVAILABLE MODELS: SPS21.

SIZES: 1/2".

CONNECTIONS: Male threaded ISO 228.

INSTALLATION: Installation in pipes via a sensor chamber. See IMI – Installation and maintenance instructions.

TECHNICAL DATA	
Maximum operating pressure	32 bar
Maximum operating temperature	239 ºC
Maximum ambient temperature	100 ºC
Minimum distance to other metallic surfaces	20 mm
Type of protection	IP 65
Cable entry	M16 x 1,5 (PG 11)



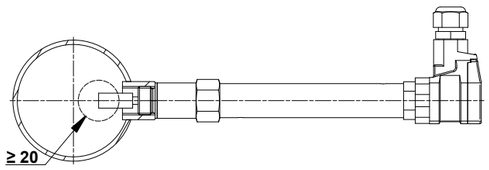
DIMENSIONS (mm)								
MODEL	**A**	**ØB**	**C**	**ØD**	**E**	**F ***	**L**	**WGT (kg) ****
SPS21	1/2"	11	281	115 (DN 25) / 105 (DN 20)	40	1/4"	41,5	0,55

* Optional. ** Probe only, without sensor chamber.

MATERIALS	
DESIGNATION	**MATERIAL**
Probe housing	Stainless steel
Probe rod	Stainless steel
Insulation	PTFE
Electrical connector	Polyamid
Sealing ring	Copper
F2132 sensor chamber	S355JR / 1.0045

MATERIALS	
POS. Nº	**DESIGNATION**
1	F2132 sensor chamber
2	SPS21 conductivity probe
3	Compression fitting for sample collection *

* Optional.



Remark: Probe can be fitted onto a “T” connection or onto the F2132 sensor chamber, providing that it is always in contact with water and wetted parts fully immersed, without air gaps. Any metallic parts near the probe must be at a minimum distance of 20 mm from the central electrode pole. Ensure the connection on the boiler is safely below the boiler low water level.

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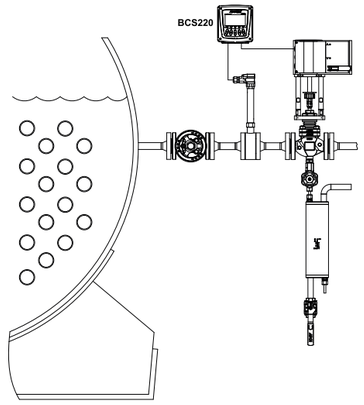
IS SPS.21 E 16.22

TYPICAL APPLICATIONS

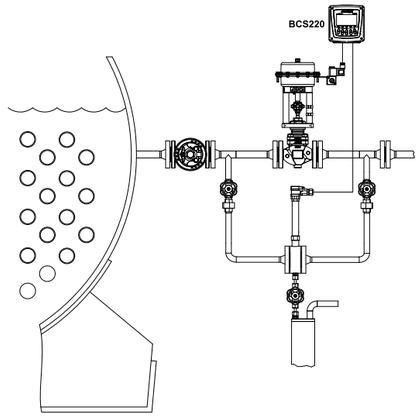
INSTALLATION WITH PROBE FITTED IN THE BOILER BLOWDOWN LINE (INLINE MEASUREMENT)

The VPC series TDS blowdown control valve is programmed to open periodically, in order to purge a certain amount of water and enable a representative sample of boiler water to reach the probe at saturated temperature.
The probe will then measure the electrical conductivity of the boiler water and the controller will compare it with the defined setpoint. If the measured value is below the setpoint the valve will close, otherwise it is kept open until the condition is satisfied. To avoid energy waste due to boiler stand-by, it is recommended to relate the blowdown operation to the burner firing system. It is also recommended to install a heat recovery system (flash vessel, heat exchanger, etc) before connecting the wasted water to the ADCA BEX blowdown expansion vessel.



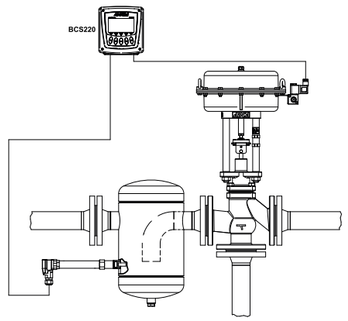
INSTALLATION WITH PROBE FITTED IN THE BOILER BLOWDOWN LINE (BYPASS MEASUREMENT)

The needle valves are adjusted to ensure a very small continuous flow of water through the bypass and probe chamber. The controller continuously monitors the electrical conductivity of the boiler water, comparing it with the defined setpoints and triggering the valve to open and close accordingly.
To avoid energy waste due to boiler stand-by or low load, it is recommended to relate the blowdown operation to the burner firing system. It is also recommended to install a heat recovery system (flash vessel, heat exchanger, etc) before connecting the wasted water to the ADCA BEX blowdown expansion vessel.



INSTALLATION WITH PROBE FITTED IN THE CONDENSATE RETURN LINE

The controller is programmed to continuously monitor the electrical conductivity of condensate circulated back to the boiler feedwater tank, comparing it with the defined setpoint. A three-way valve is used to divert contaminated condensate if the measured value exceed the setpoint.
The probe chamber ensures that the probe is always in contact with water. It is recommended to install a heat recovery system (flash vessel, heat exchanger, etc) before connecting the wasted water to the ADCA BEX blowdown expansion vessel.



CONDUCTIVITY PROBE SPS33

DESCRIPTION

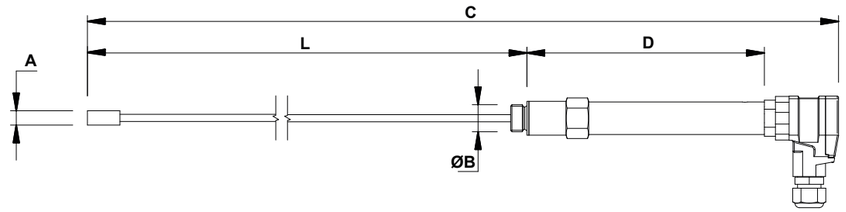
The ADCATrol SPS33 conductivity probe is typically used in steam applications to measure the conductivity of superheated boiler water, condensate or feedwater. The probe is used in conjunction with an ADCATrol BCS controller and a VPC series TDS blowdown control valve.
Water contains impurities in the form of dissolved solids and solids in suspension, whose concentration increases during vaporization. Water treatment can reduce impurities to a certain degree, however these are not completely eliminated and, in certain conditions, might even increase. As steam production starts, there is an undesirable increase in boiler water TDS (Total Dissolved Solids) concentration. If not taken care of, the high concentration can lead to problems such as water foaming, reduced boiler performance and wet steam. Contamination of the steam may occur, resulting in system damage further ahead, such as corrosion, scaling, salt incrustations on heat transfer surfaces, among other problems.
Furthermore, the high concentration is harmful and is not acceptable in applications where steam is used for treatment of food, drinks and in sterilization processes.
For these reasons, a certain amount of boiler water must be discharged continuously or periodically to ensure TDS concentration is kept within the recommended parameters.

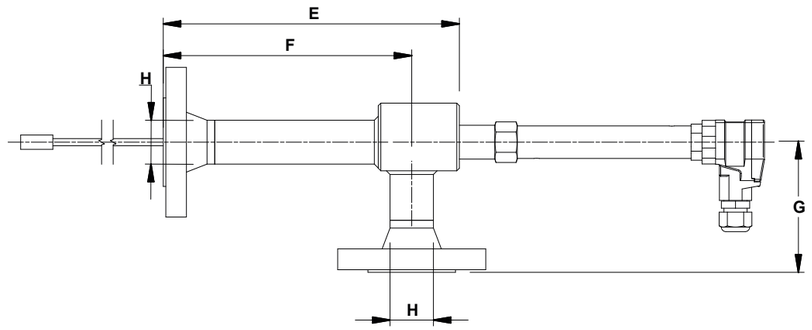
MAIN FEATURES

Available in different lengths.
IP 65 protection.
Wide ambient temperature range up to 100 ºC.

OPTIONS AND ACCESSORIES:	Flanged tee piece type F3220. Threaded outer shroud.
USE:	Measure conductivity of superheated boiler water, condensate and feedwater.
AVAILABLE MODELS:	SPS33.
SIZES:	1/2".
CONNECTIONS:	Male threaded ISO 228.
INSTALLATION:	Horizontal installation. Angled (45º) installation with outer shroud, consult manufacturer. See IMI – Installation and maintenance instructions.

TECHNICAL DATA	
Maximum operating pressure	32 bar
Maximum operating temperature	239 ºC
Maximum ambient temperature	100 ºC
Minimum distance to other metallic surfaces	40 mm
Type of protection	IP 65
Cable entry	M16 x 1,5 (PG 11)

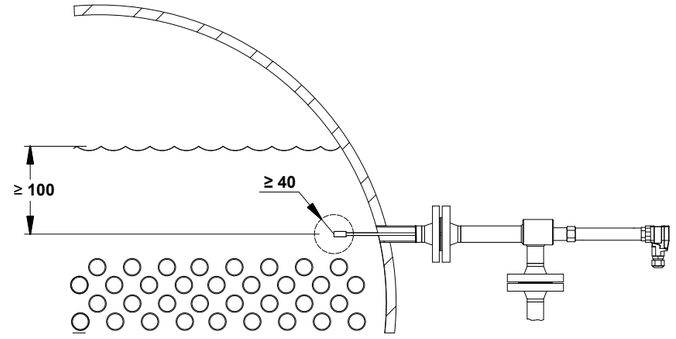




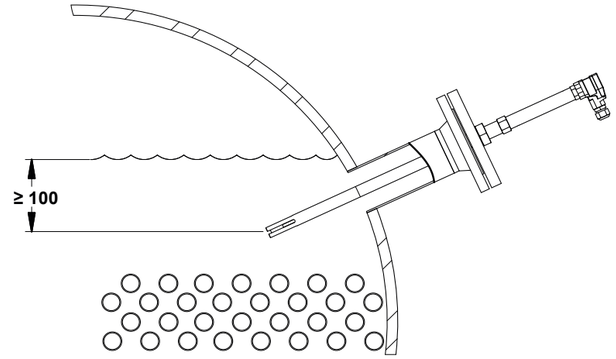
DIMENSIONS (mm)										
MODEL	A	ØB	C	D	E	F	G	H *	L **	WGT *** (kg)
SPS33	11	1/2"	673	181	230	193	100	DN 20 / DN 25	435	0,65

* Flanged EN 1092-1 PN16/40. ASME B16.5 flanges on request.
** Other dimensions available on request.
*** Probe with L = 435 mm. Weight does not include tee piece or outer shroud. Tee piece weighs approximately 3 kg.

MATERIALS	
DESIGNATION	MATERIAL
Probe housing	Stainless steel
Probe rod	Stainless steel
Insulation	PTFE
Electrical connector	Polyamid
Sealing ring	Copper
F3220 tee piece	P235GH / 1.0345



Remark: Provide a spacing of at least 40 mm between the probe central electrode pole and any metallic parts such as the boiler wall, tubes and other metallic fittings. The probe must be installed in such a way that it is always in contact with water and wetted parts fully immersed, without air gaps. As far from the feedwater inlet as possible and away from the steam bubbles, at least 100 mm below the boiler low water level.

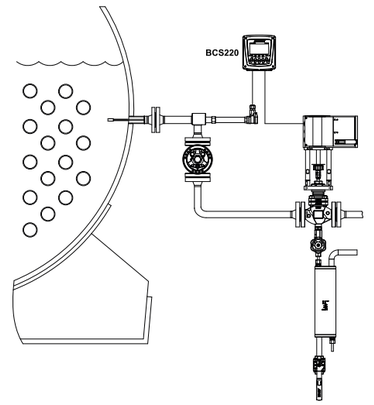


Remark: Installation at a 45º angle, only possible when probe is fitted with a threaded outer shroud.

TYPICAL APPLICATION

INSTALLATION WITH PROBE FITTED IN A TEE PIECE (DIRECT MEASUREMENT)

The probe continuously measures the electrical conductivity of the boiler water.
The controller compares the current reading with the defined setpoints, triggering the VPC series TDS blowdown control valve to open and close accordingly.
To avoid energy waste due to boiler stand-by or low load, it is recommended to relate the blowdown operation to the burner firing system. It is also recommended to install a heat recovery system (flash vessel, heat exchanger, etc) before connecting the wasted water to the ADCA BEX blowdown expansion vessel.



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IS SPS.33 E 04.22

OVERFLOW/BYPASS VALVES
OVF40

DESCRIPTION

The ADCATrol OVF40 is a series of single seated, two-way overflow valves with inline connections.
These valves are mainly used in closed loop systems to ensure that a minimum flow is kept in the event that all connected consumers are in a low load condition or have simply shut down. In these scenarios, the valve will prevent problems such as pressure surges, pump cavitation and overheating.
The spring force keeps the valve closed, until the upstream pressure, which acts on the underside of the plug, exceeds the set pressure thus opening the valve and allowing flow to the downstream side.
The set pressure is manually adjusted during commissioning by compression of the spring with the adjustment screw located on the top of the valve yoke.
The set pressure corresponds to the differential between upstream and downstream pressures across the valve.

MAIN FEATURES

Compact and versatile.
Stainless steel bellows sealing and trim.
Metal to metal valve sealing.
V-port guided valve plug.

OPTIONS: Soft or stellited valve sealing.
Perforated plugs.

USE: Water, diathermic heat transfer oil and other fluids compatible with the construction.

AVAILABLE MODELS: OVF40S – carbon steel.
OVF40i – stainless steel.

SIZES: DN 15 to DN 80.

REGULATING RANGES: DN 15 to DN 32 – 0,5 to 5 bar; 2 to 8 bar.
DN 40 – 0,5 to 6 bar.
DN 50 – 0,5 to 5 bar; 2 to 7 bar.
DN 65 and DN 80 – 1 to 4 bar.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1, on request.

CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
DN 15 to 50	DN 15 to 32	SEP
DN 65 to 80	DN 40 to 80	1 (CE marked)

BODY LIMITING CONDITIONS *							
OVF40S				**OVF40i**			
FLANGED PN 16		**FLANGED PN 40**		**FLANGED PN 16**		**FLANGED PN 40**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	-10 / 50 ºC	40 bar	-10 / 50 ºC	16 bar	-10 / 50 ºC	40 bar	-10 / 50 ºC
13,3 bar	200 ºC	33,3 bar	200 ºC	13,4 bar	200 ºC	33,7 bar	200 ºC
12,1 bar	250 ºC	27,6 bar	300 ºC	12,7 bar	250 ºC	29,7 bar	300 ºC
11 bar	300 ºC	25,7 bar	350 ºC	11,8 bar	300 ºC	28,5 bar	350 ºC
10,2 bar	350 ºC	23,8 bar	400 ºC	11,4 bar	350 ºC	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018.

PLUG DESIGN

V-PORT GUIDED

Sealing: Metal to metal
Characteristic: Linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class IV, acc. to IEC 60534-4

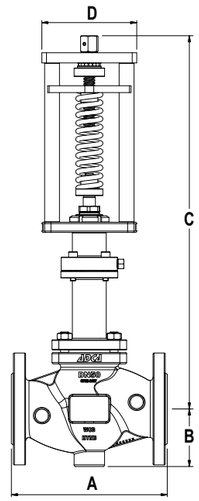
V-PORT GUIDED (SOFT SEALING)

Sealing: PTFE/GR
Characteristic: Linear (PL)
Flow direction: From below
Rangeability: 30:1
Leakage: Class VI, acc. to IEC 60534-4

FLOW RATE COEFFICIENTS								
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**
Kvs (m^3/h)	5,2	7,2	9,4	15,4	22,2	40,1	63,4	89,7
SEAT Ø (mm)	15	19,2	25	32	38	48	65	76
STROKE (mm)	20						30	

For conversion, Kvs = Cv (US) x 0,865.

DIMENSIONS



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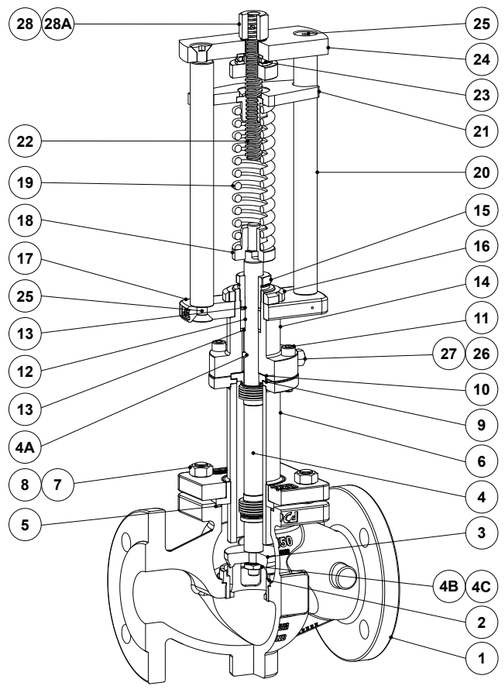
IS OVF40.50 E 06.21

DIMENSIONS (mm)								
DIMENSION	SIZE							
	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN80
A	130	150	160	180	200	230	290	310
B	48	53	58	70	75	83	93	100
C	480	480	485	495	505	570	843	848
D	140						155	
WEIGHT (kg)	12,2	13	13,8	16,8	19,4	22,7	41	50

MATERIALS



MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Valve body (OVF40S)	A216 WCB / 1.0619
	Valve body (OVF40i)	A351 CF8M / 1.4408
2	* Seat	AISI 316L / 1.4404
3	* Valve plug	AISI 316L / 1.4404
4	* Stem with welded metal bellows	AISI 316L / 1.4404 AISI 316Ti / 1.4571
4A	* Locking pin	AISI 303 / 1.4305
4B	* Serrated washer	AISI 304 / 1.4301
4C	* Nut	Stainless steel A2-70
5	* Gasket	Stainless steel / Graphite
6	Bellows housing	AISI 316 / 1.4401
7	Nuts (OVF40S)	Zinc plated steel
	Nuts (OVF40i)	Stainless steel A2-70
8	Studs (OVF40S)	34CrNiMo6 / 1.6582
	Studs (OVF40i)	Stainless steel A2-70
9	* Gasket	Stainless steel / Graphite
10	* Gasket	Stainless steel / Graphite
11	Bolts	Stainless steel A2-70
12	* Packing set	Expanded graphite
13	Washer	AISI 304 / 1.4301
14	Bellows bonnet	AISI 316L / 1.4404
15	Gland nut	AISI 303 / 1.4305
16	Lock nut	A351 CF8 / 1.4308
17	Lower yoke flange	A351 CF8 / 1.4308
18	Lower spring guide	C45E / 1.1191
19	* Adjustment spring	AISI 301 / 1.4310
20	Yoke column	C45E / 1.1191
21	Upper spring guide	S235JR / 1.0038
22	Adjustment screw	S355J2G3 / 1.0570
23	Ball bearing	Zinc plated steel
24	Upper yoke flange	A351 CF8 / 1.4308
25	Bolts	Zinc plated steel
26	Gasket	Copper
27	Plug	AISI 316 / 1.4401
28	Adjustment nut	AISI 303 / 1.4305
28A	* Locking pin	AISI 303 / 1.4305

* Available spare parts.

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IS OVF40.50 E 06.21

TEMPERATURE REGULATORS
SELF ACTING, NON BALANCED, SINGLE SEAT
TR25S

DESCRIPTION

The TR25 series of temperature regulators were designed for direct acting temperature control systems where the valve closes on temperature rise. They are single seated and are intended to be coupled with T series thermostat models T.205 and T.405. The liquid filling the thermostat expands when the temperature of the fluid being heated rises, closing the valve.
These valves are used for controlling temperature in central and district heating systems, heat exchangers and other HVAC and industrial applications

MAIN FEATURES

Easily adjustable temperature range.
Proportional temperature control.
Single seated, two way, direct acting valve.
Leakage < 0,05% Kvs.
Built-in strainer.
Narrow thermostat neutral zone (1,5 ºC - 2,5 ºC).
No special tools required for servicing.
Stuffing box is an integral part of the thermostatic element, allowing easy and simple maintenance of the valve.

OPTIONS: PK sensor pocket.
K1 cooling unit.
Diffferent capillary lenghts.
Other thermostats on request.

USE: Saturated and superheated steam.
Hot and superheated water.

AVAILABLE VALVES: TR25S – carbon steel.

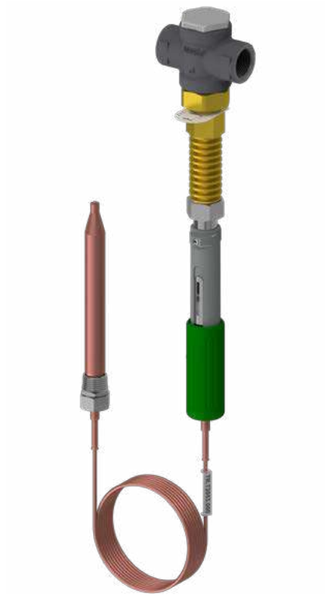
AVAILABLE THERMOSTATS: T.205 – 200 N (max. closing force).
T.405 – 400 N (max. closing force).

SIZES: 1/2” to 1”.

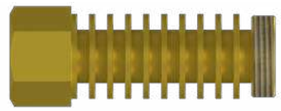
CONNECTIONS: Female threaded ISO 7 Rp.

THERMOSTAT RANGES: T.205: 0 – 60 ºC, 30 – 90 ºC and 60 – 120 ºC.
T.405: 0 – 120 ºC and 40 – 160 ºC.

INSTALLATION: Horizontal installation with the thermostat in the vertical position, in order to reduce wear.
In case of medium temperatures up to 150 ºC, the thermostat may be fitted below or above the valve. In case of medium temperatures between 150 and 250 ºC, a cooling unit type K1 has to be applied with the connection pointing downwards.
A “Y” strainer should be installed upstream of the valve. See IMI – Installation and maintenance instructions.



PK sensor pocket



K1 cooling unit

BODY LIMITING CONDITIONS	
PN 40	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
40 bar	120 ºC
24 bar	350 ºC

Minimum working temperature: -10 ºC.

TECHNICAL DATA				
TYPE	**CONNECTION**	**OPENING Ø**	**Kvs (m^3/h)**	**STROKE**
TR25 – 15/4	DN 15	4 mm	0,2	6 mm
TR25 –15/6	DN 15	6 mm	0,45	6 mm
TR25 –15/9	DN 15	9 mm	0,95	6 mm
TR25 – 15/12	DN 15	12 mm	1,7	6 mm
TR25 – 15/15	DN 15	15 mm	2,75	6 mm
TR25 – 20/9	DN 20	9 mm	0,95	6,5 mm
TR25 – 20/15	DN 20	15 mm	2,75	6,5 mm
TR25 – 20/20	DN 20	20 mm	5	6,5 mm
TR25 – 25/20	DN 25	20 mm	5	7 mm

MAX. PERMISSIBLE DIFFERENTIAL PRESSURES			
SIZE	**SEAT Ø**	**T.205**	**T.405**
		DIFFERENTIAL PRESSURE	**DIFFERENTIAL PRESSURE**
DN 15	4 and 6 mm	21 bar	40 bar
DN 15	9 mm	13 bar	38 bar
DN 15	12 mm	9,3 bar	24 bar
DN 15	15 mm	5,3 bar	15 bar
DN 20	15 mm	5,3 bar	15 bar
DN 20	20 mm	2,9 bar	9 bar
DN 25	20 mm	2,9 bar	9 bar

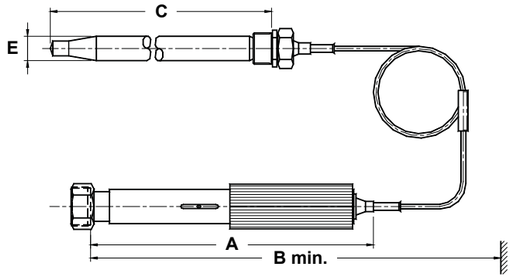
PROPORTIONAL BAND

The proportional band is the temperature change required for the valve to move from its fully open to fully closed position. It depends on the valve stroke (mm) and on the thermostat movement per ºC (mm/ºC), and is calculated as follows:

$$\text{Proportional band:} \quad \frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/ºC)}}$$

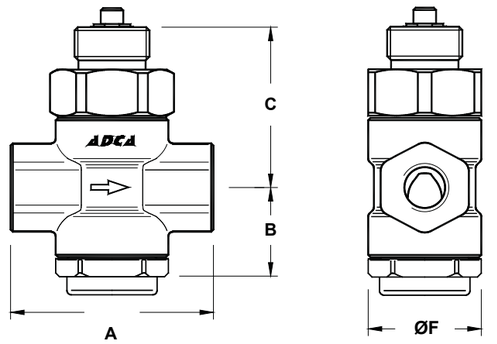
Thermostat movement for T.205 and T.405: 0,5 mm/ºC
A proportional band between 8 ºC and 13 ºC is suitable for most applications. A smaller proportional band is not ideal when heat loads vary rapidly.

DIMENSIONS (mm) – THERMOSTAT					
TYPE	**A**	**B**	**C**	**E**	**WEIGHT (kg)**
T.205	305	405	210	22	1,8
T.405	385	525	390	22	2,6



DIMENSIONS (mm) – VALVE BODY					
SIZE	**A**	**B**	**C**	**F**	**WEIGHT (kg)**
1/2”	90	40	70	50	1,2
3/4”	90	40	70	50	1,2
*** 3/4”**	100	45	75	55	1,6
1”	100	45	75	55	1,6

* TR25 – 20/20 model only.



VALSTEAM ADCA
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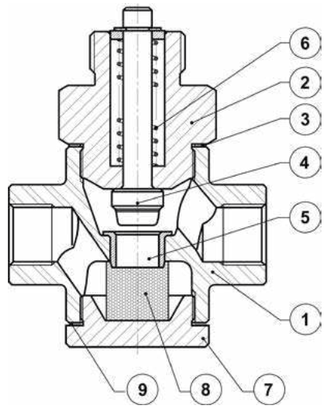
IS TR25.30 E 09.09

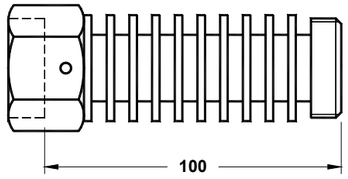
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460
2	Bonnet	CK45 / 1.1191
3	* Gasket	St. steel / Graphite
4	* Valve plug	AISI 316 / 1.4401
5	Seat	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300
7	Cap	CK45 / 1.1191
8	* Strainer screen	AISI 304 / 1.4301
9	* Cap gasket	St. steel / Graphite

* Available spare parts.



K1 COOLING UNITS

Cooling units are used as a means of protection for the stuffing box when dealing with high temperatures.
The K1 cooling unit should always be applied when medium temperatures are between 150 ºC and 250 ºC.
For higher temperatures as well as for all hot oil systems please consult.



PK SENSOR POCKETS

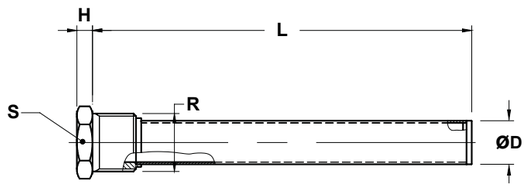
Sensor pockets made of stainless steel can be supplied with all TR series self-acting thermostats using rod sensors.
A sensor pocket, also called thermowell, is used to protect the sensor and to allow its removal while the plant is running or, e.g., the tank where it is connected to is full.
The use of sensor pockets implies delay of heat transfer to the rod sensors and, thus, a longer thermostat reaction time. This is, to some extent, counteracted by filling up the sensor pockets with a thermal conductive paste or glycerine.

INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When glycerine is used, the sensor pocket must point at least slightly downwards.

MATERIAL

AISI 316 / 1.4401.

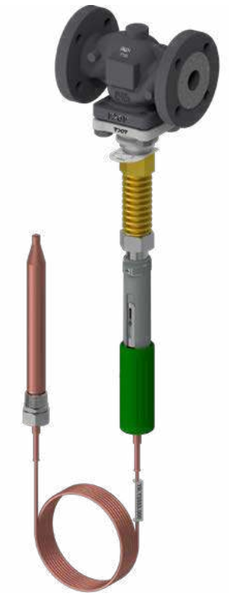


DIMENSIONS (mm)					
TYPE	**D**	**H**	**L**	**S**	**R**
PK2	25	9	218	36	1”
PK4	25	10	390	45	11/4”

TEMPERATURE REGULATORS
SELF ACTING, NON BALANCED, SINGLE SEAT
TR40

DESCRIPTION

The TR40 series of temperature regulators were designed for direct acting temperature control systems where the valve closes on temperature rise. They are single seated and are intended to be coupled with T series thermostat models T.205 and T.405. The liquid filling the thermostat expands when the temperature of the fluid being heated rises, closing the valve.
These valves are used for controlling temperature in central and district heating systems, heat exchangers and other HVAC and industrial applications

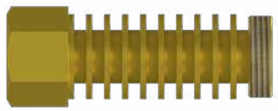


MAIN FEATURES

Easily adjustable temperature range.
Proportional temperature control.
Single seated, two way, direct acting valve.
Leakage < 0,05% Kvs.
Built-in strainer.
Narrow thermostat neutral zone (1,5 ºC - 2,5 ºC).
No special tools required for servicing.
Stuffing box is an integral part of the thermostatic element, allowing easy and simple maintenance of the valve.

OPTIONS:	PK sensor pocket. K1 cooling unit. Diffferent capillary lenghts. Other thermostats on request.
USE:	Saturated and superheated steam. Hot and superheated water.
AVAILABLE VALVES:	TR40S – carbon steel. TR40SS – stainless steel.
AVAILABLE THERMOSTATS:	T.205 – 200 N (max. closing force). T.405 – 400 N (max. closing force).
SIZES:	DN 15 to DN 25.
CONNECTIONS:	Flanged EN 1092-1 PN 40.
THERMOSTAT RANGES:	T.205: 0 – 60 ºC, 30 – 90 ºC and 60 – 120 ºC. T.405: 0 – 120 ºC and 40 – 160 ºC.
INSTALLATION:	Horizontal installation with the thermostat in the vertical position, in order to reduce wear. In case of medium temperatures up to 150 ºC, the thermostat may be fitted below or above the valve. In case of medium temperatures between 150 and 250 ºC, a cooling unit type K1 has to be applied with the connection pointing downwards. A “Y” strainer should be installed upstream of the valve. See IMI – Installation and maintenance instructions.

PK sensor pocket



K1 cooling unit

BODY LIMITING CONDITIONS *		
TR40S	TR40SS	RELATED TEMPERATURE
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
40 bar	40 bar	-10 ºC / 50 ºC
40 bar	33,7 bar	200 ºC
35,2 bar	29,7 bar	300 ºC
32,3 bar	28,5 bar	350 ºC
29,5 bar	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018;
Minimum working temperature: -10 ºC.

TECHNICAL DATA				
TYPE	CONNECTION	OPENING Ø	Kvs (m^3/h)	STROKE
TR40 – 15/4	DN 15	4 mm	0,2	6 mm
TR40 – 15/6	DN 15	6 mm	0,45	6 mm
TR40 – 15/9	DN 15	9 mm	0,95	6 mm
TR40 – 15/12	DN 15	12 mm	1,7	6 mm
TR40 – 15/15	DN 15	15 mm	2,75	6 mm
TR40 – 20/9	DN 20	9 mm	0,95	6,5 mm
TR40 – 20/15	DN 20	15 mm	2,75	6,5 mm
TR40 – 20/20	DN 20	20 mm	5	6,5 mm
TR40 – 25/20	DN 25	20 mm	5	7 mm
TR40 – 25/25	DN 25	25 mm	7,5	7 mm

MAX. PERMISSIBLE DIFFERENTIAL PRESSURES			
SIZE	SEAT Ø	T.205	T.405
		DIFFERENTIAL PRESSURE	DIFFERENTIAL PRESSURE
DN 15	4 and 6 mm	21 bar	40 bar
DN 15	9 mm	13 bar	38 bar
DN 15	12 mm	9,3 bar	24 bar
DN 15	15 mm	5,3 bar	15 bar
DN 20	15 mm	5,3 bar	15 bar
DN 20	20 mm	2,9 bar	9 bar
DN 25	20 mm	2,9 bar	9 bar
DN 25	25 mm	1,3 bar	4,7 bar

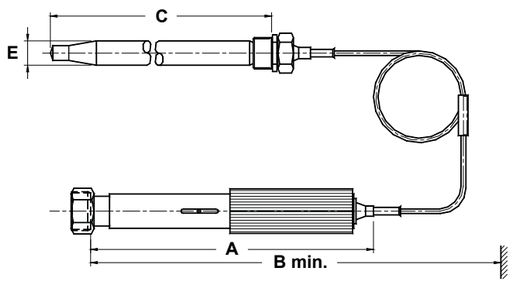
PROPORTIONAL BAND

The proportional band is the temperature change required for the valve to move from its fully open to fully closed position. It depends on the valve stroke (mm) and on the thermostat movement per ºC (mm/ºC), and is calculated as follows:

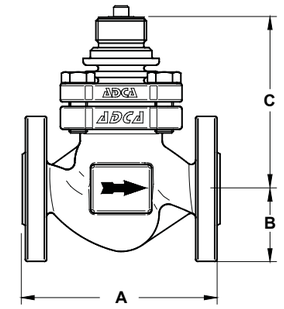
$$\text{Proportional band:} \quad \frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/ºC)}}$$

Thermostat movement for T.205 and T.405: 0,5 mm/ºC
A proportional band between 8 ºC and 13 ºC is suitable for most applications. A smaller proportional band is not ideal when heat loads vary rapidly.

DIMENSIONS (mm) – THERMOSTAT					
TYPE	A	B	C	E	WEIGHT (kg)
T.205	305	405	210	22	1,8
T.405	385	525	390	22	2,6

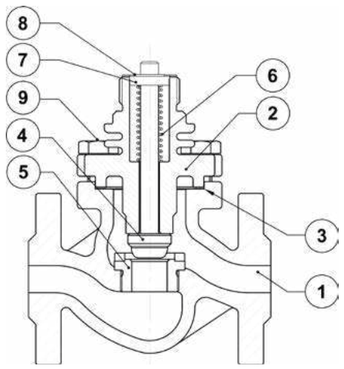


DIMENSIONS (mm) – VALVE BODY				
SIZE	A	B	C	WEIGHT (kg)
1/2”	90	40	70	1,2
3/4”	90	40	70	1,2
1”	100	45	75	1,6



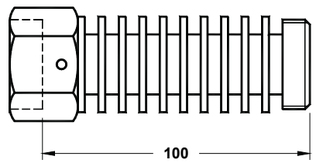
MATERIALS			
POS. Nº	DESIGNATION	TR40S	TR40SS
1	Body	A216 WCB/1.0619; GP240GH / 1.0619	CF8M / 1.4408
2	Bonnet	CK45 / 1.1191	CF8 / 1.4308
3	* Gasket	St. steel / Graphite	St. steel / Graphite
4	* Valve plug	AISI 316 / 1.4401	AISI 316 / 1.4401
5	Seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	Guide	AISI 316 / 1.4401	AISI 316 / 1.4401
8	Washer	AISI 304 / 1.4301	AISI 304 / 1.4301
9	Bolts	Steel 8.8	Stainless steel A2-70

* Available spare parts.



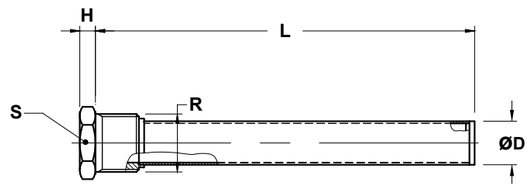
K1 COOLING UNITS

Cooling units are used as a means of protection for the stuffing box when dealing with high temperatures.
The K1 cooling unit should always be applied when medium temperatures are between 150 ºC and 250 ºC.
For higher temperatures as well as for all hot oil systems please consult.



PK SENSOR POCKETS

Sensor pockets made of stainless steel can be supplied with all TR series self-acting thermostats using rod sensors.
A sensor pocket, also called thermowell, is used to protect the sensor and to allow its removal while the plant is running or, e.g., the tank where it is connected to is full.
The use of sensor pockets implies delay of heat transfer to the rod sensors and, thus, a longer thermostat reaction time. This is, to some extent, counteracted by filling up the sensor pockets with a thermal conductive paste or glycerine.



INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When glycerine is used, the sensor pocket must point at least slightly downwards.

MATERIAL

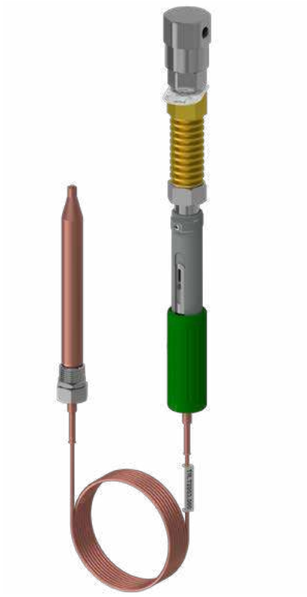
AISI 316 / 1.4401.

DIMENSIONS (mm)					
TYPE	D	H	L	S	R
PK2	25	9	218	36	1”
PK4	25	10	390	45	11/4”

TEMPERATURE REGULATORS
SELF ACTING, NON BALANCED, SINGLE SEAT
TR25SS (1/4” – 3/8”)

DESCRIPTION

The TR25 series of temperature regulators were designed for direct acting temperature control systems where the valve closes on temperature rise. They are single seated and are intended to be coupled with T series thermostat model T.205. The liquid filling the thermostat expands when the temperature of the fluid being heated rises, closing the valve.
These valves are used for controlling temperature in central and district heating systems, heat exchangers and other HVAC and industrial applications



MAIN FEATURES

Easily adjustable temperature range.
Proportional temperature control.
Single seated, two way, direct acting valve.
Leakage < 0,05% Kvs.
Built-in strainer.
Narrow thermostat neutral zone (1,5 ºC - 2,5 ºC).
No special tools required for servicing.
Stuffing box is an integral part of the thermostatic element, allowing easy and simple maintenance of the valve.

OPTIONS: PK sensor pocket.
K1 cooling unit.
Diffferent capillary lenghts.
Other thermostats on request.

USE: Saturated and superheated steam.
Hot and superheated water.

AVAILABLE VALVES: TR25SS – stainless steel.

AVAILABLE THERMOSTATS: T.205 – 200 N (max. closing force).

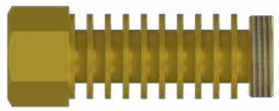
SIZES: 1/4” to 3/8”.

CONNECTIONS: Female threaded ISO 7 Rp.

THERMOSTAT RANGES: T.205: 0 – 60 ºC, 30 – 90 ºC and 60 – 120 ºC.

INSTALLATION: Horizontal installation with the thermostat in the vertical position, in order to reduce wear.
In case of medium temperatures up to 150 ºC, the thermostat may be fitted below or above the valve. In case of medium temperatures between 150 and 250 ºC, a cooling unit type K1 has to be applied with the connection pointing downwards.
A “Y” strainer should be installed upstream of the valve. See IMI – Installation and maintenance instructions.

PK sensor pocket



K1 cooling unit

BODY LIMITING CONDITIONS	
PN 40	RELATED TEMPERATURE
ALLOWABLE PRESSURE	
40 bar	120 ºC
24 bar	350 ºC

Minimum working temperature: -10 ºC.

TECHNICAL DATA				
TYPE	CONNECTION	OPENING Ø	Kvs (m^3/h)	STROKE
TR25 – 8/4	1/4”	4 mm	0,2	6 mm
TR25 – 8/6	1/4”	6 mm	0,45	6 mm
TR25 – 10/9	3/8”	9 mm	0,95	6 mm

MAX. PERMISSIBLE DIFFERENTIAL PRESSURES		
SIZE	SEAT Ø	T.205 DIFFERENTIAL PRESSURE
1/4”	4 and 6 mm	21 bar
3/8”	9 mm	13 bar

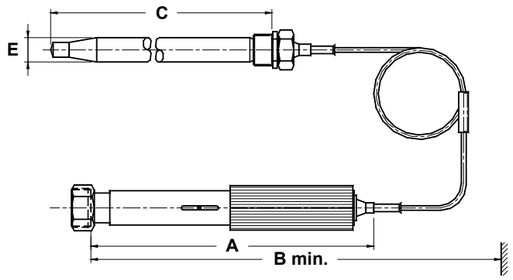
PROPORTIONAL BAND

The proportional band is the temperature change required for the valve to move from its fully open to fully closed position. It depends on the valve stroke (mm) and on the thermostat movement per ºC (mm/ºC), and is calculated as follows:

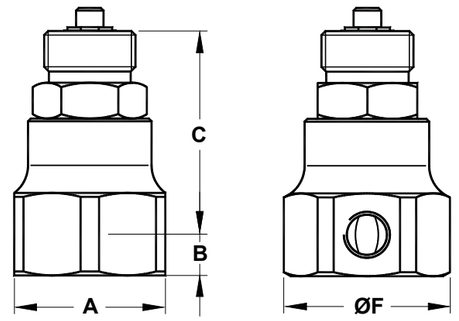
$$\text{Proportional band:} \quad \frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/ºC)}}$$

Thermostat movement for T.205 and T.405: 0,5 mm/ºC
A proportional band between 8 ºC and 13 ºC is suitable for most applications. A smaller proportional band is not ideal when heat loads vary rapidly.

DIMENSIONS (mm) – THERMOSTAT					
TYPE	A	B	C	E	WEIGHT (kg)
T.205	305	405	210	22	1,8



DIMENSIONS (mm) – VALVE BODY					
SIZE	A	B	C	F	WEIGHT (kg)
1/4”	45	15	93	49	1,1
3/8”	55	15	93	60	1,1



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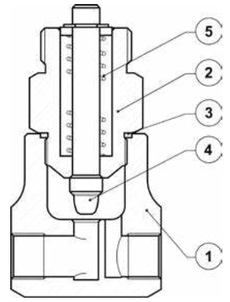
IS TR25.40 E 09.09

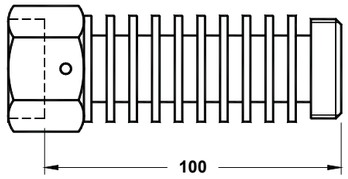
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316 / 1.4401
2	Bonnet	AISI 304 / 1.4301
3	* Gasket	St. steel / Graphite
4	* Valve plug	AISI 316 / 1.4401
5	Spring	AISI 302 / 1.4300

* Available spare parts.



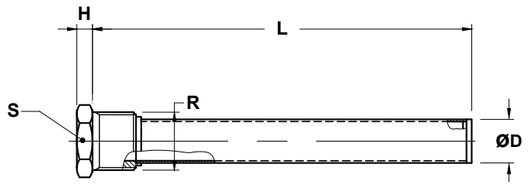
K1 COOLING UNITS

Cooling units are used as a means of protection for the stuffing box when dealing with high temperatures.
The K1 cooling unit should always be applied when medium temperatures are between 150 ºC and 250 ºC.
For higher temperatures as well as for all hot oil systems please consult.



PK SENSOR POCKETS

Sensor pockets made of stainless steel can be supplied with all TR series self-acting thermostats using rod sensors.
A sensor pocket, also called thermowell, is used to protect the sensor and to allow its removal while the plant is running or, e.g., the tank where it is connected to is full.
The use of sensor pockets implies delay of heat transfer to the rod sensors and, thus, a longer thermostat reaction time. This is, to some extent, counteracted by filling up the sensor pockets with a thermal conductive paste or glycerine.



INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When glycerine is used, the sensor pocket must point at least slightly downwards.

MATERIAL

AISI 316 / 1.4401.

DIMENSIONS (mm)					
TYPE	**D**	**H**	**L**	**S**	**R**
PK2	25	9	218	36	1”
PK4	25	10	390	45	11/4”

We reserve the right to change the design and material of this product without notice.

TEMPERATURE REGULATORS
SELF ACTING, NON BALANCED, SINGLE SEAT
TR25SS (1/2” – 1”)

DESCRIPTION

The TR25 series of temperature regulators were designed for direct acting temperature control systems where the valve closes on temperature rise. They are single seated and are intended to be coupled with T series thermostat models T.205 and T.405. The liquid filling the thermostat expands when the temperature of the fluid being heated rises, closing the valve.
These valves are used for controlling temperature in central and district heating systems, heat exchangers and other HVAC and industrial applications

MAIN FEATURES

Easily adjustable temperature range.
Proportional temperature control.
Single seated, two way, direct acting valve.
Leakage < 0,05% Kvs.
Built-in strainer.
Narrow thermostat neutral zone (1,5 ºC - 2,5 ºC).
No special tools required for servicing.
Stuffing box is an integral part of the thermostatic element, allowing easy and simple maintenance of the valve.

OPTIONS: PK sensor pocket.
K1 cooling unit.
Diffferent capillary lenghts.
Other thermostats on request.

USE: Saturated and superheated steam.
Hot and superheated water.

AVAILABLE VALVES: TR25SS – stainless steel.

AVAILABLE THERMOSTATS: T.205 – 200 N (max. closing force).
T.405 – 400 N (max. closing force).

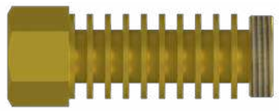
SIZES: 1/2” to 1”.

CONNECTIONS: Female threaded ISO 7 Rp.

THERMOSTAT RANGES: T.205: 0 – 60 ºC, 30 – 90 ºC and 60 – 120 ºC.
T.405: 0 – 120 ºC and 40 – 160 ºC.

INSTALLATION: Horizontal installation with the thermostat in the vertical position, in order to reduce wear.
In case of medium temperatures up to 150 ºC, the thermostat may be fitted below or above the valve. In case of medium temperatures between 150 and 250 ºC, a cooling unit type K1 has to be applied with the connection pointing downwards.
A “Y” strainer should be installed upstream of the valve. See IMI – Installation and maintenance instructions.

PK sensor pocket



K1 cooling unit

BODY LIMITING CONDITIONS	
PN 40	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
40 bar	120 ºC
24 bar	350 ºC

Minimum working temperature: -10 ºC.

We reserve the right to change the design and material of this product without notice.

TECHNICAL DATA				
TYPE	CONNECTION	OPENING Ø	Kvs (m^3/h)	STROKE
TR25 – 15/4	DN 15	4 mm	0,2	6 mm
TR25 – 15/6	DN 15	6 mm	0,45	6 mm
TR25 – 15/9	DN 15	9 mm	0,95	6 mm
TR25 – 15/12	DN 15	12 mm	1,7	6 mm
TR25 – 15/15	DN 15	15 mm	2,75	6 mm
TR25 – 20/9	DN 20	9 mm	0,95	6,5 mm
TR25 – 20/15	DN 20	15 mm	2,75	6,5 mm
TR25 – 20/20	DN 20	20 mm	5	6,5 mm
TR25 – 25/20	DN 25	20 mm	5	7 mm
TR25 – 25/25	DN 25	25 mm	7,5	7 mm

MAX. PERMISSIBLE DIFFERENTIAL PRESSURES			
SIZE	SEAT Ø	T.205	T.405
		DIFFERENTIAL PRESSURE	DIFFERENTIAL PRESSURE
DN 15	4 and 6 mm	21 bar	40 bar
DN 15	9 mm	13 bar	38 bar
DN 15	12 mm	9,3 bar	24 bar
DN 15	15 mm	5,3 bar	15 bar
DN 20	15 mm	5,3 bar	15 bar
DN 20	20 mm	2,9 bar	9 bar
DN 25	20 mm	2,9 bar	9 bar
DN 25	25 mm	1,3 bar	4,7 bar

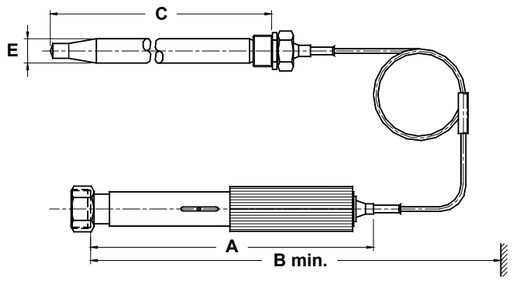
PROPORTIONAL BAND

The proportional band is the temperature change required for the valve to move from its fully open to fully closed position. It depends on the valve stroke (mm) and on the thermostat movement per ºC (mm/ºC), and is calculated as follows:

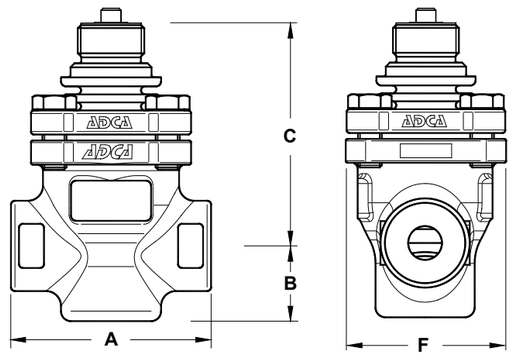
Proportional band: $\frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/ºC)}}$

Thermostat movement for T.205 and T.405: 0,5 mm/ºC
A proportional band between 8 ºC and 13 ºC is suitable for most applications. A smaller proportional band is not ideal when heat loads vary rapidly.

DIMENSIONS (mm) – THERMOSTAT					
TYPE	A	B	C	E	WEIGHT (kg)
T.205	305	405	210	22	1,8
T.405	385	525	390	22	2,6

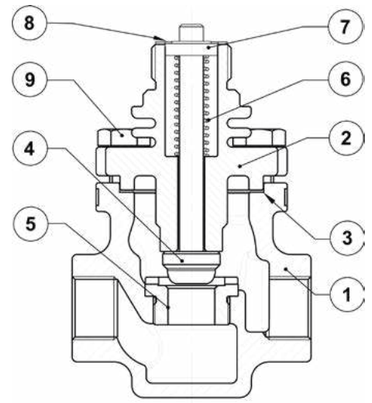


DIMENSIONS (mm) – VALVE BODY					
SIZE	A	B	C	F	WEIGHT (kg)
1/2”	100	40	112	80	2,8
3/4”	100	40	112	80	2,8
1”	100	40	112	80	2,9



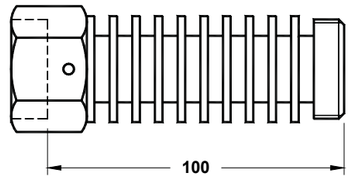
MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	CF8M / 1.4408
2	Bonnet	CF8 / 1.4308
3	* Gasket	Stainless steel / Graphite
4	* Valve plug	AISI 316 / 1.4401
5	Seat	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300
7	Cap	AISI 304 / 1.4301
8	Washer	AISI 304 / 1.4301
9	Bolts	Stainless steel A2-70

* Available spare parts.



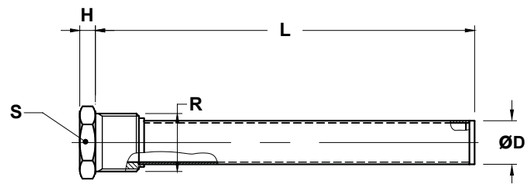
K1 COOLING UNITS

Cooling units are used as a means of protection for the stuffing box when dealing with high temperatures.
The K1 cooling unit should always be applied when medium temperatures are between 150 ºC and 250 ºC.
For higher temperatures as well as for all hot oil systems please consult.



PK SENSOR POCKETS

Sensor pockets made of stainless steel can be supplied with all TR series self-acting thermostats using rod sensors. A sensor pocket, also called thermowell, is used to protect the sensor and to allow its removal while the plant is running or, e.g., the tank where it is connected to is full.
The use of sensor pockets implies delay of heat transfer to the rod sensors and, thus, a longer thermostat reaction time. This is, to some extent, counteracted by filling up the sensor pockets with a thermal conductive paste or glycerine.



INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When glycerine is used, the sensor pocket must point at least slightly downwards.

MATERIAL

AISI 316 / 1.4401.

DIMENSIONS (mm)					
TYPE	D	H	L	S	R
PK2	25	9	218	36	1”
PK4	25	10	390	45	11/4”

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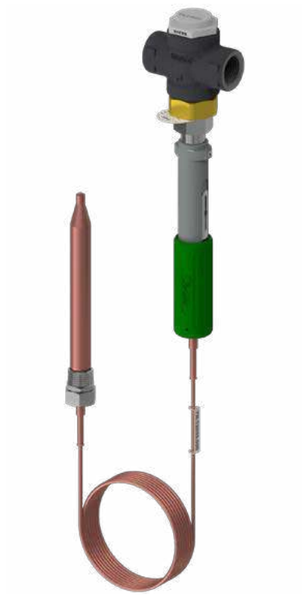
IS TR25.50 E 09.09

TEMPERATURE REGULATORS
SELF ACTING, NON BALANCED, SINGLE SEAT
TR25/R (Reverse action for cooling systems)

DESCRIPTION

The TR25/R valves series are designed for temperature control of cooling systems where the valve opens with temperature rise. They are single seated and are intended to be coupled with T series thermostat models T.205 and T.405. The liquid filling the thermostat expands when the temperature of the fluid being cooled rises, opening the valve.



MAIN FEATURES

Easily adjustable temperature range.
Proportional temperature control.
Single seated, two way, reverse acting valve.
Leakage < 0,05% Kvs.
Built-in strainer.
Narrow thermostat neutral zone (1,5 ºC - 2,5 ºC).
No special tools required for servicing.
Stuffing box is an integral part of the thermostatic element, allowing easy and simple maintenance of the valve.

OPTIONS: PK sensor pocket.
Diffferent capillary lenghts.
Other thermostats on request.

USE: Water, air ad other gases and liquids compatible with the construction.

AVAILABLE VALVES: TR25S/R – carbon steel.
TR25I/R – stainless steel.

AVAILABLE THERMOSTATS: T.205 – 200 N (max. closing force).
T.405 – 400 N (max. closing force).

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp.
Flanged EN 1092-1 PN 40.

THERMOSTAT RANGES: T.205: 0 to 60 ºC, 30 to 90 ºC and 60 to 120 ºC.
T.405: 0 to 120 ºC and 40 to 160 ºC.

INSTALLATION: Horizontal installation with the thermostat in the vertical position, in order to reduce wear.
A “Y” strainer should be installed upstream of the valve.
See IMI – Installation and maintenance instructions.

PK sensor pocket

BODY LIMITING CONDITIONS	
PN 40	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	
40 bar	120 ºC
24 bar	350 ºC

Minimum working temperature: -10 ºC.
Maximum working temperature: 150 ºC.

TECHNICAL DATA				
TYPE	**CONNECTION**	**OPENING Ø**	**Kvs (m^3/h)**	**STROKE**
TR25 – 15/15	DN 15	15 mm	1,9	6 mm
TR25 – 20/15	DN 20	15 mm	1,9	6,5 mm
TR25 – 20/20	DN 20	20 mm	4,2	6,5 mm
TR25 – 25/20	DN 25	20 mm	4,2	7 mm

MAX. PERMISSIBLE DIFFERENTIAL PRESSURES			
SIZE	**SEAT Ø**	**T.205**	**T.405**
		DIFFERENTIAL PRESSURE	**DIFFERENTIAL PRESSURE**
DN 15	15 mm	5,3 bar	15 bar
DN 20	15 mm	5,3 bar	15 bar
DN 20	20 mm	2,9 bar	9 bar
DN 25	20 mm	2,9 bar	9 bar

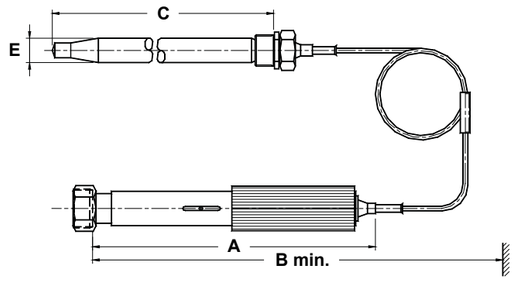
PROPORTIONAL BAND

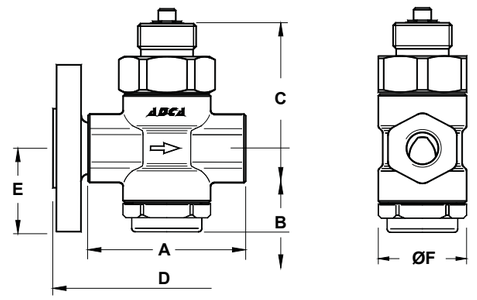
The proportional band is the temperature change required for the valve to move from its fully open to fully closed position. It depends on the valve stroke (mm) and on the thermostat movement per ºC (mm/ºC), and is calculated as follows:

$$\text{Proportional band:} \quad \frac{\text{Valve stroke (mm)}}{\text{Thermostat mov. (mm/ºC)}}$$

Thermostat movement for T.205 and T.405: 0,5 mm/ºC
A proportional band between 8 ºC and 13 ºC is suitable for most applications. A smaller proportional band is not ideal when heat loads vary rapidly.

DIMENSIONS (mm) – THERMOSTAT					
TYPE	**A**	**B**	**C**	**E**	**WEIGHT (kg)**
T.205	305	405	210	22	1,8
T.405	385	525	390	22	2,6





DIMENSIONS (mm) – VALVE BODY								
	THREADED					**PN 40**		
SIZE	**A**	**B**	**C**	**F**	**WEIGHT (kg)**	**D**	**E**	**WEIGHT (kg)**
1/2”	90	40	70	50	1,2	130	47,5	2,6
3/4”	90	40	70	50	1,2	150	52,5	3,2
*** 3/4”**	100	45	75	55	1,6	150	52,5	3,6
1”	100	45	75	55	1,6	160	57,5	4,2

* TR25 – 20/20 model only.

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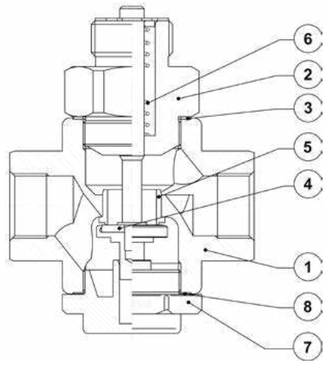
IS TR25AR.30 E 00.20

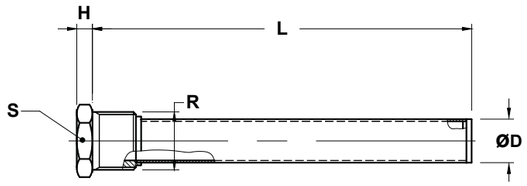
MATERIALS			
POS. Nº	**DESIGNATION**	**TR25S/R**	**TR25I/R**
1	Body	P250GH / 1.0460	AISI 316 / 1.4401
2	Bonnet	C45E / 1.1191	AISI 316L / 1.4404; AISI 303 / 1.4305
3	* Gasket	St. steel / Graphite	St. steel / Graphite
4	* Valve plug	St. steel / EPDM	St. steel / EPDM
5	Seat	AISI 316 / 1.4401	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300	AISI 302 / 1.4300
7	Cap	AISI 316 / 1.4401	AISI 316 / 1.4401
8	* Cap gasket	St. steel / Graphite	St. steel / Graphite

* Available spare parts.



PK SENSOR POCKETS

Sensor pockets made of stainless steel can be supplied with all TR series self-acting thermostats using rod sensors. A sensor pocket, also called thermowell, is used to protect the sensor and to allow its removal while the plant is running or, e.g., the tank where it is connected to is full.
The use of sensor pockets implies delay of heat transfer to the rod sensors and, thus, a longer thermostat reaction time. This is, to some extent, counteracted by filling up the sensor pockets with a thermal conductive paste or glycerine.



INSTALLATION

The installation site for the sensor pocket is arbitrary when paste is applied. When glycerine is used, the sensor pocket must point at least slightly downwards.

MATERIAL

AISI 316 / 1.4401.

DIMENSIONS (mm)					
TYPE	**D**	**H**	**L**	**S**	**R**
PK2	25	9	218	36	1”
PK4	25	10	390	45	11/4”

We reserve the right to change the design and material of this product without notice.

Pipeline Ancillaries

4 - Pipeline ancillaries

Air and gas float traps .....
Automatic air and gas vents for liquid systems .....
Vacuum breakers .....
Strainers .....
Sight checkers and glasses .....
Noise diffuser .....
Non-return valves .....
Bellows sealed stop valves .....
Isolation valves .....
Needle valves .....
Pressure gauges .....
Gauge valves .....
Gauge siphons .....
Level gauges .....

AIR AND GAS FLOAT TRAPS
FA21.1
(SG iron ; 1/2" to 1" – DN 15 to 25)

DESCRIPTION

The FA21.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA21.1-4,5 , 10 and 14 – SG iron.

SIZES: 1/2" to 1"; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1/-2 PN 16.
Flanged ASME B16.42/B16.5 Class 150.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

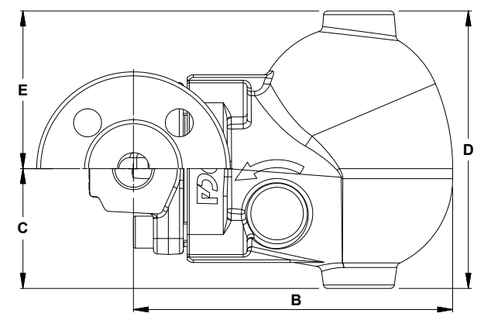
MAX. ΔP: FA21.1-4,5 – 4,5 bar
FA21.1-10 – 10 bar
FA21.1-14 – 14 bar

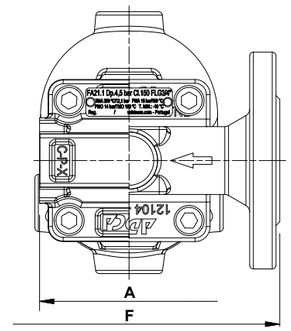
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2" to 1" – DN 15 to 25	SEP

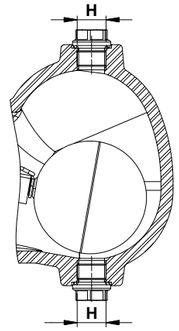
BODY LIMTING CONDITIONS		
FLANGED PN 16 * ALLOWABLE PRESSURE	**FLANGED CLASS 150 ** ALLOWABLE PRESSURE**	**RELAT. TEMP.**
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Max. operating press.: 14 bar; TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.

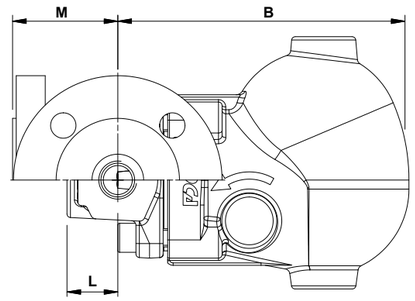
FLOW RATE CAPACITY (kg/h)										
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**								
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**
FA21.1-4,5	**1/2" to 1" – DN 15 to 25**	455	644	788	910	1366	–	–	–	–
FA21.1-10	**1/2" to 1" – DN 15 to 25**	285	403	494	570	856	1068	1276	–	–
FA21.1-14	**1/2" to 1" – DN 15 to 25**	215	304	372	430	645	805	962	1054	1139

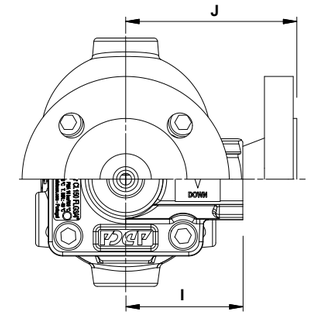






Inline design





Angled design

DIMENSIONS (mm) – INLINE DESIGN											
	THREADED							**PN 16**		**CLASS 150**	
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2" – DN 15	95	160	60	139	79	3/8"	4,9	150	6,2	150	5,8
3/4" – DN 20	95	160	60	139	79	3/8"	4,8	150	6,7	150	6,1
1" – DN 25	95	160	60	139	79	3/8"	4,7	160	7,4	160	7,2

DIMENSIONS (mm) – ANGLED DESIGN														
	THREADED								**PN 16**			**CLASS 150**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1/2" – DN 15	160	60	139	79	3/8"	65	28	4,9	95	58	6,5	100	63	6
3/4" – DN 20	160	60	139	79	3/8"	65	28	4,9	95	58	7	100	63	6,4
1" – DN 25	160	60	139	79	3/8"	65	28	4,9	95	58	7,5	100	63	6,9

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

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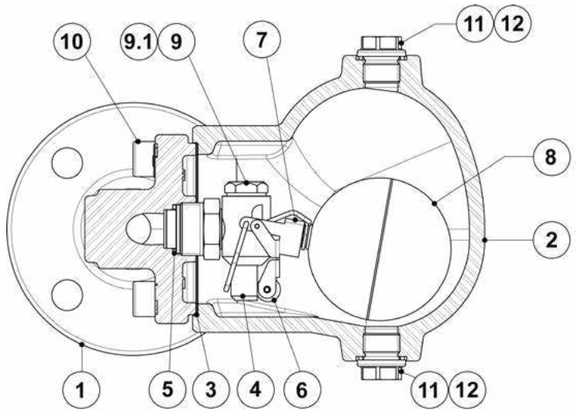
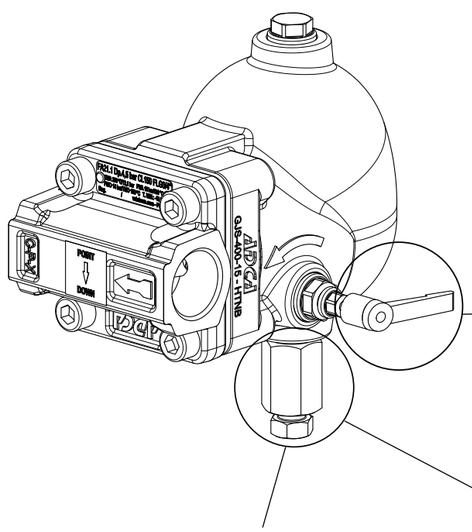
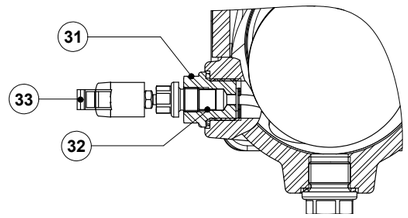
We reserve the right to change the design and material of this product without notice.
IS FA211.015 E 02.21

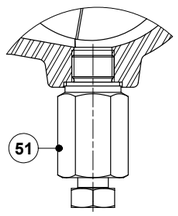
MATERIALS



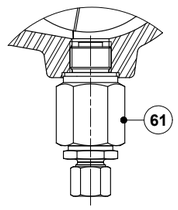




FLL - Float lifting lever



BDV - Blowdown valve (Manual)

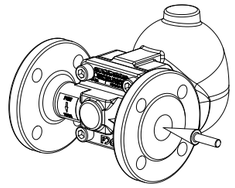


AFZ - Anti-freeze device (Automatic)

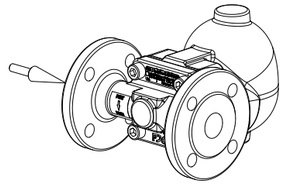
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	GJS-400-15 / 0.7040
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

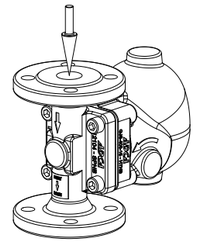
FLOW DIRECTION



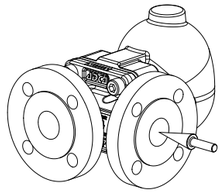
IR - Horizontal from right to left



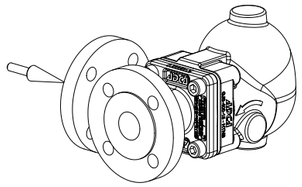
IL - Horizontal from left to right



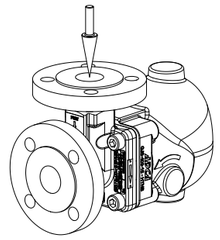
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FA21.1									
Model	**FA211**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FA21.1 – GJS-400-15 / 0.7040 SG iron	**FA211**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Flanged EN 1092-1/-2 PN 16							**L**		
Flanged ASME B16.42/B16.5 Class 150							**U**		
Size									
1/2" or DN 15								**15**	
3/4" or DN 20								**20**	
1" or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

AIR AND GAS FLOAT TRAPS
FA25.1
(SG iron ; 1" – DN 25)

DESCRIPTION

The FA25.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA25.1-4,5 , 10 and 14 – SG iron.

SIZES: 1"; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1/-2 PN 16.
Flanged ASME B16.42/B16.5 Class 150.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

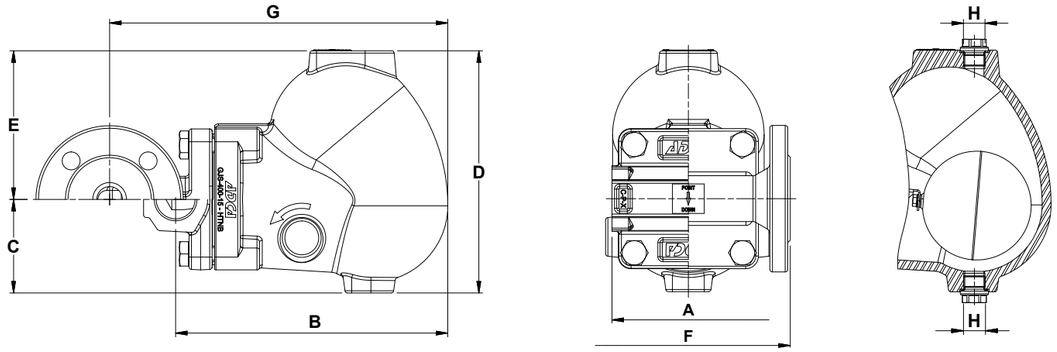
MAX. ΔP: FA25.1-4,5 – 4,5 bar
FA25.1-10 – 10 bar
FA25.1-14 – 14 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1" – DN 25	SEP

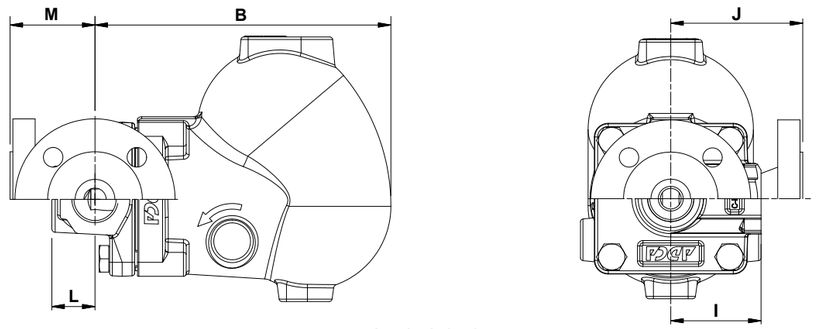
BODY LIMTING CONDITIONS		
FLANGED PN 16 * **ALLOWABLE PRESSURE**	**FLANGED CLASS 150 **** **ALLOWABLE PRESSURE**	**RELAT. TEMP.**
16 bar	16 bar	100 °C
15,5 bar	14,8 bar	150 °C
14,7 bar	13,9 bar	200 °C
13,9 bar	12,1 bar	250 °C

PMO – Max. operating press.: 14 bar; TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 °C.
Metal to metal sealing: 250 °C.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.

FLOW RATE CAPACITY (kg/h)										
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)								
		0,5	1	1,5	2	4,5	7	10	12	14
FA25.1-4,5	1" – DN 25	941	1330	1630	1882	2823	–	–	–	–
FA25.1-10	1" – DN 25	597	845	1035	1195	1793	2237	2674	–	–
FA25.1-14	1" – DN 25	455	644	788	910	1366	1704	2036	2231	2409



Inline design



Angled design

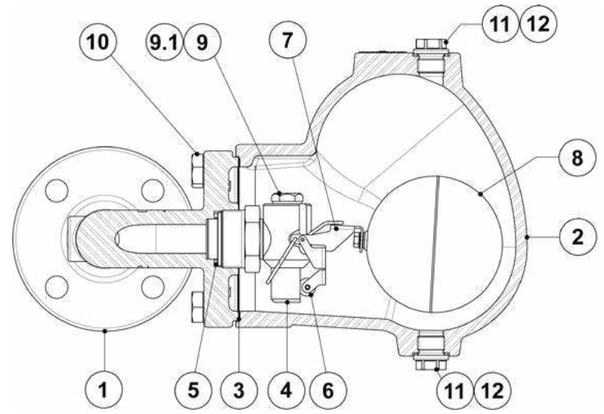
DIMENSIONS (mm) – INLINE DESIGN													
THREADED								PN 16			CLASS 150		
SIZE	A	B	C	D	E	H *	WEIGHT (kg)	F	G	WEIGHT (kg)	F	G	WEIGHT (kg)
1" – DN 25	120	212	73	189	116	3/8"	8,9	160	264	12	160	264	11,9

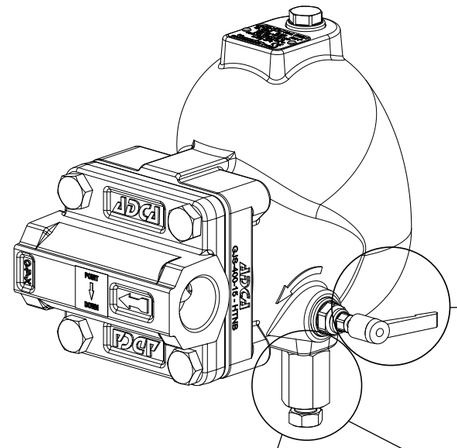
DIMENSIONS (mm) – ANGLED DESIGN													
THREADED									PN 16			CLASS 150		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1" – DN 25	212	73	189	116	3/8"	65	31	8,4	95	61	11	100	66	10,5

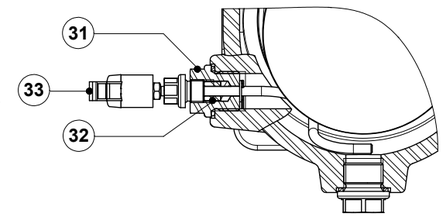
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.

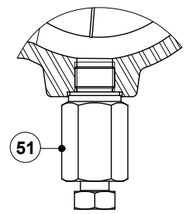
MATERIALS



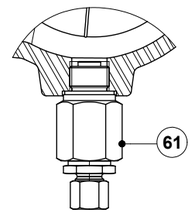




FLL - Float lifting lever



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA

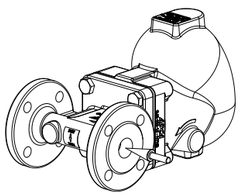
We reserve the right to change the design and material of this product without notice.

IS FA251.025 E 02.21

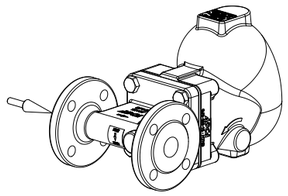
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	GJS-400-15 / 0.7040
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

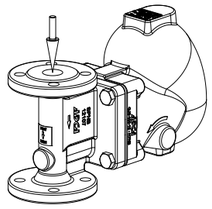
FLOW DIRECTION



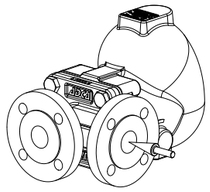
IR - Horizontal from right to left



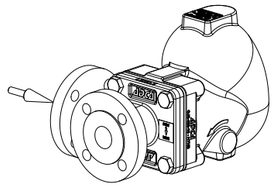
IL - Horizontal from left to right



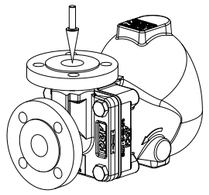
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FA25.1									
Model	**FA251**	**2**	**V**	**XX**	**X**	**IR**	**A**	**25**	
FA25.1	**FA251**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Flanged EN 1092-1/-2 PN 16							**L**		
Flanged ASME B16.42 / B16.5 Class 150							**U**		
Size									
1" or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FA251.025 E 02.21

AIR AND GAS FLOAT TRAPS
FA25.3
(SG iron ; 11/2" and 2" – DN 40 and 50)

DESCRIPTION

The FA25.3 is a range of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA25.3-4,5 , 10 and 14 – SG iron.

SIZES: 11/2" and 2"; DN 40 and DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-2 PN 16.
Flanged ASME B16.42 Class 150.

INSTALLATION: Horizontal or vertical installation.

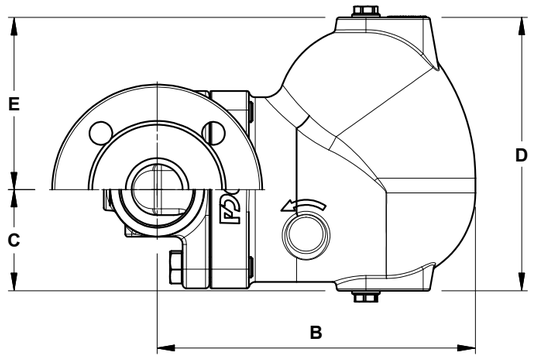
MAX. ΔP: FA25.3-4,5 – 4,5 bar
FA25.3-10 – 10 bar
FA25.3-14 – 14 bar

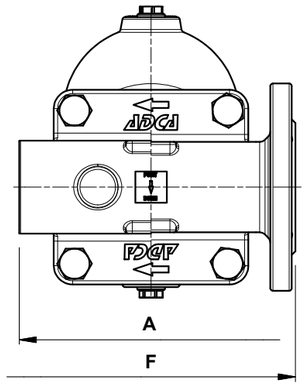
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
11/2" and 2" – DN 40 and 50	SEP

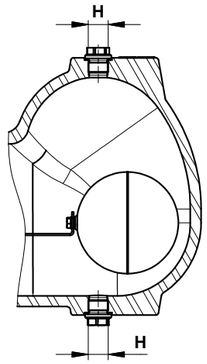
BODY LIMITING CONDITIONS		
FLANGED PN 16 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	16 bar	100 ºC
15,5 bar	14,8 bar	150 ºC
14,7 bar	13,9 bar	200 ºC
13,9 bar	12,1 bar	250 ºC

PMO – Max. operating pressure: 14 bar.
TMO – Max. operating temperature: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-2:2018; ** Acc. to ASME B16.42.
Body limiting conditions PN 16 or below, depending on the type of connection adopted. PN 16 for threaded version.

FLOW RATE CAPACITY (kg/h)										
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**								
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**
FA25.3-4,5	**11/2" and 2" – DN 40 and 50**	995	1450	1710	2000	2990	–	–	–	–
FA25.3-10	**11/2" and 2" – DN 40 and 50**	505	720	850	1010	1600	1890	2300	–	–
FA25.3-14	**11/2" and 2" – DN 40 and 50**	370	520	610	735	1150	1430	1620	1750	1980







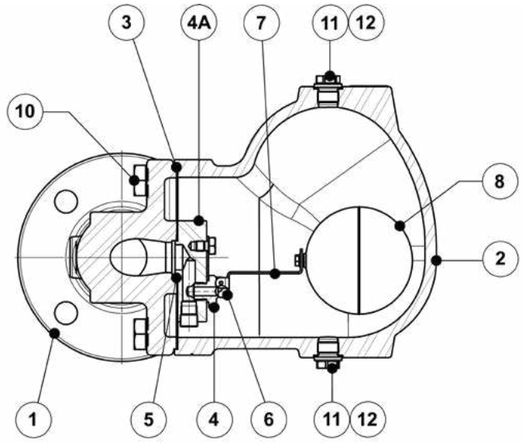
DIMENSIONS (mm)													
	THREADED							**PN 16**			**CLASS 150**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**B**	**WEIGHT (kg)**	**F**	**B**	**WEIGHT (kg)**
11/2" – DN 40	210	250	80	215	136	3/8"	18,9	230	250	21,7	230	250	20,2
2" – DN 50	210	250	80	215	136	3/8"	18,2	230	250	23,6	230	250	21,5

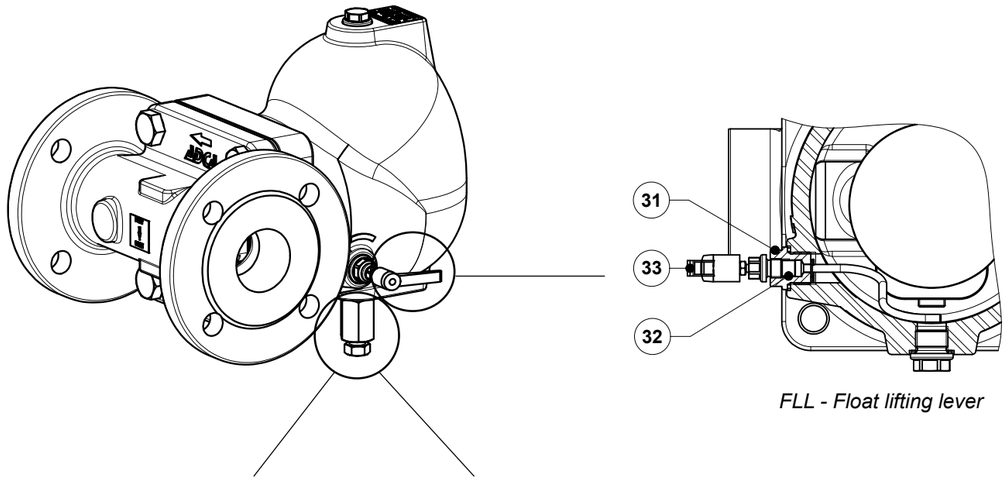
* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges or female NPT threads, these connections are female threaded NPT.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FA253.040 E 02.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJS-400-15 / 0.7040
2	Cover	GJS-400-15 / 0.7040
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
4A	Mounting plate	AISI 316 / 1.4401
5	* Gasket	Graphite
6	* Valve ball	AISI 440C / 1.4125
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.



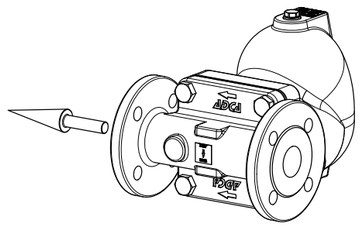


FLL - Float lifting lever

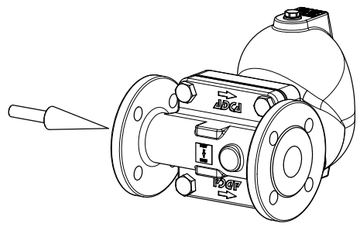
BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

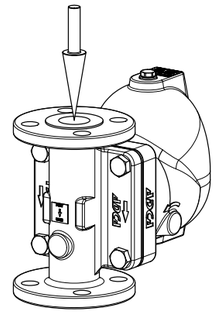
FLOW DIRECTION



R - Horizontal from right to left



L - Horizontal from left to right



V - Vertical from top to bottom

ORDERING CODES FA25.3									
Model	**FA253**	**2**	**M**	**XX**	**X**	**IR**	**A**	**40**	
FA25.3 – GJS-400-15 / 0.7040 SG iron	**FA253**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
Valve sealing									
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8" threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
BDV and AFZ have specific separated ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Horizontal from right to left – standard						**IR**			
Horizontal from left to right						**IL**			
Vertical from top to bottom						**IT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Flanged EN 1092-2 PN 16							**L**		
Flanged ASME B16.42 Class 150							**U**		
Size									
11/2" or DN 40								**40**	
2" or DN 50								**50**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FA253.040 E 02.21

AIR AND GAS FLOAT TRAPS
FA31.1
(Carbon steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FA31.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA31.1-4,5 , 14, 10, 21 and 32 – carbon steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

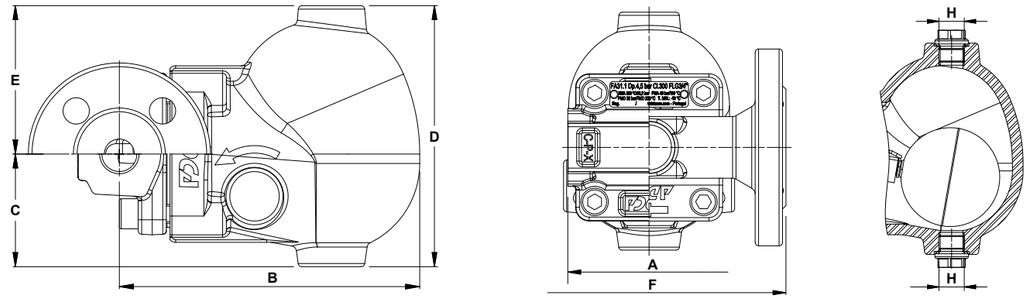
MAX. ΔP: FA31.1-4,5 – 4,5 bar
FA31.1-10 – 10 bar
FA31.1-14 – 14 bar
FA31.1-21 – 21 bar
FA31.1-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1/2” to 1” DN 15 to 25	–	SEP
–	1/2” to 1” DN 15 to 25	1 (CE marked)

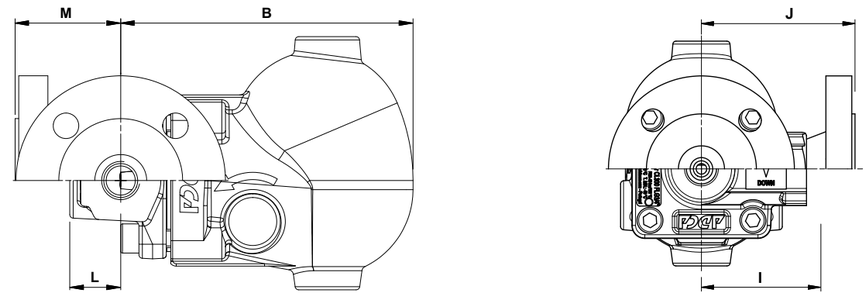
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FA31.1-4,5	**1/2” to 1” – DN 15 to 25**	455	644	788	910	1366	–	–	–	–	–	–	–	–
FA31.1-10	**1/2” to 1” – DN 15 to 25**	285	403	494	570	856	1068	1276	–	–	–	–	–	–
FA31.1-14	**1/2” to 1” – DN 15 to 25**	215	304	372	430	645	805	962	1054	1139	–	–	–	–
FA31.1-21	**1/2” to 1” – DN 15 to 25**	154	219	268	309	464	579	693	759	820	876	1004	–	–
FA31.1-32	**1/2” to 1” – DN 15 to 25**	71	100	123	142	214	267	319	349	377	403	462	504	570



Inline design



Angled design

DIMENSIONS (mm) – INLINE DESIGN													
THREADED / SW								**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2" – DN 15	95	160	60	139	79	3/8”	4,9	150	6,2	150	5,8	150	6,1
3/4” – DN 20	95	160	60	139	79	3/8”	4,8	150	6,7	150	6,1	150	7,2
1” – DN 25	95	160	60	139	79	3/8”	4,7	160	7,4	160	7,2	160	7,9

DIMENSIONS (mm) – ANGLED DESIGN																	
THREADED / SW									**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1/2" – DN 15	160	60	139	79	3/8”	65	28	4,9	95	58	6,5	95	58	6	95	58	6,5
3/4” – DN 20	160	60	139	79	3/8”	65	28	4,9	95	58	7	95	58	6,4	95	58	7,5
1” – DN 25	160	60	139	79	3/8”	65	28	4,9	95	58	7,5	95	58	6,9	95	58	8

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

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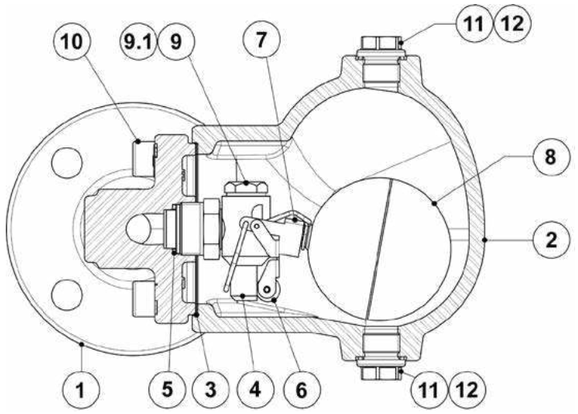
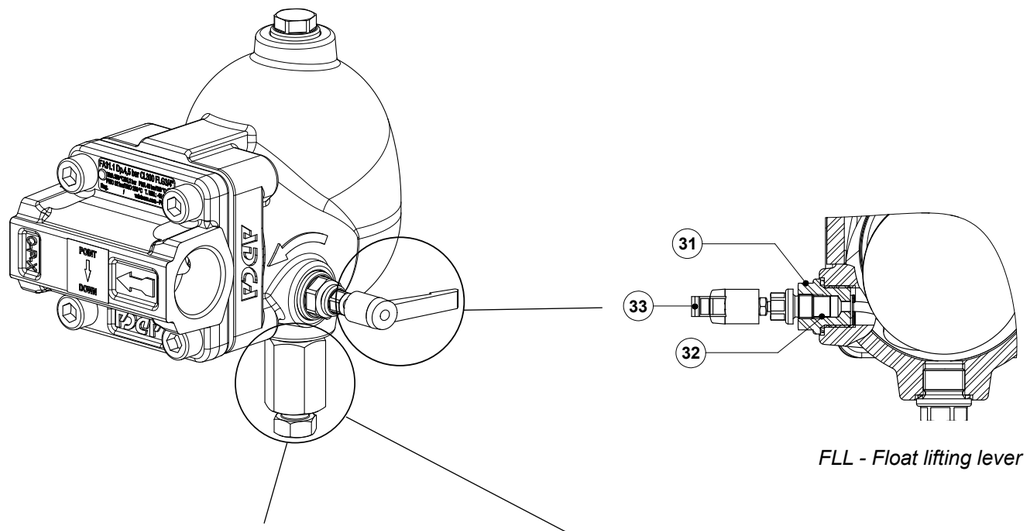
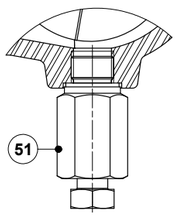
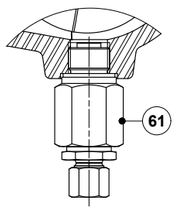




FLL - Float lifting lever



BDV - Blowdown valve (Manual)

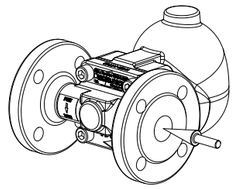


AFZ - Anti-freeze device (Automatic)

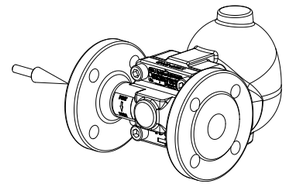
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A216 WCB / 1.0619
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

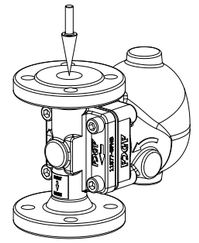
FLOW DIRECTION



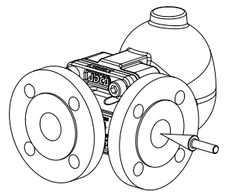
IR - Horizontal from right to left



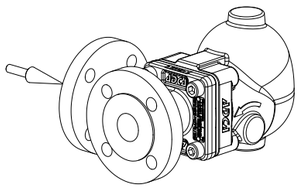
IL - Horizontal from left to right



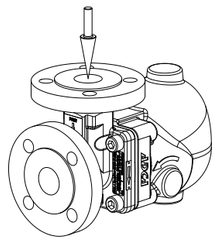
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

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ORDERING CODES FA31.1									
Model	**FA311**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FA31.1 – carbon steel	**FA311**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1/2” or DN 15								**15**	
3/4” or DN 20								**20**	
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

AIR AND GAS FLOAT TRAPS
FA35.1
(Carbon steel 1”; DN 25)

DESCRIPTION

The FA35.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA35.1-4,5 , 10, 14, 21 and 32 – carbon steel.

SIZES: 1”; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

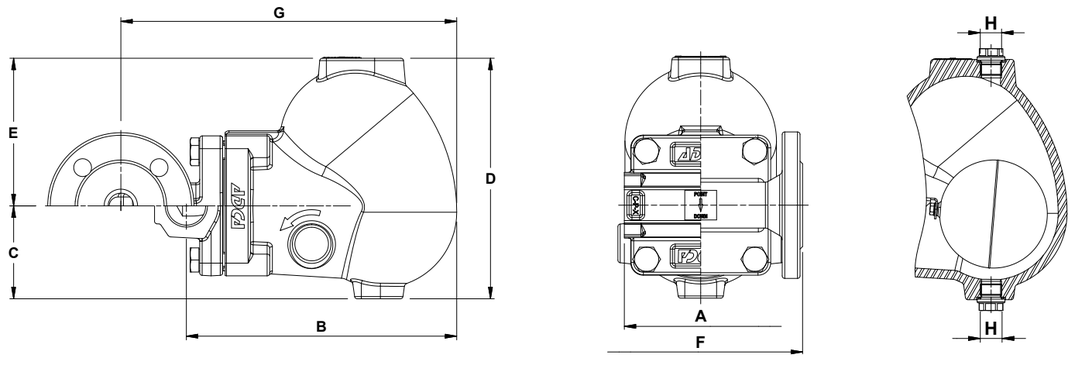
MAX. ΔP: FA35.1-4,5 – 4,5 bar
FA35.1-10 – 10 bar
FA35.1-14 – 14 bar
FA35.1-21 – 21 bar
FA35.1-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1” – DN 25	–	SEP
–	1” – DN 25	1 (CE marked)

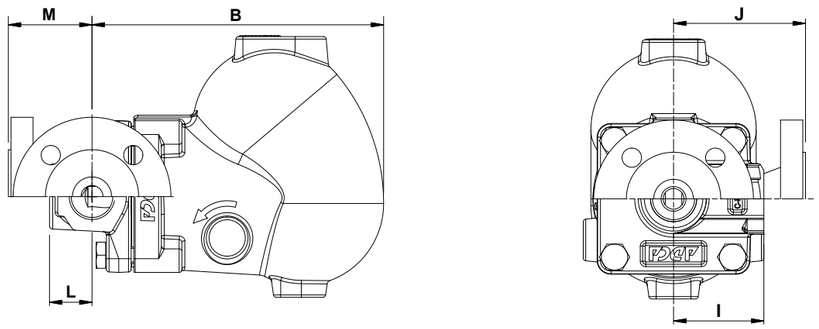
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FA35.1-4,5	1” – DN 25	941	1330	1630	1882	2823	–	–	–	–	–	–	–	–
FA35.1-10	1” – DN 25	597	845	1035	1195	1793	2237	2674	–	–	–	–	–	–
FA35.1-14	1” – DN 25	455	644	788	910	1366	1704	2036	2231	2409	–	–	–	–
FA35.1-21	1” – DN 25	242	342	419	484	726	906	1082	1186	1281	1369	1569	–	–
FA35.1-32	1” – DN 25	177	251	308	355	533	665	795	871	941	1006	1152	1257	1423



Inline design



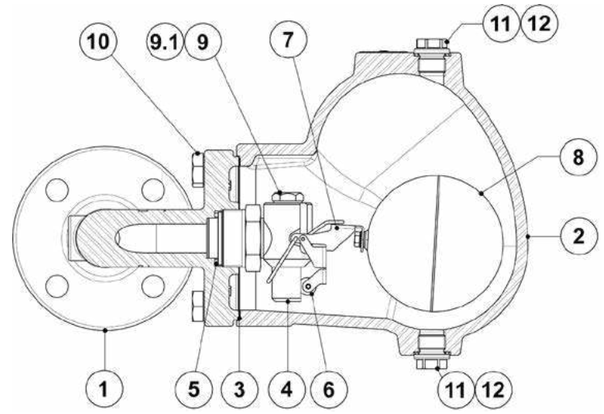
Angled design

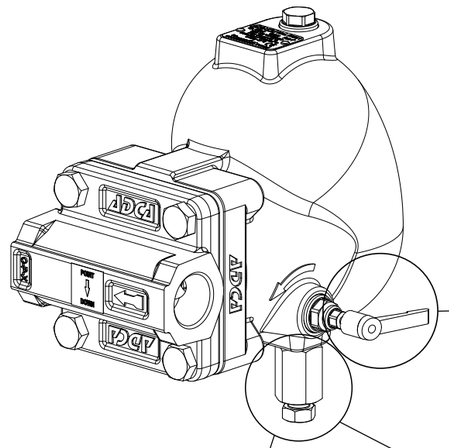
DIMENSIONS (mm) – INLINE DESIGN																
THREADED / SW								PN 40			CLASS 150			CLASS 300		
SIZE	A	B	C	D	E	H *	WGT. (kg)	F	G	WGT. (kg)	F	G	WGT. (kg)	F	G	WGT. (kg)
1” – DN 25	120	212	73	189	116	3/8”	8,9	160	264	12	160	264	11,9	160	264	12,6

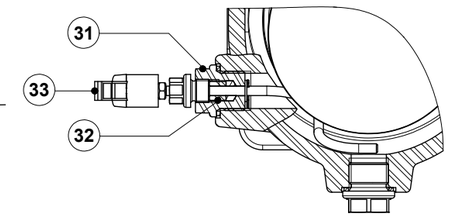
DIMENSIONS (mm) – ANGLED DESIGN																
THREADED / SW									PN 40			CLASS 150			CLASS 300		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1” – DN 25	212	73	189	116	3/8”	65	31	8,4	95	61	11	100	66	10,5	110	76	11,7

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

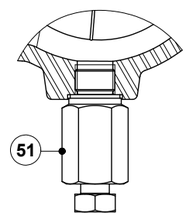
We reserve the right to change the design and material of this product without notice.



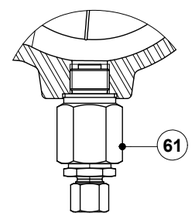




FLL - Float lifting lever



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

VALSTEAM ADCA

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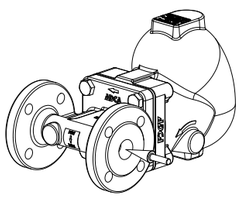
IS FA351.025 E 01.21

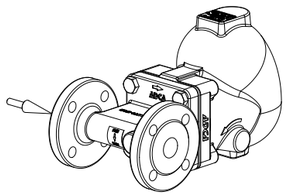
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A216 WCB / 1.0619
	Body (inline threaded)	P250GH / 1.0460
	Body (angled)	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

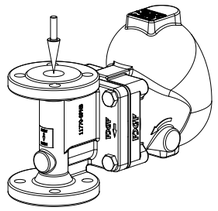
FLOW DIRECTION



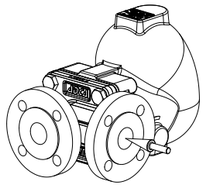
IR - Horizontal from right to left



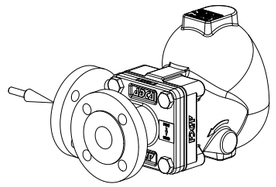
IL - Horizontal from left to right



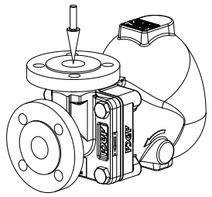
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

ORDERING CODES FA35.1									
Model	**FA351**	**2**	**V**	**XX**	**X**	**IR**	**A**	**25**	
FA35.1 – carbon steel	**FA351**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

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IS FA351.025 E 01.21

AIR AND GAS FLOAT TRAPS
FA35.3
(Carbon steel 11/2” – 2”; DN 40 – 50)

DESCRIPTION

The FA35.3 is a range of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA35.3-4,5 , 10 , 14 , 21 and 32 – carbon steel.

SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.

INSTALLATION: Horizontal or vertical installation.

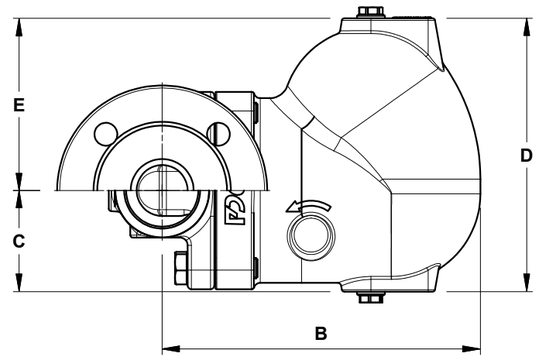
MAX. ΔP: FA35.3-4,5 – 4,5 bar
FA35.3-10 – 10 bar
FA35.3-14 – 14 bar
FA35.3-21 – 21 bar
FA35.3-32 – 32 bar

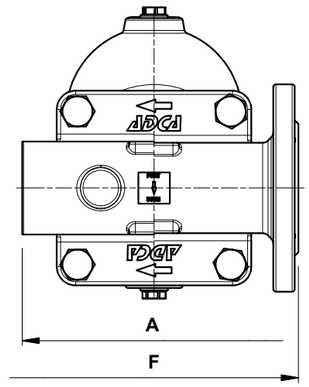
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
11/2” to 2” – DN 40 to 50	–	SEP
–	11/2” to 2” – DN 40 to 50	1 (CE marked)

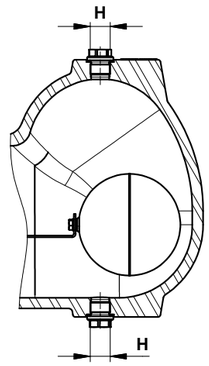
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	17,7 bar	100 ºC
40 bar	14 bar	200 ºC
39 bar	12,1 bar	250 ºC
35,2 bar	10,2 bar	300 ºC

PMO – Max. operating pressure: 32 bar.
TMO – Max. operating temperature: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FA35.3-4,5	**11/2” to 2” – DN 40 to 50**	995	1450	1710	2000	2990	–	–	–	–	–	–	–	–
FA35.3-10	**11/2” to 2” – DN 40 to 50**	505	720	850	1010	1600	1890	2300	–	–	–	–	–	–
FA35.3-14	**11/2” to 2” – DN 40 to 50**	370	520	610	735	1150	1430	1620	1750	1980	–	–	–	–
FA35.3-21	**11/2” to 2” – DN 40 to 50**	305	430	515	600	900	1160	1435	1590	1620	1760	1995	–	–
FA35.3-32	**11/2” to 2” – DN 40 to 50**	175	230	290	340	505	625	745	815	900	955	1125	1250	1480







DIMENSIONS (mm)																
THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**
11/2" – DN 40	210	250	80	215	136	3/8”	18,9	230	250	21,7	230	250	20,2	230	250	21,5
2” – DN 50	210	250	80	215	136	3/8”	18,2	230	250	23,6	230	250	21,5	230	250	23,2

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

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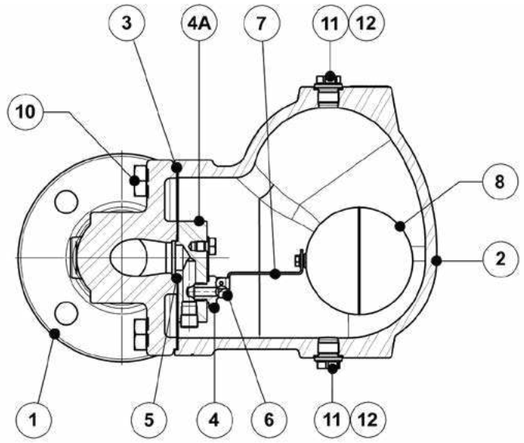
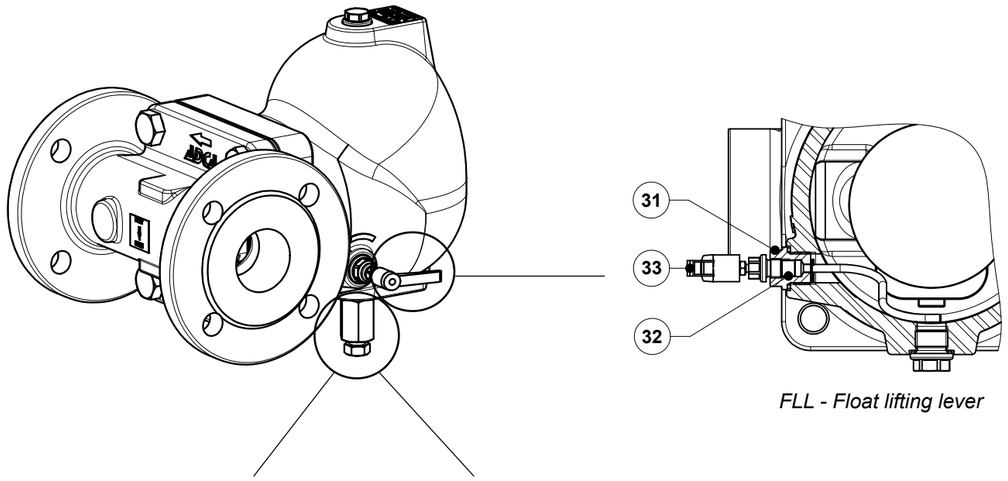
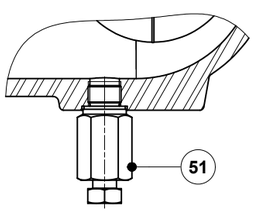
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A216 WCB / 1.0619
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
4A	Mounting plate	AISI 316 / 1.4401
5	* Gasket	Graphite
6	* Valve ball	AISI 440C / 1.4125
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
10	Bolts	Zinc plated steel
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

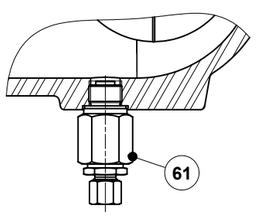




FLL - Float lifting lever

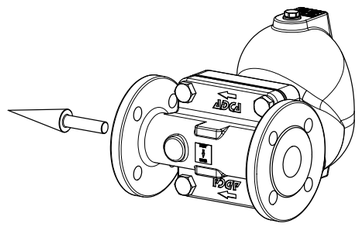


BDV - Blowdown valve (Manual)

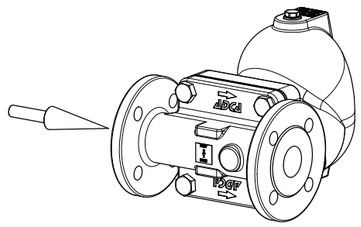


AFZ - Anti-freeze device (Automatic)

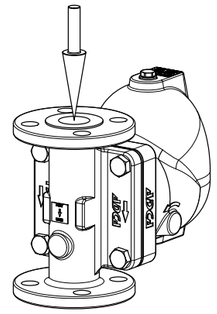
FLOW DIRECTION



R - Horizontal from right to left



L - Horizontal from left to right



V - Vertical from top to bottom

ORDERING CODES FA35.3									
Model	**FA353**	**2**	**M**	**XX**	**X**	**IR**	**A**	**40**	
FA35.3 – A216 WCB / 1.0619 carbon steel	**FA353**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
BDV and AFZ have specific separated ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Horizontal from right to left – standard						**IR**			
Horizontal from left to right						**IL**			
Vertical from top to bottom						**IT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME B16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
11/2” or DN 40								**40**	
2” or DN 50								**50**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

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IS FA353.040 E 01.21

AIR AND GAS FLOAT TRAPS
FA16SS

DESCRIPTION

The FA16SS series are fully automatic ball float traps, extremely compact in dimension and light in weight, specially designed for draining water from compressed air lines.
Usual applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Corrosion resistant.
Replaceable internal parts.
Modulating discharge.
Unaffected by sudden or wide load and pressure changes.

OPTIONS: Compression fitting.
Hand purging knob.

USE: Compressed air and non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA16SS – stainless steel.

SIZES: 1/2” and 3/4”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
1/2” or 3/4” vertical inlet (top to bottom).
1/2” vertical outlet.

INSTALLATION: Vertical installation. It must be installed absolutely vertically at the points in the plant where the condensate tends to collect.
The drain should be piped to a safe position.
See IMI – Installation and maintenance instructions.

With hand purging knob

APPLICATION LIMITS	
Minimum liquid specific weight	0,75 kg/dm³
Maximum working differential pressure	14 bar

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2” to 3/4”	SEP

BODY LIMITING CONDITIONS	
THREADED PN 16	**RELATED TEMPERATURE**
ALLOW. PRESS.	
16 bar	100 ºC
14,5 bar	150 ºC
13,4 bar	200 ºC
12,7 bar	250 ºC

PMO – Max. operating pressure: 14 bar;
TMO – Max. operating temperature: 180 ºC.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**3**	**4**	**6**	**7**	**8**	**9**	**10**	**12**	**14**
FA16SS	**1/2” to 3/4”**	120	145	180	190	230	250	300	330	340	360	380	400	430

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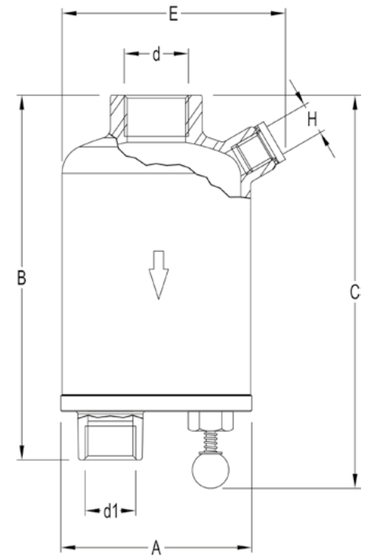
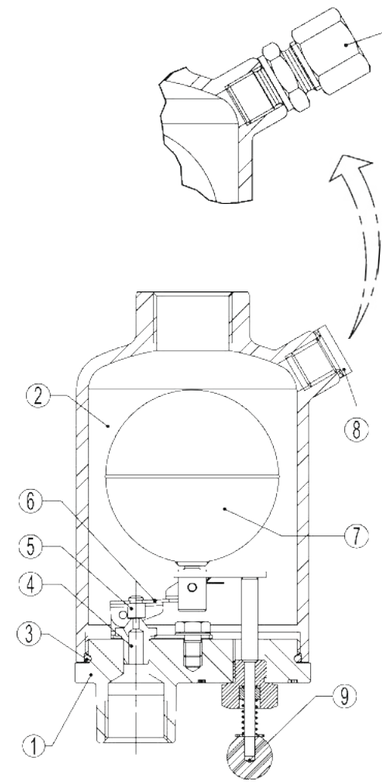


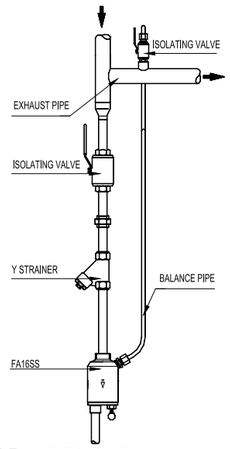
DIMENSIONS (mm)								
SIZE	**d**	**d1**	**A**	**B**	**C**	**E**	**H**	**WEIGHT (kg)**
1/2”	1/2”	1/2”	80	151	163	92	1/4”	1,6
3/4”	3/4”	1/2”	80	151	163	92	1/4”	1,6

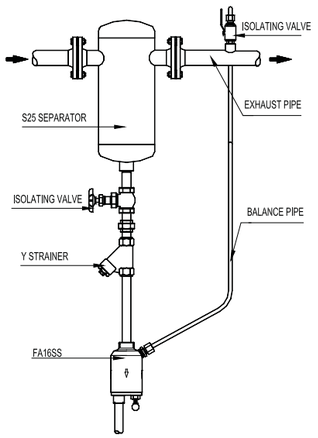
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408; AISI 316 / 1.4401
2	Cover	A351 CF8M / 1.4408; AISI 316 / 1.4401
3	* O-ring	NBR
4	* Seat	AISI 316 / 1.4401
5	* Valve	Viton
6	* Lever	AISI 304 / 1.4301
7	* Float	AISI 304 / 1.4301
8	Balance pipe connection	A351 CF8M / 1.4408; AISI 316 / 1.4401
8A	** Compression fitting	Fe/Zn 12 – ISO 2081
9	** Hand purging knob	AISI 304 / 1.4301

* Available spare parts. ** Optional, against extra price.



TYPICAL INSTALLATION





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AIR AND GAS FLOAT TRAPS
FA41.1
(Stainless steel 1/2” – 1”; DN 15 – 25)

DESCRIPTION

The FA41.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA41.1-4,5 , 10, 14 , 21 and 32 – stainless steel.

SIZES: 1/2” to 1”; DN 15 to DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

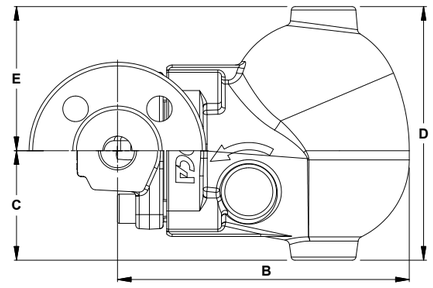
MAX. ΔP: FA41.1-4,5 – 4,5 bar
FA41.1-10 – 10 bar
FA41.1-14 – 14 bar
FA41.1-21 – 21 bar
FA41.1-32 – 32 bar

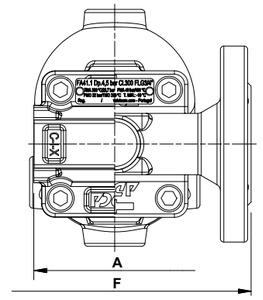
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1/2” to 1” DN 15 to 25	–	SEP
–	1/2” to 1” DN 15 to 25	1 (CE marked)

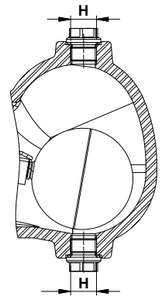
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 300 ****	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	34,4 bar	13,3 bar	100 ºC
31,8 bar	28,8 bar	11,1 bar	200 ºC
29,9 bar	26,6 bar	10,2 bar	250 ºC
27,6 bar	25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

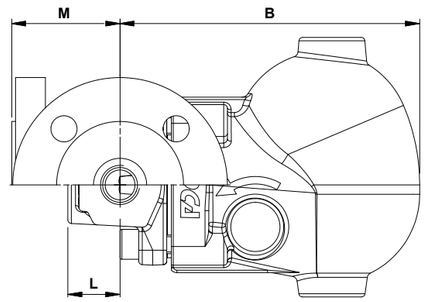
FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FA41.1-4,5	**1/2” to 1” – DN 15 to 25**	455	644	788	910	1366	–	–	–	–	–	–	–	–
FA41.1-10	**1/2” to 1” – DN 15 to 25**	285	403	494	570	856	1068	1276	–	–	–	–	–	–
FA41.1-14	**1/2” to 1” – DN 15 to 25**	215	304	372	430	645	805	962	1054	1139	–	–	–	–
FA41.1-21	**1/2” to 1” – DN 15 to 25**	154	219	268	309	464	579	693	759	820	876	1004	–	–
FA41.1-32	**1/2” to 1” – DN 15 to 25**	71	100	123	142	214	267	319	349	377	403	462	504	570

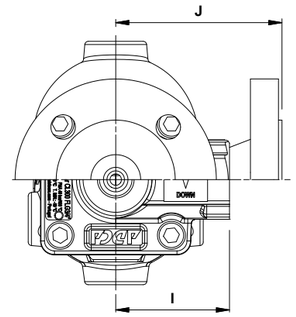






Inline design





Angled design

DIMENSIONS (mm) – INLINE DESIGN													
	THREADED / SW							**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**	**F**	**WEIGHT (kg)**
1/2" – DN 15	95	160	60	139	79	3/8”	4,9	150	6,2	150	5,8	150	6,1
3/4” – DN 20	95	160	60	139	79	3/8”	4,8	150	6,7	150	6,1	150	7,2
1” – DN 25	95	160	60	139	79	3/8”	4,7	160	7,4	160	7,2	160	7,9

DIMENSIONS (mm) – ANGLED DESIGN																	
	THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**B**	**C**	**D**	**E**	**H ***	**I**	**L**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**	**J**	**M**	**WGT. (kg)**
1/2" – DN 15	160	60	139	79	3/8”	65	28	4,8	95	58	6,5	100	63	6	105	68	6,5
3/4” – DN 20	160	60	139	79	3/8”	65	28	4,8	95	58	7	100	63	6,4	110	73	7,5
1” – DN 25	160	60	139	79	3/8”	65	28	4,8	95	58	7,5	100	63	6,9	110	73	8

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
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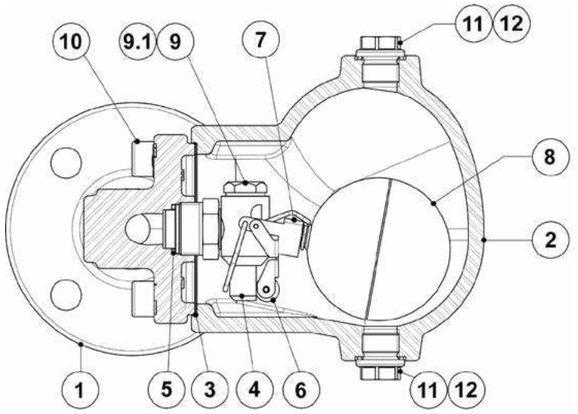
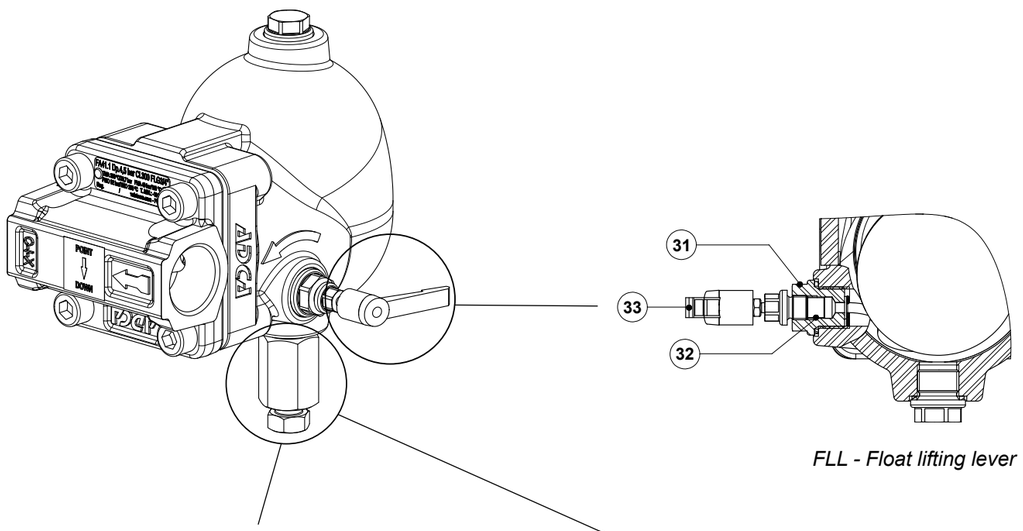
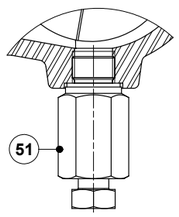
IS FA411.025 E 00.21

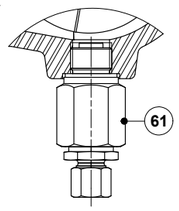




FLL - Float lifting lever



BDV - Blowdown valve (Manual)



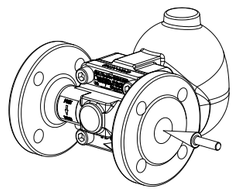
AFZ - Anti-freeze device (Automatic)

We reserve the right to change the design and material of this product without notice.

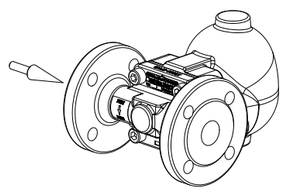
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A351 CF8M / 1.4408
	Body (inline threaded)	AISI 316L / 1.4404
	Body (angled)	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

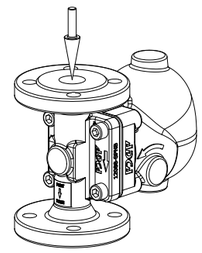
FLOW DIRECTION



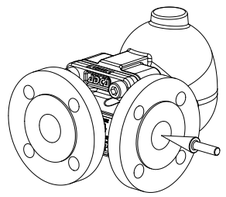
IR - Horizontal from right to left



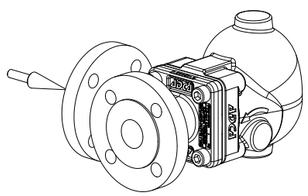
IL - Horizontal from left to right



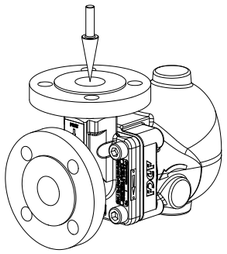
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FA411.025 E 00.21

ORDERING CODES FA41.1									
Model	**FA411**	**2**	**V**	**XX**	**X**	**IR**	**A**	**15**	
FA41.1 – stainless steel	**FA411**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1/2” or DN 15								**15**	
3/4” or DN 20								**20**	
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

AIR AND GAS FLOAT TRAPS
FA45.1
(Stainless steel 1”; DN 25)

DESCRIPTION

The FA45.1 is a series of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Metal to metal sealing.
Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA45.1-4,5 , 10, 14, 21 and 32 – stainless steel.

SIZES: 1”; DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline horizontal or vertical installation.
Angled horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

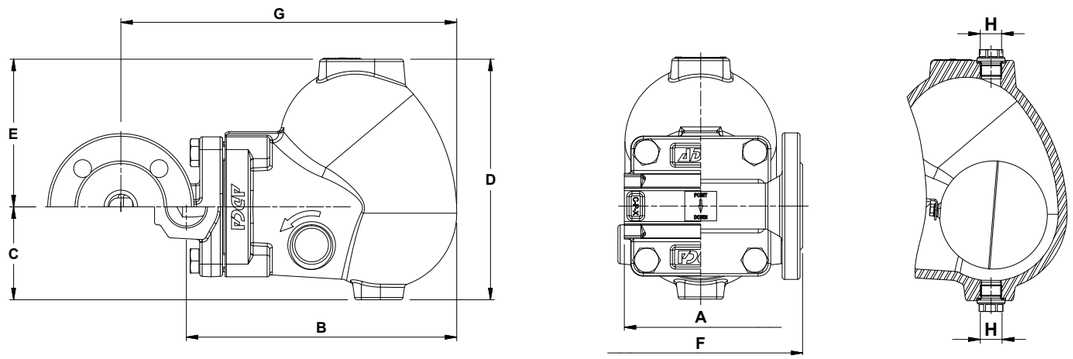
MAX. ΔP: FA45.1-4,5 – 4,5 bar
FA45.1-10 – 10 bar
FA45.1-14 – 14 bar
FA45.1-21 – 21 bar
FA45.1-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
1” – DN 25	–	SEP
–	1” – DN 25	1 (CE marked)

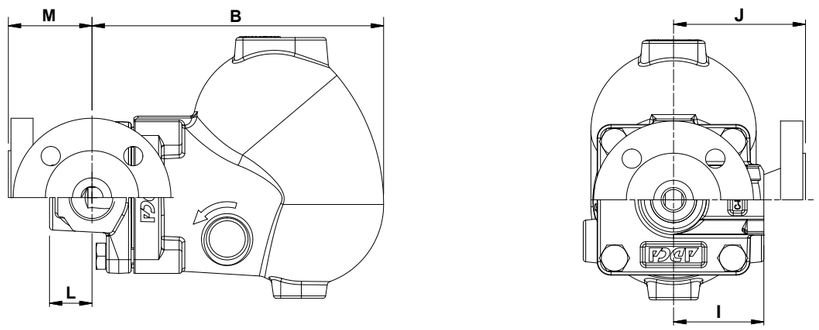
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 300 ****	**FLANGED CLASS 150 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	34,4 bar	13,3 bar	100 ºC
31,8 bar	28,8 bar	11,1 bar	200 ºC
29,9 bar	26,6 bar	10,2 bar	250 ºC
27,6 bar	25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,5	1	1,5	2	4,5	7	10	12	14	16	21	25	32
FA45.1-4,5	1” – DN 25	941	1330	1630	1882	2823	–	–	–	–	–	–	–	–
FA45.1-10	1” – DN 25	597	845	1035	1195	1793	2237	2674	–	–	–	–	–	–
FA45.1-14	1” – DN 25	455	644	788	910	1366	1704	2036	2231	2409	–	–	–	–
FA45.1-21	1” – DN 25	242	342	419	484	726	906	1082	1186	1281	1369	1569	–	–
FA45.1-32	1” – DN 25	177	251	308	355	533	665	795	871	941	1006	1152	1257	1423



Inline design

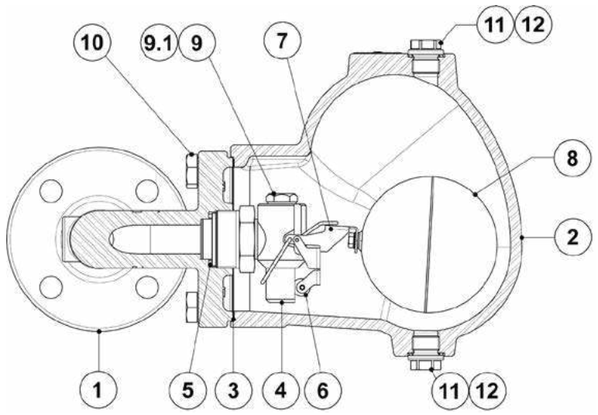


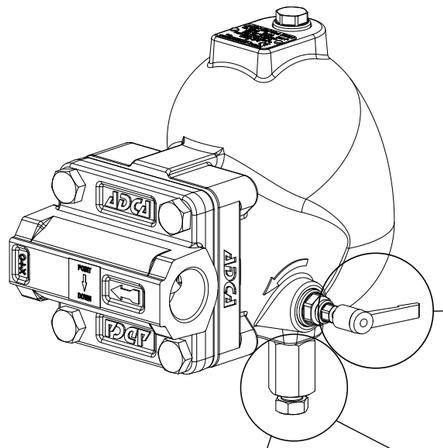
Angled design

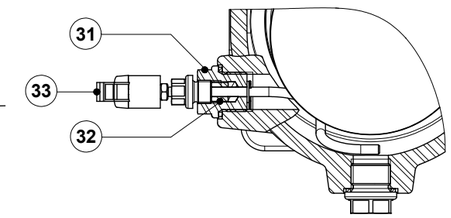
DIMENSIONS (mm) – INLINE DESIGN																
THREADED / SW								PN 40			CLASS 150			CLASS 300		
SIZE	A	B	C	D	E	H *	WGT. (kg)	F	G	WGT. (kg)	F	G	WGT. (kg)	F	G	WGT. (kg)
1” – DN 25	120	212	73	189	116	3/8”	8,9	160	264	12	160	264	11,9	160	264	12,6

DIMENSIONS (mm) – ANGLED DESIGN																
THREADED / SW									PN 40			CLASS 150			CLASS 300		
SIZE	B	C	D	E	H *	I	L	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)	J	M	WGT. (kg)
1” – DN 25	212	73	189	116	3/8”	65	31	8,4	95	61	11	100	66	10,5	110	76	11,7

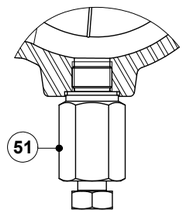
***** As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.



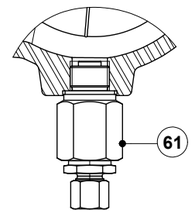




FLL - Float lifting lever



BDV - Blowdown valve (Manual)



AFZ - Anti-freeze device (Automatic)

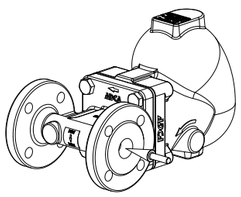
We reserve the right to change the design and material of this product without notice.

IS FA451.025 E 00.21

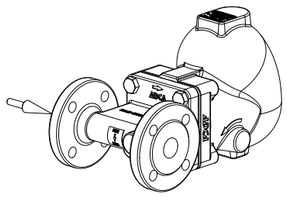
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (inline flanged)	A351 CF8M / 1.4408
	Body (inline threaded)	AISI 316L / 1.4404
	Body (angled)	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9.1	Gasket	Copper
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

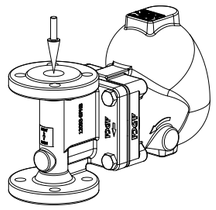
FLOW DIRECTION



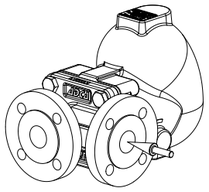
IR - Horizontal from right to left



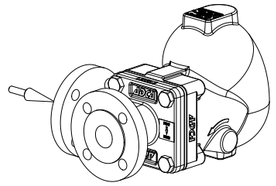
IL - Horizontal from left to right



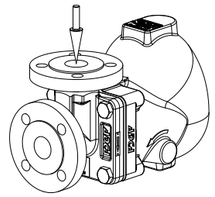
IT - Vertical from top to bottom



AR - Angled from right to front



AL - Angled from left to front



AT - Angled from top to front

We reserve the right to change the design and material of this product without notice.

ORDERING CODES FA45.1									
Model	**FA451**	**2**	**V**	**XX**	**X**	**IR**	**A**	**25**	
FA45.1 – stainless steel	**FA451**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
FPM / Viton (standard)			**V**						
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
If any, these have specific separate ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Inline horizontal from right to left (standard)						**IR**			
Inline horizontal from left to right						**IL**			
Inline vertical from top to bottom						**IT**			
Angled from right to front						**AR**			
Angled from left to front						**AL**			
Angled from top to front						**AT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME 16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
1” or DN 25								**25**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS FA451.025 E 00.21

AIR AND GAS FLOAT TRAPS
FA45.3
(Stainless steel 11/2” – 2”; DN 40 – 50)

DESCRIPTION

The FA45.3 is a range of fully automatic ball float traps specially designed for condensate drainage in compressed air and gas systems. Typical applications include aftercoolers, separators and compressed air mains.

MAIN FEATURES

Modulating discharge.
Unaffected by sudden or wide load and pressure variations.
Flow direction can be easily changed by repositioning the body in relation to the mechanism and cover.

OPTIONS: Equalizing (vent) and drain connections.
BDV – Blowdown valve.
AFZ – Anti-freeze device.
FLL – Float lifting lever.

USE: Compressed air and other non corrosive gases compatible with the construction.

AVAILABLE MODELS: FA45.3-4,5 , 10, 14, 21 and 32 – stainless steel.

SIZES: 11/2” to 2”; DN 40 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.

INSTALLATION: Horizontal or vertical installation.

MAX. ΔP: FA45.3-4,5 – 4,5 bar
FA45.3-10 – 10 bar
FA45.3-14 – 14 bar
FA45.3-21 – 21 bar
FA45.3-32 – 32 bar

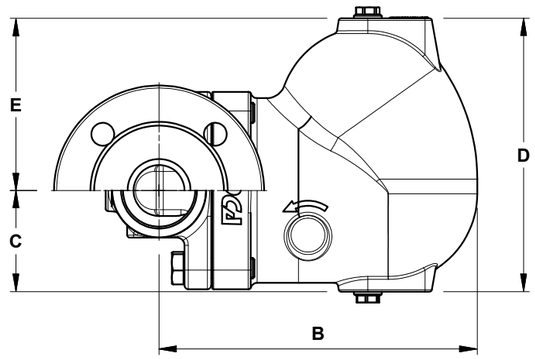
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
11/2” to 2” – DN 40 to 50	–	SEP
–	11/2” to 2” – DN 40 to 50	1 (CE marked)

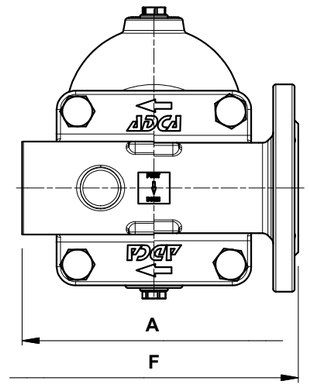
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	16 bar	100 ºC
33,7 bar	13,6 bar	200 ºC
31,8 bar	12 bar	250 ºC
29,7 bar	10,2 bar	300 ºC

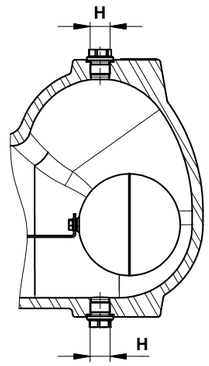
PMO – Max. operating pressure: 32 bar.
TMO – Max. operating temperature: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded, SW and BW versions.

FLOW RATE CAPACITY (kg/h)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,5	**1**	**1,5**	**2**	**4,5**	**7**	**10**	**12**	**14**	**16**	**21**	**25**	**32**
FA45.3-4,5	**11/2” to 2” – DN 40 to 50**	995	1450	1710	2000	2990	–	–	–	–	–	–	–	–
FA45.3-10	**11/2” to 2” – DN 40 to 50**	505	720	850	1010	1600	1890	2300	–	–	–	–	–	–
FA45.3-14	**11/2” to 2” – DN 40 to 50**	370	520	610	735	1150	1430	1620	1750	1980	–	–	–	–
FA45.3-21	**11/2” to 2” – DN 40 to 50**	305	430	515	600	900	1160	1435	1590	1620	1760	1995	–	–
FA45.3-32	**11/2” to 2” – DN 40 to 50**	175	230	290	340	505	625	745	815	900	955	1125	1250	1480

We reserve the right to change the design and material of this product without notice.







DIMENSIONS (mm)																
THREADED / SW								**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**E**	**H ***	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**	**F**	**B**	**WGT. (kg)**
11/2" – DN 40	210	250	80	215	136	3/8”	18,9	230	250	21,7	230	250	20,2	230	250	21,5
2” – DN 50	210	250	80	215	136	3/8”	18,2	230	250	23,6	230	250	21,5	230	250	23,2

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
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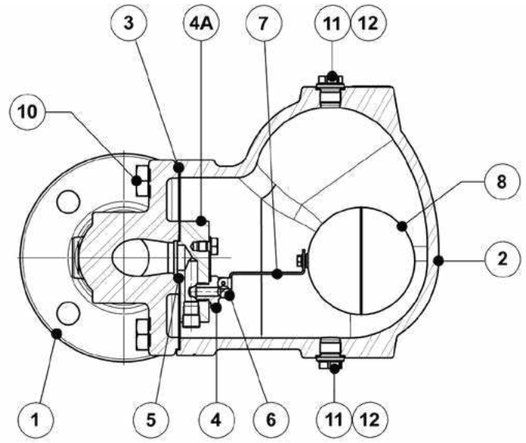
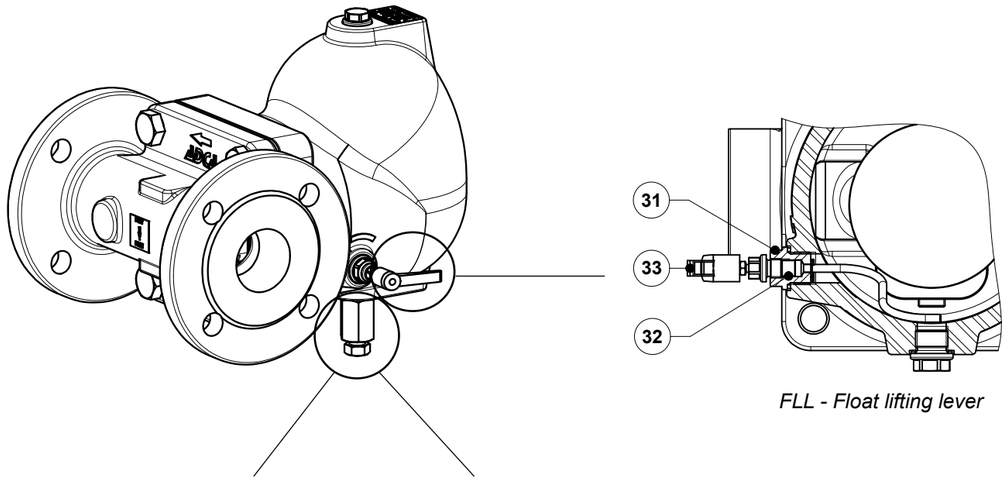
IS FA453.040 E 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 410 / 1.4006
4A	Mounting plate	AISI 316 / 1.4401
5	* Gasket	Graphite
6	* Valve ball	AISI 440C / 1.4125
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Gasket	Copper; AISI 304 / 1.4301
31	Lever mechanism	AISI 303 / 1.4305 ; AISI 304 / 1.4301; AISI 316L / 1.4404
32	Packing	Graphite
33	Lever	Plastic
51	Blowdown valve	AISI 303 / 1.4305; AISI 316L / 1.4404
61	Anti-freeze device	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.



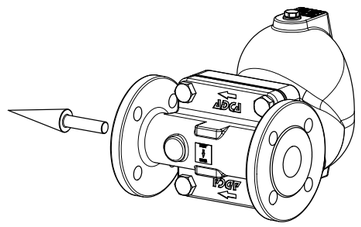


FLL - Float lifting lever

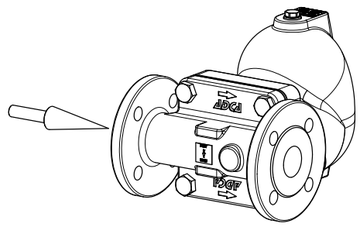
BDV - Blowdown valve (Manual)

AFZ - Anti-freeze device (Automatic)

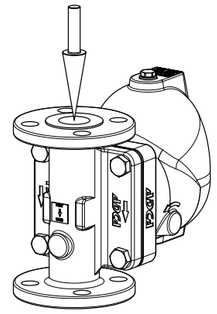
FLOW DIRECTION



R - Horizontal from right to left



L - Horizontal from left to right



V - Vertical from top to bottom

ORDERING CODES FA45.3									
Model	**FA453**	**2**	**M**	**XX**	**X**	**IR**	**A**	**40**	
FA45.3 – A351 CF8M / 1.4408 stainless steel	**FA453**								
Differential pressure									
4,5 bar		**2**							
10 bar		**3**							
14 bar		**4**							
21 bar		**5**							
32 bar		**7**							
Valve sealing									
Metal to metal			**M**						
Cover connections									
None				**XX**					
3/8” threaded connections on top and bottom, closed with plugs (mandatory if any options are considered)				**10**					
Options									
BDV and AFZ have specific separated ordering codes, please refer to the appropriate documentation.									
FLL - Float lifting lever									
None					**X**				
Lifting lever on the right side (when facing the steam trap body)					**R**				
Lifting lever on the left side (when facing the steam trap body)					**L**				
Flow direction									
Horizontal from right to left – standard						**IR**			
Horizontal from left to right						**IL**			
Vertical from top to bottom						**IT**			
Pipe connections									
Female threaded ISO 7 Rp							**A**		
Female threaded NPT							**C**		
Socket weld (SW) ASME B16.11							**H**		
Flanged EN 1092-1 PN 40							**N**		
Flanged ASME B16.5 Class 150							**U**		
Flanged ASME B16.5 Class 300							**V**		
Size									
11/2” or DN 40								**40**	
2” or DN 50								**50**	
Special valves / Extras									
Full description or additional codes have to be added in case of a non-standard combination									**E**

We reserve the right to change the design and material of this product without notice.

IS FA453.040 E 01.21

COMPRESSED AIR AUTOMATIC DRAIN VALVES
CAD

DESCRIPTION

The CAD - Compressed Air Automatic Drain Valve consists of a solid-state timer coupled to a solenoid valve.
The CAD is specially designed for automatic draining of filters, separators, aftercoolers, dryers, receivers, drip legs and other compressed air system components where condensate and contaminants collect.
The draining interval and discharge time can be adjusted according to the requirements.

MAIN FEATURES

Easy to read and set time for on/off periods.
Adjustable interval and discharge times.
Manual test switch.
Simple to install.

OPTIONS: Stainless steel valve body.

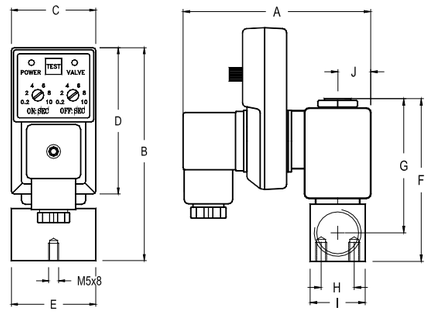
USE: Compressed air, oil, gases and liquids compatible with the materials of construction.

AVAILABLE MODELS: CAD.

SIZES: 3/8” and 1/ 2”.

CONNECTIONS: Female threaded ISO 7 Rp.

INSTALLATION: In any position.



DIMENSIONS (mm)										
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**WEIGHT (kg)**
3/8”	90	112	42	75	46	75	63	15	20	0,4
1/2”	90	112	42	75	40	75	63	15	20	0,4

SPECIFICATIONS			
TIMER		**VALVE**	
Interval time	0,5 – 45 minutes	**Type**	2/2 way direct acting valve
Discharge time	0,5 – 10 seconds	**In / Out ports**	3/8” or 1/2" female ISO 7 Rp
Supply voltage	240 V (24 V on request)	**Max. working pressure**	16 bar (40 or 80 bar on request)
Current consumption	4 mA max.	**Min./max. ambient temperature**	2 ºC / 55 ºC
Operating temperature	-40 ºC to 60 ºC	**Media temperature**	Max. 90 ºC
Environmental protection	IP 65	**Valve body**	Forged brass (4,5 mm orifice)
Housing material	ABS plastic FR grade	**Insulation**	Thermal group H (200 ºC)
Connections	DIN 43650A ISO 4400/6952	**Environmental protection**	IP 65
Indicators	1 LED to indicate “on” phase	**Supply voltage**	240 V (24 V on request)
	1 LED to indicate “off” phase	**Voltage tolerance**	+/- 10%

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE31.2
(Carbon steel 1" x 1/2"; DN 25 x 15)

DESCRIPTION

The AE31.2 is a series of automatic vents designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in carbon steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Metal to metal sealing.
Threaded connection on cover, closed with plug.
HVV – Hand vent valve.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE31.2-6, 14, 21 and 32 – carbon steel.

SIZES: 1" x 1/2"; DN 25 x 15.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME B16.11.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE31.2-6 – 6 bar
AE31.2-14 – 14 bar
AE31.2-21 – 21 bar
AE31.2-32 – 32 bar

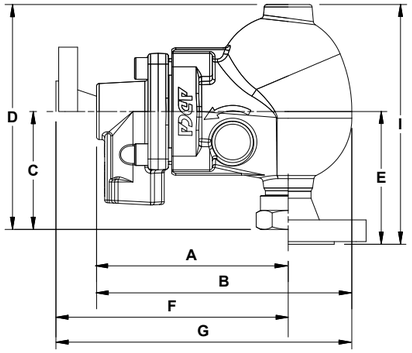
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1" x 1/2" – DN 25 x 15	SEP

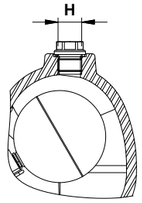
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

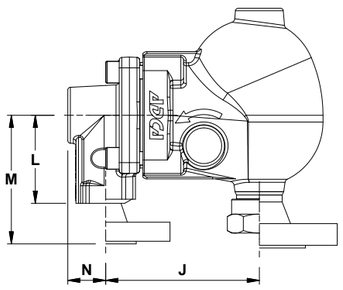
PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC;
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

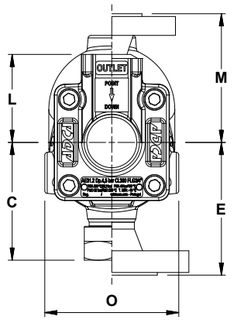
FLOW RATE CAPACITY (NL/min)																
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)														
		0,1	0,5	1	2	4	6	8	10	12	14	16	18	21	25	32
AE31.2-6	1" x 1/2" – DN 25 x 15	97	212	266	388	648	907	–	–	–	–	–	–	–	–	–
AE31.2-14	1" x 1/2" – DN 25 x 15	46	100	125	183	306	428	551	673	795	918	–	–	–	–	–
AE31.2-21	1" x 1/2" – DN 25 x 15	33	72	90	132	220	308	396	484	573	660	748	837	969	–	–
AE31.2-32	1" x 1/2" – DN 25 x 15	15	33	41	60	101	141	182	222	263	303	344	385	446	527	669

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.







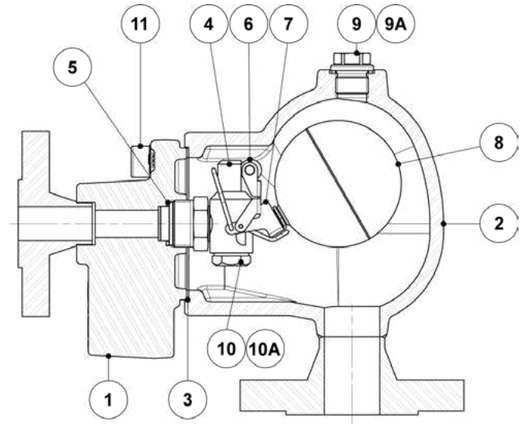


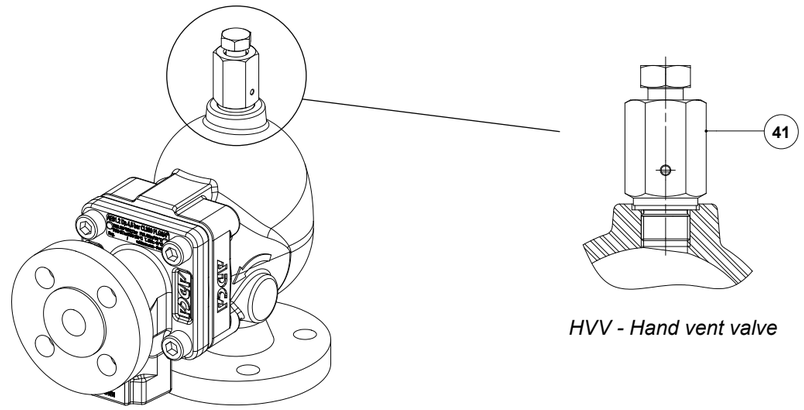
DIMENSIONS (mm)																			
THREADED / SW											PN 40								
SIZE	A	B	C	D	H *	J	L	N	O	WGT. (kg)	E	F	G	H *	I	J	M	O	WGT. (kg)
1" x 1/2" DN 25 x 15	168	243	141	214	3/8"	137	65	31	130	9	154	198	273	3/8"	227	137	95	130	11,4

CLASS 150										CLASS 300								
SIZE	E	F	G	H *	I	J	M	O	WGT. (kg)	E	F	G	H *	I	J	M	O	WGT. (kg)
1" x 1/2"	169	203	278	3/8"	242	137	100	130	10,9	176	213	288	3/8"	249	137	110	130	12,1

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.





HVV - Hand vent valve

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9A	** Gasket	Copper
10	Plug	AISI 304 / 1.4301
10A	Gasket	Copper
11	Bolts	Zinc plated steel
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts; ** Not applicable in NPT version.

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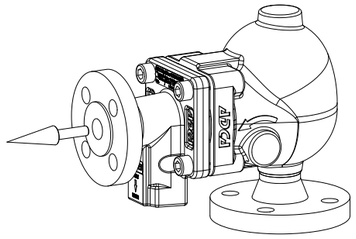
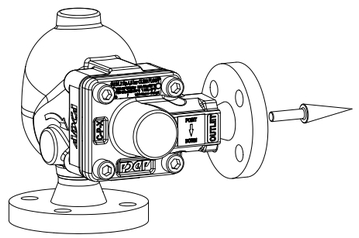
IS AE312.025 E 01.21

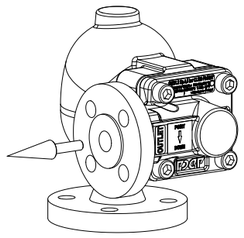
FLOW DIRECTION



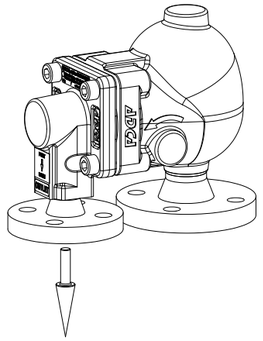
VF - Vertical inlet / straight front outlet



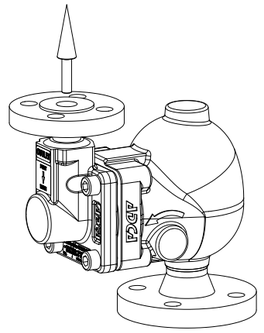
VR - Vertical inlet / right side outlet



VL - Vertical inlet / left side outlet



VB - Vertical inlet / top to bottom outlet



VT - Vertical from bottom to top

ORDERING CODES AE31.2										
Model	**AE312**	**2**	**V**	**XX**	**VF**	**A**	**15**	**A**	**25**	**E**
AE31.2 – carbon steel	**AE312**									
Differential pressure										
6 bar		**2**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Valve sealing										
FPM / Viton (standard)			**V**							
Metal to metal			**M**							
Cover connections										
None				**XX**						
3/8" threaded connections on top, closed with plug (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation										
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical inlet / top to bottom outlet					**VB**					
Vertical inlet / right side outlet					**VR**					
Vertical inlet / left side outlet					**VL**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1/2" or DN 15							**15**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1" or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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IS AE312.025 E 01.21

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE35.2
(Carbon steel 1” x 1/2”, 1” x 1”; DN 25 x 15, DN 25 x 25)

DESCRIPTION

The AE35.2 range of automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in carbon steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Metal to metal sealing.
Threaded connection on cover, closed with plug.
HVV – Hand vent valve.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE35.2-6, 14, 21 and 32 – carbon steel.

SIZES: 1” x 1/2” and 1” x 1”; DN 25 x 15 and DN 25 x 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE35.2-6 – 6 bar
AE35.2-14 – 14 bar
AE35.2-21 – 21 bar
AE35.2-32 – 32 bar

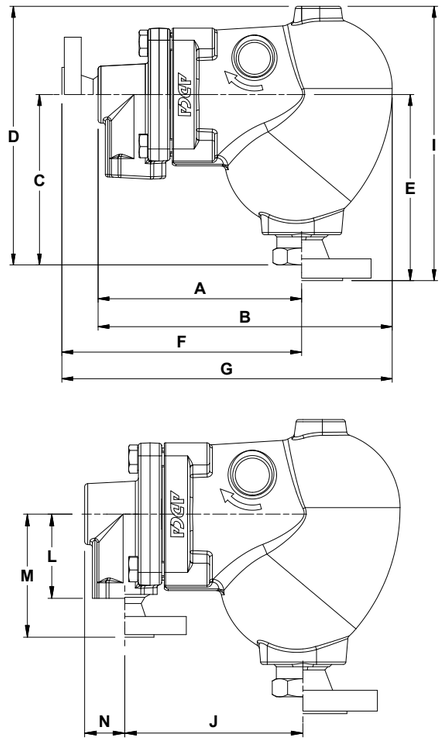
CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
All sizes	–	SEP
–	All sizes	1 (CE marked)

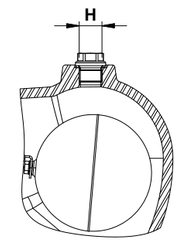
BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

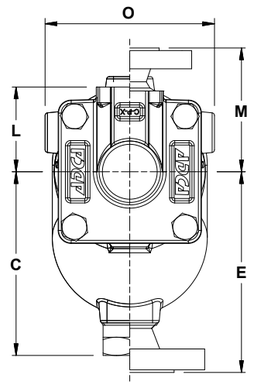
PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (NL/min)																
MODEL	**SIZE (INLET)**	**DIFFERENTIAL PRESSURE (bar)**														
		0,1	**0,5**	**1**	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**21**	**25**	**32**
AE35.2-6	**1” – DN 25**	201	440	550	803	1340	1875	–	–	–	–	–	–	–	–	–
AE35.2-14	**1” – DN 25**	127	279	349	510	851	1191	1530	1870	2210	2550	–	–	–	–	–
AE35.2-21	**1” – DN 25**	97	212	266	388	648	907	1166	1425	1683	1942	2201	2460	2848	–	–
AE35.2-32	**1” – DN 25**	38	82	104	151	252	354	455	556	657	758	859	960	1112	1314	1668

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.







DIMENSIONS (mm)																				
THREADED / SW											**PN 40**								
SIZE	**A**	**B**	**C**	**D**	**H ***	**J**	**L**	**N**	**O**	**WGT. (kg)**	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**
1” x 1/2” – DN 25 x 15	168	243	141	214	3/8”	137	65	31	130	9	154	198	273	3/8”	227	137	95	130	10,9
1” x 1” – DN 25 x 25	168	243	141	214	3/8”	137	65	31	130	8,9	154	198	273	3/8”	227	137	95	130	11,2

CLASS 150										**CLASS 300**								
SIZE	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**
1” x 1/2”	169	203	278	3/8”	242	137	100	130	10,2	176	213	288	3/8”	249	137	110	130	11,1
1” x 1”	169	203	278	3/8”	242	137	100	130	10,7	176	213	288	3/8”	249	137	110	130	11,9

* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

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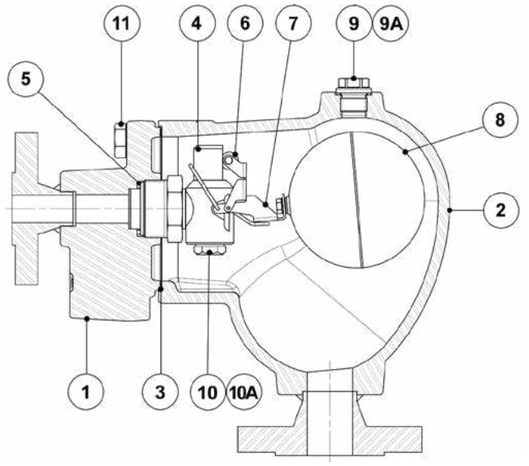
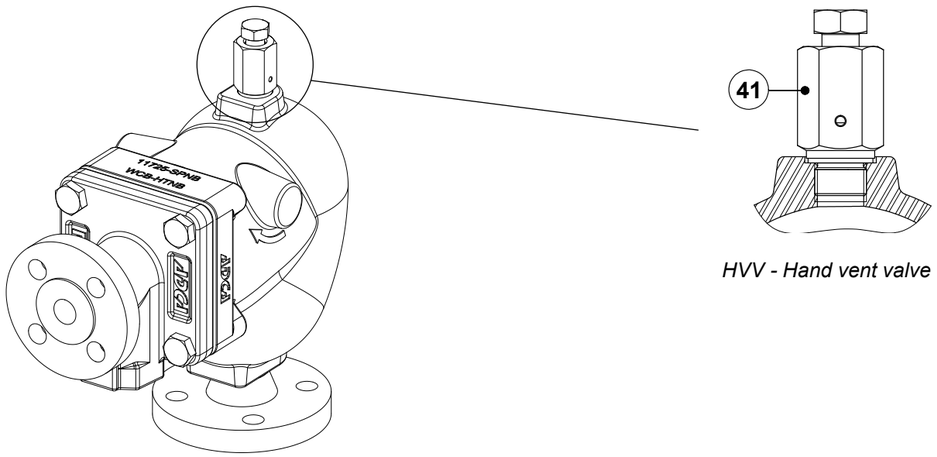
IS AE352.025 E 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9A	** Gasket	Copper
10	Plug	AISI 304 / 1.4301
10A	Gasket	Copper
11	Bolts	Zinc plated steel
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404

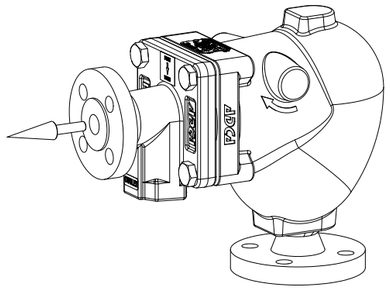
* Available spare parts. ** Not applicable in NPT version.



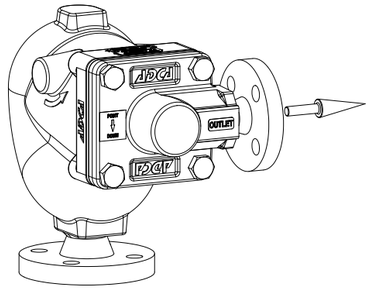


HVV - Hand vent valve

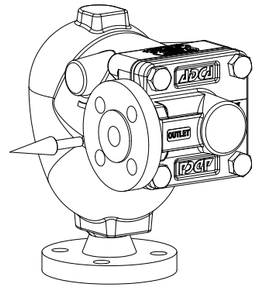
FLOW DIRECTION



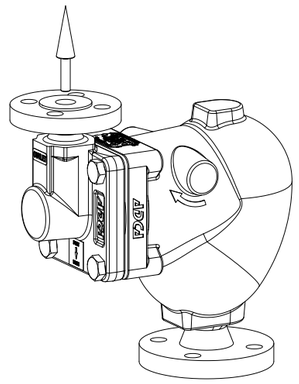
VF - Vertical inlet / straight front outlet



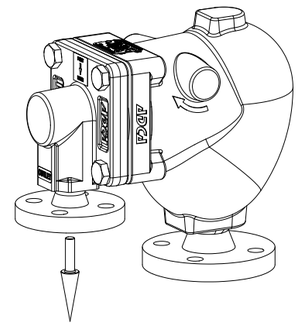
VR - Vertical inlet / right side outlet



VL - Vertical inlet / left side outlet



VT - Vertical from bottom to top



VB - Vertical inlet / top to bottom outlet

ORDERING CODES AE35.2										
Model	**AE352**	**2**	**V**	**XX**	**VF**	**A**	**15**	**A**	**25**	**E**
AE35.2 – carbon steel	**AE352**									
Differential pressure										
6 bar		**2**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Valve sealing										
FPM / Viton (standard)			**V**							
Metal to metal			**M**							
Cover connections										
None				**XX**						
3/8” threaded connections on top, closed with plug (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical inlet / top to bottom outlet					**VB**					
Vertical inlet / right side outlet					**VR**					
Vertical inlet / left side outlet					**VL**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1/2” or DN 15							**15**			
1” or DN 25							**25**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE37.2
(Carbon steel 11/2” x 1”, 2” x 1”, DN 40 x DN 25 and DN 50 x DN 25)

DESCRIPTION

The AE37.2 range of high capacity automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in carbon steel, available with various soft sealing options, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Various soft sealing options.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE37.2-10, 20 and 32 – carbon steel.

SIZES: 11/2” x 1” and 2” x 1”; DN 40 x DN 25 and DN 50 x DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE37.2-10 – 10 bar
AE37.2-20 – 20 bar
AE37.2-32 – 32 bar

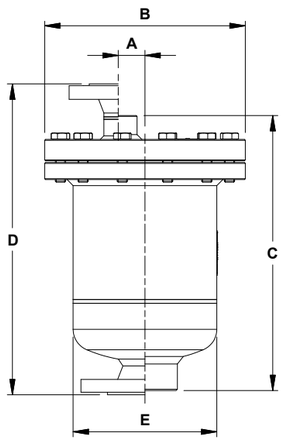
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
All sizes	1 (CE marked)

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMPERATURE
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: EPDM valve sealing: 130ºC; FPM / Viton valve sealing: 200ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (NL/min)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,1	0,5	1	3	5	7	10	12	16	20	24	28	32
AE37.2-10	11/2" x 1" – DN 40 x 25 2" x 1" – DN 50 x 25	97	212	266	519	777	1036	1425	–	–	–	–	–	–
AE37.2-20	11/2" x 1" – DN 40 x 25 2" x 1" – DN 50 x 25	67	147	184	384	540	720	989	1169	1528	1887	–	–	–
AE37.2-32	11/2" x 1" – DN 40 x 25 2" x 1" – DN 50 x 25	43	94	118	230	345	460	633	747	978	1208	1438	1668	1898

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.

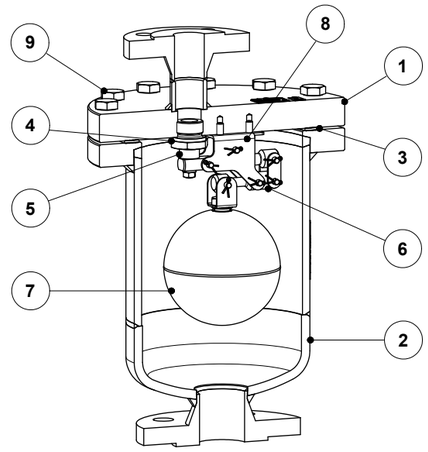


DIMENSIONS (mm)													
INLET *	THREADED					SW		PN 40		CLASS 150		CLASS 300	
OUTLET *	THREADED					SW		PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	E	WGT. (kg)	C	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)
11/2" x 1" – DN 40 x 25	31	235	320	168	20,7	336	20,9	364	23,5	369	22,9	382	24,8
2" x 1" – DN 50 x 25	31	235	322	168	20,8	348	21,2	366	24,2	370	23,7	383	25,2

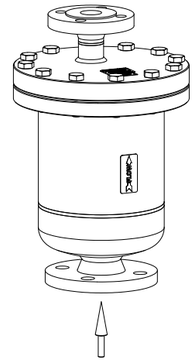
* For other combinations certified dimensions, consult the manufacturer.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	S355JR / 1.0045; P250GH / 1.0460; A105 / 1.0432
2	Cover	S355JR / 1.0045; P235GH / 1.0345; P265GH / 1.0425; P250GH / 1.0460; A105 / 1.0432
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 316L / 1.4404
5	Plug	FPM / Viton or EPDM
6	* Levers	AISI 316 / 1.4401; AISI 316L / 1.4404
7	* Float	AISI 304 / 1.4301
8	* Mechanism support bracket	AISI 304 / 1.4301
9	Bolts	Steel 8.8

* Available spare parts.



FLOW DIRECTION



VT - Vertical from bottom to top

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IS AE372.040 E 01.21

ORDERING CODES AE37.2										
Model	**AE372**	**3**	**E**	**XX**	**VT**	**A**	**25**	**A**	**40**	**E**
AE37.2 – carbon steel	**AE372**									
Differential pressure										
10 bar		**3**								
20 bar		**5**								
32 bar		**7**								
Valve sealing										
EPDM			**E**							
FPM / Viton			**V**							
Cover connections										
None				**XX**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Inline vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1” or DN 25							**25**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
11/2” or DN 40									**40**	
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE39.2
(Carbon steel 21/2” x 11/2”, 3” x 11/2”, DN 65 x DN 40 and DN 80 x DN 40)

DESCRIPTION

The AE39.2 range of high capacity automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling high loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in carbon steel, available with various soft sealing options, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
High capacity.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Various soft sealing options.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE39.2-5, 10, 20, 28 and 32 – carbon steel.

SIZES: 21/2” x 11/2” and 3” x 11/2”; DN 65 x DN 40 and DN 80 x DN 40.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP:
AE39.2-5 – 5 bar
AE39.2-10 – 10 bar
AE39.2-20 – 20 bar
AE39.2-28 – 28 bar
AE39.2-32 – 32 bar

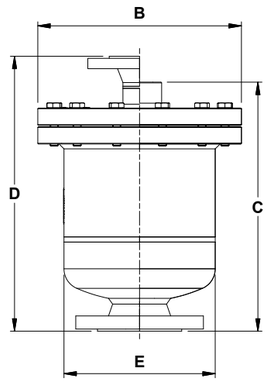
CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
All sizes	–	1 (CE marked)
–	All sizes	2 (CE marked)

BODY LIMITING CONDITIONS			
FLANGED PN 16	FLANGED PN 40 / CLASS 300 *	FLANGED CLASS 150 **	RELATED TEMPERATURE
ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
14,8 bar	37,1 bar	17,7 bar	100 ºC
13,3 bar	33,3 bar	14 bar	200 ºC
12,1 bar	30,4 bar	12,1 bar	250 ºC
11 bar	27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: EPDM valve sealing: 130ºC; FPM / Viton valve sealing: 200ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.

FLOW RATE CAPACITY (NL/min)														
MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)												
		0,1	0,5	1	3	5	7	10	12	16	20	24	28	32
AE39.2-5	21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40	661	1446	1806	3522	5277	–	–	–	–	–	–	–	–
AE39.2-10	21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40	342	749	936	1825	2735	3645	5010	–	–	–	–	–	–
AE39.2-20	21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40	132	289	362	706	1059	1410	1939	2292	2996	3700	–	–	–
AE39.2-28	21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40	67	155	231	480	720	960	1319	1559	2038	2517	2247	2607	–
AE39.2-32	21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40	51	113	141	276	413	551	757	894	1170	1445	1720	1995	2271

Values shown refer to capacities of air discharge at 15 ºC, under atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.



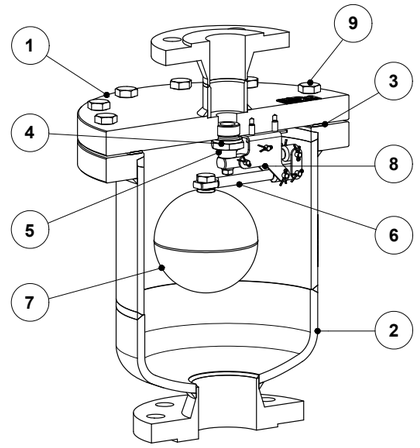
DIMENSIONS (mm)															
INLET *	PN 16				PN 40		PN 40		PN 16		PN 40		CLASS 150		CLASS 300	
OUTLET *	THREADED				THREADED		SW		PN 16		PN 40		CLASS 150		CLASS 300	
SIZE	B	C	E	WGT. (kg)	C	WGT. (kg)	C	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)	D	WGT. (kg)
21/2”x 11/2” DN 65 x 40	295	358	219	35,8	360	36,3	365	36,4	391	37,4	398	38	401	38,1	413	40,5
3”x 11/2” DN 80 x 40	295	350	219	35,5	353	36,2	358	36,4	383	37,1	391	37,9	388	37,8	403	41,3

* For other combinations certified dimensions, consult the manufacturer.

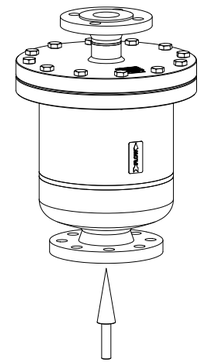
We reserve the right to change the design and material of this product without notice.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	S355JR / 1.0045; P250GH / 1.0460; A105 / 1.0432
2	Cover	S355JR / 1.0045; P235GH / 1.0345; P265GH / 1.0425; P250GH / 1.0460; A105 / 1.0432
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 316L / 1.4404
5	Plug	FPM / Viton or EPDM
6	* Levers	AISI 316 / 1.4401; AISI 316L / 1.4404
7	* Float	AISI 304 / 1.4301
8	* Mechanism support bracket	AISI 304 / 1.4301
9	Bolts	Steel 8.8

* Available spare parts.



FLOW DIRECTION



VT - Vertical from bottom to top

VALSTEAM ADCA
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IS AE392.065 E 00.21

ORDERING CODES AE39.2										
Model	**AE392**	**2**	**E**	**XX**	**VT**	**A**	**40**	**L**	**65**	
AE39.2 – carbon steel	**AE392**									
Differential pressure										
5 bar		**2**								
10 bar		**3**								
20 bar		**5**								
28 bar		**6**								
32 bar		**7**								
Valve sealing										
EPDM			**E**							
FPM / Viton			**V**							
Cover connection										
None				**XX**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Inline vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 16						**L**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
11/2” or DN 40							**40**			
Inlet pipe connection										
Flanged EN 1092-1 PN 16								**L**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
21/2” or DN 65									**65**	
3” or DN 80									**80**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE50S
(Carbon steel 1/2” x 1/2” to 1” x 1/2”; DN 15 x 1/2” to DN 25 x 1/2”)

DESCRIPTION

The AE50 range of automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in carbon steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Different soft sealing options.
Metal to metal sealing.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE50S – carbon steel.

SIZES: 1/2” x 1/2”, 3/4” x 1/2” and 1” x 1/2”;
DN 15 x 1/2”, DN 20 x 1/2” and DN 25 x 1/2”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
The drain should be piped to a safe position.
See IMI – Installation and maintenance instructions.

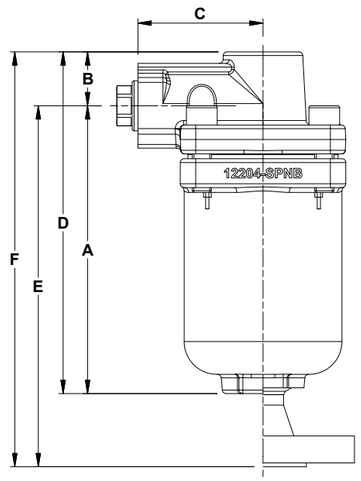
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
All sizes	SEP

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
37,1 bar	17,7 bar	100 ºC
33,3 bar	14 bar	200 ºC
30,4 bar	12,1 bar	250 ºC
27,6 bar	10,2 bar	300 ºC

PMO – Maximum operating pressure: 30 bar.
TMO – Maximum operating temperature:
Metal to metal sealing: 250 ºC.
EPDM valve sealing: 130 ºC.
FPM / Viton valve sealing: 200 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* According to EN 1092-1:2018.
** According to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.
Rating PN 40 for threaded versions.

FLOW RATE CAPACITY (NL/min)																		
MODEL	DIFFERENTIAL PRESSURE (bar)																	
	0,5	1	2	3	4	5	6	7	8	9	10	12	15	18	20	22	25	30
AE50S	31	46	72	96	120	144	168	192	216	241	265	313	385	457	505	553	626	746

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.

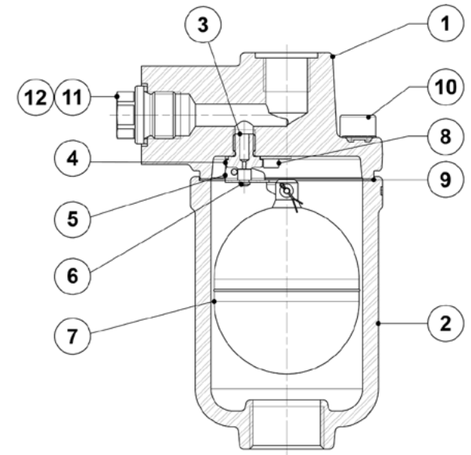


DIMENSIONS (mm)														
INLET	THREADED					PN 40			CLASS 150			CLASS 300		
SIZE	A	B	C	D	WGT. (kg)	E	F	WGT. (kg)	E	F	WGT. (kg)	E	F	WGT. (kg)
1/2" x 1/2" – DN 15 x G 1/2"	149	28	65	177	3,6	187	215	4,4	197	225	4,1	202	230	4,4
3/4" x 1/2" – DN 20 x G 1/2"	149	28	65	177	3,6	189	217	4,7	202	230	4,3	207	235	4,9
1" x 1/2" – DN 25 x G 1/2"	149	28	65	177	3,6	189	217	4,8	205	233	4,6	211	239	5,2

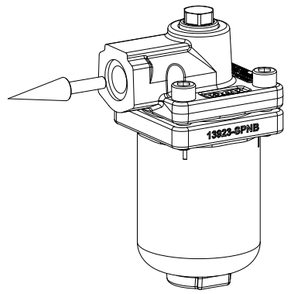
Remarks: As standard, in versions with EN flanged or female Rp threaded inlets, the outlet is female threaded ISO 228. In versions with ASME flanged or female NPT threaded inlets, the outlet is female threaded NPT.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	P250GH / 1.0460
2	Cover	A216 WCB / 1.0619
3	* Seat	AISI 316L / 1.4404
4	Mechanism support	AISI 304 / 1.4301
5	* Lever	AISI 304 / 1.4301
6	* Valve	AISI 316 / 1.4401; EPDM; Viton
7	* Float	AISI 316Ti / 1.4571
8	Bolt	Stainless steel A2-70
9	* Gasket	Stainless steel / Graphite
10	Bolts	Steel 8.8
11	Plug	AISI 316L / 1.4404
12	** Washer	Copper

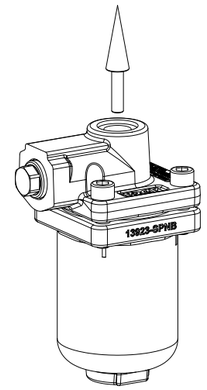
* Available spare parts; ** Not applicable in NPT version.



FLOW DIRECTION



VF - Vertical inlet / straight front outlet



VT - Vertical from bottom to top

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IS AE50S.015 E 00.21

ORDERING CODES AE50S										
Model	**AE50S**	**6**	**M**	**XX**	**VF**	**A**	**15**	**A**	**15**	**E**
AE50S – carbon steel	**AE50S**									
Differential pressure										
30 bar		**6**								
Valve sealing										
Metal to metal			**M**							
EPDM			**E**							
FPM / Viton			**V**							
Options										
None				**XX**						
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 228						**B**				
Female threaded NPT						**C**				
Outlet size										
1/2”							**15**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1/2” or DN 15									**15**	
3/4” or DN 20									**20**	
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE16SS

DESCRIPTION

The AE16SS all stainless steel air eliminator removes air from HVAC systems and are also suitable for non corrosive and/or dangerous liquids compatible with the construction, providing that their specific weight is no less than 0,75 kg/dm³.
This ball float type automatic air eliminator can be used in combination with other air elimination and separation systems or directly applied at high points in the piping.

MAIN FEATURES

Corrosion resistant working parts.
Replaceable internal parts.

OPTIONS: Integrated check valve.

USE: Cold and hot water systems.

AVAILABLE MODELS: AE16SSE – EPDM valve.
AE16SSV – Viton valve.
Suffix “CK”: Version with integrated check valve.

SIZES: 1/2" and 3/4".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
1/2" or 3/4" vertical inlet.
1/2" vertical outlet.

INSTALLATION: Vertical installation. It must be installed absolutely vertically at points in the plant where the air tends to collect. The drain should be piped to a safe position.
See IMI – Installation and maintenance instructions.

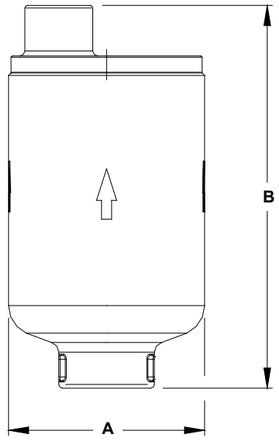
BODY LIMITING CONDITIONS	
THREADED PN 16 ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	100 ºC
14,5 bar	150 ºC
13,4 bar	200 ºC
12,7 bar	250 ºC

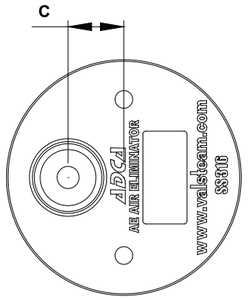
PMO – Maximum operating pressure: 14 bar.
TMO – Maximum operating temperature:
EPDM valve: 130 ºC;
Viton valve: 150 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
Maximum working diff. pressure: 12 bar.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2" and 3/4"	SEP

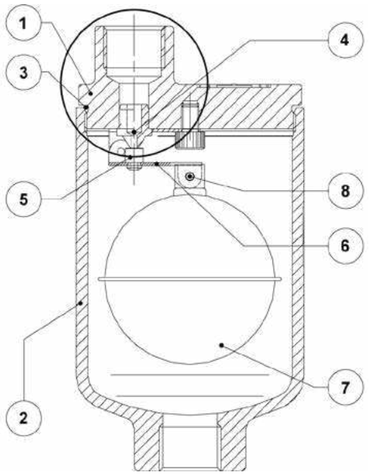
FLOW RATE CAPACITY (NL/min)											
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**									
		0,5	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**12**
AE16SS	**1/2" – 3/4"**	47	70	109	145	182	218	255	291	327	400	473

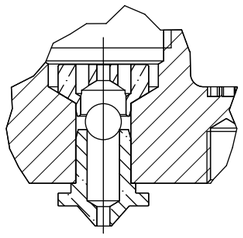
Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.





DIMENSIONS (mm)				
SIZE	**A**	**B**	**C**	**WEIGHT (kg)**
1/2"	78	152	19	1,5
3/4"	78	152	19	1,5





Optional check valve

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	* O-ring	EPDM
4	* Seat	AISI 316 / 1.4401
5	* Valve	Viton; EPDM
6, 8	* Lever	AISI 304 / 1.4301
7	* Float	AISI 304 / 1.4301

* Available spare parts.

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE30SS

DESCRIPTION

The AE30SS all stainless steel sealed body air eliminator removes air from hot and superheated water systems and is also suitable for all liquids compatible with the construction, providing that their specific weight is not less than 0,75 kg/dm³.
This ball float type automatic air eliminator can be used in combination with other air elimination and separation systems or directly applied at high points in the piping.

MAIN FEATURES

Corrosion resistant.

USE: Cold, hot and superheated water systems.

AVAILABLE MODELS: AE30SS – stainless steel.
SIZES: 1/2" and 3/4".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
1/2" or 3/4" vertical Inlet.
1/2" vertical outlet.

INSTALLATION: Vertical installation. It must be installed absolutely vertically at the points in the plant where the air tends to collect. The drain should be piped to a safe position.
See IMI – Installation and maintenance instructions.

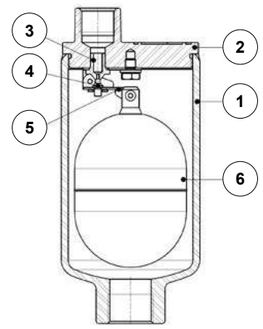
APPLICATION LIMITS	
Min. liquid specific weight	0,75 kg/dm³
Maximum working diff. pressure	30 bar

DIMENSIONS (mm)			
SIZE	**ØA**	**B**	**WEIGHT (kg)**
1/2"	80,5	187	2
3/4"	80,5	187	2

BODY LIMITING CONDITIONS	
THREADED PN 40 ALLOW. PRESS.	**RELATED TEMPERATURE**
40 bar	100 ºC
33,7 bar	200 ºC
31,8 bar	250 ºC
29,7 bar	300 ºC

PMO – Max. operating pressure: 30 bar.
TMO – Max. operating temperature: 300 ºC.

MATERIALS		
POS.	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	Seat	AISI 316 / 1.4401
4	Valve	AISI 316 / 1.4401
5	Lever	AISI 304 / 1.4301
6	Float	AISI 316 / 1.4401



FLOW RATE CAPACITY (NL/min)																			
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**																	
		0,5	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**15**	**18**	**20**	**22**	**25**	**30**
AE30SS	**1/2" – 3/4"**	31	46	72	96	120	144	168	192	216	241	265	313	385	457	505	553	626	746

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE41.2
(Stainless steel 1” x 1/2”; DN 25 x 15)

DESCRIPTION

The AE41.2 is a series of automatic vents designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in stainless steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Metal to metal sealing.
Threaded connection on cover, closed with plug.
HVV – Hand vent valve.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE41.2-6, 14, 21 and 32 – stainless steel.

SIZES: 1” x 1/2”; DN 25 x 15.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE41.2-6 – 6 bar
AE41.2-14 – 14 bar
AE41.2-21 – 21 bar
AE41.2-32 – 32 bar

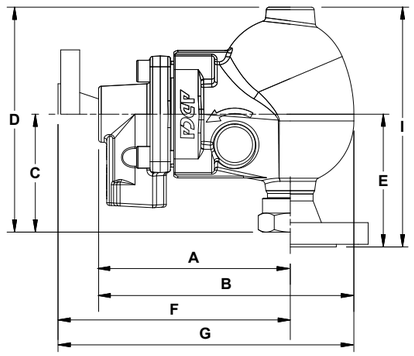
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1” x 1/2” – DN 25 x 15	SEP

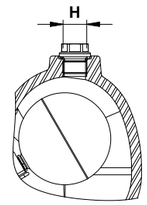
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 150 ****	**FLANGED CLASS 300 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	13,3 bar	34,4 bar	100 ºC
31,8 bar	11,1 bar	28,8 bar	200 ºC
29,9 bar	10,2 bar	26,6 bar	250 ºC
27,6 bar	9,7 bar	25,2 bar	300 ºC

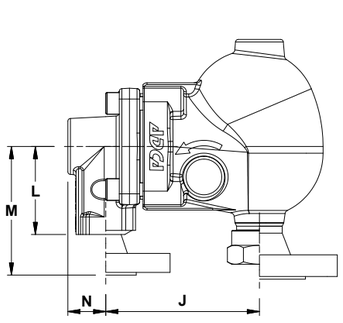
PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

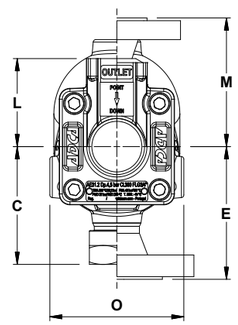
FLOW RATE CAPACITY (NL/min)																
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**														
		0,1	**0,5**	**1**	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**21**	**25**	**32**
AE41.2-6	**1” x 1/2” – DN 25 x 15**	97	212	266	388	648	907	–	–	–	–	–	–	–	–	–
AE41.2-14	**1” x 1/2” – DN 25 x 15**	46	100	125	183	306	428	551	673	795	918	–	–	–	–	–
AE41.2-21	**1” x 1/2” – DN 25 x 15**	33	72	90	132	220	308	396	484	573	660	748	837	969	–	–
AE41.2-32	**1” x 1/2” – DN 25 x 15**	15	33	41	60	101	141	182	222	263	303	344	385	446	527	669

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.









DIMENSIONS (mm)																				
THREADED / SW											**PN 40**								
SIZE	**A**	**B**	**C**	**D**	**H ***	**J**	**L**	**N**	**O**	**WGT. (kg)**	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**
1” x 1/2” – DN 25 x 15	168	243	141	214	3/8”	137	65	31	130	9	154	198	273	3/8”	227	137	95	130	11,4

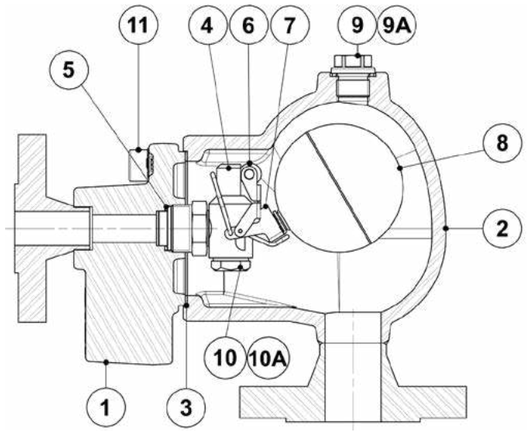
CLASS 150										**CLASS 300**								
SIZE	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**	**E**	**F**	**G**	**H ***	**I**	**J**	**M**	**O**	**WGT. (kg)**
1” x 1/2”	169	203	278	3/8”	242	137	100	130	10,9	176	213	288	3/8”	249	137	110	130	12,1

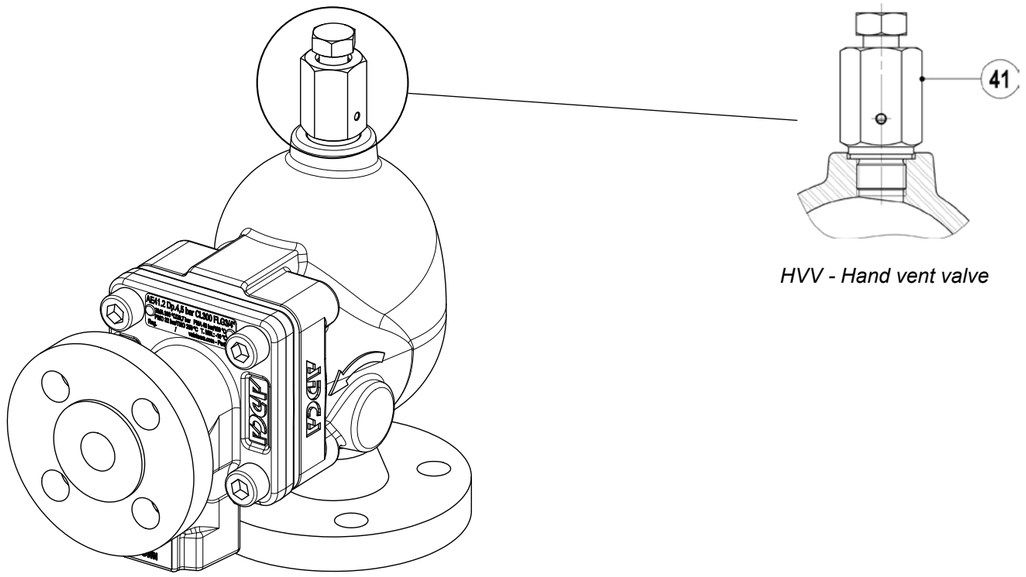
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE412.025 E 00.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408 AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9A	** Gasket	Copper
10	Plug	AISI 304 / 1.4301
10A	Gasket	Copper
11	Bolts	Stainless steel A2-70
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404

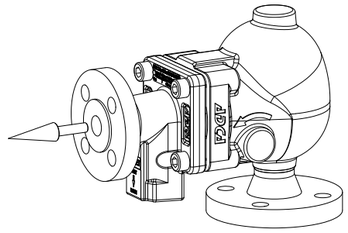
* Available spare parts. ** Not applicable in NPT version.



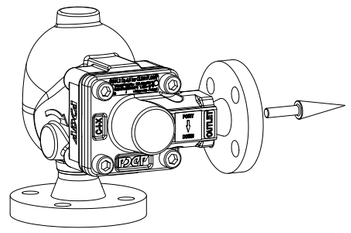


HVV - Hand vent valve

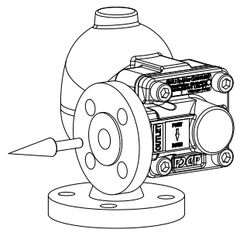
FLOW DIRECTION



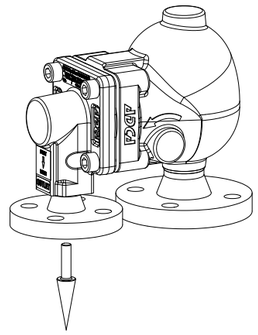
VF - Vertical inlet / straight front outlet



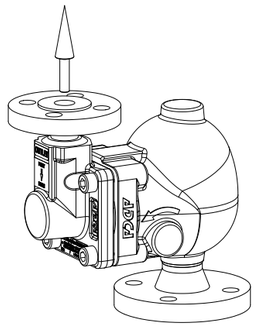
VR - Vertical inlet / right side outlet



VL - Vertical inlet / left side outlet



VB - Vertical inlet / top to bottom outlet



VT - Vertical from bottom to top

ORDERING CODES AE41.2										
Model	**AE412**	**2**	**V**	**XX**	**VF**	**A**	**15**	**A**	**25**	**E**
AE41.2 – AISI 316L / 1.4404 stainless steel	**AE412**									
Differential pressure										
6 bar		**2**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Valve sealing										
FPM / Viton (standard)			**V**							
Metal to metal			**M**							
Cover connections										
None				**XX**						
3/8” threaded connections on top, closed with plug (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation										
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical inlet / top to bottom outlet					**VB**					
Vertical inlet / right side outlet					**VR**					
Vertical inlet / left side outlet					**VL**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1/2” or DN 15							**15**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

We reserve the right to change the design and material of this product without notice.

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE45.2
(Stainless steel 1” x 1/2”, 1” x 1”; DN 25 x 15, DN 25 x 25)

DESCRIPTION

The AE45.2 range of automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in stainless steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Metal to metal sealing.
Threaded connection on cover, closed with plug.
HVV – Hand vent valve.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE45.2-6, 14, 21 and 32 – stainless steel.

SIZES: 1” x 1/2” and 1” x 1”; DN 25 x 15 and DN 25 x 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE45.2-6 – 6 bar
AE45.2-14 – 14 bar
AE45.2-21 – 21 bar
AE45.2-32 – 32 bar

CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	**PN 40**	**Category**
All sizes	–	SEP
–	All sizes	1 (CE marked)

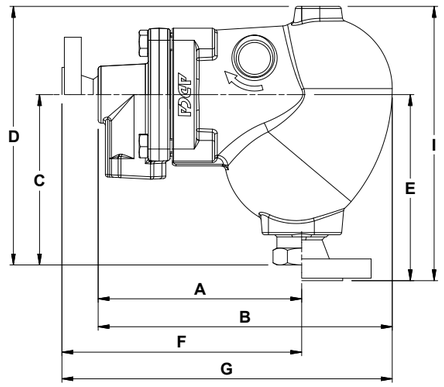
BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 150 ****	**FLANGED CLASS 300 ****	**RELAT. TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	**ALLOW. PRESS.**	
37,9 bar	13,3 bar	34,4 bar	100 ºC
31,8 bar	11,1 bar	28,8 bar	200 ºC
29,9 bar	10,2 bar	26,6 bar	250 ºC
27,6 bar	9,7 bar	25,2 bar	300 ºC

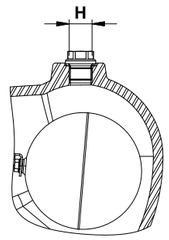
PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature:
FPM / Viton valve sealing: 200 ºC.
Metal to metal sealing: 250 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

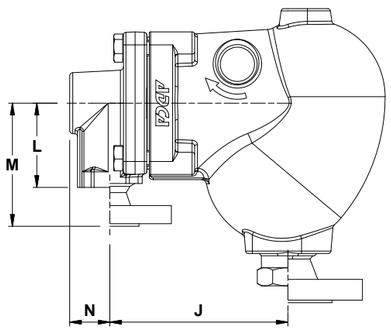
We reserve the right to change the design and material of this product without notice.

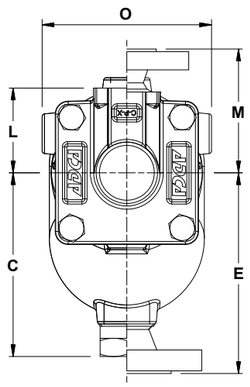
FLOW RATE CAPACITY (NL/min)																
MODEL	SIZE (INLET)	DIFFERENTIAL PRESSURE (bar)														
		0,1	0,5	1	2	4	6	8	10	12	14	16	18	21	25	32
AE45.2-6	1” – DN 25	201	440	550	803	1340	1875	–	–	–	–	–	–	–	–	–
AE45.2-14	1” – DN 25	127	279	349	510	851	1191	1530	1870	2210	2550	–	–	–	–	–
AE45.2-21	1” – DN 25	97	212	266	388	648	907	1166	1425	1683	1942	2201	2460	2848	–	–
AE45.2-32	1” – DN 25	38	82	104	151	252	354	455	556	657	758	859	960	1112	1314	1668

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.









DIMENSIONS (mm)																				
THREADED / SW											PN 40									
SIZE	A	B	C	D	H *	J	L	N	O	WGT. (kg)	E	F	G	H *	I	J	M	O	WGT. (kg)
1” x 1/2” – DN 25 x 15	168	243	141	214	3/8”	137	65	31	130	9,2	154	198	273	3/8”	227	137	95	130	11,1
1” x 1” – DN 25 x 25	168	243	141	214	3/8”	137	65	31	130	9,1	154	198	273	3/8”	227	137	95	130	11,5

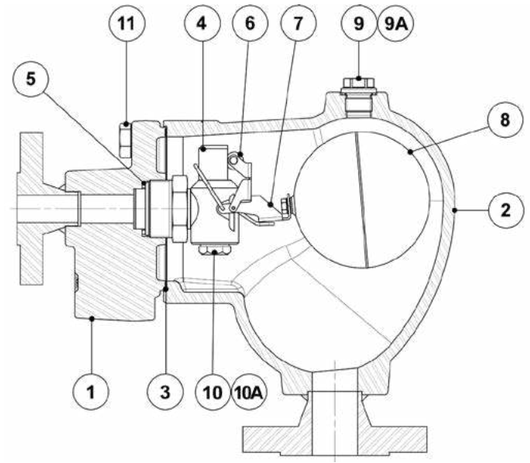
CLASS 150										CLASS 300								
SIZE	E	F	G	H *	I	J	M	O	WGT. (kg)	E	F	G	H *	I	J	M	O	WGT. (kg)
1” x 1/2”	169	203	278	3/8”	242	137	100	130	10,4	176	213	288	3/8”	249	137	110	130	11,3
1” x 1”	169	203	278	3/8”	242	137	100	130	11	176	213	288	3/8”	249	137	110	130	12,2

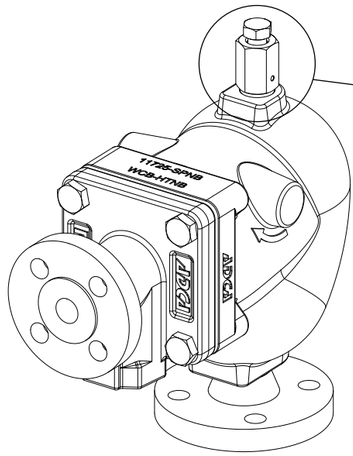
* As standard, in versions with EN flanges or female ISO 7 Rp threads, these connections are female threaded ISO 228. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

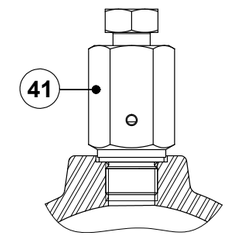
We reserve the right to change the design and material of this product without notice.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408 AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 303 / 1.4305
5	* Gasket	Copper
6	* Valve ball	AISI 316 / 1.4401; Viton
7	* Lever	AISI 304 / 1.4301
8	* Float	AISI 304 / 1.4301
9	Plug	AISI 316L / 1.4404
9A	** Gasket	Copper
10	Plug	AISI 304 / 1.4301
10A	Gasket	Copper
11	Bolts	Stainless steel A2-70
41	Hand vent valve	AISI 303 / 1.4305; AISI 316L / 1.4404

* Available spare parts. ** Not applicable in NPT version.



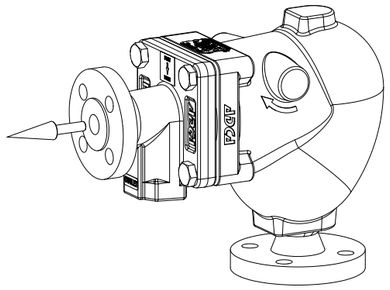




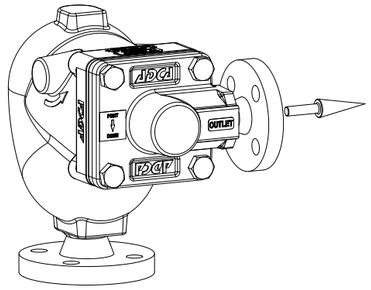
HVV - Hand vent valve

We reserve the right to change the design and material of this product without notice.

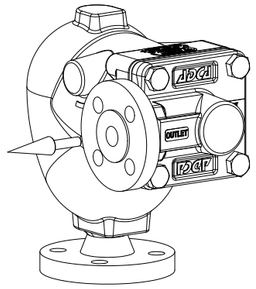
FLOW DIRECTION



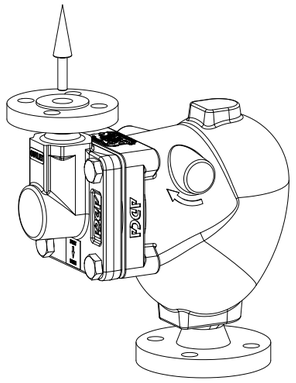
VF - Vertical inlet / straight front outlet



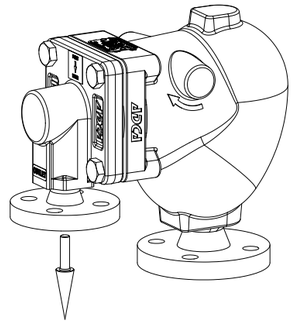
VR - Vertical inlet / right side outlet



VL - Vertical inlet / left side outlet



VT - Vertical from bottom to top



VB - Vertical inlet / top to bottom outlet

ORDERING CODES AE45.2										
Model	**AE452**	**2**	**V**	**XX**	**VF**	**A**	**15**	**A**	**25**	**E**
AE45.2 – AISI 316L / 1.4404 stainless steel	**AE452**									
Differential pressure										
6 bar		**2**								
14 bar		**4**								
21 bar		**5**								
32 bar		**7**								
Valve sealing										
FPM / Viton (standard)			**V**							
Metal to metal			**M**							
Cover connections										
None				**XX**						
3/8” threaded connections on top, closed with plug (mandatory if any options are considered)				**10**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical inlet / top to bottom outlet					**VB**					
Vertical inlet / right side outlet					**VR**					
Vertical inlet / left side outlet					**VL**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1/2” or DN 15							**15**			
1” or DN 25							**25**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE452.025 E 01.21

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE47.2
(Stainless steel 11/2” x 1”, 2” x 1”, DN 40 x DN 25 and DN 50 x DN 25)

DESCRIPTION

The AE47.2 range of high capacity automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in stainless steel, available with various soft sealing options, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Various soft sealing options.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE47.2-10, 20 and 32 – stainless steel.

SIZES: 11/2” x 1” and 2” x 1”; DN 40 x DN 25 and DN 50 x DN 25.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP: AE47.2-10 – 10 bar
AE47.2-20 – 20 bar
AE47.2-32 – 32 bar

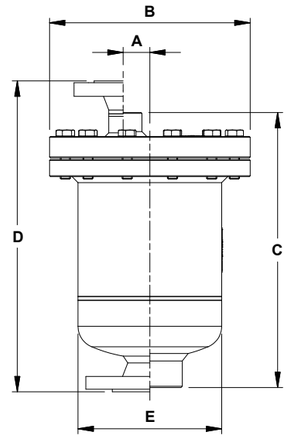
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
All sizes	1 (CE marked)

BODY LIMITING CONDITIONS			
FLANGED PN 40 *	**FLANGED CLASS 150 ****	**FLANGED CLASS 300 ****	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
37,9 bar	13,3 bar	34,4 bar	100 ºC
31,8 bar	11,1 bar	28,8 bar	200 ºC
29,9 bar	10,2 bar	26,6 bar	250 ºC
27,6 bar	9,7 bar	25,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: EPDM valve sealing: 130 ºC; FPM / Viton valve sealing: 200 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.

FLOW RATE CAPACITY (NL/min)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,1	**0,5**	**1**	**3**	**5**	**7**	**10**	**12**	**16**	**20**	**24**	**28**	**32**
AE47.2-10	**11/2” x 1” – DN 40 x 25 2” x 1” – DN 50 x 25**	97	212	266	519	777	1036	1425	–	–	–	–	–	–
AE47.2-20	**11/2” x 1” – DN 40 x 25 2” x 1” – DN 50 x 25**	67	147	184	384	540	720	989	1169	1528	1887	–	–	–
AE47.2-32	**11/2” x 1” – DN 40 x 25 2” x 1” – DN 50 x 25**	43	94	118	230	345	460	633	747	978	1208	1438	1668	1898

Values shown refer to capacities of air discharge at 15 ºC, under atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.



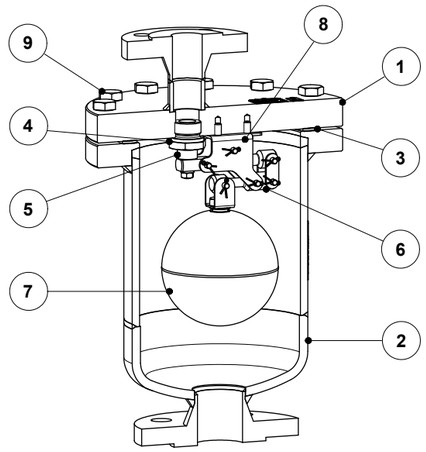
DIMENSIONS (mm)													
INLET *	**THREADED**					**SW**		**PN 40**		**CLASS 150**		**CLASS 300**	
OUTLET *	**THREADED**					**SW**		**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**A**	**B**	**C**	**E**	**WGT. (kg)**	**C**	**WGT. (kg)**	**D**	**WGT. (kg)**	**D**	**WGT. (kg)**	**D**	**WGT. (kg)**
11/2” x 1” – DN 40 x 25	31	235	314	168	20	330	20,2	357	22,8	362	22,1	375	24
2” x 1” – DN 50 x 25	31	235	316	168	20	341	20,5	359	23,4	363	23	376	24,5

* For other combinations certified dimensions, consult the manufacturer.

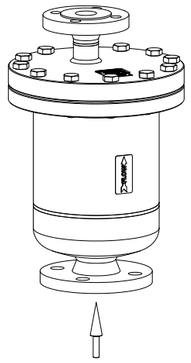
VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE472.040 E 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 316L / 1.4404
5	Plug	FPM / Viton or EPDM
6	* Levers	AISI 316 / 1.4401; AISI 316L / 1.4404
7	* Float	AISI 304 / 1.4301
8	* Mechanism support bracket	AISI 304 / 1.4301
9	Bolts	Stainless steel A2-70

* Available spare parts.



FLOW DIRECTION



VT - Vertical from bottom to top

ORDERING CODES AE47.2										
Model	**AE472**	**3**	**E**	**XX**	**VT**	**A**	**25**	**A**	**40**	**E**
AE47.2 – stainless steel	**AE472**									
Differential pressure										
10 bar		**3**								
20 bar		**5**								
32 bar		**7**								
Valve sealing										
EPDM			**E**							
FPM / Viton			**V**							
Cover connection										
None				**XX**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Inline vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
1” or DN 25							**25**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Socket weld (SW) ASME 16.11								**H**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
11/2” or DN 40									**40**	
2” or DN 50									**50**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE472.040 E 01.21

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE49.2
(Stainless steel 21/2” x 11/2”, 3” x 11/2”, DN 65 x DN 40 and DN 80 x DN 40)

DESCRIPTION

The AE49.2 range of high capacity automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling high loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in stainless steel, available with various soft sealing options, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
High capacity.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Various soft sealing options.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE49.2-5, 10, 20, 28 and 32 – stainless steel.

SIZES: 21/2” x 11/2” and 3” x 11/2”; DN 65 x DN 40 and DN 80 x DN 40.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.
Socket weld (SW) ASME 16.11.

INSTALLATION: Inline vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
See IMI – Installation and maintenance instructions.

MAX. ΔP:
AE49.2-5 – 5 bar
AE49.2-10 – 10 bar
AE49.2-20 – 20 bar
AE49.2-28 – 28 bar
AE49.2-32 – 32 bar

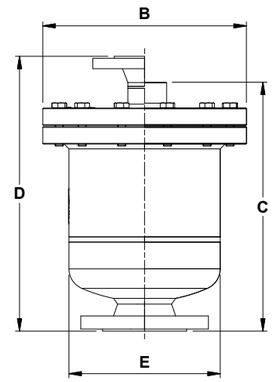
CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**PN 40**	**Category**
All sizes	–	1 (CE marked)
–	All sizes	2 (CE marked)

BODY LIMITING CONDITIONS				
FLANGED PN 16 *	**FLANGED PN 40 ***	**FLANGED CLASS 150 ****	**FLANGED CLASS 300 ****	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
15,1 bar	37,9 bar	13,3 bar	34,4 bar	100 ºC
12,7 bar	31,8 bar	11,1 bar	28,8 bar	200 ºC
11,9 bar	29,9 bar	10,2 bar	26,6 bar	250 ºC
11 bar	27,6 bar	9,7 bar	25,2 bar	300 ºC

PMO – Maximum operating pressure: 32 bar.
TMO – Maximum operating temperature: EPDM valve sealing: 130 ºC; FPM / Viton valve sealing: 200 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* Acc. to EN 1092-1:2018; ** Acc. to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted.

FLOW RATE CAPACITY (NL/min)														
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**												
		0,1	**0,5**	**1**	**3**	**5**	**7**	**10**	**12**	**16**	**20**	**24**	**28**	**32**
AE49.2-5	**21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40**	661	1446	1806	3522	5277	–	–	–	–	–	–	–	–
AE49.2-10	**21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40**	342	749	936	1825	2735	3645	5010	–	–	–	–	–	–
AE49.2-20	**21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40**	132	289	362	706	1059	1410	1939	2292	2996	3700	–	–	–
AE49.2-28	**21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40**	67	155	231	480	720	960	1319	1559	2038	2517	2247	2607	–
AE49.2-32	**21/2”x 11/2” – DN 65 x 40 3”x 11/2” – DN 80 x 40**	51	113	141	276	413	551	757	894	1170	1445	1720	1995	2271

Values shown refer to capacities of air discharge at 15 ºC, under atmospheric pressure (1013 mbar).
If the air temperature differs from 15 ºC, the discharge capacity can be corrected by multiplying it by $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.



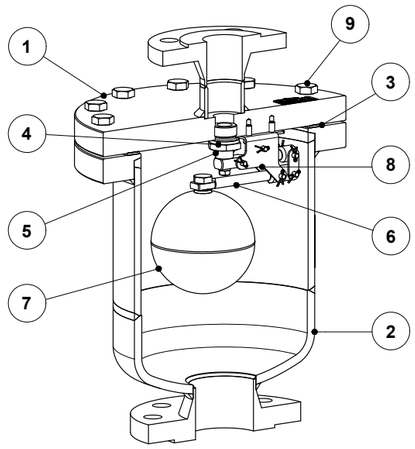
DIMENSIONS (mm)														
INLET *	**PN 16**				**PN 40**		**PN 40**		**PN 16**		**PN 40**		**CLASS 150**		**CLASS 300**	
OUTLET *	**THREADED**				**THREADED**		**SW**		**PN 16**		**PN 40**		**CLASS 150**		**CLASS 300**	
SIZE	**B**	**C**	**E**	**WGT. (kg)**	**C**	**WGT. (kg)**	**C**	**WGT. (kg)**	**D**	**WGT. (kg)**	**D**	**WGT. (kg)**	**D**	**WGT. (kg)**	**D**	**WGT. (kg)**
21/2”x 11/2” DN 65 x 40	295	346	219	35,2	353	35,8	358	36	384	36,9	391	37,5	394	37,7	406	40
3”x 11/2” DN 80 x 40	295	350	219	36	358	36,8	363	36,9	388	37,7	396	38,5	393	38,4	408	41,8

* For other combinations certified dimensions, consult the manufacturer.

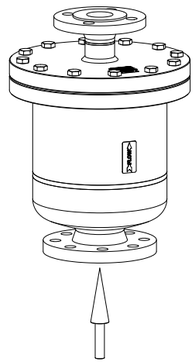
VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE492.065 E 00.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite
4	* Seat	AISI 316L / 1.4404
5	Plug	FPM / Viton or EPDM
6	* Levers	AISI 316 / 1.4401; AISI 316L / 1.4404
7	* Float	AISI 304 / 1.4301
8	* Mechanism support bracket	AISI 304 / 1.4301
9	Bolts	Stainless steel A2-70

* Available spare parts.



FLOW DIRECTION



VT - Vertical from bottom to top

ORDERING CODES AE49.2										
Model	**AE492**	**2**	**E**	**XX**	**VT**	**A**	**40**	**L**	**65**	
AE49.2 – stainless steel	**AE492**									
Differential pressure										
5 bar		**2**								
10 bar		**3**								
20 bar		**5**								
28 bar		**6**								
32 bar		**7**								
Valve sealing										
EPDM			**E**							
FPM / Viton			**V**							
Cover connection										
None				**XX**						
Options										
If any, these have specific separate ordering codes, please refer to the appropriate documentation.										
Flow direction										
Inline vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 7 Rp						**A**				
Female threaded NPT						**C**				
Socket weld (SW) ASME 16.11						**H**				
Flanged EN 1092-1 PN 16						**L**				
Flanged EN 1092-1 PN 40						**N**				
Flanged ASME B16.5 Class 150						**U**				
Flanged ASME B16.5 Class 300						**V**				
Outlet size										
11/2” or DN 40							**40**			
Inlet pipe connection										
Flanged EN 1092-1 PN 16								**L**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
21/2” or DN 65									**65**	
3” or DN 80									**80**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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IS AE492.065 E 00.21

AUTOMATIC AIR AND GAS VENTS FOR LIQUID SYSTEMS
AE50i
(Stainless steel 1/2" x 1/2" to 1" x 1/2"; DN 15 x 1/2" to DN 25 x 1/2")

DESCRIPTION

The AE50 range of automatic vents are designed to remove air or gases from water and other liquid systems, without requiring any external source of energy.
They are capable of handling significant loads during start-up while still being able to discharge smaller loads in continuous modulating operation with one single orifice.
These ball float type vents are manufactured in stainless steel, available with soft sealing, and can be used in combination with other air elimination and separation systems or directly applied at high points in the pipelines.

MAIN FEATURES

Suitable for start-up and continuous operation with one single orifice.
Allow fast and easy inline maintenance.
Corrosion resistant internal parts.
No balancing pipe required.

OPTIONS: Different soft sealing options.
Metal to metal sealing.

USE: Cold, hot and superheated water or other liquids compatible with the construction.

AVAILABLE MODELS: AE50i – stainless steel.

SIZES: 1/2" x 1/2", 3/4" x 1/2" and 1" x 1/2";
DN 15 x 1/2", DN 20 x 1/2" and DN 25 x 1/2".

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Vertical installation.
It must be installed absolutely vertically at the points in the plant where the air tends to collect.
The drain should be piped to a safe location.
See IMI – Installation and maintenance instructions.

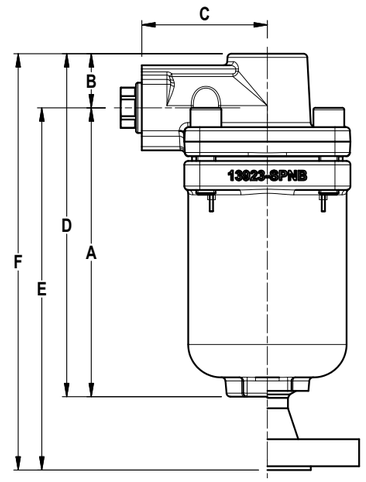
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
All sizes	SEP

BODY LIMITING CONDITIONS		
FLANGED PN 40 / CLASS 300	**FLANGED CLASS 150 ***	**RELATED TEMP.**
ALLOW. PRESS.	**ALLOW. PRESS.**	
30 bar	13,3 bar	100 ºC
28,8 bar	11,1 bar	200 ºC
26,6 bar	10,2 bar	250 ºC
25,2 bar	9,7 bar	300 ºC

PMO – Maximum operating pressure: 30 bar.
TMO – Maximum operating temperature:
Metal to metal sealing: 250 ºC;
EPDM valve sealing: 130 ºC;
FPM / Viton valve sealing: 200 ºC.
Min. liquid specific weight: 0,75 kg/dm³.
* According to EN 1759-1:2004.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded versions.

FLOW RATE CAPACITY (NL/min)																		
MODEL	**DIFFERENTIAL PRESSURE (bar)**																	
	0,5	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**12**	**15**	**18**	**20**	**22**	**25**	**30**
AE50i	31	46	72	96	120	144	168	192	216	241	265	313	385	457	505	553	626	746

Values shown refer to capacities of air discharge at 15 ºC, under average atmospheric pressure (1013 mbar).
If the temperature of the air differs from 15 ºC, the discharge capacity can be corrected by multiplying it by: $\frac{288}{273 + T}$, where T is the actual temperature in ºC.
It may be assumed that the temperature of the air is equal to the temperature of the water.



DIMENSIONS (mm)														
INLET	**THREADED**					**PN 40**			**CLASS 150**			**CLASS 300**		
SIZE	**A**	**B**	**C**	**D**	**WGT. (kg)**	**E**	**F**	**WGT. (kg)**	**E**	**F**	**WGT. (kg)**	**E**	**F**	**WGT. (kg)**
1/2" x 1/2" – DN 15 x G 1/2"	149	28	65	177	3,6	187	215	4,4	197	225	4,1	202	230	4,4
3/4" x 1/2" – DN 20 x G 1/2"	149	28	65	177	3,6	189	217	4,7	202	230	4,3	207	235	4,9
1" x 1/2" – DN 25 x G 1/2"	149	28	65	177	3,6	189	217	4,8	205	233	4,6	211	239	5,2

Remarks: As standard, in versions with EN flanged or female Rp threaded inlets, the outlet is female threaded ISO 228. In versions with ASME flanged or female NPT threaded inlets, the outlet is female threaded NPT.

VALSTEAM ADCA
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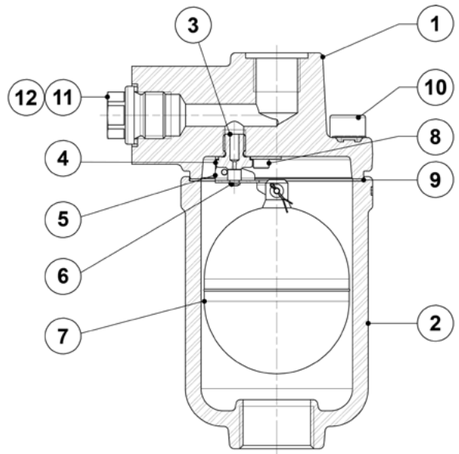
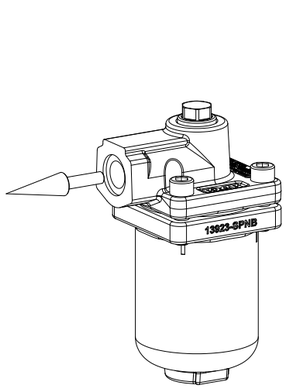
IS AE50i.015 E 01.21

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316L / 1.4404
2	Cover	A351 CF8M / 1.4408
3	* Seat	AISI 316L / 1.4404
4	Mechanism support	AISI 304 / 1.4301
5	* Lever	AISI 304 / 1.4301
6	* Valve	AISI 316 / 1.4401; EPDM; Viton
7	* Float	AISI 316Ti / 1.4571
8	Bolt	Stainless steel A2-70
9	* Gasket	Stainless steel / Graphite
10	Bolts	Stainless steel A2-70
11	Plug	AISI 316L / 1.4404
12	** Washer	Copper

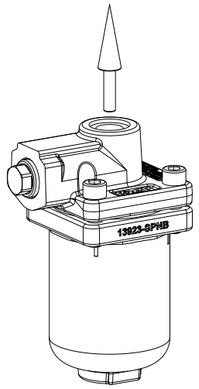
* Available spare parts; ** Not applicable in NPT version.



FLOW DIRECTION



VF - Vertical inlet / straight front outlet



VT - Vertical from bottom to top

ORDERING CODES AE50i										
Model	**AE50i**	**6**	**M**	**XX**	**VF**	**A**	**15**	**A**	**15**	**E**
AE50i – stainless steel	**AE50I**									
Differential pressure										
30 bar		**6**								
Valve sealing										
Metal to metal			**M**							
EPDM			**E**							
FPM / Viton			**V**							
Options										
None				**XX**						
Flow direction										
Vertical inlet / straight front outlet					**VF**					
Vertical from bottom to top					**VT**					
Outlet pipe connection										
Female threaded ISO 228						**B**				
Female threaded NPT						**C**				
Outlet size										
1/2”							**15**			
Inlet pipe connection										
Female threaded ISO 7 Rp								**A**		
Female threaded NPT								**C**		
Flanged EN 1092-1 PN 40								**N**		
Flanged ASME B16.5 Class 150								**U**		
Flanged ASME B16.5 Class 300								**V**		
Inlet size										
1/2” or DN 15									**15**	
3/4” or DN 20									**20**	
1” or DN 25									**25**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS AE50i.015 E 01.21

VACUUM BREAKER
VB16

DESCRIPTION

The VB16 vacuum breakers are simple and reliable devices that automatically relieve or “break” an unwanted vacuum condition, restoring the atmospheric pressure.
This device is particularly suitable for steam heated units of small and medium volume, such as heat exchangers, heating coils, calorifiers, jacketed kettles, steam boilers, etc.

OPTIONS: Stainless steel inlet deflector.

USE: Saturated steam and other gases compatible with the construction.

AVAILABLE MODELS: VB16 – stainless steel.

SIZES: 1/2” to 1”.

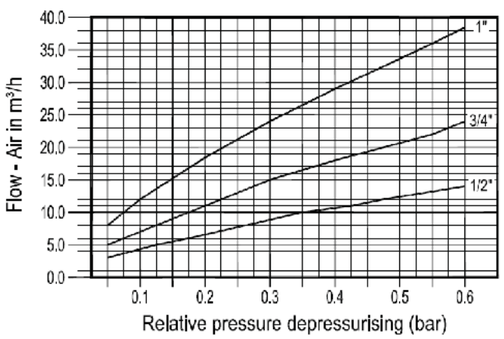
SET PRESSURE RANGES: 0,05 – 0,10 bar; 0,09 – 0,20 bar; 0,19 – 0,30 bar; 0,29 – 0,40 bar; 0,39 – 0,50 bar.

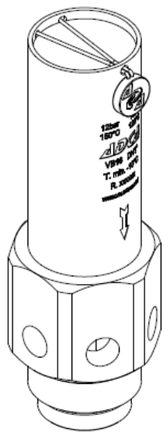
CONNECTIONS: Male threaded ISO 228 G.

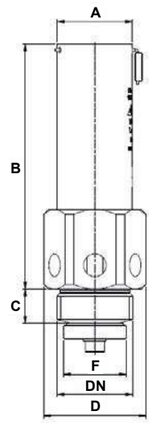
INSTALLATION: Vertical installation.
See IMI – Installation and maintenance instructions.

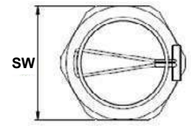
LIMITING CONDITIONS: 12 bar at 150 ºC.
16 bar at 120 ºC.

CAPACITY CHART





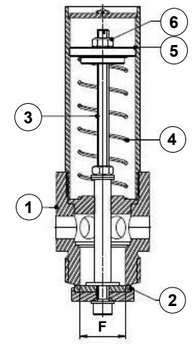




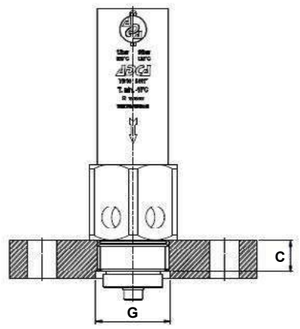
DIMENSIONS (mm)									
SIZE	A	B	C	D	E	F	G	SW	WEIGHT (kg)
1/2"	26	82	11	35	18	12,5	23	32	0,25
3/4”	33	85	13	39	21	16,5	28	36	0,34
1”	33	108	15	45	27,5	20	35	41	0,51

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 316 / 1.4401
2	* Valve	AISI 316 / 1.4401 ; Viton
3	Stem	AISI 304 / 1.4301
4	* Spring	AISI 302 / 1.4300
5	Spring guide	AISI 304 / 1.4301
6	Nut	Stainless steel A2-70

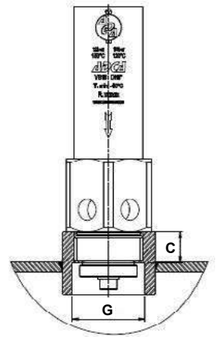
* Available spare parts.



TYPICAL INSTALLATION



With flange



With socket

VACUUM BREAKER
VB21

DESCRIPTION

The VB21 vacuum breakers are simple and reliable devices that automatically relieve or “break” an unwanted vacuum condition, restoring the atmospheric pressure.
This device is particularly suitable for steam heated units of small and medium volume, such as heat exchangers, heating coils, calorifiers, jacketed kettles, steam boilers, etc.

USE: Saturated and superheated steam.

AVAILABLE MODELS: VB21 – female threaded.
VB21M – male threaded.

SIZES: 1/2” x 1/8”.

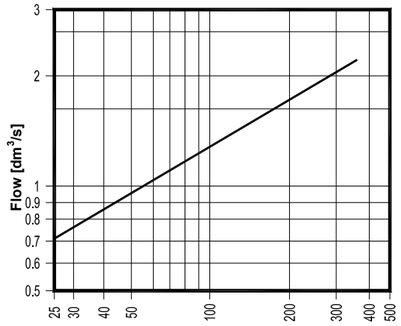
CONNECTIONS: System: vertical connection 1/2”.
Air inlet: horizontal connection 1/8”.
VB21 – female threaded ISO 7 Rp or NPT.
VB21M – male threaded ISO 228 G.

INSTALLATION: Vertical installation angled connection.
See IMI – Installation and maintenance instructions.

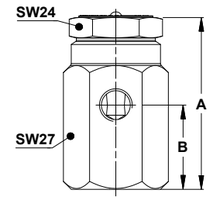
LIMITING CONDITIONS: 13 bar at 400 ºC.
21 bar at 220 ºC.

VB21 **VB21M**

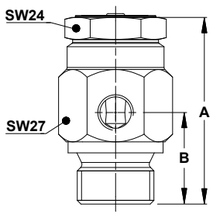
CAPACITY CHART



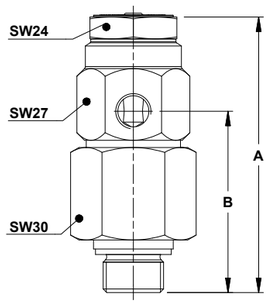
ΔP required to open vacuum breaker: 4,6mm/Hg.



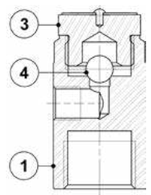
VB21



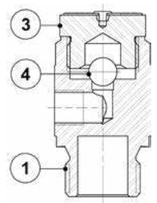
VB21M



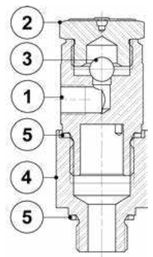
VB21M 3/8”



VB21



VB21M



VB21M 3/8”

DIMENSIONS (mm)				
MODEL	SIZE	A	B	WEIGHT (kg)
VB21	1/2”	51	25	0,17
VB21M	1/2”	51	25	0,13
VB21M *	3/8”	76	50	0,29

* Special version with adapter fitting 1/2” x 3/8” ISO 228 or NPT.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	AISI 303 / 1.4305
2	Cover	AISI 303 / 1.4305
3	* Ball valve	Stainless steel
4	Adapter fitting	AISI 303 / 1.4305
5	* Gasket	Copper

* Available spare parts.

We reserve the right to change the design and material of this product without notice.

PIPELINE Y STRAINERS
IS140

DESCRIPTION

The IS140 strainers are applicable to all types of steam, water, oil and air systems.
Their purpose is to protect traps, regulating valves, piping, etc. from dirt and impurities, which are often the cause of damage and consequent energy loss of fluid systems.

OPTIONS: Different screen aperture sizes.
Drain plug or drain valve in strainer cap.

USE: Saturated steam, water, oil, air and other fluids compatible with the construction materials.

AVAILABLE MODELS: IS140S – cast steel.
IS140I – stainless steel.

SIZES: 1/2” to 2”.

SCREENS: 0,8 mm aperture.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

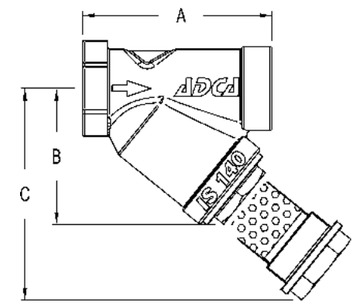
INSTALLATION: Horizontal or vertical downstream installation.
See IMI – Installation and maintenance instructions.

BODY LIMITING CONDITIONS *		
IS140S ALLOWABLE PRESSURE	IS140I ALLOWABLE PRESSURE	RELATED TEMP.
40 bar	40 bar	- 10 ºC / 50 ºC
33,3 bar	33,7 bar	200 ºC
27,6 bar	29,7 bar	300 ºC
25,7 bar	28,5 bar	350 ºC
23,8 bar	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018

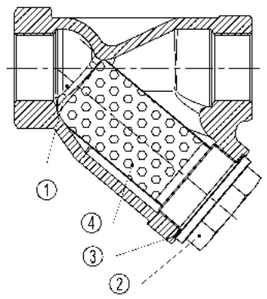
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	Category
1/2” to 11/4”	SEP
11/2” to 2”	1 (CE marked)

DIMENSIONS (mm)				
SIZE	A	B	C	WEIGHT (kg)
1/2”	85	63	107	0,6
3/4”	100	80	139	1
1”	115	87	155	1,5
11/4”	143	107	192	2,5
11/2”	160	125	215	3,6
2”	198	142	242	5,7



MATERIALS			
POS. Nº	DESIGNATION	IS140S	IS140I
1	Body	A216 WCB / 1.0619	A351 CF8M / 1.4408
2	Cap	A105 / 1.0432	AISI 316 / 1.4401
3	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Strainer screen	AISI 304 / 1.4301	AISI 304 / 1.4301

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

PIPELINE Y STRAINERS
IS16F

DESCRIPTION

The IS16F cast iron Y strainers are applicable to all types of steam, water, oil and air systems.
Their purpose is to protect traps, regulating valves, piping, etc. from dirt and impurities, which are often the cause of damage and consequent energy loss of fluid systems.

OPTIONS: Different screen aperture sizes.
Drain plug or drain valve in strainer cap.

USE: Group 2 fluids compatible with the construction (see “Body limiting conditions” table).

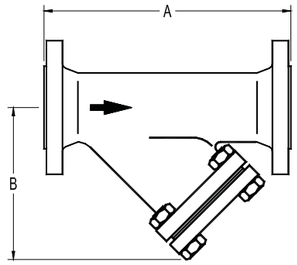
AVAILABLE MODELS: IS16F – cast iron.

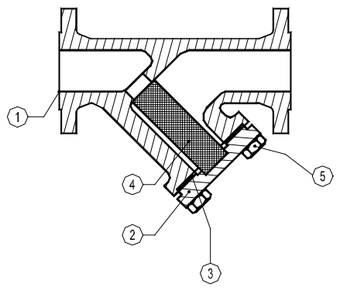
SIZES: DN 15 to DN 300.

SCREENS: 1 mm aperture – up to DN 50.
1,25 mm aperture – from DN 65 to DN 80.
1,6 mm aperture – from DN 100 to DN 300.

CONNECTIONS: Flanged EN 1092-2 PN 16.

INSTALLATION: Horizontal or vertical downstream installation.
See IMI – Installation and maintenance instructions.





CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
DN 15 to DN 50	SEP
DN 65 to DN 200	1 (CE marked)
DN 250 to DN 300	2 (CE marked)

BODY LIMITING CONDITIONS *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	-10 / 120 ºC
12,8 bar	200 ºC
11,2 bar	250 ºC
9,6 bar	300 ºC

*** Warning: The eventual use with steam/gas should be analyzed in accordance with the local applicable legislation, and always ensuring that there is no risk of water hammer.**

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	GJL-250 / 0.6025
2	Cap	GJL-250 / 0.6025
3	* Gasket	Stainless steel / Graphite
4	* Strainer screen	AISI 304 / 1.4301
5	Bolts	Steel 8.8

* Available spare parts.

DIMENSIONS (mm)			
SIZE	**A**	**B**	**WEIGHT (kg)**
DN 15	130	75	2,4
DN 20	150	75	3
DN 25	160	90	3,8
DN 32	180	90	5,2
DN 40	200	110	6,8
DN 50	230	120	9
DN 65	290	140	11,8
DN 80	310	165	16,8
DN 100	350	220	25,2
DN 125	400	260	37
DN 150	480	300	58
DN 200	600	360	112
DN 250	730	470	162
DN 300	850	560	195

We reserve the right to change the design and material of this product without notice.

PIPELINE Y STRAINERS
IS116

DESCRIPTION

The IS116 forged steel Y strainers are applicable to all types of steam, water, oil and air systems.
Their purpose is to protect traps, regulating valves, piping, etc. from dirt and impurities, which are often the cause of damage and consequent energy loss of fluid systems.

OPTIONS: Different screen aperture sizes.
Drain plug or drain valve in strainer cap.

USE: Saturated steam, water, oil, air and other fluids compatible with the construction materials.

AVAILABLE MODELS: IS116 – forged steel.

SIZES: 1/2” to 2”; DN 15 to DN 50.

SCREENS: 0,8 mm aperture.

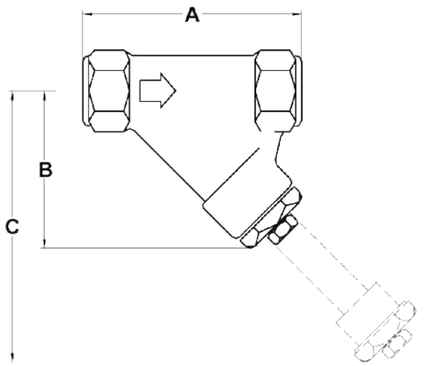
CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40, PN 63 or PN 100.
Flanged ASME B16.5 Class 150, 300 or 600.
Socket weld (SW) ASME 16.11.

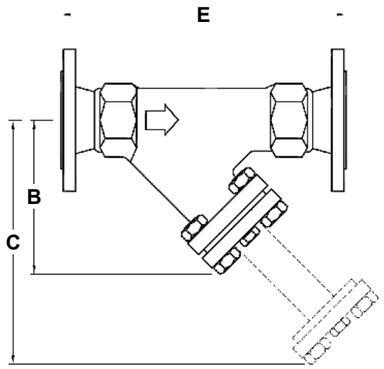
INSTALLATION: Horizontal or vertical downstream installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	**Category**
1/2” to 11/4” – DN 15 to 32	SEP
11/2” to 2” – DN 40 to 50	1 (CE marked)

LIMITING CONDITIONS	
PMA – Maximum allowable pressure	100 bar
TMA – Maximum allowable temperature	440 ºC

We reserve the right to change the design and material of this product without notice.



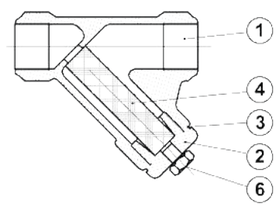


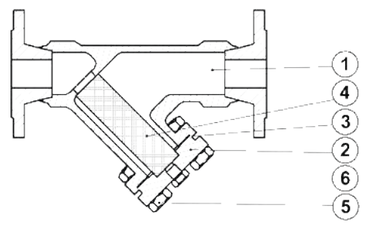
DIMENSIONS (mm)										
THREADED / SW					PN 40		PN 63 / PN 100 *	CLASS 150 *	CLASS 300 *	CLASS 600 *
SIZE	A	B	C	WEIGHT (kg)	E	WEIGHT (kg)	E	E	E	E
1/2" – DN 15	90	60	105	1	150	2,6	165	165	165	165
3/4"– DN 20	110	75	140	1,2	170	3,5	185	191	191	191
1" – DN 25	130	93	155	2	200	4,6	230	216	216	216
11/4" – DN 32	160	120	195	4,5	240	8,3	270	260	270	280
11/2" – DN 40	160	120	195	4,5	240	9,5	270	260	270	280
2" – DN 50	160	145	280	6	245	12	276	276	292	292

* For weights, consult manufacturer.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A105 / 1.0432
2	Cap	A105 / 1.0432
3	* Gasket	Stainless steel / Graphite
4	* Strainer screen	AISI 304 / 1.4301
5	Bolts	A193 B7 / A194 2H
6	Plug	A105 / 1.0432

* Available spare parts (bolted cover, only for 2").





PIPELINE T STRAINERS
IS40T
(EN)

DESCRIPTION

The IS40T cast steel T strainers are applicable to all types of steam, water, oil and air systems.
Their purpose is to protect traps, regulating valves, piping, etc. from dirt and impurities, which are often the cause of damage and consequent energy loss of fluid systems.

OPTIONS: Different screen aperture sizes.
Drain plug or drain valve in strainer cap.

USE: Saturated steam, water, oil, air and other fluids compatible with the construction materials.

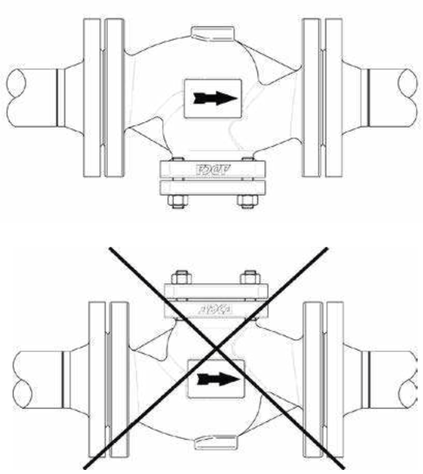
AVAILABLE MODELS: IS40TS – carbon steel.
IS40TI – stainless steel.

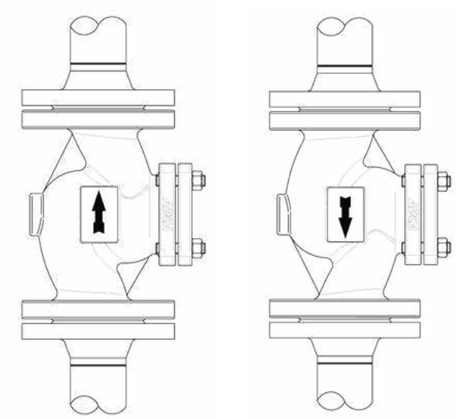
SIZES: DN 15 to DN 100.

SCREENS: 0,5 mm aperture – up to DN 25.
1,5 mm aperture – from DN 32 to DN 80.
2 mm aperture – DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16, PN 25 or PN 40.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.





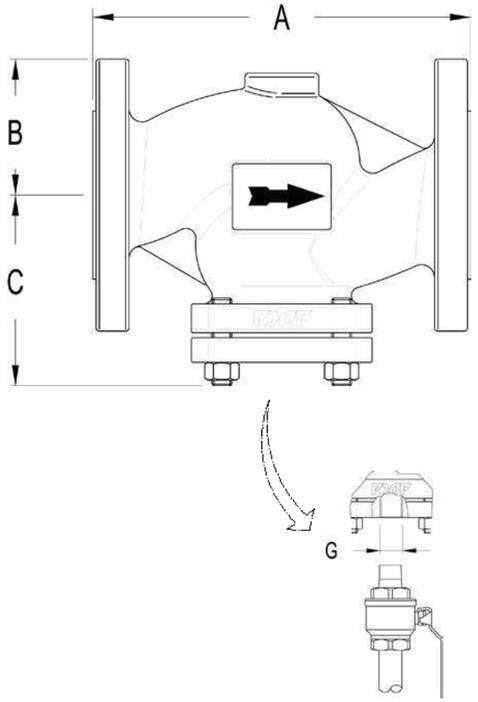
CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	PN 25	PN 40	Category
DN 15 to 50	DN 15 to 40	DN 15 to 32	SEP
DN 65 to 100	DN 50 to 100	DN 40 to 100	1 (CE marked)

BODY LIMITING CONDITIONS *							
IS40TS						IS40TI	
PN 16		PN 25		PN 40		PN 40	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
16 bar	- 10 / 120 ºC	25 bar	- 10 / 50 ºC	40 bar	- 10 / 50 ºC	40 bar	- 10 / 50 ºC
13,3 bar	200 ºC	20,8 bar	200 ºC	33,3 bar	200 ºC	33,7 bar	200 ºC
12,1 bar	250 ºC	19 bar	250 ºC	27,6 bar	300 ºC	29,7 bar	300 ºC
11 bar	300 ºC	17,2 bar	300 ºC	25,7 bar	350 ºC	28,5 bar	350 ºC
10,2 bar	350 ºC	16 bar	350 ºC	23,8 bar	400 ºC	27,4 bar	400 ºC

* Rating according to EN 1092-1:2018.

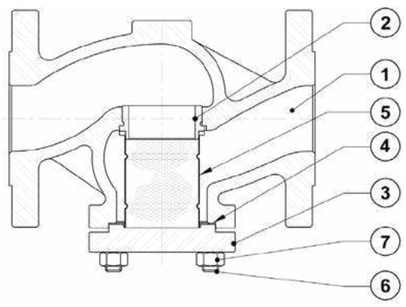
DIMENSIONS (mm)					
SIZE	A	B	C	G *	WEIGHT (kg)
DN 15	130	48	80	1/2"	3,7
DN 20	150	53	80	1/2"	4,2
DN 25	160	58	80	1/2"	5,3
DN 32	180	70	100	1/2"	7,8
DN 40	200	75	105	1/2"	9,6
DN 50	230	83	115	1/2"	14
DN 65	290	93	155	1/2"	23,5
DN 80	310	100	155	1/2"	27,9
DN 100	350	118	165	1/2"	34,6

* Others on request.



MATERIALS			
POS. Nº	DESIGNATION	IS40TS	IS40TI
1	Body	A216 WCB / 1.0619; GP240GH / 1.0619	A351 CF8M / 1.4408
2	Centering ring	AISI 304 / 1.4301	AISI 304 / 1.4301
3	Cover	AISI 304 / 1.4301	AISI 304 / 1.4301
4	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
5	* Strainer screen	AISI 304 / 1.4301	AISI 304 / 1.4301
6	Studs	Steel	Stainless steel A2-70
7	Nuts	Steel	Stainless steel A2-70

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

PIPELINE T STRAINERS
IS40T
(ASME)

DESCRIPTION

The IS40T cast steel T strainers are applicable to all types of steam, water, oil and air systems.
Their purpose is to protect traps, regulating valves, piping, etc. from dirt and impurities, which are often the cause of damage and consequent energy loss of fluid systems.

OPTIONS: Different screen aperture sizes.
Drain plug or drain valve in strainer cap.

USE: Saturated steam, water, oil, air and other fluids compatible with the construction materials.

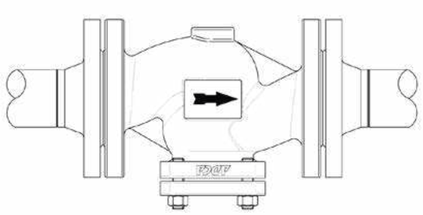
AVAILABLE MODELS: IS40TS – carbon steel.

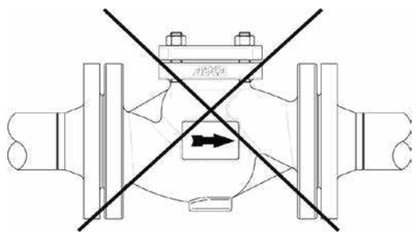
SIZES: 1” to 4”.

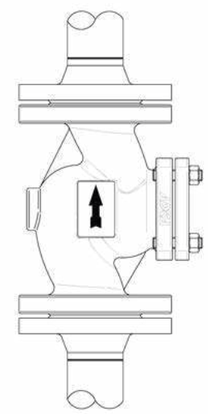
SCREENS: 0,5 mm aperture – 1”.
1,5 mm aperture – from 11/2” to 3”.
2 mm aperture – 4”.

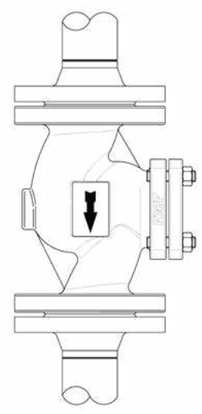
CONNECTIONS: Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.









CE MARKING – GROUP 2 (PED – European Directive)		
CLASS 150	CLASS 300	Category
1” to 2”	1”	SEP
3” to 4”	11/2” to 4”	1 (CE marked)

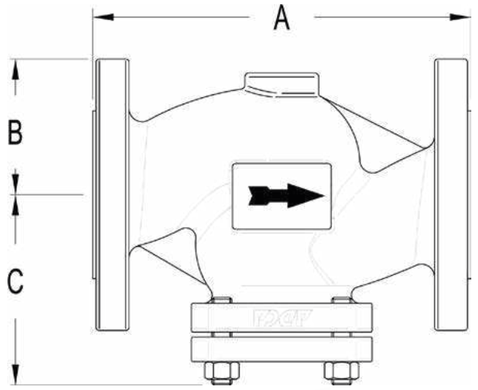
We reserve the right to change the design and material of this product without notice.

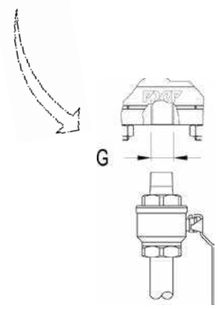
BODY LIMITING CONDITIONS *			
CLASS 150		CLASS 300	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
19,3 bar	- 10 ºC / 50 ºC	50 bar	- 10 ºC / 50 ºC
15,8 bar	150 ºC	43,9 bar	200 ºC
12,1 bar	250 ºC	36,9 bar	350 ºC
8,4 bar	350 ºC	34,6 bar	400 ºC

* Rating according to EN 1759-1:2004.

DIMENSIONS (mm)						
SIZE	A	B		C	G *	WEIGHT (kg)
		CLASS 150	CLASS 300			
1”	197	54	62	80	1/2"	5,3
11/2”	235	63,5	78	105	1/2"	9,6
2”	267	76	82,5	115	1/2"	14
3”	317	95	105	155	1/2"	27,9
4”	368	114,5	127	165	1/2"	34,6

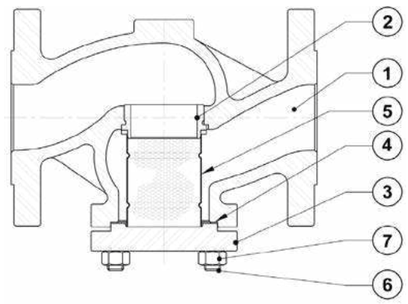
* Others on request.





MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A216 WCB / 1.0619; GP240GH / 1.0619
2	Centering ring	AISI 304 / 1.4301
3	Cover	AISI 304 / 1.4301
4	* Gasket	Stainless steel / Graphite
5	* Strainer screen	AISI 304 / 1.4301
6	Studs	Steel
7	Nuts	Steel

* Available spare parts.



SIGHT CHECKER SCKI

DESCRIPTION

The SCKI sight checkers function as both sight glasses and check valves.
Installed after the steam trap, the sight checker is a device whose main purpose is to visually check the condition and potential leakages of steam traps.

USE: Condensate pipes, downstream of steam traps.

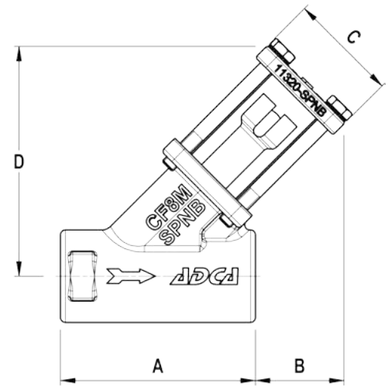
AVAILABLE MODELS: SCKI – stainless steel.

SIZES: 1/2” to 1”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: Horizontal or vertical (bottom to top) installation. See IMI – Installation and maintenance instructions.
SCKI should be fitted at least 1 meter from the trap, in order to protect the glass from thermal pressure or shock.

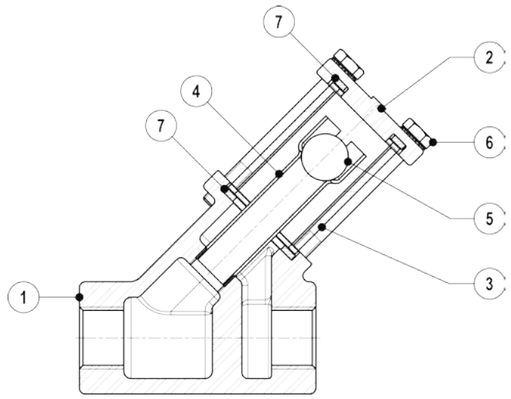
PMO – Maximum operating pressure: 10 bar.
TMO – Maximum operating temperature: 150 ºC.



DIMENSIONS (mm)					
SIZE	A	B	C	D	WEIGHT (kg)
1/2"	80	36	45	95	0,9
3/4"	80	36	45	95	0,9
1”	90	40	56	110	1,3

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	A351 CF8M / 1.4408
2	Cover	A351 CF8M / 1.4408
3	* Sight tube	Tempered borosilicate glass
4	Discharge tube	Copper
5	Check ball	Stainless steel
6	Bolts	Stainless steel A2-70
7	* Gasket	Graphite

* Available spare parts.



SINGLE WINDOW SIGHT GLASS
SW12

DESCRIPTION

For monitoring the right operation of a steam trap, in order to avoid leakages of live steam and, consequently, great energy losses, a sight glass is recommended to be installed downstream of the steam trap. The single window SW12 sight glasses have been designed for this particular application.

OPTIONS: Mica shield discs for use with steam.

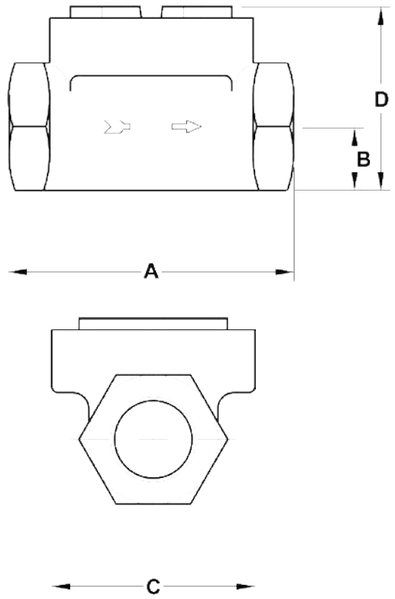
USE: Condensate pipes, downstream of the steam traps.

AVAILABLE MODELS: SW12 – 5 mm thick glass.

SIZES: 1/2” to 1”.

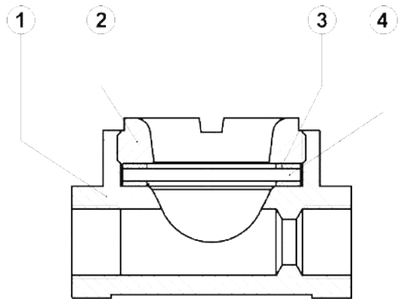
CONNECTIONS: Female threaded ISO 7 Rp or NPT.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.



LIMITING CONDITIONS	
PMO – Maximum operating pressure	12 bar
TMO – Maximum operating temperature	150 ºC

DIMENSIONS (mm)					
SIZE	A	B	C	D	WEIGHT (kg)
1/2"	80	16	62	52	0,6
3/4"	88	19	62	57	0,9
1”	88	23	62	60	0,85



MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	Brass EN12165 / CuZn39Pb2
2	Glass nut	Brass EN12165 / CuZn39Pb2
3	* Gasket	Stainless steel / Graphite
4	* Window glass	Tempered borosilicate glass

* Available spare parts.

We reserve the right to change the design and material of this product without notice.

WINDOW SIGHT GLASS
DW40S

DESCRIPTION

For monitoring the right operation of a steam trap, in order to avoid leakages of live steam and, consequently, great energy losses, a sight glass is recommended to be installed downstream of the steam trap. The double window DW40 sight glasses have been designed for this particular application.

OPTIONS: Mica shield discs for use with steam.

USE: Condensate pipes, downstream of the steam traps.

AVAILABLE MODELS: DW40S – carbon steel.

SIZES: 1/2” to 2”; DN 15 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

1/2” to 1”

11/4” to 2”

BODY LIMITING CONDITIONS			
PN 40 / CLASS 300 * ALLOWABLE PRESSURE	PN 25 * ALLOWABLE PRESSURE	CLASS 150 ** ALLOWABLE PRESSURE	RELATED TEMPERATURE
40 bar	25 bar	19,3 bar	-10 / 50 ºC
37,1 bar	23,2 bar	17,7 bar	100 ºC
35,2 bar	22 bar	15,8 bar	150 ºC
33,3 bar	20,8 bar	14 bar	200 ºC
28,7 bar	17,9 bar	11,7 bar	280 ºC

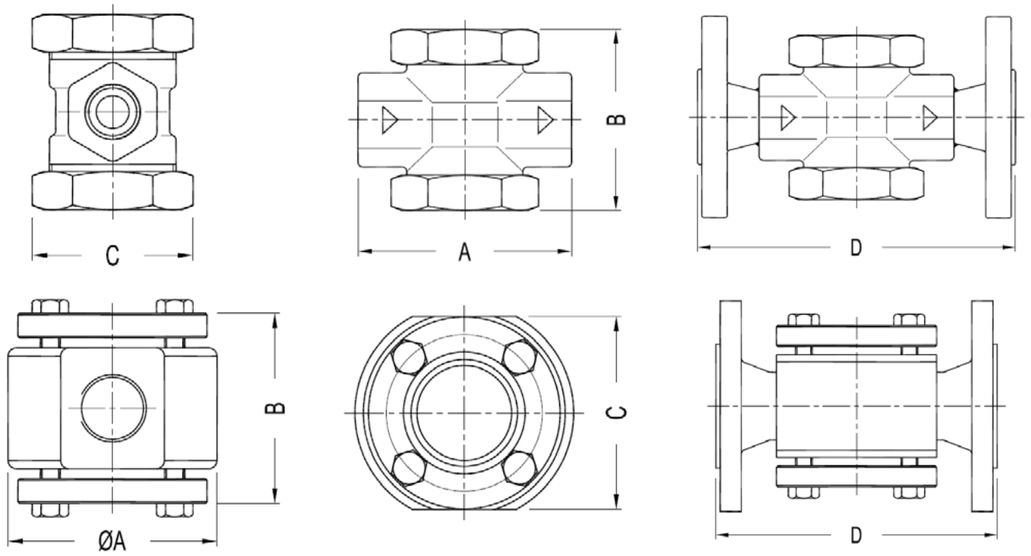
* According to EN 1092-1:2018; ** According to EN 1759-1:2004.
Remarks: For applications with steam, use mica shield discs;
Rating PN 40 for sizes up to DN 25; Rating PN 25 for sizes from DN 32 to DN 50;
Rating PN 40 or lower for threaded versions.

DN 15 to DN 25

DN 32 to DN 50

CE MARKING – GROUP 2 (PED – European Directive)			
PN 40 / CLASS 300	PN 25	CLASS 150	Category
1/2” to 1” – DN 15 to DN 25	11/4” to 11/2” – DN 32 to DN 40	1/2" to 2”	SEP
–	2” – DN 50	–	1 (CE Marked)

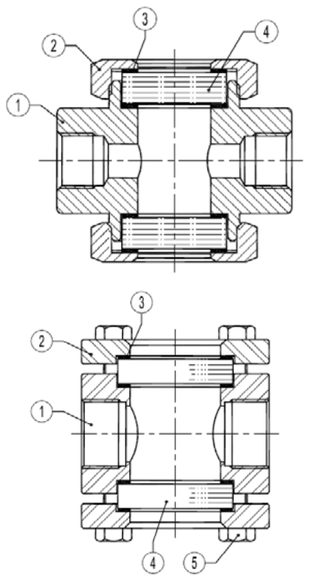
We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)										
THREADED					PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	WEIGHT (kg)	D	WEIGHT (kg)	D	WEIGHT (kg)	D	WEIGHT (kg)
1/2" – DN 15	90	80	60	1	150	2,8	150	2,2	150	2,6
3/4" – DN 20	90	80	60	1	150	3,2	150	2,6	150	3,5
1" – DN 25	100	87	65	1,2	160	3,7	160	3,3	160	4,1
11/4" – DN 32	130	115	114	7,4	180	11	180	10,2	180	11,3
11/2" – DN 40	130	115	114	7,2	200	11,5	200	11	200	12,7
2" – DN 50	130	125	114	7,7	230	13,5	230	13	230	14,3

MATERIALS			
POS. Nº	DESIGNATION	1/2" to 1" DN 15 to 25	11/4" to 2" DN 32 to 50
1	Body	P250GH / 1.0460	S355JR / 1.0045 P250GH / 1.0460
2	Glass nut / flange	P250GH / 1.0460	S355JR / 1.0045
3	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Window glass	Tempered borosilicate glass	Tempered borosilicate glass
5	Bolts	–	Steel 8.8

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

WINDOW SIGHT GLASS
DW40SS

DESCRIPTION

For monitoring the right operation of a steam trap, in order to avoid leakages of live steam and, consequently, great energy losses, a sight glass is recommended to be installed downstream of the steam trap. The double window DW40 sight glasses have been designed for this particular application.

OPTIONS: Mica shield discs for use with steam.

USE: Condensate pipes, downstream of the steam traps.

AVAILABLE MODELS: DW40SS – stainless steel.

SIZES: 1/2" to 2"; DN 15 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

1/2" to 1"

11/4" to 2"

BODY LIMITING CONDITIONS				
FLANGED CLASS 150 ** ALLOWABLE PRESSURE	FLANGED PN 25 * ALLOWABLE PRESSURE	FLANGED CLASS 300 ** ALLOWABLE PRESSURE	FLANGED PN 40 * ALLOWABLE PRESSURE	RELATED TEMPERATURE
15,3 bar	25 bar	39,9 bar	40 bar	-10 / 50 ºC
13,3 bar	23,6 bar	34,4 bar	37,9 bar	100 ºC
12 bar	21,5 bar	31,3 bar	34,4 bar	150 ºC
11,1 bar	19,8 bar	28,8 bar	31,8 bar	200 ºC
10,2 bar	18,6 bar	26,6 bar	29,9 bar	250 ºC

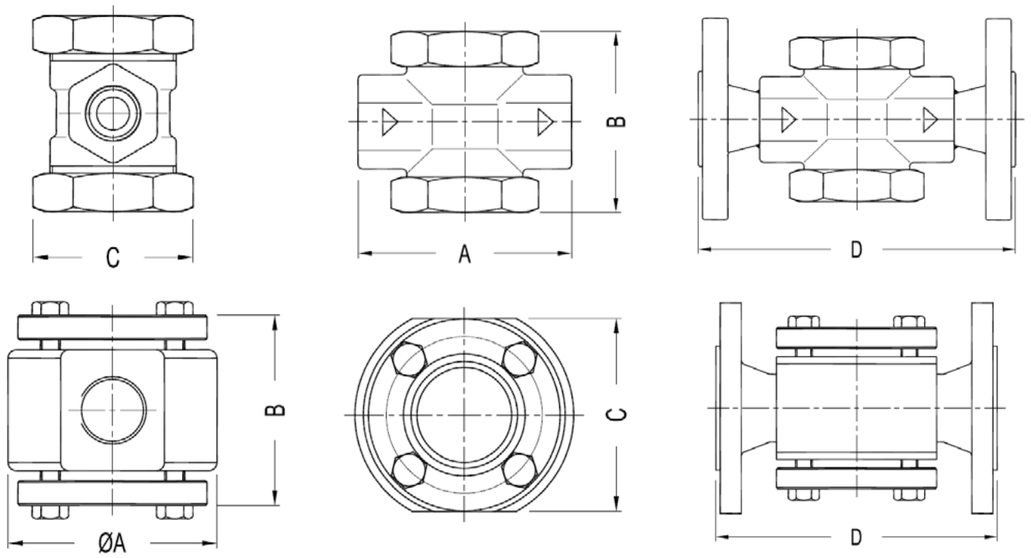
* According to EN 1092-1:2018; ** According to EN 1759-1:2004.
Remarks: For applications with steam, use mica shield discs;
Rating PN 40 for sizes up to DN 25; Rating PN 25 for sizes from DN 32 to DN 50.
Rating PN 40 or lower for threaded versions.

DN 15 to DN 25

DN 32 to DN 50

CE MARKING – GROUP 2 (PED – European Directive)			
PN 40 / CLASS 300	PN 25	CLASS 150	Category
1/2" to 1" – DN 15 to 25	11/4" to 11/2" – DN 32 to 40	1/2" to 2"	SEP
–	2" – DN 50	–	1 (CE Marked)

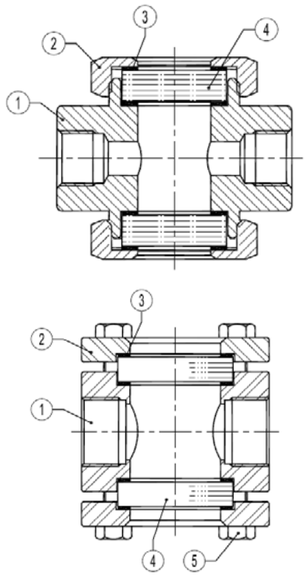
We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)										
THREADED					PN 40		CLASS 150		CLASS 300	
SIZE	A	B	C	WEIGHT (kg)	D	WEIGHT (kg)	D	WEIGHT (kg)	D	WEIGHT (kg)
1/2" – DN 15	90	80	60	1,25	150	2,8	150	2,2	150	2,6
3/4" – DN 20	90	80	60	1,25	150	3,2	150	2,6	150	3,5
1" – DN 25	100	87	65	2,1	160	3,7	160	3,3	160	4,1
11/4" – DN 32	130	115	114	6,2	180	11	180	10,2	180	11,3
11/2" – DN 40	130	115	114	6,5	200	11,5	200	11	200	12,7
2" – DN 50	130	125	114	7,5	230	13,5	230	13	230	14,3

MATERIALS			
POS. Nº	DESIGNATION	1/2" to 1" DN 15 to 25	11/4" to 2" DN 32 to 50
1	Body	AISI 316L / 1.4404	AISI 316L / 1.4404
2	Glass nut / flange	AISI 316L / 1.4404	AISI 316L / 1.4404
3	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Window glass	Tempered borosilicate glass	Tempered borosilicate glass
5	Bolts	–	Stainless steel A2-70

* Available spare parts.



We reserve the right to change the design and material of this product without notice.

WINDOW SIGHT GLASS
DW12G and DW12SS

DESCRIPTION

For monitoring the right operation of a steam trap, in order to avoid leakages of live steam and, consequently, great energy losses, a sight glass is recommended to be installed downstream of the steam trap. The double window DW12 sight glasses have been designed for this particular application.

MAIN FEATURES

Double wall bellows, specially designed for high durability.
Position indicator.
Lubricator.
Maintenance free.
Secondary safety sealing.

OPTIONS: Mica shield discs for use with steam.

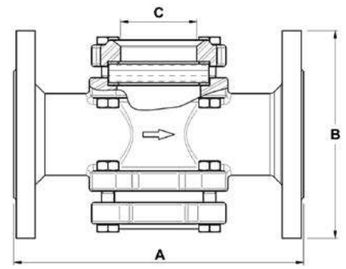
USE: Condensate pipes, downstream of the steam traps (see "Body limiting conditions" table).

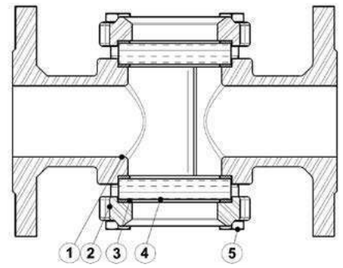
AVAILABLE MODELS: DW12G – cast iron.
DW12SS – stainless steel.

SIZES: DN 15 to DN 150.

CONNECTIONS: Flanged EN 1092-1/-2 PN 16.

INSTALLATION: Horizontal or vertical installation.
See IMI.





BODY LIMITING CONDITIONS *			
DW12G		DW12SS	
ALLOWABLE PRESSURES	RELATED TEMPERATURE	ALLOWABLE PRESSURES	RELATED TEMPERATURE
16 bar	-10 / 120 ºC	16 bar	-10 / 50 ºC
14,4 bar	150 ºC	14,5 bar	150 ºC
12,8 bar	200 ºC	13,4 bar	200 ºC
11,8 bar	230 ºC	12,9 bar	230 ºC
10,5 bar	280 ºC	12,2 bar	280 ºC

For applications with steam, use mica shield discs.

*** Warning: The eventual use with steam/gas should be analyzed in accordance with the local applicable legislation, and always ensuring that there is no risk of water hammer.**

MATERIALS			
POS. Nº	DESIGNATION	DW12G	DW12SS
1	Body	GJL-250 / 0.6025	A351 CF8M / 1.4408
2	Cover	GJL-250 / 0.6025	A351 CF8M / 1.4408
3	* Gasket	Graphite	Graphite
4	* Window glass	Borosilicate glass	Borosilicate glass
5	Bolts	Steel 8.8	Stainless steel A2-70

* Available spare parts.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
DN 15 to DN 50	SEP
DN 65 to DN 150	1 (CE marked)

DIMENSIONS (mm)					
SIZE	A	B	C	WEIGHT (kg)	
				DW12G	DW12SS
DN 15	130	95	44	3	3
DN 20	150	105	44	3,5	4
DN 25	160	115	44	4	5
DN 32	180	140	50	6	6,5
DN 40	200	150	50	6,5	7,3
DN 50	230	165	60	9	10,5
DN 65	290	185	90	17	17
DN 80	310	200	90	18	20
DN 100	350	220	110	23	26,5
DN 125	400	250	142	50	52
DN 150	480	285	160	63	68

We reserve the right to change the design and material of this product without notice.

NOISE DIFFUSERS
DF

DESCRIPTION

The ADCA DF series are compact noise diffusers designed to disperse the high-speed discharge from steam or air traps, dampening the noise levels and reducing erosion. These devices are typically installed downstream of intermittent steam traps, such as thermodynamic or inverted bucket, which are generally associated with high-speed blast discharges. Noise reductions greater than 80% can be expected when measured at 1 meter away from the source.

MAIN FEATURES

Simple and compact design.
No moving parts.
Noise reduction greater than 80%, measured at 1 meter away from the source.

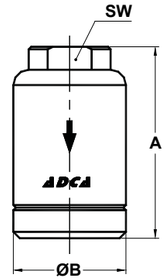
USE: Steam or compressed air.

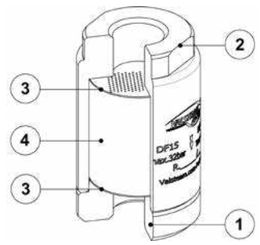
AVAILABLE MODELS: DF15 – outlet with threaded connection, suitable when discharging to condensate return lines.
DF16 – outlet without threaded connection, suitable for direct discharge to atmosphere.

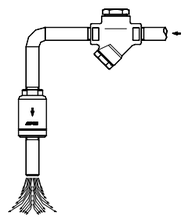
SIZES: 1/2”, 3/4” and 1”.

CONNECTIONS: Female threaded ISO 7 Rp.

INSTALLATION: The recommended installation position is vertical with the outlet connection pointing downwards to the ground or to another safe place. Clean the system thoroughly before installing the diffuser. In compressed air systems ensure the system is free of oil.
See IMI – Installation and maintenance instructions.







Application example (outlet of a DT42/2).

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 1”	SEP

LIMITING CONDITIONS	
PMA – Maximum allowable pressure	40 bar
TMA – Maximum allowable temperature	400 ºC
PMO – Maximum operating pressure	32 bar
TMO – Maximum operating temperature	250 ºC

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 304 / 1.4301
2	Cover	AISI 304 / 1.4301
3	Strainer screen	AISI 304 / 1.4301
4	Wool element	AISI 434 / 1.4113

DIMENSIONS (mm)				
SIZE	**A**	**B**	**SW**	**WEIGHT (kg)**
1/2”	80	45	36	0,9
3/4”	80	45	36	0,9
1”	90	45	40	1,3

We reserve the right to change the design and material of this product without notice.

NON-RETURN VALVES
RT25

DESCRIPTION

The RT25 all stainless steel disc check valves have a compact design and were specially designed for use with steam and hot condensate.

MAIN FEATURES

Low pressure drop.
Simple and compact design.

OPTIONS: Various soft sealing options:
EPDM (E), NBR (N), VITON (V), PTFE (T).
Inconel springs.

USE: Saturated steam, water and other gases compatible with the construction.

AVAILABLE MODELS: RT25 – stainless steel.

SIZES: 1/4” to 2”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

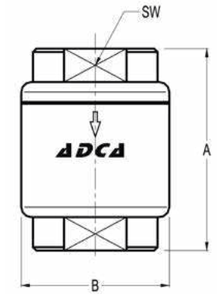
INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

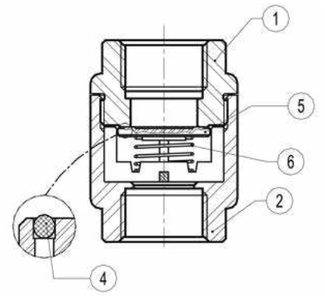
RECOMMENDED LIMITS OF OPERATION WITH SOFT SEALS			
EPDM (E)	**NBR (N)**	**VITON (V)**	**PTFE (T)**
130 ºC	95 ºC	180 ºC	180 ºC

CE MARKING – GROUP 2 (PED – European Directive)	
PN 25	**Category**
1/4” to 11/2”	SEP
2”	1 (CE marked)

LIMITING CONDITIONS	
Body design conditions	PN 25
Maximum allowable pressure	25 bar
Maximum allowable temperature	250 ºC
Maximum operating pressure	21 bar
Maximum operating temperature	220 ºC

We reserve the right to change the design and material of this product without notice.





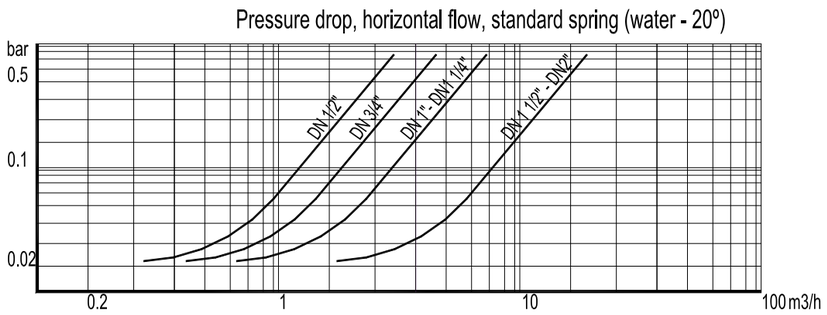
DIMENSIONS				
SIZE	**A**	**B**	**SW**	**WEIGHT (kg)**
1/4”	55	40	27	0,3
3/8”	55	40	27	0,3
1/2”	55	40	27	0,3
3/4”	60	45	32	0,38
1”	70	50	41	0,54
11/4”	61	65	50	0,68
11/2”	72	80	55	0,96
2”	72	80	70	1,13

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316 / 1.4401
2	Cover	AISI 316 / 1.4401
4	* Soft seal	EPDM; NBR; VITON; PTFE
5	* Valve disc	AISI 316 / 1.4401
6	* Spring	AISI 302 / 1.4300

* Available spare parts.

MINIMUM OPENING PRESSURES WITH STANDARD SPRING (mbar)				
SIZE	**D.P. ↑**	**D.P. →**	**D.P. ↓**	**D.P. * ↑**
1/4”	25	23	21	2
3/8”	25	23	21	2
1/2”	25	23	21	2
3/4”	25	23	21	2
1”	25	23	21	2
11/4”	25	24	21	3
11/2”	28	25	21	4
2”	29	25	21	4

→ : Flow direction.
* Vertical installation without springs (bottom to top).



To determine the pressure drop of other mediums the equivalent water flow volume has to be calculated: $V_W = \sqrt{\frac{Q}{1000}} \times V$

Vw = Equivalent water flow volume in m³/h; Q = Density in kg/m³; V = Flow volume in m³/h

We reserve the right to change the design and material of this product without notice.

WAFER-TYPE NON-RETURN VALVE
RD40
DN 15 – DN 100

DESCRIPTION

The RD40 all stainless steel disc check valves have a compact design and are specially designed for use with steam and hot condensate.

MAIN FEATURES

Low pressure drop.
Simple and compact design.
Overall lengths according to DIN EN 558-1 (DIN 3202 part 3, series K4).

OPTIONS: Various soft sealing options:
EPDM (E), NBR (N), VITON (V), PTFE (T).
Inconel springs.

USE: Saturated steam, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: RD40 – stainless steel.

SIZES: 1/2” to 4”; DN 15 to DN 100.

CONNECTIONS: Sandwiched between flanges as per EN 1092 or ASME.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

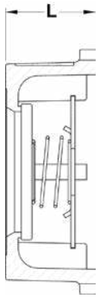
RECOMMENDED LIMITS OF OPERATION WITH SOFT SEALS			
EPDM (E)	**NBR (N)**	**VITON (V)**	**PTFE (T)**
130 ºC	95 ºC	180 ºC	180 ºC

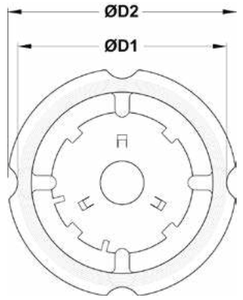
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
1/2” to 11/4” – DN 15 to 32	SEP
11/2” to 4” – DN 40 to 100	1 (CE marked)

BODY LIMITING CONDITIONS	
WAFER PN 40 *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
40 bar	100 ºC
33,7 bar	200 ºC
31,8 bar	250 ºC
29,7 bar	300 ºC

* According to EN 1092.
Minimum operating temperature: - 10 ºC.

We reserve the right to change the design and material of this product without notice.





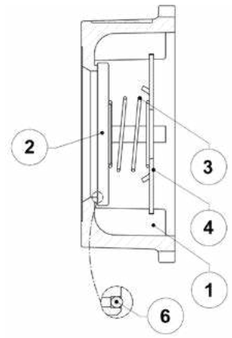
DIMENSIONS				
SIZE	**D1**	**D2**	**L**	**WEIGHT (kg)**
1/2" – DN 15	43	50	16	0,18
3/4" – DN 20	53	60	19	0,2
1" – DN 25	62	70	22	0,25
11/4" – DN 32	75	81	28	0,5
11/2" – DN 40	86	91	32	0,7
2" – DN 50	96	105	40	1,3
21/2" – DN 65	115	125	46	1,7
3" – DN 80	133	147	50	2,5
4" – DN 100	154	167	60	3,5

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8M / 1.4408
2	* Disc	AISI 316 / 1.4401
3	* Spring	AISI 302 / 1.4300
4	Star	AISI 316 / 1.4401
6	* Soft seal	EPDM; NBR; VITON; PTFE

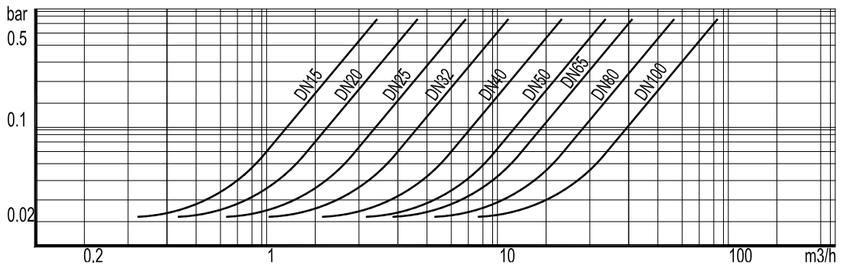
* Available spare parts.

MINIMUM OPENING PRESSURES WITH STANDARD SPRING (mbar)				
SIZE	**D.P. ↑**	**D.P. →**	**D.P. ↓**	**D.P. * ↑**
1/2" – DN 15	25	23	21	2
3/4" – DN 20	25	23	21	2
1" – DN 25	25	23	21	2
11/4" – DN 32	27	24	21	3
11/2" – DN 40	28	25	21	4
2" – DN 50	29	25	21	4
21/2" – DN 65	30	26	21	5
3" – DN 80	31	26	21	5
4" – DN 100	33	27	21	6

→ : Flow direction.
* Vertical installation without springs (bottom to top).



Pressure drop, horizontal flow, standard spring (water – 20º)



To determine the pressure drop of other mediums the equivalent water flow volume has to be calculated: $V_W = \sqrt{\frac{Q}{1000}} \times V$

Vw = Equivalent water flow volume in m³/h; Q = Density in kg/m³; V = Flow volume in m³/h

We reserve the right to change the design and material of this product without notice.

WAFER-TYPE NON-RETURN VALVE
RD40
DN 125 – DN 200

DESCRIPTION

The RD40 disc check valves have a compact design and are specially designed for use with steam and hot condensate.

MAIN FEATURES

Low pressure drop.
Simple and compact design.
Overall lengths according to DIN EN 558-1 (DIN 3202 part 3, series K4).

OPTIONS: Various soft sealing options:
EPDM (E), NBR (N), VITON (V), PTFE (T).
Inconel springs.

USE: Saturated steam, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS: RD40 – carbon steel body, stainless steel disc and seat.

SIZES: 5" to 8"; DN 125 to DN 200.

CONNECTIONS: Sandwiched between flanges as per EN 1092 or ASME.

INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

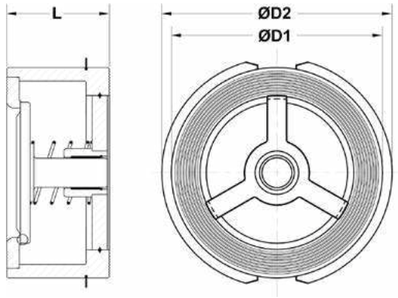
RECOMMENDED LIMITS OF OPERATION WITH SOFT SEALS			
EPDM (E)	**NBR (N)**	**VITON (V)**	**PTFE (T)**
130 ºC	95 ºC	180 ºC	180 ºC

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
DN 125 to 200	2 (CE marked)

BODY LIMITING CONDITIONS	
WAFER PN 40 *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
40 bar	100 ºC
33,7 bar	200 ºC
31,8 bar	250 ºC
29,7 bar	300 ºC

* According to EN 1092.
Minimum operating temperature: - 10 ºC.

We reserve the right to change the design and material of this product without notice.

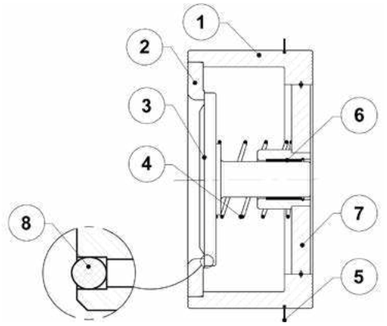


DIMENSIONS							
SIZE	PN 10/16	PN 40		CLASS 150	CLASS 300	L	WEIGHT (kg)
	D1	D1	D2 *	D1	D2 *		
5” – DN 125	192	192	-	192	212	90	10
6” – DN 150	218	-	226	218	247	106	14
8” – DN 200	273	-	290	273	304	140	24

* Centering ring required

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	S355JR / 1.0045
2	Seat	AISI 316 / 1.4401
3	* Disc	AISI 316 / 1.4401
4	* Spring	AISI 302 / 1.4300
5	Centering ring	AISI 304 / 1.4301
6	Bearing	Steel Fe Zn
7	Star	S355JR / 1.0045
8	* Soft seal	EPDM; NBR; VITON; PTFE

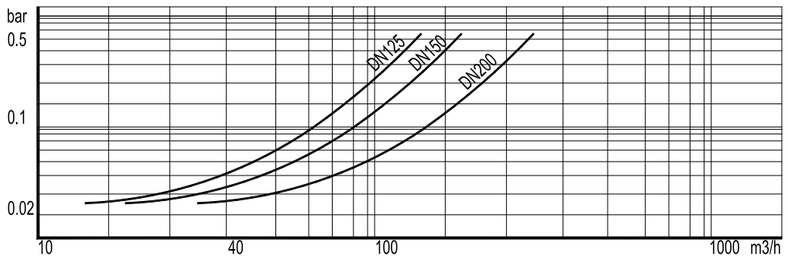
* Available spare parts.



MINIMUM OPENING PRESSURES WITH STANDARD SPRING (mbar)						
SIZE	D.P.	↑	D.P.	→	D.P.	↓
5” – DN 125	37		22		7	
6” – DN 150	40		25		10	
8” – DN 200	46		28		10	

→ : Flow direction.

Pressure drop, horizontal flow, standard spring (water – 20º)



To determine the pressure drop of other mediums the equivalent water flow volume has to be calculated: $V_W = \sqrt{\frac{Q}{1000}} \times V$

Vw = Equivalent water flow volume in m³/h; Q = Density in kg/m³; V = Flow volume in m³/h

We reserve the right to change the design and material of this product without notice.

GLOBE VALVE GV32B

DESCRIPTION

The GV32B bronze in-line stop valves are designed for use with steam, water, oil or air applications.

MAIN FEATURES

Rising stem.
PTFE renewable disk.
High quality PTFE packing.

USE: Saturated steam, condensate, water, oil, compressed air and other fluids compatible with the construction

AVAILABLE MODELS: GV32B – bronze.

SIZES: 1/2” to 2”.

CONNECTIONS: Female threaded ISO 7 Rp.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 32	Category
1/2” to 11/4”	SEP
11/2” to 2”	1 (CE marked)

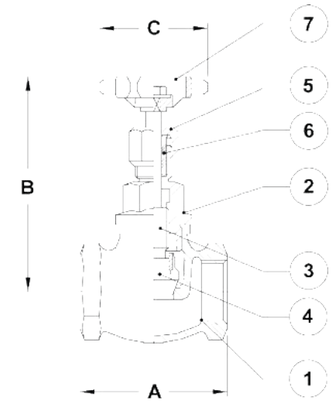
BODY LIMITING CONDITIONS	
PN 32	
ALLOWABLE PRESSURE	RELATED TEMPERATURE
32 bar	100 ºC
14 bar	198 ºC

DIMENSIONS (mm)				
SIZE	A	B	C	WEIGHT (kg)
1/2"	57	95	75	0,39
3/4"	65	98	75	0,55
1”	78	114	85	0,85
11/4”	89	138	95	1,36
11/2”	100	159	105	1,76
2”	121	170	120	2,62

FLOW RATE COEFFICIENTS (m³/h)						
SIZE	1/2"	3/4"	1”	11/4”	11/2”	2”
Kvs	2	5	10	16	23	42

For conversion: Kvs = Cv (US) x 0,855.

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Body	Bronze
2	Bonnet	Forged brass
3	Stem	Brass
4	Disc	Glass filled PTFE
5	Disc nut	Brass
6	Packing	PTFE
7	Handwheel	Aluminium



We reserve the right to change the design and material of this product without notice.

BELLOWS SEALED STOP VALVES
VF20

DESCRIPTION

The VF20 is a series of maintenance free inline stop valves designed with double wall bellow sealing, secondary safety packing and non-rising handwheel. They are specially recommended for steam, gas, liquid, condensate, thermal oil and water applications.

MAIN FEATURES

Maintenance free design.
High durability sealing via double wall bellows.
Secondary safety packing.
Non-rising handwheel.
External stem thread.

OPTIONS: Parabolic plug for throttling applications.
PTFE soft sealing for applications up to 180 ºC.

USE: Group 2 fluids compatible with the construction.

AVAILABLE MODELS: VF20 – cast iron.

SIZES: DN 15 to DN 200.

CONNECTIONS: Flanged EN 1092-2 PN 16.

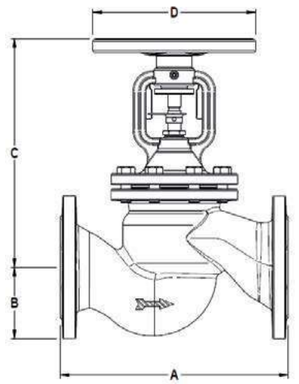
INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
DN 15 to 50	SEP
DN 65 to 200	1 (CE marked)

BODY LIMITING CONDITIONS	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	- 10 ºC / 120 ºC
12,8 bar	200 ºC
11,2 bar	250 ºC
9,6 bar	300 ºC

FLOW RATE COEFFICIENTS (m³/h)												
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**	**DN 200**
Kvs	5,9	7,4	13	18	30	41	79	115	181	225	364	725

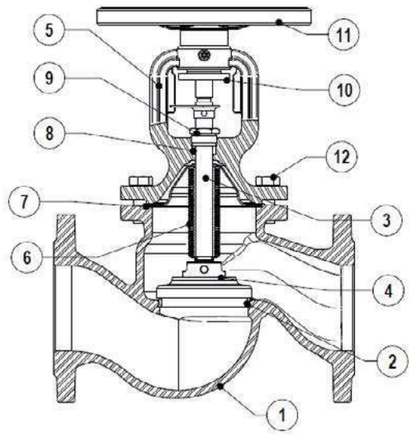
We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)					
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
DN 15	130	47,5	178	125	3,2
DN 20	150	52,5	178	125	3,9
DN 25	160	57,5	193	125	4,6
DN 32	180	70	201	125	6,5
DN 40	200	75	224	150	9
DN 50	230	82,5	228	150	11
DN 65	290	92,5	270	175	15,8
DN 80	310	100	295	200	20,5
DN 100	350	110	352	250	35
DN 125	400	125	380	300	49
DN 150	480	142,5	427	400	76
DN 200	600	170	569	500	130,5

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	EN-GJL-250
2	Seat	Stainless steel
3	* Spindle	Stainless steel
4	* Disc	Stainless steel
5	Bonnet	EN-GJS-400-18-LT
6	* Bellows	Stainless steel
7	* Gasket	Stainless steel / Graphite
8	* Packing	Carbo-graphite
9	Gland	Zinc plated steel
10	Anti-friction disc	Zinc plated steel
11	Handwheel	Steel
12	Bolts	Steel 8.8

* Available spare parts.



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IS VF20.10 E 11.13

BELLOWS SEALED STOP VALVES
VF40

DESCRIPTION

The VF40 is a series of maintenance free inline stop valves designed with double wall bellow sealing, secondary safety packing and non-rising handwheel. They are specially recommended for steam, gas, liquid, condensate, thermal oil and water applications.

MAIN FEATURES

Maintenance free design.
High durability sealing via double wall bellows.
Secondary safety packing.
Non-rising handwheel.
External stem thread.

OPTIONS: Parabolic plug for throttling applications.

USE: Group 2 fluids compatible with the construction.

AVAILABLE MODELS: VF40S – carbon steel.
VF40I – stainless steel.

SIZES: DN 15 to DN 150.

CONNECTIONS: Flanged EN 1092-1 PN 40.

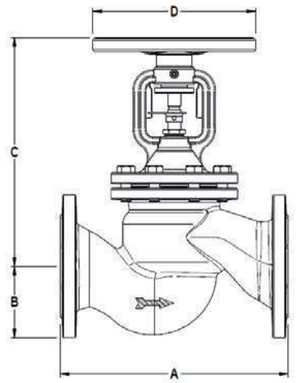
INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
DN 15 to 32	SEP
DN 40 to 100	1 (CE marked)
DN 125 to 150	2 (CE marked)

BODY LIMITING CONDITIONS		
VF40S	**VF40I**	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
40 bar	40 bar	- 10 ºC / 50 ºC
37,4 bar	40 bar	100 ºC
33,6 bar	35,8 bar	200 ºC
27,8 bar	32,5 bar	300 ºC

Remark: lower temperature limits on request.

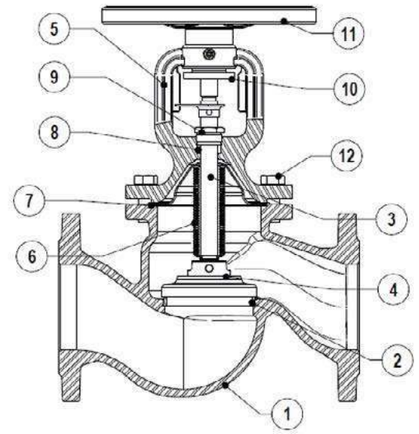
FLOW RATE COEFFICIENTS (m³/h)											
SIZE	**DN 15**	**DN 20**	**DN 25**	**DN 32**	**DN 40**	**DN 50**	**DN 65**	**DN 80**	**DN 100**	**DN 125**	**DN 150**
Kvs	4,3	7	11	17,5	27	47	68	116	162	250	364



DIMENSIONS (mm)					
SIZE	**A**	**B**	**C**	**D**	**WEIGHT (kg)**
DN 15	130	47,5	189	120	4,3
DN 20	150	52,5	189	120	5,1
DN 25	160	57,5	189	120	5,8
DN 32	180	70	220	160	9,5
DN 40	200	75	220	160	9,8
DN 50	230	82,5	295	195	17,5
DN 65	290	92,5	295	195	20,5
DN 80	310	100	368	280	34
DN 100	350	117,5	368	280	44
DN 125	400	135	523	350	77
DN 150	480	150	523	350	110

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body (VF40S)	GP240GH / 1.0619
	Body (VF40I)	A351 CF10MC / 1.4581
2	Seat	Stainless steel
3	* Spindle	Stainless steel
4	* Disc	Stainless steel
5	Bonnet	GP240GH / 1.0619
6	* Bellows	Stainless steel
7	* Gasket	Stainless steel / Graphite
8	* Packing	Graphite
9	Gland	Zinc plated steel
10	Anti-friction disc	Zinc plated steel
11	Handwheel	Cast iron
12	Bolts	Stainless steel A2-70

* Available spare parts.



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IS VF40.10 E 10.14

THREE PIECE BALL VALVES
M3S1

DESCRIPTION

The M3S1 three piece ball valves are full bore isolating valves designed for on/off applications with steam, condensate and other gases and liquids compatible with the construction.

MAIN FEATURES

Full bore floating ball design.
Can be serviced without removal from pipeline.
Bidirectional.
Blow-out proof stem design.
Antistatic device.

OPTIONS: Different sealing materials.
Fire safe design.

USE: Steam, gases and liquids compatible with the construction.

AVAILABLE MODELS: M3S1 – zinc plated carbon steel.

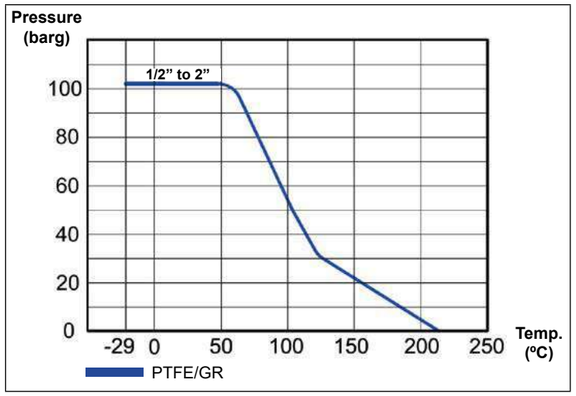
SIZES: 1/2” to 2”.

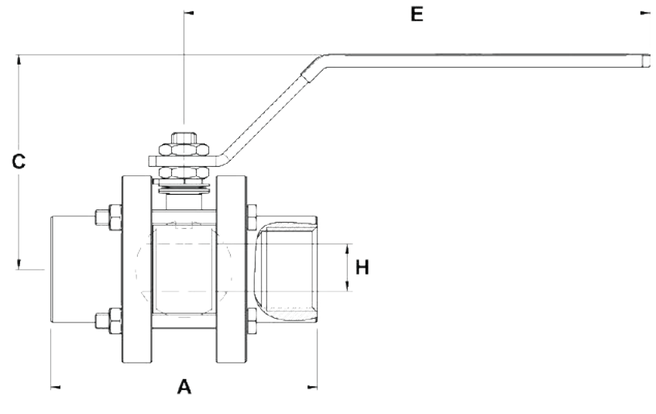
CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME B16.11.
Butt weld (BW) ASME B16.25.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	**Category**
1/2” to 11/4”	SEP
11/2” to 2”	1 (CE marked)

BODY LIMITING CONDITIONS

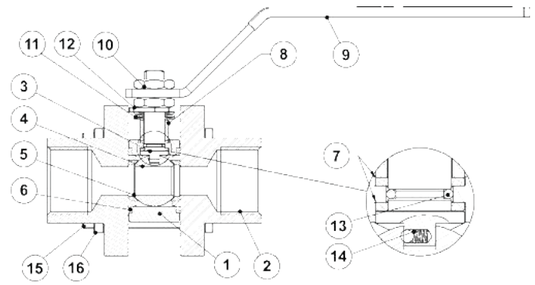




DIMENSIONS (mm)						
SIZE	**A**	**B**	**C**	**E**	**H**	**WEIGHT (kg)**
1/2”	80	60	75	145	14	0,7
3/4”	95	80	85	185	20	1,4
1”	105	90	85	185	25	2,2
11/4”	120	110	100	270	32	3,3
11/2”	130	120	110	270	38	4,3
2”	145	130	115	270	48	7,3

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A105 / 1.0432
2	Body cap	A105 / 1.0432
3	Stem	AISI 316 / 1.4401
4	Ball	AISI 304 / 1.4301
5	* Seat	PTFE/GR
6	* Body gasket	PTFE/GR
7	* Stem gasket	PTFE/GR
8	Gland	AISI 304 / 1.4301
9	Lever	Zinc plated steel
10	Gland nut	Zinc plated steel
11	Washer springs	Spring steel
12	Stop plate	Zinc plated steel
13	Stem o-ring	Viton
14	Anti-static device	AISI 304 / 1.4301
15	Bolts	Zinc plated steel
16	Nuts	Zinc plated steel

* Available spare parts



VALSTEAM ADCA
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IS M3S1.10 E 13.14

THREE PIECE BALL VALVES
M3i5

DESCRIPTION

The M3i5 three piece ball valves are reduced bore isolating valves designed for on/off applications with steam, condensate and other gases and liquids compatible with the construction.

MAIN FEATURES

Reduced bore floating ball design.
Can be serviced without removal from pipeline.
Bidirectional.
Blow-out proof stem design.
Antistatic device.

OPTIONS: Different sealing materials.

USE: Steam, gases and liquids compatible with the construction.

AVAILABLE MODELS: M3i5 – stainless steel.

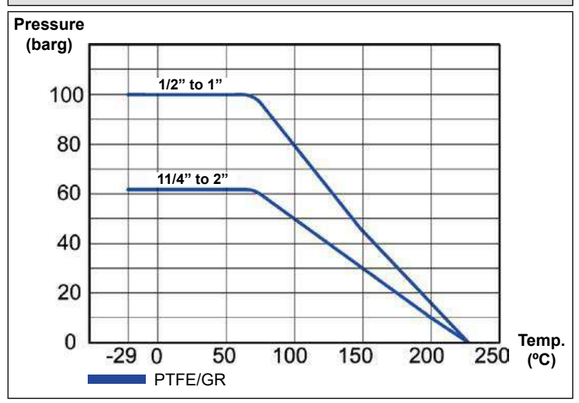
SIZES: 1/2” to 2”.

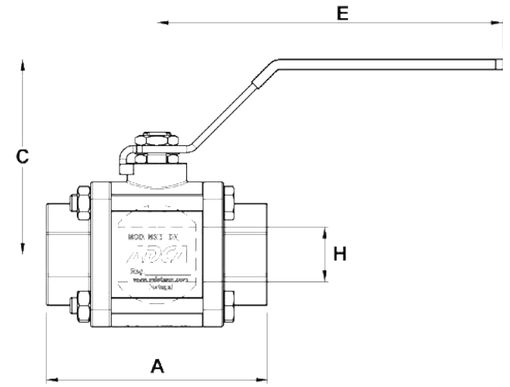
CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME B16.11.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	**Category**
1/2” to 11/4”	SEP
11/2” to 2”	1 (CE marked)

BODY LIMITING CONDITIONS

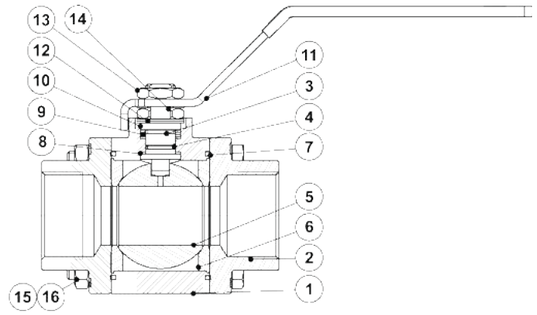




DIMENSIONS (mm)							
SIZE	**A**	**B**	**C**	**D**	**E**	**H**	**WEIGHT (kg)**
1/2”	68	42	74	21	143	11	0,61
3/4”	76	50	74	25	143	15	0,87
1”	100	62	86	31	175	20	1,81
11/4”	118	72	91	36	175	25	2,54
11/2”	130	85	115	42,5	203	32	3,95
2”	146	95	119	47,5	203	38	5,05

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A351 CF8 / 1.4308
2	Body cap	A351 CF8M / 1.4408
3	Stem	AISI 316 / 1.4401
4	Stem o-ring	Viton
5	Ball	AISI 316 / 1.4404
6	* Seat	PTFE/GR
7	* Body gasket	PTFE
8	* Stem gasket	PTFE/GR
9	* Stem seal	PTFE/GR
10	Spacer	AISI 316 / 1.4404
11	Handle	AISI 304 / 1.4301
12	* Spring washers	AISI 304 / 1.4301
13	Compression nut	AISI 304 / 1.4301
14	* Lockwasher	AISI 304 / 1.4301
15	Fixing bolts	AISI 304 / 1.4301
16	Nuts	AISI 304 / 1.4301

* Available spare parts



VALSTEAM ADCA
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IS M3i5.10 E 04.17

THREE PIECE BALL VALVES
M3i1

DESCRIPTION

The M3i1 three piece ball valves are full bore isolating valves designed for on/off applications with steam, condensate and other gases and liquids compatible with the construction.

MAIN FEATURES

Full bore floating ball design.
Can be serviced without removal from pipeline.
Bidirectional.
Blow-out proof stem design.
Antistatic device.
ISO 5211 mounting.

OPTIONS: Different sealing materials.

USE: Steam, gases and liquids compatible with the construction.

AVAILABLE MODELS: M3i1 – stainless steel.

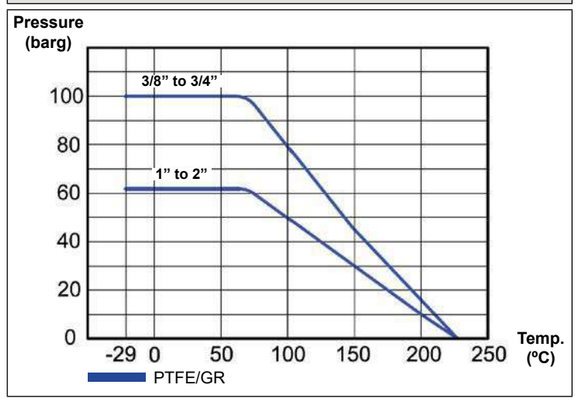
SIZES: 3/8” to 2”.

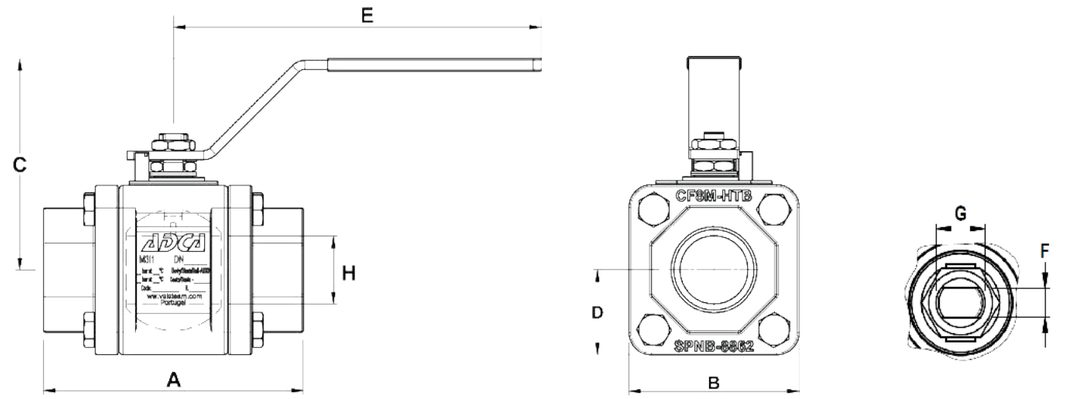
CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Socket weld (SW) ASME B16.11.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 100	**Category**
3/8” to 11/4”	SEP
11/2” to 2”	1 (CE marked)

BODY LIMITING CONDITIONS

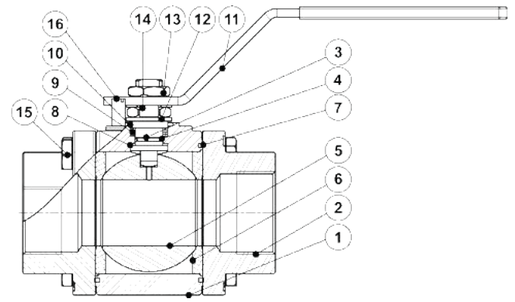




DIMENSIONS (mm)										
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**ISO 5211**	**WEIGHT (kg)**
3/8”	68	42	65	21	149	6	M10 x 1	11	F03	0,73
1/2”	76	50	69	25	149	6	M10 x 1	15	F03	1,1
3/4”	100	62	87	31	176	7,5	M12 x 1,25	20	F04	2,18
1”	118	72	92	36	176	7,5	M12 x 1,25	25	F04	3,12
11/4”	130	85	114	42,5	207	11	M16 x 1,5	32	F05	4,66
11/2”	146	95	119	47,5	207	11	M16 x 1,5	38	F05	6,35
2”	154	105	124	52,5	232	11	M16 x 1,5	50	F05	7,1

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	A35 CF3M / 1.4409
2	Body cap	A351 CF8M / 1.4408
3	Stem	AISI 316 / 1.4401
4	Stem o-ring	Viton
5	Ball	AISI 316 / 1.4401
6	* Seat	PTFE/GR
7	* Body gasket	PTFE
8	* Stem gasket	PTFE/GR
9	* Stem seal	PTFE/GR
10	Spacer	AISI 316 / 1.4401
11	Handle	AISI 304 / 1.4301
12	* Spring washers	AISI 304 / 1.4301
13	Compression nut	AISI 304 / 1.4301
14	* Lock washer	AISI 304 / 1.4301
15	Fixing bolts	AISI 304 / 1.4301
16	Nuts	AISI 304 / 1.4301

* Available spare parts



We reserve the right to change the design and material of this product without notice.
IS M3i1.10 E 04.17

WAFER BALL VALVES
MWS1 and MWi1

DESCRIPTION

The MWS1 and MWi1 series wafer ball valves are compact isolating valves designed for on/off applications with steam, condensate and other gases and liquids compatible with the construction.

MAIN FEATURES

Compact and lightweight flangeless design.
Easily installed and repaired.
Full bore floating ball design.
Bidirectional.
Blow-out proof stem design.
Antistatic device.
ISO 5211 mounting.

OPTIONS: Different sealing materials.
Stem extensions.

USE: Steam, gases and liquids compatible with the construction.

AVAILABLE MODELS: MWS1 – carbon steel.
MWi1 – stainless steel.

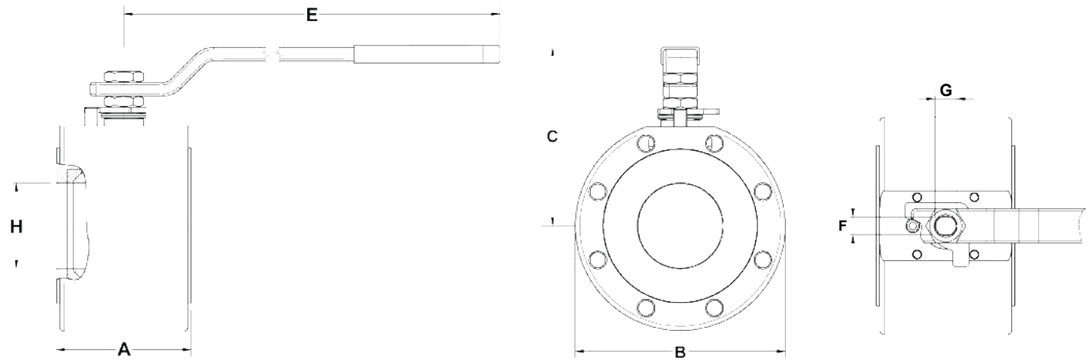
SIZES: DN 15 to DN 150.

CONNECTIONS: Flanged EN 1092-1 PN 16.

INSTALLATION: See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
DN 15 to DN 50	SEP
DN 65 to DN 150	1 (CE marked)

BODY LIMITING CONDITIONS		
MWS1	**MWi1**	**RELATED TEMPERATURE**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	16 bar	-10 / 60 ºC
14,8 bar	15 bar	100 ºC
14 bar	13,7 bar	150 ºC
7 bar	7 bar	220 ºC

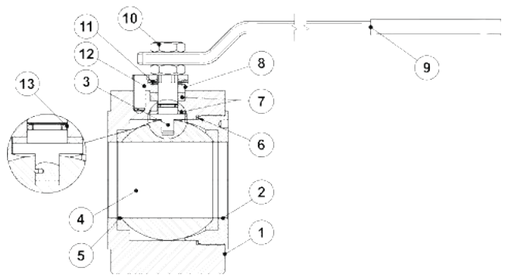


DIMENSIONS (mm)									
SIZE	**A**	**B**	**C**	**E**	**F**	**G**	**H**	**ISO 5211**	**WEIGHT (kg)**
DN 15	35	88	78	150	–	–	14	NA	1,5
DN 20	42	98	87	185	7,5	M12	19	F04	2
DN 25	46	108	91	185	7,5	M12	25	F04	2,7
DN 32	55	128	106	280	9	M14	32	F05	3,8
DN 40	66	138	111	280	9	M14	38	F05	6,5
DN 50	72	148	120	280	9	M14	48	F05	8
DN 65	98	168	157	380	14	M22	65	F07	15
DN 80	120	188	161	380	14	M22	76	F07	20
DN 100	140	220	181	480	18	M30	95	F07	30
DN 125	177	250	205	480	18	M30	119	F10	47
DN 150	210	280	220	480	18	M30	145	F10	69

NA – Not available.

MATERIALS			
POS. Nº	**DESIGNATION**	**MWS1**	**MWi1**
1	Body	A105 / 1.0432	AISI 316 / 1.4401
2	Body cap	A105 / 1.0432	AISI 316 / 1.4401
3	Stem	AISI 316 / 1.4401	AISI 316 / 1.4401
4	Ball	AISI 304 / 1.4301	AISI 316 / 1.4401
5	* Seat	PTFE/GR	PTFE/GR
6	* Body gasket	PTFE/GR	PTFE/GR
7	* Stem gasket	PTFE/GR	PTFE/GR
8	Gland	AISI 304 / 1.4301	AISI 316 / 1.4401
9	Lever	Zinc plated steel	Zinc plated steel
10	Gland nut	Zinc plated steel	Zinc plated steel
11	Washer springs	Spring steel	Spring steel
12	Stop pin	Zinc plated steel	Zinc plated steel
13	Stem o-ring	Viton	Viton

* Available spare parts



VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS MWS1.10 E 12.14

SPRING RETURN HANDLE
SRH

DESCRIPTION

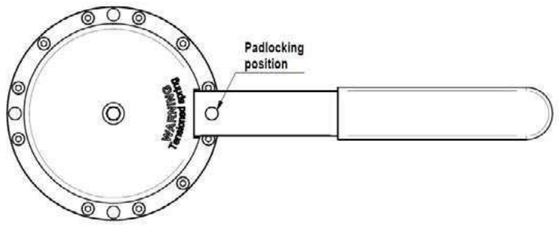
The SRH consists in a spring box which, when assembled, switches the ball valve to a safe position (closed or open), as soon as the operator releases its handle.

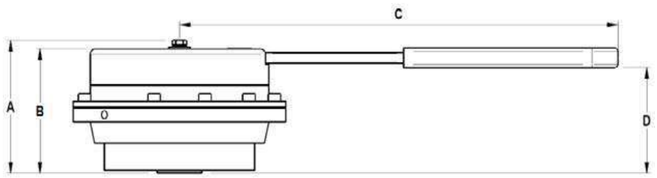
MAIN FEATURES

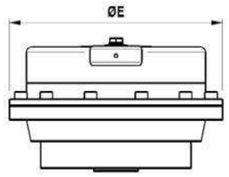
Clockwise spring action.
Lockable as standard.
Weatherproof sealed spring housing.
Sealed to IP 65.

OPTIONS:	Counter clockwise spring action. Padlock.
USE:	Failsafe operation for quarter turn manual valves.
AVAILABLE MODELS:	SRH1 – Stainless steel AISI 304.
CONNECTIONS:	ISO standard drive and mountings.

“Dead-man” lever ball valve.







DIMENSIONS (mm)						
MODEL	**A**	**B**	**C**	**D**	**E**	**WGT. (kg)**
SRH1/24	74	69	248	57	119	2,5
SRH1/40	74	69	248	57	119	2,5

SPRING RETURN HANDLES TORQUES		
MODEL	**MOUNT. TYPES**	**TORQUE (Nm)**
SRH1/24	F03 ; F05 ; F07	24
SRH1/40	F03 ; F05 ; F07	40

We reserve the right to change the design and material of this product without notice.

STAINLESS STEEL NEEDLE VALVES
NV400

DESCRIPTION

The NV400 is a series of high pressure needle valves designed for shut-off applications with steam and other industrial fluids.
The NV400B is a special version designed for use as a boiler water sample valve when connected to the bottom sample connection on a VPC TDS blowdown control valve.

NV400H

MAIN FEATURES

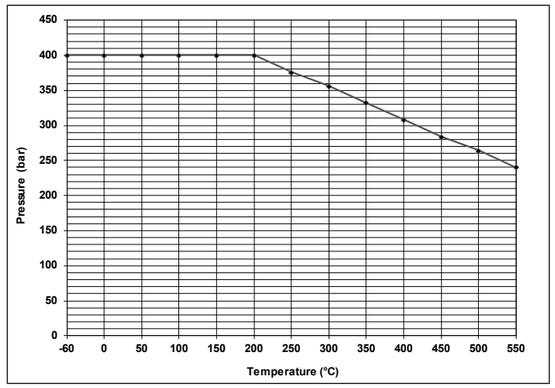
Complete stainless steel construction.
High quality graphite packing.

OPTIONS:	Version for oxygen service.
USE:	Saturated steam, water, compressed air and other fluids compatible with the construction.
AVAILABLE MODELS:	NV400H; NV400B.
SIZES:	1/4” to 1/2”.
CONNECTIONS:	NV400H – Female threaded ISO 228. NV400B – Inlet: Female threaded ISO 228. Outlet: Comp. fitting 8S (M16 x 1,5).
INSTALLATION:	In any position.

Remarks:
Other sizes, materials and connections available on request.

NV400B

BODY LIMITING CONDITIONS



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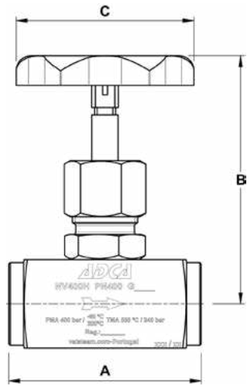
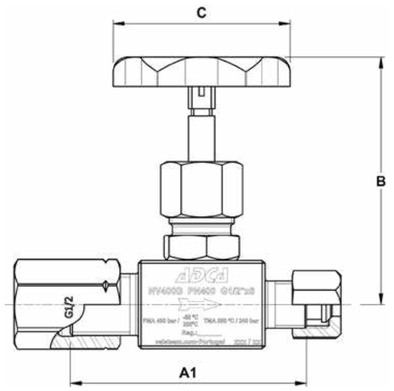




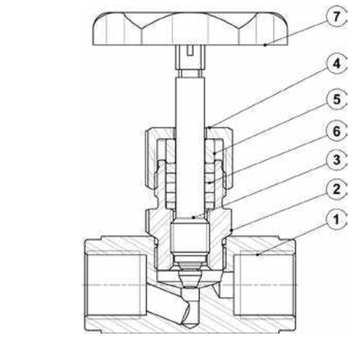
DIMENSIONS (mm) – NV400H					
SIZE	**A**	**B**	**C**	**ORIFICE**	**WEIGHT (kg)**
1/4”	55	82	70	6	0,48
3/8”	60	82	70	6	0,49
1/2”	65	82	70	6	0,49

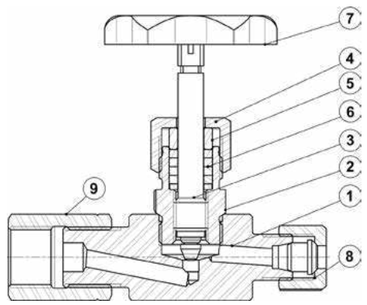
DIMENSIONS (mm) – NV400B					
SIZE	**A1**	**B**	**C**	**ORIFICE**	**WEIGHT (kg)**
1/2”	80	82	70	6	0,63

FLOW RATE COEFFICIENTS (m^3/h)			
	SIZES		
	1/4”	**3/4”**	**1/2”**
Kvs	0,56		

For conversion Kvs = Cv (US) x 0,855.

MATERIALS		
POS.	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316 Ti / 1.4571
2	Bonnet	AISI 316 Ti / 1.4571
3	Stem	AISI 316 Ti / 1.4571
4	Packing nut	AISI 316 Ti / 1.4571
5	Packing gland	AISI 316 Ti / 1.4571
6	Packing	Graphite
7	Handwheel	Metallic
8	Compression fitting	AISI 316 Ti / 1.4571
9	Alignment union	AISI 316 Ti / 1.4571





PRESSURE GAUGES
MAN-63

DESCRIPTION

The MAN-63 are reliable general purpose bourdon tube pressure gauges designed for pressure measurement of liquid and gaseous media. These units have a size diameter of 63 mm, range marked in bar and are fully manufactured in stainless steel.

MAIN FEATURES

Compact full stainless steel construction.
Wetted parts in AISI 316Ti / 1.4571.
Designed according to EN 837-1.
Bayonet lock case with blow-out.
Suitable to be filled with glycerine.

USE: Gases and liquids compatible with the construction.

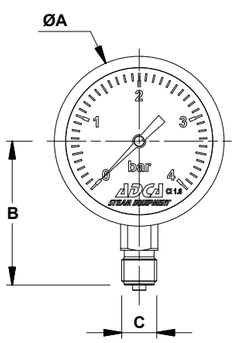
AVAILABLE MODELS: MAN-63R – radial connection.
MAN-63A – axial connection.

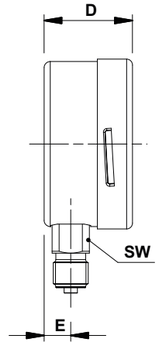
SIZES: 1/4".

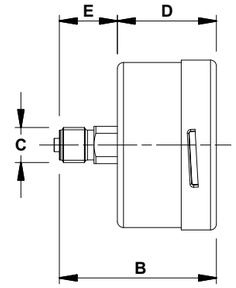
CONNECTIONS: ISO 228.

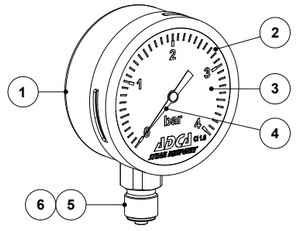
MEASURING RANGES: -1 to 1,5 bar, 0 to 2,5 bar, 0 to 4 bar, 0 to 6 bar, 0 to 10 bar, 0 to 16 bar, 0 to 25 bar and 0 to 40 bar.

LIMITING CONDITIONS	
Accuracy	±1,6% FS
IP rating	IP 65
Maximum allowable pressure	Full scale reading
Maximum operating temperature	100 ºC
Ambient temperature	- 10 ºC to 60 ºC









DIMENSIONS (mm)							
MODEL	**ØA**	**B**	**C**	**D**	**E**	**SW**	**WEIGHT (kg)**
MAN-63R	63,8	54	1/4"	33,2	10	14	0,2
MAN-63A	63,8	59	1/4"	37,2	21,8	14	0,2

MATERIALS					
POS. Nº	**DESIGNATION**	**MATERIAL**	**POS. Nº**	**DESIGNATION**	**MATERIAL**
1	Case and bezel ring	AISI 304 / 1.4301	**4**	Pointer	Black aluminium
2	Window	Glass	**5**	Connection	AISI 316Ti / 1.4571
3	Dial	White aluminium	**6**	Measuring system	AISI 316Ti / 1.4571

PRESSURE GAUGE
MAN-100

DESCRIPTION

The MAN-100 are reliable and cost-effective, general purpose bourdon tube pressure gauges designed for pressure measurement of liquid and gaseous media. They have a nominal size diameter of 100mm, units marked in bar and their casing is fully manufactured from stainless steel.

MAIN FEATURES

Accuracy: 1% of full scale value.
Designed according to EN 837-1.
Bottom connection.

OPTIONS: Backside centric connection.
Complete stainless steel construction.

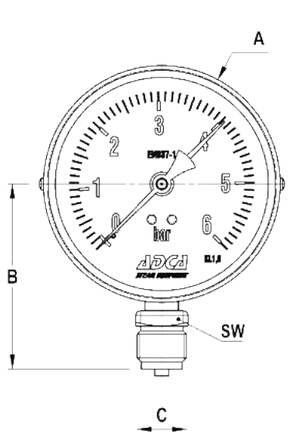
USE: Non-viscous and non-crystallizing liquids and gases compatible with copper alloy.

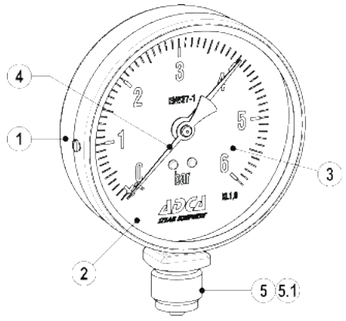
AVAILABLE MODELS: MAN-100.

CONNECTIONS: ISO 228 G 1/2".

MEASURING RANGES: 0 – 2,5 bar; 0 – 4 bar; 0 – 6 bar; 0 – 10 bar; 0 – 16 bar; 0 – 25 bar; 0 – 40 bar.

LIMITING CONDITIONS	
Maximum allowable pressure	Full scale reading
Maximum operating temperature	110 ºC
Ambient temperature	- 10 ºC to 60 ºC





DIMENSIONS (mm)							
SIZE	Ø A	B	C	D	E	SW	WGT. (kg)
1/2"	100	78	1/2"	31	10,5	22	0,34

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Case and bezel ring	AISI 304 / 1.4301
2	Window	Glass
3	Dial	White aluminium
4	Pointer	Black aluminium
5	Connection	Brass
5.1	Measuring system	Copper alloy

GAUGE VALVES
GC400

DESCRIPTION

The GC400 gauge valves were designed for mounting of instruments such as pressure gauges, transmitters and switches. Throttling of the valve protects the connected instrument against pressure spikes. Complete valve shut-off and pressure release through the integrated vent plug allows safe instrument removal for replacement or calibration procedures.

GC400

MAIN FEATURES

Integrated vent plug.
Designed and tested according to DIN 16270.

OPTIONS: Version for oxygen service.

USE: Saturated steam, water, compressed air and other fluids compatible with the construction.

AVAILABLE MODELS: GC400 – carbon steel.
GC400I – stainless steel.

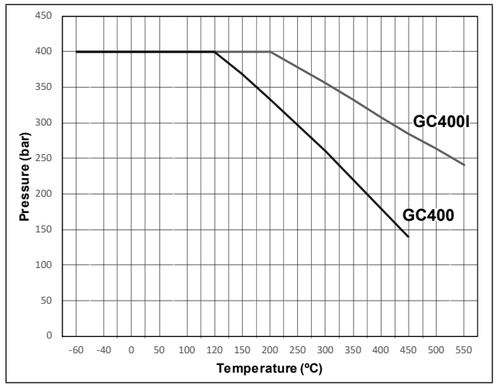
CONNECTIONS: ISO 228 G 1/2" (male x female).

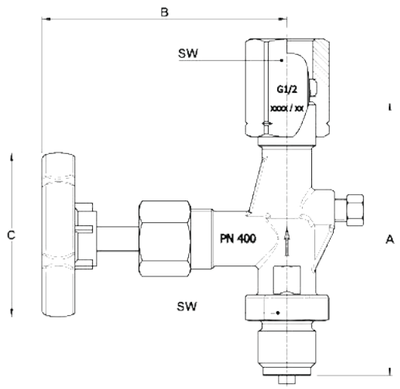
INSTALLATION: Any position.

Remarks:
Other sizes, materials and connections available on request.

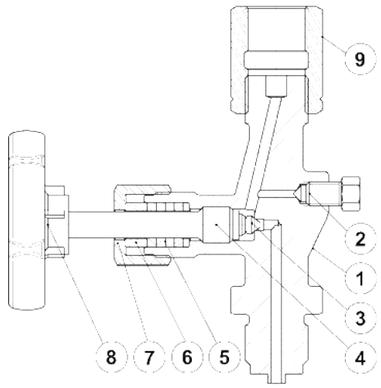
GC400I

BODY LIMITING CONDITIONS





DIMENSIONS (mm)					
SIZE	**A**	**B**	**C**	**SW**	**WEIGHT (kg)**
1/2" x 1/2"	100	90	63	27	0,54



MATERIALS			
POS. Nº	**DESIGNATION**	**GC400**	**GC400I**
1	Body	P250GH / 1.0460	AISI 316 Ti / 1.4571
2	Vent plug	AISI 316 Ti / 1.4571	AISI 316 Ti / 1.4571
3	Valve	AISI 420C / 1.4034	AISI 316 Ti / 1.4571
4	Stem	X14CrMoS17 / 1.4104	AISI 316 Ti / 1.4571
5	Packing	Graphite	Graphite
6	Packing gland	11SMnPb30 / 1.0718	AISI 316 Ti / 1.4571
7	Packing nut	11SMnPb30 / 1.0718	AISI 316 Ti / 1.4571
8	Handwheel	Plastic	Plastic
9	Compression fitting	11SMnPb30 / 1.0718	AISI 316 Ti / 1.4571

GAUGE SIPHONS
GSC - GSU

DESCRIPTION

The GS series pressure gauge siphons were designed to protect pressure gauges from the effects of sudden pressure surges and hot pressurized fluids.
They operate as cooling elements for liquids and gases in pressure measuring devices.
An isolation pressure gauge cock is recommended to be installed in combination with gauge siphons.

GSC

MAIN FEATURES

Complete stainless steel construction.

OPTIONS: Different types of connections.

USE: Pressure gauge protection on steam, water, compressed air and other fluid systems compatible with the construction.

AVAILABLE MODELS: GSC-40; GSU-40 ; GSUL-40.

SIZES: G1/2" (male x female).

CONNECTIONS: ISO 228-1.

INSTALLATION: GSC – vertical; GSU – horizontal.

LIMITING CONDITIONS: 40 bar at 300 ºC; 110 bar at 110 ºC.

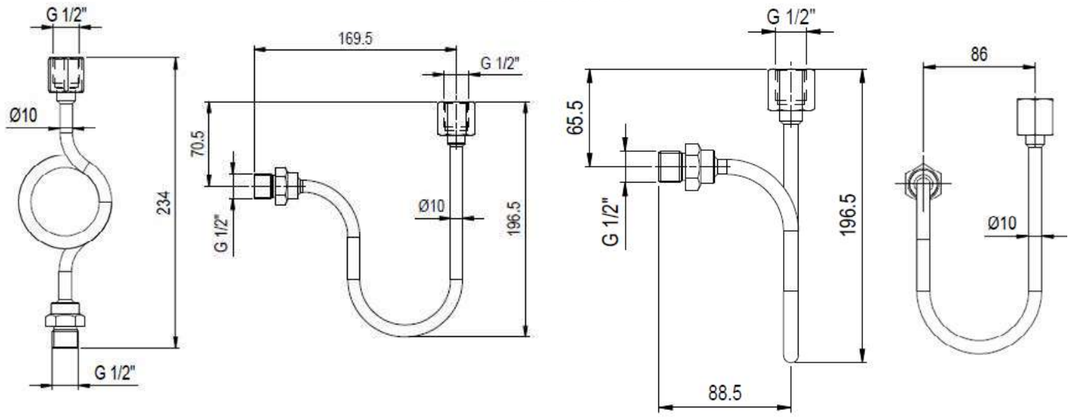
WEIGHT: 0,34 kg.

MATERIALS: Coil – AISI 316L / 1.4404.
Connections – AISI 304 / 1.4301.

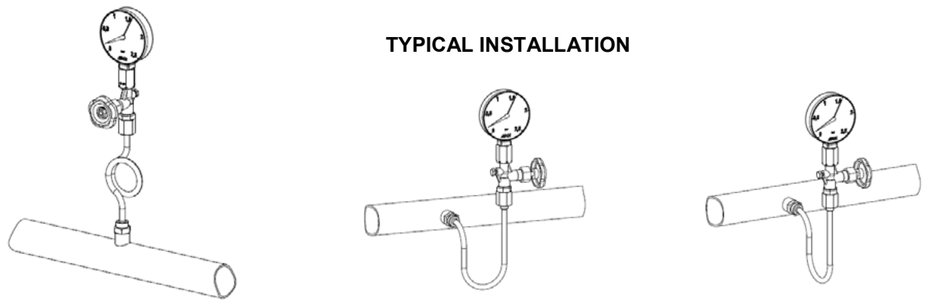
GSU

GSUL

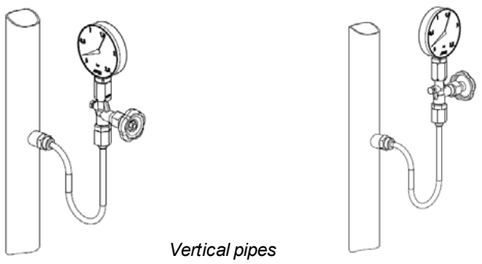
DIMENSIONS



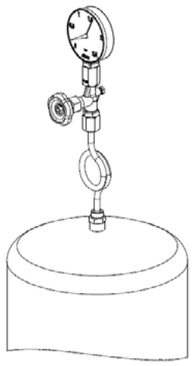
TYPICAL INSTALLATION



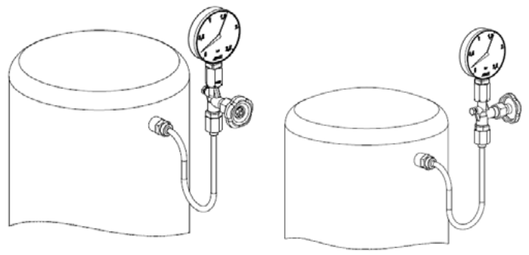
Horizontal pipes



Vertical pipes



Top of vessel



Side of vessel

We reserve the right to change the design and material of this product without notice.

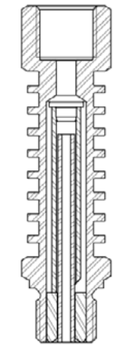
GAUGE SIPHONS
GSV

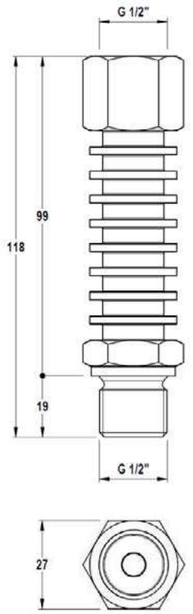
DESCRIPTION

The GSV series pressure gauge siphons have been designed to protect pressure gauges from the effect of rapid pressure surges and hot pressure fluids.
Specifically designed to replace the traditional “pigtail” and other coil design siphons where it is necessary to eliminate gauge whip and vibration. They operate as cooling elements for liquids and gases in pressure measuring devices.
An isolation pressure gauge cock is recommended to be installed in combination with gauge siphons.

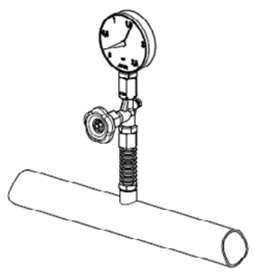
MAIN FEATURES
Complete stainless steel construction.
Compact sturdy design, requires minimum space for installation.

OPTIONS:	Different types of connections.
USE:	Pressure gauge protection on steam, water, compressed air and other fluid systems compatible with the construction.
AVAILABLE MODELS:	GSV.
SIZES:	G1/2” (male x female).
CONNECTIONS:	ISO 228-1.
INSTALLATION:	Vertical.
LIMITINNG CONDITIONS:	63 bar at 400 ºC; 100 bar at 120 ºC.
WEIGHT:	0,42 kg.
MATERIALS:	AISI 316L / 1.4404.

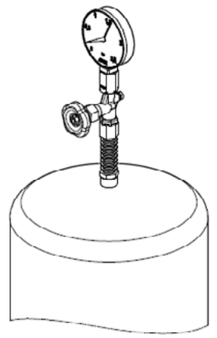




TYPICAL INSTALLATION



Horizontal pipe



Top of vessel

We reserve the right to change the design and material of this product without notice.

LEVEL GAUGE VALVES
LGC400

DESCRIPTION

The LGC stainless steel level gauge valves are specially conceived to supervise the functioning and visualize the liquid level in pressure operated pumps, reservoirs and other equipment.
These valves are designed to be used with tubular glass, which can be supplied with the units.

MAIN FEATURES

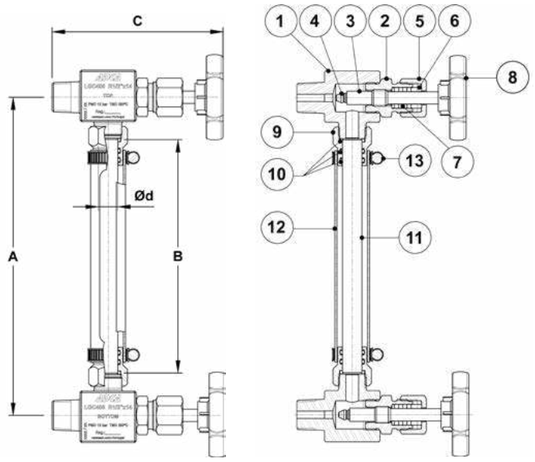
Stainless steel construction.
Simple and cost-effective design.
PTFE packing.

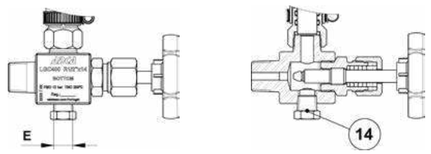
OPTIONS: Fitted with glass and protection guard.
1/4” bottom drain connection.

AVAILABLE MODELS: LGC400 – stainless steel.

SIZES: 1/2” x 14 mm.

CONNECTIONS: Male threaded ISO 7 R.





Optional bottom drain connection

LIMITING CONDITIONS	
Maximum operating pressure	12 bar
Maximum operating temperature	200 ºC

DIMENSIONS (mm)						
SIZE	**A**	**B**	**C**	**d**	**E**	**WEIGHT (kg)**
1/2” x 14	*	**	122	14	1/4” ***	****

* Dimension to be provided by customer.
** Dimension B is obtained by subtracting 61 mm to dimension A.
*** Female threaded NPT.
**** Weight to be determined according to dimensions A and B.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316 Ti / 1.4571
2	Bonnet	AISI 316 Ti / 1.4571
3	Stem	AISI 316 Ti / 1.4571
4	Plug	AISI 316 Ti / 1.4571
5	Packing nut	AISI 316 Ti / 1.4571
6	Packing gland	AISI 316 Ti / 1.4571
7	Packing set	PTFE
8	Handwheel	PP GF30
9	Glass guide	AISI 316 / 1.4401
10	O-rings	Viton
11	Glass	Borosilicate
12	Glass protection guard	AISI 304 / 1.4301
13	Hose clamp	Zinc plated steel
14	Plug	AISI 316 Ti / 1.4571

* Available spare parts.

Special Equipment

5 - Special equipment

Pumps .....
Electric condensate recovery unit and systems .....
Humidity separators .....
Sample coolers .....
Direct steam humidifiers .....
Steam injectors .....
Steam/water mixers .....
Exhaust heads .....
Flash vessels .....
Air and dirt separators .....
Heat exchangers .....
Packaged water heating units .....
Flash steam heat recovery units .....
Blowdown expansion and cooling units .....
Lifting pots .....
Hot condensate coolers .....
Boiler feed tanks .....
Deaerators .....
Flash condensing heads .....
Steam distributions manifolds .....

PRESSURE OPERATED PUMP
POP-LC

The ADCAMat POP-LC low capacity pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure.
Under certain conditions, it can drain a closed vessel under vacuum or pressure.The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel or stainless steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Compact design.
Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.
Pump mechanism with 360º rotation (limited to flange bolt holes).

OPTIONS: Level gauge.
Stroke counter.

USE: To lift steam condensate and other liquids compatible with the construction.

AVAILABLE MODELS: POP-LCS – carbon steel.
POP-LCSS – stainless steel.

SIZES: 1" x 1", 11/2" x 1", 11/2" x 11/2".
DN 25 x 25, DN 40 x 25 and DN 40 x 40.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam, compressed air, nitrogen and other gases.

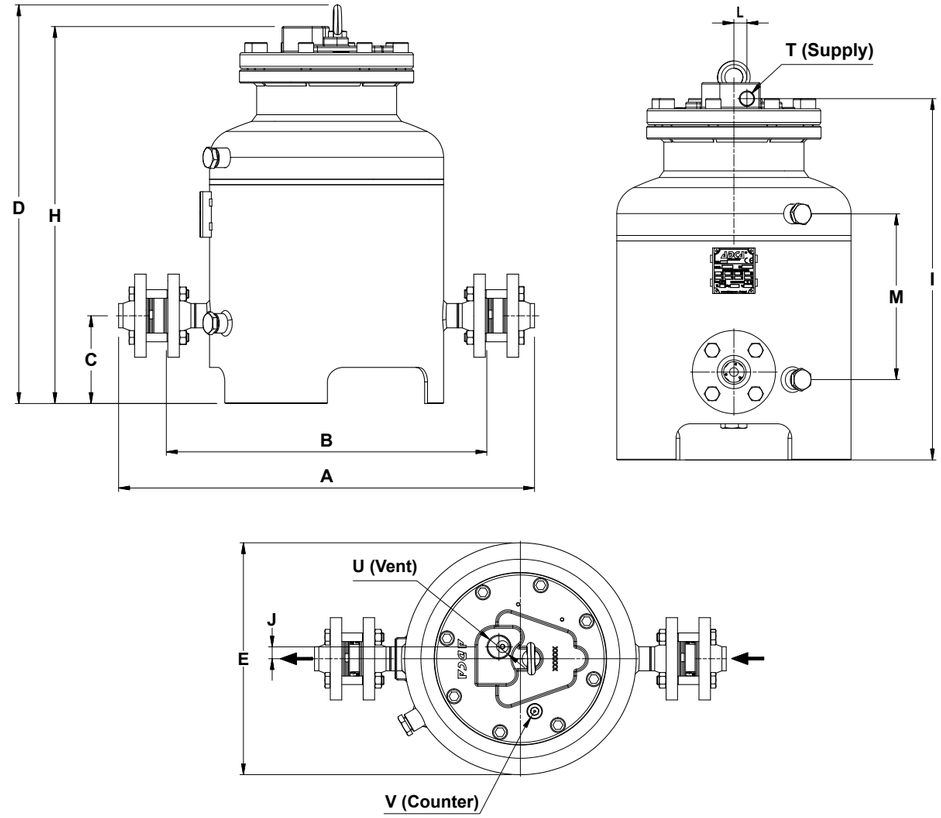
BODY LIMITING CONDITIONS *					
POP-LCS			POP-LCSS		
	ALLOW. PRESS.	RELAT. TEMP.		ALLOW. PRESS.	RELAT. TEMP.
PN 16	16 bar	50 ºC	PN 16	16 bar	50 ºC
	14 bar	100 ºC		15 bar	100 ºC
	13 bar	195 ºC		12,7 bar	200 ºC
	12 bar	250 ºC		12 bar	250 ºC
CLASS 150	16 bar	50 ºC	CLASS 150	15,3 bar	50 ºC
	14 bar	100 ºC		13,3 bar	100 ºC
	13 bar	195 ºC		11,1 bar	200 ºC
	12 bar	250 ºC		10,2 bar	250 ºC

* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
All sizes	2 (CE marked)

We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	0,5 bar
Maximum operating temperature	185 ºC
Minimum operating temperature *	0 ºC
Pump discharge per cycle	11,2 L



DIMENSIONS (mm)															
SIZE	A *	B *	C	D	E	H	I	J	L	M	T **	U **	V **	WGT. (kg)	VOL. (L)
1" x 1" DN 25 x 25	578	444	122	552	323	522	500	17	18	229	1/2"	1"	1/2"	60	25,7
11/2" x 1" DN 40 x 25	597	449	122	552	323	522	500	17	18	229	1/2"	1"	1/2"	60	25,7
11/2" x 11/2" DN 40 x 40	615	454	122	552	323	522	500	17	18	229	1/2"	1"	1/2"	61	25,7

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

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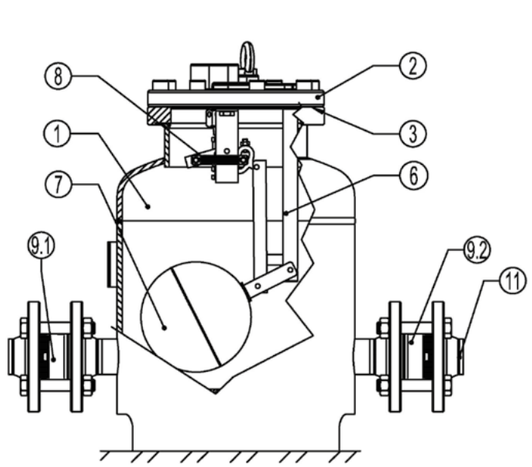
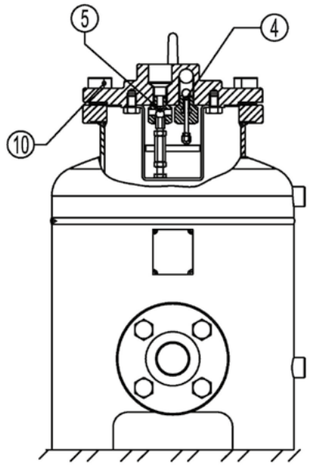




MATERIALS			
POS. Nº	**DESIGNATION**	**POP-LCS**	**POP-LCSS**
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038	AISI 316 / 1.4401; AISI 316L / 1.4404
2	Cover	GJS-400-15 / 0.7040	CF8M / 1.4408
3	* Cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel	Stainless steel
6	Internal mechanism	Stainless steel	Stainless steel
7	* Float	Stainless steel	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel	Inconel
9.1	* Outlet check valve	CF8M / 1.4408	CF8M / 1.4408
9.2	* Inlet check valve	CF8M / 1.4408	CF8M / 1.4408
10	Bolts	Steel 8.8	Stainless steel A2-70
11	Counter flanges	P250GH / 1.0460	AISI 316 / 1.4401

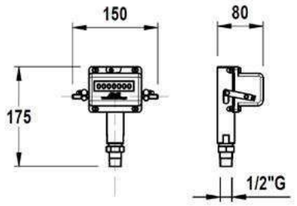
* Available spare parts.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

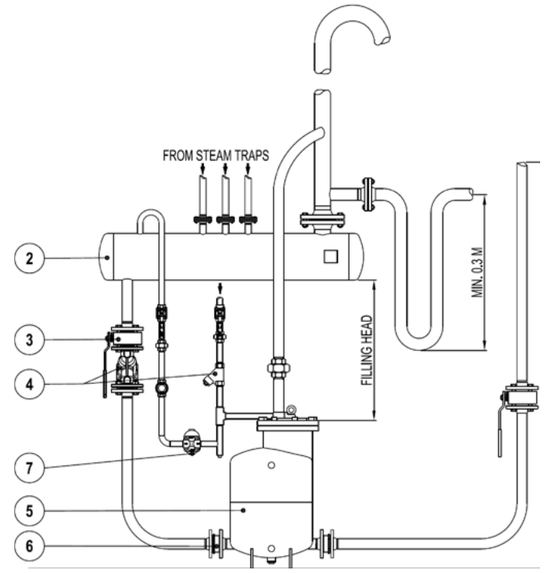


Fig. 1

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
2	Receiver	**5**	Pump
3	Ball valve	**6**	Disc check valve
4	Y strainer	**7**	Steam trap

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpressure vs Motive pressure (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
1" x 1" DN 25 x 25	0,7	1	1,2	1,35
11/2" x 1" DN 40 x 25	0,7	1	1,2	1,35
11/2" x 1/12" DN 40 x 40	0,7	1	1,2	1,35

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER			
PUMP SIZE	**1" x 1" DN 25 x 25**	**11/2" x 1" DN 40 x 25**	**11/2" x 11/2" DN 40 x 40**
Pipe size with 1 m lenght	6"		

Table 3

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER			
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**1" x 1" DN 25 x 25**	**11/2" x 1" and 11/2" x 11/2" DN 40 x 25 and DN 40 x 40**
1	0,35	820	1260
2		1050	1540
3		1100	1750
4		1150	1860
5		1210	1970
6		1250	2160
8		1290	2180
10		1300	2195
2	1	800	1200
3		940	1430
4		1080	1590
5		1110	1660
6		1140	1730
8		1180	1820
10		1200	1880
3	2	790	1100
4		900	1520
5		1000	1580
6		1140	1690
8		1200	1785
10		1220	1820
4	3	750	1000
5		860	1310
6		910	1450
8		970	1540
10		980	1580
5	4	730	960
6		840	1310
8		920	1410
10		940	1500
6	5	710	890
8		770	1040
10		880	1150
7	6	730	840
8		790	980
10		880	1090

Table 4 (based on liquid specific gravity of 0,9 to 1,0)

Example

Condensate load	950 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	8 bar
Vertical lift after pump	10 m
Return piping pressure	1,2 bar
Piping friction pressure drop	Negligible

Filling head correction:
With 150 mm filling head the correction factor from Table 2 is 0,7. The corrected capacity is thus 1540 kg/h x 0,7 = 1078 kg/h.

Calculations:
Total backpressure: 1,2 bar + (10 m x 0,0981) = 2,181 bar.
Assuming steam as motive medium at a pressure of 8 bar and a total backpressure of 3 bar, then according to Table 4 a DN 40 pump, with a capacity of 1540 kg/h, is the recommended size.

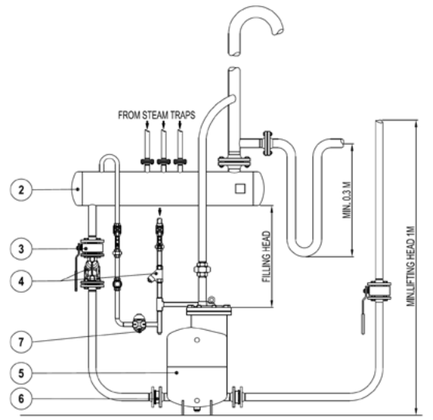
Correction for air as a motive medium:
The % backpressure is 2,181 bar / 8 bar = 27%.
The correction factor from Table 1 is 1,08.
The corrected capacity is thus 1078 kg/h x 1,08 = 1164,2 kg/h, and so, a DN 40 pump is still the recommended size.

TYPICAL APPLICATIONS

CONDENSATE RECOVERY IN A OPEN LOOP SYSTEM

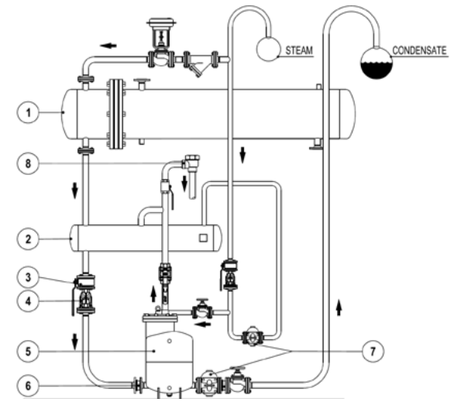
The pump transfers high temperature condensate without cavitation problems.
The vent line must be unrestricted and self draining to the receiver.

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
1	Heat exchanger	**5**	Pump
2	Receiver	**6**	Disc check valve
3	Ball valve	**7**	Steam trap
4	Y strainer	**8**	Air vent



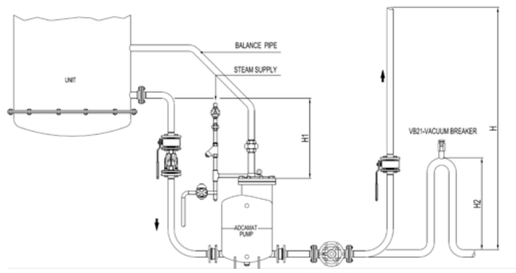
REMOVAL OF CONDENSATE UNDER PRESSURE WITH PUMP AND STEAM TRAP COMBINATION

The pump is installed in a closed loop with its vent connected to a pressurized reciever.
When steam pressure is sufficient to overcome backpressure, the steam trap operates. As soon as, e.g., the equipment's control valve starts to modulate, the steam pressure will decrease (even vacuum can occur). The lower differential pressure decreases the steam trap ability to discharge, causing the condensate level to rise inside the body of the pump. Once the pump float reaches its higher position, the intake valve opens and steam replaces the necessary positive pressure to pump out the condensate.



DRAINAGE OF A SINGLE UNIT UNDER VACUUM

This configuration works with units operating with a minimum absolute pressure of 0,2 bar.
For proper operation the filling head (H1) must range between 1 and 2 meters. The lift (H) must be as minimum as possible, but never less than 1 meter, otherwise a siphon with hight (H2) is required.
Steam must be used as motive medium, and its maximum pressure should not exceed 3 bar.



PRESSURE OPERATED PUMP
POP
(1" x 1" to 3" x 2" – DN 25 x 25 to DN 80 x 50)

DESCRIPTION

The ADCAMat POP pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure. Under certain conditions, it can drain a closed vessel under vacuum or pressure. The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel or stainless steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.

OPTIONS: Level gauge.
Stroke counters.

USE: To lift steam condensate and other liquids compatible with the construction.

AVAILABLE MODELS: POPS – carbon steel.
POPSS – stainless steel.

SIZES: 1" x 1", 11/2" x 11/2", 2" x 2" and 3" x 2".
DN 25 x 25, DN 40 x 40, DN 50 x 50 and DN 80 x 50.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

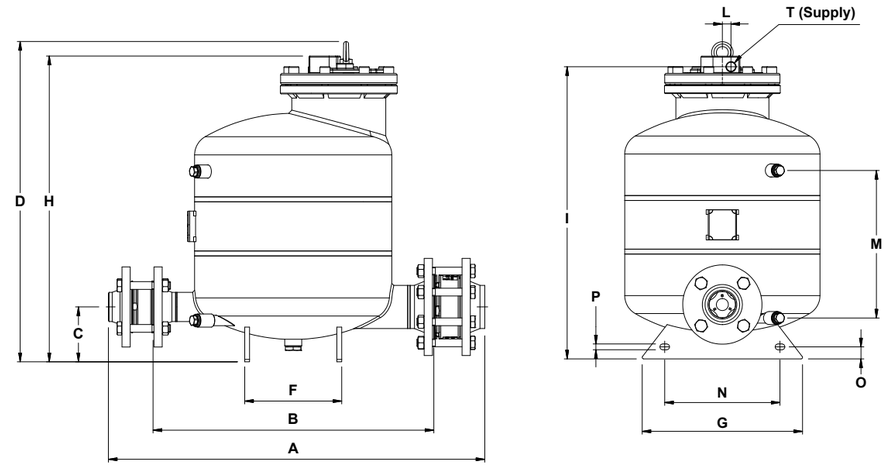
MOTIVE MEDIUM: Saturated steam, compressed air, nitrogen and other gases.

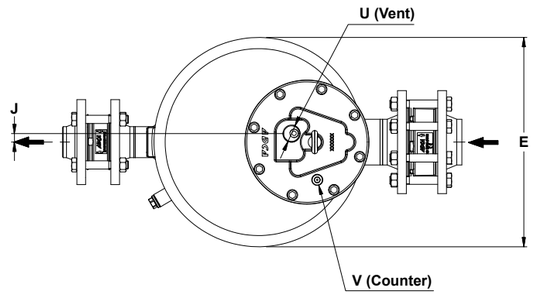
BODY LIMITING CONDITIONS *					
POPS			POPSS		
	ALLOW. PRESS.	RELAT. TEMP.		ALLOW. PRESS.	RELAT. TEMP.
PN 16	16 bar	50 ºC	PN 16	16 bar	50 ºC
	14 bar	100 ºC		15 bar	100 ºC
	13 bar	195 ºC		12,7 bar	200 ºC
	12 bar	250 ºC		12 bar	250 ºC
CLASS 150	16 bar	50 ºC	CLASS 150	15,3 bar	50 ºC
	14 bar	100 ºC		13,3 bar	100 ºC
	13 bar	195 ºC		11,1 bar	200 ºC
	12 bar	250 ºC		10,2 bar	250 ºC

* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
All sizes	2 (CE marked)

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	0,5 bar
Maximum operating temperature	185 ºC
Minimum operating temperature	0 ºC
Pump discharge per cycle	16 L
Pump discharge per cycle (3" x 2" – DN 80 x 50)	25 L





DIMENSIONS (mm)																			
SIZE	A *	B *	C	D	E	F	G	H	I	J	L	M	N	O	P	T **	U **	V **	WGT. (kg)	VOL. (L)
1" x 1" DN 25 x 25	578	444	100	640	323	160	244	617	598	17	18	327	150	25	12	1/2"	1"	1/2"	71	31,7
11/2" x 11/2" DN 40 x 40	615	454	100	640	323	160	244	617	598	17	18	327	150	25	12	1/2"	1"	1/2"	72,8	31.8
2" x 2" DN 50 x 50	644	460	100	640	323	160	244	617	598	17	18	327	150	25	12	1/2"	1"	1/2"	74,5	31,9
3" x 2" DN 80 x 50	776	580	113	650	406	200	334	627	608	17	18	307	240	25	12	1/2"	1"	1/2"	78,5	48,9

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

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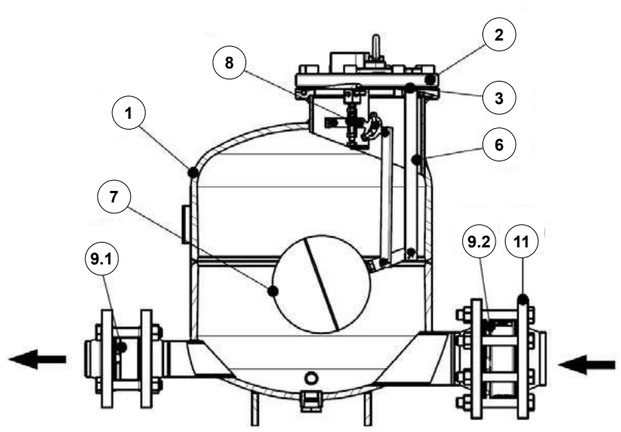
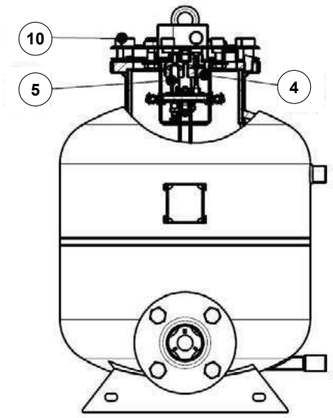




MATERIALS			
POS. Nº	**DESIGNATION**	**POPS**	**POPSS**
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038	AISI 316 / 1.4401; AISI 304 / 1.4301
2	Cover	GJS-400-15 / 0.7040; A216 WCB / 1.0619	A351 CF8M / 1.4408
3	* Cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel	Stainless steel
6	Internal mechanism	Stainless steel	Stainless steel
7	* Float	Stainless steel	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel	Inconel
9.1	* Outlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
9.2	* Inlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
10	Bolts	Steel 8.8	Stainless steel A2-70
11	Counter flanges	P250GH / 1.0460	AISI 316 / 1.4401

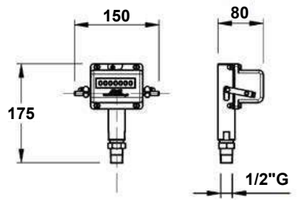
* Available spare parts.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

We reserve the right to change the design and material of this product without notice.

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

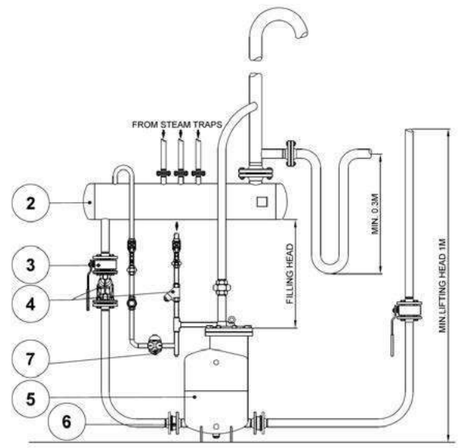


Fig. 1

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
2	Receiver	**5**	Pump
3	Ball valve	**6**	Disc check valve
4	Y strainer	**7**	Steam trap

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpressure vs Motive pressure (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
1" x 1" DN 25 x 25	0,7	1	1,2	1,35
11/2" x 11/2" DN 40 x 40	0,7	1	1,2	1,35
2" x 2" DN 50 x 50	0,7	1	1,2	1,35
3" x 2" DN 80 x 50	0,9	1	1,08	1,2

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER				
PUMP SIZE	**1" x 1" DN 25 x 25**	**11/2" x 11/2" DN 40 x 40**	**2" x 2" DN 50 x 50**	**3" x 2" DN 80 x 50**
Pipe size with 1 m lenght	6"	6"	8"	10"

Table 3

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IS 9.101 E 08.19

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER					
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**1" x 1" DN 25 x 25**	**11/2" x 11/2" DN 40 x 40**	**2" x 2" DN 50 x 50**	**3" x 2" DN 80 x 50**
1	0,35	840	1490	2320	4480
2		1030	1520	3160	5240
3		1140	1640	3560	5640
4		1180	1680	3840	5840
5		1240	1740	3910	5900
6		1270	1760	3940	5980
8		1300	2200	3990	6030
10		1310	2205	4000	6080
2	1	805	1560	2550	4080
3		940	1790	2990	4720
4		1080	1930	3160	5080
5		1110	2010	3200	5280
6		1140	2090	3250	5400
8		1180	2190	3280	5490
10		1190	2200	3320	5560
3	2	780	1495	2470	3510
4		900	1690	2620	3950
5		1000	1820	2830	4230
6		1040	1910	2860	4740
8		1100	2010	2880	4880
10		1110	2060	2900	4960
4	3	740	1400	2360	3480
5		860	1545	2540	3640
6		910	1675	2560	3720
8		970	1805	2590	4050
10		980	1850	2650	4110
5	4	720	1335	2280	2690
6		820	1480	2460	2860
8		910	1675	2500	3190
10		930	1760	2540	3380
6	5	680	1290	2080	2520
8		740	1530	2180	2740
10		810	1630	2220	2860
7	6	660	1230	1880	1940
8		730	1370	1940	2240
10		820	1490	2150	2360

Table 4 (based on liquid specific gravity of 0,9 to 1,0)

Example

Condensate load	1800 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	8 bar
Vertical lift after pump	6 m
Return piping pressure	1,5 bar
Piping friction pressure drop	Negligible

Filling head correction:
With 150 mm filling head the correction factor from Table 2 is 0,7. The corrected capacity is thus 2590 kg/h x 0,7 = 1813 kg/h.

Calculations:
Total backpressure: 1,5 bar + (6 m x 0,0981) = 2,09 bar.
Assuming steam as motive medium at a pressure of 8 bar and a total backpressure of 3 bar, then according to Table 4 a DN 50 x 50 pump, with a capacity of 2590 kg/h, is the recommended size.

Correction for air as a motive medium:
The % backpressure is 2,09 bar / 8 bar = 30%.
The correction factor from Table 1 is 1,08.
The corrected capacity is thus 1813 kg/h x 1,08 = 1958 kg/h, and so, a DN 50 x 50 pump is still the recommended size.

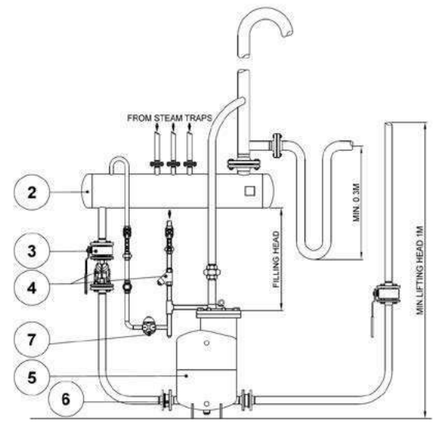
We reserve the right to change the design and material of this product without notice.

TYPICAL APPLICATIONS

CONDENSATE RECOVERY IN A OPEN LOOP SYSTEM

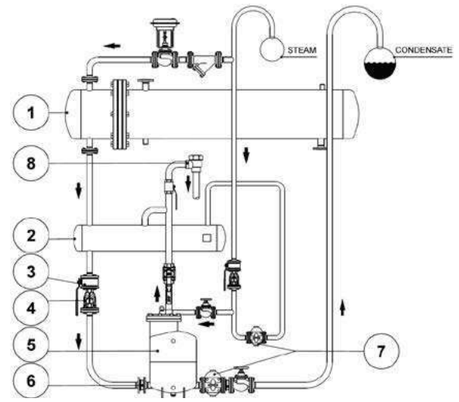
The pump transfers high temperature condensate without cavitation problems.
The vent line must be unrestricted and self draining to the receiver.

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
1	Heat exchanger	**5**	Pump
2	Receiver	**6**	Disc check valve
3	Ball valve	**7**	Steam trap
4	Y strainer	**8**	Air vent



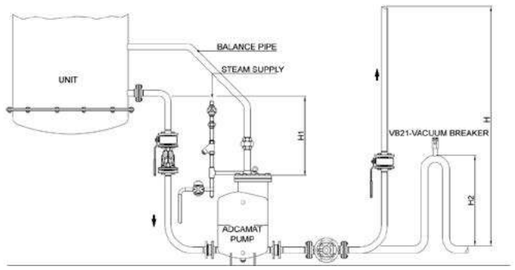
REMOVAL OF CONDENSATE UNDER PRESSURE WITH PUMP AND STEAM TRAP COMBINATION

The pump is installed in a closed loop with its vent connected to a pressurized reciever.
When steam pressure is sufficient to overcome backpressure, the steam trap operates. As soon as, e.g., the equipment's control valve starts to modulate, the steam pressure will decrease (even vacuum can occur). The lower differential pressure decreases the steam trap ability to discharge, causing the condensate level to rise inside the body of the pump. Once the pump float reaches its higher position, the intake valve opens and steam replaces the necessary positive pressure to pump out the condensate.



DRAINAGE OF A SINGLE UNIT UNDER VACUUM

This configuration works with units operating with a minimum absolute pressure of 0,2 bar.
For proper operation the filling head (H1) must range between 1 and 2 meters. The lift (H) must be as minimum as possible, but never less than 1 meter, otherwise a siphon with hight (H2) is required.
Steam must be used as motive medium, and its maximum pressure should not exceed 3 bar.



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PRESSURE OPERATED PUMP
PPO14

DESCRIPTION

The ADCAMat PPO14 pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure.
Under certain conditions, it can drain a closed vessel under vacuum or pressure.
The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel or stainless steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.

OPTIONS: Level gauge.
Stroke counters.

USE: To lift steam condensate and other liquids compatible with the construction.

AVAILABLE MODELS: PPO14S – carbon steel.
PPO14SS – stainless steel.

SIZES: 1" x 1", 11/2" x 11/2" and 2" x 2".
DN 25 x 25, DN 40 x 40 and DN 50 x 50.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam, compressed air, nitrogen and other gases.

BODY LIMITING CONDITIONS *

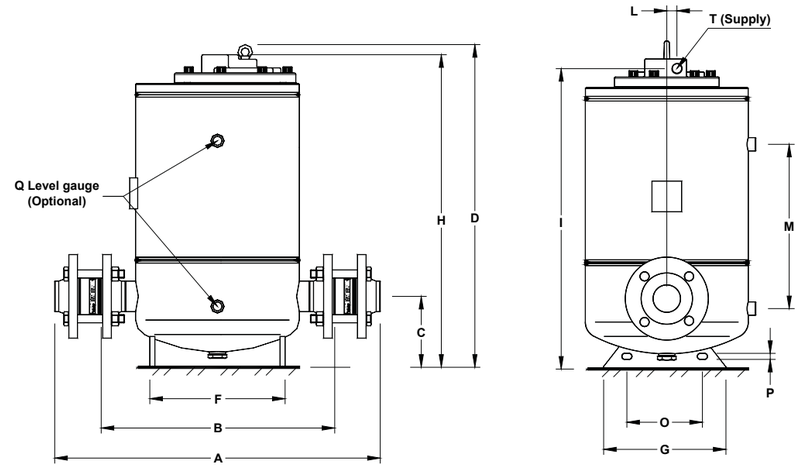
PPO14S			PPO14SS		
	ALLOW. PRESS.	RELAT. TEMP.		ALLOW. PRESS.	RELAT. TEMP.
PN 16	16 bar	50 ºC	PN 16	16 bar	50 ºC
	14 bar	100 ºC		15 bar	100 ºC
	13 bar	195 ºC		12,7 bar	200 ºC
	12 bar	250 ºC		12 bar	250 ºC
CLASS 150	16 bar	50 ºC	CLASS 150	15,3 bar	50 ºC
	14 bar	100 ºC		13,3 bar	100 ºC
	13 bar	195 ºC		11,1 bar	200 ºC
	12 bar	250 ºC		10,2 bar	250 ºC

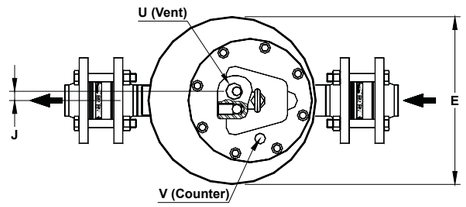
* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	Category
All sizes	2 (CE marked)

We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	0,5 bar
Maximum operating temperature	185 ºC
Minimum operating temperature	0 ºC
Pump discharge per cycle	16 L





DIMENSIONS (mm)

SIZE	A *	B *	C	D	E	F	G	H	I	J	L	M	O	P	Q	T **	U **	V **	WGT. (kg)	VOL. (L)
1" x 1" DN 25 x 25	578	444	140	640	323	268	250	617	598	17	18	327	150	12	1/2"	1/2"	1"	1/2"	75	32,2
11/2" x 11/2" DN 40 x 40	615	454	140	640	323	268	250	617	598	17	18	327	150	12	1/2"	1/2"	1"	1/2"	72	32,3
2" x 2" DN 50 x 50	644	460	140	640	323	268	250	617	598	17	18	327	150	12	1/2"	1/2"	1"	1/2"	66	32,5

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

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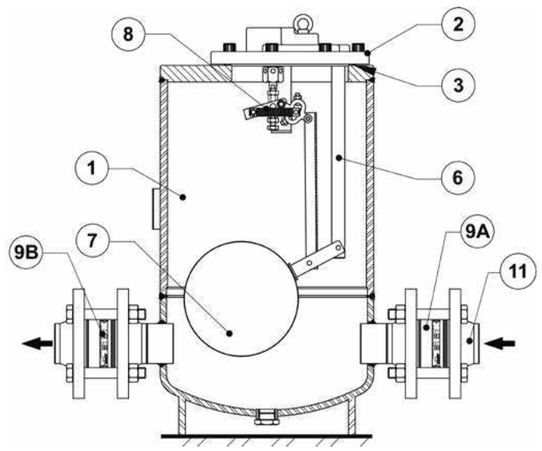
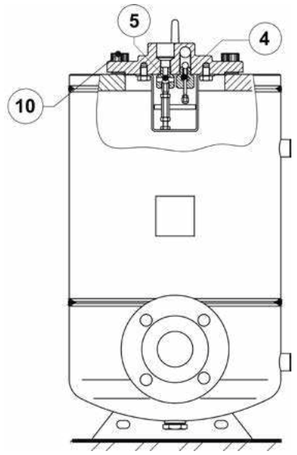




MATERIALS			
POS. Nº	**DESIGNATION**	**PPO14S**	**PPO14SS**
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038	AISI 316 / 1.4401; AISI 304 / 1.4301
2	Cover	GJS-400-15 / 0.7040	AISI 316 / 1.4401; AISI 304 / 1.4301
3	* Cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel	Stainless steel
6	Internal mechanism	Stainless steel	Stainless steel
7	* Float	Stainless steel	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel	Inconel
9.1	* Outlet check valve	CF8M / 1.4408	CF8M / 1.4408
9.2	* Inlet check valve	CF8M / 1.4408	CF8M / 1.4408
10	Bolts	Steel 8.8	Stainless steel A2-70
11	Counter flanges	P250GH / 1.0460	AISI 316 / 1.4401

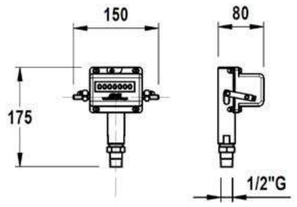
* Available spare parts.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

We reserve the right to change the design and material of this product without notice.

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

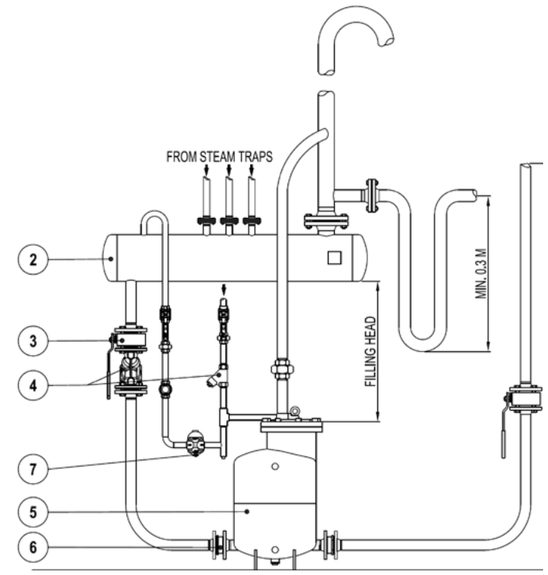


Fig. 1

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
2	Receiver	**5**	Pump
3	Ball valve	**6**	Disc check valve
4	Y strainer	**7**	Steam trap

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpressure vs Motive pressure (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
1" x 1" DN 25 x 25	0,7	1	1,2	1,35
11/2" x 11/2" DN 40 x 40	0,7	1	1,2	1,35
2" x 2" DN 50 x 50	0,7	1	1,2	1,35

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER			
PUMP SIZE	**1" x 1" DN 25 x 25**	**11/2" x 11/2" DN 40 x 40**	**2" x 2" DN 50 x 50**
Pipe size with 1 m lenght	6”	6”	8”

Table 3

VALSTEAM ADCA
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IS 9.102 E 18.09

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER				
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**1" x 1" DN 25 x 25**	**11/2" x 11/2" DN 40 x 40**	**2" x 2" DN 50 x 50**
1	0,35	840	1490	2320
2		1030	1520	3160
3		1140	1640	3560
4		1180	1680	3840
5		1240	1740	3910
6		1270	1760	3940
8		1300	2200	3990
10		1310	2205	4000
2	1	805	1560	2550
3		940	1790	2990
4		1080	1930	3160
5		1110	2010	3200
6		1140	2090	3250
8		1180	2190	3280
10		1190	2200	3320
3	2	780	1495	2470
4		900	1690	2620
5		1000	1820	2830
6		1040	1910	2860
8		1100	2010	2880
10		1110	2060	2900
4	3	740	1400	2360
5		860	1545	2540
6		910	1675	2560
8		970	1805	2590
10		980	1850	2650
5	4	720	1335	2280
6		820	1480	2460
8		910	1675	2500
10		930	1760	2540
6	5	680	1290	2080
8		740	1530	2180
10		810	1630	2220
7	6	660	1230	1880
8		730	1370	1940
10		820	1490	2150

Table 4 (based on liquid specific gravity of 0,9 to 1,0)

Example

Condensate load	1800 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	8 bar
Vertical lift after pump	6 m
Return piping pressure	1,5 bar
Piping friction pressure drop	Negligible

Filling head correction:
With 150 mm filling head the correction factor from Table 2 is 0,7. The corrected capacity is thus 2590 kg/h x 0,7 = 1813 kg/h.

Calculations:
Total backpressure: 1,5 bar + (6 m x 0,0981) = 2,09 bar.
Assuming steam as motive medium at a pressure of 8 bar and a total backpressure of 3 bar, then according to Table 4 a DN 50 x 50 pump, with a capacity of 2590 kg/h, is the recommended size.

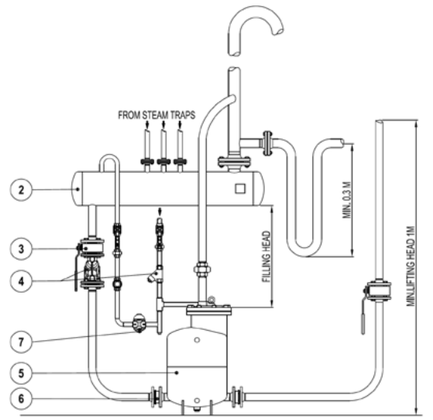
Correction for air as a motive medium:
The % backpressure is 2,09 bar / 8 bar = 30%.
The correction factor from Table 1 is 1,08.
The corrected capacity is thus 1813 kg/h x 1,08 = 1958 kg/h, and so, a DN 50 x 50 pump is still the recommended size.

TYPICAL APPLICATIONS

CONDENSATE RECOVERY IN A OPEN LOOP SYSTEM

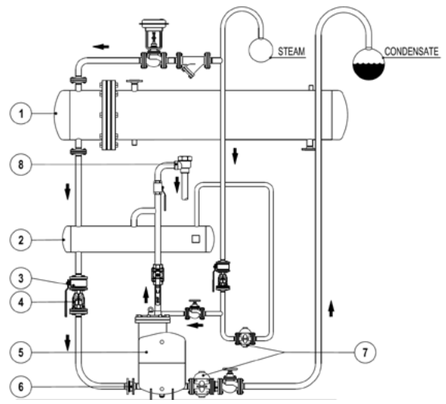
The pump transfers high temperature condensate without cavitation problems.
The vent line must be unrestricted and self draining to the receiver.

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
1	Heat exchanger	**5**	Pump
2	Receiver	**6**	Disc check valve
3	Ball valve	**7**	Steam trap
4	Y strainer	**8**	Air vent



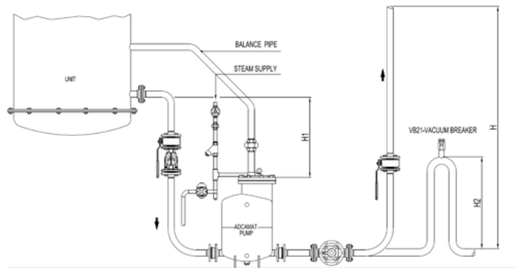
REMOVAL OF CONDENSATE UNDER PRESSURE WITH PUMP AND STEAM TRAP COMBINATION

The pump is installed in a closed loop with its vent connected to a pressurized reciever.
When steam pressure is sufficient to overcome backpressure, the steam trap operates. As soon as, e.g., the equipment's control valve starts to modulate, the steam pressure will decrease (even vacuum can occur). The lower differential pressure decreases the steam trap ability to discharge, causing the condensate level to rise inside the body of the pump. Once the pump float reaches its higher position, the intake valve opens and steam replaces the necessary positive pressure to pump out the condensate.



DRAINAGE OF A SINGLE UNIT UNDER VACUUM

This configuration works with units operating with a minimum absolute pressure of 0,2 bar.
For proper operation the filling head (H1) must range between 1 and 2 meters. The lift (H) must be as minimum as possible, but never less than 1 meter, otherwise a siphon with hight (H2) is required.
Steam must be used as motive medium, and its maximum pressure should not exceed 3 bar.



ADCAMAT PACKAGED AUTOMATIC PUMP
(Suitable for steam supply)
POPS-K (Simplex)

DESCRIPTION

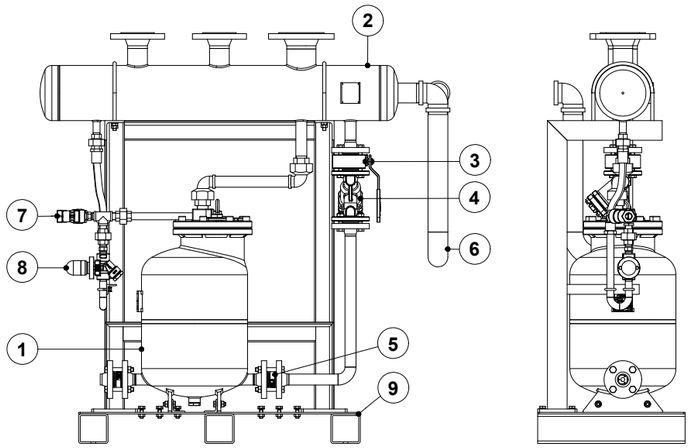
The ADCAMat POPS-K packaged pump units can be used to lift or displace hot condensate and other liquids even in hazardous areas.
The unit is comprised by an ADCAMat POP, a vented receiver and all auxiliary items, compactly mounted on a metal frame, piped and ready for connection.
Packaged units save time, work and site costs. In addition, they ensure that the installation of the pump is correct in every detail.
Two or more units can be connected in parallel to cope with flow rates beyond the capacity of a single pump.
Packaged units for operation with compressed air are also available.
All connections are flanged EN 1092-1 PN 16. Flanged ASME B16.5 Class 150 on request.
Threaded flanges and/or other connection standards available on request.
For operating conditions and pumping capacities, please refer to the information sheet IS 9.101.

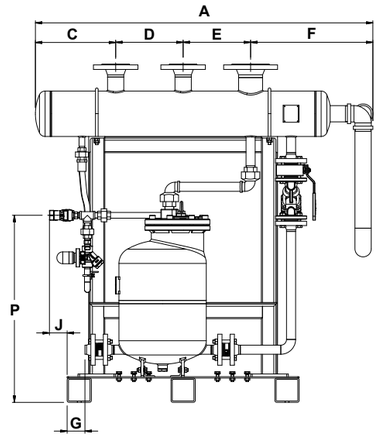
How to order: i.e. ADCAMat POPS-K carbon steel packaged pump, steam operated, flanged PN 16 DN 40.

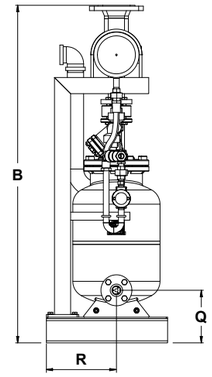
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	2 (CE marked)

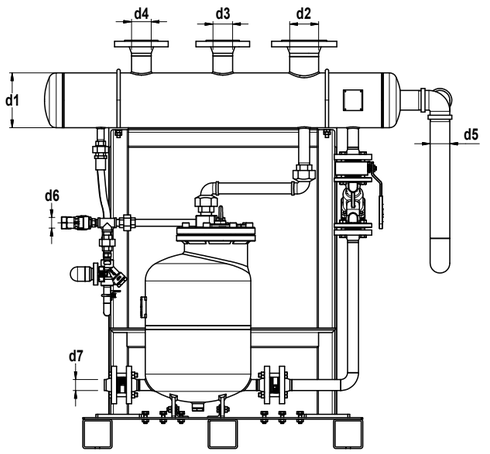
LIMITING CONDITIONS	
Receiver – Maximum operating pressure	0,5 bar
Pump	See IS 9.101

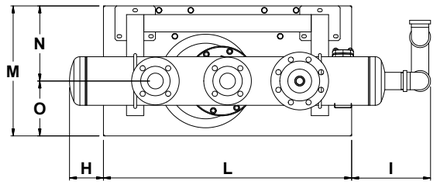
MATERIALS	
POS. Nº	**DESIGNATION**
1	POPS pump
2	Receiver
3	MWS1 wafer ball valve
4	IS16F strainer
5	RD40 disc check valve
6	Overflow
7	IS140 Y strainer
8	UCX41 + UBS20 steam trap
9	Metal frame











CONNECTIONS SIZE							
SIZE	**d1 (mm)**	**d2 ***	**d3 ***	**d4 ***	**d5**	**d6**	**d7 ****
DN 25	168	3" – DN 80	2" – DN 50	2" – DN 50	2"	1/2"	1" – DN 25
DN 40	168	3" – DN 80	2" – DN 50	2" – DN 50	2"	1/2"	11/2" – DN 40
DN 50	220	3" – DN 80	2" – DN 50	2" – DN 50	2"	1/2"	2" – DN 50
DN 80 x 50	273	4" – DN 100	21/2" – DN 65	21/2" – DN 65	2"	1/2"	2" – DN 50

d2 – vent; d3 and d4 – condensate inlets; d5 – overflow.
* Threaded connections on request.
** Welding neck flange. Threaded connections on request.

DIMENSIONS (mm)																	
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**
DN 25	1251	1254	298	250	250	454	66	118	274	66	860	450	260	190	693	195	260
DN 40	1251	1254	298	250	250	454	46	118	274	66	860	450	260	190	693	195	260
DN 50	1289	1304	316	250	250	473	32	136	293	72	860	450	260	190	693	195	260
DN 80 x 50	1367	1368	175	330	330	532	13	125	282	3	960	535	309	226	703	208	309

Dimensions subject to change without notice. Consult manufacturer for certified dimensions and weight.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.111 E 04.19

ADCAMAT PACKAGED AUTOMATIC PUMP
(Suitable for steam supply)
POPS-KD (Duplex)

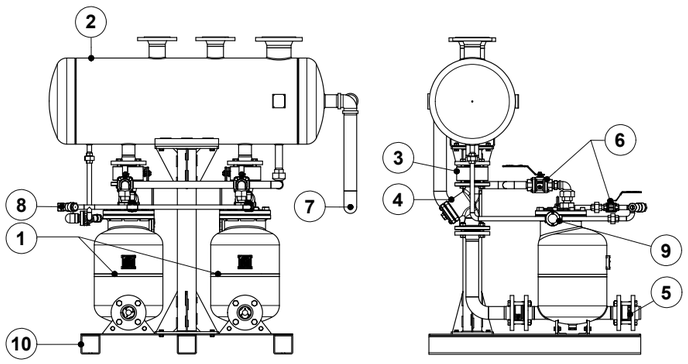
DESCRIPTION

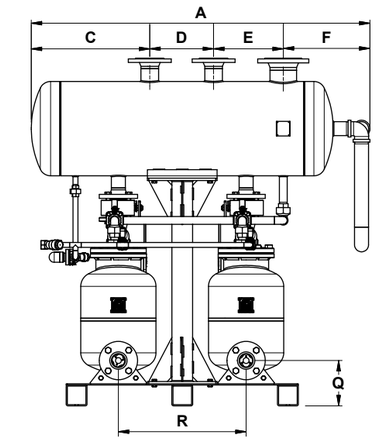
The POPS-K packaged pump units can be used to lift or displace hot condensate and other liquids even in hazardous areas.
A POPS-KD (Duplex) packaged unit is comprised by two ADCAMat pumps in parallel, a vented receiver and all auxiliary items, compactly mounted on a metal frame, piped and ready for connection.
Packaged units save time, work and site costs. In addition, they ensure that the installation of the pump is correct in every detail.
Two or more units can be connected in parallel to cope with flow rates beyond the capacity of a single pump.
Packaged units for operation with compressed air are also available.
All connections are flanged EN 1092-1 PN 16.
Threaded flanges and/or other connection standards available on request.
For operating conditions and pumping capacities, please refer to the information sheet IS 9.101 E.

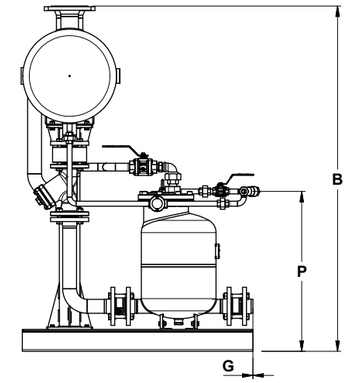
How to order: i.e. ADCAMAT POPS-KD carbon steel packaged pump, steam operated, flanged PN 16 DN 80 x 50.

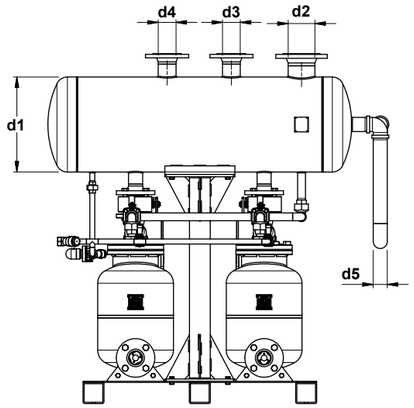
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	2 (CE marked)

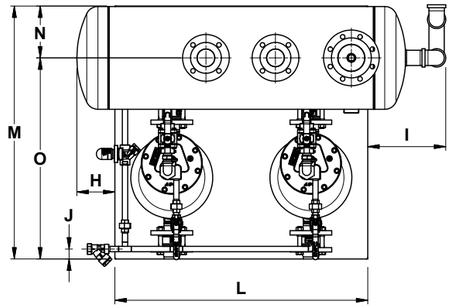
MATERIALS	
POS. Nº	**DESIGNATION**
1	POPS pumps
2	Receiver
3	MWS1 wafer ball valve
4	IS16F strainer
5	RD40 disc check valve
6	M3i ball valves
7	Overflow
8	IS140 Y strainer
9	UCX41 + UBS20 steam trap
10	Metal frame











CONNECTIONS SIZE					
SIZE	**d1 (mm)**	**d2**	**d3**	**d4**	**d5**
2 x DN 50x50	406	DN 100	DN 65	DN 65	2”
2 x DN 80x50	406	DN 150	DN 80	DN 80	2”

d2 – vent; d3 and d4 – condensate inlets; d5 – overflow.

LIMITING CONDITIONS	
Receiver – Max. operating pressure	0,5 bar
Pump	See IS 9.101

DIMENSIONS (mm)																	
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**
2 x DN 50x50	1460	1497	510	275	300	374	–	150	309	31	1000	1000	205	795	693	195	550
2 x DN 80x50	1509	1509	555	275	300	378	96	175	303	44	1000	1000	205	795	703	208	550

Dimensions subject to change without notice. Consult manufacturer for certified dimensions and weight.

We reserve the right to change the design and material of this product without notice.
IS 9.112 E 03.19

ADCAMAT PACKAGED AUTOMATIC PUMP
(Suitable for steam supply)
POPS-KT (Triplex)

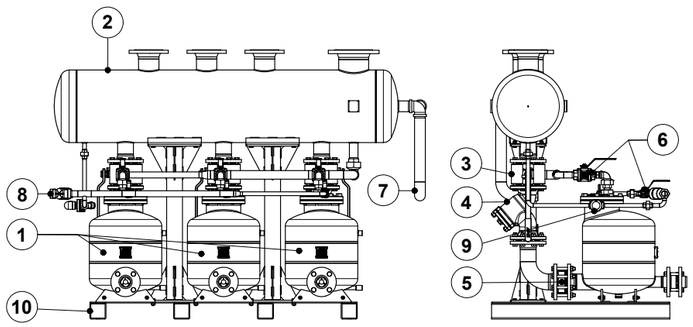
DESCRIPTION

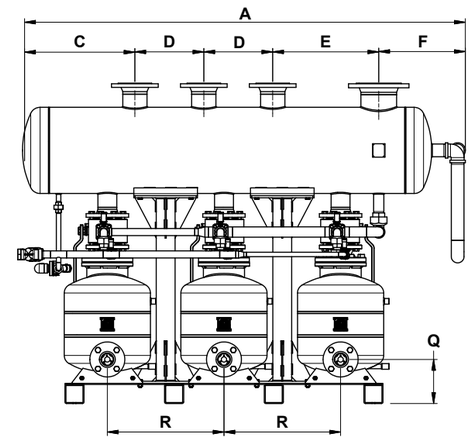
The POPS-K packaged pump units can be used to lift or displace hot condensate and other liquids even in hazardous areas.
A POPS-KT (Triplex) packaged unit is comprised by three Adcamat pumps in parallel, a vented receiver and all auxiliary items, compactly mounted on a metal frame, piped and ready for connection.
Packaged units save time, work and site costs. In addition, they ensure that the installation of the pump is correct in every detail.
Two or more units can be connected in parallel to cope with flow rates beyond the capacity of a single pump.
Packaged units for operation with compressed air are also available.
All connections are flanged EN 1092-1 PN 16.
Threaded flanges and/or other connection standards available on request.
For operating conditions and pumping capacities, please refer to the information sheet IS 9.101 E.

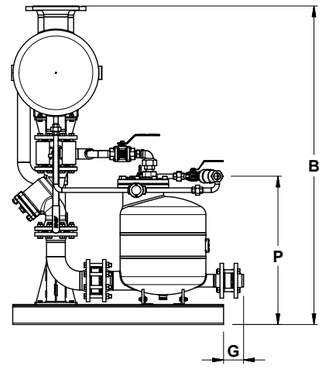
How to order: i.e. ADCAMAT POPS-KD carbon steel packaged pump, steam operated, flanged PN 16 DN 80 x 50.

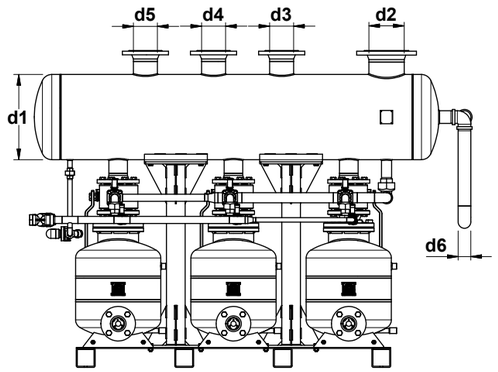
CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	2 (CE marked)

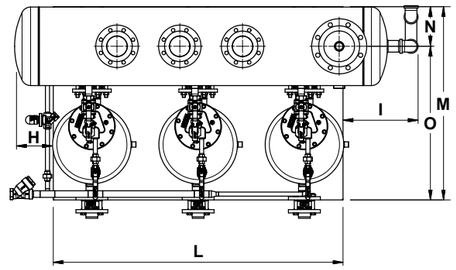
MATERIALS	
POS. Nº	**DESIGNATION**
1	POPS pumps
2	Receiver
3	MWS1 wafer ball valve
4	IS16F strainer
5	RD40 disc check valve
6	M3i ball valves
7	Overflow
8	IS140 Y strainer
9	UCX41 + UBS20 steam trap
10	Metal frame











CONNECTIONS SIZE						
SIZE	**d1 (mm)**	**d2**	**d3**	**d4**	**d5**	**d6**
3 x DN 50x50	406	DN 150	DN 80	DN 80	DN 80	2”
3 x DN 80x50	406	DN 150	DN 100	DN 100	DN 100	2”

d2 – vent; d3, d4 and d5 – condensate inlets; d6 – overflow.

LIMITING CONDITIONS	
Receiver – Max. operating pressure	0,5 bar
Pump	See IS 9.101

DIMENSIONS (mm)																		
SIZE	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**
3 x DN 50x50	2088	1497	530	325	500	408	–	200	388	1500	1000	205	795	693	195	550	550
3 x DN 80x50	2088	1509	530	325	500	408	95	200	388	1500	1000	205	795	709	208	550	550

Dimensions subject to change without notice. Consult manufacturer for certified dimensions and weight.

We reserve the right to change the design and material of this product without notice.
IS 9.113 E 03.19

PRESSURE OPERATED PUMP
POP
(4" x 4" – DN 100 x 100)

DESCRIPTION

The ADCAMat POP pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure.
Under certain conditions, it can drain a closed vessel under vacuum or pressure.
The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.

OPTIONS: Level gauge.
Stroke counters.

USE: To lift steam condensate and other liquids compatible with the construction.

AVAILABLE MODELS: POPS – carbon steel.

SIZES: 4" x 4"; DN 100 x 100

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam, compressed air, nitrogen and other gases.

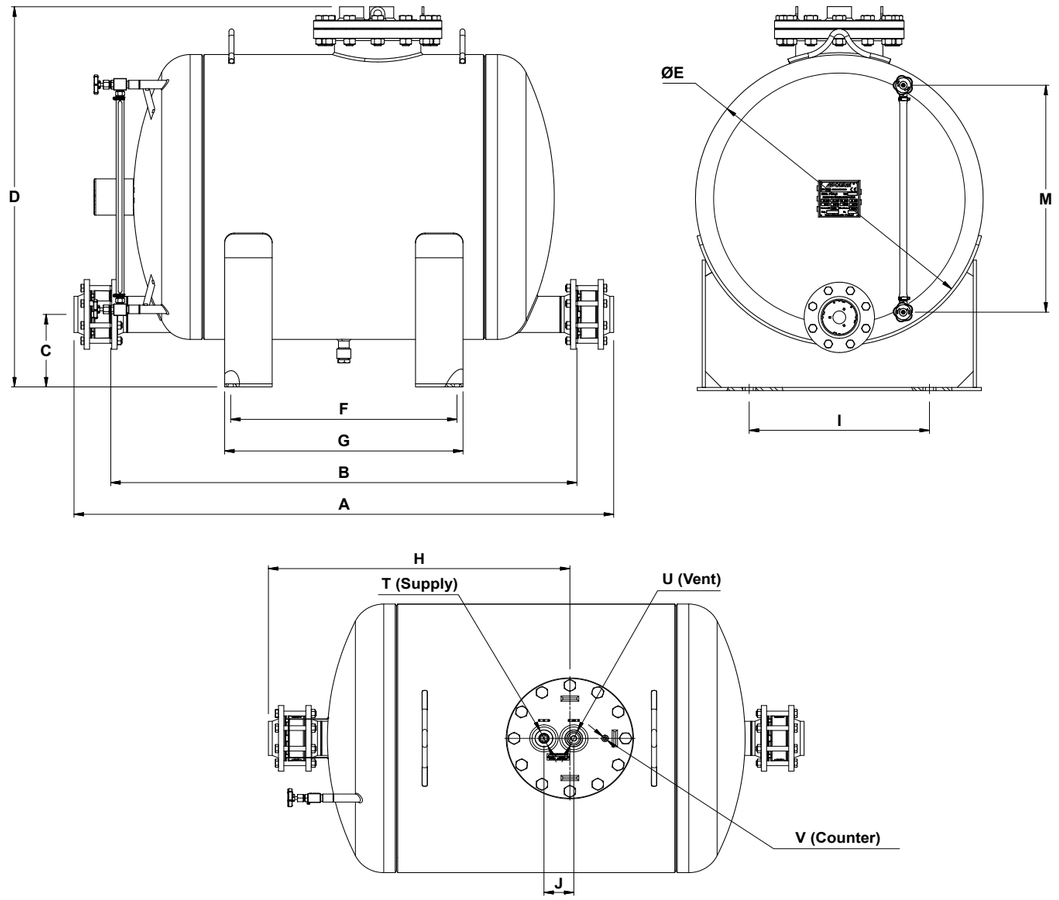
BODY LIMITING CONDITIONS *		
	ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
PN 16	16 bar	50 ºC
	14 bar	100 ºC
	13 bar	195 ºC
	12 bar	250 ºC
CLASS 150	16 bar	50 ºC
	13 bar	195 ºC

* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	4 (CE marked)

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	1 bar
Maximum operating temperature	185 ºC
Minimum operating temperature *	20 ºC
Pump discharge per cycle	325 L

* Lower limits on request.



DIMENSIONS (mm)																
SIZE	**A ***	**B ***	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**M**	**T ****	**U ****	**V ****	**WGT. (kg)**	**VOL. (L)**
4" x 4" DN 100 x 100	1705	1473	229	1200	900	715	753	960	564	95	710	2"	2"	1/2"	565	1028

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

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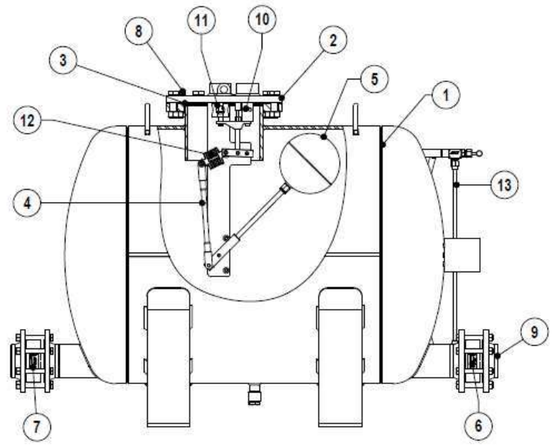
IS 9.120 E 07.19



MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038
2	Cover	GJS-400-15 / 0.7040
3	* Cover gasket	Stainless steel / Graphite
4	Internal mechanism	Stainless steel
5	* Float	Stainless steel
6	* Outlet check valve	A351 CF8M / 1.4408
7	* Inlet check valve	A351 CF8M / 1.4408
8	Bolts	Steel 8.8
9	Counter flanges	P250GH / 1.0460
10	* Intake valve/seat assembly	Stainless steel
11	* Exhaust valve/seat assembly	Stainless steel
12	* Springs	Inconel
13	** Level gauge cocks / Glass	See IS LGC400.10

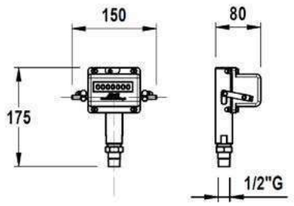
* Available spare parts. ** Optional.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

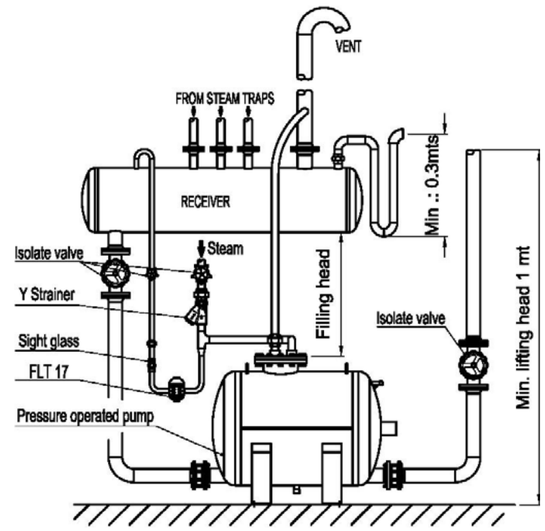


Fig. 1

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpress. vs Motive press. (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
4" x 4" DN 100 x 100	0,7	0,8	1	1,08

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER			
PUMP SIZE	**4" x 4" DN 100 x 100**		
Pipe Ø x lenght	406 x 2000	640 x 1500	800 x 1500

Table 3

VALSTEAM ADCA
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IS 9.120 E 07.19

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER		
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**4" x 4" DN 100 x 100**
1	0,35	13130
1,7		16850
3,5		21900
5		24830
7		26880
10		29800
1,7	1	16630
3,5		20400
5		23050
7		25100
10		29800
2,5	1,5	13210
3,5		15150
5		17280
7		19100
10		21410
3,5	3	11860
4		12300
5		12900
7		13740
10		14980
4,5	4	11700
5		11840
7		12710
10		13760

Table 4 (based on liquid specific gravity of 0,9 to 1,0)

Example

Condensate load	8500 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	7 bar
Vertical lift after pump	10 m
Return piping pressure	1,2 bar
Piping friction pressure drop	Negligible

Calculations:
Total back pressure: 1,2 bar + (10 m x 0,0981) = 2,181 bar.
Assuming steam as motive medium at a pressure of 7 bar and a total backpressure of 3 bar, then according to Table 4 a DN 100 x 100 pump, with a capacity of 13740 kg/h, is the recommended size.

Correction for filling head:
With 150 mm filling head the correction factor from Table 2 is 0,7. The corrected capacity is thus 13740 kg/h x 0,7 = 9618 kg/h.

Correction for air as a motive fluid:
The % backpressure is 2,181 bar / 7 bar = 31%.
The correction factor from Table 1, is 1,08.
The corrected capacity is thus 9618 kg/h x 1,08 = 10387,44 kg/h, and so, a DN 100 x 100 pump is still the recommended size.

PRESSURE OPERATED PUMP PPA14

DESCRIPTION

The ADCAMat PPA14 pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure.
Under certain conditions, it can drain a closed vessel under vacuum or pressure.
The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel or stainless steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.

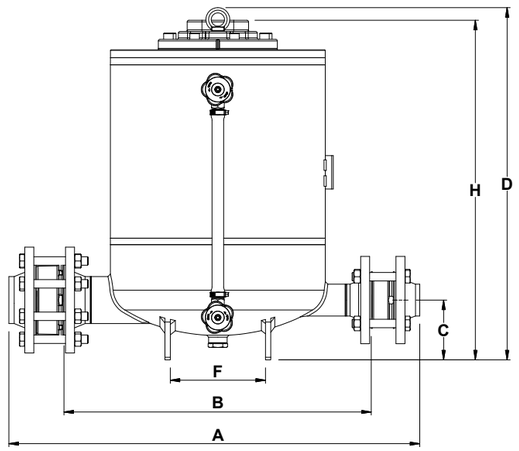
OPTIONS:	Level gauge. Stroke counters. Stainless steel construction.
USE:	To lift steam condensate and other liquids compatible with the construction.
AVAILABLE MODELS:	PPA14 – carbon steel.
SIZES:	3" x 2"; DN 80 x 50.
CONNECTIONS:	Flanged EN 1092-1 PN 16. Flanged ASME B16.5 Class 150. Female threaded ISO 7 Rp (threaded flanges). Others on request.
INSTALLATION:	Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.
MOTIVE MEDIUM:	Saturated steam, compressed air, nitrogen and other gases.

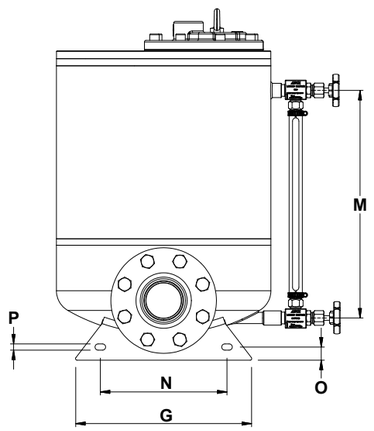
BODY LIMITING CONDITIONS *		
	ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
PN 16	16 bar	50 ºC
	15 bar	100 ºC
	12,7 bar	200 ºC
	12 bar	250 ºC
CLASS 150	16 bar	50 ºC
	12,6 bar	200 ºC

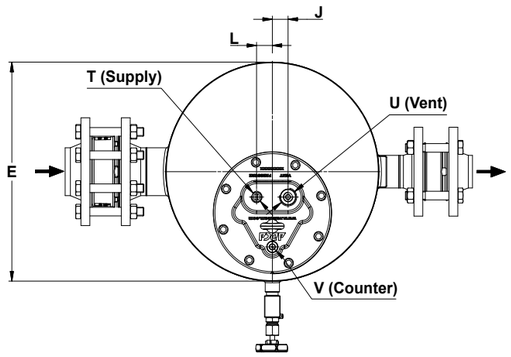
* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
DN 80 x 50	3 (CE marked)

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	1 bar
Maximum operating temperature	185 ºC
Minimum operating temperature	0 ºC
Pump discharge per cycle	25 L

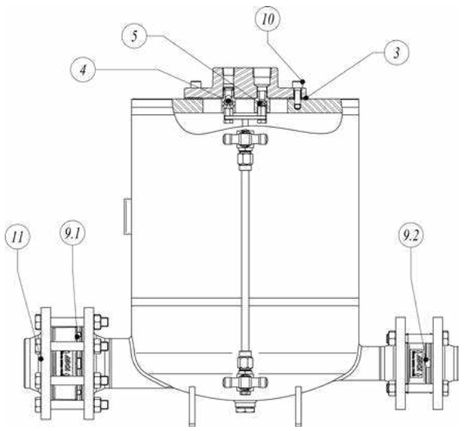


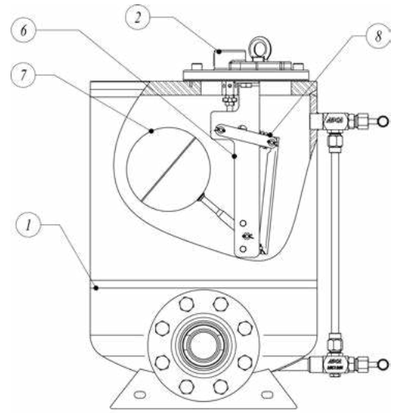




DIMENSIONS (mm)																		
SIZE	A *	B	C	D	E	F	G	H	J	L	M	N	O	P	T **	U **	V **	WGT. (kg)	VOL. (L)
DN 80 x 50	775	580	113	665	406	200	333	642	30	30	435	228	25	12	1/2"	1"	1/2"	123	68

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.





MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038
2	Cover	GJS-400-15 / 0.7040 ; A216 WCB / 1.0619
3	* Cover gasket	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel
6	Internal mechanism	Stainless steel
7	* Float	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel
9.1	* Outlet check valve	A351 CF8M / 1.4408
9.2	* Inlet check valve	A351 CF8M / 1.4408
10	Bolts	Steel 8.8
11	Counter flanges	P250GH / 1.0460

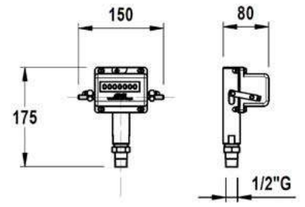
* Available spare parts.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.122 E 04.19

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
2	Receiver	**5**	Pump
3	Ball valve	**6**	Disc check valve
4	Y strainer	**7**	Steam trap

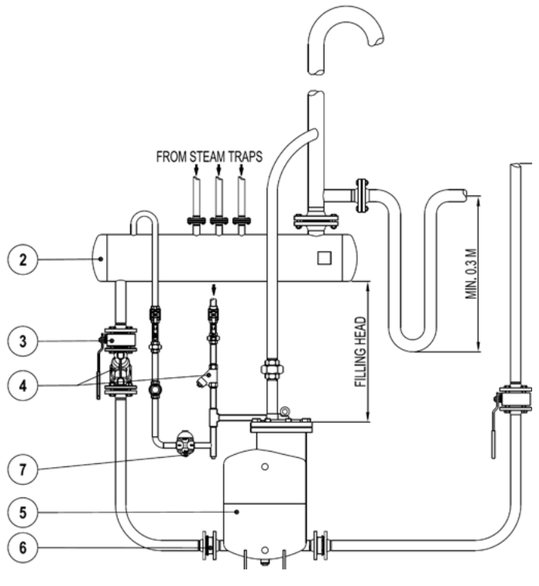


Fig. 1

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpressure vs Motive pressure (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
3" x 2" DN 80 x 50	0,9	1	1,08	1,2

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER	
PUMP SIZE	**3" x 2" DN 80 x 50**
Pipe Ø x lenght	323 x 1000

Table 3

We reserve the right to change the design and material of this product without notice.

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER		
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**3" x 2" DN 80 x 50**
1	0,35	3710
1,7		5470
3,5		5820
5		5970
7		6010
10		6290
1,7	1	3570
3,5		5160
5		5360
7		5470
10		5790
2,5	1,5	3435
3,5		4835
5		4980
7		5080
10		5390
3,5	3	2890
4		3440
5		3780
7		4040
10		4430
4,5	4	2505
5		2680
7		2990
10		3385

Table 4 (based on liquid specific gravity of 0,9 to 1,0)

Example

Condensate load	3500 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	7 bar
Vertical lift after pump	10 m
Return piping pressure	1,2 bar
Piping friction pressure drop	Negligible

Calculations:
Total backpressure: 1,2 bar + (10 m x 0,0981) = 2,181 bar. Assuming steam as motive medium at a pressure of 7 bar and a total backpressure of 3 bar, then according to Table 4 a DN 80 x 50 pump, with a capacity of 4040 kg/h, is the recommended size.

Filling head correction:
With 150 mm filling head the correction factor from Table 2 is 0,9. The corrected capacity is thus 4040 kg/h x 0,9 = 3636 kg/h.

Correction for air as a motive medium:
The % backpressure is 2,181 bar / 7 bar = 31%.
The correction factor from Table 2 is 1,08.
The corrected capacity is thus 3636 kg/h x 1,08 = 3926,88 kg/h, and so, a DN 80 x 50 pump is still the recommended size.

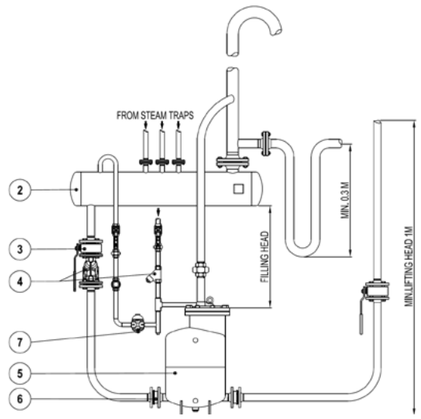
We reserve the right to change the design and material of this product without notice.

TYPICAL APPLICATIONS

CONDENSATE RECOVERY IN A OPEN LOOP SYSTEM

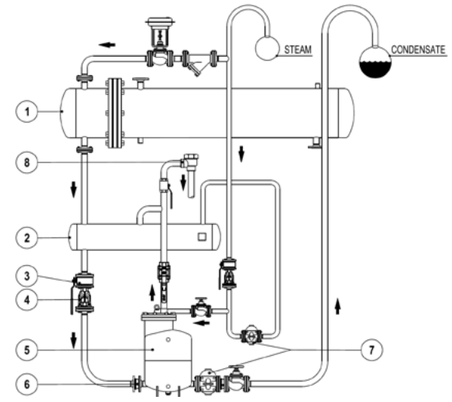
The pump transfers high temperature condensate without cavitation problems.
The vent line must be unrestricted and self draining to the receiver.

MATERIALS			
POS. Nº	**DESIGNATION**	**POS. Nº**	**DESIGNATION**
1	Heat exchanger	**5**	Pump
2	Receiver	**6**	Disc check valve
3	Ball valve	**7**	Steam trap
4	Y strainer	**8**	Air vent



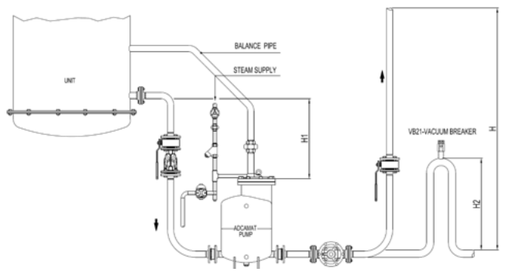
REMOVAL OF CONDENSATE UNDER PRESSURE WITH PUMP AND STEAM TRAP COMBINATION

The pump is installed in a closed loop with its vent connected to a pressurized reciever.
When steam pressure is sufficient to overcome backpressure, the steam trap operates. As soon as, e.g., the equipment's control valve starts to modulate, the steam pressure will decrease (even vacuum can occur). The lower differential pressure decreases the steam trap ability to discharge, causing the condensate level to rise inside the body of the pump. Once the pump float reaches its higher position, the intake valve opens and steam replaces the necessary positive pressure to pump out the condensate.



DRAINAGE OF A SINGLE UNIT UNDER VACUUM

This configuration works with units operating with a minimum absolute pressure of 0,2 bar.
For proper operation the filling head (H1) must range between 1 and 2 meters. The lift (H) must be as minimum as possible, but never less than 1 meter, otherwise a siphon with hight (H2) is required.
Steam must be used as motive medium, and its maximum pressure should not exceed 3 bar.



ADCAMAT PRESSURE OPERATED PUMP PPA312

DESCRIPTION

The ADCAMat PPA312 pressure operated pump is recommended in the transfer of steam condensate, oils and other non-hazardous liquids compatible with the construction, to a higher elevation or pressure.
Under certain conditions, it can drain a closed vessel under vacuum or pressure.
The pump can be operated using steam, compressed air or other gases, and is manufactured in carbon steel or stainless steel.

OPERATION

Liquid flows by gravity into the pump through an inlet check valve, lifting the float. At this point, the motive fluid intake valve is closed while the vent valve is open. As the float reaches its highest position the motive fluid intake valve opens and the vent valve closes, allowing the motive fluid to enter the pump body. The pressure in the pump builds up just enough to overcome backpressure.
The pressurized liquid opens the outlet check valve and the discharge starts. The liquid discharged may be quantified through a special counter, enabling the pump to function as a reliable flow meter.
When the float reaches its lower position the motive fluid intake valve closes and the vent valve opens allowing the liquid to fill the pump once again, repeating the cycle.

MAIN FEATURES

Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.

OPTIONS: Level gauge.
Stroke counters.
Stainless steel construction.

USE: To lift steam condensate and other liquids compatible with the construction.

AVAILABLE MODELS: PPA312 – carbon steel.

SIZES: 2" x 2" and 3" x 2".
DN 50 x 50 and DN 80 x 50.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam, compressed air, nitrogen and other gases.

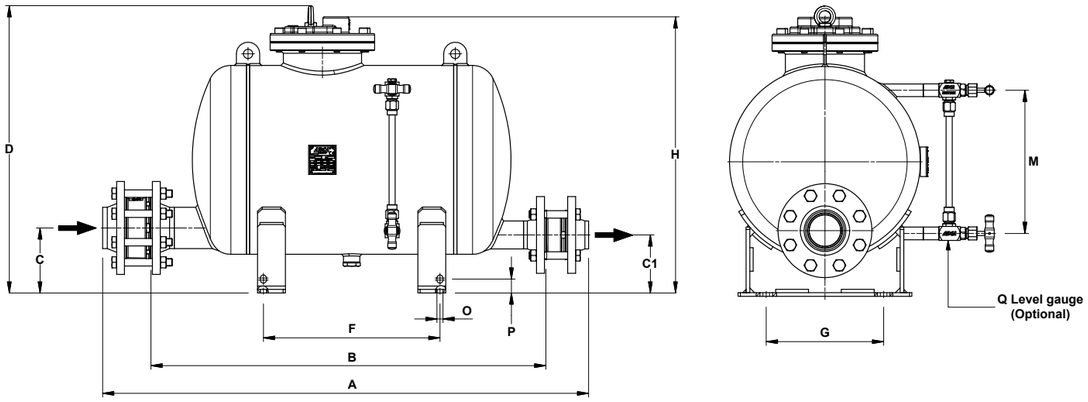
BODY LIMITING CONDITIONS *		
	ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
PN 16	16 bar	50 ºC
	14 bar	100 ºC
	13 bar	195 ºC
	12 bar	250 ºC
CLASS 150	16 bar	50 ºC
	13 bar	195 ºC

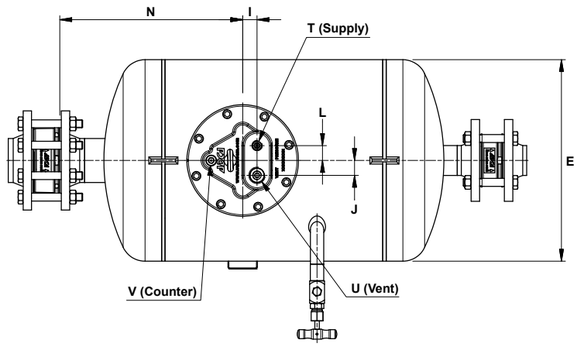
* Rating according to EN 1092-1:2018.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	3 (CE marked)

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum viscosity	5 ºEngler
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	1 bar
Maximum operating temperature	185 ºC
Minimum operating temperature *	20 ºC
Pump discharge per cycle	45 L

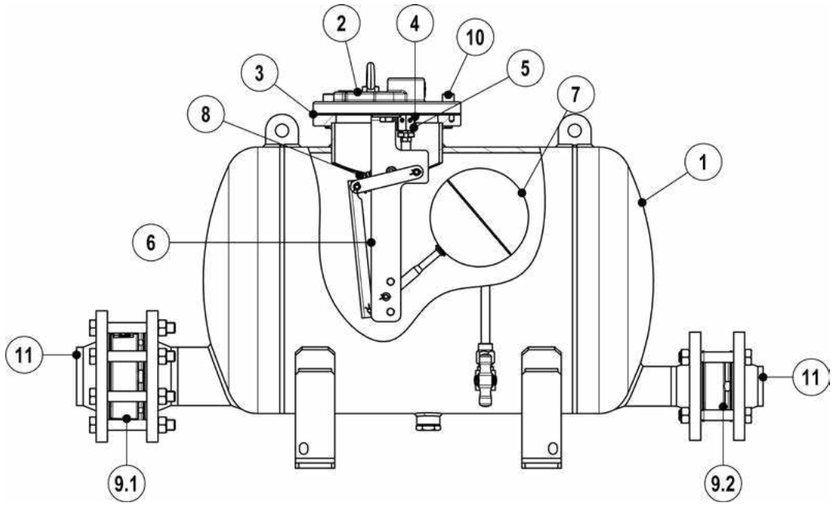
* Lower limits on request.





DIMENSIONS (mm)																					
SIZE	A *	B *	C	C1	D	E	F	G	H	I	J	L	M	N	O	P	Q	T *	U **	V **	WGT. (kg)	VOL. (L)
2" x 2" DN 50 x 50	1020	836	125	125	619	406	380	250	595	29	30	30	305	355	13	30	1/2"	1/2"	1"	1/2"	109	75,5
3" x 2" DN 80 x 50	1046	850	140	125	619	406	380	250	595	29	30	30	305	369	13	30	1/2"	1/2"	1"	1/2"	113	76

* With EN 1092-1 welding neck flanges. Dimensions may differ if ASME B16.5 flanges or ISO 7 Rp female threaded flanges are requested. Consult the manufacturer.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.



MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Pump body	P265GH / 1.0425; P235GH / 1.0345; S235JR / 1.0038
2	Cover	GJS-400-15 / 0.7040
3	* Cover gasket	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel
6	Internal mechanism	Stainless steel
7	* Float	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel
9.1	* Outlet check valve	A351 CF8M / 1.4408
9.2	* Inlet check valve	A351 CF8M / 1.4408
10	Bolts	Steel 8.8
11	Counter flanges	P250GH / 1.0460

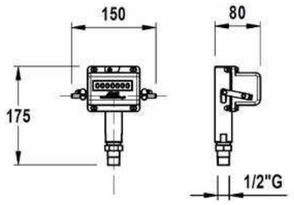
* Available spare parts.

STROKE COUNTER

A stroke counter can be screwed onto a respective female threaded connection on the pump cover. Mechanical and digital versions are available. The mechanical version requires that the following conditions are met.

LIMITING CONDITIONS *	
Minimum motive pressure (steam)	6 bar
Minimum motive pressure (compressed air and nitrogen)	5 bar
Minimum system backpressure (steam)	700 mbar *
Minimum system backpressure (compressed air and nitrogen)	700 mbar *

* The pump outlet check valve can be supplied with a stronger spring to simulate increased system backpressure. Consult manufacturer.



The digital version is composed of sensor and remote stroke counter. The device can be tailor made to meet customer requirements and is not dependent on the process condition. The standard unit is battery powered, features an LCD display and optional volt-free output connection for remote monitorization. Consult manufacturer.

SIZING

To accurately size a pressure operated pump, the following information must be provided:

1. The condensate load (kg/h).

2. The operating medium (steam, compressed air or other gases) and its pressure.

3. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

4. Available filling head (see Fig. 1) in mm or any other dimension that allows its determination.

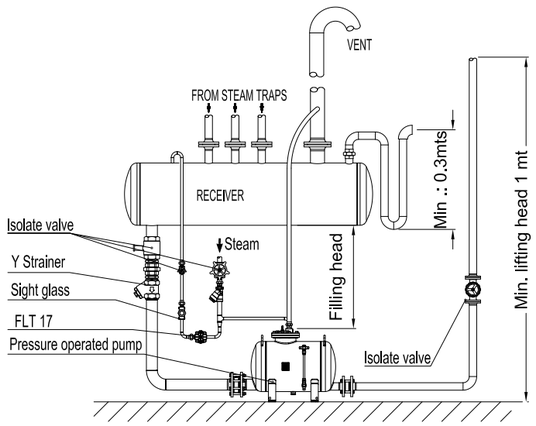


Fig. 1

CAPACITY CORRECTION FACTOR FOR GASES OTHER THAN STEAM					
% Backpressure vs Motive pressure (BP/MP)	**10%**	**30%**	**50%**	**70%**	**90%**
Correction factor	1,04	1,08	1,12	1,18	1,28

Table 1

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD (mm)**			
	150	**300**	**600**	**900**
2" x 2" DN 50 x 50	0,9	1	1,08	1,2
3" x 2" DN 80 x 50	0,9	1	1,08	1,2

Table 2

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used.
Suggested receiver sizes are shown in Table 3.

RECEIVER		
PUMP SIZE	**2" x 2" DN 50 x 50**	**3" x 2" DN 80 x 50**
Pipe Ø x lenght	323 x 1000	

Table 3

We reserve the right to change the design and material of this product without notice.

FLOW RATE (kg/h) INSTALLATION WITH 300 mm FILLING HEAD ABOVE THE PUMP COVER			
Motive pressure (bar)	**Total lift (bar)**	**2" x 2" DN 50 x 50**	**3" x 2" DN 80 x 50**
1	0,35	3125	4070
1,7		4625	5980
3,5		4810	6845
5		4905	6935
7		5075	7030
8,5		5250	7520
10		5280	7540
1,7	1	3170	4075
3,5		4350	5800
5		4880	6430
7		4950	6480
8,5		5120	6845
10		5150	6870
2,5	1,5	3210	3670
3,5		3760	4625
5		4585	5660
7		4635	5755
8,5		4680	5895
10		4695	5925
3,5	3	2580	2990
4		2990	3805
5		3440	4440
7		3810	4575
8,5		4260	4665
10		4285	4695
4,5	4	2030	2715
5		2120	2900
7		2900	3215
8,5		2985	3355
10		3000	3385

Table 4 (based on liquid specific gravity 0,9 – 1,0).

Example

Condensate load	3500 kg/h
Filling head	150 mm
Motive fluid	Compressed air
Available pressure	7 bar
Vertical lift after pump	10 m
Return piping pressure	1,2 bar
Piping friction pressure drop	Negligible

Filling head correction:
With 150 mm filling head the correction factor from Table 2 is 0,9. The corrected capacity is thus 4575 kg/h x 0,9 = 4117,5 kg/h.

Calculations:
Total backpressure: 1,2 bar + (10 m x 0,0981) = 2,181 bar.
Assuming steam as motive medium at a pressure of 7 bar and a total backpressure of 3 bar, then according to Table 4 a DN 80 x 50 pump, with a capacity of 4575 kg/h, is the recommended size.

Correction for air as a motive medium:
The % backpressure is 2,181 bar / 7 bar = 31%.
The correction factor from Table 2 is 1,08.
The corrected capacity is thus 4117,5 kg/h x 1,08 = 4446,9 kg/h, and so, a DN 80 x 50 pump is still the recommended size.

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IS 9.124 E 05.18

AUTOMATIC PUMP TRAP
APST

DESCRIPTION

The ADCAMat APST automatic pump trap is especially recommended where stall condition may occur due to poor steam trap condensate discharge capacity, caused by temporary insufficient pressure drop.
The equipment combines the features of a float steam trap and a pressure operated pump, in one single unit.
Whenever the steam trap function is incapable of draining condensate, the pump function is activated (using external steam pressure). The pump replaces the necessary positive pressure to lift the condensate to the return system, before water logging occurs, avoiding water hammer and consequent noise, equipment damage, corrosion, unstable temperature control, etc.

MAIN FEATURES

High capacity.
Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.
No motive or flash steam is lost.
Operation under vacuum conditions.

OPTIONS: Level gauge.

USE: Drain and lift steam condensate from heat exchangers, among others.

AVAILABLE MODELS:
APSTS – carbon steel.
APSTS-HC – carbon steel, high capacity.
APSTSS – stainless steel.
APSTSS-HC – stainless steel, high capacity.

SIZES:
2" x 2" and 3" x 2".
DN 50 x 50 and DN 80 x 50.

CONNECTIONS:
Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation in a closed loop system. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	2 (CE marked)

We reserve the right to change the design and material of this product without notice.

LIMITING CONDITIONS	
Minimum density	0,80 kg/L
Maximum motive pressure	10 bar
Minimum motive pressure	1 bar
Maximum operating temperature	185 ºC
Minimum operating temperature	0 ºC
Pump discharge per cycle (approx.)	22 L

Remark: It is recommended that the motive pressure does not exceed 1 to 4 bar above the expected back pressure applied to the pump.

BODY LIMITING CONDITIONS *				
APSTS		**APSTSS**		
FLANGED PN 16 / CLASS 150		**FLANGED PN 16**	**FLANGED CLASS 150**	**RELATED TEMP.**
ALLOWABLE PRESSURE	**RELATED TEMP.**	**ALLOWABLE PRESSURE**	**ALLOWABLE PRESSURE**	
16 bar	50 ºC	16 bar	15,3 bar	50 ºC
14 bar	100 ºC	15 bar	13,3 bar	100 ºC
13 bar	195 ºC	12,7 bar	11,1 bar	200 ºC
12 bar	250 ºC	12 bar	10,2 bar	250 ºC

* Rating according to EN 1092-1:2018.

FLOW RATE CAPACITY (kg/h) OPERATING IN PUMP MODE W/ 300 mm FILLING HEAD			
MOTIVE PRESSURE (bar)	**TOTAL LIFT (bar)**	**2" x 2" DN 50 x 50**	**3" x 2" DN 80 x 50**
1	0,35	2290	2640
2		3130	3610
3		3530	4070
4		3810	4390
6		3910	4500
8		3960	4570
10		3970	4580
2	1	2520	2910
3		2960	3420
4		3130	3610
6		3220	3710
8		3250	3750
10		3290	3800
3	2	2440	2810
4		2590	2990
5		2800	3220
6		2830	3270
8		2850	3290
10		2870	3300
4	3	2330	2680
5		2510	2900
6		2530	2920
8		2560	2960
10		2620	3030
5	4	2250	2600
6		2430	2810
8		2470	2860
10		2510	3010
6	5	2050	2370
8		2150	2490
10		2190	2540
7	6	1850	2140
8		1910	2210
10		2120	2450

RECEIVER SIZING TABLE FOR EQUALIZED, CLOSED SYSTEM INSTALLATION							
FLOW RATE (kg/h)	**RECEIVER SIZE (DN)**						
	40	**50**	**80**	**100**	**150**	**200**	**250**
	RECEIVER LENGTH (mm)						
≤ 300	1200	700	–	–	–	–	–
400	1500	1000	–	–	–	–	–
500	2000	1200	500	–	–	–	–
600	–	1500	600	–	–	–	–
800	–	2000	800	500	–	–	–
1000	–	–	1000	700	–	–	–
1500	–	–	1500	1000	–	–	–
2000	–	–	2000	1300	600	–	–
3000	–	–	–	2000	900	500	–
4000	–	–	–	–	1200	700	–
5000	–	–	–	–	1400	800	500
6000	–	–	–	–	1700	1000	600
7000	–	–	–	–	2000	1200	700
8000	–	–	–	–	–	1300	800
9000	–	–	–	–	–	1500	900
10000	–	–	–	–	–	1700	1000

Remark: Receiver length can be reduced by 50% when the motive inlet pressure divided by the backpressure is ≥ 2.

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm				
PUMP SIZE	**FILLING HEAD "H" (mm)**			
	150	**300**	**600**	**900**
All sizes	0,7	1	1,2	1,35

Remark: Filling head “H" is shown in Fig. 1.

FLOW RATE CAPACITY (kg/h) OPERATING IN STEAM TRAP MODE											
MODEL	**SIZE**	**DIFFERENTIAL PRESSURE (bar)**									
		0,1	**0,3**	**0,5**	**0,7**	**1**	**1,5**	**2**	**4,5**	**7**	**10**
APST	**2" x 2" – DN 50 x 50**	1800	3000	3900	4450	5000	6100	7100	10000	13750	16000
APST-HC	**2" x 2" – DN 50 x 50**	2400	5900	7550	9050	11000	14000	15500	22500	26500	30000
APST	**3" x 2" – DN 80 x 50**	1800	3000	3900	4450	5000	6100	7100	10000	13750	16000
APST-HC	**3" x 2" – DN 80 x 50**	2400	5900	7550	9050	11000	14000	15500	22500	26500	30000

VALSTEAM ADCA

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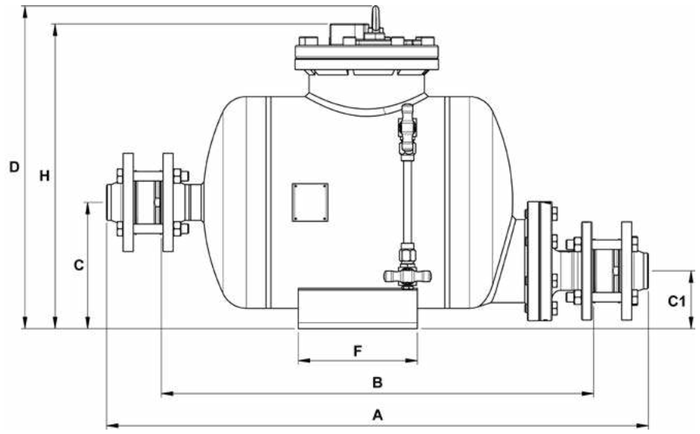
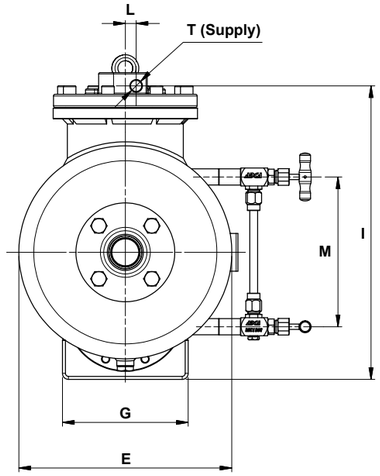
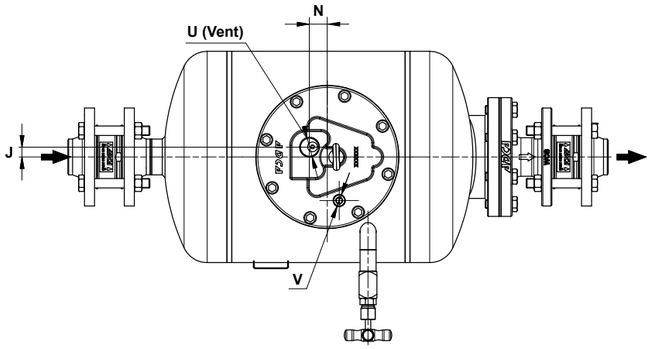
IS 9.084 E 13.13







DIMENSIONS (mm) – PN 16

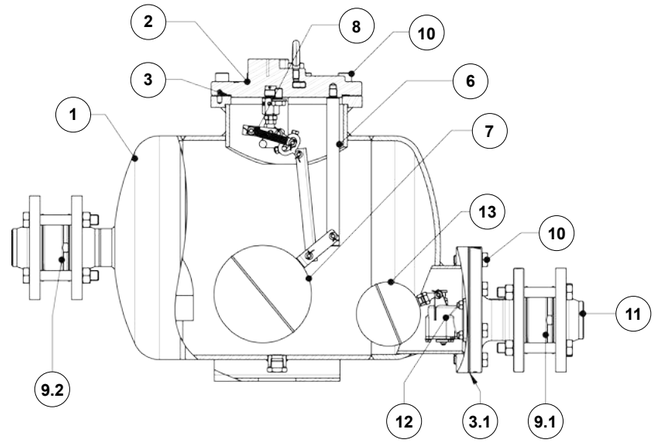
SIZE	A *	B *	C	C1	D	E	F	G	H	I	J	L	M	N	T **	U **	V **	WGT. (kg)	VOL. (L)
DN 50 x 50	910	726	212	97	542	356	200	210	512	490	17	18	250	30	1/2"	1"	1/2"	84	45
DN 80 x 50	924	728	212	97	542	356	200	210	512	490	17	18	250	30	1/2"	1"	1/2"	91	45

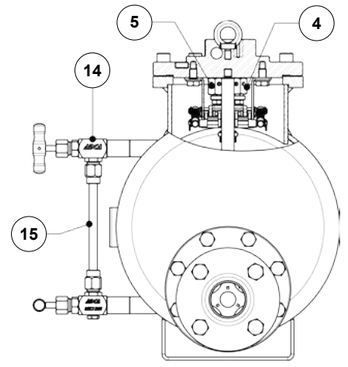
DIMENSIONS (mm) – CLASS 150

SIZE	A *	B *	C	C1	D	E	F	G	H	I	J	L	M	N	T **	U **	V **	WGT. (kg)	VOL. (L)
2" x 2"	958	743	212	97	542	356	200	210	512	490	16	18	250	30	1/2"	1"	1/2"	86	45
3" x 2"	980	748	212	97	542	356	200	210	512	490	16	18	250	30	1/2"	1"	1/2"	90	45

* Dimensions are different if ISO 7 Rp female threaded flanges are requested.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

LRQA CERTIFIED ISO 9001





MATERIALS			
POS. Nº	**DESIGNATION**	**APSTS**	**APSTSS**
1	Body	P265GH / 1.0425 ; P235GH / 1.0345 ; S235JR / 1.0038	AISI 316 / 1.4401; AISI 316L / 1.4404
2	Cover	GJS-400-15 / 0.7040	A351 CF8M / 1.4408
3	* Cover gasket	Non asbestos	Non asbestos
3.1	* Outlet cover gasket	Non asbestos	Non asbestos
4	* Intake valve/seat assembly	Stainless steel	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel	Stainless steel
6	Pump mechanism	Stainless steel	Stainless steel
7	*Float	Stainless steel	Stainless steel
8	Spring assembly (2 pcs.)	Inconel	Inconel
9.1	* Outlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
9.2	* Inlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
10	Bolts	Steel 8.8	Stainless steel A2-70
11	Counter flanges	P250GH / 1.0460	AISI 316 / 1.4401
12	* Steam trap mechanism	Stainless steel	Stainless steel
13	* Steam trap float	Stainless steel	Stainless steel
14	Level gauge cocks	Bronze / Stainless steel	Stainless steel
15	Tube glass	Borosilicate	Borosilicate

* Available spare parts.

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IS 9.084 E 13.13

SIZING

To accurately size a pump trap, the following information must be provided:

1. Heat exchanger (or process equipment) maximum steam or condensate load, in kg/h.

2. Heat exchanger (or process equipment) operating pressure at full load in bar or, alternatively, the heat exchanger maximum operating pressure in bar and the over design percentage.

3. Motive steam pressure available to operate the pump trap, in bar.

4. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

5. Maximum controlled temperature of the medium to be heated (secondary fluid outlet temperature), in ºC.

6. Minimum temperature of the medium to be heated (secondary fluid minimum inlet temperature), in ºC.

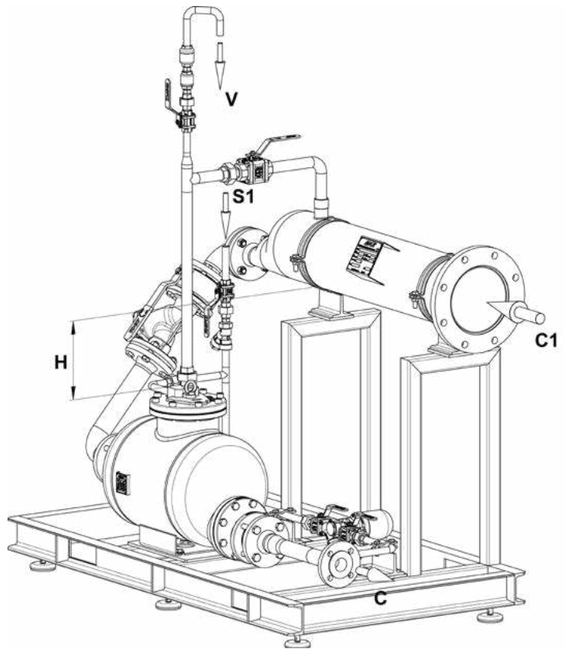
7. Available filling head (H) in mm or any other dimension that allows its determination. See Fig. 1.

For information on how to predict stall refer to IS 9.085 Technical Information Sheet - Understanding stall condition - or consult the manufacturer.

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used. See receiver sizing table.

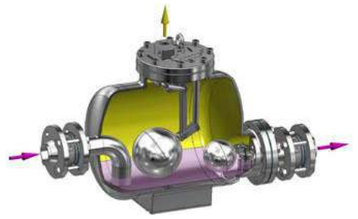
NOTE: All ADCAMat automatic pump traps feature two mechanisms, combining the characteristics of a float steam trap and a pressure operated pump.
When certain that the system backpressure is always superior to the equipment upstream pressure then an ADCAMat pressure operated pump (without steam trap) is the ideal solution as long as it is installed in a closed loop.
In extreme cases, where the system condensate load is above the discharge capacity of all ADCAMat automatic pump trap models, it is recommended to install an ADCAMat pressure operated pump in combination with a high capacity FLT series steam trap. In such scenarios, please consult the manufacturer.



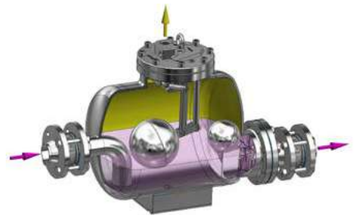
H – Filling head
S1 – Motive steam
C1 – Condensate from heat process
C – Condensate return
V – Automatic air venting

Fig.1

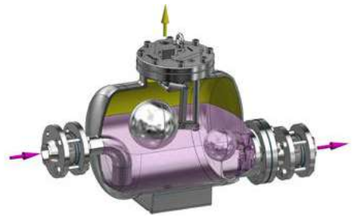
OPERATION



1. In the first instance, the steam intake valve is closed, while the vent valve is open. As condensate flows into the body through the inlet check valve, the APST can operate in a closed loop application, in one of two ways (as a steam trap or pressure operated pump).



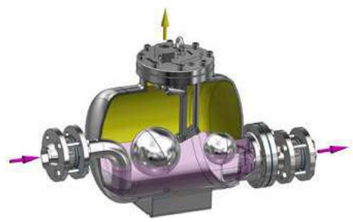
2. If the inlet pressure is greater than the back pressure, the APST works as a steam trap, continuously discharging condensate by differential pressure. At this point the steam intake valve remains closed and the vent valve open.



3. As soon as, e.g., the equipment control valve starts to modulate, the steam pressure will decrease. The lower differential pressure decreases the APST's ability to discharge as a steam trap, causing the condensate level to rise inside the body. Vacuum may even occur at this stage.

4. If this situation would persist, the condensate would eventually flood the equipment, causing problems. However, by using an APST, as the float reaches its highest position, the snap action mechanism actuates, closing the vent valve and opening the steam intake valve. Steam will then replace the necessary positive pressure to pump out the condensate. At this point the APST works as a pressure operated pump.

5. The float starts to fall as the condensate level inside the body drops and is discharged to the return system. When the float reaches its lowest position, the snap action mechanism resets.



6. As the motive steam valve closes and the vent valve opens, equalizing the body pressure with the upstream pressure, the condensate is allowed to flow once again into the APST. The cycle then repeats itself and, with enough differential pressure, the APST resumes as a steam trap or, otherwise, as a pump.

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AUTOMATIC PUMP TRAP
PPT14

DESCRIPTION

The ADCAMat PPT14 automatic pump trap is especially recommended where stall condition may occur due to poor steam trap condensate discharge capacity, caused by temporary insufficient pressure drop.
The equipment combines the features of a float steam trap and a pressure operated pump, in one single unit.
Whenever the steam trap function is incapable of draining condensate, the pump function is activated (using external steam pressure). The pump replaces the necessary positive pressure to lift the condensate to the return system, before water logging occurs, avoiding water hammer and consequent noise, equipment damage, corrosion, unstable temperature control, etc.

MAIN FEATURES

Compact design.
Hardened stainless steel wear parts.
High-endurance inconel springs.
Low filling head to minimize installation space.
No electric requirements or NPSH issues.
Suitable for hazardous environments.
Low running costs.
No motive or flash steam is lost.
Operation under vacuum conditions.

OPTIONS: Level gauge.

USE: Drain and lift steam condensate from heat exchangers, among others.

AVAILABLE MODELS: PPT14S – carbon steel.
PPT14SS – stainless steel.

SIZES: 11/2" x 1" and 2" x 11/2".
DN 40 x 25 and DN 50 x 40.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp (threaded flanges).
Others on request.

INSTALLATION: Horizontal installation in a closed loop system. An example is shown in Fig. 1. See IMI – Installation and maintenance instructions.

MOTIVE MEDIUM: Saturated steam.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
All sizes	2 (CE marked)

LIMITING CONDITIONS	
Liquid specific gravity	0,8 to 1
Maximum motive inlet pressure	10 bar
Minimum motive inlet pressure	1 bar
Maximum operating temperature	185 ºC
Minimum operating temperature	0 ºC
Pump discharge per cycle (approx.)	11 L

Remark: It is recommended that the motive inlet pressure does not exceed 1 to 4 bar above the expected pump backpressure.

FLOW RATE CAPACITY (kg/h) OPERATING IN PUMP MODE W/ 300 mm FILLING HEAD

MOTIVE PRESSURE (bar)	TOTAL LIFT (bar)	11/2" x 1" DN 40 x 25	2" x 11/2" DN 50 x 40
1	0,35	1050	1220
2		1190	1490
3		1220	1530
4		1280	1600
6		1310	1640
8		1380	1730
10		1460	1830
2	1	940	1180
3		1020	1280
4		1110	1390
6		1200	1510
8		1290	1620
10		1380	1730
3	2	720	900
4		850	1070
5		940	1180
6		1010	1260
8		1130	1410
10		1200	1490
4	3	620	780
5		730	920
6		840	1050
8		980	1230
10		1090	1370
5	4	540	680
6		690	870
8		880	1100
10		960	1190
6	5	520	650
8		730	910
10		840	1060
7	6	530	670
8		640	810
10		730	920

BODY LIMITING CONDITIONS *

PPT14S		PPT14SS		
FLANGED PN 16 / CLASS 150		FLANGED PN 16	FLANGED CLASS 150	RELATED TEMP.
ALLOWABLE PRESSURE	RELATED TEMP.	ALLOWABLE PRESSURE	ALLOWABLE PRESSURE	
16 bar	50 ºC	16 bar	15,3 bar	50 ºC
14 bar	100 ºC	15 bar	13,3 bar	100 ºC
13 bar	195 ºC	12,7 bar	11,1 bar	200 ºC
12 bar	250 ºC	12 bar	10,2 bar	250 ºC

* Rating according to EN 1092-1:2018.

RECEIVER SIZING TABLE FOR EQUALIZED, CLOSED SYSTEM INSTALLATION

FLOW RATE (kg/h)	RECEIVER SIZE (DN)						
	40	50	80	100	150	200	250
	RECEIVER LENGTH (mm)						
≤ 300	1200	700	–	–	–	–	–
400	1500	1000	–	–	–	–	–
500	2000	1200	500	–	–	–	–
600	–	1500	600	–	–	–	–
800	–	2000	800	500	–	–	–
1000	–	–	1000	700	–	–	–
1500	–	–	1500	1000	–	–	–
2000	–	–	2000	1300	600	–	–
3000	–	–	–	2000	900	500	–
4000	–	–	–	–	1200	700	–
5000	–	–	–	–	1400	800	500
6000	–	–	–	–	1700	1000	600
7000	–	–	–	–	2000	1200	700
8000	–	–	–	–	–	1300	800
9000	–	–	–	–	–	1500	900
10000	–	–	–	–	–	1700	1000

Remark: Receiver length can be reduced by 50% when the motive inlet pressure divided by the backpressure is ≥ 2.

CAPACITY CORRECTION FACTORS FOR FILLING HEADS OTHER THAN 300 mm

PUMP SIZE	FILLING HEAD "H" (mm)			
	150	300	600	900
All sizes	0,7	1	1,2	1,35

Remark: Filling head (H) is shown in Fig. 1.

FLOW RATE CAPACITY (kg/h) OPERATING IN STEAM TRAP MODE

MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)											
		0,1	0,3	0,5	0,7	1	1,5	2	3	4	5	7	10
PPT14	11/2" x 1" – DN 40 x 25	650	1100	1500	1700	2000	2600	3000	3510	3990	4400	5400	6200
PPT14	2" x 11/2" – DN 50 x 40	1050	1750	2400	2700	3400	3900	4500	5900	6600	7650	8500	10100

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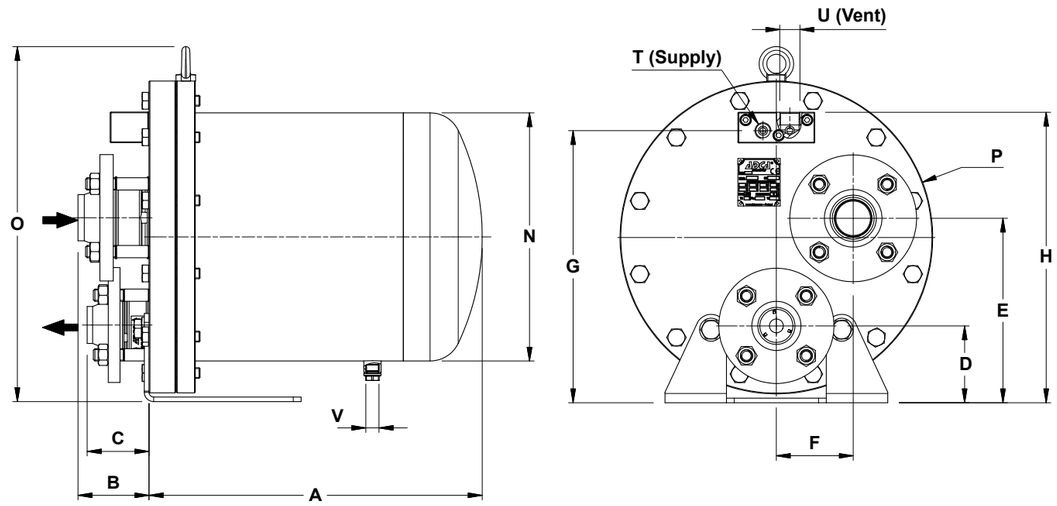
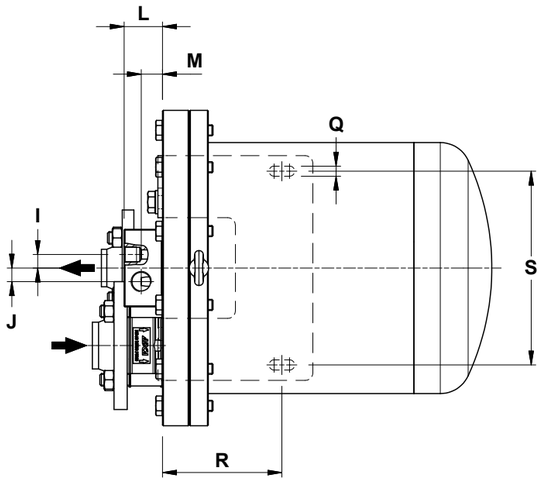
IS PPT14.01 E 02.20





DIMENSIONS (mm) – PN 16

SIZE	A	B *	C *	D	E	F	G	H	I	J	L	M	N	O	P	Q	R	S	T **	U **	V **	WGT. (kg)	VOL. (L)
DN 40 x 25	425	80	64	100	240	100	354	378	17,5	17,5	50	28	324	464	407	13	154	250	1/2"	3/4"	3/8"	81,2	25
DN 50 x 40	425	91	79	100	240	100	354	378	17,5	17,5	50	28	324	464	407	13	154	250	1/2"	3/4"	3/8"	84	25

DIMENSIONS (mm) – CLASS 150

SIZE	A	B *	C *	D	E	F	G	H	I	J	L	M	N	O	P	Q	R	S	T **	U **	V **	WGT. (kg)	VOL. (L)
11/2" x 1"	425	97	80	100	240	100	354	378	17,5	17,5	50	28	324	464	407	13	154	250	1/2"	3/4"	3/8"	80,6	25
2" x 11/2"	425	106	96	100	240	100	354	378	17,5	17,5	50	28	324	464	407	13	154	250	1/2"	3/4"	3/8"	83,3	25

* Dimensions are different if ISO 7 Rp female threaded flanges are requested.
** As standard, in versions manufactured with EN 1092-1 PN 16 flanges, these connections are female threaded ISO 7 Rp. In versions with ASME B16.5 flanges, these connections are female threaded NPT.

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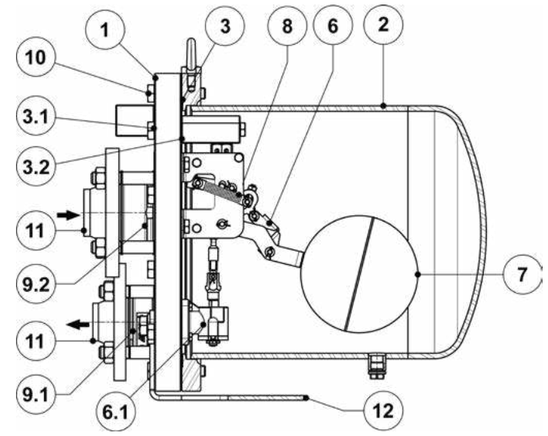

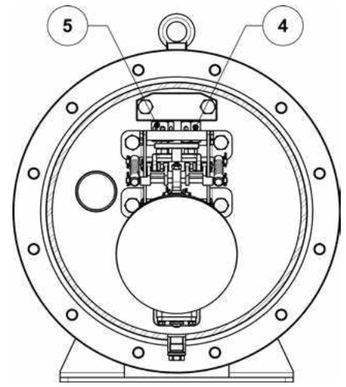

MATERIALS

POS. Nº	DESIGNATION	PPT14S	PPT14SS
1	Body	S355JR / 1.0045	AISI 316 / 1.4401; AISI 316L / 1.4404
2	Cover	S355JR / 1.0045; P265GH / 1.0425; P235GH / 1.0345	AISI 304 / 1.4301; AISI 316 / 1.4401
3	* Cover gasket	Stainless steel / Graphite	Stainless steel / Graphite
3.1	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
3.2	* Gasket	Stainless steel / Graphite	Stainless steel / Graphite
4	* Intake valve/seat assembly	Stainless steel	Stainless steel
5	* Exhaust valve/seat assembly	Stainless steel	Stainless steel
6	Pump mechanism	Stainless steel	Stainless steel
6.1	Steam trap mechanism	Stainless steel	Stainless steel
7	* Float	Stainless steel	Stainless steel
8	* Spring assembly (2 pcs.)	Inconel	Inconel
9.1	* Outlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
9.2	* Inlet check valve	A351 CF8M / 1.4408	A351 CF8M / 1.4408
10	Bolts	Steel 8.8	Stainless steel A2-70
11	Counter flanges	P250GH / 1.0460	AISI 316 / 1.4401
12	Supporting frame	S235JR / 1.0038	AISI 304 / 1.4301

* Available spare parts.

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SIZING

To accurately size a pump trap, the following information must be provided:

1. Heat exchanger (or process equipment) maximum steam or condensate load, in kg/h.

2. Heat exchanger (or process equipment) operating pressure at full load in bar or, alternatively, the heat exchanger maximum operating pressure in bar and the over design percentage.

3. Motive steam pressure available to operate the pump trap, in bar.

4. The total lift or backpressure in bar the pump will have to overcome. This includes the change in fluid level elevation after the pump (0.0981 bar/m of lift), plus pressure in the return piping, plus the pressure drop caused by pipe friction and other system components.

5. Maximum controlled temperature of the medium to be heated (secondary fluid outlet temperature), in ºC.

6. Minimum temperature of the medium to be heated (secondary fluid minimum inlet temperature), in ºC.

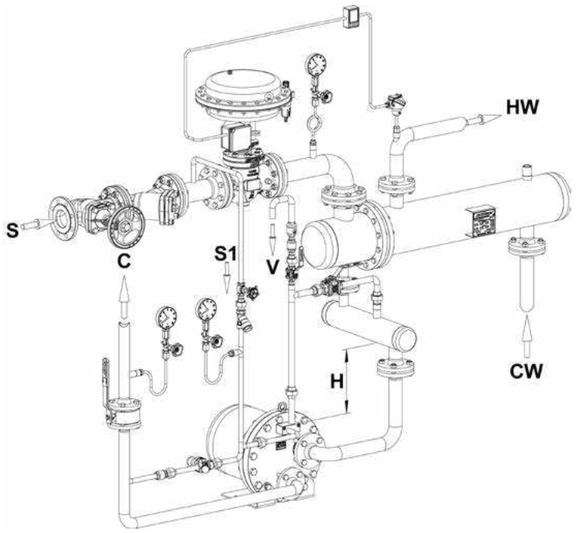
7. Available filling head (H) in mm or any other dimension that allows its determination. See Fig. 1.

For information on how to predict stall refer to IS 9.085 Technical Information Sheet - Understanding stall condition - or consult the manufacturer.

RECEIVER

A receiver is recommended to temporarily hold the liquid and prevent any flooding of the equipment, while the pump is performing a pumping cycle. A definable length of large diameter pipe can be used. See receiver sizing table.

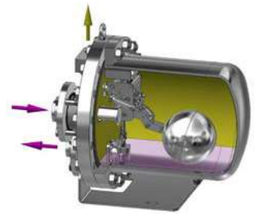
NOTE: All ADCAMat automatic pump traps feature two mechanisms, combining the characteristics of a float steam trap and a pressure operated pump.
When certain that the system backpressure is always superior to the equipment upstream pressure then an ADCAMat pressure operated pump (without steam trap) is the ideal solution as long as it is installed in a closed loop.
In extreme cases, where the system condensate load is above the discharge capacity of all ADCAMat automatic pump trap models, it is recommended to install an ADCAMat pressure operated pump in combination with a high capacity FLT series steam trap. In such scenarios, please consult the manufacturer.



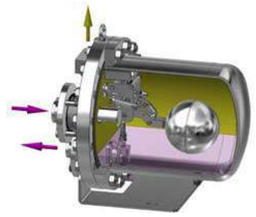
H – Filling head
S – Process steam supply
S1 – Motive steam
C – Condensate return
V – Automatic air venting
CW – Cold water inlet
HW – Hot water outlet

Fig.1

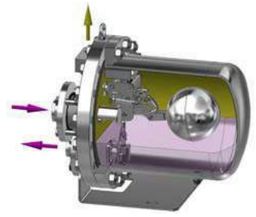
OPERATION



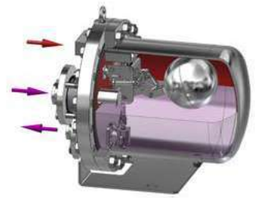
1. In the first instance, the steam intake valve is closed, while the vent valve is open. As condensate flows into the body through the inlet check valve, the PPT14 can operate in a closed loop application, in one of two ways (as a steam trap or pressure operated pump).



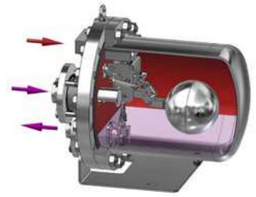
2. If the inlet pressure is greater than the back pressure, the PPT14 works as a steam trap, continuously discharging condensate by differential pressure. At this point the steam intake valve remains closed and the vent valve open.



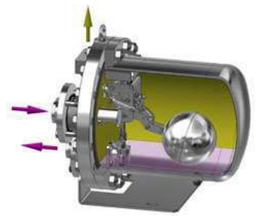
3. As soon as, e.g., the equipment control valve starts to modulate, the steam pressure will decrease. The lower differential pressure decreases the PPT14's ability to discharge as a steam trap causing the condensate level to rise inside the body. Vacuum may even occur at this stage.



4. If this situation would persist, the condensate would eventually flood the equipment, causing problems. However, by using a PPT14, as the float reaches its highest position, the snap action mechanism actuates, closing the vent valve and opening the steam intake valve. Steam will then replace the necessary positive pressure to pump out the condensate. At this point the PPT14 works as a pressure operated pump.



5. The float starts to fall as the condensate level inside the body drops and is discharged to the return system. When the float reaches its lowest position, the snap action mechanism resets.



6. As the motive steam valve closes and the vent valve opens, equalizing the body pressure with the upstream pressure, the condensate is allowed to flow once again into the PPT14. The cycle then repeats itself and, with enough differential pressure, the PPT14 resumes as a steam trap or, otherwise, as a pump.

ADCAMat

ADCAMAT PUMP TRAPS

UNDERSTANDING STALL CONDITION

For convenience purposes the term heat exchanger will be used to describe all types of equipment where heat is transferred from one fluid to another. This includes shell and tube heat exchangers and plate heat exchangers, but also heating coils, jacketed vessels, heating batteries, etc.

What is stall and why does it occur?

In a temperature control application such as the one shown in Fig. 1, when a control valve is throttling to meet the requirements of a reduced heat load, the steam pressure P1 inside the heat exchanger falls. This fall is sometimes considerable and can reduce differential pressure across the steam trap to a point where it can no longer discharge (P2 is equal to or greater than P1). Consequently, condensate accumulates inside the heat exchanger resulting in a stall condition which leads to poor heat transfer (temperature fluctuation), corrosion, water hammer, leakages and noise, amongst others.

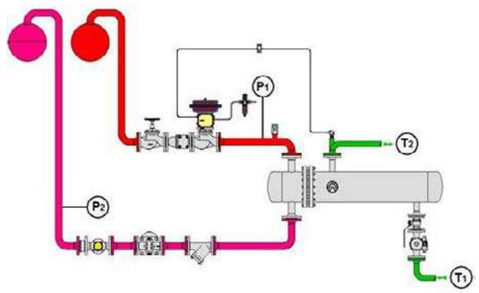


Fig. 1

Overdesigned heat exchangers

Most heat exchangers have more heating area than required. This is because designers typically select a heat exchanger that covers the requirements from a standard range with pre-determined heat transfer areas. In addition to other safety factors normally considered, this often results in over sizing.

Overdesigned heat exchangers with capabilities above the required needs operate with lower steam pressures, and corresponding temperatures, when compared to perfectly sized units, increasing the chance of stall condition occurring.

It is thus critical that an evaluation of the load profile of a heat exchanger is taken place, determining whether or not a stall condition may occur.

How to solve a stall condition?

In such cases where stall condition can take place, an ADCAMat pressure operated pump and steam trap (see Fig. 2) or an ADCAMat automatic pump trap, installed in a closed loop system, is a solution.

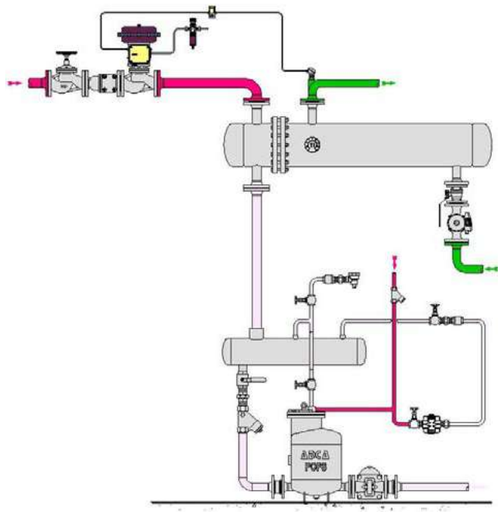


Fig. 2

Whenever the steam trap is incapable of draining condensate, the pump function is activated (using external steam pressure). The pump replaces the necessary positive pressure to lift the condensate to the return system before water logging occurs. The pump is only required during stall loads and therefore a steam trap is still required to prevent steam from discharging into the return condensate line whenever steam pressure P1 exceeds the back pressure P2.

Obviously, if the back pressure always exceeds the steam pressure (full load stall) the steam trap is unnecessary.

Wheatear a pressure operated pump and steam trap set or a “two-in-one” automatic pump trap is involved each part (pump and trap) must be analysed individually.

Stall prediction

Calculation of the stall load can be performed either by mathematical or graphical approach. The first uses standard thermodynamic formulas to calculate the percentage of heat load at stall, which is reached when the steam pressure P1 is equal to the back pressure P2. The second approach involves the use of a “stall chart” which yields sufficient accuracy as long as the operating steam pressure, and corresponding temperature, at full load is considered.

Example

Consider a heat exchanger operating at a nominal 6 bar g, designed to heat a constant water flow of 15 000 kg/h from 20 ºC to 80 ºC. Minimum heat load occurs at 60% of full load. The condensate lifts 10 meters into a return line at 0,5 bar g pressure.

a) Determining the equivalent saturated temperature of the total back pressure

The total back pressure is equal to the lift height equivalent pressure, plus the pressure on the return line.

Pipe friction is neglected considering a short and properly sized downstream pipe work.

10 m × 0,0981 bar + 0,5 bar = 1.481 ≈ 1,5 bar g

Therefore, the total back pressure is 1,5 bar g and, from the steam tables, the corresponding saturated temperature is t_B=127,6 ºC.

b) Calculating the full heat load

$$\dot{Q} = \dot{m} \cdot Cp \cdot \Delta T$$

$\dot{Q}$ = Heat transfer rate [kcal/h]
$\dot{m}$ = Mass flowrate of the secondary fluid [kg/h]
Cp = Specific heat capacity of the secondary fluid [kcal/kg°C]
ΔT = Temperate rise of the secondary fluid [K or °C]

$$\dot{Q} = 15\,000 \cdot 1 \cdot (80 - 20)$$

$$\dot{Q} = 900\,000 \text{ kcal/h}$$

c) Calculating the steam flow rate at full load

At 6 bar g saturated steam has a temperature of approximately 165 ºC and an enthalpy of evaporation h_{fg} = 483,8 kcal/kg.

$$\dot{m}_s = \frac{\dot{Q}}{h_{fg}}$$

$$\dot{m}_s = \frac{900\,000}{483{,}8} = 1860{,}27 \text{ kg/h}$$

d) Calculating the required heating area

Using the logarithmic mean temperature difference:

$$\Delta T_{LM} = \frac{t_{CO} - t_{CI}}{\ln\left(\frac{t_S - t_{CI}}{t_S - t_{CO}}\right)}$$

ΔT_{LM} = Logarithmic meam temperature difference [K or °C]
t_{CO}=Secondary fluid outlet temperature [°C]
t_{CI}=Secondary fluid inlet temperature [°C]
t_S=Steam temperature [°C]

$$\Delta T_{LM} = \frac{80 - 20}{\ln\left(\frac{165 - 20}{165 - 80}\right)}$$

$$\Delta T_{LM} = 112{,}34 \text{ °C}$$

The minimum heating area that fulfills the requirements for the full load is calculated according to the following formula:

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$$\dot{Q} = A \cdot k \cdot \Delta T_{LM}$$

$$A = \frac{\dot{Q}}{k \cdot \Delta T_{LM}}$$

$\dot{Q}$ =Heat transfer rate [kcal/h]

A = Heating area [m^2]

k = Heat transfer coefficient [kcal/m^2 h°C]

ΔT_{LM} = Logarithmic meam temperature difference [K or °C]

The manufacturer considers a heat transfer coefficient of 2100 kcal/m^2 h°C for this steam to water heat exchanger which yields a heat transfer area of:

$$A = \frac{900\,000}{2100 \cdot 112,34}$$

$$A = 3,81\ m^2$$

Amongst the heat exchanger manufacturer range, a model with a heat transfer area of A = 4,15 m^2 was selected which corresponds to an overdesigning of around 9%.

e) Calculating operating steam pressure and flow rate at full load for the overdesigned heat exchanger

The operating steam temperature t_s for the full load condition must be determined by taking the larger heating area into consideration, however firstly the new ΔT_{LM} must be determined as follows:

$$\Delta T_{LM} = \frac{\dot{Q}}{A \cdot k}$$

$$\Delta T_{LM} = \frac{900\,000}{4,15 \cdot 2100}$$

$$\Delta T_{LM} = 103,27\ ºC$$

The steam temperature t_s can be retrieved from the following equation:

$$\Delta T_{LM} = \frac{t_{CO} - t_{CI}}{\ln\left(\frac{t_S - t_{CI}}{t_S - t_{CO}}\right)}$$

$$103,27 = \frac{80 - 20}{\ln\left(\frac{t_S - 20}{t_S - 80}\right)}$$

$$\ln\left(\frac{t_S - 20}{t_S - 80}\right) = 0,58$$

$$\frac{t_S - 20}{t_S - 80} = e^{0,58}$$

$$t_S - 20 = e^{0,58}\,(t_S - 80)$$

$$0,79t_S = 122,88$$

$$t_S = 155,54\ ºC$$

This temperature corresponds to a steam pressure of 4.5 bar g which means that a 9% overdesigning decreased the operating steam pressure by 25 %. The steam flowrate at the full load of 900 000 kcal/h for the heat exchanger with A = 4,15 m^2 can now be calculated. Steam tables state that the enthalpy of evaporation of saturated steam at 4.5 bar is h_{fg} = 500,76 kcal/kg.

$$\dot{m}_s = \frac{\dot{Q}}{h_{fg}}$$

$$\dot{m}_s = \frac{900\,000}{500,76} = 1797,27\ kg/h$$

f) Calculating the flow rate at stall load for the overdesigned heat exchanger

The load percentage at which stall condition occurs can be calculated according to the following formula:

$$\%\ \text{Stall load} = \frac{t_B - t_{CO}}{t_S - t_{CO}}$$

t_S = Steam temperature [°C]

t_B = Back pressure equivalent steam temperature [°C]

t_{CO} = Secondary fluid outlet temperature [°C]

$$\%\ \text{Stall load} = \frac{127,60 - 80}{155,54 - 80} \cdot 100$$

$$\%\ \text{Stall load} = 63\ \%$$

Which means that the flow rate at stall load is:

$$\dot{m}_S = 1797,27 \times 0,63 = 1132,28\ kg/h$$

g) Sizing the steam trap and pump or pump trap

In this case stall condition occurs above the minimum working load which means that a pump and steam trap, or automatic pump trap, must be installed.

The steam trap must be able to discharge the flow rate at full load (1797,27 kg/h with 4,5 bar g of steam pressure) and the pump must be able to handle the flow rate at stall condition of (1132,28 kg/h) against the back pressure of 1,5 bar g.

FLOW RATE CAPACITY (kg/h) OPERATING IN STEAM TRAP MODE

MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)					
		0,1	0,3	0,5	0,7	1	1,5
PPT14	11/2" x 1" - DN 40 x 25	650	1100	1500	1700	2000	2600
PPT14	2" x 11/2" - DN 50 x 40	1050	1750	2400	2700	3400	3900

MODEL	SIZE	DIFFERENTIAL PRESSURE (bar)					
		2	3	4	5	7	10
PPT14	11/2" x 1" - DN 40 x 25	3000	3510	3990	4400	5400	6200
PPT14	2" x 11/2" - DN 50 x 40	4500	5900	6600	7650	8500	10100

Fig. 3

According to Fig. 3 it can be seen that a PPT14 DN 40 x 25 or DN 50 x 40 will be able to handle the full load of 1797,27 kg/h at a differential pressure of 4,5 – 1,5 = 3 bar g.

FLOW RATE CAPACITY (kg/h) OPERATING IN PUMP MODE W/ 300 mm FILLING HEAD

MOTIVE PRESSURE (bar)	TOTAL LIFT (bar)	11/2" x 1" DN 40 x 25	2" x 11/2" DN 50 x 40
1	0,35	1050	1220
2		1190	1490
3		1220	1530
4		1280	1600
6		1310	1640
8		1380	1730
10		1460	1830
2	1	940	1180
3		1020	1280
4		1110	1390
6		1200	1510
8		1290	1620
10		1380	1730
3	2	720	900
4		850	1070
5		940	1180
6		1010	1260
8		1130	1410
10		1200	1490

Fig. 4

The pump flow rate capacities shown in Fig. 4 confirms that with an available motive pressure of 6 bar, a PPT14 DN 50 x 40 will handle the 1132,28 kg/h of condensate at stall condition against the 1,5 bar g back pressure.

Thus, a PPT14 DN 40 x 50 is suitable for this application.

If, however, in another application the minimum working load is higher than the stall load (e.g. minimum working load of 70%) then the system will have positive differential pressure at all times and a steam trap is the appropriate solution, as long as it has enough discharge capacity at minimum and maximum system loads.

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ELECTRIC CONDENSATE RECOVERY UNITS
ECRU

DESCRIPTION

The ADCAMAT ECRU series electric condensate recovery units are recommended in the transfer of high-temperature water such as hot condensate, to a higher elevation or pressure. This condensate is usually used as boiler feedwater. The standard models are prepared for flows up to 20 m3/h, or higher on request. The units are composed of an horizontal condensate vessel (receiver), a metallic support frame, electric pumps, level controls, valves, prewired control panel and pipework for connections between the different elements of the units.

OPERATION

The condensate is brought into the vessel through the inlet connections, with stainless steel sparge pipes, located on the top of the vessel. As the condensate level rises it will trigger the level control system to start the pumping process. In normal operating conditions, the pumps will work in alternating mode, which means they will alternate duty at the end of each cycle. In the event of a peak load, the level will continue rising eventually triggering the cascading switch which will make both pumps work simultaneously to relieve this peak demand.

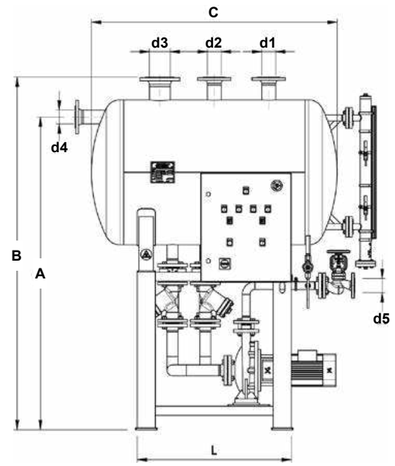
MAIN FEATURES

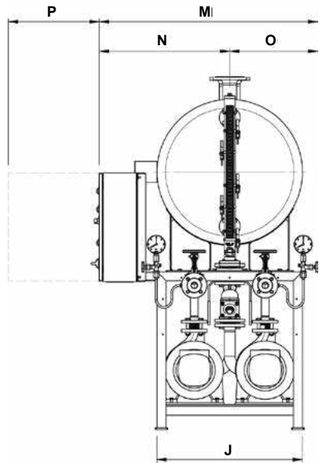
Condensate vessel – Completely manufactured from AISI 316 stainless steel or carbon steel, with inlet connections, overflow, air vents, drain, pump feeding outlets and a magnetic level indicator with bi-stable switches.
Valves and ancillaries – Includes full bore ball valves at the pump suction ports, manual regulating valves for system head regulation at the pumps discharge, seamless carbon steel pipes, strainers and pressure gauges.
Metal frame – Manufactured from structural steel, sandblasted and painted.
Pumps – Manufactured from stainless steel or cast iron, capable of handling hot condensate up to 98 ºC and designed for low NPSH.
Control panel – Metal enclosure rated to IP 65 or higher. Features alternating and cascading (simultaneity) functions, pump fault indication for each pump, low and high-level alarms, pump dry run inhibitor, operating mode selector switch and volt-free telemetry terminals for remote stats. The unit requires a 3 phase, 380-415 V AC, 50 Hz power supply.

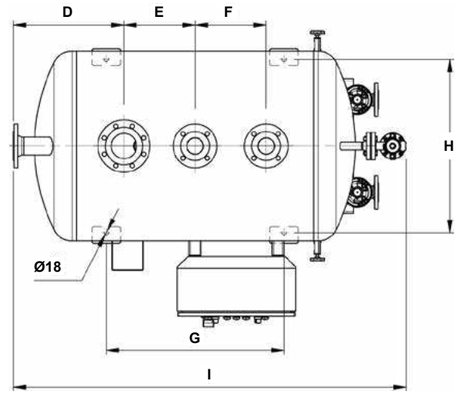
OPTIONS:
- Thermal insulation.
- Frame in stainless steel.
- Complete pipelines in stainless steel.
- Different pumping capacities.
- Alternative designs.

AVAILABLE MODELS:
- EC225 2T10 – 225L vessel capacity, 2 m³/h flow rate and 10 m delivery head.
- EC225 4T10 – 225L vessel capacity, 4 m³/h flow rate and 10 m delivery head.
- EC600 10T10 – 600L vessel capacity, 10 m³/h flow rate and 10 m delivery head.
- EC600 10T20 – 600L vessel capacity, 10 m³/h flow rate and 20 m delivery head.
- EC600 20T10 – 600L vessel capacity, 20 m³/h flow rate and 10 m delivery head.
- EC600 20T20 – 600L vessel capacity, 20 m³/h flow rate and 20 m delivery head.
- EC850 30T10 – 850L vessel capacity, 30 m³/h flow rate and 10 m delivery head.
- EC850 30T20 – 850L vessel capacity, 30 m³/h flow rate and 20 m delivery head.

CERTIFICATION
The ADCAMAT ECRU is designed to operate exclusively at atmospheric pressure and therefore is outside the scope of the European Pressure Equipment Directive. It complies with the European Machinery Directive and therefore carries the CE mark.
When supplied with an integrated control panel the compliance with the Low Voltage Directive and the Electromagnetic Compatibility Devices Directive is also ensured.
A declaration of conformity is delivered with the equipment according with the relevant Directives in use.







CONNECTIONS					
MODEL	**d1**	**d2**	**d3**	**d4**	**d5**
EC225 2T10	DN 50	DN 50	DN 80	DN 50	1” – DN 25 *
EC225 4T10	DN 50	DN 50	DN 80	DN 50	11/2” – DN 40 *
EC600 10T10	DN 65	DN 65	DN 100	DN 65	DN 32
EC600 10T20	DN 65	DN 65	DN 100	DN 65	DN 32
EC600 20T10	DN 80	DN 80	DN 100	DN 80	DN 40
EC600 20T20	DN 80	DN 80	DN 100	DN 80	DN 40
EC850 30T10	DN 100	DN 100	DN 100	DN 100	DN 50
EC850 30T20	DN 100	DN 100	DN 100	DN 100	DN 50

* Female threaded ISO 7 Rp or flanged EN 1092-1 PN 16.

DIMENSIONS (mm)															
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**
EC225	1450	1645	1236	423	300	300	750	440	1577,5	500	830	1043	568	475	500
EC600	1725	1945	1354	467	300	300	750	730	1660,5	800	850	1200	727	473	500
EC850	1700	1945	1854	617	400	400	1000	730	2160,5	800	1100	1200	727	473	500

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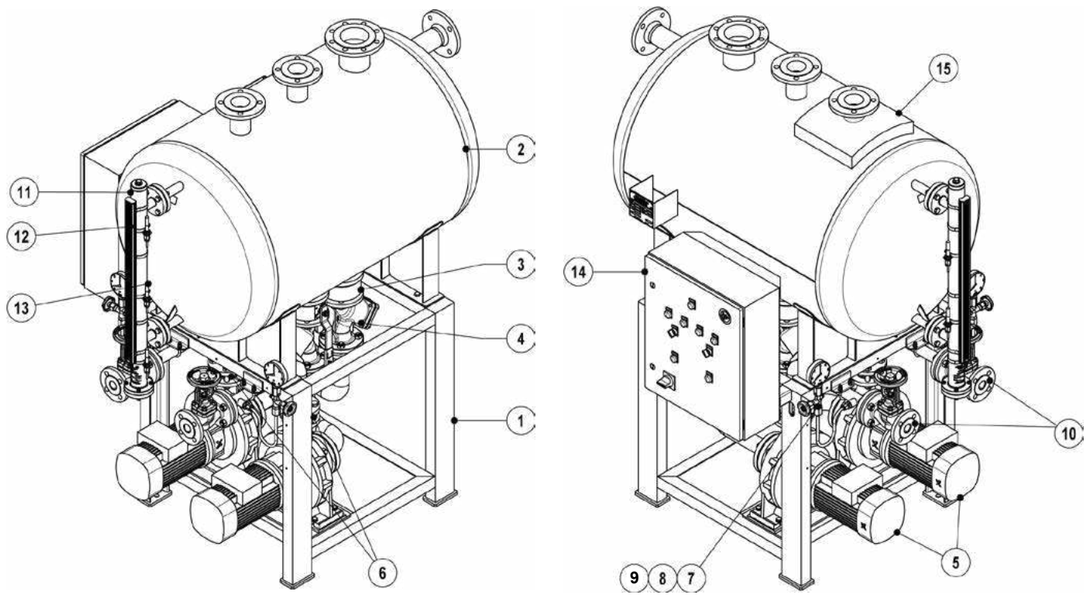

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL ***
1	Metal frame	S235JR / 1.0038; AISI304 / 1.4301
2	Vessel	AISI 316 / 1.4401; P235GH / 1.0325
3	Ball valves	ADCA M3I / MWS1
4	Strainers	ADCA IS16F
5	Electric pumps	-
6	Check valves	ADCA RD40
7	Pressure gauge	ADCA MAN100
8	Siphon	ADCA GSU
9	Gauge cock	ADCA GC400
10	Globe valve	ADCA VF20; ADCA VF40; ADCA GV32
11	Magnetic level indicator	ADCA MLI
12	Indicator	ADCA MLI
13	Level switch	ADCA MS
14	Control panel	-
15	Thermal insulation **	Rock-wool / Aluminium

* References shown are merely indicative. They can be changed without notice.
** Optional.

ORDERING CODES ECRU										
Model	**EC**	**225**	**S**	**S**	**2T10**	**S**	**S**	**X**	**X**	**E**
ECRU Electric Condensate Recovery Unit	**EC**									
Vessel capacity										
225 liters		**225**								
600 liters		**600**								
850 liters		**850**								
Vessel material										
Carbon steel			**S**							
AISI 316 / 1.4401 stainless steel			**I**							
Number of electric pumps										
Single pump (non standard) (3~ 380 – 415 V, 50 Hz)				**S**						
Two pumps (3~ 380 – 415 V, 50 Hz)				**D**						
Maximum flow rate and delivery head in meters at the mentioned flow										
2 m³/h at 10 metres (with 225 L vessel)					**2T10**					
4 m³/h at 10 metres (with 225 L vessel)					**4T10**					
10 m³/h at 10 metres (with 600 L vessel)					**10T10**					
10 m³/h at 20 metres (with 600 L vessel)					**10T20**					
20 m³/h at 10 metres (with 600 L vessel)					**20T10**					
20 m³/h at 20 metres (with 600 L vessel)					**20T20**					
30 m³/h at 10 metres (with 850 L vessel)					**30T10**					
30 m³/h at 20 metres (with 850 L vessel)					**30T20**					
Metal frame										
Fabricated carbon steel						**S**				
Fabricated stainless steel						**I**				
Piping connections										
Carbon steel							**S**			
Stainless steel							**I**			
Control panel										
Without control panel								**X**		
Control panel, magnetic level indicator, bi-stable switches and wiring								**E**		
Thermal insulation										
Without thermal insulation									**X**	
Thermal insulation with aluminium external protection									**T**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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ELECTRIC CONDENSATE RECOVERY UNITS
ECRUV

DESCRIPTION

The ADCAMat ECRUV series electric condensate recovery units are recommended in the transfer of high-temperature water such as hot condensate, to a higher elevation or pressure. This condensate is usually used as boiler feedwater. The standard models are prepared for flows up to 4 m³/h. The units are composed of a vertical condensate vessel (receiver), a metallic support frame, electric pump, level controls, valves, prewired control panel and pipework for connections between the different elements of the units.

OPERATION

The condensate is brought into the vessel through the inlet connections, with stainless steel sparge pipes, located on the top of the vessel. As the condensate level rises it will trigger the level control system to start the pumping process.

MAIN FEATURES

Condensate vessel – Completely manufactured from carbon steel or AISI 316 stainless steel, with inlet connections, overflow, air vents, drain, pump feeding outlets and a set of conductive level switches.

Metal frame – Manufactured from structural carbon steel or stainless steel and sandblasted. Carbon steel version is painted.

Pump – Manufactured from stainless steel, capable of handling hot condensate up to 98 ºC and designed for low NPSH.

Control panel – Metal enclosure rated to IP 65 or higher. Features pump fault indication, level alarms, operating mode selector switch and volt-free telemetry terminals for remote stats. The unit requires a 3 phase, 380-415 V AC, 50 Hz power supply.

AVAILABLE MODELS:

ECV150 2T10 – 150L vessel capacity, 2 m³/h flow rate and 10 m delivery head.
ECV225 4T10 – 225L vessel capacity, 4 m³/h flow rate and 10 m delivery head.

OPTIONS:

Thermal insulation.
Frame in stainless steel.
Complete pipelines in stainless steel.
Different pumping capacities.
Alternative designs.

CERTIFICATION

The ADCAMAT ECRUV is designed to operate exclusively at atmospheric pressure and therefore is outside the scope of the European Pressure Equipment Directive. It complies with the European Machinery Directive and therefore carries the CE mark.
When supplied with an integrated control panel the compliance with the Low Voltage Directive and the Electromagnetic Compatibility Devices Directive is also ensured.
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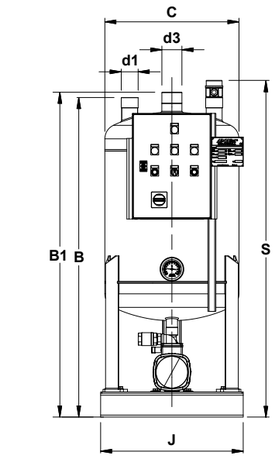

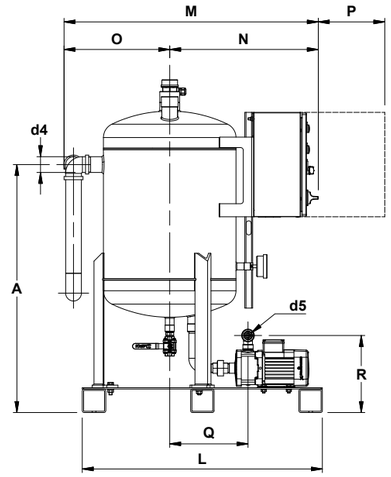

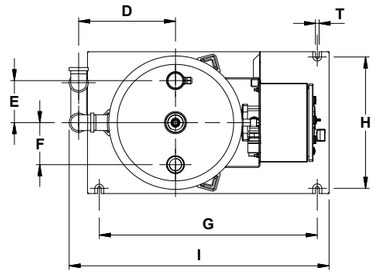

CONNECTIONS				
MODEL	**d1 ***	**d3 ***	**d4 ****	**d5 ***
ECV150 2T10	11/2”	2”	2”	1”
ECV225 4T10	2”	2”	2”	11/2”

* Female threaded ISO 7 Rp.
** Male threaded ISO 7 R.

DIMENSIONS (mm)																				
MODEL	**A**	**B**	**B1**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**
ECV150 2T10	950	1210	1230	508	369	160	160	830	500	990	540	920	974	569	405	255	300	295	1275	14
ECV225 4T10	1400	1680	–	508	369	160	150	890	500	1050	540	980	974	569	405	255	360	359	1725	14

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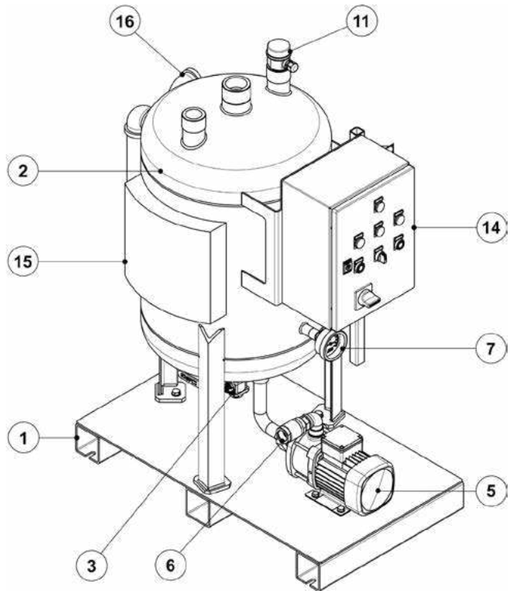

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL ***
1	Metal frame	S235JR / 1.0038; AISI304 / 1.4301
2	Vessel	AISI 316 / 1.4401; P235GH / 1.0325
3	Ball valve	ADCA M3i5
5	Electric pump	Stainless steel
6	Check valve	ADCA RT25
7	Thermometer	–
11	Conductive switches (multipoint detection)	PP; Stainless steel
14	Control panel	Steel
15	Thermal insulation **	Rockwool / Aluminium
16	Overflow	AISI 316 / 1.4401; P235GH / 1.0325

* References shown are merely indicative. They can be changed without notice.
** Optional.

LRQA CERTIFIED ISO 9001

ORDERING CODES ECRUV										
Model	**ECV**	**150**	**S**	**S**	**2T10**	**S**	**S**	**X**	**X**	**E**
ECRUV Electric Condensate Recovery Unit (vertical design)	**ECV**									
Vessel capacity										
150 liters		**150**								
225 liters		**225**								
Vessel material										
Carbon steel			**S**							
AISI 316 / 1.4401 stainless steel			**I**							
Number of electric pumps										
Single pump (3~ 380 – 415 V, 50 Hz)				**S**						
Maximum flow rate and delivery head in meters at the mentioned flow										
2 m³/h at 10 metres (with 150 L vessel)					**2T10**					
4 m³/h at 10 metres (with 225 L vessel)					**4T10**					
Metal frame										
Fabricated carbon steel						**S**				
Fabricated stainless steel						**I**				
Piping connections										
Carbon steel							**S**			
Stainless steel							**I**			
Control panel										
Without control panel								**X**		
Control panel, conductive switches and wiring								**C**		
Thermal insulation										
Without thermal insulation									**X**	
Thermal insulation with aluminium external protection									**T**	
Special valves / Extras										
Full description or additional codes have to be added in case of a non-standard combination										**E**

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MAGNETIC LEVEL INDICATORS
MLI

DESCRIPTION

The MLI series of bypass type magnetic level indicators were designed for continuous level indication and/or control in ADCA ECRU units and other special SKID mounted packages.
The indicators can be equipped with multiple MSB reed switches for alarm purposes or a side mounted level transmitter for continuous level monitoring.

MAIN FEATURES

Stainless steel construction.
Minimal leak points as compared to sight glasses.
No process media in contact with the indicator glass.
Continuous measurement of levels, independent of physical and chemical changes of the media: flashing, foaming, bubble formation, etc.

OPTIONS: MSB Magnetic bistable reed switches.

AVAILABLE MODELS: MLI16.

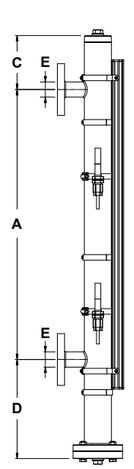
CONNECTIONS: Flanged EN 1092-1 PN 40.
Flanged ASME B16.5 Class 300.

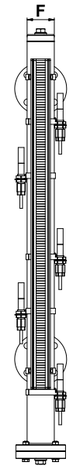
INSTALLATION: Always with the bottom cover pointing downwards.

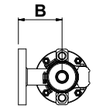
CE MARKING – GROUP 2 (PED – European Directive)	
PN 40	**Category**
DN 25	1 (CE marked)

BODY LIMITING CONDITIONS *	
FLANGED PN 40 / CLASS 300 **ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
40 bar	50 ºC
37,9 bar	100 ºC
34,4 bar	150 ºC
31,8 bar	200 ºC

PMO – Maximum operating pressure: 30 bar;
TMO – Maximum operating temperature: 200 ºC.
* According to EN 1092-2:2018.



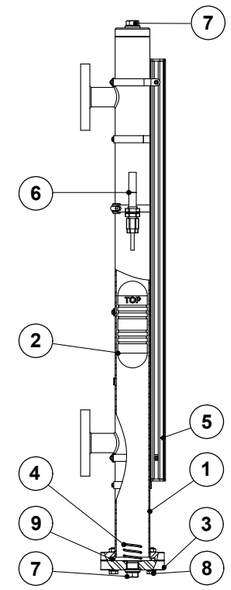




DIMENSIONS (mm)							
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**WEIGHT (kg)**
MLI350	350	90	120	220	DN 25 – 1”	60	7,53
MLI600	600	90	120	220	DN 25 – 1”	60	8,78

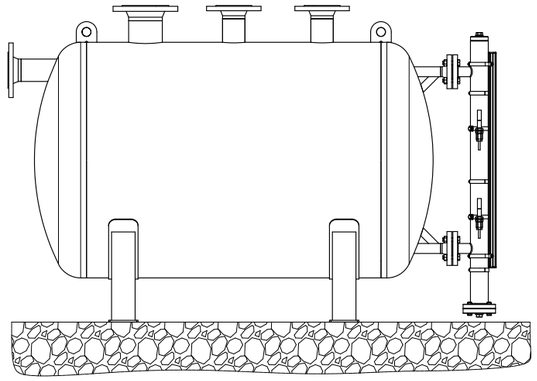
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	AISI 316 / 1.4401
2	* Float **a)**	AISI 316 / 1.4401
3	Bottom cover	AISI 316 / 1.4401
4	Float spring	AISI 302 / 1.4300
5	Indication rail	Aluminium with AISI 316 flaps
6	Magnet switch	Plastic
7	Plug	AISI 316L / 1.4404
8	Screws	AISI 304 / 1.4301
9	* O-ring	** Viton

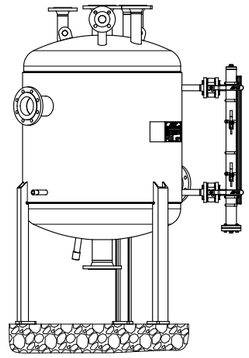
* Available spare parts.
** Others on request.
a) For fluid densities between 920 and 1075 kg/m3. Others on request.



We reserve the right to change the design and material of this product without notice.
IS MLI16.10 E 02.19

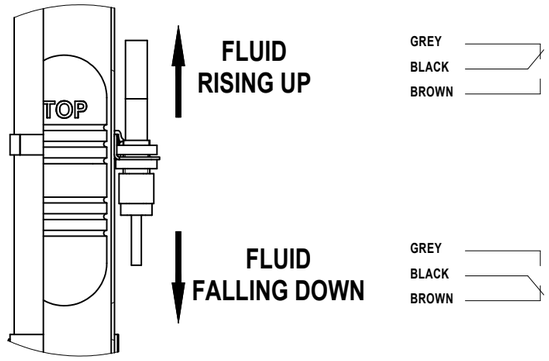
SIZING AND INSTALLATION





MAGNETIC SWITCHES

The MSB are bistable magnetic change-over reed switches, pre-wired with a 2 m long 3 x 0,75 mm² cable. They can be fitted onto the level indicator body by means of stainless steel mounting brackets, included with each switch.



TECHNICAL DATA	
Level of protection	IP 67
Contacts	Fe/Ni with rhodium as contact
Ambient air temperature	-25 ºC to 70 ºC
Max. switching frequency	100 Hz
Max. switching performance	60 VA/W
Max. switching current	1,0 A
Max. switching voltage	250 V AC/DC
Switch-on time	4,5 ms
Drop-out time	7,0 ms

LRQA CERTIFIED ISO 9001

HUMIDITY SEPARATORS
S16S
PN 16 and PN 40

DESCRIPTION

The S16 series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S16S – carbon steel.

SIZES: 1/2” to 2”.

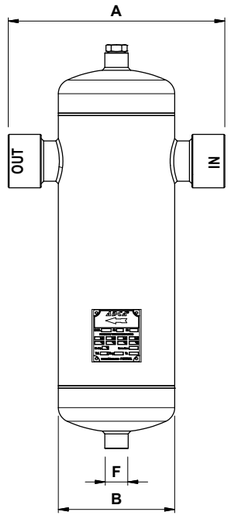
CONNECTIONS: Female threaded ISO 7 Rp or NPT.

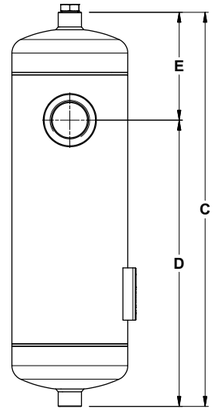
INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	**Category**	**PN 40**	**Category**
1/2" to 1”	SEP	1/2” to 11/4”	1 (CE marked)
11/4” to 2”	1 (CE marked)	11/2” to 2”	2 (CE marked)

BODY LIMITING CONDITIONS *			
PN 16		**PN 40**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	40 bar	50 ºC
14,8 bar	100 ºC	37,1 bar	100 ºC
13,3 bar **	200 ºC	33,3 bar **	200 ºC
12,1 bar	250 ºC	30,4 bar	250 ºC

* Rating according to EN 1092-1:2018.
** PMO – Max. operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.





DIMENSIONS (mm)													
PN 16									PN 40				
SIZE	A	B	C	D	E	F	VOLUME (L)	WEIGHT (kg)	C	D	E	VOLUME (L)	WEIGHT (kg)
1/2”	210	114	300	205	95	1/2”	2	3,7	315	210	105	2,2	5,2
3/4”	210	114	300	205	95	1/2”	2,5	3,9	315	210	105	2,2	5,4
1”	210	114	340	220	120	1/2”	3	4,6	340	220	120	2,4	6
11/4”	245	141	435	305	130	1/2”	5	8,2	435	305	130	4,8	11,3
11/2”	260	141	475	345	130	1/2”	5,7	9,3	475	340	135	5,4	12,7
2”	300	168	545	405	140	1/2”	10,5	13,6	545	395	150	9,2	19,6

* As standard, in separators manufactured with ISO 7 Rp threads, the drain connection is also female threaded ISO 7 Rp. In versions with NPT threads, this connection is also female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
Remarks: The top of the separator is supplied with a threaded connection which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

MATERIALS	
DESIGNATION	MATERIAL
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0325
Inlet / outlet sockets	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

We reserve the right to change the design and material of this product without notice.

HUMIDITY SEPARATORS
S16SS
PN 16 and PN 40

DESCRIPTION

The S16 series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S16SS – stainless steel.

SIZES: 1/2” to 2”.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.

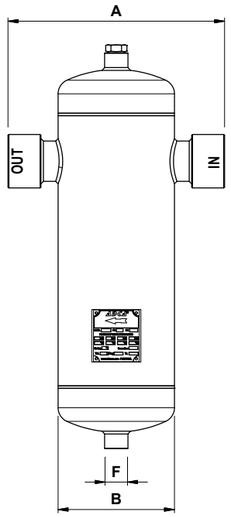
INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

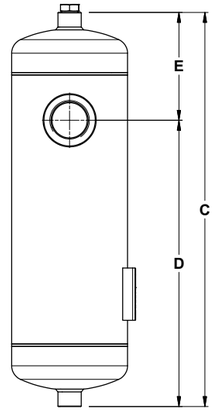
CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	Category	PN 40	Category
1/2" to 1”	SEP	1/2” to 11/4”	1 (CE marked)
11/4” to 2”	1 (CE marked)	11/2” to 2”	2 (CE marked)

BODY LIMITING CONDITIONS *			
PN 16		PN 40	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
16 bar	50 ºC	40 bar	50 ºC
15,1 bar	100 ºC	37,9 bar	100 ºC
12,7 bar **	200 ºC	31,8 bar **	200 ºC
11,9 bar	250 ºC	29,9 bar	250 ºC

* Rating according to EN 1092-1:2018.
** PMO – Max. operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.





DIMENSIONS (mm)													
PN 16									PN 40				
SIZE	A	B	C	D	E	F	VOLUME (L)	WEIGHT (kg)	C	D	E	VOLUME (L)	WEIGHT (kg)
1/2”	210	114	300	205	95	1/2”	2	3,2	300	205	95	2,1	4,5
3/4”	210	114	300	205	95	1/2”	2,3	3,4	300	205	95	2,2	4,6
1”	210	114	340	220	120	1/2”	2,7	4	340	220	120	2,5	5,4
11/4”	245	141	435	305	130	1/2”	5,5	7	435	295	140	4,8	11,8
11/2”	260	141	475	340	135	1/2”	6,1	8	475	330	145	5,7	13,2
2”	300	168	545	405	140	1/2”	10,9	10,9	545	400	145	9,2	18,8

* As standard, in separators manufactured with ISO 7 Rp threads, the drain connection is also female threaded ISO 7 Rp. In versions with NPT threads, this connection is also female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
Remarks: The top of the separator is supplied with a threaded connection which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

MATERIALS	
DESIGNATION	MATERIAL
Body	AISI 316L / 1.4404
Heads	AISI 316L / 1.4404; AISI 316Ti / 1.4571
Inlet / outlet pipes	AISI 316L / 1.4404
Inlet / outlet sockets	AISI 316L / 1.4404
Sockets	AISI 316L / 1.4404
Internals	AISI 316L / 1.4404

We reserve the right to change the design and material of this product without notice.

HUMIDITY SEPARATORS
S25/S
PN 16 and PN 40

DESCRIPTION

The S25 series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Condensate flanged connection.

USE: Steam, compressed air and other gases .

AVAILABLE MODELS: S25/S – carbon steel.

SIZES: DN 15 to DN 300.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300 on request.
Female threaded ISO 7 Rp or NPT on request.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.

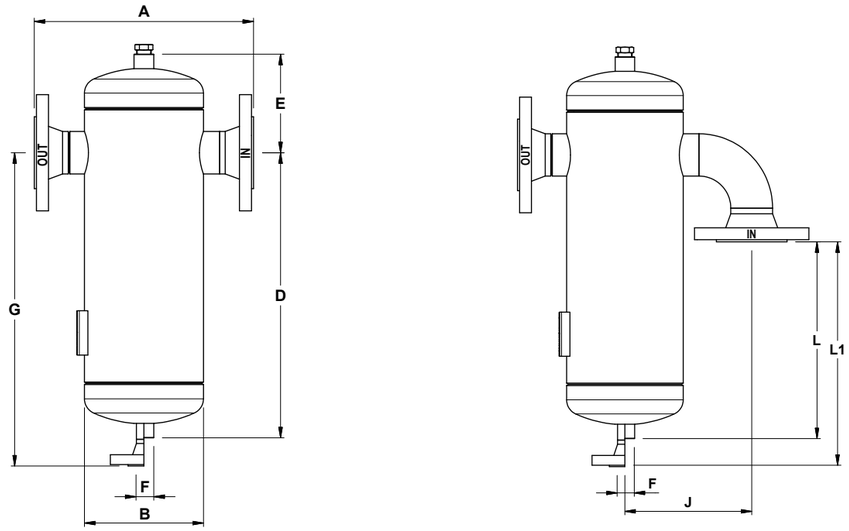
INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	Category	PN 40	Category
DN 15 to 25	SEP	DN 15 to 32	1 (CE marked)
DN 32 to 50	1 (CE marked)	DN 40 to 80	2 (CE marked)
DN 65 to 125	2 (CE marked)	DN 100 to 150	3 (CE marked)
DN 150 to 200	3 (CE marked)	DN 200 to 300	4 (CE marked)
DN 250 to 300	4 (CE marked)	–	–

We reserve the right to change the design and material of this product without notice.

BODY LIMITING CONDITIONS *					
FLANGED PN 16		FLANGED CLASS 150		FLANGED PN 40 / CLASS 300	
ALLOW. PRESS.	RELATED TEMP.	ALLOW. PRESS.	RELATED TEMP.	ALLOW. PRESS.	RELATED TEMP.
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC	37 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC
12 bar	250 ºC	–	–	27 bar	300 ºC

* Rating according to EN 1092-1:2018; ** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.



EVH – Elbow vertical inlet / horizontal outlet

APPROXIMATE DIMENSIONS (mm) *															
SIZE	A PN 16	A CL. 150	B	D	E	F **	G PN 16	G CL. 150	J	L PN 16	L CL. 150	L1 PN 16	L1 CL. 150	VOL. (L)	WGT. (kg)
DN 15	230	250	114	205	95	1/2"	245	255	115	144	135	184	185	2	5,4
DN 20	230	255	114	205	95	1/2"	245	255	115	136	123	176	173	2,5	5,8
DN 25	230	262	114	220	120	1/2"	260	270	135	142	126	182	176	3	6,8
DN 32	260	290	140	305	130	1/2"	345	355	155	194	200	234	250	5	11,4
DN 40	260	294	140	345	130	1/2"	385	395	165	243	226	283	276	5,7	12,6
DN 50	310	341	168	405	140	1/2"	445	455	190	281	265	321	315	10,5	18,4
DN 65 ***	380	430	219	430	160	3/4"	470	483	240	275	250	315	303	18,5	29,8
DN 80	400	440	219	482	168	3/4"	522	535	260	306	286	346	339	25	33,6
DN 100	470	520	273	548	207	3/4"	588	601	330	326	302	366	355	35,4	49,7
DN 125	535	605	324	652	227	1”	688	704	403	380	346	426	408	50	76
DN 150	565	633	356	712	292	1”	758	774	457	428	394	474	456	75	104
DN 200	605	685	406	902	312	1”	948	965	545	485	446	531	508	140	168,5
DN 250	720	784	508	1165	425	11/2”	1210	1227	671	714	682	779	764	280	318
DN 300	860	933	610	1197	553	11/2”	1262	1279	800	662	626	727	708	452	463

* For certified values, consult manufacturer. Volume and weight refer to EN flanged versions. Other versions may have slightly different values.
** As standard, in separators manufactured with EN flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

We reserve the right to change the design and material of this product without notice.

APPROXIMATE DIMENSIONS (mm) *															
SIZE	A PN 40	A CL. 300	B	D	E	F **	G PN 40	G CL. 300	J	L PN 40	L CL. 300	L1 PN 40	L1 CL. 300	VOL. (L)	WGT. (kg)
DN 15	230	259	114	210	105	1/2"	250	264	115	144	130	184	182	2	6,6
DN 20	230	264	114	210	105	1/2"	250	264	115	136	119	176	173	2,5	7,4
DN 25	230	274	114	220	120	1/2"	260	274	135	142	120	182	174	3	8,5
DN 32	260	303	140	305	130	1/2"	345	360	155	194	215	234	269	5	13
DN 40	260	307	140	345	130	1/2"	385	399	165	243	220	283	274	5,7	16
DN 50	310	354	168	395	150	1/2"	435	450	190	281	259	321	313	10,5	24
DN 65	394	442	219	415	175	3/4"	455	472	240	268	244	308	301	18,5	39
DN 80	410	459	219	470	180	3/4"	510	527	260	298	277	338	334	25	44
DN 100	490	530	273	530	225	3/4"	570	587	330	313	293	353	350	35,4	75
DN 125	561	622	324	627	262	1”	668	690	403	367	337	379	401	50	114
DN 150	605	652	356	712	292	1”	754	776	457	408	385	427	449	75	131
DN 200	650	700	406	852	362	1”	898	920	545	459	436	478	500	140	264
DN 250	810	815	508	1165	425	11/2”	1235	1259	671	679	666	736	760	280	454
DN 300	914	964	610	1197	553	11/2”	1262	1286	800	625	597	695	691	452	514

* For certified values, consult manufacturer. Volume and weight refer to EN flanged versions. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME B16.5 flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

MATERIALS	
DESIGNATION	MATERIAL
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

FLANGE CONNECTIONS			
RATING	SIZE	EN STANDARD	ASME STANDARD
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 40	DN 15 to 300	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.

We reserve the right to change the design and material of this product without notice.

HUMIDITY SEPARATORS
S25/S
PN 63

DESCRIPTION

The S25 series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S25/S – carbon steel.

SIZES: DN 15 to DN 200.

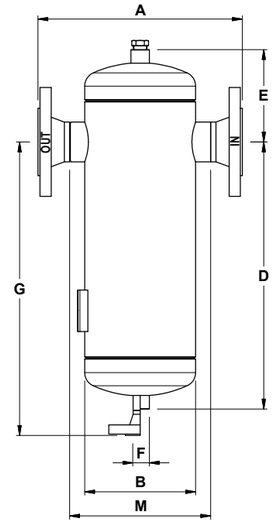
CONNECTIONS: Flanged EN 1092-1 PN 63.
Flanged ASME B16.5 Class 600 on request.
Socket weld (SW) ASME 16.11.

INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 63	**Category**
DN 15 to 25	1 (CE marked)
DN 32 to 50	2 (CE marked)
DN 65 to 125	3 (CE marked)
DN 150 to 200	4 (CE marked)

BODY LIMITING CONDITIONS *	
FLANGED PN 63 / CLASS 600	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
58 bar	100 ºC
47 bar **	261 ºC
43 bar	300 ºC

* Rating according to EN 1092-1:2018.
** PMO – Max. operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.



APPROXIMATE DIMENSIONS (mm) *										
SIZE	**A**	**B**	**D**	**E**	**F *****	**G**	**VOLUME (L)**	**WEIGHT (kg)**	**M (SW)**	**WEIGHT (kg)**
DN 15 **	245	114	230	125	1/2"	254	2	5,5	200	4,5
DN 20 **	245	114	222	133	1/2"	250	2,5	6,5	190	4,6
DN 25 **	265	114	254	136	1/2"	280	3	7,8	205	5,5
DN 32 **	295	140	330	145	1/2"	356	5	12,8	238	8,8
DN 40 **	295	140	368	147	1/2"	394	5,7	14,4	245	9,7
DN 50	340	168	415	170	1/2"	450	10,5	20,6	300	15,6
DN 65	410	219	433	197	3/4"	482	18,5	33	–	–
DN 80	430	219	485	205	3/4"	532	25	39	–	–
DN 100	500	273	533	262	3/4"	593	35,4	58,5	–	–
DN 125	590	324	627	302	1”	693	50	83	–	–
DN 150	625	356	727	317	1”	773	75	155	–	–
DN 200	680	406	842	412	1”	910	140	178	–	–

* For certified values, consult manufacturer; ** Supplied with PN 100 flanges
*** As standard, in separators manufactured with EN 1092-1 flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME B16.5 flanges or SW connections, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connections can be supplied (ASME in the same class as main connections).
Remarks: The top of the separator is supplied with a threaded connection which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0305
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0305
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

FLANGE CONNECTIONS			
Rating	**Size**	**EN Standard**	**ASME Standard**
PN 63	DN 15 to DN 40	EN 1092-1 PN 100	ASME B16.5 Cl. 600
PN 63	DN 50 to DN 200	EN 1092-1 PN 63	ASME B16.5 Cl. 600

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.304 E 00.21

HUMIDITY SEPARATORS
S25/S HV and S25/S VH
PN 16 and PN 40

DESCRIPTION

The S25 HV and VH series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S25/S HV or VH – carbon steel.

SIZES: DN 15 to DN 200.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300 on request.
Female threaded ISO 7 Rp or NPT on request.

INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

S25/S VH

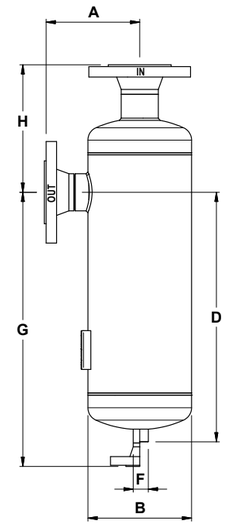
S25/S HV

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	**Category**	**PN 40**	**Category**
DN 15 to 25	SEP	DN 15 to 32	1 (CE marked)
DN 32 to 50	1 (CE marked)	DN 40 to 80	2 (CE marked)
DN 65 to 125	2 (CE marked)	DN 100 to 150	3 (CE marked)
DN 150 to 200	3 (CE marked)	DN 200	4 (CE marked)

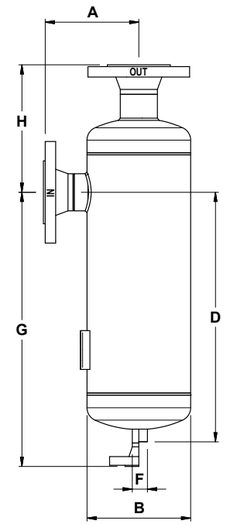
BODY LIMITING CONDITIONS *					
FLANGED PN 16		**FLANGED CLASS 150**		**FLANGED PN 40 / CLASS 300**	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC	37 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC
12 bar	250 ºC	–	–	27 bar	300 ºC

* Rating according to EN 1092-1:2018; ** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.



VH – Direct vertical inlet / Horizontal outlet



HV – Direct horizontal inlet / Vertical outlet

APPROXIMATE DIMENSIONS (mm) *													
SIZE	**A PN 16**	**A PN 40**	**A CL. 150**	**A CL. 300**	**B**	**D**	**F ****	**H**	**G**	**G CL. 150**	**G CL. 300**	**VOL. (L)**	**WGT. (kg)**
DN 15	115	115	125	130	114	205	1/2"	140	245	255	260	2	5
DN 20	115	115	128	132	114	205	1/2"	160	245	255	260	2,5	6
DN 25	115	115	131	137	114	220	1/2"	170	260	270	275	3	7
DN 32	130	130	145	152	140	305	1/2"	188	345	355	360	5	12
DN 40	130	130	147	154	140	345	1/2"	195	385	395	400	5,7	13,8
DN 50	155	155	170	177	168	405	1/2"	207	445	455	460	10,5	19,5
DN 65	190	197	215	221	219	430	3/4"	261	470	482	487	18,5	32
DN 80	200	205	220	230	219	482	3/4"	295	522	534	539	25	38
DN 100	235	245	260	267	273	548	3/4"	345	588	600	605	35,4	57
DN 125	268	280	303	311	324	652	1”	435	698	714	720	50	81,5
DN 150	283	303	316	326	356	714	1”	475	760	776	782	75	153
DN 200	303	329	343	352	406	902	1”	500	948	964	970	140	195

* For certified values, consult manufacturer. Volume and weight refer to PN 16 version. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME B16.5 flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connections can be supplied (ASME in the same class as main connections).

MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

FLANGE CONNECTIONS			
Rating	**Size**	**EN Standard**	**ASME Standard**
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to 200	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 40	DN 15 to 200	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.305 E 00.21

HUMIDITY SEPARATORS
S25/SS
PN 16 and PN 40

DESCRIPTION

The S25 series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impacts and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S25/SS – stainless steel.

SIZES: DN 15 to DN 300.

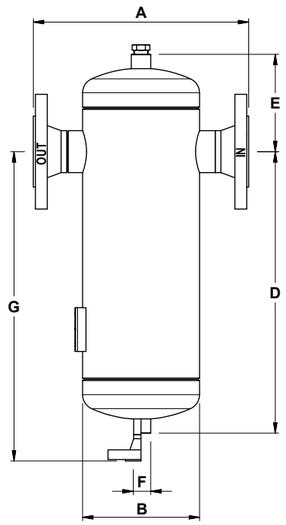
CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300 on request.
Female threaded ISO 7 Rp or NPT on request.

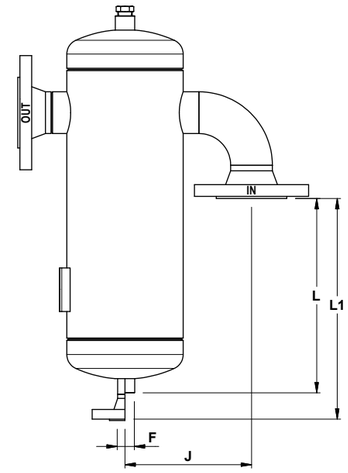
INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	**Category**	**PN 40**	**Category**
DN 15 to 25	SEP	DN 15 to 32	1 (CE marked)
DN 32 to 50	1 (CE marked)	DN 40 to 80	2 (CE marked)
DN 65 to 125	2 (CE marked)	DN 100 to 150	3 (CE marked)
DN 150 to 200	3 (CE marked)	DN 200 to 300	4 (CE marked)
DN 250 to 300	4 (CE marked)	–	–

LIMITING CONDITIONS							
FLANGED PN 16 *		**FLANGED CLASS 150 ****		**FLANGED CLASS 300 ****		**FLANGED PN 40 ***	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	15,3 bar	50 ºC	39,9 bar	50 ºC	40 bar	50 ºC
15 bar	100 ºC	13,3 bar	100 ºC	34,4 bar	100 ºC	37,9 bar	100 ºC
12,7 bar	200 ºC	11,1 bar ***	200 ºC	26,6 bar ***	250 ºC	29,9 bar ***	250 ºC
12 bar ***	250 ºC	–	–	25,2 bar	300 ºC	27,6 bar	300 ºC

* Rating according to EN 1092-1:2018; ** According to EN 1759-1:2004; *** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.





EVH – Elbow vertical inlet / horizontal outlet

APPROXIMATE DIMENSIONS (mm) *															
SIZE	**A PN 16**	**A CL. 150**	**B**	**D**	**E**	**F ****	**G PN 16**	**G CL. 150**	**J**	**L PN 16**	**L CL. 150**	**L1 PN 16**	**L1 CL. 150**	**VOL. (L)**	**WGT. (kg)**
DN 15	230	250	114	205	95	1/2"	245	255	115	144	135	184	185	2	5,4
DN 20	230	255	114	205	95	1/2"	245	255	115	136	123	176	173	2,5	5,8
DN 25	230	262	114	220	120	1/2"	260	270	135	142	126	182	176	3	6,8
DN 32	260	290	140	305	130	1/2"	345	355	155	194	200	234	250	5	11,4
DN 40	260	294	140	345	130	1/2"	385	395	165	243	226	283	276	5,7	12,6
DN 50	310	341	168	405	140	1/2"	445	455	190	281	265	321	315	10,5	18,4
DN 65 ***	380	430	219	430	160	3/4"	470	483	240	275	250	315	303	18,5	29,8
DN 80	400	440	219	482	168	3/4"	522	535	260	306	286	346	339	25	33,6
DN 100	470	520	273	548	207	3/4"	588	601	330	326	302	366	355	35,4	49,7
DN 125	535	605	324	652	227	1"	688	704	403	380	346	426	408	50	76
DN 150	565	633	356	712	292	1"	758	774	457	428	394	474	456	75	104
DN 200	605	685	406	902	312	1"	948	965	545	485	446	531	508	140	168,5
DN 250	720	784	508	1165	425	11/2"	1210	1227	671	714	682	779	764	280	318
DN 300	860	933	610	1197	553	11/2"	1262	1279	800	662	626	727	708	452	463

* For certified values, consult manufacturer. Volume and weight refer to EN flanged versions. Other versions may have slightly different values.
** As standard, in separators manufactured with EN flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

APPROXIMATE DIMENSIONS (mm) *															
SIZE	A PN 40	A CL. 300	B	D	E	F **	G PN 40	G CL. 300	J	L PN 40	L CL. 300	L1 PN 40	L1 CL. 300	VOL. (L)	WGT. (kg)
DN 15	230	259	114	210	105	1/2"	250	264	115	144	130	184	182	2	6,6
DN 20	230	264	114	210	105	1/2"	250	264	115	136	119	176	173	2,5	7,4
DN 25	230	274	114	220	120	1/2"	260	274	135	142	120	182	174	3	8,5
DN 32	260	303	140	305	130	1/2"	345	360	155	194	215	234	269	5	13
DN 40	260	307	140	345	130	1/2"	385	399	165	243	220	283	274	5,7	16
DN 50	310	354	168	395	150	1/2"	435	450	190	281	259	321	313	10,5	24
DN 65	394	442	219	415	175	3/4"	455	472	240	268	244	308	301	18,5	39
DN 80	410	459	219	470	180	3/4"	510	527	260	298	277	338	334	25	44
DN 100	490	530	273	530	225	3/4"	570	587	330	313	293	353	350	35,4	75
DN 125	561	622	324	627	262	1"	668	690	403	367	337	379	401	50	114
DN 150	605	652	356	712	292	1"	754	776	457	408	385	427	449	75	131
DN 200	650	700	406	852	362	1"	898	920	545	459	436	478	500	140	264
DN 250	810	815	508	1165	425	11/2"	1235	1259	671	679	666	736	760	280	454
DN 300	914	964	610	1197	553	11/2"	1262	1286	800	625	597	695	691	452	514

* For certified values, consult manufacturer. Volume and weight refer to EN flanged versions. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME B16.5 flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connection can be supplied (ASME in the same class as main connections).
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or sensing pipe connection.

MATERIALS	
DESIGNATION	MATERIAL
Body	ASTM A312 TP 316L
Heads	ASTM A403 WP 316L
Inlet / outlet pipes	ASTM A312 TP 316L
EN flanges	ASTM A182; AISI 316/316L
ASME flanges	ASTM A182; AISI 316/316L
Sockets	AISI 304 / 1.4301; AISI 316 / 1.4401
Internals	ASTM A479/A276; AISI 316/316L

FLANGE CONNECTIONS			
RATING	SIZE	EN STANDARD	ASME STANDARD
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 40	DN 15 to 300	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.

HUMIDITY SEPARATORS
SH25
PN 16 and PN 40

DESCRIPTION

The SH25 series horizontal centrifugal separators remove moisture from steam and compressed air systems. Steam or compressed air pass through the separator and, as a result of centrifugal forces, impact and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Inline design.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged drain connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: SH25/S – carbon steel.

SIZES: 1/2” to 6”; DN 15 to DN 150.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300.

INSTALLATION: Horizontal with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	Category	PN 40	Category
1/2” to 1” – DN 15 to 25	SEP	1/2” to 11/4” – DN 15 to 32	1 (CE marked)
11/4” to 2” – DN 32 to 50	1 (CE marked)	11/2” to 3” – DN 40 to 80	2 (CE marked)
21/2” to 6” – DN 65 to 150	2 (CE marked)	4” to 6” – DN 100 to 150	3 (CE marked)

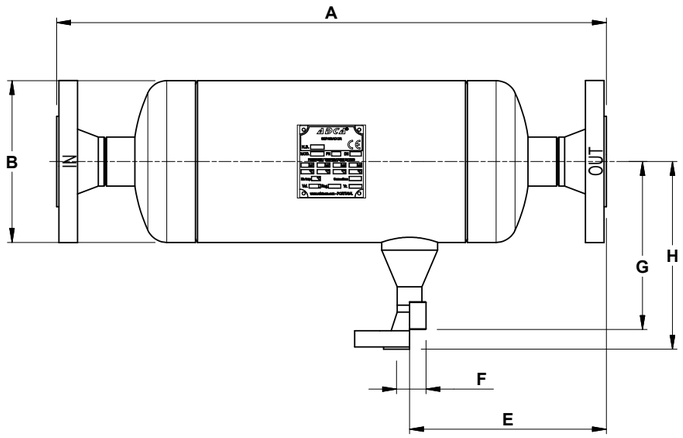
BODY LIMITING CONDITIONS *					
FLANGED PN 16		FLANGED CLASS 150		FLANGED PN 40 / CLASS 300	
ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE	ALLOWABLE PRESSURE	RELATED TEMPERATURE
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC	37 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC
12 bar	250 ºC	–	–	27 bar	300 ºC

* According to EN 1092-1:2018; ** PMO – Maximum operating pressure for saturated steam.
Body limiting conditions PN 40 or below, depending on the type of connection adopted. Rating PN 40 for threaded and SW versions.
Minimum operating temperature: -10 ºC. Design code: AD-Merkblatt.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

FLANGE CONNECTIONS			
RATING	**SIZE**	**EN STANDARD**	**ASME STANDARD**
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Class 150
PN 16	DN 65 to 100	EN 1092-1 PN 16	ASME B16.5 Class 150
PN 40	DN 15 to 100	EN 1092-1 PN 40	ASME B16.5 Class 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.



DIMENSIONS (mm)																
SIZE	**A PN 16**	**A PN 40**	**A CLASS 150**	**A CLASS 300**	**B**	**E PN 16**	**E PN 40**	**E CLASS 150**	**E CLASS 300**	**F ***	**G**	**H PN 16 / PN 40**	**H CLASS 150**	**H CLASS 300**	**VOL. (L.)**	**WGT. (kg)**
1/2" – DN 15	431	431	450	460	114	166	171	176	185	1/2"	134	148	158	162	2.5	5.7
3/4" – DN 20	435	435	460	470	114	168	173	180	190	1/2"	134	148	158	162	2.6	6.4
1" – DN 25	435	435	465	479	114	168	173	183	195	1/2"	134	148	158	162	2.6	6.9
11/4" – DN 32	475	475	505	521	140	180	186	195	209	3/4"	168	182	194	199	4.6	10.8
11/2" – DN 40	515	515	549	562	140	183	189	200	212	3/4"	168	182	194	199	5.2	11.8
2" – DN 50	550	550	581	593	168	193	210	208	232	3/4"	182	196	208	213	7.8	16.0
21/2" – DN 65	555	570	605	618	168	195	220	220	244	3/4"	182	196	208	213	8.1	16.8
3" – DN 80	625	640	665	682	219	245	258	264	280	1"	212	222	237	243	15.1	27.6
4" – DN 100	750	776	798	818	273	273	306	297	326	1"	239	249	264	270	29.1	40.9
5" – DN 125	860	886	928	947	324	289	324	322	355	1"	264	274	289	296	48.2	62.4
6" – DN 150	910	950	978	997	356	298	321	332	344	1"	280	290	305	312	62.5	80.4

* As standard, in versions with EN flanges and female ISO 7 Rp threads, these connections are female threaded ISO 7 Rp. In versions with ASME flanges, female NPT threads or SW, these connections are female threaded NPT.

We reserve the right to change the design and material of this product without notice.

HUMIDITY SEPARATORS
S30
PN 16 and PN 40

DESCRIPTION

The S30 series baffle separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of expansion, impact and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale, are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Maintenance-free design.

OPTIONS: Flanged condensate connection.

USE: Steam, compressed air and other gases.

AVAILABLE MODELS: S30/S – carbon steel, baffle design.

SIZES: DN 15 to DN 300.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300 on request.
Female threaded ISO 7 Rp or NPT on request.

INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	**Category**	**PN 40**	**Category**
DN 15 to 25	SEP	DN 15 to 32	1 (CE marked)
DN 32 to 50	1 (CE marked)	DN 40 to 80	2 (CE marked)
DN 65 to 125	2 (CE marked)	DN 100 to 150	3 (CE marked)
DN 150 to 200	3 (CE marked)	DN 200 to 300	4 (CE marked)
DN 250 to 300	4 (CE marked)	–	–

BODY LIMITING CONDITIONS *					
FLANGED PN 16		**FLANGED CLASS 150**		**FLANGED PN 40 / CLASS 300**	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC	37 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC
12 bar	250 ºC	–	–	27 bar	300 ºC

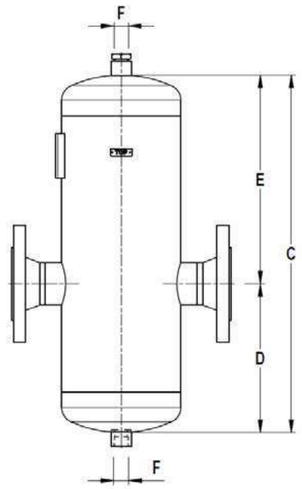
* Rating according to EN 1092-1:2018; ** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

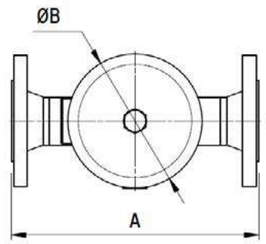
We reserve the right to change the design and material of this product without notice.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038

FLANGE CONNECTIONS			
Rating	**Size**	**EN Standard**	**ASME Standard**
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 40	DN 15 to 300	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.





APPROXIMATE DIMENSIONS (mm) *											
SIZE	**A PN 16**	**A PN 40**	**A CL. 150**	**A CL. 300**	**B**	**C**	**D**	**E**	**F ****	**VOLUME (L)**	**WEIGHT (kg)**
1/2" – DN 15	230	230	250	259	114	320	130	190	1/2"	2,7	6,3
3/4" – DN 20	230	230	255	264	114	320	130	190	1/2"	2,7	6,9
1" – DN 25	230	230	262	274	114	320	130	190	1/2"	2,8	7,3
11/4" – DN 32	260	260	290	303	140	395	170	225	1/2"	5,1	12
11/2" – DN 40	260	260	294	307	140	435	190	245	1/2"	5,7	13,3
2" – DN 50	310	310	341	354	168	505	210	295	1/2"	9,8	19
21/2" – DN 65	380	394	430	442	219	550	240	310	3/4"	17,9	30,8
3" – DN 80	400	416	440	459	219	610	290	320	3/4"	20	35
4" – DN 100	470	490	520	530	273	715	300	415	3/4"	37,6	49,6
5" – DN 125	535	561	605	622	324	845	350	495	1"	62,8	75,4
6" – DN 150	565	605	633	652	356	960	400	560	1"	86,2	101,2
8" – DN 200	605	650	685	700	406	1170	450	720	1"	139	158,7
10" – DN 250	720	790	784	815	508	1540	610	930	11/2"	283	301
12" – DN 300	860	914	933	964	610	1700	740	960	11/2"	452	433,9

* For certified values, consult manufacturer. Volume and weight refer to PN 16 version. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, the drain connection is female threaded ISO 7 Rp. In models with ASME B16.5 flanges, this connection is female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connections can be supplied (ASME on the same class as main connections).
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or balance pipe connection.

We reserve the right to change the design and material of this product without notice.

HUMIDITY SEPARATORS
SF251/S
PN 16 and PN 40

DESCRIPTION

The SF251/S series centrifugal separators remove moisture from steam and compressed air pipelines. Steam and compressed air pass through the separator and, as a result of centrifugal forces, impact and swirling effects, the particles with a heavier specific gravity, such as water and oil droplets, moisture in suspension, dirt and scale are separated from the fluid.
The condensate collected at the bottom of the separator must be automatically drained by a suitable steam or compressed air trap.

MAIN FEATURES

Several possibilities of installation.
No moving parts.
Stainless steel strainer screen included.

OPTIONS: Threaded condensate connection.
Special tailor-made designs.

USE: Steam, compressed air and other gases .

AVAILABLE MODELS: SF251/S – carbon steel.

SIZES: 1/2" to 4"; DN 15 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300 on request.

INSTALLATION: Always with the condensate discharge pointing downwards.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)			
PN 16	**Category**	**PN 40**	**Category**
DN 15 to 25	SEP	DN 15 to 32	1 (CE marked)
DN 32 to 50	1 (CE marked)	DN 40 to 80	2 (CE marked)
DN 65 to 100	2 (CE marked)	DN 100	3 (CE marked)

BODY LIMITING CONDITIONS *					
FLANGED PN 16		**FLANGED CLASS 150**		**FLANGED PN 40 / CLASS 300**	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	50 ºC	16 bar	50 ºC	40 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC	37 bar	100 ºC
13 bar **	195 ºC	13 bar **	195 ºC	31 bar **	239 ºC
12 bar	250 ºC	–	–	27 bar	300 ºC

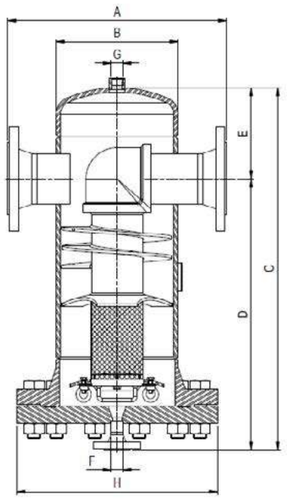
* Rating according to EN 1092-1:2018; ** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet /outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	S235JR / 1.0038
Strainer	AISI 304 / 1.4301

FLANGE CONNECTIONS			
Rating	**Size**	**EN Standard**	**ASME Standard**
PN 16	* DN 15 to 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 40	DN 15 to 300	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.



APPROXIMATE DIMENSIONS (mm) *													
SIZE	**A PN 16**	**A PN 40**	**A CL. 150**	**A CL. 300**	**B**	**C**	**D**	**E**	**F ****	**G ****	**H**	**VOL. (L)**	**WGT. (kg)**
1/2" – DN 15	230	230	250	259	114	385	285	100	DN 15	1/2"	235	2	21
3/4" – DN 20	230	230	255	264	114	385	285	100	DN 15	1/2"	235	2,6	22,4
1" – DN 25	230	230	262	274	114	385	285	100	DN 15	1/2"	235	3	24
11/4" – DN 32	260	260	290	303	140	520	410	110	DN 15	1/2"	270	5,3	36
11/2" – DN 40	260	260	294	307	140	520	410	110	DN 15	1/2"	270	6	38
2" – DN 50	310	310	341	354	168	590	460	130	DN 15	1/2"	300	11	52,5
21/2" – DN 65	380	400	430	448	219	710	550	160	DN 20	3/4"	375	19,3	94
3" – DN 80	400	410	440	453	219	710	550	160	DN 20	3/4"	375	26	102,5
4" – DN 100	470	490	518	532	273	815	610	205	DN 20	3/4"	450	37	169

* For certified values, consult manufacturer. Volume and weight refer to PN 16 version. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, these connections are female threaded ISO 7 Rp. In models with ASME B16.5 flanges, they are female threaded NPT. Alternatively, EN 1092-1 or ASME B16.5 flanged drain connections can be supplied (ASME on the same class as main connections).
Remarks: The top of the separator is supplied with a threaded connection, which size does not exceed the size of the drain connection. This connection is always supplied with a threaded socket. It can be used for air venting or balance pipe connection.

SAMPLE COOLERS
SC32 and SC132

DESCRIPTION

The ADCA sample coolers are specially designed to cool samples of boiler water or steam for analysis.
Sample coolers prevent steam flashing-off from hot pressurised liquid samples, which can be dangerous and may result in an incorrect sample.
This device may be used for boiler water analysis and other sampling or cooling applications compatible with the construction materials.

MAIN FEATURES

Corrosion-resistant body and internals.
Self draining sample (top inlet, bottom outlet).

OPTIONS:
Sample inlet valve.
Cooling water inlet valve.
Temperature indicator.
Bolted cover.
Different connection sizes and materials on request.
Double coil high pressure design for larger capacities.

USE: Steam boilers and hot water systems.

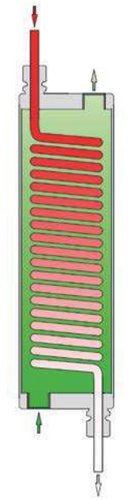
AVAILABLE MODELS: SC32/SS and SC132/SS – stainless steel body and coil.

SIZES AND CONNECTIONS: Cooling water inlet/outlet: 1/2" on body (ISO 7 Rp or NPT).
Sample tube inlet/outlet: 8 mm O/D.

INSTALLATION: Vertical installation. See IMI – Installation and maintenance instructions.

OPERATION: Cooling water must be at its maximum flow before opening or closing the sample inlet valve, in order to avoid the risk of scalding.
Sample valve must also be closed before opening the cooling water valve.
Sample coil should always be completely immersed in water.

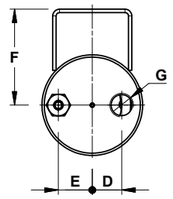
PERFORMANCE: 30 to 60 kg/h of sample liquid at ≈30 ºC with 1 m³/h of inlet cooling water at 15 ºC. For other pressures, temperatures and/or certified values, consult manufacturer.

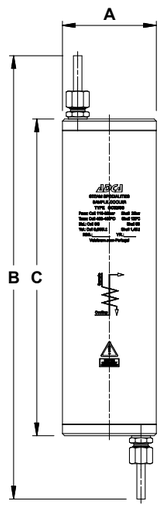


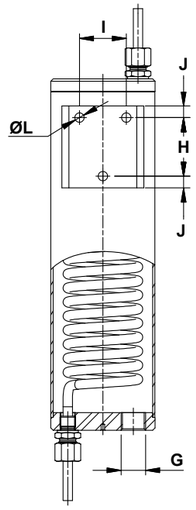
LIMITING CONDITIONS				
MODEL	**BODY**		**COIL**	
	ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
SC32 SC132	20 bar	120 ºC	110 bar	400 ºC
			90 bar	450 ºC

Minimum operating temperature: - 10 ºC.
Design code: AD-Merkblatt.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	AISI 304 / 1.4301
Covers	AISI 304 / 1.4301
Coil	AISI 316L / 1.4404
Compression fittings	AISI 316Ti / 1.4571
Discharge tube	AISI 316L / 1.4404
Thermometer connection	AISI 316 / 1.4401





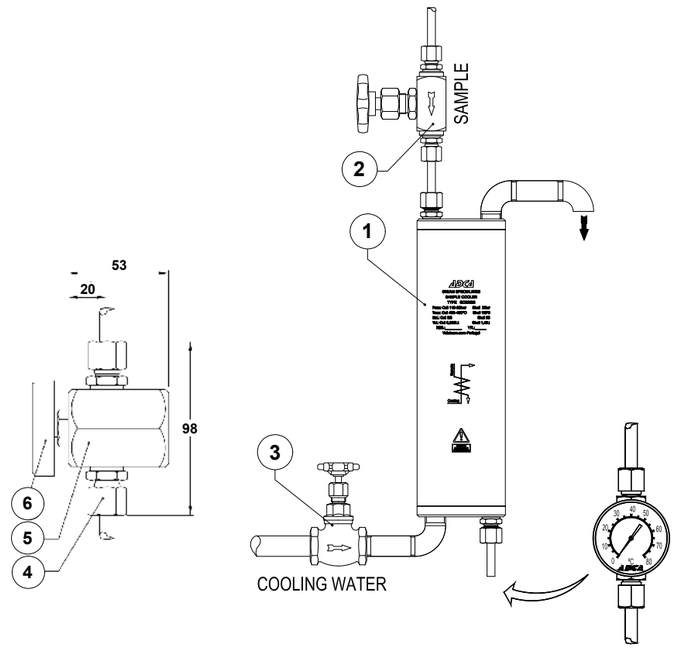


DIMENSIONS (mm)												
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**WEIGHT (kg)**
SC32	90	420	300	26	30	85	1/2”	50	40	10	8	3,9
SC132	90	520	400	26	30	85	1/2”	50	40	10	8	4,8

TYPICAL INSTALLATION

MATERIALS	
POS. Nº	**MATERIAL**
1	Sample cooler
2	Sample inlet valve ADCA NV400 *
3	Cooling water inlet valve ADCA GV32B *
4	Compression fittings (x2) 1/4” x 8 mm
5	Thermometer connection
6	Bimetallic thermometer

* For operating conditions, check IS NV400.10 and IS GV32B.10.



SAMPLE COOLERS SC32F and SC132F (With Funnel)

DESCRIPTION

The ADCA sample coolers were specially designed to cool samples of boiler water or steam for analysis.
Sample coolers prevent steam flashing-off from hot pressurised liquid samples, which can be dangerous and may result in an incorrect sample.
This device may be used for boiler water analysis and other sampling or cooling applications compatible with the construction materials.

MAIN FEATURES

Corrosion-resistant body and internals.

OPTIONS: Sample inlet valve.
Cooling water inlet valve.
Temperature indicator.
Compression fittings.
Bolted top plate.
Different connection sizes and materials under request.

USE: Steam boilers and hot water systems.

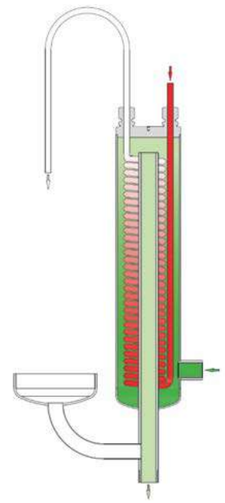
AVAILABLE MODELS: SC32F/SS and SC132F/SS – stainless steel body and coil.

SIZES AND CONNECTIONS: Cooling water body inlet 1/2”, outlet 3/4” (ISO 7 Rp or NPT)
Sample tube inlet/outlet: 8 mm O/D

INSTALLATION: Vertical installation. See IMI – Installation and maintenance instructions.

OPERATION: Cooling water must be at its maximum flow before opening or closing the sample inlet valve, in order to avoid the risk of scalding.
Sample valve must also be closed before opening the cooling water valve.
Sample coil should always be completely immersed in water.

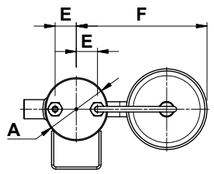
PERFORMANCE: 30 to 60 kg/h of sample liquid at ≈30ºC with 1 m³/ of inlet cooling water at 15 ºC (boilers up to 20 bar – 220 ºC), for other pressures, temperatures and/or certified values, consult manufacturer.

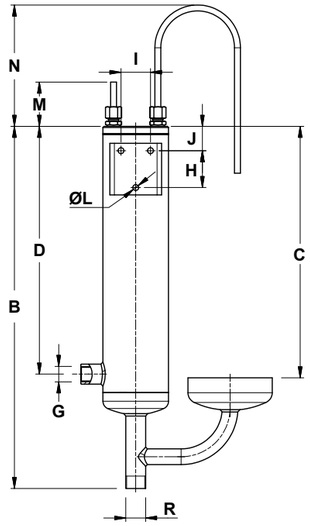


LIMITING CONDITIONS				
MODEL	**BODY**		**COIL**	
	ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
SC32F SC132F	20 bar	120 ºC	110 bar	400 ºC
			90 bar	450 ºC

Minimum operating temperature: - 10 ºC; Design code: AD-Merkblatt.

MATERIALS	
DESIGNATION	**MATERIAL**
Body and funnel	AISI 304 / 1.4301
Covers	AISI 304 / 1.4301
Coil	AISI 316L / 1.4404
Compression fittings	AISI 316Ti / 1.4571
Discharge tube	AISI 316L / 1.4404
Thermometer connection	AISI 316 / 1.4401



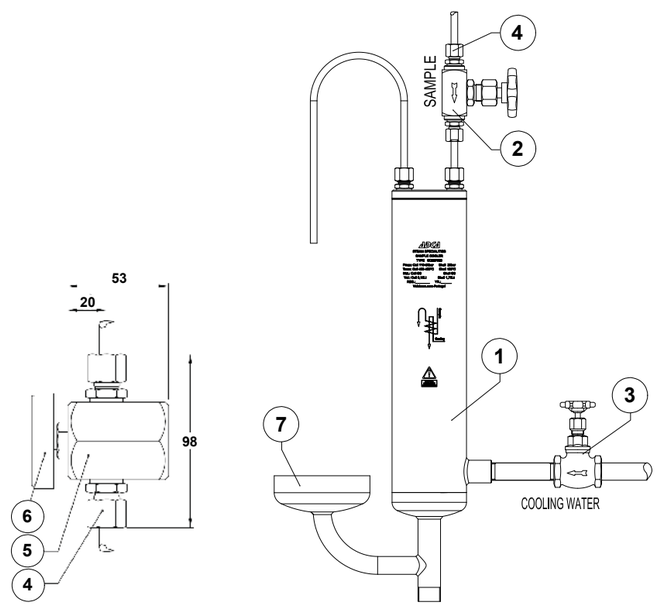


DIMENSIONS (mm)															
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**R**	**WGT. (kg)**
SC32F	90	491	341	336	30	185	1/2"	50	40	33	8	60	165	3/4"	4,5
SC132F	90	590	341	336	30	185	1/2"	50	40	33	8	60	165	3/4"	5,5

TYPICAL INSTALLATION

MATERIALS	
POS. Nº	**MATERIAL**
1	Sample cooler
2	Sample inlet valve ADCA NV400 *
3	Cooling water inlet valve ADCA GV32B *
4	Compression fittings (x2) 1/4" x 8 mm
5	Thermometer connection
6	Bimetallic thermometer
7	Funnel

* For operating conditions, check IS NV400.10 and IS GV32B.10.



SAMPLE COOLERS SC32B and SC132B (Bolted Cover)

DESCRIPTION

The ADCA sample coolers were specially designed to cool samples of boiler water or steam for analysis.
Sample coolers prevent steam flashing-off from hot pressurised liquid samples, which can be dangerous and may result in an incorrect sample.
This device may be used for boiler water analysis and other sampling or cooling applications compatible with the construction materials.

MAIN FEATURES

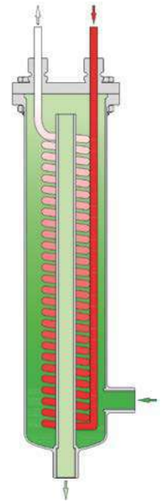
Corrosion-resistant body and internals.

OPTIONS: Sample inlet valve.
Cooling water inlet valve.
Temperature indicator.
Compression fittings.
Different connection sizes and materials under request.

USE: Steam boilers and hot water systems.

AVAILABLE MODELS: SC32B/SS and SC132B/SS - stainless steel body and coil.

SIZES AND CONNECTIONS: Cooling water body inlet 1/2", outlet 1/2" (ISO 7 Rp or NPT).
Sample tube inlet/outlet: 8 mm O/D.



INSTALLATION: Vertical installation. See IMI – Installation and maintenance instructions.

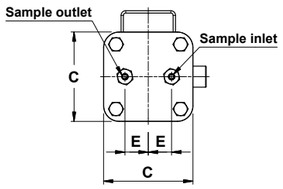
OPERATION: Cooling water must be at its maximum flow before opening or closing the sample inlet valve, in order to avoid the risk of scalding.
Sample valve must also be closed before opening the cooling water valve.
Sample coil should always be completely immersed in water.

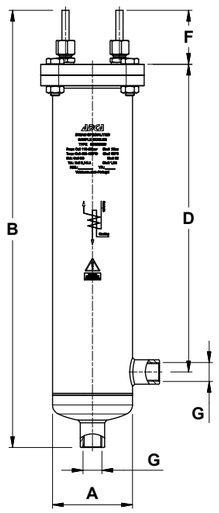
PERFORMANCE: 30 to 60 kg/h of sample liquid at ≈30 ºC with 1 m³/h of inlet cooling water at 15 ºC (boilers up to 20 bar – 220 ºC), for other pressures, temperatures and/or certified values, consult manufacturer.

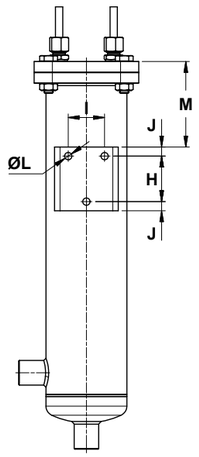
LIMITING CONDITIONS				
MODEL	**BODY**		**COIL**	
	ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
SC32B SC132B	20 bar	120 ºC	110 bar	400 ºC
			90 bar	450 ºC

Minimum operating temperature: - 10 ºC; Design code: AD-Merkblatt.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	AISI 304 / 1.4301
Covers	AISI 304 / 1.4301
Coil	AISI 316L / 1.4404
Compression fittings	AISI 316Ti / 1.4571
Discharge tube	AISI 316L / 1.4404
Thermometer connector	AISI 316 / 1.4401
Bolts and nuts	Stainless steel A2-70





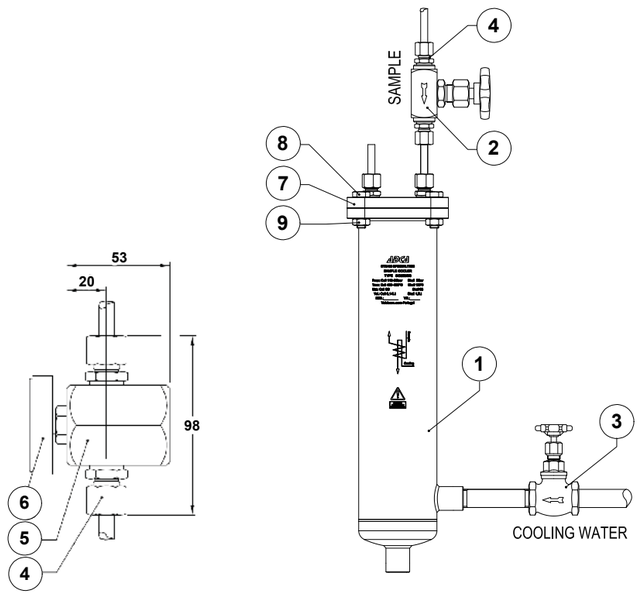


DIMENSIONS (mm)													
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**WEIGHT (kg)**
SC32B	90	486	115	342	30	60	1/2”	50	40	10	8	94	4,5
SC132B	90	585	115	342	30	60	1/2”	50	40	10	8	94	5,9

TYPICAL INSTALLATION

MATERIALS	
POS. Nº	**MATERIAL**
1	Sample cooler
2	Sample inlet valve ADCA NV400 *
3	Cooling water inlet valve ADCA GV32B *
4	Compression fittings (x2) 1/4” x 8 mm
5	Thermometer connector
6	Bimetallic thermometer
7	Cover
8	Bolts
9	Nuts

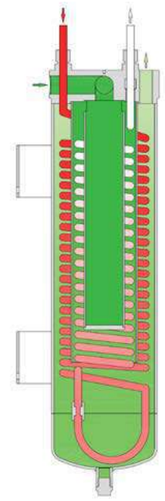
* For operating conditions, check IS NV400.10 and IS GV32B.10.



SAMPLE COOLERS
SC332, SC432 and SC532

DESCRIPTION

The ADCA sample coolers were specially designed to cool samples of boiler water or steam for analysis.
Sample coolers prevent steam flashing-off from hot pressurised liquid samples, which can be dangerous and may result in an incorrect sample.
This device may be used for boiler water analysis and other sampling or cooling applications compatible with the construction materials.



MAIN FEATURES

Corrosion-resistant body and internals.
Counter-current flow for better performance.

OPTIONS: Sample inlet valve.
Cooling water inlet valve.
Temperature indicator.
Bolted top plate.
Different connection sizes and materials under request.

USE: Steam boilers and hot water systems.

AVAILABLE MODELS: SSC332/SS, SC432/SS and SC532/SS – stainless steel body and coil.
All above models are available in high pressure versions, e.g. SC332H/SS

SIZES AND CONNECTIONS: SC332 and SC332H:
Cooling water inlet/outlet: 1/2” (ISO 7 Rp or NPT).
Sample tube inlet/outlet: 10 mm O/D.
SC432, SC532, SC432H and SC532H:
Cooling water inlet/outlet: 3/4” (ISO 7 Rp or NPT).
Sample tube inlet/outlet: 10 mm O/D.

INSTALLATION: Vertical installation. See IMI – Installation and maintenance instructions.

OPERATION: Cooling water must be at its maximum flow before opening or closing the sample inlet valve, in order to avoid the risk of scalding.
Sample valve must also be closed before opening the cooling water valve.
Sample coil should always be completely immersed in water.

PERFORMANCE: 30 to 60 kg/h of sample liquid at ≈30 ºC with 1 m³/h of inlet cooling water at 15 ºC. For other pressures, temperatures and/or certified values, consult manufacturer.

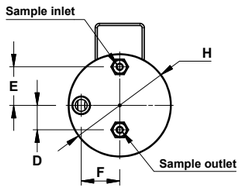
LIMITING CONDITIONS				
MODEL	**BODY**		**COIL**	
	ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
SC332 SC432 SC532	20 bar	100 ºC	130 bar	300 ºC
			120 bar	400 ºC
			110 bar	450 ºC
			100 bar	500 ºC

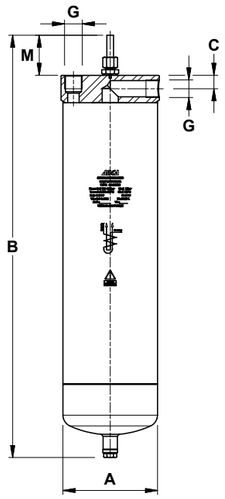
Minimum operating temperature: - 10 ºC.
Design code: AD-Merkblatt.

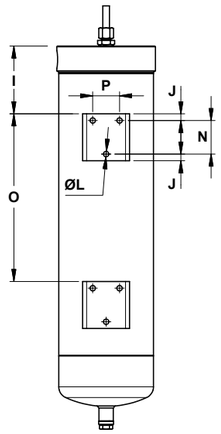
LIMITING CONDITIONS				
MODEL	**BODY**		**COIL**	
	ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
SC332H SC432H SC532H	20 bar	100 ºC	280 bar	300 ºC
			268 bar	400 ºC
			260 bar	450 ºC
			245 bar	550 ºC

Minimum operating temperature: - 10 ºC.
Design code: AD-Merkblatt.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	AISI 304 / 1.4301 or AISI 316 / 1.4401
Covers	AISI 304 / 1.4301 or AISI 316 / 1.4401
Coil	AISI 316Ti / 1.4571
Compression fittings	AISI 316Ti / 1.4571
Discharge tube	AISI 316Ti / 1.4571







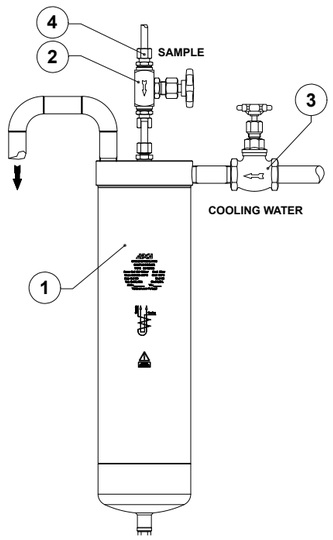
DIMENSIONS (mm)																
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**L**	**M**	**N**	**O**	**P**	**WGT. (kg)**
SC332/SS	89	665	15	18	35	35	1/2”	100	96	10	8	60	50	250	40	9
SC432/SS	141	631	20	35	55	55	3/4"	147	101	10	8	60	50	250	40	18,3
SC532/SS	141	731	20	35	55	55	3/4"	147	151	10	8	60	50	250	40	22,3

Remark: same dimensions for high pressure versions.

TYPICAL INSTALLATION

MATERIALS	
POS. Nº	**MATERIAL**
1	Sample cooler
2	Sample inlet valve ADCA NV400 *
3	Cooling water inlet valve ADCA GV32B *
4	Compression fittings (x2) 3/8” x 10 mm

* For operating conditions, check IS NV400.10 and IS GV32B.10.



DIRECT STEAM INJECTION HUMIDIFIERS DSH

DESCRIPTION

The ADCA DSH series of direct steam injection humidifiers are designed to ensure highly efficient and moisture free steam injection in air ducts and AHU for humidification purposes. These units are completely manufactured from corrosion resistant stainless steel, and are available as plug and play packaged solutions or alternatively as individual components to be incorporated into humidification systems. Each humidifier is manufactured as a bespoke solution to meet flow requirements and duct design with single or multiple injection tube design.

Single tube humidifier

OPERATION

Steam moves in the supply line passing through a strainer to remove solid particles and, if necessary, through a pressure reducing valve to reduce it to humidification pressure (generally around 1 to 2 barg). Steam then passes through a S16TSS centrifugal humidity separator which removes any remaining finer particulate matter and most moisture content. The separator special design dries the steam which is injected and also the steam which feeds the heating chamber keeping heating temperatures stable. As steam leaves the humidity separator and passes through the jacketed injection tubes it is kept at a constant temperature, preventing condensation to be carried over with the steam.
Condensate collects on the bottom of the separator and is removed from the system at saturated temperature via a FLT float and thermostatic steam trap. Condensate which forms inside the injection tube heating chamber is removed by means of one or multiple steam traps depending on the case.
An ADCATrol globe control valve equipped with a fail-safe electric or pneumatic actuator provides accurate modulation of flow and, thus, precise humidity control.

Injection tube

MAIN FEATURES

Quiet and efficient.
Complete stainless steel construction.
Bespoke injection tubes to meet flow requirements and duct design.
Fully jacketed injection tubes providing moisture free steam injection.
Use of ADCA highly efficient and proven centrifugal separator specially designed for the application.

Humidity separator

OPTIONS:	Fully assembled in a plug and play package. Sanitary design to ADCAPure standards. See IS DSHS.15 (Technical information) for further details and other surface finish options.
USE:	Saturated steam.
AVAILABLE MODELS:	DSH10, DSH25 and DSH30.
INJECTION TUBE SIZES:	1/2", 1" and 11/4".
CONNECTIONS:	Female threaded ISO 7 Rp or NPT. Flanged and special connections on request.
INSTALLATION:	Horizontal or vertical (pointing upwards) installation in horizontal air ducts. Horizontal installation in vertical air ducts. See IMI – Installation and maintenance instructions.

ABSORPTION DISTANCE

Absorption distance is the dimension from the injection tube outlet to the downstream point where steam has been fully absorbed by the air passing through and is no longer visible as mist. The absorption distance serves as base for the calculation of the minimum distances to any obstacle (e.g. branches, filters, ventilators) installed downstream. If such obstacles would otherwise be located at a shorter distance, unabsorbed steam would hit those parts and condense, causing dripping which often results in microbial growth and, consequently, odors and an overall unhealthy air.

Absorption distance is mainly affected by:

- Air temperature: absorption distance decreases with increase in inlet air temperature.
- Inlet relative humidity: absorption distance decreases with increase in inlet relative humidity.
- Required relative humidity: absorption distance increases with increase in required relative humidity.
- Mixing homogeneity: absorption distance decreases with increase in mixing homogeneity.

SANITARY DESIGN

The presence of chemicals used in water treatment of plant steam boilers which produce steam used in humidification systems can have toxic effects on human health. Regulations have come into force in some countries so that only clean steam is used for humidification purposes and, to meet such requirements, ADCA DSH direct steam humidifiers can be tailor-made for use with clean steam. These can be supplied with individual ADCAPure components or as plug and play packaged solutions. See IS DSHS.15 (Technical information) for further details and other surface finish options.

SINGLE VS MULTI-TUBE HUMIDIFIERS

A single-tube humidifier is the most economically viable solution if a single injection tube respects the humidification load and the higher absorption distance (generally associated with single-tube humidifiers) is lower than the distance to any obstacle downstream – Consult Table 1 and Table 2.
If on the other hand, the available distance is insufficient to accommodate the necessary absorption distance of a single-tube solution or when duct height is significant then a multi-tube humidifier should be selected. This solution will shorten the necessary absorption distance by up to 4 times as the increase in injection points will decrease flow velocity and also promote an homogenous and efficient mixing – Consult Table 3 and Table 4.

TABLE 1 – INJECTION TUBE STEAM CAPACITY – SINGLE-TUBE (kg/h)

MODEL	C * (mm)	STEAM PRESSURE TO HUMIDIFIER SUPPLY CONNECTION (barg)															
		0,25	0,5	0,75	1	1,25	1,5	1,75	2	2,25	2,5	2,75	3	3,25	3,5	3,75	4
DSH10	180 – 450	17	24	30	35	38	41	45	49	51	53	56	60	61	63	67	70
	451 – 650	21	31	38	43	46	50	55	61	64	67	71	75	77	79	83	87
	651 – 1000	32	46	55	64	70	76	83	90	94	99	105	111	114	117	123	128
	≥ 1001	43	63	74	86	94	103	112	121	127	133	141	149	153	157	165	173
DSH25	330 – 600	72	103	126	145	159	173	188	204	214	226	237	251	257	266	279	291
	601 – 900	78	114	138	158	172	187	204	221	232	248	261	274	280	288	303	319
	901 – 1250	95	139	168	192	212	232	253	273	286	301	316	332	339	349	368	386
	≥ 1251	114	166	200	230	252	275	299	324	341	359	377	397	–	–	–	–
DSH30	980 – 1250	127	185	223	252	277	304	331	358	378	399	421	444	–	–	–	–
	1251 – 1550	155	226	273	309	340	372	404	438	463	489	515	542	–	–	–	–
	≥ 1551	189	276	334	378	416	455	494	535	565	597	628	662	–	–	–	–

* Tube insertion length (see dimensions table).

TABLE 2 – MAXIMUM RECOMMENDED DUCT HEIGHT FOR SINGLE-TUBE HUMIDIFIER

INJECTION TUBE	DSH10	DSH25	DSH30
DUCT HEIGHT	Up to 900 mm	Up to 1100 mm	Up to 1300 mm

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HOW TO SIZE

Example 1 – Single-tube humidifier

Installation position: Inside a horizontal air duct with 2000 mm of available downstream distance without obstacles.
Duct size (H x W): 500 x 800 mm
Maximum humidification load: 100 kg/h @ 1 barg

Step 1: Select the injection tube model

A single-tube humidifier is appropriate for the required absorption distance (see Note).

According to Table 1 a single DSH25 injection tube respects the maximum humidification load as it ensures 158 kg/h for an insertion length between 600 and 901 mm.

Step 2: Select the humidity separator

The humidity separator should be of the same size as the pipeline upstream which has previously been sized accordingly, e.g. by pressure drop or velocity, not exceeding 25 m/s (recommended).
For the current example, with a maximum humidification load of 100 kg/h @ 1 barg, the recommended pipe size is 11/4" and so the appropriate humidity separator is a 11/4" S16TSS.

Step 3: Select the control valve and actuator

After calculating the required Kv for the application one can find the valve Kvs on the respective ADCATrol valve datasheet. For the current example, the selection could be e.g. a 1" ADCATrol V16/2I with a 25 mm seat and Kvs of 10 m^3/h to suit the application. Alternatively, a similar valve in 11/4" with a 25 mm seat (reduced bore) can be selected. The valve can be fitted with an ADCATrol AVF series electric fail-safe spring return actuator or a reverse action ADCATrol PA series pneumatic actuator.

Step 4: Steam traps, pressure reducing station and ancillaries

A suitable trapping set must be installed on the drain connection of the humidity separator and heating chamber. A pressure reducing station may be required in some situations to reduce system pressure to the desired value and different valves and ancillaries may also be necessary. Consult the manufacturer for further information.

TABLE 3 – INJECTION TUBE STEAM CAPACITY – MULTI-TUBE (kg/h)

MODEL	C * (mm)	STEAM PRESSURE TO HUMIDIFIER SUPPLY CONNECTION (barg)															
		0,25	0,5	0,75	1	1,25	1,5	1,75	2	2,25	2,5	2,75	3	3,25	3,5	3,75	4
DSH10	180 – 1000	43	62	74	86	94	102	112	121	126	133	141	149	153	157	166	172
	≥ 1001	58	85	99	116	126	139	151	163	171	179	190	201	206	211	222	233
DSH25	330 – 1250	128	187	226	259	286	313	341	368	386	406	426	448	457	471	496	521
	≥ 1251	153	224	270	310	340	371	403	437	460	484	508	535	562	589	617	645
DSH30	980 – 1550	209	305	368	417	459	502	545	591	625	660	695	731	767	803	840	877
	≥ 1551	255	372	450	510	561	614	666	722	762	805	847	893	939	985	1032	1079

* Tube insertion length (see dimensions table).

TABLE 4 – MINIMUM RECOMMENDED NUMBER OF INJECTION TUBES FOR MULTI-TUBE HUMIDIFIER

DUCT HEIGHT	Up to 1500 mm	1501 – 2000 mm	2001 – 2500 mm	above 2501 mm
Nº OF TUBES	2	3	4	5 or more

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Example 2 – Multi-tube humidifier

Installation position: Inside a AHU with 500 mm downstream distance to fan entry
AHU size (H x W): 1600 x 1600 mm
Maximum humidification load: 180 kg/h @ 1,5 barg

Step 1: Select the injection tube model and quantity

A multi-tube humidifier is recommended in order to ensure complete steam absorption before reaching the fan entry (see Note).
According to table Table 4 a total of three injection tubes are recommended for a AHU height of 1600 mm. Their nominal size can then be selected according to Table 3. In this case, a set of three DSH25 will ensure 371 kg/h for an insertion length ≥ 1250 mm.

Step 2: Select the humidity separator

The humidity separator should be of the same size as the pipeline upstream which has previously been sized accordingly, e.g. by pressure drop or velocity, not exceeding 25 m/s (recommended).
For the current example, with a maximum humidification load of 180 kg/h @ 1.5 barg, the recommended pipe size is 11/2" and so the appropriate humidity separator is a 11/2" S16TSS.

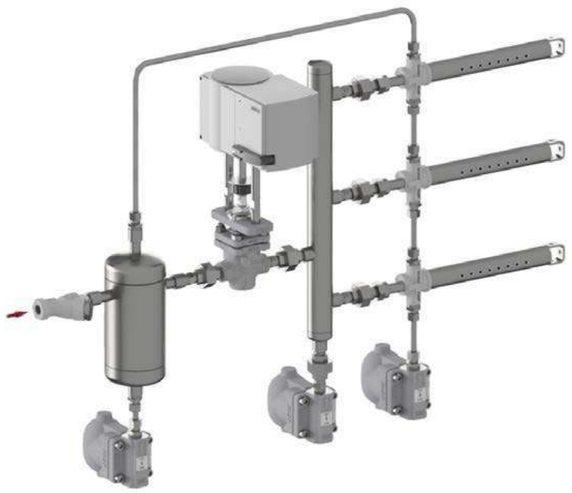
Step 3: Select the control valve and actuator

After calculating the required Kv for the application one can find the valve Kvs on the respective ADCATrol valve datasheet. For the current example, the selection could be e.g. a 11/2" ADCATrol V16/2I with a Kvs of 16 m³/h to suit the application. The valve can be fitted with an ADCATrol AVF series electric fail-safe spring return actuator or a reverse action ADCATrol PA series pneumatic actuator.

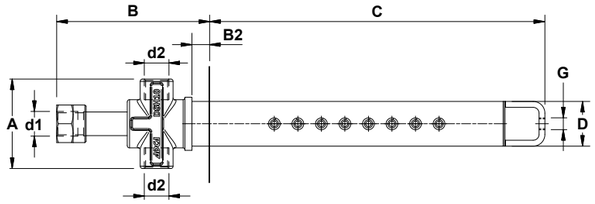
Step 4: Steam traps, pressure reducing station and ancillaries

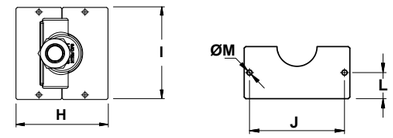
A suitable trapping set must be installed on the drain connection of the humidity separator and one or multiple steam traps must also be installed to drain the heating chambers and manifold if any. A pressure reducing station may be required in some situations to reduce system pressure to the desired value and different valves and ancillaries may also be necessary. Consult the manufacturer for further information.

Note: For information on ADCA DSH absorption distances consult the manufacturer. Required information: Inlet air temperature (ºC), inlet relative humidity (%), outlet relative humidity (%), injection steam pressure (barg), maximum humidification load (kg/h), duct/AHU dimensions (H x W in mm).



INJECTION TUBES





Cover plates

CE MARKING – GROUP 2 (PED – European Directive)	
PN 6	**Category**
1/2" to 11//4"	SEP

LIMITING CONDITIONS	
Body design conditions	PN 6
PMA – Maximum allowable pressure	4 bar
TMA – Maximum allowable temperature	152 ºC

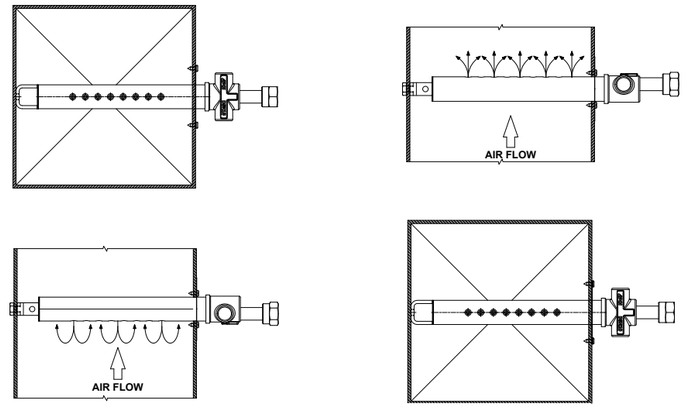
DIMENSIONS (mm)

MODEL	d1	d2	A	B	B1	B2 *	C ** Min. - Max.	D	E	ØF	G	H	I	J	L	ØM	WGT. (kg)
DSH10	1/2"	1/2"	76	135	85	20	180 - 3100	38	7,3	8,5	M10	100	100	90	25	5	***
DSH25	1"	3/4"	88	142	92	15	330 - 3100	51	11,4	8,5	M10	110	110	100	27,5	5	
DSH30	11/4"	11/4"	122	177	112	16	980 - 3100	76	17	8,5	M10	150	130	120	37,5	5	

* When thermal insulation is present, this dimension must be increased accordingly.
** Tube insertion length to be defined according to customer requirements (e.g. duct width).
*** To be confirmed after exact length is defined.

STEAM EMISSION DIRECTION

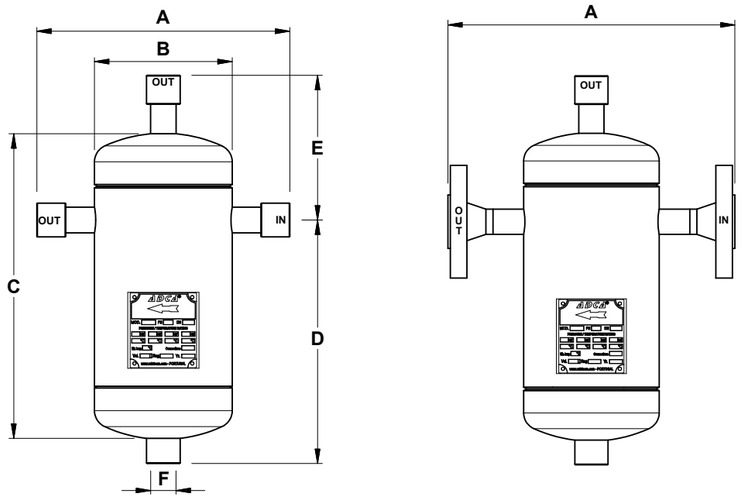
Steam injection should be against the air flow. On vertical air flow applications, the steam should be injected upwards, regardless of the air flow direction.



(plan view)
Horizontal duct

(plan view)
Vertical duct

S16TSS HUMIDITY SEPARATOR



DIMENSIONS (mm) *										
SIZE	**A THREADED**	**A PN 16**	**A CLASS 150**	**B**	**C**	**D**	**E**	**F ****	**VOLUME (L)**	**WEIGHT (kg)**
1/2"	210	242	261	114	260	205	123	1/2"	2,2	3,2
3/4"	210	243	267	114	260	205	123	1/2"	2,3	3,6
1"	210	234	265	114	300	220	148	1/2"	2,7	4,2
11/4"	245	266	296	141	395	305	161	1/2"	5,5	7,4
11/2"	260	275	309	141	435	340	176	1/2"	6,1	8,6
2"	300	314	345	168	505	405	186	1/2"	10,9	11,7

* For certified values, consult manufacturer. Weights refer to threaded versions, other versions may have slightly different values.
** As standard, in separators manufactured with ISO 7 Rp threads or PN 16 flanges, the drain connection is also female threaded ISO 7 Rp. In versions with NPT threads or ASME Class 150 flanges, this connection is also female threaded NPT.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
1/2" to 1"	SEP
11/4" to 2"	1 (CE marked)

BODY LIMITING CONDITIONS *	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**
16 bar	50 ºC
15 bar	100 ºC
12,7 bar	200 ºC
12 bar **	250 ºC

* Rating according to EN 1092-1:2018.
** PMO – Max. operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.

LRQA CERTIFIED ISO 9001

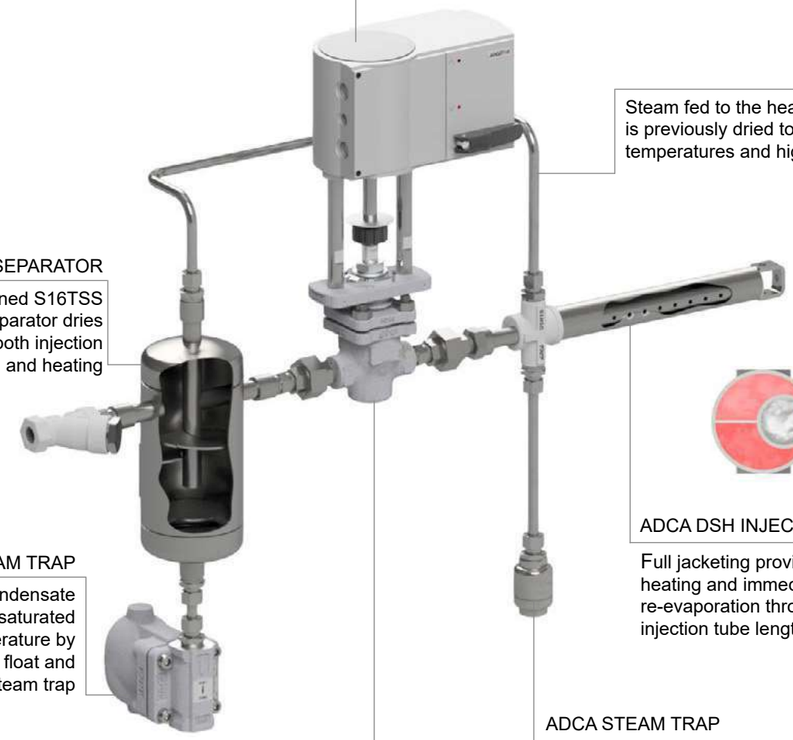
ACTUATOR

Choice of fail-safe spring return electric actuator or ADCATrol pneumatic diaphragm actuator

Steam fed to the heating chamber is previously dried to ensure stable temperatures and higher efficiency

ADCA HUMIDITY SEPARATOR

Specially designed S16TSS centrifugal separator dries steam used for both injection and heating



ADCA DSH INJECTION TUBES

Full jacketing provides continuous heating and immediate re-evaporation throughout the injection tube length

ADCA STEAM TRAP

Immediate condensate discharge at saturated steam temperature by means of a FLT float and thermostatic steam trap

ADCA STEAM TRAP

Various trapping options depending on tube quantity and load

ADCATROL CONTROL VALVE

Threaded or flanged, full bore, reduced bore or microflow control valve

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CONDENSATE DRAINAGE CONFIGURATIONS FOR MULTI-TUBE HUMIDIFIERS

In systems with two injection tubes, two steam traps suffice.

Recommended when the sum of insertion lengths (dimension “C”) totals 7 meters or less.

Recommended when the sum of insertion lengths (dimension “C”) totals more than 7 meters.

Remarks: The number of injection tubes may vary. Images above are merely indicative.
The size of the injection tube manifold must always be greater than the nominal size of the upstream humidity separator.

ORDERING CODES DSH								
Model	**DSH**	**10**	**XXXX**	**X**	**A**	**A**	**15**	
DSH Injection tube	**DSH**							
Type								
10		**10**						
25		**25**						
30		**30**						
Insertion length (mm)								
Specify dimension “C”			**XXXX**					
Options								
None				**X**				
“B2” increased by 30 mm to accommodate thermal insulation thickness				**I3**				
Pipe connection (d1)								
Female threaded ISO 7 Rp					**A**			
Female threaded NPT ASME B1.20.1					**C**			
Flanged EN 1092-1 PN 16					**L**			
Flanged ASME B16.5 Class 150					**U**			
Pipe connection (d2)								
Female threaded ISO 7 Rp						**A**		
Female threaded NPT ASME B1.20.1						**C**		
Size (d1 x d2)								
1/2" or DN 15 x 1/2"							**15**	
1" or DN 25 x 3/4"							**25**	
11/4" or DN 32 x 11/4"							**32**	
Specials / Extras								
Full description or additional codes have to be added in case of non-standard combination								**E**

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IS DSH.15 E 02.20

STEAM INJECTORS
SI20

DESCRIPTION

The SI20 series steam injectors from ADCA are condensate injectors. They ensure low noise and vibration and rapid heating of still or flowing fluids in basins and vessels due to direct steam injection.
Steam enters through the inlet housing, passes along the centre of the heater, through holes in the inner rings, through spaces between the element plates where it condensates under light load and partly condensates under heavy load to be discharged through the serrated periphery of the element plates. Under heavy load if any steam pass through the periphery of the element plates, will do so in very small jets and will condensate in the surrounding liquid with very little noise and vibration.

MAIN FEATURES

Quiet operation.
Corrosion-resistant.
No moving parts.

OPTIONS: Complete system including vacuum breaker and self operated controller.
Different capacities and designs available under request.

USE: Direct steam injection heating systems.

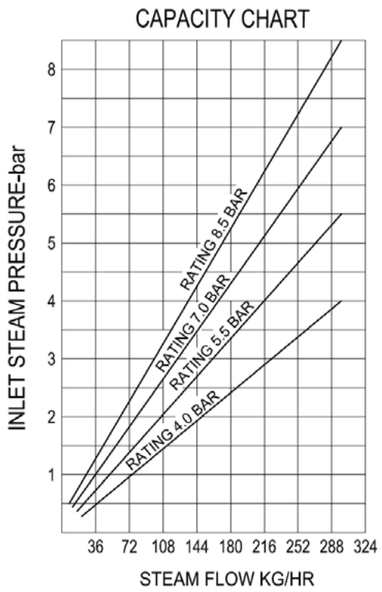
AVAILABLE MODELS: SI20-4, SI20-5,5 , SI20-7 and SI20-8,5.

SIZES: 3/4".

CONNECTIONS: Female threaded ISO 7 Rp.

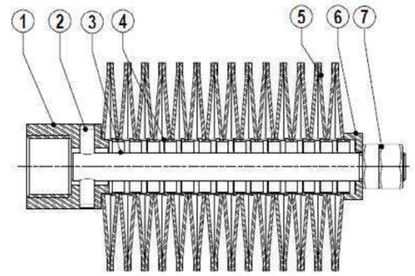
INSTALLATION: Horizontal or vertical installation.
See IMI – Installation and maintenance instructions.

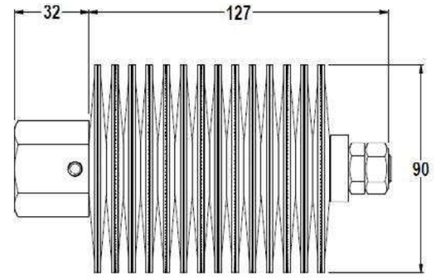
LIMITING CONDITIONS	
PMO – Maximum operating pressure	8,5 bar
TMO – Maximum operating temperature	180 ºC



Example: We require the injection of 950 kg/h of steam with a pressure of 5 bar. Assuming 20% pressure drop across the control valve, the steam supply to the injectors will be of 4 bar. From the injector capacity chart, we see that the 4 bar injector will process 293 kg/h and 950 divided by 293 = 3,24.
Three injectors of this size will barely cope, so it is recommended to install four injectors, which will meet the demand.
The pressure rating is stamped on the inlet housing (1). The SI20 injector is made in one size and if one device does not pass sufficient steam, two or more should be fitted to a common supply pipe.

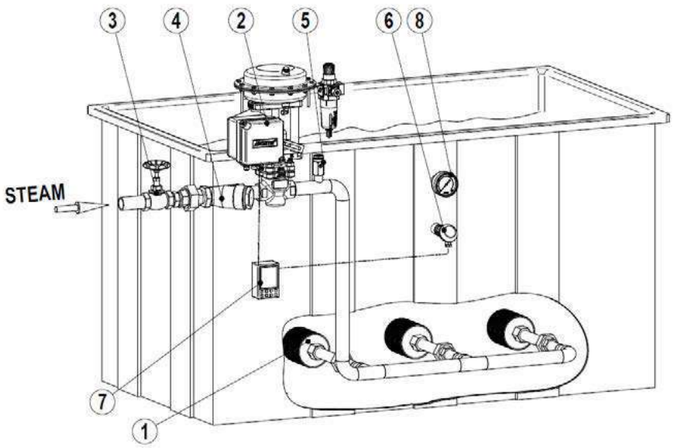
MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Inlet housing	AISI 304 / 1.4301
2	Cross pin	AISI 304 / 1.4301
3	Tie-rod	AISI 304 / 1.4301
4	Inner rings	AISI 304 / 1.4301
5	Element plates	AISI 304 / 1.4301
6	Retaining plate	AISI 304 / 1.4301
7	Retaining nut	AISI 304 / 1.4301





TYPICAL INSTALLATION

POS. Nº	DESIGNATION
1	ADCA SI20 Steam injector
2	ADCATrol V25 Control valve and positioner
3	GV32B Bronze globe valve
4	ADCA IS140Y Strainer
5	ADCA VB21 Vacuum breaker
6	PT100 Resistence thermometer
7	Temperature controller
8	Temperature indicator



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Produced in accordance with Sound Engineering Practices of the European PED - Pressure Equipment Directive. IS 9.401 E 09.10

STEAM INJECTORS
SI115

DESCRIPTION

The SI115 series steam injectors from ADCA are condensate injectors. They ensure low noise and vibration and rapid heating of still or flowing fluids in basins and vessels, due to direct steam injection.
Steam enters through the inlet housing, passes along the centre of the heater, mixing with the cool water, which is drawn in through radial holes.

MAIN FEATURES

Quiet operation.
Corrosion-resistant.
No moving parts.

OPTIONS: Complete system including vacuum breaker and self operated controller.
Different capacities and designs available under request.

USE: Direct steam injection heating systems.

AVAILABLE MODELS: SI115.

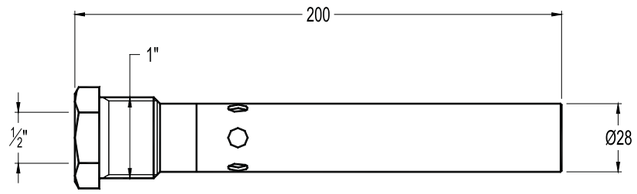
SIZES: 1/2”.

CONNECTIONS: Female threaded ISO 7 Rp.

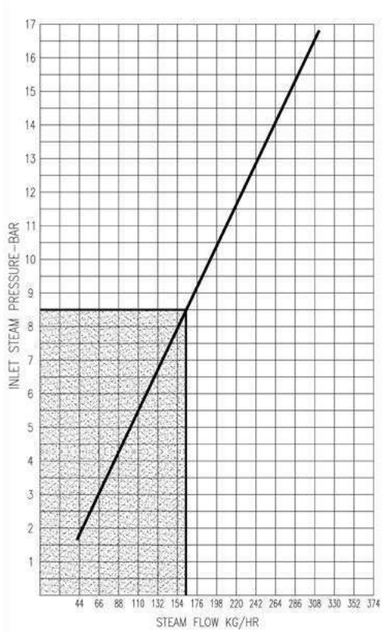
INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

MATERIAL: AISI 316 / 1.4401.

LIMITING CONDITIONS	
Body design conditions	PN 25
PMO – Maximum operating pressure	17 bar
TMO – Maximum operating temperature	95 ºC



CAPACITY CHART
(With vessel at atmospheric pressure)



Remark: Selection under shadow area is recommended for the quietest operation.

Example: We require the injection of 230 kg/h of steam with a pressure of 5,5 bar. From the injector capacity chart, we see that, at 5,5 bar the injector will process 110 kg/h and 230 divided by 110 = 2,09.
Two injectors will barely cope, so it is recommended to install three injectors, which will meet the demand.

STEAM INJECTORS
SI125 and SI140

DESCRIPTION

The SI series steam injectors from ADCA are condensate injectors. They ensure low noise and vibration and rapid heating of still or flowing fluids in basins and vessels due to direct steam injection.
Steam enters through the inlet housing, passes along the centre of the heater, mixing with the cool water, which is drawn in through radial holes.

MAIN FEATURES

Quiet operation.
Corrosion-resistant.
No moving parts.

OPTIONS: Complete system including vacuum breaker and self operated controller.
Different capacities and designs available under request.

USE: Direct steam injection heating systems.

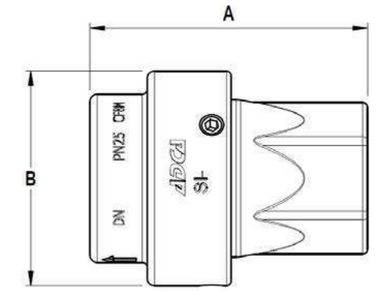
AVAILABLE MODELS: SI125 and SI140.

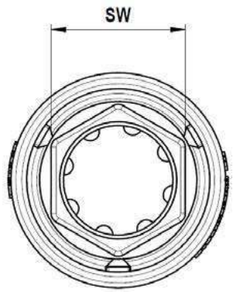
SIZES: 1” and 11/2”.

CONNECTIONS: Female threaded ISO 7 Rp.

INSTALLATION: Horizontal installation.
See IMI – Installation and maintenance instructions.

MATERIAL: CF8M / 1.4408.





LIMITING CONDITIONS	
Body design conditions	PN 25
PMO – Maximum operating pressure	17 bar
TMO – Maximum operating temperature	95 ºC

DIMENSIONS (mm)				
SIZE	**A**	**B**	**SW**	**WGT. (kg)**
1"	88	73	40	0,97
11/2”	114	88	55	1,8

FLOW RATE CAPACITY (kg/h)																		
MODEL	**SIZE**	**INLET STEAM PRESSURE (bar)**																
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
SI125	**1”**	130	170	270	352	415	500	575	660	695	795	880	940	980	1040	1090	1150	1220
SI140	**11/2”**	395	570	800	970	1120	1290	1440	1625	1810	1940	2240	2360	2590	2700	2800	3050	3200

Example: We require the injection of 3500 kg/h of steam with a pressure of 8 bar. From the injector capacity table, we see that at 8 bar the injector SI140 will process 1625 kg/h, and 3500 divided by 1625 = 2,15.
Two injectors will barely cope, so it is recommended to install three injectors, which will meet the demand.

STEAM - WATER MIXERS
MX20

DESCRIPTION

The steam/water ADCAMix MX20 mixers provide a cheap and instantaneous source of low pressure hot water, by using existing steam and cold water supplies.
The mixer incorporates a safety device, to ensure that live steam cannot be accidentally ejected even if, for some reason, the cold water supply fails.
The temperature of water at the outlet of the ADCAMix is easily controlled by using water and steam valves fitted to the inlets.

MAIN FEATURES

Instant source of low pressure hot water.
Safety device against accidental steam ejection.
Non return valves included.
Complete stainless steel construction.
Quiet operation.

OPTIONS: Alternative steam valve if live steam is required, e.g. for sterilisation.

ACCESSORIES: Stainless steel pedestal.
Adjustable spray gun.
Steam/water inlet valves.
Hot water/steam hose.
Stainless steel suspension for hose.

USE: Saturated steam and cold water.

AVAILABLE MODELS: MX20 – stainless steel.

SIZES: 3/4” x 3/4”.

CONNECTIONS: Female threaded ISO 7 Rp.

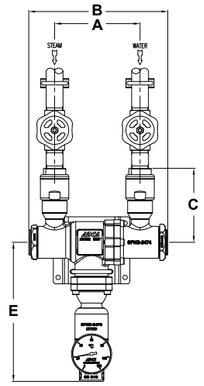
INSTALLATION: Vertical wall installation.
See IMI – Installation and maintenance instructions.

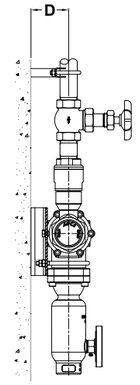
FLOW RATE CAPACITY – HOT WATER FLOW (L/h)							
STEAM PRESSURE (bar)	HOT WATER OUTLET TEMPERATURE						
	40 °C	50 °C	60 °C	70 °C	80 °C	90 °C	95 °C
2,5	1900	1400	1150	900	700	650	600
3	2250	1600	1230	1030	900	800	700
4	2700	2000	1550	1250	1000	850	800
5	3250	2300	1800	1500	1250	900	850
6	3900	2900	2250	1800	1500	1200	1100
7	4200	3100	2400	1950	1600	1300	1200
8	4800	3500	2700	2100	1800	1550	1280
9	5200	3900	3000	2450	2000	1700	1600
10	5900	4100	3250	2700	2250	1900	1750

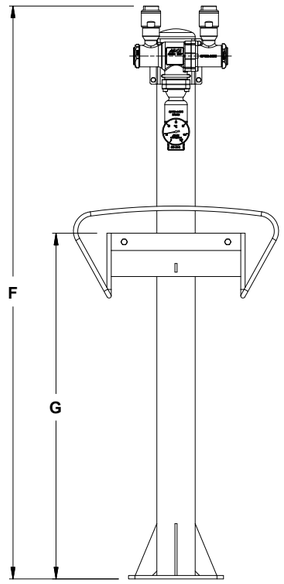
LIMITING CONDITIONS	
Minimum steam pressure	2,5 bar
Maximum steam pressure	10 bar

Remarks: Steam pressure must be equal to or lower than 3 times the water pressure;
Water pressure cannot be higher than steam pressure.

We reserve the right to change the design and material of this product without notice.

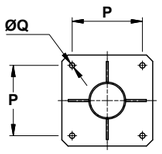






Stainless steel pedestal

Stainless steel support for hose



Pedestal base

DIMENSIONS (mm)																
SIZE	A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Q	WGT. (kg)
3/4"	134	220	116	57,5	337	1330	800	213	130	475	320	240	10,5	150	170	13	7

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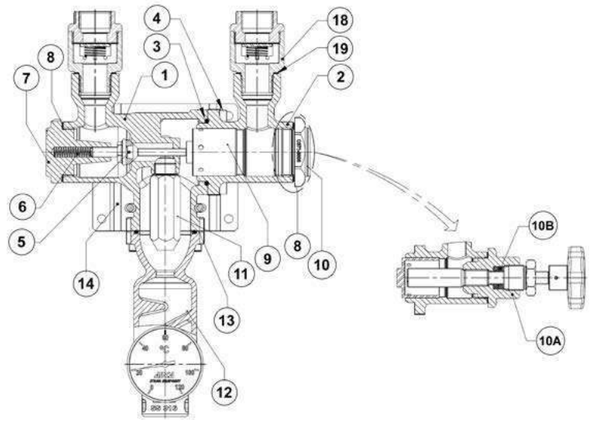
Produced in accordance with Sound Engineering Practices of the European PED - Pressure Equipment Directive. IS 9.800 E 07.14

MATERIALS		
POS. Nº	DESIGNATION	MATERIAL
1	Steam body	CF8M / 1.4408
2	Water body	CF8M / 1.4408
3	* Gasket	NBR
4	Bolts	Stainless steel A2-70
5	* Steam valve	St. steel / Graphite
6	* Valve spring	AISI 302 / 1.4300
7	Steam cover	AISI 316 / 1.4401
8	* Gasket	PTFE
9	* Piston	AISI 316 / 1.4401
10	Water cover	AISI 316 / 1.4401
10A	Steam valve	AISI 316 / 1.4401
10B	* Packing	PTFE
11	Steam nozzle	AISI 316 / 1.4401
12	Mixing chamber	CF8M / 1.4408
13	* Gasket	Viton
14	Support	AISI 304 / 1.4301
18	* Check valve	AISI 316 / 1.4401
19	* Gasket	PTFE

* Available spare parts.



HOSE TECHNICAL SPECIFICATIONS	
Tube materials	NBR rubber, clear colour, food quality, odourless, tasteless, smooth, mirror-like. Complies with FDA standards, BfR recommendations and M.D. 21/03/73 and following amendments.
Cover materials	NBR rubber, blue colour, abrasion, ozone and weather resistant, smooth, cloth finish.
Reinforcement materials	Heat resistant synthetic textile plies.
Temperature range	From –20 ºC to 95 ºC. Up to 164 ºC for saturated steam cleaning operations (short peaks) – limited to a working pressure of 6 bar. Sterilisation up to 130 ºC for a maximum time of 30 minutes.
Inner diameter	19 mm.
Outer diameter	31 mm.
Wall thickness	6 mm.
Burst pressure	60 bar.
Approx. weight	0,58 kg/m.

WATER SAVING JET-SPRAY GUNS
SG20

DESCRIPTION

The SG20 series water-saving guns are specially recommended to be used along with the Adcamix MX20 steam to water mixers. By using this gun, water and energy costs can be considerably reduced and it also contributes to the environment protection, avoiding the use of chemicals in the cleaning process.
The valve is opened and closed by operating the lever which regulates the flow from a mist to a concentrated jet.
The lock catch facilitates the continuous operation.
The valve is designed for industrial use, it is extremely robust. It is protected against shock, heat and cold by caustic and acid-resistant rubber cladding.

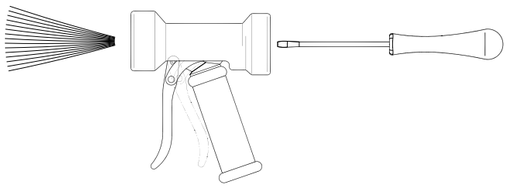
OPTIONS: Different colours against extra price.

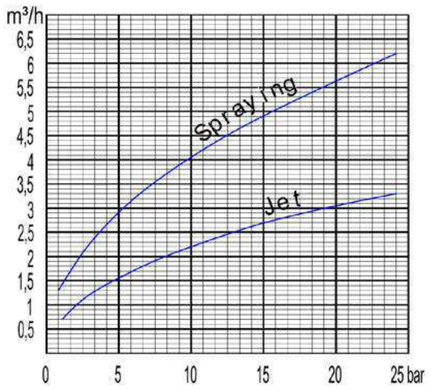
USE: Cold and hot water.

MAX. OPERATING PRESSURE: 24 bar.

AVAILABLE MODELS: SG20 (+50ºC).
SG20H (+95ºC).

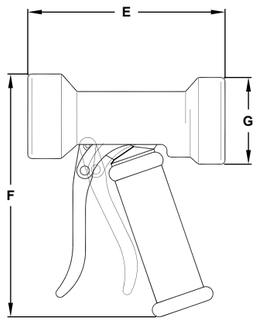
SIZE: 1/2”.

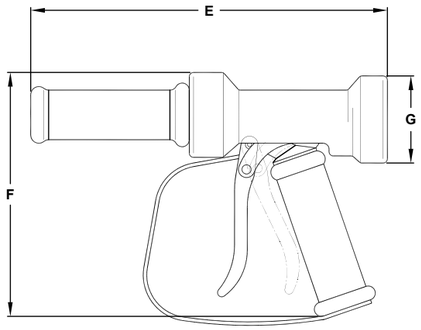


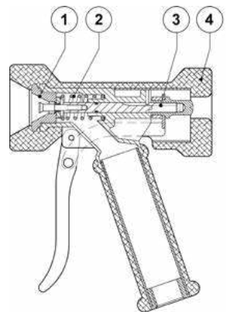


How to adjust the water jet:

-Press the trigger until it stops.
-Turn left with a screwdriver the screw on the opposite side of the water outlet to achieve the desired water jet.
(Hang the spray gun between the trigger and the handle).

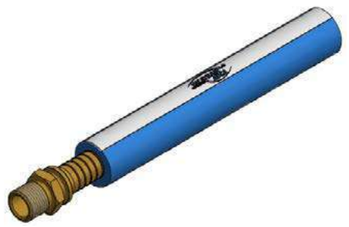


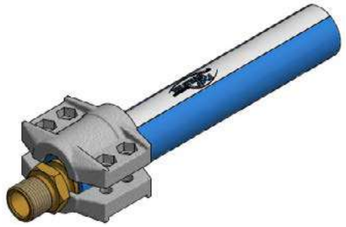


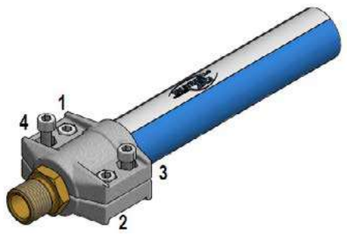


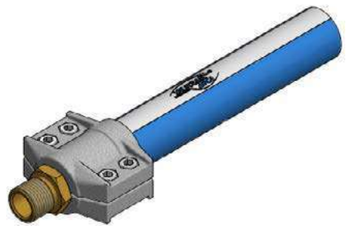
DIMENSIONS (mm)				
MODEL	**E**	**F**	**G**	**WEIGHT (kg)**
SG20	141	167	62	0,95
SG20H	250	167	62	0,98

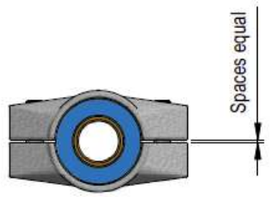
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Jet	Brass
2	Spring	Stainless steel
3	Valve	Brass
4	External protection	Rubber

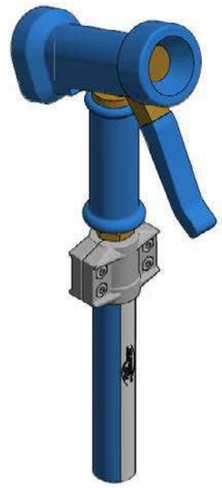












Important:
-Always tighten bolts diagonally;
-After installation, examine the hose assembly and check if the safety clamps are parallel (there will always be a space between the clamp shells).

EXHAUST HEADS
EH

DESCRIPTION

The EH series exhaust heads were designed to protect personnel from injury and exterior of buildings from harmful effects of steam ejection to atmosphere. The head is fitted at the end of a vertical exhaust pipe and effectively retains the moisture separated from the steam for draining.

MAIN FEATURES

Stainless steel separating element.
Quiet operation.
Reduces discharge velocity.

OPTIONS: Corrosion protection (metal abrasive blasted, metalized and painted).
Complete stainless steel construction.

USE: Open vertical steam vent pipes in blowdown vessels, boiler feedtanks, etc.

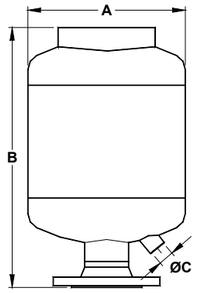
CAUTION: Not recommended for safety valves outlets.

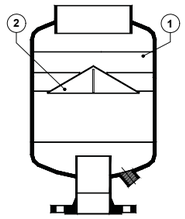
AVAILABLE MODELS: EH/S – carbon steel body.
EH/SH – thermal spraying zinc coating and black painted.
EH/SS – stainless steel body.

SIZES: 1” to 4”; DN 25 to DN 250.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 class 150.

INSTALLATION: Vertical installation.
The drain should be piped to a safe position.
The exhaust head should be selected so that it has the same size as the vent pipe.
See IMI – Installation and maintenance instructions.





DIMENSIONS (mm) *				
SIZE	**A**	**B**	**C**	**WEIGHT (kg)**
DN 25	168	345	1/2"	15
DN 32	168	345	1/2"	16
DN 40	168	400	1/2"	18
DN 50	273	450	3/4”	26
DN 65	273	450	3/4”	28
DN 80	273	495	3/4”	29
DN 100	273	495	1”	33
DN 125	356	525	1”	42
DN 150	356	525	1”	48
DN 200	508	650	11/2”	95
DN 250	508	650	11/2”	110

* Dimensions refer to EN 1092-1 flanged version. For other versions, consult manufacturer. Other sizes and designs can be supplied on request.

MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Body	P235GH / 1.0305
2	Separating element	AISI 304 / 1.4301

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar

Minimum operating temp.: -10 ºC;
Design code: AD-Merkblatt.
Remark: other conditions and CE marking on request.

FLASH VESSELS
RV

DESCRIPTION

The flash vessel is the main component in any flash recovery system. It can be used in all steam plants where high pressure condensate is reduced to a lower pressure, so that flash steam is formed by re-evaporation. This steam can be used in low pressure process or heating equipments.

MAIN FEATURES

Several possibilities of installation and special sizes and types (available on request).

OPTIONS: Complete stainless steel construction.
Installation supports on body (without supporting feet).

USE: High pressure condensate.
Boiler blowdown heat recovery systems.

AVAILABLE MODELS: RV…A/S; RV…L/S – carbon steel.
RV…A/SS; RV…L/SS – stainless steel.
(A – angle; L – inline connections).

SIZES: RV06, RV08, RV12, RV16 and RV18.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Special flanges on request.

INSTALLATION: Vertical installation.
Horizontal condensate inlet and outlet or alternative horizontal inlet and vertical condensate outlet.
See AD (assembly drawing).

RV/A

RV/L

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
RV06	2 (CE marked)
RV08	2 (CE marked)
RV12	3 (CE marked)
RV16	3 (CE marked)
RV18	3 (CE marked)

LIMITING CONDITIONS

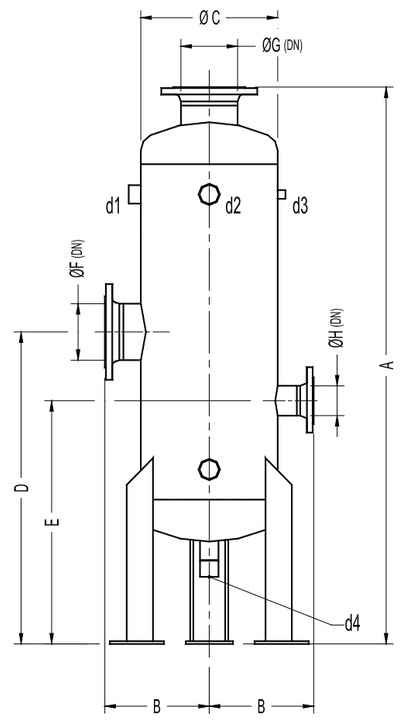
RV/S						RV/SS					
RATING	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**
PN 16 *	16 bar	50 ºC	**CLASS 150 ****	16 bar	50 ºC	**PN 16 ***	16 bar	50 ºC	**CLASS 150 ****	15,3 bar	50 ºC
	14 bar	100 ºC		14 bar	100 ºC		15 bar	100 ºC		13,3 bar	100 ºC
	13 bar	195 ºC		13 bar	195 ºC		12,7 bar	200 ºC		11,1 bar	200 ºC
	12 bar	250 ºC		–	–		12 bar	250 ºC		–	–

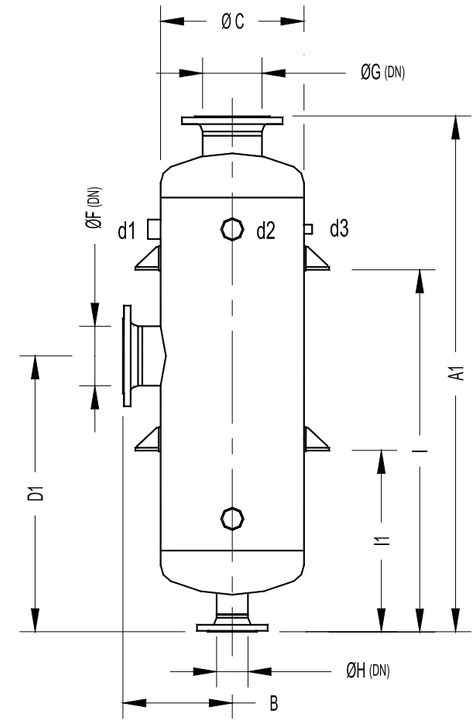
* Rating according to EN 1092-1:2018; ** Rating according to EN 1759-1:2004; PMO – Maximum operating pressure for saturated steam: 13 bar. Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.

APPROXIMATE DIMENSIONS (mm) *																	
MODEL	**A**	**A1**	**B**	**C**	**D**	**D1**	**E**	**F**	**G**	**H**	**I**	**I1**	**d1**	**d2**	**d3**	**d4**	**WGT. (kg)**
RV06	1400	1200	185	170	800	600	635	50	50	50	853	–	3/4"	2”	1/2"	1”	36
RV08	1500	1300	210	220	810	610	645	80	80	50	908	–	1”	2”	1/2"	1”	56
RV12	1540	1340	265	325	830	630	660	100	100	50	908	–	11/2”	2”	1/2"	1”	92
RV16	1660	1460	310	410	930	730	725	150	150	80	–	480	11/2”	2”	1/2"	11/2”	146
RV18	1610	1410	330	460	965	765	755	150	150	80	–	485	2”	2”	1/2"	11/2”	174

* For certified values and ANSI dimensions, consult manufacturer. Volume and weight refer to AS/SF EN1092-14 PN16 flanged version. Other versions may have slightly different values.
Remarks: For the correct selection it is required the condensate flow rate and temperature when arriving to the flash vessel, as well as the flash steam pressure required.
Auxiliary equipment is recommended. Consult manufacturer for correct flash vessel selection and system design, including all the necessary accessories.





MATERIALS

DESIGNATION	RV/S	RV/SS
Heads and shell	P265GH / 1.0425; P235GH / 1.0345	AISI 316 / 1.4401; AISI 316L / 1.4404
Inlet / outlet pipes	P235GH / 1.0345	AISI 316 / 1.4401
EN flanges	P250GH / 1.0460	AISI 316 / 1.4401
ASME flanges	ASTM A105 / 1.0432	AISI 316 / 1.4401
Sockets	ASTM A105 / 1.0432	AISI 316 / 1.4401
Supports	S235JR / 1.0038	AISI 304 / 1.4301

VALSTEAM ADCA

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IS 9.702 E 15.15

FLASH VESSELS
RVST
(With inbuilt steam trap)

DESCRIPTION

The flash vessel is the main component in any flash recovery system. It can be used in all steam plants where high pressure condensate is reduced to a lower pressure, so that flash steam is formed by re-evaporation. This steam can be used in low pressure process or heating equipments.

MAIN FEATURES

Several possibilities of installation and special sizes and types available on request.
Inbuilt steam trap.

OPTIONS: Complete stainless steel construction.
Installation supports on body (without supporting feet).

USE: High pressure condensate.
Boiler blowdown heat recovery systems.

AVAILABLE MODELS: RVST/S – carbon steel.
RVST/SS – stainless steel.

SIZES: RVST08, RVST12, RVST16, RVST18.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Special flanges upon request.

INSTALLATION: Vertical installation.
Horizontal condensate inlet and outlet.
See AD (assembly drawing).

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
RV08	2 (CE marked)
RV12	3 (CE marked)
RV16	3 (CE marked)
RV18	3 (CE marked)

LIMITING CONDITIONS

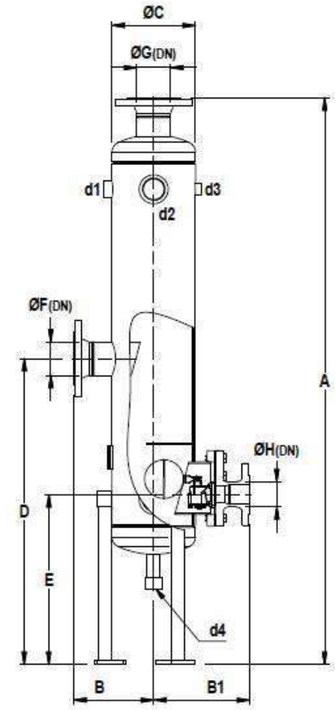
RVST/S						RVST/SS					
RATING	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**	**RATING**	**ALLOW. PRESS.**	**RELAT. TEMP.**
PN 16 *	16 bar	50 ºC	**CLASS 150 ****	16 bar	50 ºC	**PN 16 ***	16 bar	50 ºC	**CLASS 150 ****	15,3 bar	50 ºC
	14 bar	100 ºC		14 bar	100 ºC		15 bar	100 ºC		13,3 bar	100 ºC
	13 bar	195 ºC		13 bar	195 ºC		12,7 bar	200 ºC		11,1 bar	200 ºC
	12 bar	250 ºC		–	–		12 bar	250 ºC		–	–

* Rating according to EN 1092-1:2018; PMO – Maximum operating pressure for saturated steam: 13 bar.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.

APPROXIMATE DIMENSIONS (mm) *														
MODEL	**A**	**B**	**B1**	**C**	**D**	**E**	**F**	**G**	**H**	**d1**	**d2**	**d3**	**d4**	**WGT. (kg)**
RV08	1500	210	252	220	810	450	80	80	50	1”	2”	1/2"	1”	67
RV12	1540	265	305	325	830	485	100	100	50	11/2”	2”	1/2"	1”	102
RV16	1660	310	385	410	930	530	150	150	80	11/2”	2”	1/2"	11/2”	179
RV18	1610	330	410	460	965	545	150	150	80	2”	2”	1/2"	11/2”	197

* For certified values, consult manufacturer.
Remarks: For the correct selection it is required the condensate flow rate and temperature when arriving to the flash vessel, as well as the flash steam pressure required.
Auxiliary equipment is recommended. Consult manufacturer for correct flash vessel selection and system design, including all the necessary accessories.



MATERIALS

DESIGNATION	RVST/S	RVST/SS
Heads and shell	P265GH / 1.0425; P235GH / 1.0345	AISI 316 / 1.4401; AISI 316L / 1.4404
Inlet / outlet pipes	P235GH / 1.0345	AISI 316 / 1.4401
EN flanges	P250GH / 1.0460	AISI 316 / 1.4401
ASME flanges	ASTM A105 / 1.0432	AISI 316 / 1.4401
Sockets	ASTM A105 / 1.0432	AISI 316 / 1.4401
Supports	S235JR / 1.0038	AISI 304 / 1.4301
Steam trap mechanism	Stainless steel	Stainless steel
Steam trap cover	P235GH / 1.0305; A216 WCB / 1.0619	AISI 316 / 1.4401; A351 CF8 / 1.4308
Steam trap gasket	Stainless steel / Graphite	Stainless steel / Graphite
Bolts	Steel 8.8	Stainless steel A2-70

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.704 E 15.15

CENTRIFUGAL AIR AND DIRT SEPARATORS FOR LIQUID SYSTEMS AS and AS/F

DESCRIPTION

The AS series centrifugal air and dirt separators are designed to be used in the flow line of a hydronic heater or cooling system. The operation is based on the principle of centrifugal force, instead of relying on low velocity separation, offering the advantage of efficient separation in a smaller form factor.
The inside strainer protects against any dirt present in the system such as sand, welding residues and other foreign matter. The strainer screen position has a particular advantage compared with external pipe strainers since dirt is removed from the water flow and is collected in the bottom of the unit, avoiding pressure losses.

MAIN FEATURES

No moving parts.
Integrated strainer.
Maximum separation efficiency with minimum space requirements.

OPTIONS: Different connections and ratings on request.

USE: To remove air and dirt in hydronic heating, cooling and pumping systems.

AVAILABLE MODELS:
AS/S - carbon steel body.
AS/SS - stainless steel body.
AS/SF - carbon steel with strainer.
AS/SSF - stainless steel with strainer.

SIZES: DN 32 to DN 300.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092, on request.

INSTALLATION: The AS separators should be installed at the highest temperature and lowest pressure points, where solubility is lower.
Ideally, they should be installed after boilers or heat exchangers, before chillers and before pump suction.
Horizontal installation, always with the drain discharge pointing downwards.
The installation of an ADCA AE series air eliminator is recommended, to remove the air.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
DN 32 to 300	SEP

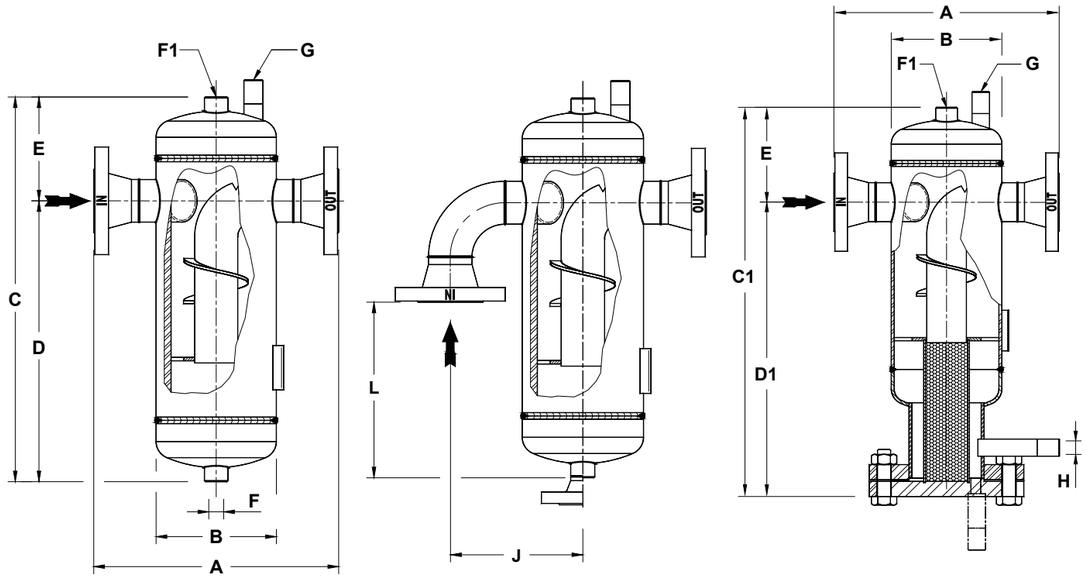
BODY LIMITING CONDITIONS – AS/S *			
FLANGED PN 16		**FLANGED CLASS 150**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	16 bar	50 ºC
14 bar	100 ºC	14 bar	100 ºC
13 bar	195 ºC	13 bar	195 ºC
12 bar	250 ºC	–	–

* Rating according to EN 1092-1:2018; Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

BODY LIMITING CONDITIONS – AS/SS			
FLANGED PN 16 *		**FLANGED CLASS 150 ****	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	15,3 bar	50 ºC
15 bar	100 ºC	13,3 bar	100 ºC
12,7 bar	200 ºC	11,1 bar	200 ºC
12 bar	250 ºC	–	–

* Rating according to EN 1092-1:2018; ** Rating according to EN 1759-1:2004.
Minimum operating temperature: -10 ºC; Design code: AD-Merkblatt.

DIMENSIONS



AS | AS – EVH version | AS/F

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS 9.503 E 00.21

APPROXIMATE DIMENSIONS (mm) *														
SIZE	**A PN 16**	**A CL.150**	**B**	**C**	**C1**	**D**	**D1**	**E**	**F ****	**F1 ****	**G ****	**H ****	**VOL. (L)**	**WGT. (kg)**
DN 32	260	290	140	395	495	285	385	110	3/4"	1/2"	1/2"	3/4"	6	13
DN 40	260	294	140	435	535	325	425	110	3/4"	1/2"	1/2"	3/4"	6,7	14,3
DN 50	310	341	168	505	605	385	485	120	3/4"	1/2"	1/2"	3/4"	11,7	21
DN 65 ***	380	430	219	550	670	410	530	140	1"	3/4"	3/4"	1"	19,8	31,5
DN 80	400	440	219	610	730	462	582	148	1"	3/4"	3/4"	1"	27	40
DN 100	485	533	273	715	835	528	648	187	11/4"	3/4"	3/4"	11/4"	38	59,8
DN 125	535	605	324	845	995	630	780	215	11/4"	1"	1"	11/4"	54	84
DN 150	565	635	356	962	1131	692	841	290	11/2"	1"	1"	11/2"	79	161
DN 200	605	685	406	1170	1320	880	1030	290	11/2"	1"	1"	11/2"	146	202
DN 250	720	784	508	1540	1710	1140	1310	400	11/2"	1"	1"	11/2"	288	330
DN 300	840	913	610	1700	1870	1172	1342	528	11/2"	1"	1"	11/2"	412	475

F – Drain connection; F1 – Automatic air eliminator connection; G – Manual start-up air drain connection; H – Strainer drain connection.
* For certified values, consult factory. Volume and weight refer to AS/SF PN 16 flanged version. Other versions may have slightly different values.
** As standard, in separators manufactured with EN 1092-1 flanges, these connections are female threaded ISO 7 Rp. In models with ASME B16.5 flanges, these connections are female threaded NPT. For the drains, alternative EN 1092-1 or ASME B16.5 flanged connections can be supplied (ASME on the same class as main connections).
*** Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1, on request.

MATERIALS	
DESIGNATION	**MATERIAL**
Body	EN 10216-2 / P235GH / 1.0325
Heads	EN 10028-2 / P265GH / 1.0425
Inlet / Outlet pipes	EN 10216-2 / P235GH / 1.0325
EN flanges	EN 10222-2 / P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	EN 10025-2 / S235JR / 1.0038

EN 10204 3.1 certificate available if requested with the order.

FLANGE CONNECTIONS			
RATING	**SIZE**	**EN STANDARD**	**ASME STANDARD**
PN 16	* DN 15 to DN 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to DN 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.

SHELL AND TUBE & PLATE HEAT EXCHANGERS

DESCRIPTION

Adcatherm heat exchangers are divided in several lines, from the traditional shell and tube to the PHE (plate heat exchangers), and offer solutions for many different industrial heat transfer applications.

MAIN FEATURES

Different types of materials and designs available, according to the application.

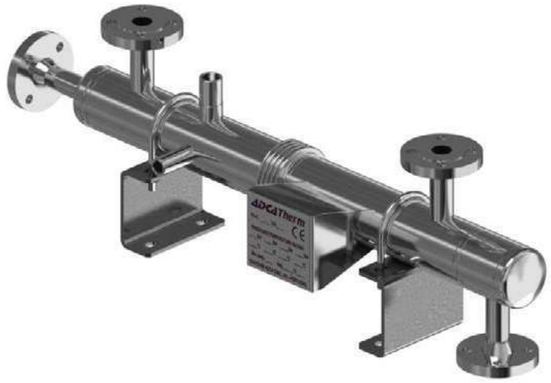
OPTIONS: Packaged units, heating coils, special designs.

USE: Steam, water, hot condensate and other fluids compatible with the construction.

AVAILABLE MODELS:
STSH/STSV – Shell and tube sealed.
STH/STV – Shell and tube bolted.
PAT – Plate heat exchanger (gasketed and bolted).

ORDER REQUIREMENTS:
Type of fluids and correspondent pressures.
Flow rates.
Inlet and outlet temperatures.
Output.

STV



STSH

PAT

CE

PLATE HEAT EXCHANGERS
PAT

DESCRIPTION

The ADCATherm PAT plate heat exchangers (gasketed and bolted), consist of a variable number of pressed heat transfer plates clamped together between a fixed and a movable pressure plate, all assembled in a metal frame.

MAIN FEATURES

Compact and easy to install.
Corrosion-resistant stainless steel plates.
Highly efficient heat transfer.
Flexible configuration, allowing increase of heat transfer area by adding extra plates.
Low liquid content.
Easily serviced due to gasketed and bolted design.

OPTIONS: Special designs and materials (titanium, special alloys, lined flaged connections, etc).
Thermal insulation.
Stainless steel frame.

USE: Steam, water, hot condensate and other fluids compatible with the construction.

AVAILABLE MODELS: PAT00 to PAT30.
PATL00 to PATL50.
PATR00 to PATR50.

CONNECTIONS: Female threaded ISO 228 or NPT.
Flanged EN 1092-1 PN 10 or ASME B16.5 Class 150.
Others on request.

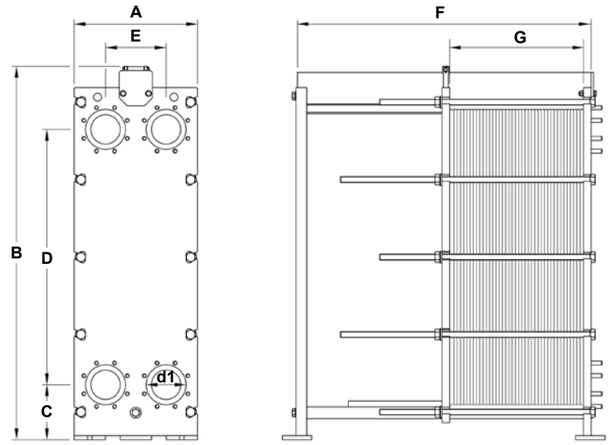
INSTALLATION: Vertical installation. Horizontal installation on request.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)
Non-standardized product designed acc. to requirements. Conformity assessment and CE marking are carried out case by case.

LIMITING CONDITIONS *		
Maximum operating pressure		10 bar
Maximum operating temperature	NBR seals	140 ºC
	EPDM seals	150 ºC
	TF-EPDM or TF-NBR seals	150 ºC
	EPDM-HT seals	180 ºC
	FKM seals	180 ºC
Minimum allowable temperature		-20 ºC

* Actual limiting conditions may vary depending on the requirements and final design.
Design code: ASME VIII div. 1.

We reserve the right to change the design and material of this product without notice.



DIMENSIONS (mm)										
MODEL	A	B	C	D	E	F Min. - Max.	G *	d1	W ** (m²)	W1 *** (m²)
PAT00	160	330	40	250	60	120 - 200	K x 2,45	1"	0,864	0,018
PAT01	300	835	200	535	115	250 - 1600	K x 3,20	2"	23,93	0,087
PAT10	400	1164	230	760	186	400 - 1300	K x 2,70	50	53,8	0,20
PAT30	578	1813	260	1316	280	700 - 2900	K x 3,10	100	245	0,49
PATL00	350	860	200	560	160	200 - 400	K x 4,10	2"	6,12	0,12
PATL10	440	1102	230	706	222	400 - 1300	K x 4,50	100	28	0,20
PATL30	620	1548	278	1023	300	700 - 3300	K x 5,20	150	143,10	0,45
PATL50	810	1936	320	1345	400	700 - 3300	K x 5,20	200	332	0,83
PATR00	220	440	68.5	308	102	200 - 300	K x 3,20	11/4"	2,19	0,043
PATR10	460	1212	230	804	230	400 - 1800	K x 3,20	100	96,9	0,255
PATR30	630	1824	280	1302	309	700 - 2400	K x 3,60	150	254,2	0,62
PATR50	800	2222	320	1520	360	900 - 4100	K x 4,00	200	512,87	0,948

* Distance between pressure plates. K: number of heat transfer plates.
** W: Maximum total surface area (m²).
*** W1: Surface area per plate (m²).
Remarks: Connections (d1) are sized according with the process conditions. For certified values, please consult the manufacturer.
Other sizes and designs can be supplied on request.

MATERIALS	
DESIGNATION	MATERIAL
Heat transfer plates	ASME SA240 316L; ASME SA240 304L; Titanium ASME SB265 Gr. 1; Titanium ASME SB265 Gr. 11; Nickel ASME SB162; Hastelloy ASME SB575
Frame and pressure plates	ASME SA516 Gr.60 or S355J2-N; ASME SA240 316; ASME SA240 304;
Gaskets *	NBR; EPDM; EPDM-HT; FKM; TF-EPDM; TF-NBR
Connections	AISI 304 / 1.4301; AISI 316 / 1.4401; NBR; EPDM; Titanium
Tightening bolts and nuts	AISI 304 / 1.4301; ASTM A193 Gr. B7

* Available spare parts.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS PAT.000 E 08.22

SHELL AND TUBE HEAT EXCHANGERS
STS
(Steam to water – Vertical installation)

DESCRIPTION

The ADCA ST series steam to water shell and tube heat exchangers are shorter and lighter than the alternative shell and tube exchangers manufactured with smooth pipes. The use of extruded low fin tube has the advantage that it can improve the external surface and thermal performance.

MAIN FEATURES

Corrosion-resistant stainless steel low finned tube bundle and shell construction.
Straight tubes for easy cleaning.
Expansion bellow in the shell, avoiding excessive tube stresses caused by thermal expansion and contraction.

OPTIONS: Horizontal installation (STSH).

USE: Steam, water, hot condensate and other fluids compatible with the construction.

AVAILABLE MODELS: STSV – vertical installation.

INSTALLATION: Vertical or horizontal (different condensate heads execution).
See IMI – Installation and maintenance instructions.

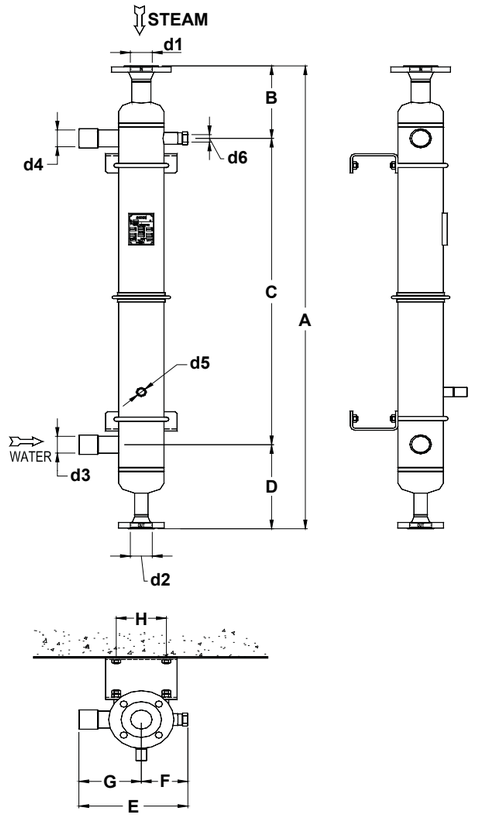
ORDER REQUIREMENTS: Steam pressure and temperature.
Inlet and outlet water temperature.
Water mass flow or heat exchanged.

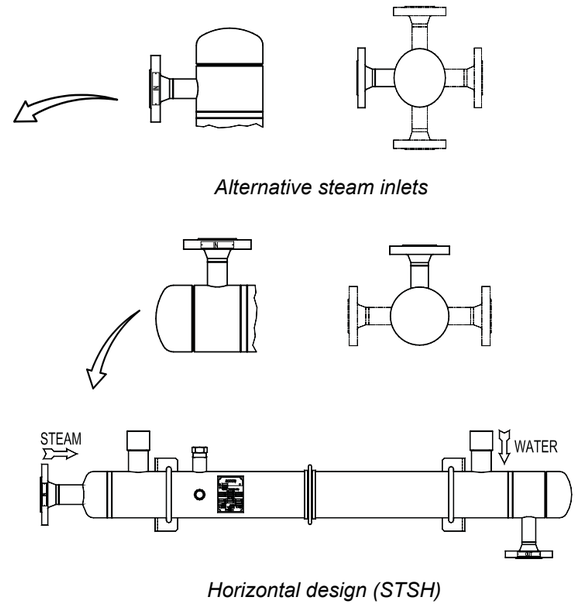
CE MARKING – GROUP 2 (PED – European Directive)		
PN 16	**Category Tube side**	**Category Shell side**
STSV 3.075 to 8.150	1 (CE marked)	SEP

MATERIALS	
DESIGNATION	**MATERIAL**
Tube bundle	AISI 316L / 1.4404
Tube sheet	AISI 316 / 1.4401
Heads and shell	AISI 316 / 1.4401; AISI 316L / 1.4404
Inlet / outlet pipes	AISI 316 / 1.4401
EN flanges	AISI 316 / 1.4401
ASME flanges	AISI 316 / 1.4401
Sockets	AISI 316 / 1.4401
Supports	AISI 304 / 1.4301

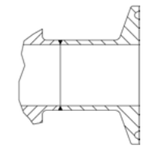
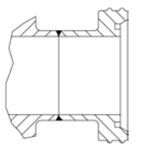
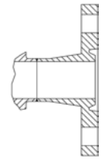
BODY LIMITING CONDITIONS *			
PN 16		**CLASS 150**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	16 bar	50 ºC
15 bar	100 ºC	15 bar	100 ºC
12,7 bar	200 ºC	12,6 bar	200 ºC
12 bar	250 ºC	–	–

Min. operating temp.: -10 ºC; Design code: AD-Merkblatt.
* Rating according to EN 1092-1:2018.
PMO – Maximum operating pressure for saturated steam: 13 bar.





Horizontal design (STSH)

ALTERNATIVE CONNECTIONS		
CLAMP	**ROUND THREAD**	**FLANGE**
		

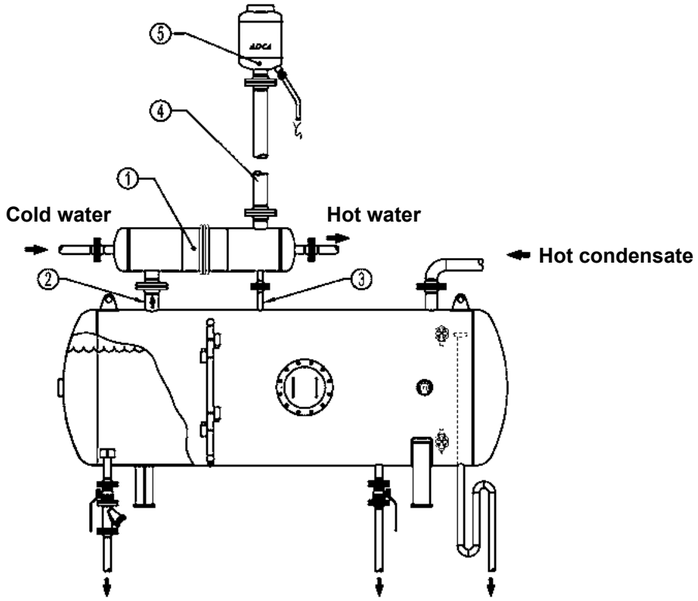
Remark: Different designs and dimensions on request.

DIMENSIONS (mm)														
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**d1 ***	**d2 ***	**d3 ***	**d4 ***	**d5**	**d6**
STSV 3.075	1045	225	595	225	250	105	145	100	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 3.100	1295	225	845	225	250	105	145	100	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 3.150	1795	225	1345	225	250	105	145	100	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 4.075	1075	240	595	240	274	117	157	125	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 4.100	1325	240	845	240	274	117	157	125	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 4.150	1825	240	1345	240	274	117	157	125	DN 40	DN 25	11/2”	11/2”	1/2”	3/4"
STSV 5.075	1098	251,5	595	251,5	300	130	170	154	DN 50	DN 40	2”	2”	1/2”	3/4"
STSV 5.100	1348	251,5	845	251,5	300	130	170	154	DN 50	DN 40	2”	2”	1/2”	3/4"
STSV 5.150	1848	251,5	1345	251,5	300	130	170	154	DN 50	DN 40	2”	2”	1/2”	3/4"
STSV 6.075	1126	265,5	595	265,5	330	145	185	182	DN 65	DN 40	2”	2”	1/2”	3/4"
STSV 6.100	1376	265,5	845	265,5	330	145	185	182	DN 65	DN 40	2”	2”	1/2”	3/4"
STSV 6.150	1876	265,5	1345	265,5	330	145	185	182	DN 65	DN 40	2”	2”	1/2”	3/4"
STSV 8.075	1136	280,5	595	280,5	380	170	210	232	DN 80	DN 50	21/2”	21/2”	1/2”	3/4"
STSV 8.100	1406	280,5	845	280,5	380	170	210	232	DN 80	DN 50	21/2”	21/2”	1/2”	3/4"
STSV 8.150	1906	280,5	1345	280,5	380	170	210	232	DN 80	DN 50	21/2”	21/2”	1/2”	3/4"

* Merely indicative values. Final sizes will be determined after order, considering the effective flow rates and connections.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS STSV.20 E 12.09

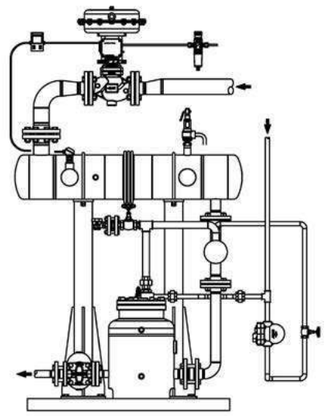
TYPICAL INSTALLATION AS FLASH STEAM VENT CONDENSER
(Steam to the shell)



POS. Nº	MATERIAL
1	STS heat exchanger
2	Receiver vent
3	Drain (condensate)
4	Vent to atmosphere
5	EH - Exhaust head

Flash steam vents energy recovery. When heating water or another process fluid using this steam, which is usually wasted, both boiler operation period and energy consumption are reduced, consequently reducing the pollution emissions as well.

TYPICAL INSTALLATION AS PART OF A “PWHU”
(Packaged Water Heating Unit)



The PWHU unit allows several options for the preparation of hot water for consumption or heating. It can be supplied complete with the feed water system, expansion and recirculation for closed circuit operation, or simply prepared to supply process hot water.
For drawing simplifying purposes some components and accessories have been omitted.

TUBULAR HEATING COILS
R SERIES
(STEAM TO WATER)

DESCRIPTION

The ADCA R series steam to water tubular heating coils are shorter and lighter than the alternative tubular heating coils manufactured with smooth pipes. The use of extruded low fin tube has the advantage that it can improve the external surface and thermal performance.

MAIN FEATURES

Corrosion-resistant low finned stainless steel tube bundle construction.
Straight tubes for easy cleaning.
Floating head at the end of the tube bundle, avoiding tube stresses caused by thermal expansion and contraction.

OPTIONS: Special designs.

USE: Steam, water, hot condensate and other fluids compatible with the construction.

AVAILABLE MODELS: R5, R6, R8 and R10.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Threaded on request.

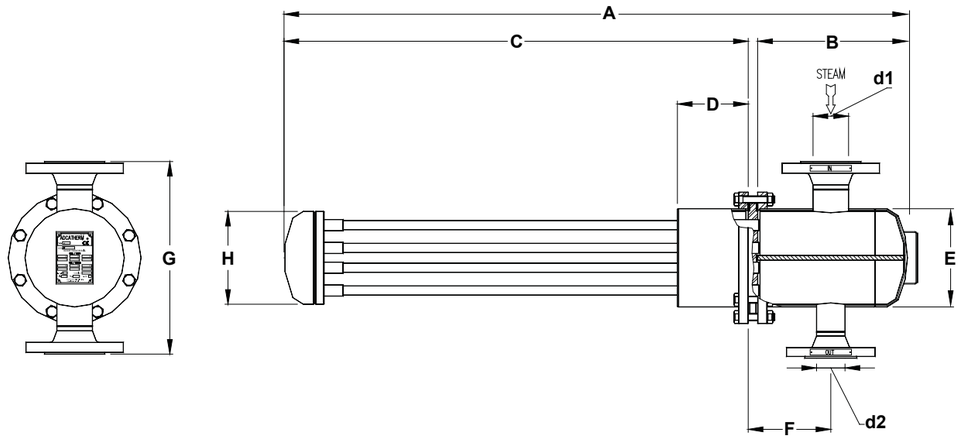
INSTALLATION: Horizontally on vertical or horizontal vessels.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
PN 16	**Category**
R5.075 to R5.150	1 (CE marked)
R6.075 to R6.150	1 (CE marked)
R8.075 to R8.150	2 (CE marked)
R10.075 to R10.150	2 (CE marked)

BODY LIMITING CONDITIONS		
FLANGED PN 16 *	**FLANGED CLASS 150 ****	**RELATED TEMP.**
ALLOWABLE PRESSURE	**ALLOWABLE PRESSURE**	
16 bar	15,3 bar	50 ºC
15 bar	13,3 bar	100 ºC
12,7 bar ***	11,1 bar ***	200 ºC
12 bar	–	250 ºC

Min. operating temp.: -10 ºC; Design code: AD-Merkblatt
* According to EN 1092-1:2018.
** According to EN 1759-1:2004.
*** PMO – Maximum operating pressure for saturated steam.

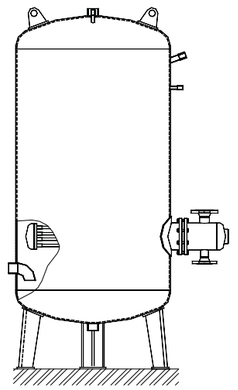
MATERIALS	
DESIGNATION	**MATERIAL**
Tube bundle	AISI 316L / 1.4404
Tube sheet	AISI 316 / 1.4401
Heads	S235JR / 1.0038; P235GH / 1.0305
Inlet / outlet pipes	P235GH / 1.0305
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Supports	S235JR / 1.0038



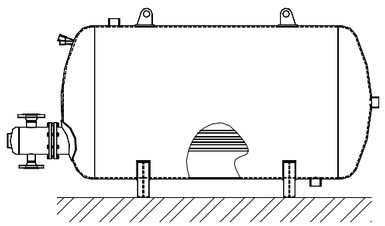
DIMENSIONS (mm)										
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**d1 ***	**d2 ***
R5.075	1010	234	762	120	139	145	340	128	40	25
R5.100	1260	234	1012	120	139	145	340	128	40	25
R5.150	1760	234	1512	120	139	145	340	128	40	25
R6.075	1040	254	770	120	168	145	368	157	65	40
R6.100	1290	254	1020	120	168	145	368	157	65	40
R6.150	1790	254	1520	120	168	145	368	157	65	40
R8.075	1060	264	780	130	220	145	420	204	80	50
R8.100	1310	264	1030	130	220	145	420	204	80	50
R8.150	1810	264	1530	130	220	145	420	204	80	50
R10.075	1097	304	775	130	273	145	473	257	80	50
R10.100	1347	304	1025	130	273	145	473	257	80	50
R10.150	1847	304	1525	130	273	145	473	257	80	50

* Merely indicative values. Sizes to be determined according to flow conditions.
Since each coil is built to suit specific plant requirements, consult manufacturer for certified dimensions and weight.

TYPICAL INSTALLATION



Vertical vessel



Horizontal vessel

SHELL AND TUBE HEAT EXCHANGERS
STH
(Steam to water – Horizontal installation)

DESCRIPTION

The ADCA ST series steam to water shell and tube heat exchangers are shorter and lighter than the alternative shell and tube exchangers manufactured with smooth pipes. The use of extruded low fin tubes has the advantage that it can improve the external surface and thermal performance.

MAIN FEATURES

Corrosion-resistant stainless steel low finned tube bundle construction.
Straight tubes for easy cleaning.
Floating head at the end of the tube bundle, avoiding tube stresses caused by thermal expansion and contraction.

USE: Steam, water, hot condensate and other fluids compatible with the construction.

AVAILABLE MODELS: STH/S – carbon steel shell.
STH/SS – completely in stainless steel.

CONNECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.
Female threaded ISO 7 Rp or NPT.

INSTALLATION: Can be installed on floor, walls or hanging from the ceiling.
Steam runs inside the tubes and process water outside.
See IMI – Installation and maintenance instructions.

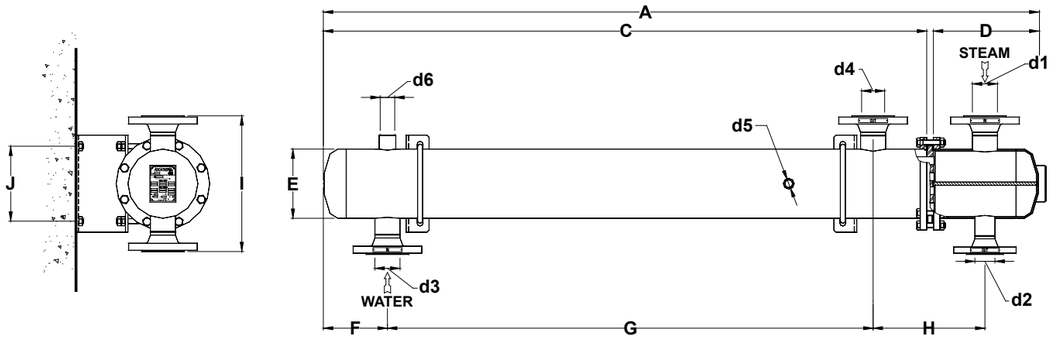
ORDER REQUIREMENTS: Steam pressure and temperature.
Inlet and outlet water temperature.
Water mass flow or heat exchanged.

CE MARKING – GROUP 2 (PED – European Directive)		
PN16	**Category Tube side**	**Category Shell side**
STH4.075 to 4.150	1 (CE marked)	SEP
STH5.075 to 5.150	1 (CE marked)	SEP
STH6.075 to 6.150	1 (CE marked)	SEP
STH8.075 to 8.150	2 (CE marked)	SEP
STH10.075 to 10.150	2 (CE marked)	SEP
STH12.075 to 12.150	2 (CE marked)	SEP

BODY LIMITING CONDITIONS *			
PN 16		**CLASS 150**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	16 bar	50 ºC
15 bar	100 ºC	15 bar	100 ºC
12,7 bar	200 ºC	12,6 bar	200 ºC
12 bar	250 ºC	–	–

Min. operating temp.: -10 ºC; Design code: AD-Merkblatt.
* Rating according to EN 1092-1:2018.
PMO – Maximum operating pressure for saturated steam: 13 bar.

MATERIALS		
DESIGNATION	**STH/S**	**STH/SS**
Tube bundle	AISI 316L / 1.4404	AISI 316L / 1.4404
Tube sheet	AISI 316 / 1.4401	AISI 316 / 1.4401
Heads	S235JRG2 / 1.0038; P235GH / 1.0345	AISI 316 / 1.4401; AISI 316L / 1.4404
Inlet / outlet pipes	P235GH / 1.0345	AISI 316 / 1.4401
EN flanges	P250GH / 1.0460	AISI 316 / 1.4401
ASME flanges	ASTM A105 / 1.0432	AISI 316 / 1.4401
Sockets	ASTM A105 / 1.0432	AISI 316 / 1.4401
Supports	S235JRG2 / 1.0038	AISI 304 / 1.4301



DIMENSIONS (mm)															
MODEL	**A**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**d1 ***	**d2 ***	**d3 ***	**d4 ***	**d5**	**d6**
STH4.075	965	785	166	114	120	550	207	314	116	50	25	50	50	1/2"	3/4"
STH4.100	1215	1035	166	114	120	800	207	314	116	50	25	50	50	1/2"	3/4"
STH4.150	1715	1535	166	114	120	1300	207	314	116	50	25	50	50	1/2"	3/4"
STH5.075	1050	790	245	140	160	510	276	340	150	65	40	65	65	1/2"	3/4"
STH5.100	1300	1040	245	140	160	760	276	340	150	65	40	65	65	1/2"	3/4"
STH5.150	1800	1540	245	140	160	1260	276	340	150	65	40	65	65	1/2"	3/4"
STH6.075	1093	820	255	168	180	500	288	368	180	65	40	65	65	1/2"	3/4"
STH6.100	1343	1070	255	168	180	750	288	368	180	65	40	65	65	1/2"	3/4"
STH6.150	1843	1570	255	168	180	1250	288	368	180	65	40	65	65	1/2"	3/4"
STH8.075	1176	840	320	220	197	487	304	420	230	80	50	80	80	1/2"	1"
STH8.100	1426	1090	320	220	197	737	304	420	230	80	50	80	80	1/2"	1"
STH8.150	1926	1590	320	220	197	1237	304	420	230	80	50	80	80	1/2"	1"
STH10.075	1185	855	306	273	205	448	356	473	285	80	50	80	80	1/2"	1"
STH10.100	1435	1105	306	273	205	698	356	473	285	80	50	80	80	1/2"	1"
STH10.150	1935	1605	306	273	205	1198	356	473	285	80	50	80	80	1/2"	1"
STH12.075	1307	877	407	324	277	400	430	540	336	100	50	100	100	1/2"	1"
STH12.100	1557	1127	407	324	277	650	430	540	336	100	50	100	100	1/2"	1"
STH12.150	2057	1627	407	324	277	1150	430	540	336	100	50	100	100	1/2"	1"

* Merely indicative values. Final sizes will be determined after order, considering the effective flow rates and connections.
Pipe connections are sized considering the correct thermal insulation, not included but recommended to be applied after the installation.

SHELL AND TUBE HEAT EXCHANGERS
STV
(Steam to water – Vertical installation)

DESCRIPTION

The ADCA ST series steam to water shell and tube heat exchangers are shorter and lighter than the alternative shell and tube exchangers manufactured with smooth pipes. The use of extruded low fin tubes has the advantage that it can improve the external surface and thermal performance.

MAIN FEATURES

Corrosion-resistant stainless steel low finned tube bundle construction.
Straight tubes for easy cleaning.
Floating head at the end of the tube bundle, avoiding tube stresses caused by thermal expansion and contraction.

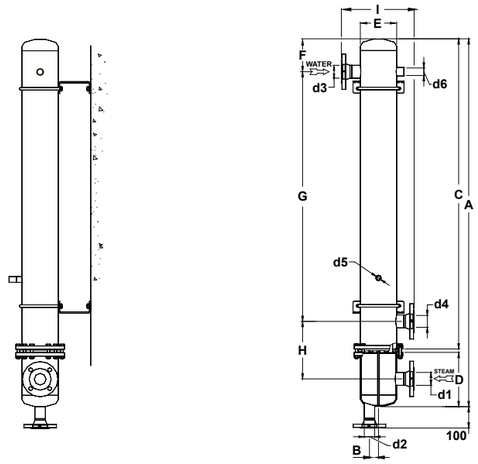
USE:	Steam, water, hot condensate and other fluids compatible with the construction.
AVAILABLE MODELS:	STV/S – carbon steel shell. STV/SS – completely in stainless steel.
CONNECTIONS:	Flanged EN 1092-1 PN 16. Flanged ASME B16.5 Class 150. Female threaded ISO 7 Rp or NPT.
INSTALLATION:	Wall mounting or floor (needs special supports). Steam runs inside the tubes and process water outside. See IMI – Installation and maintenance instructions.
ORDER REQUIREMENTS:	Steam pressure and temperature. Inlet and outlet water temperature. Water mass flow or heat exchanged.

CE MARKING – GROUP 2 (PED – European Directive)		
PN16	**Category Tube side**	**Category Shell side**
STV4.075 to 4.150	1 (CE marked)	SEP
STV5.075 to 5.150	1 (CE marked)	SEP
STV6.075 to 6.150	1 (CE marked)	SEP
STV8.075 to 8.150	2 (CE marked)	SEP
STV10.075 to 10.150	2 (CE marked)	SEP
STV12.075 to 12.150	2 (CE marked)	SEP

BODY LIMITING CONDITIONS *			
PN 16		**CLASS 150**	
ALLOWABLE PRESSURE	**RELATED TEMPERATURE**	**ALLOWABLE PRESSURE**	**RELATED TEMPERATURE**
16 bar	50 ºC	16 bar	50 ºC
15 bar	100 ºC	15 bar	100 ºC
12,7 bar	200 ºC	12,6 bar	200 ºC
12 bar	250 ºC	–	–

Min. operating temp.: -10 ºC; Design code: AD-Merkblatt.
* Rating according to EN 1092-1:2018.
PMO – Maximum operating pressure for saturated steam: 13 bar.

MATERIALS		
DESIGNATION	**STV/S**	**STV/SS**
Tube bundle	AISI 316L / 1.4404	AISI 316L / 1.4404
Tube sheet	AISI 316 / 1.4401	AISI 316 / 1.4401
Heads	S235JRG2 / 1.0038; P235GH / 1.0345	AISI 316 / 1.4401; AISI 316L / 1.4404
Inlet / outlet pipes	P235GH / 1.0345	AISI 316 / 1.4401
EN flanges	P250GH / 1.0460	AISI 316 / 1.4401
ASME flanges	ASTM A105 / 1.0432	AISI 316 / 1.4401
Sockets	ASTM A105 / 1.0432	AISI 316 / 1.4401
Supports	S235JRG2 / 1.0038	AISI 304 / 1.4301



DIMENSIONS (mm)															
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**d1 ***	**d2 ***	**d3 ***	**d4 ***	**d5**	**d6**
STV4.075	965	28	785	166	114	120	550	207	314	DN 50	DN 25	DN 50	DN 50	1/2"	3/4"
STV4.100	1215	28	1035	166	114	120	800	207	314	DN 50	DN 25	DN 50	DN 50	1/2"	3/4"
STV4.150	1715	28	1535	166	114	120	1300	207	314	DN 50	DN 25	DN 50	DN 50	1/2"	3/4"
STV5.075	1050	35	790	245	140	160	510	276	340	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV5.100	1300	35	1040	245	140	160	760	276	340	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV5.150	1800	35	1540	245	140	160	1260	276	340	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV6.075	1093	40	820	255	168	180	500	288	368	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV6.100	1343	40	1070	255	168	180	750	288	368	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV6.150	1843	40	1570	255	168	180	1250	288	368	DN 65	DN 40	DN 65	DN 65	1/2"	3/4"
STV8.075	1176	55	840	320	220	197	487	304	420	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV8.100	1426	55	1090	320	220	197	737	304	420	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV8.150	1926	55	1590	320	220	197	1237	304	420	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV10.075	1185	60	855	306	273	205	448	356	473	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV10.100	1435	60	1105	306	273	205	698	356	473	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV10.150	1935	60	1605	306	273	205	1198	356	473	DN 80	DN 50	DN 80	DN 80	1/2"	1"
STV12.075	1307	80	877	407	324	277	400	430	540	DN 100	DN 50	DN 100	DN 100	1/2"	1"
STV12.100	1557	80	1127	407	324	277	650	430	540	DN 100	DN 50	DN 100	DN 100	1/2"	1"
STV12.150	2057	80	1627	407	324	277	1150	430	540	DN 100	DN 50	DN 100	DN 100	1/2"	1"

* Merely indicative values. Final sizes will be determined after order, considering the effective flow rates and connections.
Pipe connections are sized considering the correct thermal insulation, not included but recommended to be applied after the installation.

We reserve the right to change the design and material of this product without notice.

ADCATHERM
STEAM TO WATER HEATING SYSTEMS

GENERAL

The AdcaTherm series offers several solutions for water heating in a safe and efficient way, from compact instant production systems to semi-instantaneous and storage systems.
Either for room heating, consumption water or process water, Valsteam ADCA will always have a solution for you.

DESCRIPTIONS

PWHU – Packaged Water Heating Units

Complete system conceived for instant production of heated water using steam as primary fluid. Ready to work, just needs the connections to the respective fluids.
This system is ideal whenever there is enough energy available for instant heating.

MAIN FEATURES

Rust free, hot water available (using austenitic stainless steel design).
Ready and easy to install, saves design and assembly time, as well as floor space.
Installation and commissioning time reduction.

WAVE – Water Heating Vessel

Especially suitable for the production of consumable hot water, domestic or industrial. The required amount of steam for instantaneous heating may not be available at all times. In these cases, it's necessary to install a buffer tank (semi-instantaneous system) or even a storage tank (storage system).

MAIN FEATURES

Ready and easy to install, saves design and assembly time.
Installation and commissioning time reduction.
Extra water for peak periods, reducing the need for extra boiler power. The system can be designed for the amount of energy available, not compromising the remaining process.

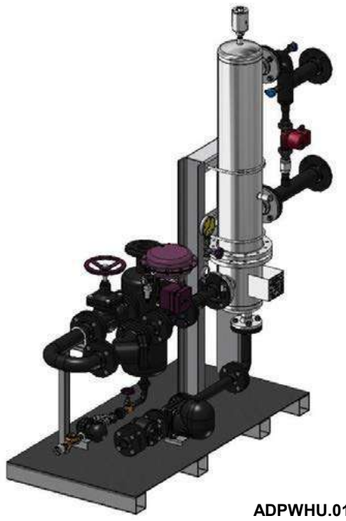
OPTIONS:	Different types of materials and designs available, according to the application, see ADPWHU.07.5871.
USE:	Steam, water, hot condensate and other fluids compatible with the construction.
AVAILABLE MODELS:	PWHU, WAVE-P (packaged) AND WAVE-S (split system).
ORDER REQUIREMENTS:	Type of application. Flow rates or detailed description of intended use (number of baths in a set period of time, for instance). Inlet and outlet temperatures. Types of fluids and corresponding pressures. Power (output) or information that can allow its determination. Room available for installation and other limiting conditions, if any.

We reserve the right to change the design and material of this product without notice.

Some examples of an extensive range of AdcaTherm skids already manufactured

ADPWHU.10.6359

ADPWHU.12.6371



ADPWHU.01.2439

ADPWHU.11.6370

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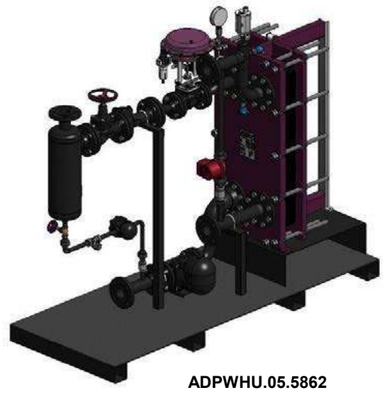
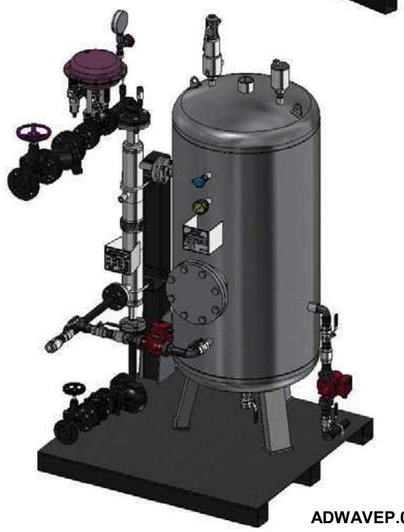
ADPWHU.03.5857

ADPWU.06.5870



ADPWHU.05.5862

ADPWHU.04.5858



ADWAVEP.02.2848

ADWAVES.01.2847

VALSTEAM ADCA

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IS PWHU.GE E 03.16

ADCATHERM FRECO
FLASH STEAM HEAT RECOVER

DESCRIPTION

The Adcatherm Freco – flash steam heat recovery unit – is a skid mounted package unit to facilitate heat recovery from flash steam, condensate or both.
The Freco is specially recommended for heating a continuous flow of fluid, such as make-up water to a boiler feed water system.
Non-continuous flow applications may require additional recirculation, relief valves, or other devices, to avoid system damage due to overheating and consequent overpressure.

It is known that the condensate return and its recovery is beneficial and ensures a remarkable energetic efficiency. However, the condensate, which is initially at high temperatures, ends up expanding and losing most of its energy through the formation of flash steam. On the other hand, feed water temperatures higher than 90 ºC to the boiler feed pumps when coming from atmospheric vessels will normally cause cavitation on the pumps with all the consequent damages.
The Freco system prevents this problem since it is installed downstream of the pumps, using the high pressures which can be found there, allowing the condensate heating above 100 ºC, without the existence of any boiling, and naturally eliminating the chances of cavitation.

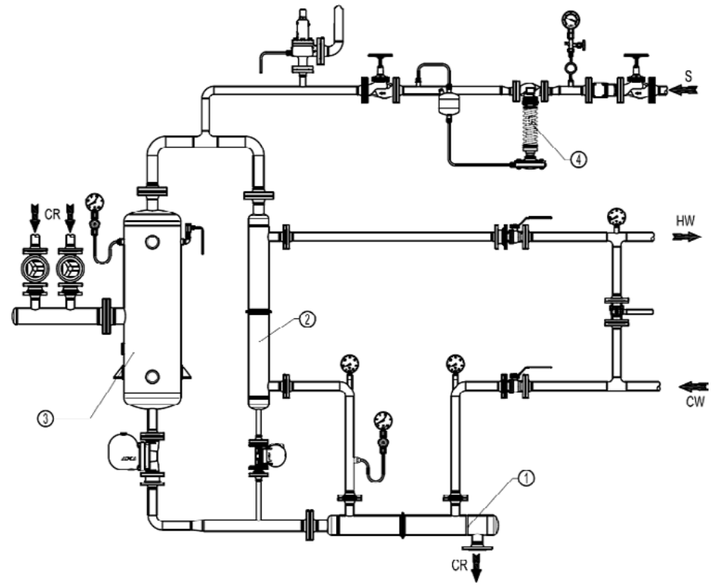
MAIN FEATURES

Different types of materials and designs available, according to the application.

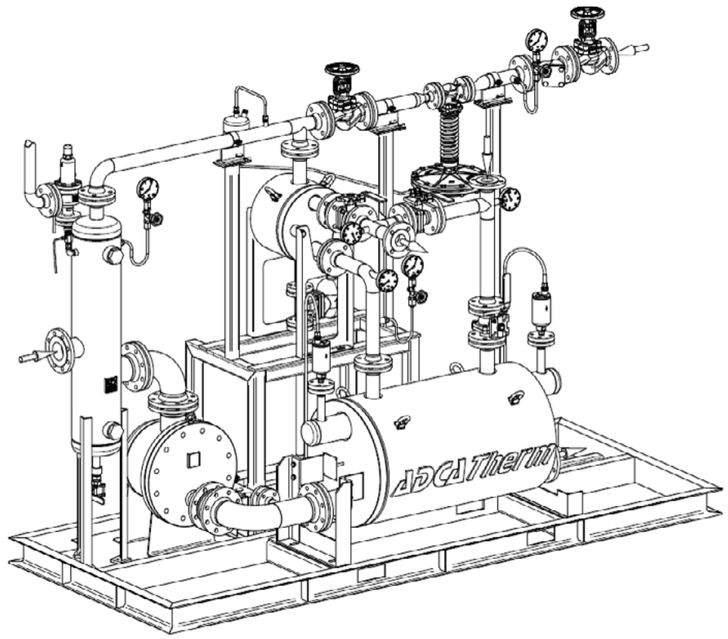
OPTIONS:	Atmospherically vented units, to avoid extra back pressure in the condensate return system.
USE:	Steam, water, hot condensate and other fluids compatible with the construction.
ORDER REQUIREMENTS:	Condensate flow rate and temperature. Make-up water flow rate and temperature. Operating pressures. Steam boiler(s) capacity and operating pressure.

We reserve the right to change the design and material of this product without notice.

TYPICAL INSTALLATION



The condensate return (CR) is expanded on a flash vessel (3). The flash steam which is produced there and the remaining condensate are then directed to the respective heat exchangers (1 e 2) where, in the meanwhile, the pressurized feed water (CW) is heated (HW) before it passes to the economizer or is directly introduced in the steam boiler (it is recommended to install a by-pass from CW to HW).
The final condensate will then be recovered to the condensate tank, not being at this stage sufficiently hot to cause the feed water overheating.
A pressure reducing station (4) may be considered to ensure the thermal stability of the system.



VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS FRECO.GE E 07.14

BLOWDOWN EXPANSION AND COOLING UNIT
BEX

DESCRIPTION AND OPERATION

The ADCA BEX series blowdown expansion and cooling units are used in modern boiler houses to cool hot waste water and steam boiler blowdown before discharging them into a pit or drain. The waste water is discharged into the unit, which is at atmospheric pressure, and the cooling water enters through a control valve controlled by a thermostat, mixing it with the hot water.
If flash steam can not be recovered or discharged to atmosphere, an additional condensing water spray system (optional) can be supplied. It is fitted into the top of the unit and can be controlled directly, either by another thermostat, or by the same command used for the automatic blowdown valve control.

MAIN FEATURES

Prevents thermal pollution.
Overflow with siphon breaker.
Easy to install.
Reduces the flow of flash steam.

OPTIONS: Stainless steel construction.
Complete system including all the necessary equipment (stop and check valves, thermostats, exhaust head, etc).
Manifold with several inlets for multi-boiler installations.
Manhole or handhole for inspection.
Fitted with support brackets for elevated installation.

USE: Boiler blowdown and hot waste water.

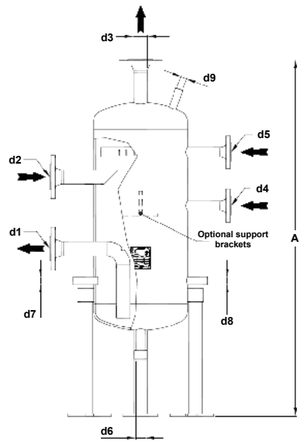
AVAILABLE MODELS: BEX15, 30, 40, 50, 60 and 80 – carbon steel.

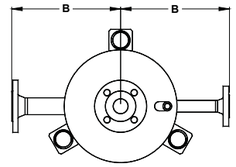
CONECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

INSTALLATION: Vertical installation.
The inlet of the blowdown tank is always higher than the boiler discharge valves. Therefore, the connecting pipe should have provisions made at a low point to drain the boiler.
See IMI – Installation and maintenance instructions.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: - 10 ºC.
Design code: AD-Merkblatt.
Other conditions and CE marking on request.





DIMENSIONS (mm) *														
MODEL	A	B	d1	d2	d3	d4	d5 **	d6	d7	d8	d9 **	VOL. (L)	STW. (L) ***	WGT. (kg)
BEX15	1150	255	DN 25	DN 25	DN 40	DN 15	DN 15	1”	1/2”	1”	1”	22,9	9	41
BEX30	1245	312	DN 40	DN 40	DN 40	DN 25	DN 25	1”	1/2”	1”	1”	66,6	18	69
BEX40	1275	353	DN 50	DN 50	DN 50	DN 25	DN 25	1”	1/2”	1”	1”	111,7	29	100
BEX50	1430	455	DN 80	DN 50	DN 80	DN 25	DN 25	1”	1/2”	1”	1”	251	71	130
BEX60	1930	455	DN 100	DN 65	DN 100	DN 25	DN 25	1”	1/2”	1”	1”	393	121	187
BEX80	2350	530	DN 150	DN 100	DN 150	DN 40	DN 40	11/2”	1/2”	1”	1”	883,5	233	367

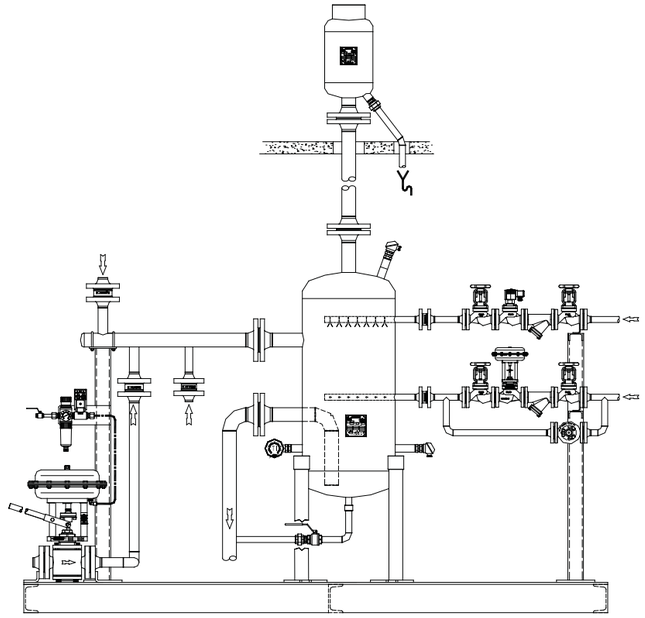
* Indicative values. Final dimensions, weight and connections to be defined according to the supplied drawing.
** Optional.
*** Standing water.

SELECTION TABLE						
HOT WATER FLOW RATES (kg/h)	150	300	600	1500	3000	5000
MODEL	BEX15	BEX30	BEX40	BEX50	BEX60	BEX80

CONNECTIONS		
POS.	DESIGNATION	RATING
d1	Drain outlet	PN 16
d2	Blowdown inlet	PN 16
d3	Venting outlet	PN 16
d4	Cooling water inlet	PN 16
d5	Flash steam cooling water	PN 16
d6	Drain	PN 16
d7	Thermometer connection	PN 16
d8	Thermostat connection	PN 16
d9	Thermostat connection	PN 16

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS BEX.20 E 15.07

TYPICAL INSTALLATION



In case of order or inquiry, please refer the required item numbers (see assembly drawing ADBEX.01.2839).

BLOWDOWN EXPANSION VESSELS
BV

DESCRIPTION

The ADCA BV series blowdown vessels are used in modern boiler houses to cool hot waste water and steam boiler blowdown before discharging them into a pit or drain.
If flash steam can not be recovered or discharged to the atmosphere, an optional condensing water spray system can be supplied. It is fitted into the top of the unit and can be controlled by a thermostat.

MAIN FEATURES

Prevents thermal pollution.
Overflow with siphon breaker.
Easy to install.

OPTIONS: Water injection cooling system.
Stainless steel construction.
Complete system including all the necessary equipment (stop and check valves, thermostats, exhaust head, etc).
Manifold with several inlets for multi-boiler installations.
Manhole or handhole for inspection.

USE: Boiler blowdown and hot waste water.

AVAILABLE MODELS: BV3, 4, 5, 6 and 7 – carbon steel.

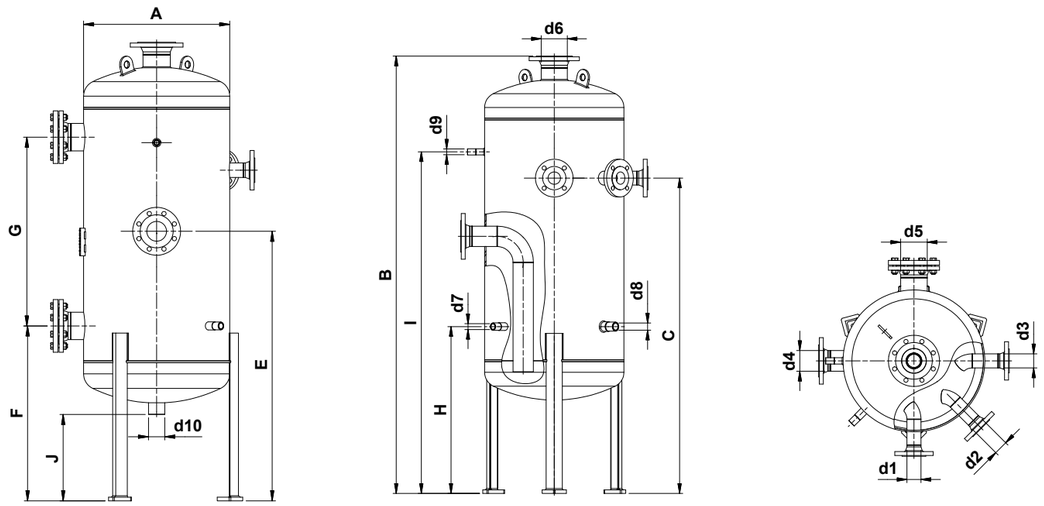
CONECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

INSTALLATION: Vertical installation.
The inlet of the blowdown tank is always higher than the boiler blowdown valves. Therefore, the connecting pipe should have provisions made at a low point to drain the boiler.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – European Directive)	
Model	**Category**
BV3 and BV4	3 (CE marked)
BV5 to BV7	4 (CE marked)

LIMITING CONDITIONS	
PMA – Max. allowable pressure	7 bar
TMA – Max. allowable temperature	180 ºC

Minimum operating temperature: 20 ºC.
Design code: AD-Merkblatt.
Other conditions on request.



DIMENSIONS (mm) *											
MODEL	**A**	**B**	**C**	**E**	**F**	**G**	**H**	**I**	**J**	**STW. (L) ****	**WEIGHT (kg)**
BV3	508	1845	1345	1080	701	795	700	1430	357	114	176
BV4	610	1914	1380	1125	730	788	730	1495	361	175	210
BV5	762	1995	1415	1165	761	810	760	1540	357	284	322
BV6	914	2115	1470	1220	785	841	785	1565	304	473	447
BV7	1220	2254	1544	1294	819	885	839	1664	319	856	865

* Indicative values. Final dimensions, weight and connections to be defined according to the supplied drawing.
** Standing water.

CONNECTION SIZES										
MODEL	**d1**	**d2**	**d3**	**d4**	**d5**	**d6**	**d7**	**d8**	**d9**	**d10**
BV3	DN 50	DN 50	DN 50	DN 80	DN 100	DN 100	3/4"	1"	1/2"	2"
BV4	DN 50	DN 50	DN 50	DN 80	DN 100	DN 100	3/4"	1"	1/2"	2"
BV5	DN 50	DN 50	DN 50	DN 100	DN 100	DN 150	3/4"	1"	1/2"	2"
BV6	DN 50	DN 50	DN 50	DN 100	DN 100	DN 150	3/4"	1"	1/2"	2"
BV7	DN 50	DN 50	DN 50	DN 150	DN 150	DN 200	3/4"	1"	1/2"	2"

CONNECTIONS		
POS.	**DESIGNATION**	**RATING**
d1	Blowdown inlet	PN 16
d2	Blowdown inlet	PN 16
d3	Blowdown inlet	PN 16
d4	Blowdown outlet	PN 16
d5	Handhole	PN 16
d6	Venting outlet	PN 16
d7	Cooling water inlet	PN 16
d8	Thermostat connection	PN 16
d9	Pressure gauge connection	PN 16
d10	Drain	PN 16

We reserve the right to change the design and material of this product without notice.

LIFTING POT
LIPO

DESCRIPTION

The LIPO series of condensate lifting pots are designed for installation in steam and condensate systems. They are particularly used in condensate lines where condensate must be transported without causing water hammers and noise and lifted to elevated condensate mains.
When condensate is lifted to an elevated condensate mains, the flash steam formed at the outlet of the steam trap will condense due to sudden contact with condensate at a much lower temperature. The steam bubbles implode, reducing their volume while passing to the liquid state. Vacuum is then suddenly formed pulling violently the surrounding condensate which causes pressure shocks and water hammer.
The LIPO prevents this phenomenon from happening, by maintaining an air and flash steam cushion in the upper part of the lifting pot to absorb these shocks, while in the bottom the condensate operates as a sealing liquid. The condensate flowing inside the LIPO is thus pushed by the pressure inside to the elevated condensate mains.

OPTIONS: Stainless steel construction.

USE: Condensate lines where condensate has to be lifted.

AVAILABLE MODELS: LIPO – carbon steel.

SIZES: DN 15 to DN 100.

CONECTIONS: Flanged EN 1092-1 PN 16.
Flanged ASME B16.5 Class 150.

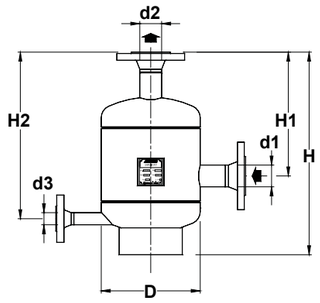
INSTALLATION: Horizontal installation. Horizontal inlet and vertical outlet. See IMI – Installation and maintenance instructions

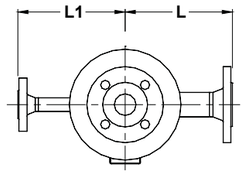
CE MARKING – GROUP 2 (PED – European Directive)		
Ps12	**Ps18**	**Category**
DN 15 to DN 50	DN 15 to DN 50	1 (CE marked)
DN 65 to DN 100	DN 65 to DN 100	2 (CE marked)

LIMITING CONDITIONS		
	PN 16	**PN 40**
PMA – Max. allowable pressure	12 bar	18 bar
TMA – Max. allowable temperature	250 ºC	250 ºC

Min. operating temp.: -10 ºC; Design code: AD-Merkblatt.
Other conditions on request.

We reserve the right to change the design and material of this product without notice.

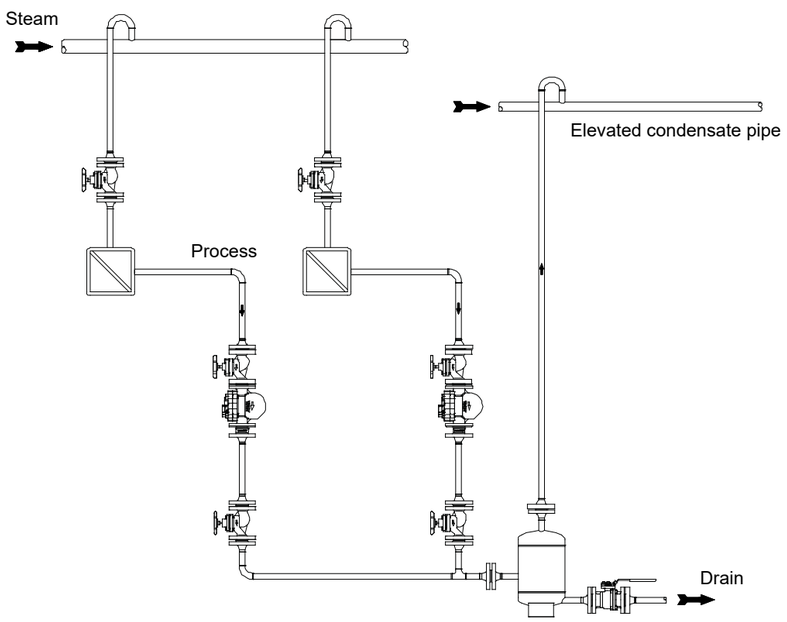




DIMENSIONS (mm)										
SIZE	**H**	**H1**	**H2**	**L**	**L1**	**D**	**d1**	**d2**	**d3**	**WEIGHT (kg) ***
DN 15	384	240	325	180	180	170	DN 15	DN 15	DN 15	9
DN 20	384	240	325	180	180	170	DN 20	DN 20	DN 15	10
DN 25	384	240	325	180	180	170	DN 25	DN 25	DN 15	11
DN 32	450	275	370	210	210	220	DN 32	DN 32	DN 20	18,5
DN 40	450	275	370	210	210	220	DN 40	DN 40	DN 20	19
DN 50	450	275	370	210	210	220	DN 50	DN 50	DN 20	21
DN 65	630	425	540	240	240	275	DN 65	DN 65	DN 20	35
DN 80	630	400	540	240	240	275	DN 80	DN 80	DN 20	38
DN 100	630	400	545	350	350	400	DN 100	DN 100	DN 20	72

* Weight to be confirmed.

TYPICAL INSTALLATION



We reserve the right to change the design and material of this product without notice.

HOT CONDENSATE COOLERS
HCC

DESCRIPTION

The HCC is a cooling device that allows the mixing of hot condensate with a lower temperature condensate, avoiding hammering.
Condensate discharge from higher pressure lines (drip points, for instance) are often connected to low pressure condensate lines, with lower temperature. This sudden pressure drop will convert the sensible heat difference between the two fluid conditions into latent heat, generating flash steam.
Flash steam has a much bigger volume than condensate and, when mixed with the cold condensate, it will cool suddenly, imploding and causing hammering (noise and vibration).
The HCC avoids this phenomenon, since it slowly cools down the hot condensate which circulates inside a coil, surrounded by cold condensate which circulates according to the thermo-siphon physical laws.

MAIN FEATURES

Eliminates hammering.
Corrosion-resistant internal coil.

OPTIONS: Larger flow rates.
Special tailored designs.

USE: Condensate discharge downstream of steam traps.

AVAILABLE MODELS: HCC3 – up to 300 kg/h.
HCC10 – up to 500 kg/h.

CONNECTIONS: Flanged EN 1092-1 PN 16 and PN 40.
Flanged ASME B16.5 Class 150 or 300.
Others on request.

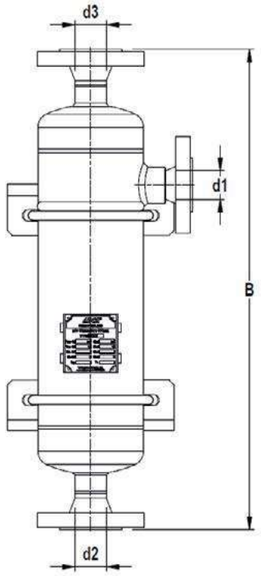
CONSTRUCTION: Carbon steel or stainless steel on request.

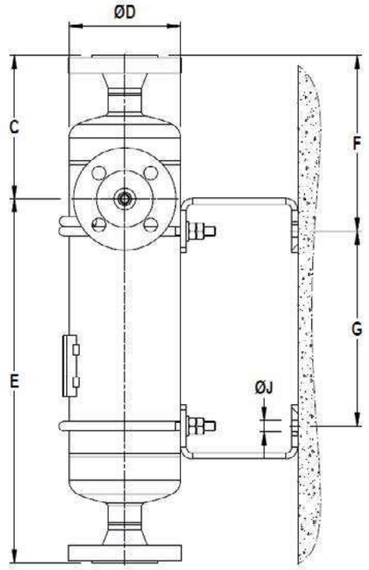
INSTALLATION: Vertical installation.
Hot condensate angle inlet and vertical outlet.
Cold condensate bottom inlet and vertical outlet.

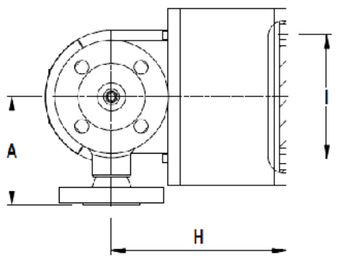
LIMITING CONDITIONS												
HCC/S				**HCC/SS**								
FLANGED PN 16 / CLASS 150 *		**FLANGED PN 40 / CLASS 300 ***		**FLANGED PN 16 ***		**FLANGED CLASS 150 ****		**FLANGED CLASS 300 ****		**FLANGED PN 40 ***	
ALLOW. PRESS.	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**	**ALLOW. PRESS.**	**RELATED TEMP.**
16 bar	50 ºC	40 bar	50 ºC	16 bar	50 ºC	15,3 bar	50 ºC	39,9 bar	50 ºC	40 bar	50 ºC
14,8 bar	100 ºC	37,1 bar	100 ºC	15 bar	100 ºC	13,3 bar	100 ºC	34,4 bar	100 ºC	37,9 bar	100 ºC
13,3 bar ***	200 ºC	33,3 bar ***	200 ºC	12,7 bar ***	200 ºC	11,1 bar ***	200 ºC	26,6 bar ***	250 ºC	29,9 bar ***	250 ºC
12,1 bar	250 ºC	–	–	12 bar	250 ºC	10,2 bar	250 ºC	25,2 bar	300 ºC	27,6 bar	300 ºC

* Rating according to EN 1092-1:2018; ** According to EN 1759-1:2004; *** PMO – Maximum operating pressure for saturated steam.
Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.

We reserve the right to change the design and material of this product without notice.







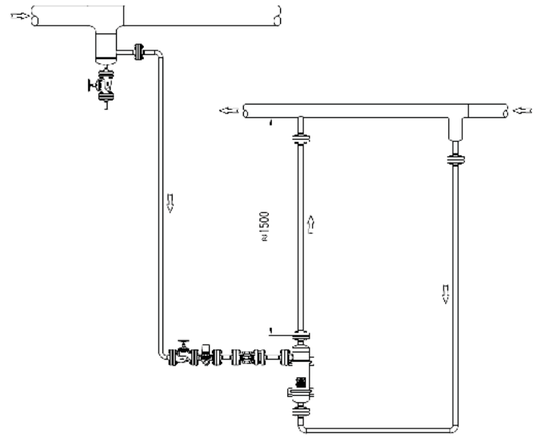
DIMENSIONS (mm) *															
MODEL	**SIZE**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**d1**	**d2**	**d3**	**WEIGHT (kg)**
HCC3-20	**DN 20 x 25**	110	530	155	115	375	185	200	177	126	12	20	25	25	13,8
HCC3-25	**DN 25 x 25**	110	530	155	115	375	185	200	177	126	12	25	25	25	15,5
HCC10-32	**DN 32 x 50**	190	715	227,5	273	487,5	266	223	257	286	14	32	50	50	62,8
HCC10-40	**DN 40 x 50**	190	715	227,5	273	487,5	266	223	257	286	14	40	50	50	63,1

* Values refer to EN 1092-1 flanged version. For certified values and ASME dimensions, consult manufacturer.

MATERIALS		
DESIGNATION	**HCC/S**	**HCC/SS**
Tube coil	AISI 316L / 1.4404	AISI 316L / 1.4404
Heads and shell	P265GH / 1.0425 P235GH / 1.0305	AISI 316 / 1.4401 AISI 316L / 1.4404
EN flanges	P250GH / 1.0460	AISI 316 / 1.4401
ASME flanges	ASTM A105 / 1.0432	AISI 316 / 1.4401
Sockets	ASTM A105 / 1.0432	AISI 316 / 1.4401
Supports	S235JR / 1.0038	AISI 304 / 1.4301

EN 10204 3.1 certificate available on request.

TYPICAL INSTALLATION



OPERATION

The steam trap hot condensate discharge from the steam line is connected to the top of the HCC coil (horizontal connection) which, in turn, is surrounded by cold condensate (Fig. 1), thus beginning to be cooled down while flowing to the top outlet (Fig.2), where it finally mixes with the colder condensate (Fig. 3). Flash steam bubbles that are formed during the process decrease, until they completely disappear, before the mentioned mixing process.
The cold condensate is connected to the bottom of the HCC (Fig.1) and, in contact with the hot coil, is warmed (Fig.2), starting its natural circulation process by thermosiphon (Fig. 3).

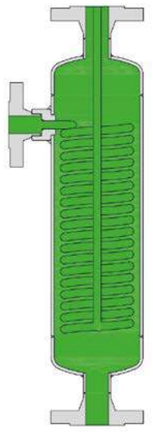


Fig. 1 - Cold system

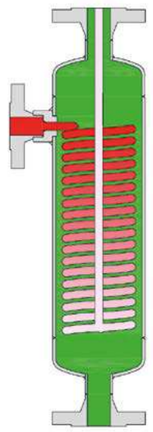


Fig. 2 - Hot condensate arrival

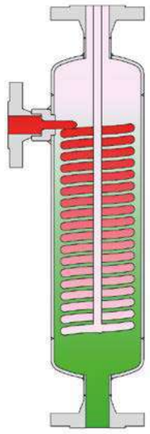


Fig. 3 - Thermosiphon process

Other applications: The HCC can be specifically designed for other applications and different flow rates, such as:
Small heat exchangers and steam heaters in general; Preheating of cold make up water to a condensate vessel or deaerator; Equalizing temperature of boiler feed tanks, etc.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
Produced in accordance with Sound Engineering Practices of the European PED - Pressure Equipment Directive. **IS HCC.20 E 11.16**

ADCATHERM BOILER FEED TANKS
BFT

DESCRIPTION

The BFT boiler feed tank is one of the most important devices in a boiler room. Its main function is to store the make-up water and condensate, assuring a reserve of treated water to supply to the steam boilers.
The make-up water has to be softened to prevent scale formation on the boiler and the oxygen also has to be removed, so that corrosion in the boiler and steam system is avoided (this situation is normally handled by specialists).
The consumption of chemicals used to eliminate the oxygen can be drastically reduced if you use one of the several ADCATherm thermal degasification processes (ADG, TDG, FCD) for the removal of oxygen and other non-condensable gases (mainly carbon dioxide).
Even if you choose not to use one of the mentioned systems, the ADCATherm boiler feed tanks will always be optimized according to the existing needs, therefore being able to include water pre-heating, as well as other features obvious to a true steam expert, but not to a simple tank manufacturer.

MAIN FEATURES

Sandblasted and metalized internally and externally (externally painted).
Prevents energy wasting.
Can be installed on new or existing systems.

OPTIONS: Vertical and special designs for different applications.
Complete stainless steel construction.
Complete system including all the necessary equipment.
Vent condenser for energy recovery.

USE: Steam boiler feed water.

AVAILABLE MODELS: BFT – standard horizontal design.
BFT/ADG or TDG – vessel and correspondent deaerator dome.
BFTV – special vertical design.

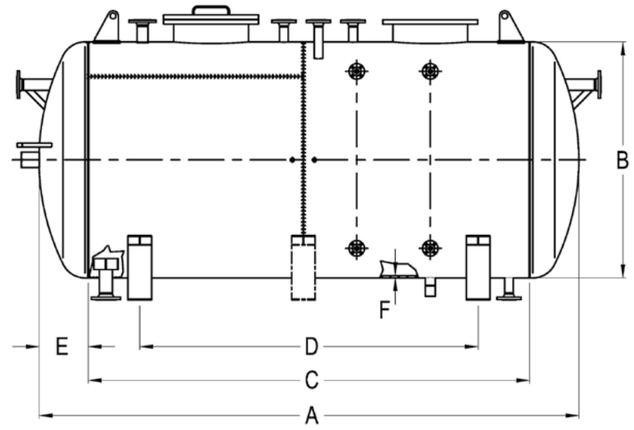
CONNECTIONS: Flanged EN 1092-1 or ASME.
ISO or NPT threaded sockets.
Different connections on request.

CONSTRUCTION: Carbon steel with internal stainless steel components.

INSTALLATION: See ADG/TDG catalogues for typical installations.
Standard horizontal install. Vertical on request.
Final dimensions and connections according to the drawing supplied after order confirmation.
Insulation (not included) recommended after installation.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: -10 ºC;
Design code: AD-Merkblatt.
Remark: other conditions and CE marking on request.



DIMENSIONS (mm)								
MODEL	CAPACITY (L)	A	B	C	D	E	F	WEIGHT (kg)
BFT-500	537	1800	640	1500	900	150	4	180
BFT-750	856	1860	800	1500	900	180	5	290
BFT-1000	1107	2360	800	2000	1200	180	5	350
BFT-1250	1336	1920	960	1500	900	210	5	360
BFT-1500	1698	2420	960	2000	1200	210	5	410
BFT-2000	2248	2480	1080	2000	1200	240	6	570
BFT-2500	2706	2980	1080	2500	1500	240	6	665
BFT-3000	3068	2560	1280	2000	1200	280	7	795
BFT-3500	3711	3060	1280	2500	1500	280	7	920
BFT-4000	4176	2660	1500	2000	1200	330	8	1160
BFT-5000	5060	3160	1500	2500	1500	330	8	1335
BFT-6000	5943	3660	1500	3000	1800	330	8	1510

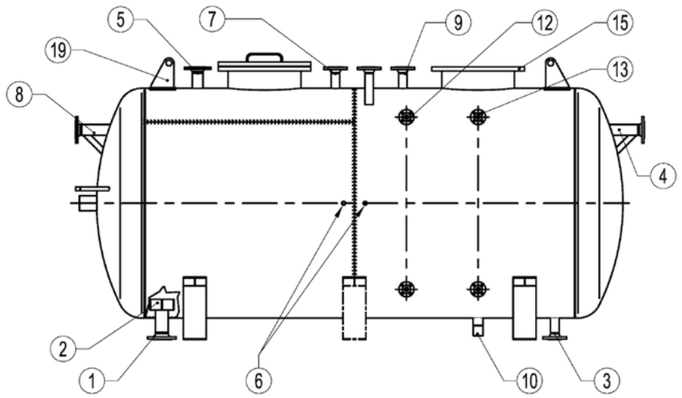
Remarks: approximate dimensions. Consult manufacturer for certified dimensions.
Pipe connections and location approved after order confirmation.

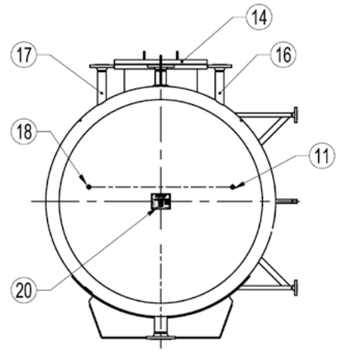
MATERIALS	
DESIGNATION	MATERIAL
Cylindrical shell	EN 10025 / S235JR / 1.0038
Domed ends	EN 10025 / S235JR / 1.0038
Inlet/outlet pipes	EN 10216-2 / P235GH / 1.0345
EN flanges	EN 10222-2 / P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
Internals	EN 10028-7 / AISI 316 / 1.4401
Supports	EN10025 / S235JR / 1.0038
Bolts	Steel 8.8

EN 10204 3.1 certificate available on request.

THERMAL DEAERATOR DATA INQUIRY		
Make-up water pressure		bar
Make-up water temperature		ºC
Make-up water flow rate		kg/h
Condensate return pressure		bar
Condensate temperature		ºC
Condensate flow rate		kg/h
Saturated heating steam pressure		bar
Feed water tank required capacity		m3
Max. dearated water flow required		kg/h

We reserve the right to change the design and material of this product without notice.
IS BFT.20 E 09.12





CONNECTIONS *		
POS. Nº	**DESIGNATION**	**REMARKS**
1	Boiler feed pump supply	Larger diameter to optimize pressure loss (preventing cavitation)
2	Anti vortex	–
3	Drain	To be connected to a BEX (always at a lower level than the feed tank)
4	Overflow	Float trap or “U” bend (only for atmospheric)
5	Heating steam	Can be located at the domed ends
6	Chemical dosing	Can be located at the domed ends
7	Condensate return	Only if not connected to a dearetor dome
8	Soft water inlet	Only if not connected to a dearetor dome
9	Vent outlet	Only if not connected to a dearetor dome
10	Recirculating pump	Recommended for atmospheric design only
11	Temperature indicator	Can be located at the domed ends
12	Level indicator	Can be located at the domed ends
13	Level controller	Can be located at the domed ends
14	Headhole	DN 300 PN 6 up to 1000 L
14	Manhole	DN 500 PN 6 for 1250 L and above
15	Dome flange	For ADG or TDG
16	Vacuum valve	For pressurized systems only
17	Safety valve	For presurized systems only
18	Temperature control	Suitable for electrical or self operated valve control
19	Lifting eyes	–
20	Name plate	–

* Sizes to be defined according to the real flow conditions.

We reserve the right to change the design and material of this product without notice.

ATMOSPHERIC SEMI – DEAERATORS
ADG

DESCRIPTION

The ADCATherm atmospheric semi-deaerators are designed to heat boiler feed water and to reduce oxygen and carbon dioxide (oxygen values in the feed water of less than 1,6 mg/L can be achieved). Remaining oxygen can be completely removed using oxygen scavenging chemicals.
Basically, the complete system consists of a storage vessel, a deaeration head section and a vent.

OPERATION

Hot return condensate is injected in the bottom of the storage vessel using an adequate sparger pipe and softened make-up water is introduced in the deaerator head to be heated by a contact cascade flash steam heating system (counter-current flow) coming from the vessel. A part of the dissolved gases is liberated from the water at this point, and then to the atmosphere, trough the flash steam vent line.
The semi-deaerated water then falls to the storage vessel below, where a steam injection system will provide an additional deaeration.
The complete unit is supplied, including all the necessary instrumentation for temperature and level control, to be described in our offer, depending on the operation conditions (see Table 1).

MAIN FEATURES

Prevents energy wasting.
Easy to install.
Can be installed on new or existing systems.
Reduces the flow of flash steam from the vessel venting pipe.
Long life expectancy.

OPTIONS: Complete stainless steel construction.
Complete system including all the necessary equipments.
Vent condenser for energy recovery.

USE: Steam boiler feed water.

AVAILABLE MODELS: ADG – Deaerator head.

CONNECTIONS: Flanged EN 1092-1 or ASME.
ISO or NPT threaded sockets.
Different connections on request.

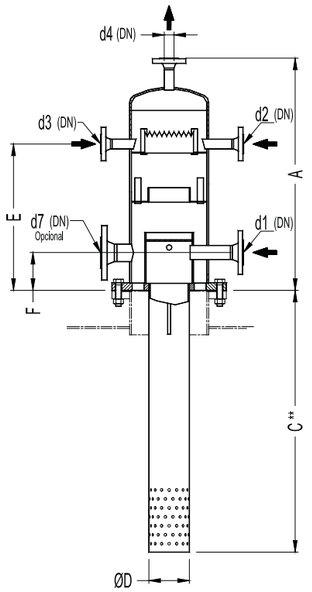
CONSTRUCTION: Carbon steel with internal stainless steel components.

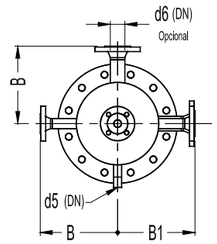
INSTALLATION: Deaerator head – vertical installation.
Storage vessel – cylindrical horizontal design.
Final dimensions and connections according to the drawing supplied after order confirmation.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: -10 ºC;
Design code: AD-Merkblatt.
Remark: other conditions and CE marking on request.

We reserve the right to change the design and material of this product without notice.





DIMENSIONS (mm)														
MODEL	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**E (mm)**	**F (mm)**	**d1 (DN)**	**d2 (DN)**	**d3 (DN)**	**d4 (DN)**	**d5 (DN)**	**d6 * (DN)**	**d7 * (DN)**	**WGT. (kg)**
ADG150	610	184	**	80	400	125	50	25	25	40	1/2”	50	50	***
ADG200	670	210	**	120	425	160	80	32	25	50	1/2”	65	65	***
ADG250	860	237	**	140	580	190	100	50	25	65	1/2”	80	80	***
ADG300	900	265	**	170	610	190	100/150	65	40	80	1/2”	100	100	***
ADG400	780	510	**	220	490	180	150	80	40	100	1/2”	125	125	***

d1 – hot condensate inlet; d2 – cold make-up water; d3 – recirculating pump connection; d4 – vent; d5 – pressure gauge connection; d6 – cold condensate return; d7 – flash steam;
* Optional; ** Dimensions on request; *** Weight to be confirmed.

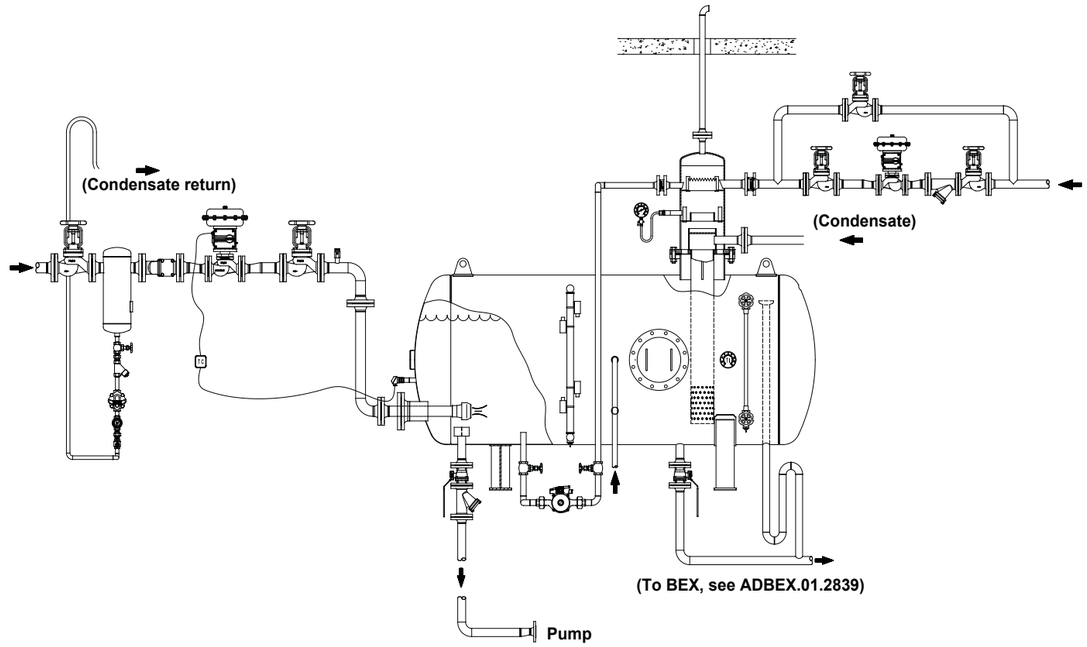
SELECTION TABLE					
MAX. STEAM GENERATION (kg/h)	**5000**	**10000**	**20000**	**30000**	**50000**
MODEL	ADG150	ADG200	ADG250	ADG300	ADG400

THERMAL DEAERATOR DATA INQUIRY		
Make-up water pressure		bar
Make-up water temperature		ºC
Make-up water flow rate		kg/h
Condensate return pressure		bar
Condensate temperature		ºC
Condensate flow rate		kg/h
Saturated heating steam pressure		bar
Feed water tank required capacity		m3
Max. dearated water flow required		kg/h

Table 1

TYPICAL INSTALLATION

Semi - deaerator system with cold make-up water



Atmospheric deaerator provides an economic system to preheat boiler feed water and remove dissolved gases.

The steam injector can be supplied with flanges and pipe, ready to adapt to existing vessels.

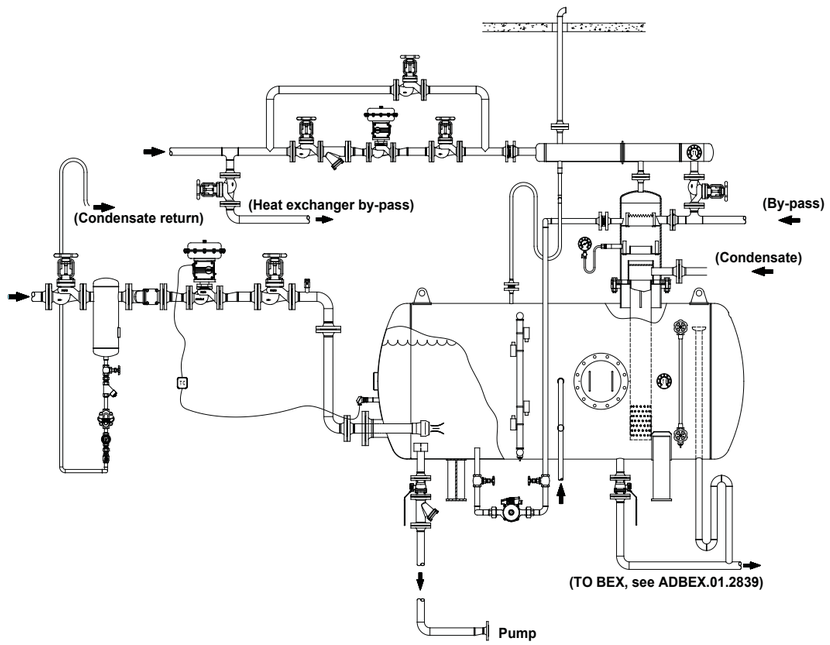
The feed water is re-circulated using a low power re-circulating pump which will improve thermal efficiency by reducing the temperature stratification.

For more detailed information please see assembly drawing ADADGV.01.2844.

VALSTEAM ADCA
We reserve the right to change the design and material of this product without notice.
IS ADG.20 E 12.07

TYPICAL INSTALLATION

Semi - deaerator system with vent condenser



Atmospheric deaerator including ADCATherm STS series complete stainless steel heat exchanger. Make-up water crossing the heat exchanger will condense the flash steam, preventing energy waste and providing better performance for the whole system.

The steam injector can be supplied with flanges and pipe, ready to adapt to existing vessels.

The feed water is re-circulated using a low power re-circulating pump which will improve thermal efficiency by reducing the temperature stratification.

For more detailed information please see assembly drawing ADADGV.02.2845.

ADCATHERM TRAY TYPE DEAERATORS
TDG

DESCRIPTION

The TDG series tray type thermal deaerators are designed to heat boiler feed water and reduce oxygen and carbon dioxide levels (oxygen levels in the feed water of less than 0,02 mg/l - 0,02 ppm can be achieved). Remaining oxygen can be completely removed using oxygen scavenging chemicals.
Basically, the complete system consists of a storage vessel, a deaeration section and a vent.

OPERATION

Returning condensate and softened make-up water are introduced in the deaerator dome to be heated by a contact cascade steam heating system (counter-current flow). Most of the dissolved gases are liberated from the water at this point, and they are released to the atmosphere trough the flash steam vent line.
The deaerated water then falls to the storage vessel below, where a steam blanket ensures that no gases are reabsorbed.
A sparger pipe is installed inside the tank, at the bottom level, providing the necessary heating energy. A second low pressure steam supply may also be necessary.
The complete unit is supplied including all the necessary instrumentation for temperature, pressure and level control, to be described in our offer depending on the operation conditions (see Table 1).

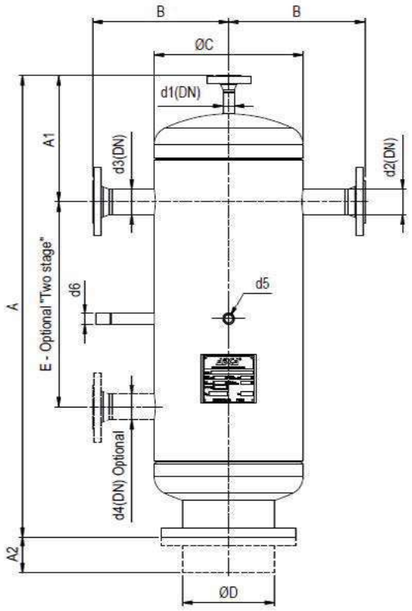
MAIN FEATURES

Turndown (max./min. flow) – 100:1.
Long life expectancy.

OPTIONS:	Complete stainless steel construction. Complete system including all the necessary equipment. Two stage deaerators. Vent condenser for energy recover
USE:	Steam boiler feed water.
AVAILABLE MODELS:	TDG – deaerator dome.
CONNECTIONS:	Flanged EN 1092-1 or ASME. ISO or NPT threaded sockets. Different connections on request.
CONSTRUCTION:	Carbon steel with internal stainless steel components.
INSTALLATION:	Deaerator dome – vertical installation. Storage vessel – cylindrical horizontal design. Final dimensions and connections according to the drawing supplied after order confirmation.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: -10 ºC;
Design code: AD-Merkblatt.
Remark: other conditions and CE marking on request.



DIMENSIONS (mm)													
MODEL	**FLOW ***	**A**	**A1**	**A2**	**B**	**C**	**D**	**d1**	**d2**	**d3**	**d4**	**d5**	**d6**	**WGT. (kg)**
TDG-10	1	950	265	250	260	220	220	DN 15	DN 25	DN 25	DN 50	G 1/2"	G 1/2"	47,2
TDG-20	2	950	265	250	290	273	220	DN 20	DN 25	DN 25	DN 50	G 1/2"	G 1/2"	56,1
TDG-40	4	1100	300	300	325	355	220	DN 20	DN 50	DN 50	DN 50	G 1/2"	G 1/2"	96,1
TDG-60	6	1250	320	300	380	457	273	DN 32	DN 50	DN 50	DN 80	G 1/2"	G 1/2"	163,4
TDG-100	10	1400	355	300	425	508	324	DN 32	DN 80	DN 80	DN 100	G 1/2"	G 1/2"	225,7
TDG-140	14	1550	380	300	475	610	407	DN 32	DN 80	DN 80	DN 100	G 1/2"	G 1/2"	330,4
TDG-200	20	1950	410	300	550	813	508	DN 32	DN 100	DN 100	DN 100	G 1/2"	G 1/2"	528,4

* Maximum flow rate in m³/h (heating from 10 ºC to 105 ºC).
Remarks: d1 to d6 and certified dimensions supplied after complete data evaluation.

THERMAL DEAERATOR DATA INQUIRY		
Make-up water pressure		bar
Make-up water temperature		ºC
Make-up water flow rate		kg/h
Condensate return pressure		bar
Condensate temperature		ºC
Condensate flow rate		kg/h
Saturated heating steam pressure		bar
Feed water tank required capacity		m3
Max. dearated water flow required		kg/h

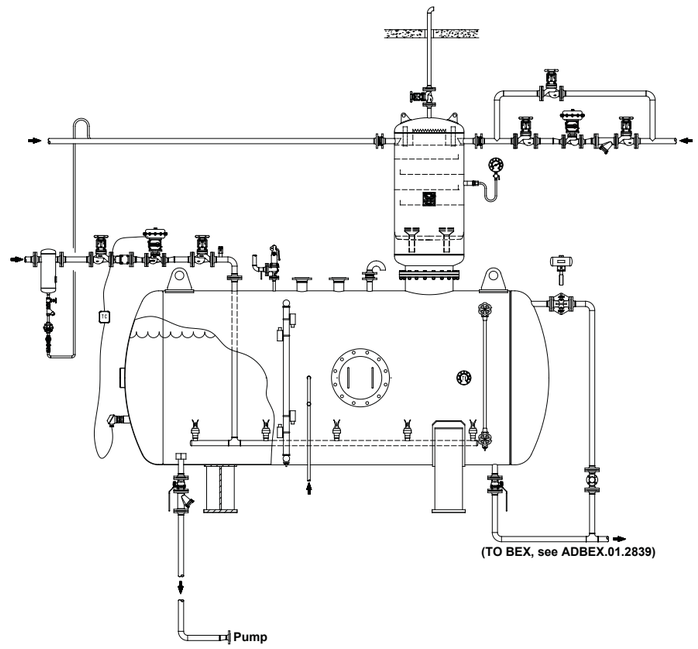
Table 1

LRQA CERTIFIED ISO 9001

ADCA

TYPICAL INSTALLATION

Thermal deaerator system with cold make-up water (without dome steam injection)



If a high percentage of hot condensate is recovered, the direct steam injection in the deaerator tower is usually unnecessary, as the heating steam supplied trough the steam injection system is, in most cases, enough.

For more detailed information please consult assembly drawing ADTDGV.04.2843.

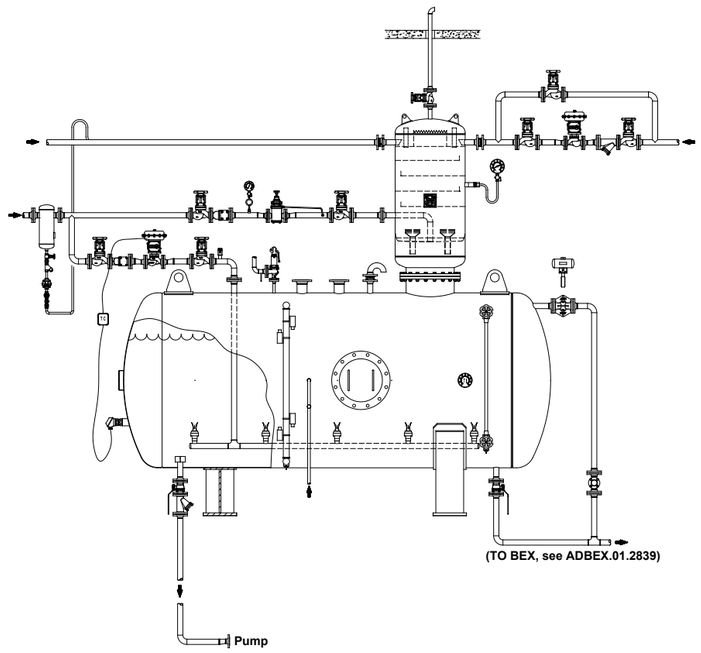
VALSTEAM ADCA

We reserve the right to change the design and material of this product without notice.

IS TDG.20 E 15.07

TYPICAL INSTALLATION

Thermal deaerator system with cold make-up water (with dome steam injection)

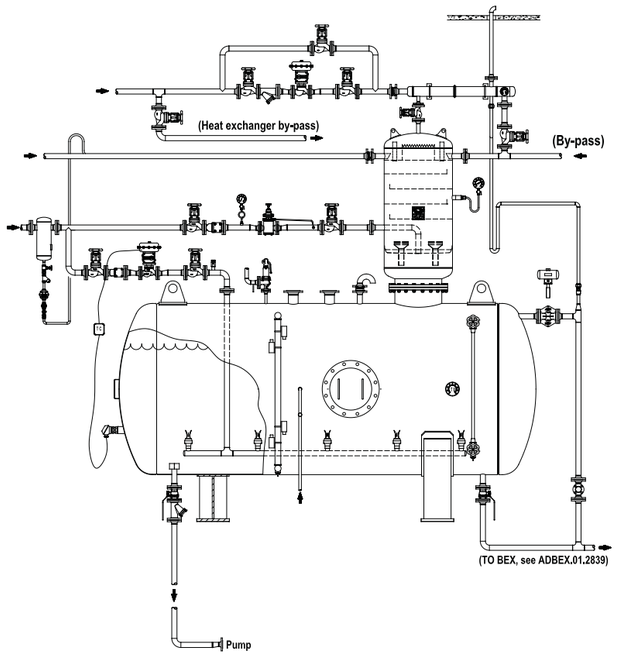


In systems where condensate return is negligible and/or high flow rates are involved, an additional dome steam injection should be provided.

For more detailed information please consult assembly drawing ADTDGV.01.2597.

TYPICAL INSTALLATION

Thermal deaerator system with vent condenser

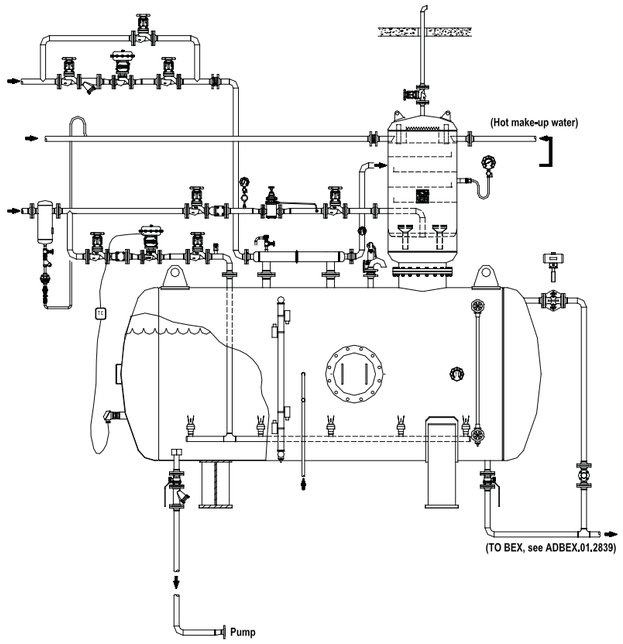


Thermal deaerators, including ADCATherm STS series complete stainless steel heat exchanger. Make-up water crossing the heat exchanger will condense the flash steam, preventing energy waste and increasing performance of the whole system.

For more detailed information please see assembly drawing ADTDGV.02.2841.

TYPICAL INSTALLATION

Thermal deaerator system with pre-heating make-up water heat exchanger



Thermal deaerator with low pressure steam to water ADCATherm STS complete stainless steel heat exchanger, providing make-up water heating.

For more detailed information please see assembly drawing ADTDGV.03.2842.

FLASH CONDENSING HEADS
FCD

DESCRIPTION AND OPERATION

The ADCATherm flash condensing heads are designed to promote energy efficiency on new or existing systems.
Mixing the flash steam with the boiler make-up water allows the energy within the flash steam to be fully absorbed into the water and therefore reduces energy waste that normally occurs from the discharge of flash steam through a vent.
The main advantages over some traditional systems are that it is possible to make most of the piping connections in a single and compact mixing unit and a greater heat recovery efficiency can be achieved.

This mixing unit includes the following fluid connections:
-Cold make-up water;
-Condensate return;
-Re-circulating feedwater;
-Vacuum breaker and vent connection;
-Optional connections for flash steam from a TDS (Total Dissolved Solids) heat recovery system.

The mixing unit includes the necessary baffles, spray nozzle, water injector pipe, etc., in order to guarantee the high mixing energy efficiency. The water is finally mixed in the vessel as it passes through an immersion tube, which ensures a quiet operation.
The feedwater is re-circulated using a low power re-circulating pump which will improve thermal efficiency by reducing the temperature stratification.
Additional equipment can be used to improve energy efficiency and accurate control. ADCATrol control valves, steam injectors, exhaust heads and many other items are available from an ADCA supplier.
Since each plant has particular requirements we suggest that a local ADCA distributor is contacted for layout discussion and equipment selection.

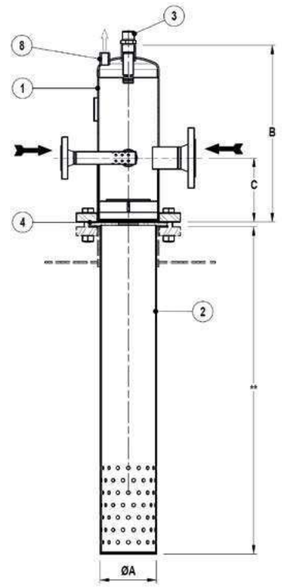
MAIN FEATURES

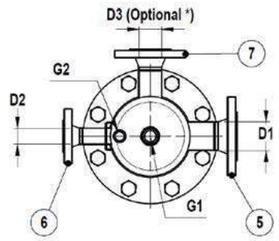
Prevents energy wasting.
Easy to install.
Stainless steel construction.
Reduces the flow of flash steam from the vessel venting pipe.

OPTIONS:	Complete system including all the necessary equipment.
USE:	On boiler water feed tanks.
AVAILABLE MODELS:	FCD150, 200, 250, 300 and 400.
CONNECTIONS:	Female threaded ISO 7 Rp or NPT. Flanged EN 1092-1 or ASME. Different connections on request.
INSTALLATION:	Vertical installation, on the top of the vessel. Connections according to the supplied drawing.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: -10 ºC;
Design code: AD-Merkblatt.
Remark: other conditions and CE marking on request.





DIMENSIONS (mm)										
MODEL	**A**	**B**	**C**	**D1**	**D2**	**D3 ***	**E ****	**G1**	**G2**	**WEIGHT (kg)**
FCD150	155	484	175	50	25	40	195	1”	1/2"	***
FCD200	205	522	200	80	32	50	195	1”	1/2"	***
FCD250	255	557	220	100	50	80	195	1”	1/2"	***
FCD300	300	617	250	100/150	65	100	195	1”	1/2"	***
FCD400	400	680	290	150	80	100	195	1”	1/2"	***

* Optional; ** Dimensions on request (standard; 950, 1200, 1600, 2100 mm); *** Weight to be confirmed.

SELECTION TABLE					
MAX. STEAM GENERATION (kg/h)	**5000**	**10000**	**20000**	**30000**	**50000**
MODEL	FCD150	FCD200	FCD250	FCD300	FCD400

Lenght of the immersion tube to be defined according to the vessel design.

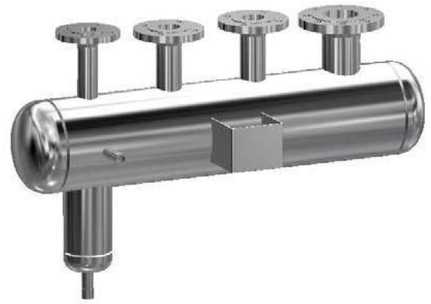
MATERIALS		
POS. Nº	**DESIGNATION**	**MATERIAL**
1	Mixing unit	Stainless steel
2	Immersion tube	Stainless steel
3	Spray nozzle	Stainless steel
4	Gaskets	C 4430
5	Condensate return	Stainless steel
6	Coldwater make-up	Stainless steel
7	Flash steam (option)	Stainless steel
8	Air vent connection	Stainless steel
8	Vacuum breaker conn.	Stainless steel

Remarks: Flange and pipe for vessel connection not included.

STEAM DISTRIBUTION MANIFOLD
MAS

DESCRIPTION

The MAS series steam distribution manifolds are essentially designed to allow the placement of steam supply valves in a single location, reducing costs and providing an easy control of different steam lines.
The drain connection, with an automatic steam trap installed, discharges any condensate formed, thus providing high quality dry steam.



MAIN FEATURES

Several installation possibilities.
Reduced field assembly costs, achieved by means of prefabrication.

OPTIONS: Complete units including valves, pressure gauges and steam trap station.
Different designs.

USE: Saturated or superheated steam.
Water, compressed air and other fluids (on request).

AVAILABLE MODELS: MAS-H – horizontal steam distribution manifold.
MAW-H – horizontal liquid manifold.
MAG-H – horizontal gas manifold.

SIZES: DN 100 to DN 300.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Flanged ASME B16.5 Class 150 or 300.
Female threaded ISO 7 Rp or NPT on request.

DESIGN CODE: AD Merkblatt.

INSTALLATION: Always with the condensate connection pointing downwards.
See IMI – Installation and maintenance instructions.

INQUIRY INFORMATION: Type of fluid, maximum operating pressure and temperature.
Manifold diameter (dimension B).
Number of connections from left to right using suffix “I” and “O” to identify the inlets and outlets.
Example: MAS-H B-168 with 1 DN100-I + 2 DN50-O + 1 DN40-O.
Condensate connection d1.
Other relevant information like insulation thickness, instrumentation connections, etc.
Note: In case of order, an approval drawing shall be sent before manufacturing.

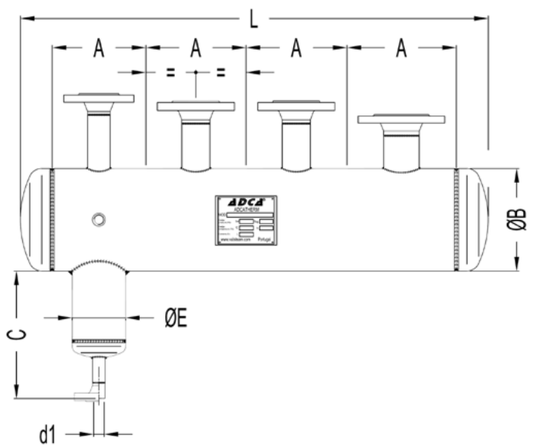
CE MARKING – GROUP 2 (PED – European Directive)
Since this is not a standard product, and can have different volumes and operation conditions, the conformity assessment and CE marking has to be carried out case by case.

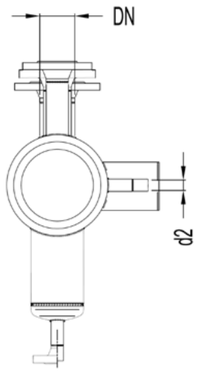
MATERIALS	
DESIGNATION	**MATERIAL**
Body	P235GH / 1.0325
Heads	P265GH / 1.0425
Inlet / Outlet pipes	P235GH / 1.0325
EN flanges	P250GH / 1.0460
ASME flanges	ASTM A105 / 1.0432
Sockets	ASTM A105 / 1.0432
* Internals	S235JR / 1.0038

* If any.

FLANGE CONNECTIONS			
RATING	**SIZE**	**EN STANDARD**	**ASME STANDARD**
PN 16	* DN 15 to DN 50	EN 1092-1 PN 40	ASME B16.5 Cl. 150
PN 16	DN 65 to DN 300	EN 1092-1 PN 16	ASME B16.5 Cl. 150
PN 25	DN 15 to DN 150	EN 1092-1 PN 40	ASME B16.5 Cl. 300
PN 25	DN 200 to DN 300	EN 1092-1 PN 25	ASME B16.5 Cl. 300
PN 40	DN 15 to DN 300	EN 1092-1 PN 40	ASME B16.5 Cl. 300

* Flanges EN 1092-1 PN 16 and PN 40, from DN 15 to DN 50, have the same number and size of holes.





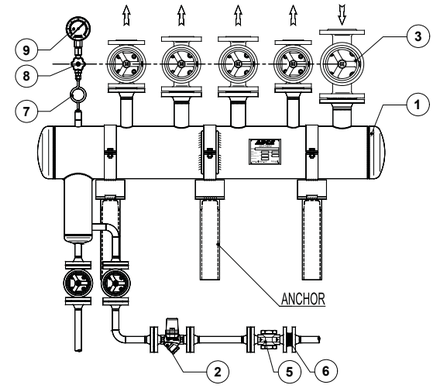
SUGGESTED DIMENSIONS *													
DN	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**
A (mm)	145	155	165	190	200	215	235	250	270	300	335	395	455	510

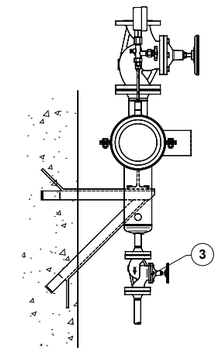
* Recommended minimum gap between flanged connections for later assembly of EN 1092-1 PN 16 / PN 40 flanged globe valves.
Remark: Since this is not a standard product, and can have different volumes and sizes, the certified values for each dimension will be supplied only after complete data evaluation and order confirmation

MAXIMUM BRANCH CONNECTION DEPENDING ON DIAMETER “B” (mm)							
B	**114**	**140**	**168**	**220**	**275**	**325**	**357**
DN	≤ 65	≤ 80	≤ 100	≤ 150	≤ 200	≤ 200	≤ 250

TYPICAL INSTALLATIONS

MATERIALS	
POS. Nº	**DESIGNATION**
1	MAS-H – Manifold
2	BM32 – Bimetallic steam trap
3	VF16 – Bellow seal valve
5	DW40S – Sight glass
6	RD40 – Check valve
7	GSC-40 – Gauge siphon
8	GC-400 – Gauge cock
9	MAN-100 – Pressure gauge

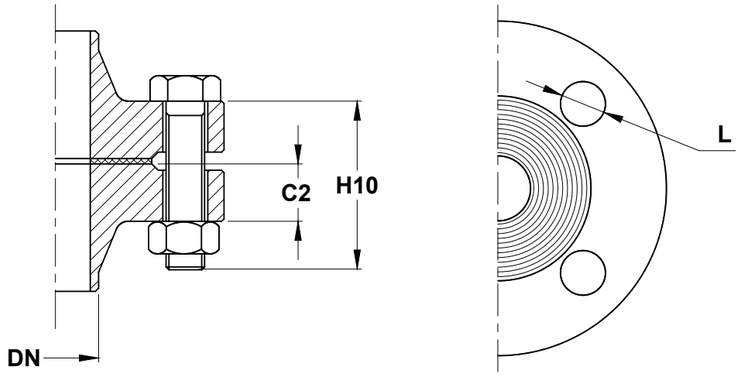




MATERIALS	
POS. Nº	**DESIGNATION**
1	MAS-H – Manifold
2	IB12 – Inverted bucket trap
3	VF16 – Bellow seal valve
4	GV32B – Globe valve
5	SW12 – Sight glass
6	RT25 – Check valve
7	GSU-40 – Gauge siphon
8	GC-400 – Gauge cock
9	MAN-100 – Pressure gauge

MATERIALS	
POS. Nº	**DESIGNATION**
1	MAS-H – Manifold
2	FLT17LC – Float steam trap *
3	VF16 – Bellow seal valve
4	GV32B – Globe valve
5	SCK – Sight checker
6	IS16 – Y strainer
7	GSU-40 – Gauge siphon
8	GC-400 – Gauge cock
9	MAN-100 – Pressure gauge

*Recommended for low pressures only.



BOLTING DIMENSIONS FOR FLANGES															
SIZE	EN 1092-1 TYPE 11 PN 16					EN 1092-1 TYPE 11 PN 25					EN 1092-1 TYPE 11 PN 40				
	C2	ØL	BOLTING		H10	C2	ØL	BOLTING		H 10	C2	ØL	BOLTING		H10
			Nº	SIZE				Nº	SIZE				Nº	SIZE	
DN 15	16	14	4	M12	50	16	14	4	M12	50	16	14	4	M12	50
DN 20	18	14	4	M12	55	18	14	4	M12	55	18	14	4	M12	55
DN 25	18	14	4	M12	55	18	14	4	M12	55	18	14	4	M12	55
DN 32	18	18	4	M16	55	18	18	4	M16	55	18	18	4	M16	55
DN 40	18	18	4	M16	55	18	18	4	M16	55	18	18	4	M16	55
DN 50	18	18	4	M16	55	20	18	4	M16	60	20	18	4	M16	60
DN 65	18	18	4 *	M16	55	22	18	8	M16	65	22	18	8	M16	65
DN 80	20	18	8	M16	60	24	18	8	M16	70	24	18	8	M16	70
DN 100	20	18	8	M16	60	24	22	8	M20	75	26	22	8	M20	75
DN 125	22	18	8	M16	65	26	26	8	M24	80	28	26	8	M24	90
DN 150	22	22	8	M20	70	28	26	8	M24	90	30	26	8	M24	90
DN 200	24	22	12	M20	75	30	26	12	M24	90	36	30	12	M27	110
DN 250	26	26	12	M24	80	32	30	12	M27	100	42	33	12	M30	120
DN 300	28	26	12	M24	90	34	30	16	M27	100	52	33	16	M30	140

* Flange EN 1092-1 DN 65 PN 16 with 4 holes as standard. Flange with 8 holes under request.

We reserve the right to change the design and material of this product without notice.

Due to its specificity and wideness, our sanitary range is complied in an exclusive catalog.

$$Kv = Q1\sqrt{\frac{d1}{Dp \times 1000}}$$

$$P2 < \frac{P1}{2}$$

$$Kv = \frac{Q2}{2,4\ \sqrt{Dp} \times P2}$$

$$Kv = \frac{Q3}{257 \times P1}\sqrt{d2 \times T}$$

$$Kv = Q2\sqrt{\frac{d3}{Dp \times 587}}$$

$$T(^{o}F) = (2,4 \times T(^{o}C)) + 25$$

N.m3/h (0 ºC – 1013 mbar)

$$Kv = \frac{Q1}{195 \times P1}\sqrt{d1 \times T}$$

Technical Information

DATA SHEET FOR ADCATROL CONTROL VALVES

VALVE SIZING

The valve sizing is based on the calculation of the Kv coefficient. The Kv represents the quantity of water, expressed in cubic meters (m^3) at 15 ºC, that flows through the valve with a pressure drop of 1 bar, in one hour period. The formulas, below indicated, allow the Kv calculation in accordance with the type of fluid and its operating condition.
After the Kv calculation, the corresponding Kvs is available from the valve data sheet. If real operating data have been used for the calculation, as a rule, the calculated Kv should be around 70% to 80% of the selected valve Kvs in order to ensure the proper regulation of maximum flow rate at the given operating conditions, preventing that sometimes some precautionary additions will result in undesirable valve oversizing. At the same time, it is necessary to check whether the minimum flow rate can be even regulated or not, considering the chosen valve rangeability.
For critical applications (critical flow velocities, for example), noise prediction, etc, please fill the data sheet available in the next pages and submit it to our technical department for proper selection using our software.

CALCULATION OF Kv VALUE

PRESSURE DROP	MEDIUM		
	LIQUIDS	SATURATED STEAM	GASES
a) $P2 > \frac{P1}{2}$	$Kv = Q1\sqrt{\frac{d1}{Dp \times 1000}}$	$Kv = \frac{Q2}{22{,}4\sqrt{Dp \times P2}}$	$Kv = \frac{Q3}{514}\sqrt{\frac{d2 \times T}{Dp \times P2}}$
$Dp < \frac{P1}{2}$			
b) $P2 < \frac{P1}{2}$		$Kv = \frac{Q2}{11{,}2 \times P1}$	$Kv = \frac{Q3}{257 \times P1}\sqrt{d2 \times T}$
$Dp > \frac{P1}{2}$			

Remarks: For superheated steam and other fluids please consult.
a) Subcritical pressure drop: downstream absolute pressure more than 50% of the absolute upstream pressure in the valve.
b) Supercritical pressure drop: downstream absolute pressure is equal or less than 50% of the upstream absolute pressure in the valve.

Kv	Flow coefficient	m^3/h
P1	Upstream absolute pressure	bar
P2	Downstream absolute pressure	bar
Dp	Pressure drop (P1 – P2)	bar
Q1	Flow rate	m^3/h
Q2	Flow rate	kg/h
Q3	Flow rate	$N.m^3/h$ (0 ºC – 1013 mbar)
d1	Specific weight of liquid	kg/m^3
d2	Specific weight of gas	kg/m^3
T	Absolute temperature (T=273 + t ºC)	ºK
t	Fluid temperature	ºC

RECOMMENDED FLOW VELOCITIES AT THE INLET OF VALVES

LIQUIDS	GASES	SATURATED STEAM	SUPERHEATED STEAM
2,5 m/s	20 m/s	25 m/s	50 m/s

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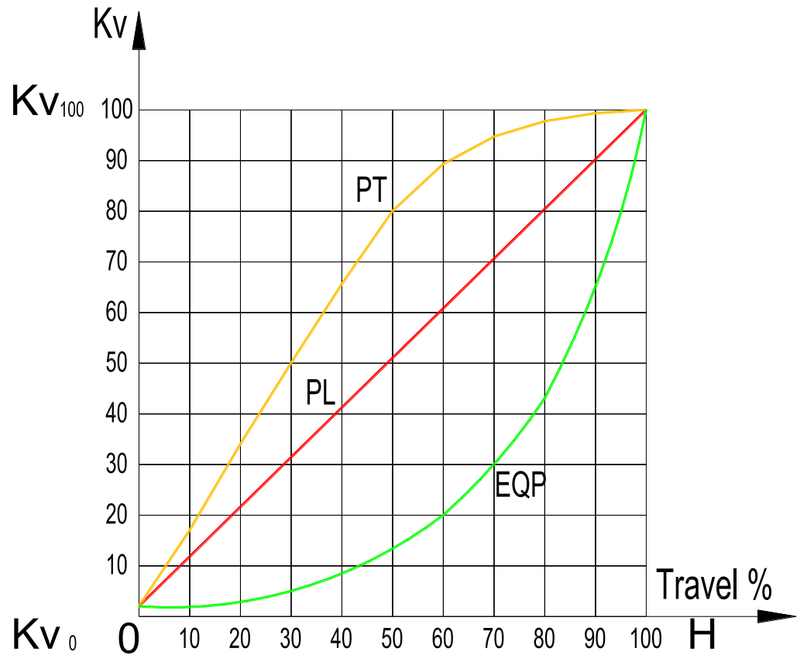
SUPERCRITICAL PRESSURE DROP

When pressure ratio is supercritical, the flow reaches acoustic velocity at the narrowest section, causing a higher level of noise, cavitation or flashing. In these cases, the single or double perforated trim design is recommended.

INHERENT FLOW CHARACTERISTICS



PT – On-off: the flow rate changes from 0 to 100% - fully open or fully closed control.
PL – Linear: the flow capacity or Kv increases linearly with valve travel. The flow is directly proportional to the valve travel. Recommended when there are no relevant variations in differential pressure or flow rates
EQP – Equal-percentage: for equal increments of valve plug travel, the change in flow rate related to travel may be expressed as a constant percentage of the flow rate at the time of the change. At constant differential pressure, a valve travel increase of 10% usually corresponds to a flow rate increase equal to 50% of the valve flow preceding the variation. The change in flow rate observed, related to travel, will be relatively small when the valve plug is near its seat and relatively high when the valve plug is nearly wide open. Recommended when there are wide variations in flow rate or differential pressure.

CONTROL VALVE SEAT LEAKAGE CLASSIFICATIONS

BO – Leak test on the closure with air, in accordance with DIN 3230

NOMINAL SIZE (DN)		LEAKAGE RATE 1	LEAKAGE RATE 2	LEAKAGE RATE 3	TEST PERIOD (minutes)
Over	Up to	Bubbles per minute a)		cm^3 per minute	
–	40	0	2	25	0,25
40	100	0	6	63	1
100	150	0	9	94	1
150	200	0	12	125	2
200	250	0	15	157	2
250	300	0	18	188	2

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Kvs VALUES FOR ADCATROL V25 AND V40 – STANDARD PARABOLIC PLUGS

SEAT Ø (mm)	VALVE STROKE (mm)	SIZES											
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
4 *	20	0,1	–	–	–	–	–	–	–	–	–	–	–
4 *		0,25	–	–	–	–	–	–	–	–	–	–	–
4 *		0,5	–	–	–	–	–	–	–	–	–	–	–
8 *		1	–	–	–	–	–	–	–	–	–	–	–
8 *		1,7	1,7	–	–	–	–	–	–	–	–	–	–
12		2,1	2,5	3	–	–	–	–	–	–	–	–	–
12		2,7	3,7	4	4,3	–	–	–	–	–	–	–	–
15		3,8	4,7	5,8	6,1	6,8	–	–	–	–	–	–	–
20		–	5,1	6,3	7,8	9,3	10,2	–	–	–	–	–	–
25		–	–	9,4	11,7	14,6	17,5	18,7	–	–	–	–	–
32		–	–	–	15,4	19,2	24	28	30,5	–	–	–	–
40		–	–	–	–	22,2	27,7	34,6	40,8	44,7	–	–	–
50		–	–	–	–	–	40,1	49	61	68	74,1	–	–
65	30 / 40	–	–	–	–	–	–	63,4	79,2	91	109,3	119	–
80		–	–	–	–	–	–	–	89,7	112,1	139,8	166	182
100		–	–	–	–	–	–	–	–	136,7	170,8	212,5	243
125	40 / 50	–	–	–	–	–	–	–	–	–	230,6	288,2	359,4
150		–	–	–	–	–	–	–	–	–	–	316,1	396
200	50 / 80	–	–	–	–	–	–	–	–	–	–	–	590

* Microflow only available with contoured linear characteristic.

Kvs VALUES FOR ADCATROL V25 AND V40 – PERFORATED PLUG PL (LINEAR)

SEAT Ø (mm)	VALVE STROKE (mm)	SIZES											
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
15	25	2,55	2,65	2,65	2,65	2,65	–	–	–	–	–	–	–
20		–	4,6	4,8	4,8	4,8	4,8	–	–	–	–	–	–
25		–	–	7,1	7,5	7,5	7,5	7,5	–	–	–	–	–
32	30	–	–	–	11,8	11,8	11,8	11,8	11,8	–	–	–	–
40		–	–	–	–	18	18	18	19	19	–	–	–
50		–	–	–	–	–	28	30	30	30	30	–	–
65	40	–	–	–	–	–	–	48	50	50	50	50	–
80	50	–	–	–	–	–	–	–	74	75	75	76	76
100		–	–	–	–	–	–	–	–	115	121	121	121
125	60	–	–	–	–	–	–	–	–	–	180	189	189
150	80	–	–	–	–	–	–	–	–	–	–	260	270
200		–	–	–	–	–	–	–	–	–	–	–	402

Kvs VALUES FOR ADCATROL V25 AND V40 – PERFORATED PLUG EQP (EQUAL PERCENTAGE)

SEAT Ø (mm)	VALVE STROKE (mm)	SIZES											
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
15	25	–	–	–	–	–	–	–	–	–	–	–	–
20		–	2,65	2,65	2,65	2,65	–	–	–	–	–	–	–
25		–	–	4,8	4,8	4,8	4,8	–	–	–	–	–	–
32	30	–	–	–	7,5	7,5	7,5	7,5					
40		–	–	–		11,8	11,8	11,8	11,8				
50		–	–	–			18	18	19	19			
65	40	–	–	–				30	30	30	30		
80	50	–	–	–					50	50	50	50	
100		–	–	–						75	75	76	76
125	60	–	–	–							121	121	121
150	80	–	–	–								189	189
200		–	–	–									270

ADCATROL – DETAILS FOR SELECTION AND SIZING

CUSTOMER: ..... OUR REFª .....

VALVE TYPE: ..... REG NR.: DATE: ..... / ..... / ..... PAGE: ..... / .....

	1	OPERATING CONDITIONS	SERVICE :					
	2		PIPELINE SIZE / RATING : DN ..... PN..... CLASS					
	3		FLUID :..... STATE AT THE INPUT : ☐ LIQUID ☐ STEAM ☐ GAS					
	4		VISCOSITY : cP TEMP.: ºC SPECIF. WEIGHT : ☐ Kgs/dm3 ☐ Kg/Nm3					
				MIN.	STAND.	MAX.	UNIT	
	5		FLOW RATE :					
	6		UPSTREAM PRESSURE ABS.(Gauge + Atmospheric press.) :					
	7		DOWNSTREAM PRESSURE ABS.(Gauge + Atmospheric press.) :					
	8		PRESSURE DROP (bar) :					
	9		AMBIENT TEMPERATURE º C :					
	10	VALVE BODY	VALVE TYPE: ☐ 2 way ☐ Straightway ☐ Angle valve Fluid Direction: ☐ under ☐ over (the seat)					
			☐ 3 way ☐ Mixing AB ← A ☐ Diverging AB → A					
			ACTION ON FAILURE: AB ← ☐ B AB → ☐ B					
	11		TAG:					
	12		SIZE / RATING: DN ..... PN..... CLASS					
	13		TYPE OF CONNECTION: ☐ Flanged ☐ EN ☐ ANSI ☐ Threaded ☐ Welded end ☐					
	14		BODY MATERIAL:					
	15		PLUG MATERIAL: ☐ Stainless steel ☐ Soft ☐ Stellite ☐					
	16		SOFT SEAT SEAL MATERIAL: ☐ PTFE / GR ☐ PTFE ☐					
	17		PLUG CHARACTERISTICS: ☐ Equal % ☐ Linear ☐ On / Off					
	18		SEAL: ☐ Metal ☐ Soft ☐ CLASSE					
	19		SEAT MATERIAL: ☐ Stainless steel ☐ Stellite ☐					
	20		REDUCE BORE: ☐ Yes ☐ No Size					
	21		BONNET: ☐ Standard ☐ Finned ☐ Extended ☐					
	22		STUFFING BOX PACKING: ☐ Virgin PTFE ☐ PTFE / GR ☐ Pure Graphite ☐ Bellows ☐ Other Number ____					
	23	ACTUATOR	ACTUATOR REF.: ..... ☐ Pneumatic ☐ Electric ☐ Manual ☐					
	24		PNEUMATIC SIGNAL: ☐ 0,2 - 1 bar ☐ 0,4 - 1,2 bar ☐ 0,4 - 2 bar ☐ 0 - 2,5 bar ☐					
	25		ACTION ON AIR FAILURE: ☐ Closed ☐ Opened HANDWEEL: ☐ Yes ☐ No					
	26		ELECTRIC SIGNAL: ☐ 4-20 mA ☐ 0-10 V ☐ ..... INITIAL COMPRESSION ..... mm					
	27		ACTION ON CURRENT FAILURE: ☐ Closed ☐ Opened ☐ Stop					
	28		ELECTRIC SUPPLY: ☐ 230 V ☐ 24 V ☐					
	29		LIMIT SWITCHES: ☐ Open valve limit switch ☐ Close valve limit switch					
	30	POSITIONER	POSITIONER REF: ..... ☐ Pneumatic ☐ Electro - pneumatic ☐ Electric					
	32		CONTROL SIGNAL: ☐ Pneumatic ☐ Electric					
	33		CONTROL VALVE: Opened at: ..... psi/bar ..... mA .....V Closed at: ..... psi/bar ..... mA V					
	34		AIR FILTER REGULATOR: ☐ Yes ☐ No AIR SUPPLY: ..... psi / bar					
	35		SOLENOID VALVE: ☐ Yes ☐ No ☐ ... VAC ☐ ... VDC					

REMARKS: _____

ADCATROL CONTROL VALVES
General Information

TWO WAY VALVES

Application:
On/off, control of flow, pressure and temperature.

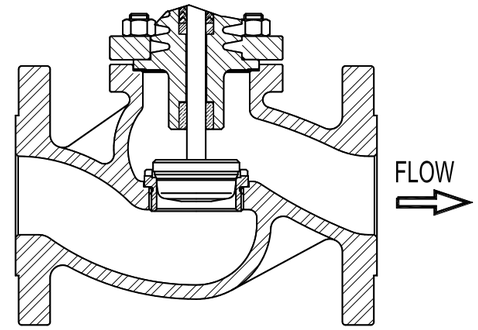

Fig.1

THREE WAY MIXING VALVES

Application:
Mixing of two streams
By-pass at heat exchangers

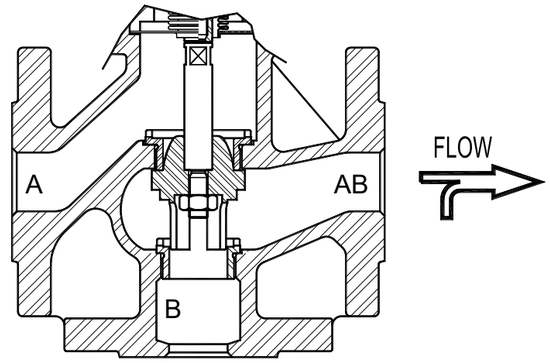

Fig.2

THREE WAY DIVERTING VALVES

Application:
Diverting of two streams
By-pass at heat exchangers *
Diverting into two different systems
(* The mixing design is recommended, see Fig.6)

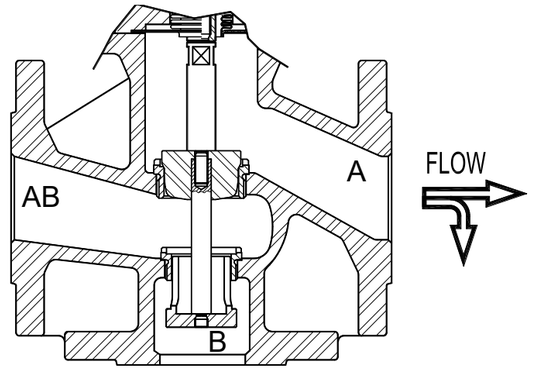

Fig.3

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TYPICAL REGULATION LOOPS

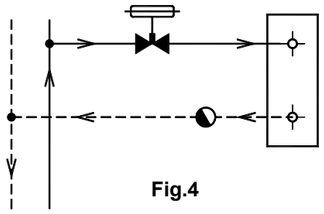

Fig.4

Two-way valve arrangement
Fluid: saturated steam

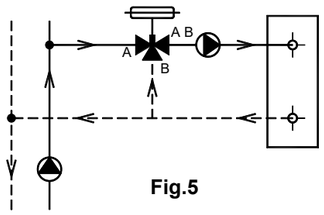

Fig.5

Three – way mixing valve arrangement
(mixing regulation)
Fluids: water, diathermic oil, …

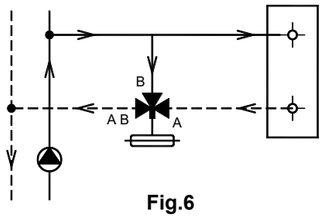

Fig.6

Three – way mixing valve arrangement
(diverting regulation)
Fluids: water, diathermic oil, …

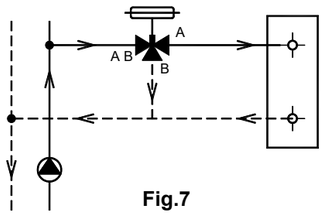

Fig.7

Three – way diverting valve arrangement
Fluids: water, diathermic oil, …

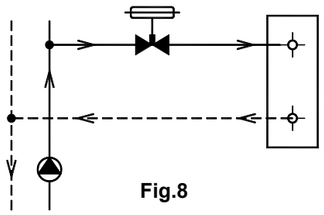

Fig.8

Two-way valve arrangement
Fluids: water, diathermic oil, …

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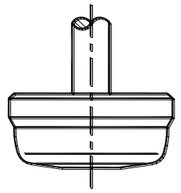
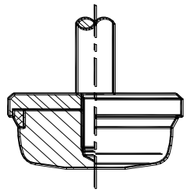
ADCATROL - VALVE PLUGS



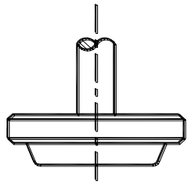
PARABOLIC PLUG (two-way valve)

Characteristic:	linear or equal percentage
Flow direction:	from below
Ratio:	30:1 to 50:1
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	steam, water and other fluids and gases without cavitation.



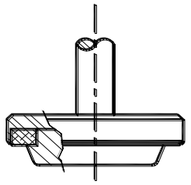
PARABOLIC PLUG (two-way valve)

Characteristic:	linear or equal percentage
Flow direction:	from below
Ratio:	30:1 to 50:1
Material:	stainless steel
Sealing:	soft sealing-PTFE/Graphite
Leakage:	class V acc. IEC 60534-4:2006
Application:	Steam, water and other fluids and gases up to 200ºC without cavitation.



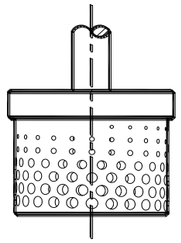
ON/OFF PLUG (two-way valve)

Characteristic:	none
Flow direction:	from below or above
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	shut off of all media



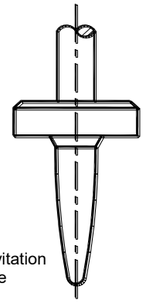
ON/OFF PLUG (two-way valve)

Characteristic:	none
Flow direction:	from below or above
Material:	stainless steel
Sealing:	soft sealing-PTFE/Graphite
Leakage:	class V acc. IEC 60534-4:2006
Application:	shut off of all media up to 200ºC



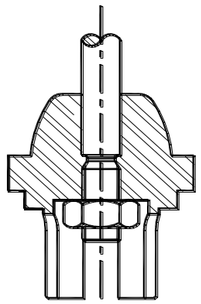
PERFORATED PLUG (two-way valve)

Characteristic:	linear or equal percentage
Flow direction:	from above
Ratio:	30:1 to 40:1
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	steam, water and other fluids and gases. Can be use where cavitation and flashing is present and if noise reduction is required.



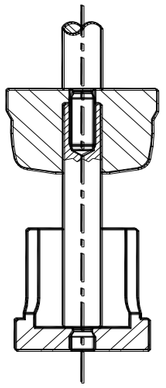
MICROFLOW PLUG (two-way valve)

Characteristic:	linear or equal percentage
Flow direction:	from below
Ratio:	50:1
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	steam, water and other fluids and gases where extremely low flow rates are present.



MIXING PLUG (three-way valve)

Characteristic:	linear/linear
Ratio:	30:1 to 50:1
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	Water, diathermic oil, …



DIVERTING PLUG (three-way valve)

Characteristic:	linear /linear
Ratio:	30:1
Material:	stainless steel
Sealing:	metal to metal
Leakage:	class IV acc. IEC 60534-4:2006
Application:	Water, diathermic oil,…

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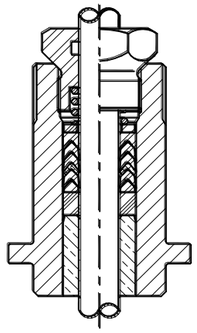
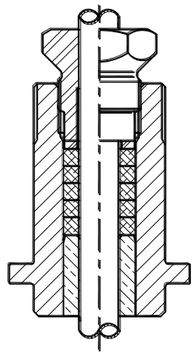
ADCATROL SPINDLE PACKING



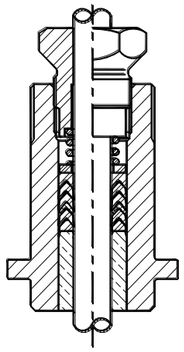
"V" RINGS WITH SPRING

Type:	V1.1
Max. pressure:	40bar
Max. temperature:	200ºC
Material:	PTFE/Graphite
Application:	Steam, water and other fluids



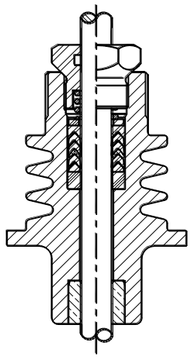
GRAPHITE

Type	G1
Max. pressure:	40bar
Max. temperature:	400ºC
Material:	Graphite
Application:	Steam, water and other fluids



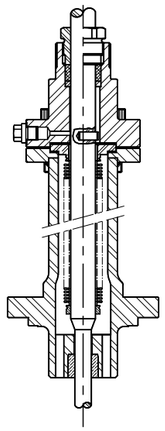
"V" RINGS WITH SPRING

Type:	V2.1
Max. pressure :	40bar
Max. temperature:	180ºC
Material:	PTFE
Application:	Steam, water and other fluids



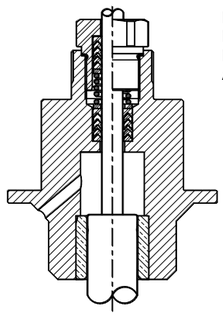
"V" RINGS W/SPRING &COOLING FINS

Type:	V1.1 and VV1.1
Max. pressure :	40bar
Max. temperature:	250ºC
Material:	PTFE/Graphite
Application:	Steam, water and other fluids



BELLOWS

Max. pressure :	25bar
Max. temperature:	400ºC
Material:	Stainless steel
Application:	Water, diathermic oil,…



"V" RINGS WITH SPRINGS

Type:	VV1.1
Max. pressure :	40bar
Max.temperature:	200ºC
Material:	PTFE/Graphite
Application:	Steam, water and other fluids

We reserve the right to change the design and material of this product without notice.

PHYSICAL PROPERTIES OF SATURATED STEAM

Pm (bar)	Pa (bar)	T (ºC)	V (m^3/kg)	he (kcal/kg)	he (kJ/kg)	r (kcal/kg)	r (kJ/kg)	hg (kcal/kg)	hg (kJ/kg)
0,00	1,013	100,0	1,673	100,1	419,1	539,4	2258,4	639,5	2677,5
0,05	1,063	101,4	1,601	101,5	425,0	538,4	2254,2	639,9	2679,1
0,10	1,113	102,6	1,533	102,8	430,4	537,7	2251,2	640,5	2681,6
0,15	1,163	105,1	1,471	104,1	435,8	536,9	2247,9	641,0	2683,7
0,20	1,213	106,2	1,414	105,3	440,9	536,2	2245,0	641,5	2685,8
0,30	1,313	107,4	1,312	107,6	450,5	534,7	2238,7	642,3	2689,2
0,40	1,413	109,5	1,225	109,8	459,7	533,3	2232,8	643,1	2692,5
0,50	1,513	111,6	1,149	111,9	468,5	531,9	2227,0	643,8	2695,5
0,60	1,613	113,5	1,038	113,8	476,5	530,6	2221,5	644,4	2698,0
0,70	1,713	115,4	1,024	115,7	484,4	529,5	2216,9	645,2	2701,3
0,80	1,813	117,1	0,971	117,5	491,9	528,3	2211,9	645,8	2703,8
0,90	1,913	118,8	0,923	119,2	499,1	527,1	2206,9	646,3	2705,9
1,00	2,013	120,4	0,881	120,8	505,8	526,0	2202,3	646,8	2708,0
1,10	2,113	121,9	0,841	122,4	512,5	525,1	2198,5	647,5	2711,0
1,20	2,213	123,4	0,806	124,0	519,2	524,1	2194,3	648,1	2713,5
1,30	2,313	124,9	0,773	125,4	525,0	523,1	2190,1	648,5	2715,1
1,40	2,413	126,3	0,743	126,8	530,9	522,2	2186,3	649,0	2717,2
1,50	2,513	127,6	0,714	128,1	536,3	521,1	2181,7	649,2	2718,1
1,60	2,613	128,9	0,689	129,5	542,2	520,4	2178,8	649,9	2721,0
1,70	2,713	130,1	0,665	130,7	547,2	519,5	2175,0	650,2	2722,3
1,80	2,813	131,4	0,643	132,0	552,7	518,6	2171,3	650,6	2723,9
1,90	2,913	132,5	0,622	133,2	557,7	517,8	2167,9	651,0	2725,6
2,00	3,013	133,7	0,603	134,4	562,7	517,0	2164,6	651,4	2727,3
2,20	3,213	135,9	0,568	136,6	571,9	515,5	2158,3	652,1	2730,2
2,40	3,413	138,0	0,536	138,8	581,1	514,0	2152,0	652,8	2733,1
2,60	3,613	140,0	0,509	140,8	589,5	512,6	2146,2	653,4	2735,7
2,80	3,813	141,9	0,483	142,8	597,9	511,2	2140,3	654,0	2738,2
3,00	4,013	143,7	0,461	144,7	605,8	509,9	2134,8	654,6	2740,7
3,20	4,213	145,4	0,440	146,4	612,9	508,6	2129,4	655,0	2742,4
3,40	4,413	147,2	0,422	148,2	620,5	507,4	2124,4	655,6	2744,9
3,60	4,613	148,8	0,405	149,9	627,6	506,1	2118,9	656,0	2746,5
3,80	4,813	150,4	0,389	151,5	634,3	505,0	2114,3	656,5	2748,6
4,00	5,013	152,0	0,374	153,1	641,0	503,8	2109,3	656,9	2750,3
4,20	5,213	153,4	0,361	154,6	647,3	502,7	2104,7	657,3	2752,0
4,40	5,413	154,8	0,348	156,1	653,6	501,6	2100,1	657,7	2753,7
4,60	5,613	156,2	0,336	157,6	659,8	500,6	2095,9	658,2	2755,8
4,80	5,813	157,6	0,325	159,0	665,7	499,5	2091,3	658,5	2757,0
5,00	6,013	158,9	0,315	160,3	671,1	498,5	2087,1	658,8	2758,3
5,50	6,513	162,1	0,292	163,6	685,0	496,1	2077,1	659,7	2762,0
6,00	7,013	165,0	0,272	166,7	697,9	493,8	2067,4	660,5	2765,4
6,50	7,513	167,8	0,255	169,6	710,1	491,6	2058,2	661,2	2768,3
7,00	8,013	170,5	0,240	172,4	721,8	489,4	2049,0	661,8	2770,8
7,50	8,513	173,0	0,227	175,1	733,1	487,4	2040,6	662,5	2773,8
8,00	9,013	175,4	0,215	177,6	743,6	485,4	2032,3	663,0	2775,8
8,50	9,513	177,7	0,204	180,0	753,6	483,5	2024,3	663,5	2777,9
9,00	10,013	180,0	0,194	182,3	763,3	481,6	2016,4	663,9	2779,6
9,50	10,513	182,1	0,185	184,6	772,9	479,8	2008,8	664,4	2781,7
10,00	11,013	184,1	0,177	186,8	782,1	478,0	2001,3	664,8	2783,4
11,00	12,013	188,0	0,163	190,9	799,3	474,6	1987,1	665,5	2786,3
12,00	13,013	191,7	0,151	194,8	815,6	471,4	1973,7	666,2	2789,2
13,00	14,013	195,1	0,141	198,5	831,1	468,3	1960,7	666,8	2791,8
14,00	15,013	198,3	0,132	202,0	845,7	465,3	1948,1	667,3	2793,9
15,00	16,013	201,4	0,124	205,3	859,6	462,5	1936,4	667,8	2795,9
16,00	17,013	204,4	0,117	208,5	872,9	459,7	1924,7	668,2	2797,6
17,00	18,013	207,2	0,110	211,5	885,5	457,0	1913,4	668,5	2798,9
18,00	19,013	209,9	0,105	214,4	897,8	454,4	1902,5	668,8	2800,1
19,00	20,013	212,5	0,100	217,2	909,4	451,8	1891,6	669,0	2801,0
20,00	21,013	215,0	0,095	220,0	921,1	449,4	1881,5	669,4	2802,6
21,00	22,013	217,3	0,090	222,6	932,0	447,0	1871,5	669,6	2803,5
22,00	23,013	219,6	0,087	225,1	942,4	444,6	1861,5	669,7	2803,9
23,00	24,013	221,8	0,083	227,6	952,9	442,2	1851,4	669,8	2804,3
24,00	25,013	224,0	0,080	230,0	963,0	440,0	1842,2	670,0	2805,2
25,00	26,013	226,1	0,077	232,3	972,6	437,7	1832,6	670,0	2805,2

Pm – gauge pressure; **Pa** – absolute pressure; **T** – temperature; **V** – specific volume; **he** – specific enthalpy of liquid; **r** – specific enthalpy of vaporization; **Hg** – specific enthalpy of saturated steam.

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IS PV10.00 E 06.07

MASS FLOWRATES OF SATURATED STEAM FOR DIFFERENT VELOCITIES IN PIPES DIN2448 – STANDARD

Pm bar	v m/s	FLOWRATE (kg/h)													
		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
0.4	15	10	17	28	48	64	103	171	236	397	600	878	1476	2346	3319
	25	17	29	47	80	107	171	285	393	662	1000	1464	2459	3911	5532
	40	28	46	75	128	171	274	456	628	1058	1601	2342	3935	6257	8851
0.6	15	12	20	33	56	76	121	202	278	468	708	1036	1741	2769	3917
	25	20	34	55	94	126	202	336	463	781	1181	1727	2902	4615	6528
	40	33	54	89	151	202	324	538	741	1249	1889	2764	4644	7384	10445
0.8	15	13	22	35	60	81	130	216	297	501	757	1108	1862	2960	4187
	25	22	36	59	101	135	216	360	495	835	1262	1846	3103	4934	6979
	40	35	58	95	161	216	346	575	792	1335	2019	2954	4964	7894	11166
1	15	14	24	39	67	89	143	238	327	552	835	1221	2052	3263	4615
	25	24	40	65	111	149	238	396	546	920	1391	2035	3420	5438	7692
	40	38	64	104	178	238	381	634	873	1472	2226	3256	5471	8700	12307
1.5	15	18	29	48	82	110	176	293	404	681	1030	1507	2532	4026	5694
	25	30	49	80	137	184	294	489	673	1135	1716	2511	4219	6710	9491
	40	47	79	129	219	294	470	783	1078/	1816	2746	4018	6751	10735	15185
2	15	21	35	57	97	131	209	347	478	806	1219	1784	2998	4767	6743
	25	35	58	95	162	218	348	579	797	1344	2032	2973	4996	7945	11238
	40	56	93	152	259	348	557	927	1276	2150	3252	4757	7994	12711	17980
2.5	15	24	40	66	112	151	241	401	553	931	1409	2061	3463	5506	7789
	25	41	67	110	187	251	402	669	921	1552	2348	3435	5771	9177	12982
	40	65	108	176	300	402	643	1070	1474	2484	3756	5495	9234	14684	20770
3	15	28	46	75	127	171	273	454	626	1055	1595	2333	3921	6235	8820
	25	46	76	125	212	285	455	757	1043	1758	2658	3889	6535	10392	14699
	40	73	122	199	339	455	728	1212	1669	2813	4253	6223	10456	16627	23519
4	15	34	56	92	157	211	337	560	771	1300	1966	2876	4833	7685	10871
	25	57	94	154	261	351	561	934	1286	2167	3277	4794	8055	12809	18119
	40	90	150	246	418	561	898	1494	2057	3467	5243	7670	12888	20495	28990
5	15	40	67	109	186	250	400	665	916	1544	2334	3415	5738	9125	12907
	25	67	111	182	310	417	666	1109	1527	2573	3890	5692	9564	15208	21512
	40	107	178	292	496	667	1066	1774	2443	4116	6224	9107	15302	24333	34420
6	15	47	77	127	216	289	463	770	1061	1788	2703	3955	6646	10568	14948
	25	78	129	211	359	482	772	1284	1768	2979	4505	6592	11076	17613	24913
	40	124	206	338	575	772	1235	2054	2829	4767	7208	10546	17722	28180	39861
7	15	53	88	144	244	328	525	873	1202	2026	3064	4482	7532	11977	16941
	25	88	146	239	407	547	875	1455	2004	3377	5106	7470	12553	19961	28235
	40	141	234	383	652	875	1399	2328	3206	5402	8170	11953	20084	31937	45176
8	15	59	98	160	273	366	586	975	1342	2261	3420	5003	8407	13369	18911
	25	98	163	267	455	610	976	1624	2237	3769	5700	8339	14012	22282	31518
	40	157	261	427	727	977	1562	2599	3579	6031	9120	13342	22420	35651	50429
9	15	65	109	178	302	406	649	1080	1487	2506	3790	5545	9318	14816	20958
	25	109	181	296	504	676	1082	1800	2479	4177	6317	9242	15529	24694	34930
	40	174	289	474	806	1082	1731	2880	3966	6683	10107	14787	24847	39510	55888
10	15	72	119	195	331	445	711	1184	1630	2747	4154	6078	10212	16239	22971
	25	119	198	324	552	741	1186	1973	2717	4578/	6923	10129	17021	27066	38285
	40	191	317	519	884	1186	1897	3157	4347	7325	11077	16207	27233	43305	61255
12	15	84	139	228	388	521	834	1388	1911	3220	4869	7124	11971	19036	26926
	25	140	232	380	647	869	1390	2313	3185	5367	8115	11873	19951	31726	44877
	40	224	372	608	1036	1390	2224	3700	5095	8587	12985	18998	31922	50761	71803
14	15	96	160	261	444	596	954	1587	2186	3683	5570	8150	13694	21776	30802
	25	160	266	435	740	994	1590	2645	3643	6139	9284	13583	22823	36293	51336
	40	256	425	696	1185	1591	2544	4233	5829	9823	14854	21732	36517	58068	82138
16	15	108	180	294	501	673	1076	1791	2466	4156	6284	9194	15450	24567	34751
	25	181	300	491	835	1122	1794	2985	4110	6926	10474	15324	25749	40945	57918
	40	289	480	785	1337	1794	2870	4775	6576	11082	16758	24518	41199	65513	92668
18	15	121	201	328	559	750	1199	1995	2748	4631	7003	10245	17215	27375	38722
	25	201	334	547	931	1250	1999	3326	4580	7718	11671	17075	28692	45625	64537
	40	322	535	875	1489	2000	3198	5321	7328	12348	18673	27320	45907	73000	103259
20	15	134	222	363	617	829	1326	2205	3037	5118	7740	11324	19027	30256	42798
	25	223	369	604	1029	1381	2209	3676	5062	8530	12899	18873	31712	50427	71330
	40	356	591	967	1646	2210	3535	5881	8099	13648	20639	30196	50740	80684	114128

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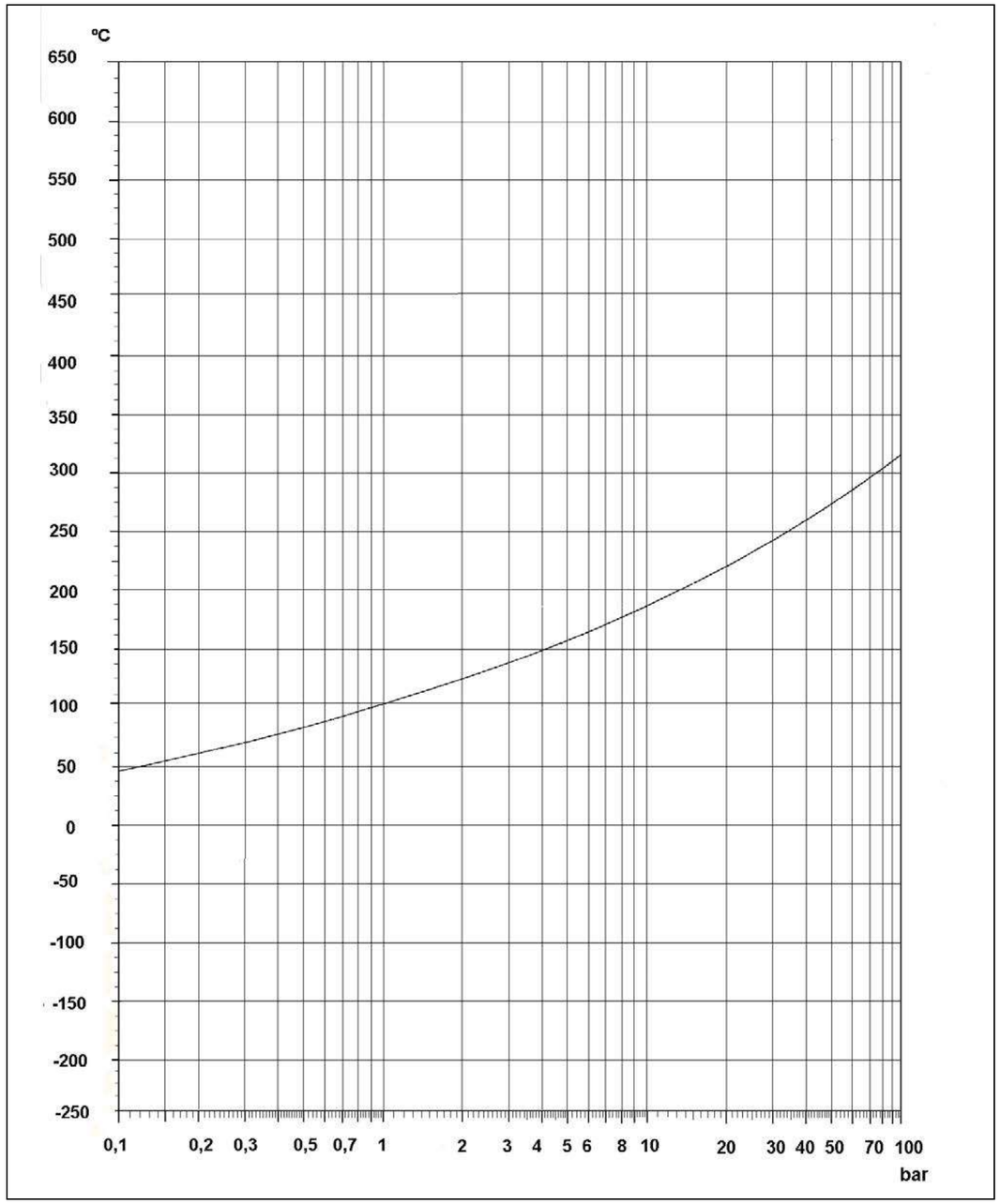
VAPOUR TENSION OF WATER



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CONVERSION FACTORS

FLOW RATE IN VOLUME

UNIT		m^3/s	L/s	cfm	gpm
Cubic metre per second	m^3/s	1	1×10^{3}	2118,88	15850
Litre per second	L/s	1×10^{-3}	1	2,1189	15,85
Cubic foot per minute	cfm	$0,4719\times10^{-3}$	0,4719	1	7,48
Gallon per minute	gpm	$0,6309\times10^{-4}$	0,06309	0,1337	1

MASS

UNIT		kg	lb	ton
Kilogramme	kg	1	2,2046	1×10^{-3}
Pound	lb	0,4536	1	$0,454\times10^{-3}$
Ton short (US)	ton	907,1847	2000	1

AREA

UNIT		m^2	cm^2	in^2	ft^2
Square metre	m^2	1	1×10^{4}	1550	10,764
Square centimetre	cm^2	1×10^{-4}	1	0,155	$10,764\times10^{-4}$
Square inch	in^2	$6,452\times10^{-4}$	6,452	1	$6,944\times10^{-3}$
Square foot	ft^2	$9,290\times10^{-2}$	928,03	144	1

LENGTH

UNIT		m	cm	mm	in	ft
Metre	m	1	1×10^{2}	1×10^{3}	39,370	3,281
Centimetre	cm	1×10^{-2}	1	10	0,390	0,033
Milimetre	mm	1×10^{-3}	1×10^{-1}	1	0,039	$3,28\times10^{-3}$
Inch	in	$2,54\times10^{-2}$	2,540	25,4	1	0,083
Foot	ft	0,305	30,480	304,8	12	1

VOLUME

UNIT		m^3	L	in^3	ft^3	gal
Cubic metre	m^3	1	1×10^{3}	$61,024\times10^{3}$	35,315	219,969
Cubic dcm or liter	dm^3 (L)	1×10^{-3}	1	61,024	0,353	0,220
Cubic inch	in^3	$0,0164\times10^{-3}$	0,016	1	$5,787\times10^{-4}$	$3,605\times10^{-3}$
Cubic foot	ft^3	0,028	28,317	1728	1	6,229
Gallon (UK)	gal	$4,546\times10^{-3}$	4,546	277,419	0,161	1

WORK, ENERGY, HEAT AND ENTHALPY

UNIT		J	kgfm	kcal	Wh	Btu
Joule	J	1	0,1020	$0,2388\times10^{-3}$	$0,2778\times10^{-3}$	$0,9478\times10^{-3}$
Kilogramme metre	kgfm	9,807	1	$2,342\times10^{-3}$	$2,724\times10^{-3}$	$9,295\times10^{-3}$
Kilocalorie	kcal	4186,8	426,92	1	3,968	3,968
Watt hour	Wh	3600	367,08	0,861	1	3,413
British thermal unit	Btu	1055,06	107,58	0,252	0,293	1

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POWER

UNIT		W	kcal/h	kgm/s	BTU/h	ft lb/s	BHP	CV
Watt	W	1	0,8605	0,102	3,413	0,7375	$1,341\times10^{-3}$	$1,360\times10^{-3}$
Kilocalorie/hour	kcal/h	1,1628	1	0,1186	3,9683	0,8576	$1,559\times10^{-3}$	$1,581\times10^{-3}$
Kilogramme metre/sec	kgm/s	9,807	8,434	1	33,47	7,233	$1,315\times10^{-2}$	$1,333\times10^{-2}$
British thermal unit/hour	BTU/h	0,293	0,252	0,02988	1	0,2161	$0,393\times10^{-3}$	$0,398\times10^{-3}$
Foot pound/second	ft lb/s	1,356	1,166	0,1383	4,627	1	$1,818\times10^{-3}$	$1,844\times10^{-3}$
Brake horsepower	BHP	745,7	641,3	76,04	2547	550	1	1,0139
Horsepower (metric)	CV	735,5	632,53	75	2512,2	542,4	0,986	1

VELOCITY

UNIT		m/s	ft/s	km/h
Metre per second	m/s	1	3,2808	3,6
Foot per second	ft/s	0,3048	1	1,0973
Kilometre per hour	km/h	0,2778	0,9113	1

PRESSURE

UNIT		Pa	bar	at	mm Hg	kgf/m^2	psi	lbf/ft^2
Pascal	Pa	1	$1x10^{-5}$	$1,0197x10^{-5}$	0,0075	0,10197	$0,145x10^{-3}$	0,02088
Bar	bar	$1x10^{5}$	1	1,0197	750,07	10197	14,5050	2088
Atmosphere (Kgf/cm^2)	atm	98070	0,9807	1	735,56	10000	14,223	2048,16
Millimetre of mercury	mm Hg	133,32	$1,3332x10^{-3}$	$1,3595x10^{-3}$	1	13,595	0,0193	1,392
Kilogramme per sq. mtr.	kgf/m^2	9,807	$9,807x10^{-5}$	$1x10^{-4}$	0,0735	1	0,0014	0,205
Pounds per sq. Inch	psi	6894,14	0,06894	0,0703	51,719	703,07	1	144
Pounds per sq. foot	lbf/ft^2	47,876	$4,7876x10^{-4}$	$4,8824x10^{-4}$	0,7183	4,8824	0,00694	1

WATER HARDNESS

UNIT		ºFr	ºdH	GPG	ppm
French degree	ºFr	1	0,56	0,583	10,0
German degree	ºdH	1,79	1	1,040	17,9
Grain/US gallon	GPG	1,71	0,958	1	17,1
Parts per million	ppm	0,10	0,056	0,0583	1

TEMPERATURE

ºC	ºF	ºC	ºF	ºC	ºF	ºC	ºF
-35	-31	40	104	115	239	190	374
-30	-22	45	113	120	248	195	383
-25	-13	50	122	125	257	200	392
-20	-4	55	131	130	266	205	401
-15	5	60	140	135	275	210	410
-10	14	65	149	140	284	215	419
-5	23	70	158	145	293	220	428
0	32	75	167	150	302	225	437
5	41	80	176	155	311	230	446
10	50	85	185	160	320	235	455
15	59	90	194	165	329	240	464
20	68	95	203	170	338	245	473
25	77	100	212	175	347	250	482
30	86	105	221	180	356	255	491
35	95	110	230	185	365	260	500
Conversion equations		T(ºF) = (1,8 × T(ºC)) + 32					
		T(ºC) = 0,55 × (T(ºF) - 32)					
		T(K) = T(ºC) + 273,15					

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IS PV10.00 E 06.07

MASS PER UNIT VOLUME OF DRY AIR (IN kg/m³)
FOR TEMPERATURES FROM 0 ºC TO 300 ºC AND PRESSURES FROM 0 TO 25 bar

T (ºC)	GAUGE PRESSURE (bar)										
	0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
0	1,293	1,931	2,569	3,207	3,845	4,483	5,121	5,759	6,397	7,036	7,674
10	1,247	1,863	2,478	3,094	3,709	4,325	4,941	5,556	6,172	6,787	7,403
20	1,205	1,799	2,394	2,988	3,583	4,177	4,772	5,367	5,961	6,556	7,150
30	1,165	1,740	2,315	2,890	3,465	4,040	4,615	5,189	5,764	6,339	6,914
40	1,128	1,684	2,241	2,798	3,354	3,911	4,467	5,024	5,580	6,137	6,693
50	1,093	1,632	2,172	2,711	3,250	3,790	4,329	4,868	5,408	5,947	6,486
60	1,060	1,583	2,106	2,630	3,153	3,676	4,199	4,722	5,245	5,768	6,292
70	1,029	1,537	2,045	2,553	3,061	3,569	4,077	4,585	5,092	5,600	6,108
80	1,000	1,494	1,987	2,481	2,974	3,468	3,961	4,455	4,948	5,442	5,935
90	0,973	1,453	1,932	2,412	2,892	3,372	3,852	4,332	4,812	5,292	5,772
100	0,947	1,414	1,881	2,348	2,815	3,282	3,749	4,216	4,683	5,150	5,617
110	0,922	1,377	1,832	2,286	2,741	3,196	3,651	4,106	4,561	5,016	5,471
120	0,898	1,342	1,785	2,228	2,672	3,115	3,558	4,002	4,445	4,888	5,331
130	0,876	1,308	1,741	2,173	2,605	3,038	3,470	3,902	4,335	4,767	5,199
140	0,855	1,277	1,699	2,120	2,542	2,964	3,386	3,808	4,230	4,651	5,073
150	0,835	1,247	1,658	2,070	2,482	2,894	3,306	3,718	4,130	4,542	4,953
160	0,815	1,218	1,620	2,023	2,425	2,827	3,230	3,632	4,034	4,437	4,839
170	0,797	1,190	1,584	1,977	2,370	2,763	3,157	3,550	3,943	4,337	4,730
180	0,779	1,164	1,549	1,933	2,318	2,702	3,087	3,472	3,856	4,241	4,626
190	0,763	1,139	1,515	1,891	2,268	2,644	3,020	3,397	3,773	4,149	4,526
200	0,746	1,115	1,483	1,852	2,220	2,588	2,957	3,325	3,693	4,062	4,430
220	0,716	1,070	1,423	1,776	2,130	2,483	2,837	3,190	3,543	3,897	4,250
240	0,688	1,028	1,368	1,707	2,047	2,386	2,726	3,066	3,405	3,745	4,085
260	0,662	0,989	1,316	1,643	1,970	2,297	2,624	2,951	3,278	3,605	3,931
280	0,639	0,954	1,269	1,584	1,899	2,214	2,529	2,844	3,159	3,474	3,789
300	0,616	0,920	1,224	1,528	1,833	2,137	2,441	2,745	3,049	3,353	3,657

T (ºC)	GAUGE PRESSURE (bar)										
	6	7	8	9	10	12	14	16	18	20	25
0	8,950	10,226	11,502	12,778	14,054	16,606	19,159	21,711	24,263	26,815	33,196
10	8,634	9,865	11,096	12,327	13,558	16,020	18,482	20,944	23,406	25,868	32,024
20	8,339	9,528	10,717	11,906	13,095	15,473	17,852	20,230	22,608	24,986	30,931
30	8,064	9,214	10,364	11,514	12,663	14,963	17,263	19,562	21,862	24,162	29,911
40	7,807	8,920	10,033	11,146	12,259	14,485	16,711	18,938	21,164	23,390	28,956
50	7,565	8,644	9,722	10,801	11,880	14,037	16,194	18,352	20,509	22,666	28,060
60	7,338	8,384	9,430	10,470	11,523	13,616	5,708	17,800	19,893	21,986	27,217
70	7,124	8,140	9,156	10,171	11,187	13,219	15,250	17,280	19,314	21,345	26,424
80	6,922	7,909	8,896	9,883	10,870	12,845	14,819	16,793	18,767	20,741	25,676
90	6,732	7,692	8,651	9,611	10,571	12,491	14,411	16,330	18,250	20,170	24,969
100	6,551	7,485	8,420	9,354	10,288	12,156	14,024	15,893	17,761	19,629	24,300
110	6,380	7,290	8,200	9,110	10,019	11,839	13,658	15,478	17,297	19,117	23,666
120	6,218	7,105	7,991	8,878	9,764	11,538	13,311	15,084	16,857	18,631	23,064
130	6,064	6,928	7,793	8,658	9,522	11,252	12,981	14,710	16,439	18,168	22,492
140	5,917	6,761	7,604	8,448	9,292	10,979	12,667	14,354	16,041	17,729	21,947
150	5,777	6,601	7,425	8,248	9,072	10,720	12,367	14,015	15,662	17,310	21,429
160	5,644	6,449	7,253	8,058	8,863	10,472	12,082	13,691	15,301	16,910	20,934
170	5,516	6,303	7,090	7,876	8,663	10,236	11,809	13,382	14,955	16,529	20,461
180	5,395	6,164	6,933	7,702	8,472	10,010	11,548	13,087	14,625	16,164	20,010
190	5,278	6,031	6,783	7,536	8,289	9,794	11,299	12,804	14,310	15,815	19,578
200	5,167	5,903	6,640	7,377	8,114	9,587	11,060	12,534	14,007	15,481	19,164
220	4,957	5,664	6,371	7,078	7,784	9,198	10,612	12,025	13,439	14,853	18,387
240	4,764	5,443	6,123	6,802	7,481	8,840	10,198	11,557	12,915	14,274	17,670
260	4,585	5,443	5,893	6,547	7,200	8,508	9,816	11,123	12,431	13,738	17,007
280	4,419	5,050	5,680	6,310	6,940	8,200	9,461	10,721	11,981	13,242	16,392
300	4,265	4,873	5,482	6,090	6,698	7,914	9,131	10,347	11,563	12,780	15,820

PHYSICAL PROPERTIES OF GASES AND VAPOURS – SI UNITS

Referred to 0ºC (32F) and 1013,25 mbar (14,7 psia)

ρ - mass per unit volume
V - specific volume
T_f - melting temperature
Cp - specific heat at constant pressure
T_e - boiling temperature
λ - thermal conductivity
ρe - mass per unit volume of the liquid at T_e

Gas or Vapour	Formula	ρ (kg/m³)	T_f (ºC)	T_e (ºC)	ρ_e (kg/m³)	V (m³/kg)	Cp (kcal/kg.hºC)	λ (kcal/m.hºC)
Acetone	C_3H_6O	2,591	-94,8	56,2	749	0,386	0,296	0,0083
Acetylene	C_2H_2	1,162	-83,3	-83,6	613	0,861	0,386	0,0158
Ammonia	NH_3	0,76	-77,9	-33,4	680	1,316	0,491	0,0187
Argon	Ar	1,782	189,2	-185,7	1820	0,561	0,125	0,014
Benzole	C6H6	3,485	-	-	-	0,287	0,227	0,0076
Biogas (40% CH4)	-	1,467	-	-	-	-	-	-
Biogas (56% CH4)	-	1,267	-	-	-	-	-	-
Biogas (70% CH4)	-	1,092	-	-	-	-	-	-
Butane	C_4H_{10}	2,593	-138,4	-0,5	602	0,386	0,382	0,0119
Carbon dioxide	CO_2	1,964	-56,6	-78,2	1219	0,509	0,195	0,0122
Carbon disulphide	CS2	3,397				0,294	0,139	0,0058
Carbon monoxide	CO	1,25	-205	-191,6	801	0,8	0,248	0,0191
Chlorine	Cl_2	3,164	-101	-34,6	1512	0,316	0,116	0,0073
Diethyl ether	C4H10O	3,307				0,302	0,345	0,0108
Dry air	-	1,293	-213	-192,3	875	0,773	0,24	0,0209
Ethane	C_2H_6	1,342	-183,3	-88,6	546	0,745	0,394	0,0155
Ethyl alcohol	C_2H_6O	2,055	-114,2	78,3	747	0,487	0,364	0,0119
Ethylene	C_2H_4	1,251	-169,5	-103,7	568	0,799	0,349	0,0144
Helium	He	0,179	-272,2	-268,9	125	5,599	1,25	0,1233
Hydrochloric acid	HCl	1,627	-111,2	-84,8	1135	0,615	0,19	0,0072
Hydrogen	H_2	0,09	-259,1	-252,9	71	11,118	3,45	0,1508
Hydrogen sulphide	H_2S	1,52	-85,6	-60,4	957	0,658	0,237	0,0108
Methane	CH_4	0,716	-182,5	-161,5	415	1,397	0,517	0,0263
Methyl alcohol	CH_4O	1,429	-97,6	64,7	737	0,7	0,32	0,012
Natural gas	-	0,6	-	-	-	-	-	-
Nitrogen	N_2	1,25	-209,9	-195,8	810	0,8	0,247	0,0205
Oxygen	O_2	1,428	-218,4	-183	1131	0,7	0,218	0,0208
Propane	C_3H_8	1,968	-187,7	-42,1	585	0,508	0,37	0,013
Propylene	C_3H_6	1,877	-185	-47,8	686	0,533	0,34	-
Sulfur dioxide	SO2	2,858	-	-	-	0,35	0,14	0,0072

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PHYSICAL PROPERTIES OF WATER – SI UNITS

t_{ref} – reference temperature for — Ca – actual specific heat at t_{ref}

M_s – mass per unit volume at 20ºC (68ºF) — λ – rthermal conductivity at t_{ref}

Temp. (ºC)	Ms (kg/m³)	V (m³/kgx1000)	Ca (kcal/kg.ºC)	λ (kcal/m.h.ºC)	Temp. (ºC)	Ms (kg/m³)	V (m³/kgx1000)	Ca (kcal/kg.ºC)	λ (kcal/m.h.ºC)
0	999,87	1,00013	–	–	**70**	977,81	1,02269	1,0002	0,57
4	999,99	1,00001	–	–	**71**	977,23	1,0233	–	–
6	999,97	1,00003	–	–	**72**	976,66	1,0239	–	–
8	999,89	1,00011	–	–	**73**	976,07	1,02452	–	–
10	999,75	1,00025	1	0,493	**74**	975,48	1,02514	–	–
12	999,55	1,00045	–	–	**75**	974,89	1,02576	1,0013	0,574
14	999,3	1,0007	–	–	**76**	974,29	1,02639	–	–
16	999	1,001	–	–	**77**	973,68	1,02703	–	–
18	998,65	1,00135	–	–	**78**	973,07	1,02768	–	–
20	998,2	1,0018	1	0,51	**79**	972,45	1,02833	–	–
22	997,83	1,00217	–	–	**80**	971,83	1,02899	1,0025	0,577
24	997,37	1,00264	–	–	**81**	971,21	1,02964	–	–
26	996,87	1,00314	–	–	**82**	970,57	1,03032	–	–
28	996,33	1,00368	–	–	**83**	969,94	1,03099	–	–
30	995,76	1,00426	1	0,526	**84**	969,3	1,03167	–	–
32	995,12	1,0049	–	–	**85**	968,65	1,03236	1,0037	0,58
34	994,49	1,00554	–	–	**86**	968	1,03306	–	–
36	993,74	1,0063	–	–	**87**	967,34	1,03376	–	–
38	993,02	1,00703	–	–	**88**	966,68	1,03447	–	–
40	992,24	1,00782	1	0,539	**89**	966,01	1,03519	–	–
41	991,86	1,00821	–	–	**90**	965,34	1,0359	1,0049	0,582
42	991,47	1,0086	–	–	**91**	964,67	1,03662	–	–
43	991,07	1,00901	–	–	**92**	963,99	1,03736	–	–
44	990,66	1,00943	–	–	**93**	963,3	1,0381	–	–
45	990,25	1,00985	–	–	**94**	962,61	1,03884	–	–
46	989,82	1,01028	–	–	**95**	961,92	1,03959	1,006	0,584
47	989,4	1,01071	–	–	**96**	961,22	1,04034	–	–
48	988,96	1,01116	–	–	**97**	960,51	1,04111	–	–
49	988,52	1,01161	–	–	**98**	959,81	1,04187	–	–
50	988,07	1,01207	1	0,551	**99**	959,09	1,04266	–	–
51	987,62	1,01254	–	–	**100**	958,38	1,04343	1,0061	0,586
52	987,15	1,01302	–	–	**105**	–	–	1,0071	0,588
53	986,69	1,01349	–	–	**110**	–	–	1,0084	0,589
54	986,21	1,01398	–	–	**115**	–	–	1,0098	0,59
55	985,73	1,01448	1	0,556	**120**	–	–	1,0114	0,591
56	985,25	1,01497	–	–	**125**	–	–	1,0132	0,591
57	984,75	1,01549	–	–	**130**	–	–	1,0152	0,592
58	984,25	1,016	–	–	**135**	–	–	1,0175	0,592
59	983,75	1,01652	–	–	**140**	–	–	1,02	0,592
60	983,24	1,01705	1	0,561	**145**	–	–	1,0228	0,591
61	982,72	1,01758	–	–	**150**	–	–	1,0258	0,591
62	982,2	1,01812	–	–	**160**	–	–	1,0328	0,589
63	981,67	1,01867	–	–	**170**	–	–	1,0411	0,586
64	981,13	1,01923	–	–	**180**	–	–	1,0507	0,582
65	980,59	1,01979	1	0,566	**190**	–	–	1,0619	0,578
66	980,05	1,02036	–	–	**200**	–	–	1,0746	0,572
67	979,5	1,02093	–	–	**210**	–	–	1,089	0,565
68	978,94	1,02151	–	–	**220**	–	–	1,1052	0,558
69	978,38	1,0221	–	–	**230**	–	–	1,1234	0,55

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PHYSICAL PROPERTIES OF LIQUIDS – SI UNITS

T_{ref} – reference temperature for — Ca – actual specific heat at t_{ref}

M_s – mass per unit volume at 20ºC (68ºF) — λ – thermal conductivity at t_{ref}

Liquid	T_{ref} (ºC)	Ms (kg/m³)	Ca (kcal/kg.ºC)	λ (kcal/m.h.ºC)	Liquid	T_{ref} (ºC)	Ms (kg/m³)	Ca (kcal/kg.ºC)	λ (kcal/m.h.ºC)
Acetic acid	25	1049	0,51	0,166	**Methane**	- 90	162	-	-
Acetone	20	790	0,515	0,139	**Methanol**	20	791	0,33	-
Ammonia sol. (25%)	20	771	-	0,425	**Methyl alcohol (95%vol.)**	20	792	0,596	0,174
Apple juice	20	1356	0,446	-	**Milk, cow, heavy cream**	20	994	0,94	0,434
Argon	-186	1430	-	-	**Naphta**	15	665	0,92	-
Automobile oils	15	880-940	-	0,125	**Nitric acid**	20	1520	0,411	0,456
Beer	10	1010	-	-	**Nitrogen**	-201	808	-	-
Benzene	20	870	0,43	0,138	**Oil, coconut**	20	924	-	-
Benzole	20	879	0,43	0,132	**Oil, corn**	20	922	-	-
	80	-	0,44	0,13	**Oil, castor**	25	956,1	0,43	0,155
Butane	25	599	0,55	-	**Oil, cotton seed**	15	926	-	-
Butter	20	911	0,557-0,688	-	**Oil, olive**	10	918	0,47	0,146
Carbon tetrachloride	25	1584	0,207	0,089	**Oil, palm**	20	915	-	-
Carbon disulphide	20	1266	0,241	0,138	**Oil, soya**	20	927	0,47	-
Chloride	25	1560	-	-	**Oil, sunflower**	20	920	-	-
Chloroform	20	1489	0,251	0,11	**Oil, peanut**	20	914	-	-
Citric acid	25	1660	-	-	**Oil, whale**	15	925	-	-
Crude oil	20	900	-	0,113	**Oxygen (liquid)**	-186	1155	-	-
Diesel	20	800	-	-	**Petrol**	30	680 - 710	0,45	0,112
Ethane (liquid)	-89	570	-	-	**Phenol**	25	1072	0,34	0,163
Ethyl acetate	20	901	-	-	**Propanol**	25	804	-	-
Ethyl alcohol (95%vol.)	0	789	0,547	0,166	**Propyl alcohol**	25	800	0,57	0,138
	40	-	0,648	0,144	**Sea water**	25	1025	0,94	-
Fuel oil	20	840 - 920	0,471	0,103	**Sodium carbonate**	20	2530	0,86	0,516
Gasoline	20	803	0,53	0,129	**Sodium Hydroxide (caustic soda)**	15	1250	0,77	0,37
Glycerine	10	1260	0,576	0,25	**Sulphuric acid**	12	1853	0,33	0,28
Glycerol	25	1126	-	-	**Sulphurous acid (96%)**	20	1840	0,351	0,43
Helium	-271	147	-	-	**Water**	8	999,88	1	0,485
Honey	20	1420	0,54-0,6	0,00648		41	991,66	1	0,538
Hydrazine	25	795	-	-		72	976,36	1	0,58
Hydrochloric acid (25%)	20	1150	0,75	0,404		100	958,38	1,006	0,586
Kerosene	16	820,1	0,48	0,125		200	0 - 200	1,037	0,572
Lubricating oil	81	920	-	0,105					
	0	-	-	0,133					
	100	-	-	0,128					
	200	-	-	0,122					

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PHYSICAL PROPERTIES OF METALS – SI UNITS

T_{ref} - reference temperature for Ms - mass per unit volume at 20 °C

λ - thermal conductivity at t_{ref} Ca - actual specific heat at t_{ref}

Metal	T_{ref} (°C)	Ms (kg/m³)	λ (kcal/m.h.°C)	Ca (kcal/kg.h.°C)
Alloy Steel (5%Cr)	20	7790	28	0,11
(20%Cr)	20	7670	20	0,11
(10%Cr)	20	7760	27	0,11
Alloy Steel (5%Ni)	30	7850	25	-
(10%Ni)	30	-	22	-
(40%Ni)	30	8120	9	-
(20%Ni)	30	-	14	-
Aluminum	0	2700	173	0,21
	100	-	176	0,224
	300	-	198	0,241
Brass	20	8400	79-96	-
	100	-	90-110	-
Bronze	20	8700	50	0,0913
	100	-	62	0,0937
Carbon Steel (0,1%C)	100	7830	47	-
	300	-	43	-
	600	-	32	-
Carbon Steel (0,5%C)	100	7820	45	0,113
	300	-	38	-
	600	-	31	-
Carbon Steel (1,5%C)	100	7740	32	-
	300	-	31	-
	600	-	29	-
Cast Iron (4%C)	20	-	50	-
Chromium	0	7190	-	0,102
	100	-	-	0,113
	300	-	-	0,125
Copper	20	8960	332	0,0911
Gold	0	19320	268	0,0311
	200	-	266	-
Magnesium	100	1738	135	0,257
Nikel	10	8902	54	0,105
	500	-	44	-
Silver	0	10500	360	0,057
	100	-	312	0,0572
	900	-	-	0,0676
Tin	0	7310	56	0,0536
	200	-	52	-
Zinc	0	7133	95	0,0918
	200	-	90	-

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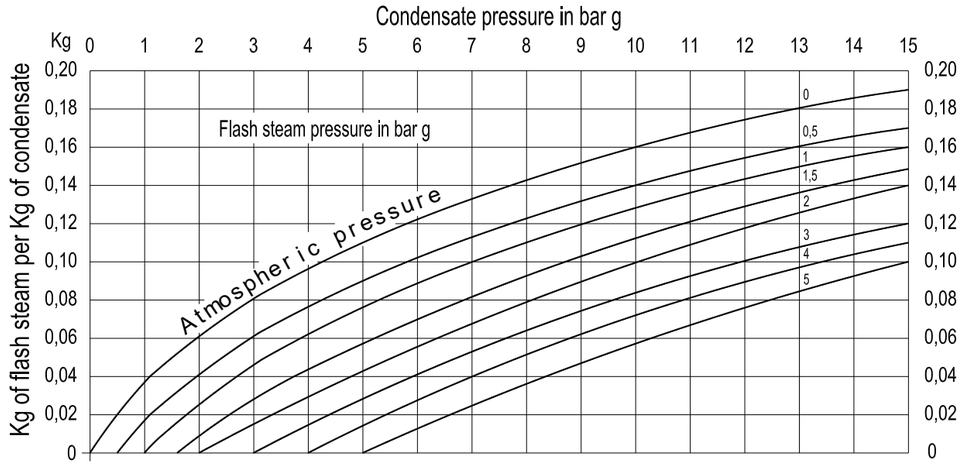
FLASH STEAM FROM BOILING CONDENSATE



VALSTEAM ADCA

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IS PV10.00 E 06.07

MAXIMUM PERMISSIBLE PRESSURE DROPS FOR ADCATROL CONTROL VALVES

GENERAL

This information sheet serves as a sizing and selection guide for ADCATrol actuators to be used with ADCATrol control valves. The specified values are an overview for the most common valve configurations.

- Leakage classes are according to IEC 60534-4.
- Specified pressure drops are based on parabolic and V-port guided plugs.
- "PTFE" specified pressure drops are applicable to valves assembled with V-Rings and O-Ring stem seals independently of the material.
- "GRAPH." specified pressure drops are applicable to valves assembled with graphite or bellow stem seals.
- In case of unmentioned conditions, other actuators and valve configurations, such as flow to open, balanced trim valves and others, consult the manufacturer.

PNEUMATIC ACTUATORS

- All permissible pressure drops are based on the specified operating ranges.
- Specified pressure drops for three way valves are valid for actuators with direction of action air to open and air to close.
- Operating ranges which differ from the spring range – bench range – specified on the actuator datasheet, are written in parentheses. This is the case when the valve and actuator have different rated strokes or when additional spring precompression has been applied to actuators with additional possible spring compression.

ELECTRIC ACTUATORS

- The specified values for fail safe actuator with spring return (AVF and ELR series) refer to spring closing forces and not to the motor torques.
- When selecting an electric actuator always observe if the operating speed meets the process requirements.

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ADCATROL V16/2 TWO-WAY GLOBE CONTROL VALVES (EN and ASME)

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
12	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	18,7	9,6	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	18,7	9,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	30	20,9	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	30	20,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
15	DN 15 to 32 1/2" to 11/4"	20	PA10 (100 cm²)	0,2 - 1	–	–	11,1	5,3	38,3	32,5	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	11,1	5,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	38,3	32,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	18,4	12,6	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	18,4	12,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1 (0,4 - 1,2)	38,3	32,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
19,2	DN 20 to 40 3/4" to 11/2"	20	PA10 (100 cm²)	0,2 - 1	–	–	6,1	2,5	22,6	19,1	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	6,1	2,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	22,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	10,5	6,9	33,7	30,1	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 – 1 (0,4 - 1,2)	10,5	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	33,7	30,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	22,6	19,1	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	22,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
19,2	DN 20 to 40 3/4" to 11/2"	20	PA281 (300 cm²)	0,2 - 1	–	–	28,2	24,6	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	28,2	24,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
25	DN 25 to 50 1" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	3	–	12,8	10,7	29,1	27	37,2	35,1	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	12,8	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	29,1	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	5,6	3,5	19,3	17,2	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	5,6	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	19,3	17,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	12,8	10,7	37,2	35,1	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	12,8	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	29,1	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	37,2	35,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	16	13,9	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	16	13,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	35,6	33,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
32	DN 32 to 50 11/4" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	1,4	0,1	7,3	6,1	17,3	16	22,3	21	27,2	26	37,2	35,9	40	40	6
				1 - 2	7,3	6,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	17,3	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	3	1,7	11,3	10,1	25,3	24	32,2	30,9	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	3	1,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	11,3	10,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	9,3	8,1	27,2	26	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	9,3	8,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	21,3	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	33,2	31,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
32	DN 32 to 65 11/4" to 21/2"	20	PA25 (250 cm²)	0,2 - 1	–	–	7,3	6,1	22,3	21	40	40	40	40	40	40	40	40	–	–	5
				0,2 – 1 (0,4 - 1,2)	7,3	6,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	17,3	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	22,3	21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 65 21/2"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	26,2	24,9	40	40	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	17,3	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	39,5	38,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
38	DN 40 to 50 11/2" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	–	–	4,9	4	12	11,1	15,5	14,6	19,1	18,1	26,1	25,2	33,2	32,3	6
				1 - 2	4,9	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	12	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	–	–	7,8	6,9	17,6	16,7	22,6	21,7	–	–	–	–	–	–	3,5
				1 - 3	7,8	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	6,4	5,5	19,1	18,1	40	39,3	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	6,4	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	14,8	13,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	23,3	22,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	31,7	30,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 40 to 80 11/2" to 3"	20	PA25 (250 cm²)	0,2 - 1	–	–	4,9	4	15,5	14,6	33,2	32,3	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	4,9	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	12	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	15,5	14,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	33,2	32,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	16,2	15,3	33,2	32,3	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	10,6	9,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	24,7	23,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	36	35,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
38	DN 65 to 80 21/2" to 3"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	18,3	17,4	37,1	36,2	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	12	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,9 - 2,1 (0,95 - 2)	27,7	26,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (1,3 - 2,1)	38,7	37,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
48	DN 50 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	–	–	2,8	2,3	7,2	6,7	9,5	8,9	11,7	11,1	16,1	15,5	20,5	19,9	6
				1 - 2	2,8	2,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	7,2	6,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	–	–	4,6	4	10,8	10,2	13,9	13,3	–	–	–	–	–	–	3,5
				1 - 3	4,6	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	3,7	3,1	11,7	11,1	24,9	24,4	31,6	31	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	3,7	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	9	8,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	14,3	13,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	19,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 50 to 100 2" to 4"	20	PA25 (250 cm²)	0,2 - 1	–	–	2,8	2,3	9,5	8,9	20,5	19,9	26	25,5	31,6	31	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	2,8	2,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	7,2	6,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	9,5	8,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	20,5	19,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
		20	PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	9,9	9,3	20,5	19,9	38,2	37,6	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	6,4	5,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	15,2	14,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	22,3	21,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 100 21/2" to 4"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	11,2	10,6	23	22,4	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	7,3	6,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	17,1	16,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	24	23,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	32,8	32,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
48	DN 65 to 100 21/2" to 4"	20	PA436 (700 cm²)	1 - 2 (1,35 - 2)	40	39,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,5 - 3 (2 - 3)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
65	DN 65 to 100 21/2" to 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	2,7	2,4	8,5	8,2	18,2	17,8	23	22,7	27,8	27,5	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	2,7	2,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	6,6	6,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	8,5	8,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	18,2	17,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
			PA341 (445 cm²)	0,2 - 1	–	–	3,2	2,9	9,6	9,3	(20,3)	(20)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	3,2	2,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	5,3	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	7,5	7,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	8,5	8,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	11,7	11,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	12,4	12,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	15,7	15,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	24,2	23,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	14,3	14	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	18,2	17,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	27,8	27,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
76	DN 80 to 100 3" to 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	1,9	1,6	6,1	5,9	13,2	12,9	16,7	16,5	20,2	20	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	1,9	1,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	4,7	4,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	6,1	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	13,2	12,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
76	DN 80 to 100 3" to 4"	30	PA341 (445 cm²)	0,2 - 1	–	–	2,2	2	6,9	6,7	(14,7)	(14,5)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	2,2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	3,8	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	5,3	5,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	6,1	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	8,5	8,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	8,9	8,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	11,4	11,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	17,6	17,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	10,3	10,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	13,2	12,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	20,2	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
96	DN 100 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	1	0,9	3,7	3,5	8,1	8	10,3	10,2	12,5	12,4	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	1	0,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	2,8	2,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	3,7	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,1	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
			PA341 (445 cm²)	0,2 - 1	–	–	–	–	4,2	4	(9,1)	(9)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,4	2,2	2,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	3,2	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	3,7	3,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	5,2	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	5,5	5,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	7	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	10,9	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	6,3	6,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	8,1	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	12,5	12,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
12	DN 15 to 25 1/2” to 1”	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
15	DN 15 to 32 1/2” to 11/4”	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
19,2	DN 20 to 40 3/4” to 11/2”	20	EL12 / ELR2.1	1,2	28,2	24,6
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
25	DN 25 to 50 1” to 2”	20	EL12 / ELR2.1	1,2	16	13,9
			EL20 / AVF234S	2	29,1	27
			ELR2.2 / AVM234S	2,5	37,2	35,1
			ELR2.3	2,8	40	40
			EL45	4,5	40	40
32	DN 32 to 50 11/4” to 2”	20	EL12	1,2	9,3	8,1
			AVF234S	2	17,3	16
			AVM234S	2,5	22,3	21
	DN 32 to 65 11/4” to 21/2”	20	EL20	2	17,3	16
			ELR2.1	1,2	9,3	8,1
			ELR2.2	2,5	22,3	21
			ELR2.3	2,8	25,3	24
			EL45	4,5	40	40
38	DN 40 to 50 11/2” to 2”	20	EL12	1,2	6,4	5,5
			AVF234S	2	12	11,1
			AVM234S	2,5	15,5	14,6
	DN 40 to 80 11/2” to 3”	20	EL20	2	12	11,1
			ELR2.1	1,2	6,4	5,5
			ELR2.2	2,5	15,5	14,6
			ELR2.3	2,8	17,6	16,7
			EL45	4,5	29,6	28,7
			EL80	8	40	40
48	DN 50 2”	20	EL12	1,2	3,7	3,1
			EL20 / AVF234S	2	7,2	6,7
			AVM234S	2,5	9,5	8,9
	DN 50 to 100 2” to 4”	20	ELR2.1	1,2	3,7	3,1
			ELR2.2	2,5	9,5	8,9
			ELR2.3	2,8	10,8	10,2
			EL45	4,5	18,3	17,7
			EL80	8	33,8	33,2

V16/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
65	DN 65 to 100 21/2” to 4”	30	EL20	2	3,7	3,4
			ELR2.2	2,3	4,4	4,1
			ELR2.3	2,6	5,1	4,8
			EL45	4,5	9,7	9,4
			EL80	8	18,2	17,8
			EL120	12	27,8	27,5
76	DN 80 to 100 3” to 4”	30	EL20	2	2,6	2,4
			ELR2.2	2,3	3,1	2,9
			ELR2.3	2,6	3,6	3,4
			EL45	4,5	7	6,8
			EL80	8	13,2	12,9
			EL120	12	20,2	20
96	DN 100 4”	30	EL20	2	1,5	1,3
			ELR2.2	2,3	1,8	1,7
			ELR2.3	2,6	2,1	2
			EL45	4,5	4,2	4,1
			EL80	8	8,1	8
			EL120	12	12,5	12,4

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
12	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	23,2	14,2	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	23,2	14,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	34,5	25,5	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	34,5	25,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
15	DN 15 to 32 1/2" to 11/4"	20	PA10 (100 cm²)	0,2 - 1	–	–	14,7	8,9	40	36,1	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	14,7	8,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	36,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	22	16,2	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	22	16,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1 (0,4 - 1,2)	40	36,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
19,2	DN 20 to 40 3/4" to 11/2"	20	PA10 (100 cm²)	0,2 - 1	–	–	8,9	5,3	25,5	21,9	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	8,9	5,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	25,5	21,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	13,3	9,8	36,5	33	40	40	40	40	–	–	–	–	–	-	3,5
				0,2 - 1 (0,4 - 1,2)	13,3	9,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	36,5	33	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	25,5	21,9	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	25,5	21,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	31	27,4	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	31	27,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
25	DN 25 to 50 1" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	5,2	3,1	14,9	12,8	31,2	29,1	39,4	37,3	40	40	40	40	40	40	6
				1 - 2	14,9	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	31,2	29,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	7,8	5,7	21,4	19,4	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	7,8	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	21,4	19,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	14,9	12,8	39,4	37,3	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	14,9	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	31,2	29,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	39,4	37,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	18,2	16,1	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	18,2	16,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	37,7	35,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
32	DN 32 to 50 11/4" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	3,1	1,8	9	7,8	19	17,7	24	22,7	28,9	27,7	38,9	37,6	40	40	6
				1 - 2	9	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	19	17,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	4,7	3,4	13	11,8	27	25,7	33,9	32,6	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	4,7	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	13	11,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	11	9,8	28,9	27,7	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	11	9,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	23	21,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	34,9	33,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 32 to 65 11/4" to 21/2"	20	PA25 (250 cm²)	0,2 - 1	–	–	24	22,7	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	9	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	19	17,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	24	22,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
32	DN 65 21/2”	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	27,9	26,6	40	40	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	19,0	17,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	40	39,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
38	DN 40 to 50 11/2” to 2”	20	PA10 (100 cm²)	0,2 - 1	–	–	–	–	6,4	5,5	13,4	12,5	17	16,1	20,5	19,6	27,5	26,6	34,6	33,7	6
				1 - 2	6,4	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	13,4	12,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	3,3	2,4	9,2	8,3	19,1	18,2	24	23,1	–	–	–	–	–	–	3,5
				1 - 3	9,2	8,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	7,8	6,9	20,5	19,6	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	7,8	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	16,3	15,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	24,7	23,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	33,2	32,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 40 to 80 11/2” to 3”	20	PA25 (250 cm²)	0,2 - 1	–	–	6,4	5,5	17	16,1	34,6	33,7	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	6,4	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	13,4	12,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	17	16,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	34,6	33,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	17,7	16,8	34,6	33,7	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	12,0	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	26,1	25,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	37,4	36,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 80 21/2” to 3”	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	19,7	18,8	38,6	37,7	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	13,4	12,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,9 - 2,1 (0,95 - 2)	29,1	28,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (1,3 - 2,1)	40	39,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
48	DN 50 2”	20	PA10 (100 cm²)	0,2 - 1	–	–	1,3	0,7	4	3,4	8,4	7,8	10,6	10	12,8	12,2	17,2	16,7	21,6	21,1	6
				1 - 2	4	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,4	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	2	1,4	5,7	5,2	11,9	11,3	15	14,4	–	–	–	–	–	–	3,5
				1 - 3	5,7	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	4,8	4,3	12,8	12,2	26,1	25,5	32,7	32,1	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	4,8	4,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	10,1	9,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	15,4	14,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	20,8	20,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 50 to 100 2” to 4”	20	PA25 (250 cm²)	0,2 - 1			4	3,4	10,6	10	21,6	21,1	27,2	26,6	32,7	32,1	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	4	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	8,4	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	10,6	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	21,6	21,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	11	10,5	21,6	21,1	39,3	38,8	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	7,5	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	16,3	15,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	23,4	22,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 100 21/2” to 4”	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	12,3	11,8	24,1	23,6	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	8,4	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	18,2	17,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	25,1	24,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	34,0	33,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
		20	PA436 (700 cm²)	1 - 2 (1,35 - 2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,5 - 3 (2 - 3)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
65	DN 65 to 100 21/2” to 4”	30	PA40 (400 cm²)	0,2 - 1	–	–	3,6	3,3	9,4	9	19	18,7	23,8	23,5	28,6	28,3	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	3,6	3,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	7,4	7,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	9,4	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	19	18,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
65	DN 65 to 100 21/2" to 4"	30	PA341 (445 cm²)	0,2 - 1	–	–	4	3,7	10,4	10,1	(21,2)	(20,9)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	4	3,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	6,1	5,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	8,3	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	9,4	9,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	12,6	12,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	13,2	12,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	16,6	16,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	25	24,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	15,1	14,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	19	18,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	28,6	28,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
76	DN 80 to 100 3" to 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	2,6	2,4	6,8	6,6	13,9	13,6	17,4	17,2	20,9	20,7	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	2,6	2,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	5,4	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	6,8	6,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	13,9	13,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
			PA341 (445 cm²)	0,2 - 1	–	–	2,9	2,7	7,6	7,4	(15,5)	(15,2)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	2,9	2,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	4,5	4,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	6	5,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	6,8	6,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	9,2	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	9,6	9,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	12,1	11,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	18,3	18,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	11,1	10,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	13,9	13,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	20,9	20,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
96	DN 100 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	1,6	1,5	4,3	4,1	8,7	8,5	10,9	10,7	13,1	13	–	–	–	–	4
				0,2 - 1 (0,4 - 1,2)	1,6	1,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	3,4	3,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2	4,3	4,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,7	8,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
			PA341 (445 cm²)	0,2 - 1	–	–	1,8	1,7	4,8	4,6	(9,7)	(9,5)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,4	2,8	2,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	3,8	3,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	4,3	4,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	5,7	5,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	6	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	7,6	7,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	11,4	11,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80 (800 cm²)	0,4 - 2 (0,8 - 2,4)	6,9	6,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	8,7	8,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	13,1	13	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V16/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
12	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
15	DN 15 to 32 1/2" to 11/4"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
19,2	DN 20 to 40 3/4" to 11/2"	20	EL12 / ELR2.1	1,2	30,5	26,9
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
25	DN 25 to 50 1" to 2"	20	EL12 / ELR2.1	1,2	17,8	15,7
			EL20 / AVF234S	2	30,8	28,8
			ELR2.2 / AVM234S	2,5	39	36,9
			ELR2.3	2,8	40	40
			EL45	4,5	40	40
32	DN 32 to 50 11/4" to 2"	20	EL12	1,2	10,7	9,5
			AVF234S	2	18,7	17,4
			AVM234S	2,5	23,7	22,4
	DN 32 to 65 11/4" to 21/2"	20	EL20	2	18,7	17,4
			ELR2.1	1,2	10,7	9,5
			ELR2.2	2,5	23,7	22,4
			ELR2.3	2,8	26,7	25,4
			EL45	4,5	40	40
38	DN 40 to 50 11/2" to 2"	20	EL12	1,2	7,5	6,6
			AVF234S	2	13,2	12,3
			AVM234S	2,5	16,7	15,8
	DN 40 to 80 11/2" to 3"	20	EL20	2	13,2	12,3
			ELR2.1	1,2	7,5	6,6
			ELR2.2	2,5	16,7	15,8
			ELR2.3	2,8	18,8	17,9
			EL45	4,5	30,8	29,9
			EL80	8	40	40
48	DN 50 2"	20	EL12	1,2	4,6	4,1
			EL20 / AVF234S	2	8,2	7,6
			AVM234S	2,5	10,4	9,8
	DN 50 to 100 2" to 4"	20	ELR2.1	1,2	4,6	4,1
			ELR2.2	2,5	10,4	9,8
			ELR2.3	2,8	11,7	11,1
			EL45	4,5	19,2	18,7
			EL80	8	34,7	34,1

V16/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
65	DN 65 to 100 21/2" to 4"	30	EL20	2	4,4	4,1
			ELR2.2	2,3	5,1	4,8
			ELR2.3	2,6	5,8	5,5
			EL45	4,5	10,4	10,1
			EL80	8	18,8	18,5
			EL120	12	28,5	28,2
76	DN 80 to 100 3" to 4"	30	EL20	2	3,2	2,9
			ELR2.2	2,3	3,7	3,5
			ELR2.3	2,6	4,2	4
			EL45	4,5	7,6	7,4
			EL80	8	13,7	13,5
			EL120	12	20,8	20,6
96	DN 100 4"	30	EL20	2	1,9	1,8
			ELR2.2	2,3	2,3	2,1
			ELR2.3	2,6	2,6	2,5
			EL45	4,5	4,7	4,6
			EL80	8	8,6	8,4
			EL120	12	13	12,9

ADCATROL V25/2 TWO-WAY GLOBE CONTROL VALVES (EN and ASME)

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
4	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
8	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	40	25,7	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	40	25,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
12	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	18,7	9,6	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	18,7	9,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	30	20,9	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	30	20,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
15	DN 15 to 32 1/2" to 11/4"	20	PA10 (100 cm²)	0,2 - 1	–	–	11,1	5,3	38,3	32,5	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	11,1	5,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	38,3	32,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	18,4	12,6	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	18,4	12,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	—	—	38,3	32,5	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	38,3	32,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
19,2	DN 20 to 40 3/4" to 11/2"	20	PA10 (100 cm²)	0,2 - 1	–	–	6,1	2,5	22,6	19,1	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	6,1	2,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	22,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	10,5	6,9	33,7	30,1	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	10,5	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	33,7	30,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	22,6	19,1	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	22,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	11,6	8	28,2	24,6	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	28,2	24,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
25	DN 25 to 50 1" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	3	0,9	12,8	10,7	29,1	27	37,2	35,1	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	12,8	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	29,1	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	5,6	3,5	19,3	17,2	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	5,6	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	19,3	17,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	12,8	10,7	37,2	35,1	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	12,8	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	29,1	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	37,2	35,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	16	13,9	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	16	13,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	35,6	33,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) – Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
32	DN 32 to 50 11/4" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	1,4	0,1	7,3	6,1	17,3	16	22,3	21	27,2	26	37,2	35,9	40	40	
				1 - 2	7,3	6,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	17,3	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	3	1,7	11,3	10,1	25,3	24	32,2	30,9	–	–	–	–	–	–	
				1 - 3	11,3	10,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	9,3	8,1	27,2	26	40	40	40	40	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	9,3	8,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	21,3	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,4	33,2	31,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 32 to 65 11/4" to 21/2"	20	PA25 (250 cm²)	0,2 - 1	–	–	7	5,1	22	20,1	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	7	5,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	17	15,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	22	20,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 65 21/2"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	25,9	24	40	40	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	17	15,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,95 - 2)	39,2	37,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
38	DN 40 to 50 11/2" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	–	–	4,9	4	12	11,1	15,5	14,6	19,1	18,1	26,1	25,2	33,2	32,3	
				1 - 2	4,9	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	12	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	1,8	0,9	7,8	6,9	17,6	16,7	22,6	21,7	–	–	–	–	–	–	
				1 - 3	7,8	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	6,4	5,5	19,1	18,1	40	39,3	40	40	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	6,4	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	14,8	13,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,4	23,3	22,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	31,7	30,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) – Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
38	DN 40 to 80 11/2" to 3"	20	PA25 (250 cm²)	0,2 - 1	–	–	4,7	3,4	15,3	14	32,9	31,6	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	4,7	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	11,8	10,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	15,3	14	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	32,9	31,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	16	14,7	32,9	31,6	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	10,4	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	24,5	23,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,35 - 2)	35,8	34,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 80 21/2" to 3"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	18,1	16,7	36,9	35,6	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	11,8	10,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,95 - 2)	27,5	26,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	38,5	37,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
48	DN 50 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	–	–	2,8	2,3	7,2	6,7	9,5	8,9	11,7	11,1	16,1	15,5	20,5	19,9	
				1 - 2	2,8	2,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	7,2	6,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	–	–	4,6	4	10,8	10,2	13,9	13,3	–	–	–	–	–	–	
				1 - 3	4,6	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	3,7	3,1	11,7	11,1	24,9	24,4	31,6	31	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	3,7	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	9	8,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,4	14,3	13,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	19,6	19,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 50 to 100 2" to 4"	20	PA25 (250 cm²)	0,2 - 1	–	–	2,7	1,8	9,3	8,5	20,4	19,5	25,9	25	31,4	30,6	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	2,7	1,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	7,1	6,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	9,3	8,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	20,4	19,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
48	DN 50 to 100 2" to 4"	20	PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	9,8	8,9	20,4	19,5	38,1	37,2	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	6,2	5,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	15,1	14,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	22,1	21,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 100 21/2" to 4"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	11,1	10,2	22,9	22	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	7,1	6,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	17	16,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	23,8	23	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	32,7	31,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1 (0,45 - 1)	12,2	11,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	27,7	26,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,35 - 2)	40	39,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3 (1,35 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2 - 3)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
65	DN 65 to 100 21/2" to 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	2,7	2,2	8,4	8	18,1	17,6	22,9	22,4	27,7	27,3	37,4	36,9	40	40	6
				0,2 - 1 (0,4 - 1,2)	2,7	2,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	6,5	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	8,4	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	18,1	17,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	3,1	2,6	9,5	9,1	(20,3)	(19,8)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	3,1	2,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	5,2	4,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	7,4	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	8,5	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	11,7	11,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
65	DN 65 to 100 21/2" to 4"	30	PA436 (700 cm²)	0,2 - 1	–	–	5,5	5,1	15,7	15,2	32,5	32,1	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	5,5	5,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	12,3	11,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	15,7	15,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	24,1	23,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	32,5	32,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 125 21/2" to 5"	30	PA80 (800 cm²)	0,2 - 1	–	–	6,5	6	18,1	17,6	37,4	36,9	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	6,5	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	14,2	13,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	18,1	17,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	27,7	27,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	37,4	36,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
76	DN 80 to 100 3" to 4"	30	PA40 (400 cm²)	0,2 - 1	–	–	1,8	1,5	6,1	5,7	13,1	12,8	16,6	16,3	20,2	19,8	27,2	26,9	34,3	33,9	6
				0,4 - 2 (0,8 - 2,4)	4,6	4,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	6,1	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	13,1	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	2,1	1,8	6,8	6,5	(14,7)	(14,4)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,4	3,7	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	5,3	4,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	6,1	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	8,4	8,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1	–	–	3,9	3,6	11,3	11	23,7	23,3	29,9	29,5	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	3,9	3,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	8,9	8,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	11,3	11	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	17,5	17,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	23,7	23,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 80 to 150 3" to 6"	30	PA80 (800 cm²)	0,2 - 1	–	–	4,6	4,3	13,1	12,8	27,2	26,9	34,3	33,9	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	4,6	4,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	10,3	9,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	13,1	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	20,2	19,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	27,2	26,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
96	DN 100 4”	30	PA40 (400 cm²)	0,2 - 1	–	–	1	0,8	3,7	3,4	8,1	7,9	10,3	10,1	12,5	12,3	16,9	16,7	21,3	21,1	
				0,4 - 2 (0,8 - 2,4)	2,8	2,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	3,7	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,1	7,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	1,2	1	4,2	3,9	(9,1)	(8,9)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,4	2,2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	3,2	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,9 - 2,1	3,7	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	5,1	4,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1	–	–	2,3	2,1	7	6,8	14,7	14,5	18,6	18,4	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	5,4	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1 - 2	7	6,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	10,8	10,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	14,7	14,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 100 to 200 4” to 8”	30	PA80 (800 cm²)	0,2 - 1	–	–	2,8	2,6	8,1	7,9	16,9	16,7	21,3	21,1	25,8	25,5	34,6	34,4	–	–	
				0,2 - 1 (0,4 - 1,2)	2,8	2,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				0,4 - 2 (0,8 - 2,4)	6,3	6,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	8,1	7,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	12,5	12,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	16,9	16,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	25,8	25,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
125	DN 125 to 200 5” to 8”	50	PA80 (800 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	2,5	2,3	5,6	5,4	10,9	10,7	13,5	13,3	16,1	15,9	21,3	21,1	26,5	26,3	
				0,4 - 2 (1,05 - 2,4)	4,9	4,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,15 - 2)	5,4	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1,5 - 3 (1,75 - 3)	8,5	8,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	11,6	11,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	5,6	5,4	11,9	11,7	22,3	22,1	27,6	27,3	–	–	–	–	–	–	
				0,2 - 1 (0,55 - 1,2)	5,1	4,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (1,05 - 2,4)	10,3	10,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,15 - 2)	11,4	11,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				1,5 - 3 (1,75 - 3)	17,6	17,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,35 - 4)	23,9	23,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
125	DN 200 8”	50	PA80T (2400 cm²)	0,4 - 2 (1,05 - 2,4)	15,8	15,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2 (1,15 - 2)	17,4	17,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3 (1,75 - 3)	26,8	26,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	36,2	35,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
150	DN 150 to 200 6” to 8”	50	PA80 (800 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	1,7	1,5	3,9	3,7	7,5	7,3	9,3	9,1	11,1	10,9	14,7	14,6	18,3	18,2	
				0,4 - 2 (1,05 - 2,4)	3,3	3,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,15 - 2)	3,7	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1,5 - 3 (1,75 - 3)	5,8	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	8	7,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	3,9	3,7	8,2	8,1	15,4	15,3	19,1	18,9	–	–	–	–	–	–	3,5
				0,4 - 2 (1,05 - 2,4)	7,1	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,15 - 2)	7,8	7,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				1,5 - 3 (1,75 - 3)	12,2	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,35 - 4)	16,5	16,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 200 8”	50	PA80T (2400 cm²)	0,4 - 2 (1,05 - 2,4)	10,9	10,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2 (1,15 - 2)	12	11,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3 (1,75 - 3)	18,5	18,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	25	24,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
200	DN 200 8”	60	PA80 (800 cm²)	0,2 - 1	–	–	0,5	0,4	1,7	1,6	3,7	3,6	4,7	4,7	5,8	5,7	7,8	7,7	9,8	9,7	6
				2 - 4	3,7	3,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1	–	–	1,3	1,2	3,7	3,6	7,8	7,7	9,8	9,7	11,9	11,8	15,9	15,9	20	19,9	
				0,4 - 2 (0,8 - 2,4)	2,9	2,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	3,7	3,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1,5 - 3	5,8	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	7,8	7,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80T (2400 cm²)	0,4 - 2 (0,8 - 2,4)	4,5	4,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	5,8	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3	8,8	8,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	11,9	11,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
4	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
8	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
12	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
15	DN 15 to 32 1/2" to 11/4"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
19,2	DN 20 to 40 3/4" to 11/2"	20	EL12 / ELR2.1	1,2	28,2	24,6
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
25	DN 25 to 50 1" to 2"	20	EL12 / ELR2.1	1,2	16	13,9
			EL20 / AVF234S	2	29,1	27
			ELR2.2 / AVM234S	2,5	37,2	35,1
			ELR2.3	2,8	40	40
			EL45	4,5	40	40
32	DN 32 to 50 11/4" to 2"	20	EL12 / ELR2.1	1,2	9,3	8,1
			ELR2.2	2,5	22	20,1
			ELR2.3	2,8	25	23
			AVF234S	2	17,3	16
			AVM234S	2,5	22,3	21
	DN 32 to 65 11/4" to 21/2"	20	EL20	2	17	15,1
			EL45	4,5	40	40
38	DN 40 to 50 11/2" to 2"	20	EL12	1,2	6,4	5,5
			ELR2.1	1,2	6,1	4,8
			ELR2.2	2,5	15,3	14
			ELR2.3	2,8	17,4	16,1
			AVF234S	2	12	11,1
			AVM234S	2,5	15,5	14,6
	DN 40 to 80 11/2" to 3"	20	EL20	2	11,8	10,4
			EL45	4,5	29,4	28,1
			EL80	8	40	40

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V25/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
48	DN 50 2"	20	EL12 / ELR2.1	1,2	3,6	2,7
			ELR2.2	2,5	9,3	8,5
			ELR2.3	2,8	10,6	9,8
			AVF234S	2	7,2	6,7
			AVM234S	2,5	9,5	8,9
	DN 50 to 100 2" to 4"	20	EL20	2	7,1	6,3
			EL45	4,5	18,2	17,3
			EL120	12	40	40
65	DN 65 to 100 21/2" to 4"	30	EL20	2	3,6	3,2
	DN 65 to 125 21/2" to 5"	30	EL45	4,5	9,6	9,2
			EL80	8	18,1	17,6
			EL120	12	27,7	27,3
			EL250	25	40	40
76	DN 80 to 150 3" to 6"	30	EL45	4,5	6,9	6,6
			EL80	8	13,1	12,8
			EL120	12	20,2	19,8
			EL250	25	40	40
96	DN 100 to DN 150 4" to 6"	30	EL45	4,5	4,2	4
	DN 100 to DN 200 4" to 8"	30	EL80	8	8,1	7,9
			EL120	12	12,5	12,3
			EL250	25	26,9	26,7
	DN 125 to DN 200 5" to 8"	50	PF-M50 (Mod. duty)	19	20,2	19,8
			PF-M50 (On/Off duty)	30,4	32,8	32,4
			PF-M100 (Mod. duty)	31	33,4	33,1
			PF-M100 (On/Off duty)	40	40	40
125	DN 125 to DN 150 5" to 6"	50	PF-M50 (Mod. duty)	19	11,8	11,6
	DN 125 to DN 200 5" to 8"	50	EL80	8	4,6	4,4
			EL120	12	7,2	7
			EL250	25	15,7	15,5
			PF-M50 (On/Off duty)	30,4	19,2	19
			PF-M100 (Mod. duty)	31	19,6	19,4
			PF-M100 (On/Off duty)	40	25,5	25,3
	DN 200 8"	50	PF-M100 (On/Off duty)	49,6	31,7	31,5
150	DN 150 to DN 200 6" to 8"	50	EL80	8	3,1	3
			EL120	12	4,9	4,8
			EL250	25	10,8	10,7
			PF-M50 (Mod. duty)	19	8,1	8
			PF-M50 (On/Off duty)	30,4	13,3	13,1
			PF-M100 (Mod. duty)	31	13,5	13,4
			PF-M100 (On/Off duty)	40	17,6	17,5
200	DN 200 8"	60	PF-M50 (Mod. duty)	19	4,5	4,4
			PF-M50 (On/Off duty)	30,4	7,4	7,3
			PF-M100 (Mod. duty)	31	7,5	7,5
			PF-M100 (On/Off duty)	49,6	12,3	12,2

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
4	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
8	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	40	32,5	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	40	32,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	40	40	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
12	DN 15 to 25 1/2" to 1"	20	PA10 (100 cm²)	0,2 - 1	–	–	23,2	14,2	40	40	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	23,2	14,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	34,5	25,5	40	40	40	40	40	40	–	–	–	–	–	-	3,5
				0,2 - 1 (0,4 - 1,2)	34,5	25,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
15	DN 15 to 32 1/2" to 11/4"	20	PA10 (100 cm²)	0,2 - 1	–	–	14,7	8,9	40	36,1	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	14,7	8,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	36,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	22	16,2	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	22	16,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	40	36,1	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	40	36,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
19,2	DN 20 to 40 3/4" to 11/2"	20	PA10 (100 cm²)	0,2 - 1	–	–	8,9	5,3	25,5	21,9	40	40	40	40	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	8,9	5,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	25,5	21,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	13,3	9,8	36,5	33	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	13,3	9,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	36,5	33	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	25,5	21,9	40	40	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	25,5	21,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	14,4	10,9	31	27,4	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	31	27,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
25	DN 25 to 50 1" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	5,2	3,1	14,9	12,8	31,2	29,1	39,4	37,3	40	40	40	40	40	40	6
				0,2 - 1 (0,4 - 1,2)	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	14,9	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	31,2	29,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	7,8	5,7	21,4	19,4	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	7,8	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 3	21,4	19,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA25 (250 cm²)	0,2 - 1	–	–	14,9	12,8	39,4	37,3	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	14,9	12,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				0,4 - 2 (0,8 - 2,4)	31,2	29,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	39,4	37,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA281 (300 cm²)	0,2 - 1	–	–	18,2	16,1	40	40	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	18,2	16,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	37,7	35,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) – Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
32	DN 32 to 50 11/4" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	3,1	1,8	9	7,8	19	17,7	24	22,7	28,9	27,7	38,9	37,6	40	40	
				1 - 2	9	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	19	17,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	4,7	3,4	13	11,8	27	25,7	33,9	32,6	–	–	–	–	–	–	
				1 - 3	13	11,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	11	9,8	28,9	27,7	40	40	40	40	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	11	9,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	23	21,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	34,9	33,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,6 - 3,2	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 32 to 65 11/4" to 21/2"	20	PA25 (250 cm²)	0,2 - 1	–	–	8,7	6,8	23,7	21,8	40	40	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	8,7	6,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	18,7	16,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	23,7	21,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 65 21/2"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	27,6	25,7	40	40	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	18,7	16,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,95 - 2)	40	38,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
38	DN 40 to 50 11/2" to 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	2,1	1,2	6,4	5,5	13,4	12,5	17	16,1	20,5	19,6	27,5	26,6	34,6	33,7	
				1 - 2	6,4	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	13,4	12,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	3,3	2,4	9,2	8,3	19,1	18,2	24	23,1	–	–	–	–	–	–	
				1 - 3	9,2	8,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	7,8	6,9	20,5	19,6	40	40	40	40	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	7,8	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	16,3	15,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	24,7	23,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,6 - 3,2	33,2	32,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) – Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6		
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
38	DN 40 to 80 11/2" to 3"	20	PA25 (250 cm²)	0,2 - 1	–	–	6,2	4,8	16,7	15,4	34,4	33	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	6,2	4,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	13,2	11,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	16,7	15,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	34,4	33	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	17,4	16,1	34,4	33	40	40	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	11,8	10,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	25,9	24,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,35 - 2)	37,2	35,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 80 21/2" to 3"	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	19,5	18,2	38,3	37,0	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	13,2	11,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,95 - 2)	28,9	27,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	39,9	38,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,2 - 2,8 (1,75 - 2,8)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
48	DN 50 2"	20	PA10 (100 cm²)	0,2 - 1	–	–	1,3	0,7	4	3,4	8,4	7,8	10,6	10	12,8	12,2	17,2	16,7	21,6	21,1	
				1 - 2	4	3,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	8,4	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA206 (140 cm²)	0,2 - 1	–	–	2	1,4	5,7	5,2	11,9	11,3	15	14,4	–	–	–	–	–	–	
				1 - 3	5,7	5,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
			PA281 (300 cm²)	0,2 - 1	–	–	4,8	4,3	12,8	12,2	26,1	25,5	32,7	32,1	–	–	–	–	–	–	
				0,2 - 1 (0,4 - 1,2)	4,8	4,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	10,1	9,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,4	15,4	14,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				1,6 - 3,2	20,8	20,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	DN 50 to 100 2" to 4"	20	PA25 (250 cm²)	0,2 - 1	–	–	3,8	3	10,5	9,6	21,5	20,7	27	26,2	32,6	31,7	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	3,8	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	8,2	7,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	10,5	9,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	21,5	20,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
48	DN 50 to 100 2” to 4”	20	PA40 (400 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	10,9	10	21,5	20,7	39,2	38,3	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,45 - 1)	7,4	6,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				0,4 - 2 (0,95 - 2)	16,2	15,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,35 - 2)	23,3	22,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,65 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 100 21/2” to 4”	20	PA341 (445 cm²)	0,2 - 1 (0,2 - 0,75)	–	–	12,2	11,3	24	23,1	(40)	(40)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,45 - 1)	8,3	7,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	18,1	17,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1 (1,3 - 2,1)	25	24,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8 (1,75 - 2,8)	33,8	33	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1 (0,45 - 1)	13,3	12,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,95 - 2)	28,8	27,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,35 - 2)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3 (1,35 - 2,4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2 - 3)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
65	DN 65 to 100 21/2” to 4”	30	PA40 (400 cm²)	0,2 - 1	–	–	3,5	3	9,3	8,8	18,9	18,5	23,7	23,3	28,6	28,1	38,2	37,7	40	40	6
				0,2 - 1 (0,4 - 1,2)	3,5	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	7,3	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	9,3	8,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	18,9	18,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	3,9	3,5	10,4	9,9	(21,1)	(20,6)	–	–	–	–	–	–	–	–	2,5
				0,2 - 1 (0,4 - 1,2)	3,9	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,6 - 1,4	6,1	5,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	8,2	7,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	9,3	8,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	12,5	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
65	DN 65 to 100 21/2” to 4”	30	PA436 (700 cm²)	0,2 - 1	–	–	6,4	5,9	16,5	16	33,4	32,9	40	40	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	6,4	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	13,1	12,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	16,5	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	24,9	24,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	33,4	32,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 65 to 125 21/2” to 5”	30	PA80 (800 cm²)	0,2 - 1	–	–	7,3	6,9	18,9	18,5	38,2	37,7	40	40	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	7,3	6,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	15,1	14,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	18,9	18,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	28,6	28,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	38,2	37,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
76	DN 65 to 100 21/2” to 4”	30	PA40 (400 cm²)	0,2 - 1	–	–	2,5	2,2	6,8	6,4	13,8	13,5	17,3	17	20,9	20,5	27,9	27,6	35	34,6	6
				0,4 - 2 (0,8 - 2,4)	5,4	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	6,8	6,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	13,8	13,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	2,9	2,5	7,6	7,2	(15,4)	(15,1)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,4	4,4	4,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	6	5,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	6,8	6,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	9,1	8,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1	–	–	4,7	4,3	12,1	11,7	24,4	24,1	30,6	30,2	–	–	–	–	–	–	3,5
				0,2 - 1 (0,4 - 1,2)	4,7	4,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	9,6	9,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	12,1	11,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	18,2	17,9															
				2 - 4	24,4	24,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 80 to 150 3” to 6”	30	PA80 (800 cm²)	0,2 - 1	–	–	5,4	5	13,8	13,5	27,9	27,6	35	34,6	40	40	40	40	–	–	5
				0,2 - 1 (0,4 - 1,2)	5,4	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	11	10,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	13,8	13,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	20,9	20,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	27,9	27,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	40	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – WITH PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
96	DN 100 4”	30	PA40 (400 cm²)	0,2 - 1	–	–	1,6	1,4	4,2	4	8,6	8,4	10,9	10,6	13,1	12,9	17,5	17,3	21,9	21,7	6
				0,4 - 2 (0,8 - 2,4)	3,3	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	4,2	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,6	8,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA341 (445 cm²)	0,2 - 1	–	–	1,8	1,6	4,7	4,5	(9,6)	(9,4)	–	–	–	–	–	–	–	–	2,5
				0,6 - 1,6 (0,6 - 1,4)	2,8	2,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	3,7	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,9 - 2,1	4,2	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,2 - 2,8	5,7	5,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA436 (700 cm²)	0,2 - 1	–	–	2,9	2,7	7,5	7,3	15,3	15,1	19,1	18,9	–	–	–	–	–	–	3,5
				0,4 - 2 (0,8 - 2,4)	6	5,8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	7,5	7,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	11,4	11,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	15,3	15,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 100 to 200 4” to 8”	30	PA80 (800 cm²)	0,2 - 1	–	–	3,3	3,1	8,6	8,4	17,5	17,3	21,9	21,7	26,3	26,1	35,2	35	–	–	5
				0,2 - 1 (0,4 - 1,2)	3,3	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (0,8 - 2,4)	6,9	6,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	8,6	8,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	13,1	12,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	17,5	17,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (3 - 4)	26,3	26,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
125	DN 125 to 200 5” to 8”	50	PA80 (800 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	3	2,7	6,1	5,9	11,3	11,1	13,9	13,7	16,5	16,3	21,7	21,5	26,9	26,7	6
				0,4 - 2 (1,05 - 2,4)	3,7	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,15 - 2)	5,8	5,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3 (1,75 - 3)	9	8,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	12,1	11,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	6,1	5,9	12,3	12,1	22,8	22,6	28	27,8	–	–	–	–	–	–	3,5
				0,2 - 1 (0,55 - 1,2)	5,6	5,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				0,4 - 2 (1,05 - 2,4)	10,8	10,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,15 - 2)	11,8	11,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				1,5 - 3 (1,75 - 3)	18,1	17,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,35 - 4)	24,3	24,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)														MAX. AIR SUPPLY (bar) a)
					AIR TO OPEN (stem extends by spring force)		AIR TO CLOSE (stem retracts by spring force) Air supply pressure (bar)												
							1,4		2		3		3,5		4		5		6	
					PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	PTFE	GRAPH.	
125	DN 200 4”	50	PA80T (2400 cm²)	0,4 - 2 (1,05 - 2,4)	16,3	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2 (1,15 - 2)	17,8	17,6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3 (1,75 - 3)	27,2	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4 (2,35 - 4)	36,6	36,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
150	DN 150 to 200 6” to 8”	50	PA80 (800 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	2	1,9	4,2	4,1	7,8	7,7	9,6	9,5	11,5	11,3	15,1	14,9	18,7	18,6	6
				0,4 - 2 (1,05 - 2,4)	3,7	3,5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2 (1,15 - 2)	4	3,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3 (1,75 - 3)	6,2	6,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4 (2,35 - 4)	8,4	8,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1 (0,2 - 0,8)	–	–	4,2	4,1	8,6	8,4	15,8	15,7	19,4	19,3	–	–	–	–	–	–	3,5
				0,4 - 2 (1,05 - 2,4)	7,5	7,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1 - 2 (1,15 - 2)	8,2	8,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
				1,5 - 3 (1,75 - 3)	12,5	12,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				2 - 4 (2,35 - 4)	16,9	16,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
	DN 200 8”	50	PA80T (2400 cm²)	0,4 - 2 (1,05 - 2,4)	11,3	11,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2 (1,15 - 2)	12,4	12,2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3 (1,75 - 3)	18,9	18,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4 (2,35 - 4)	25,4	25,3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
200	DN 200 8”	60	PA80 (800 cm²)	0,2 - 1	–	–	0,7	0,6	2	1,9	4	3,9	5	4,9	6	5,9	8,1	8	10,1	10	6
				2 - 4	4	3,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80D (1600 cm²)	0,2 - 1	–	–	1,5	1,5	4,0	3,9	8,1	8,0	10,1	10,0	12,1	12,1	16,2	16,1	20,3	20,2	6
				0,4 - 2 (0,8 - 2,4)	3,2	3,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1 - 2	4,0	3,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				2 - 4	8,1	8,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
				1,5 - 3	6,0	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
			PA80T (2400 cm²)	0,4 - 2 (0,8 - 2,4)	4,8	4,7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				1 - 2	6	5,9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
				1,5 - 3	9,1	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
				2 - 4	12,1	12,1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

a) Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 1 to 2 bar operating range requires a minimum of 2,2 bar air supply pressure.

V25/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
4	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
8	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
12	DN 15 to 25 1/2" to 1"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
15	DN 15 to 32 1/2" to 11/4"	20	EL12 / ELR2.1	1,2	40	40
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
19,2	DN 20 to 40 3/4" to 11/2"	20	EL12 / ELR2.1	1,2	30,5	26,9
			EL20 / AVF234S	2	40	40
			ELR2.2 / AVM234S	2,5	40	40
			ELR2.3	2,8	40	40
25	DN 25 to 50 1" to 2"	20	EL12 / ELR2.1	1,2	17,8	15,7
			EL20 / AVF234S	2	30,8	28,8
			ELR2.2 / AVM234S	2,5	39	36,9
			ELR2.3	2,8	40	40
			EL45	4,5	40	40
32	DN 32 to 50 11/4" to 2"	20	EL12 / ELR2.1	1,2	10,7	9,5
			ELR2.2	2,5	23,4	21,5
			ELR2.3	2,8	26,4	24,4
			AVF234S	2	18,7	17,4
			AVM234S	2,5	23,7	22,4
	DN 32 to 65 11/4" to 21/2"	20	EL20	2	18,4	16,5
			EL45	4,5	40	40
38	DN 40 to 50 11/2" to 2"	20	EL12	1,2	7,5	6,6
			ELR2.1	1,2	7,3	6
			ELR2.2	2,5	16,5	15,1
			ELR2.3	2,8	18,6	17,3
			AVF234S	2	13,2	12,3
			AVM234S	2,5	16,7	15,8
	DN 40 to 80 11/2" to 3"	20	EL20	2	13	11,6
			EL45	4,5	30,6	29,2
			EL80	8	40	40

V25/2 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, SOFT SEALING (CLASS VI)

SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
48	DN 50 2"	20	EL12 / ELR2.1	1,2	4,5	3,7
			ELR2.2	2,5	10,3	9,4
			ELR2.3	2,8	11,6	10,7
			AVF234S	2	8,2	7,6
			AVM234S	2,5	10,4	9,8
	DN 50 to 100 2" to 4"	20	EL20	2	8	7,2
			EL45	4,5	19,1	18,2
			EL120	12	40	40
65	DN 65 to 100 21/2" to 4"	30	EL20	2	4,3	3,8
	DN 65 to 125 21/2" to 5"	30	EL45	4,5	10,3	9,9
			EL80	8	18,8	18,3
			EL120	12	28,4	28
			EL250	25	40	40
76	DN 80 to 150 3" to 6"	30	EL45	4,5	7,5	7,2
			EL80	8	13,7	13,4
			EL120	12	20,7	20,4
			EL250	25	40	40
96	DN 100 to DN 150 4" to 6"	30	EL45	4,5	4,7	4,5
	DN 100 to DN 200 4" to 8"	30	EL80	8	8,5	8,3
			EL120	12	13	12,8
			EL250	25	27,3	27,1
	DN 125 to DN 200 5" to 8"	50	PF-M50 (Mod. duty)	19	20,6	20,3
			PF-M50 (On/Off duty)	30,4	33,2	32,9
			PF-M100 (Mod. duty)	31	33,9	33,6
			PF-M100 (On/Off duty)	40	40	40
125	DN 125 to DN 150 5" to 6"	50	PF-M50 (Mod. duty)	19	12,1	11,9
	DN 125 to DN 200 5" to 8"	50	EL80	8	5	4,8
			EL120	12	7,6	7,4
			EL250	25	16,1	15,9
			PF-M50 (On/Off duty)	30,4	19,6	19,4
			PF-M100 (Mod. duty)	31	20	19,8
			PF-M100 (On/Off duty)	40	25,8	25,6
	DN 200 8"	50	PF-M100 (On/Off duty)	49,6	32,1	31,9
150	DN 150 6"	50	EL80	8	3,4	3,3
			EL120	12	5,2	5,1
			EL250	25	11,1	11
	DN 150 to DN 200 6" to 8"	50	PF-M50 (Mod. duty)	19	8,4	8,3
			PF-M50 (On/Off duty)	30,4	13,6	13,4
			PF-M100 (Mod. duty)	31	13,8	13,7
			PF-M100 (On/Off duty)	40	17,9	17,8
200	DN 200 8"	60	PF-M50 (Mod. duty)	19	4,7	4,6
			PF-M50 (On/Off duty)	30,4	7,6	7,5
			PF-M100 (Mod. duty)	31	7,8	7,7
			PF-M100 (On/Off duty)	49,6	12,5	12,4
			PF-M100 (On/Off duty)	49,6	12,5	12,4

ADCATROL V253 THREE-WAY GLOBE CONTROL VALVES

V253 – PA SERIES PNEUMATIC ACTUATORS – MIXING OR DIVERTING, METAL TO METAL (CLASS IV)

SEAT Ø (mm) a)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)		MIN. AIR SUPPLY PRESSURE (bar)	MAX. AIR SUPPLY PRESSURE (bar)
					PTFE	GRAPHITE		
20 / 15	DN 15 to 20	20	PA206 (140 cm²)	0,2 - 1 (0,4 - 1,2)	9,5	6,3	1,6	3,5
			PA281 (300 cm²)	0,2 - 1 (0,4 - 1,2)	25	22,6	1,6	
				0,4 - 2 (0,8 - 2,4)	25	25	3,2	
25 / 20	DN 25	20	PA206 (140 cm²)	0,2 - 1 (0,4 - 1,2)	5,6	3,5	1,6	3,5
			PA281 (300 cm²)	0,2 - 1 (0,4 - 1,2)	16	13,9	1,6	
				0,4 - 2 (0,8 - 2,4)	25	25	3,2	
32 / 25	DN 32	20	PA206 (140 cm²)	0,2 - 1 (0,4 - 1,2)	3	1,7	1,6	3,5
			PA281 (300 cm²)	0,2 - 1 (0,4 - 1,2)	9,3	8,1	1,6	
				0,4 - 2 (0,8 - 2,4)	21,3	20	3,2	
			PA40 (400 cm²)	0,4 - 2 (0,95 - 2)	25	25	3	4
				1 - 2 (1,35 - 2)	25	25	3,4	
			PA341 (445 cm²)	0,4 - 2 (0,95 - 2)	25	25	3	3,5 **b)**
				0,9 - 2,1 (1,3 - 2,1)	25	25	3,4	
40 / 32	DN 40	20	PA206 (140 cm²)	0,2 - 1 (0,4 - 1,2)	1,6	0,8	1,6	3,5
			PA281 (300 cm²)	0,2 - 1 (0,4 - 1,2)	5,7	4,8	1,6	
				0,4 - 2 (0,8 - 2,4)	13,3	12,5	3,2	
			PA40 (400 cm²)	0,4 - 2 (0,95 - 2)	22,2	21,4	3	4
				1 - 2 (1,35 - 2)	25	25	3,4	
				1,5- 3 (2 - 3)	25	25	5	5
			PA341 (445 cm²)	0,4 - 2 (0,95 - 2)	24,9	24,1	3	3,5 **b)**
				0,9 - 2,1 (1,3 - 2,1)	25	25	3,4	
50 / 40	DN 50	20	PA281 (300 cm²)	0,2 - 1 (0,4 - 1,2)	3,4	2,8	1,6	3,5
				0,4 - 2 (0,8 - 2,4)	8,3	7,7	3,2	
			PA40 (400 cm²)	0,4 - 2 (0,95 - 2)	14	13,4	3	4
				1 - 2 (1,35 - 2)	20,5	20	3,4	
				1,5- 3 (2 - 3)	25	25	5	5
				2- 4 (2,3 - 3,65)	25	25	6	6
			PA341 (445 cm²)	0,4 - 2 (0,95 - 2)	15,7	15,2	3	3,5 **b)**
				0,9 - 2,1 (1,3 - 2,1)	22	21,5	3,4	

a) Upper and lower seat diameters respectively.
b) Only with directions of action "air to open".
Remark: Higher thrust actuators are available for valves with bellow sealing – consult the manufacturer.

V253 – PA SERIES PNEUMATIC ACTUATORS – MIXING OR DIVERTING, METAL TO METAL (CLASS IV)

SEAT Ø (mm) a)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)		MIN. AIR SUPPLY PRESSURE (bar)	MAX. AIR SUPPLY PRESSURE (bar)
					PTFE	GRAPHITE		
65 / 50	DN 65	30	PA40 (400 cm²)	0,4 - 2 (0,8 - 2,4)	6,6	6,3	3,2	4
				1 - 2	8,5	8,2	3	
				1,5- 3	13,3	13	4,5	5
				2- 4	18,2	17,8	6	6
			PA341 (445 cm²)	0,2 - 1 (0,4 - 1,2)	3,2	2,9	1,6	3,5 **b)**
				0,6 - 1,4	5,3	5	2	
				0,4 - 2 (0,8 - 2,4)	7,5	7,1	3,2	3,5
				0,9 - 2,1	8,5	8,2	3	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	12,4	12,1	3,2	3,5
				1 - 2	15,7	15,4	3	
80 / 65	DN 80	30	PA40 (400 cm²)	0,4 - 2 (0,8 - 2,4)	4,2	4,0	3,2	4
				1 - 2	5,5	5,3	3	
				1,5- 3	8,7	8,4	4,5	5
				2- 4	11,8	11,6	6	6
			PA341 (445 cm²)	0,2 - 1 (0,4 - 1,2)	1,9	1,7	1,6	3,5 **b)**
				0,6 - 1,4	3,4	3,1	2	3,5
				0,4 - 2 (0,8 - 2,4)	4,8	4,6	3,2	
				0,9 - 2,1	5,5	5,3	3	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	8	7,8	3,2	3,5
				1 - 2	10,2	10	3	
100 / 80	DN 100	30	PA40 (400 cm²)	0,4 - 2 (0,8 - 2,4)	2,6	2,4	3,2	4
				1 - 2	3,4	3,2	3	
				1,5- 3	5,4	5,3	4,5	5
				2- 4	7,4	7,3	6	6
			PA341 (445 cm²)	0,2 - 1 (0,4 - 1,2)	1,1	1	1,6	3,5 **b)**
				0,6 - 1,4	2	1,9	2	
				0,4 - 2 (0,8 - 2,4)	2,9	2,8	3,2	3,5
				0,9 - 2,1	3,4	3,2	3	
			PA436 (700 cm²)	0,4 - 2 (0,8 - 2,4)	5	4,9	3,2	3,5
				1 - 2	6,4	6,3	3	

a) Upper and lower seat diameters respectively.
b) Limited to 2,5 bar in case of direction of action "air to close".
Remark: Higher thrust actuators are available for valves with bellow sealing – consult the manufacturer.

V253 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)						
SEAT Ø (mm) a)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
20 / 15	DN 15 to 20	20	EL12 / ELR2.1	1,2	25	22,6
			EL20	2	25	25
			ELR2.2	2,5	25	25
			ELR2.3	2,8	25	25
25 / 20	DN 25	20	EL12 / ELR2.1	1,2	16	13,9
			EL20	2	25	25
			ELR2.2	2,5	25	25
			ELR2.3	2,8	25	25
32 / 25	DN 32	20	EL12 / ELR2.1	1,2	9,3	8,1
			EL20	2	17,3	16
			ELR2.2	2,5	22,3	21
			ELR2.3	2,8	25	24
			EL45	4,5	25	25
40 / 32	DN 40	20	EL12 / ELR2.1	1,2	5,7	4,8
			EL20	2	10,7	9,9
			ELR2.2	2,5	13,9	13,1
			ELR2.3	2,8	15,8	15
			EL45	4,5	25	25
50 / 40	DN 50	20	EL12	1,2	3,4	2,8
			EL20	2	6,6	6,1
			ELR2.1	1,2	3,4	2,8
			ELR2.2	2,5	8,7	8,1
			ELR2.3	2,8	9,9	9,4
			EL45	4,5	16,8	16,3
			EL80	8	25	25
65 / 50	DN 65	20	EL20	2	3,7	3,4
			ELR2.2	2,5	4,9	4,6
			ELR2.3	2,8	5,6	5,3
			EL45	4,5	9,7	9,4
			EL80	8	18,2	17,8
			EL120	12	25	25
80 / 65	DN 80	20	ELR2.2	2,5	3,1	2,9
			ELR2.3	2,8	3,6	3,4
			EL45	4,5	6,3	6,1
			EL80	8	11,8	11,6
			EL120	12	18,2	18
100 / 80	DN 100	30	EL45	4,5	3,9	3,8
			EL80	8	7,4	7,3
			EL120	12	11,5	11,4
100 / 100	DN 125 (DIVERTING)	35	EL45	4,5	3,9	3,8
			EL80	8	7,4	7,3
			EL120	12	11,5	11,4

a) Upper and lower seat diameters respectively.

V253 – EL, ELR AND AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL (CLASS IV)						
SEAT Ø (mm) a)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)	
					PTFE	GRAPHITE
125 / 120	DN 125 (MIXING)	35	EL45	4,5	2,4	2,3
			EL80	8	4,7	4,6
			EL120	12	7,3	7,2
120 / 120	DN 150 (DIVERTING)	40	EL45	4,5	2,6	2,5
			EL80	8	5,1	5
			EL120	12	7,9	7,8
150 / 140	DN 150 (MIXING)	40	EL45	4,5	1,6	1,5
			EL80	8	3,2	3,1
			EL120	12	5	4,9

a) Upper and lower seat diameters respectively.

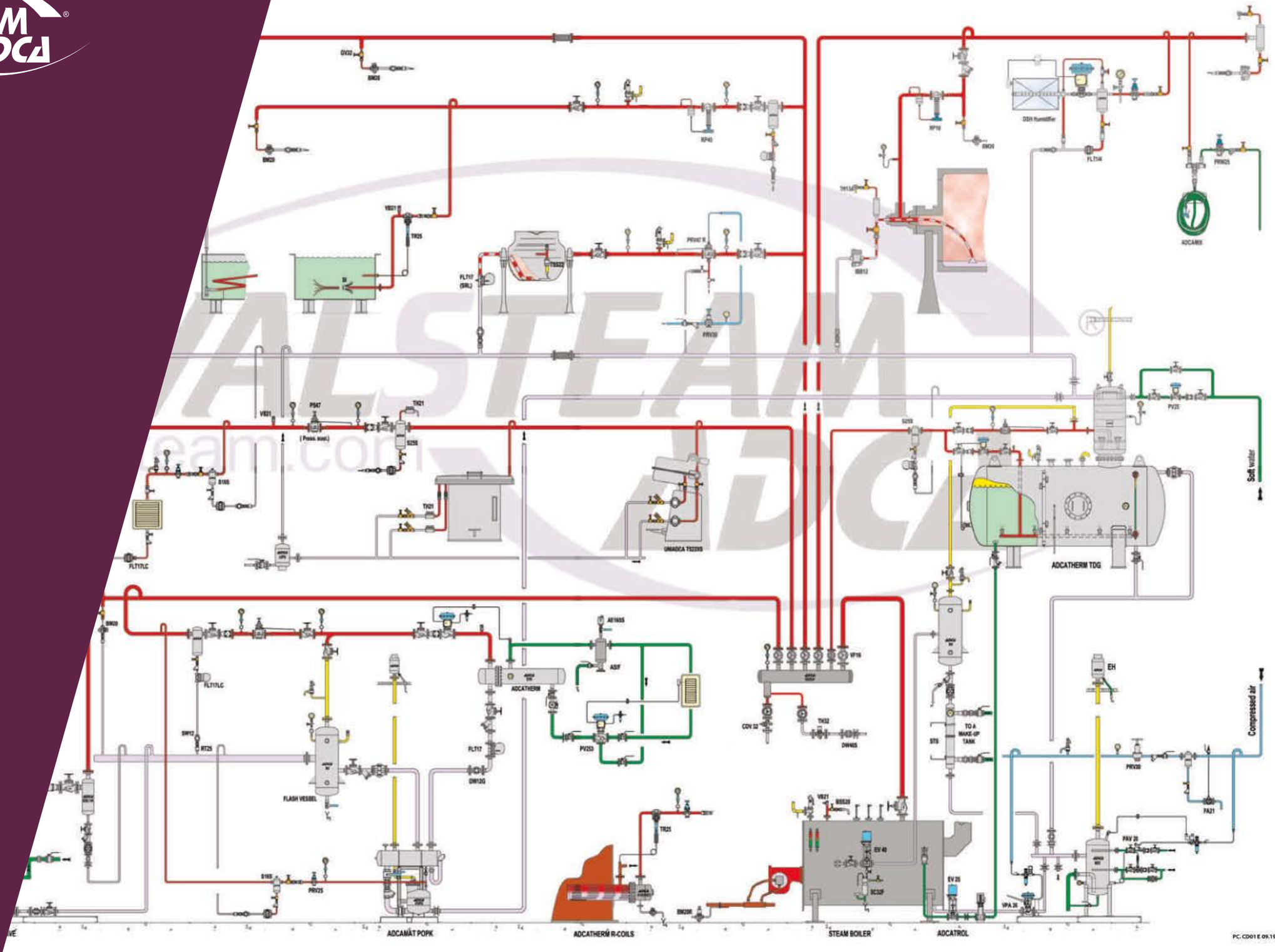
ADCATROL VPC26 TDS BLOWDOWN CONTROL VALVES (EN and ASME)

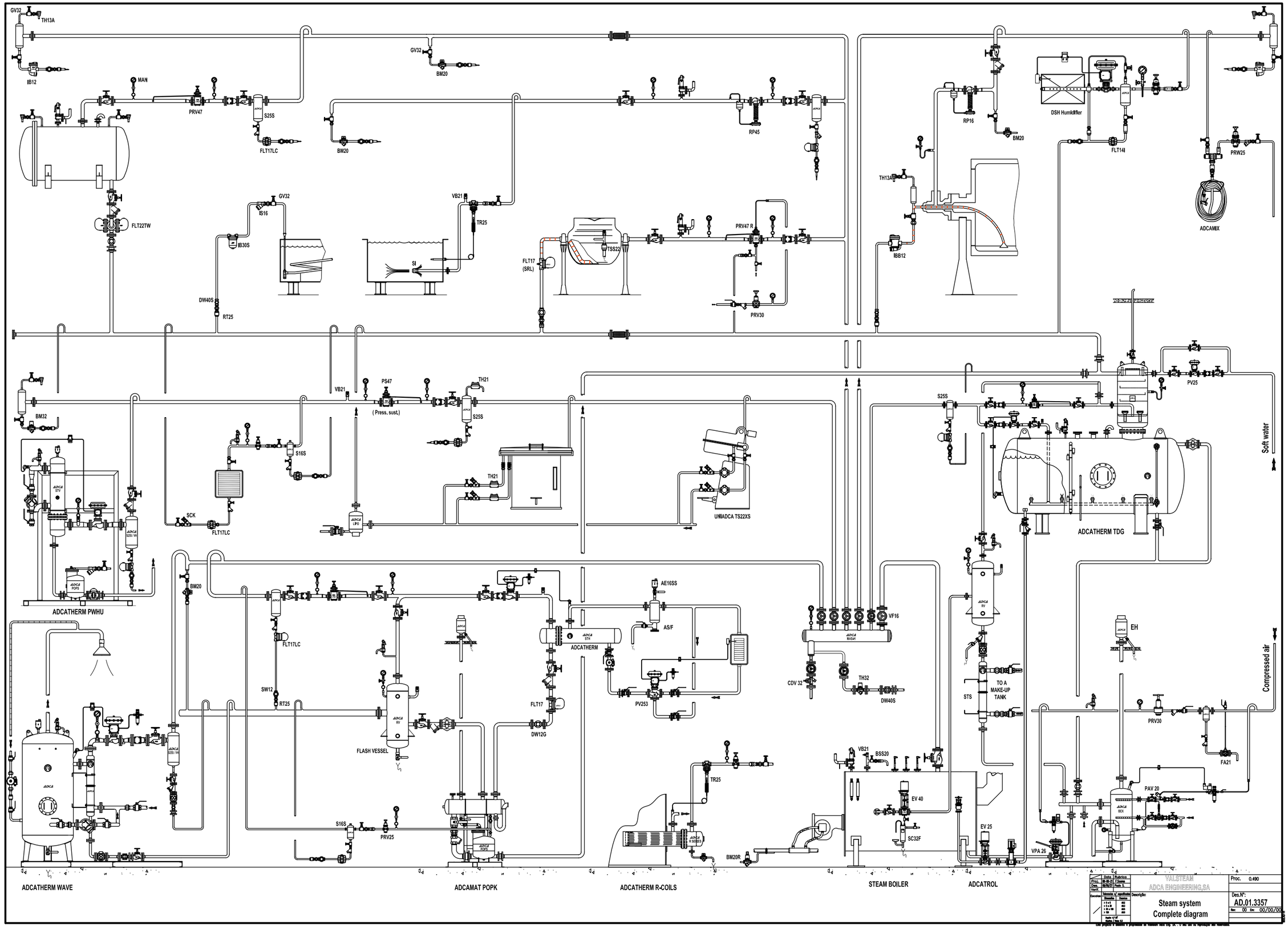
VPC26 – PA SERIES PNEUMATIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL						
SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	SPRING RANGE (bar)	MAX. PERMISSIBLE PRESSURE DROP (bar)	MAX. AIR SUPPLY PRESSURE (bar) a)
					AIR TO OPEN (stem extends by spring force)	
					PTFE	
10	DN 15 to DN 25 1/2" to 1"	6	PA10 (100 cm²)	2 - 4 (2 - 2,6)	40	6
			PA206 (140 cm²)	1 - 3 (1 - 1,6)	40	3,5
12	DN 40 11/2"	8	PA10 (100 cm²)	2 - 4 (2 - 2,6)	40	6
			PA206 (140 cm²)	1 - 3 (1 - 1,6)	40	3,5

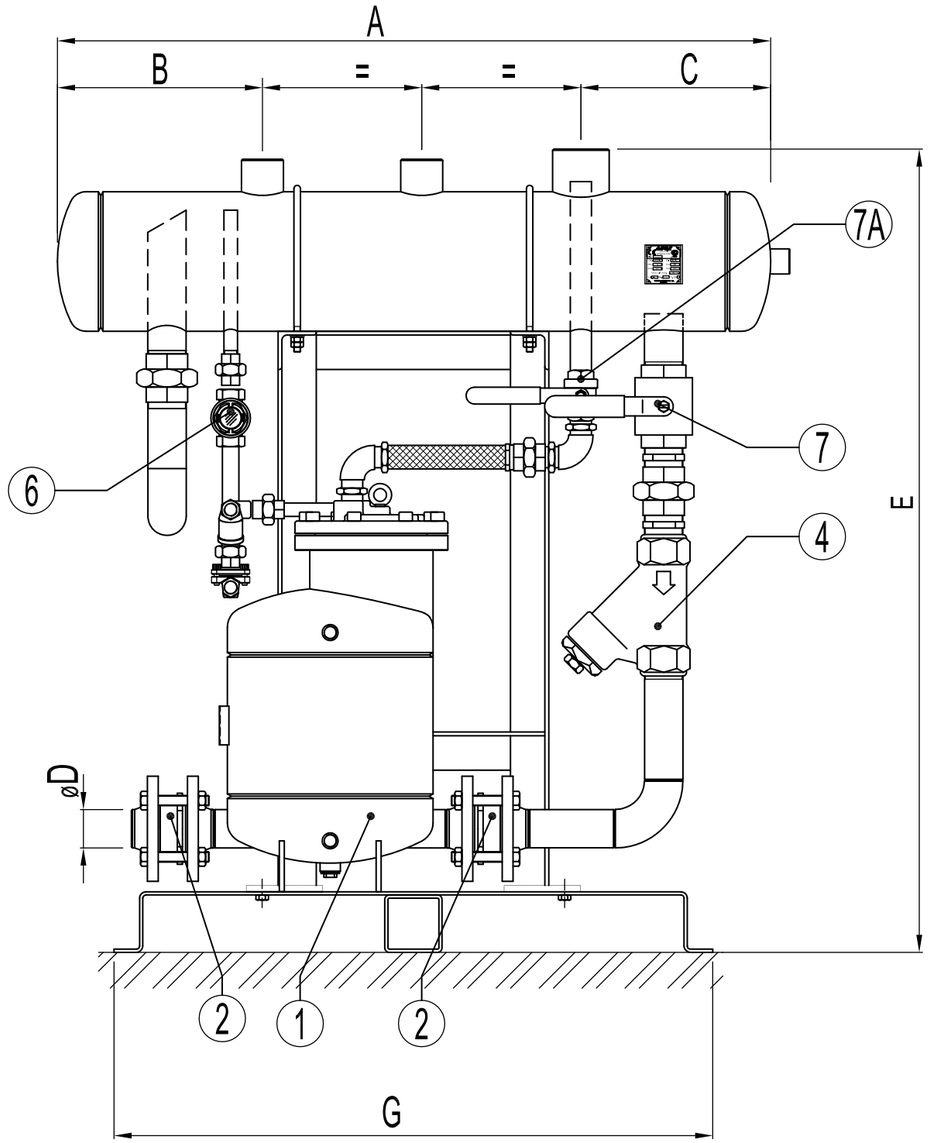
Minimum required air supply pressure = Upper operating range value + 0,2 bar. Example: an actuator with 2 to 2,6 bar operating range requires a minimum of 2,8 bar air supply pressure.

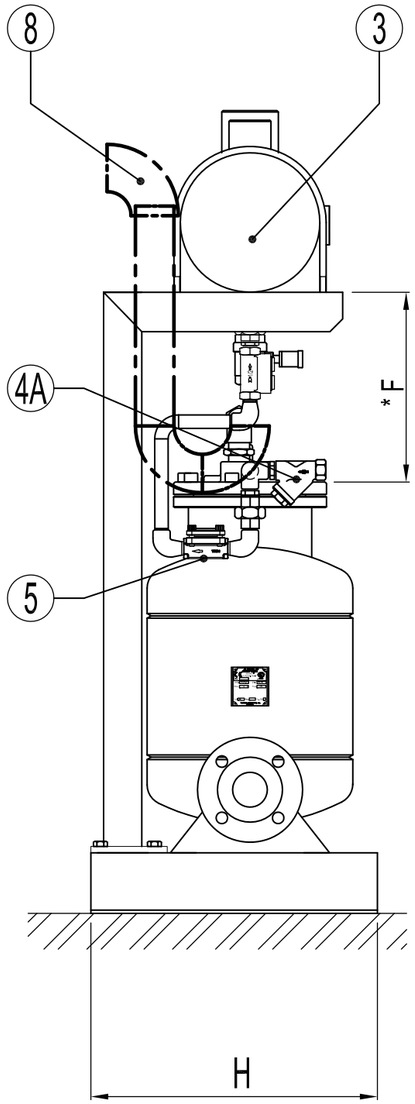
VPC26 – AV SERIES ELECTRIC ACTUATORS – FTO, UNBALANCED TRIM, METAL TO METAL					
SEAT Ø (mm)	VALVE SIZE	STROKE (mm)	ACTUATOR MODEL	CLOSING FORCE (kN)	MAX. PERMISSIBLE PRESSURE DROP (bar)
					PTFE
10	DN 15 to DN 25 1/2" to 1"	6	AVF234S	2	40
12	DN 40 11/2"	8	AVF234S	2	40

VALSTEAM ADCA
valsteam.com



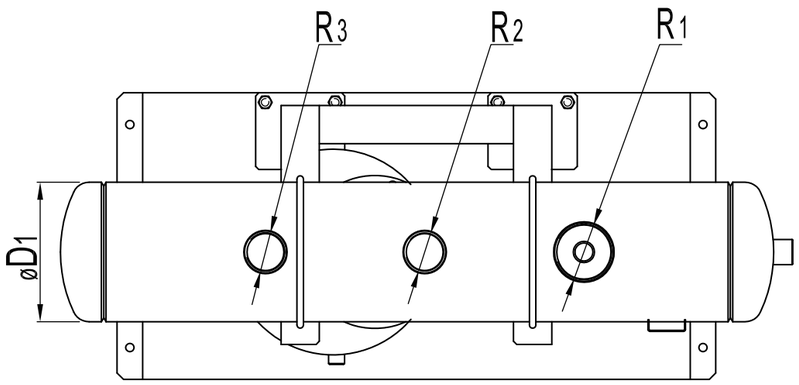

GV32
TH13A
IB12
MAN
PRV47
S25S
FLT17LC
BM20
GV32
BM20
RP45
FLT22TW
GV32
IS16
IB30S
DW40S
RT25
VB21
TR25
SI
FLT17
(SRL)
TSS22
PRV47 R
PRV30
RP16
BM20
DSH Humidifier
FLT14I
PRW25
ADCAMIX
TH13A
IBB12
BM32
VB21
PS47
(Press. sust.)
TH21
S25S
S16S
SCK
FLT17LC
TH21
UNIADCA TS22XS
S25S
PV25
Soft water
ADCATHERM PWHU
BM20
FLT17LC
SW12
RT25
FLASH VESSEL
ADCATHERM
AE16SS
AS/F
PV253
FLT17
DW12G
S16S
PRV25
VF16
CDV 32
TH32
DW40S
ADCATHERM TDG
TO A
MAKE-UP
TANK
STS
EH
Compressed air
PRV30
FA21
PAV 20
TR25
BM20R
VB21
BSS20
EV 40
SC32F
EV 25
VPA 26
ADCATHERM WAVE
ADCAMAT POPK
ADCATHERM R-COILS
STEAM BOILER
ADCATROL
Data
Proj.: 08-08-01 F.Soares
Des. 08/09/01 Paula S.
Verif.
Revisão
Alteração
Desenho
Verificação
Data
Rubrica
VALSTEAM
ADCA ENGINEERING,SA
Proc. 0.490
Descrição:
Steam system
Complete diagram
Des.Nº:
AD.01.3357
Rev 00 Em: 00/00/00





Nr.	Designation	Ref./DN	QTY	✓
1	ADCA POPS pressure operate pump		1	
2	ADCA RD40 Check valve		1	
3	Receiver		1	
4	ADCA IS16 Y strainer		1	
4A	ADCA IS16 Y strainer		1	
5	ADCA TH21 Thermostatic steam trap		1	
6	ADCA SW12 Sigh glass		1	
7	Ball valve		1	
7A	Ball valve		1	
8	Overflow		1	

DIMENSIONS (mm)	
A	
B	
C	
øD	
øD1	
E	
F	* Min. 300mm
G	
H	
R_1	
R_2	
R_3	



	Data	Rubrica
Proj.	05/03/15	F.Soares
Des.	05/03/15	Paulo S.
Rect.		

Escalas: /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
ADCAMAT PUMP POPS-K
Packeged vented system
(Steam operated)

Des.N°:
ADPOPK50.06.1840
Rev: 00 Em: 00/00/00

Mod.A3-H

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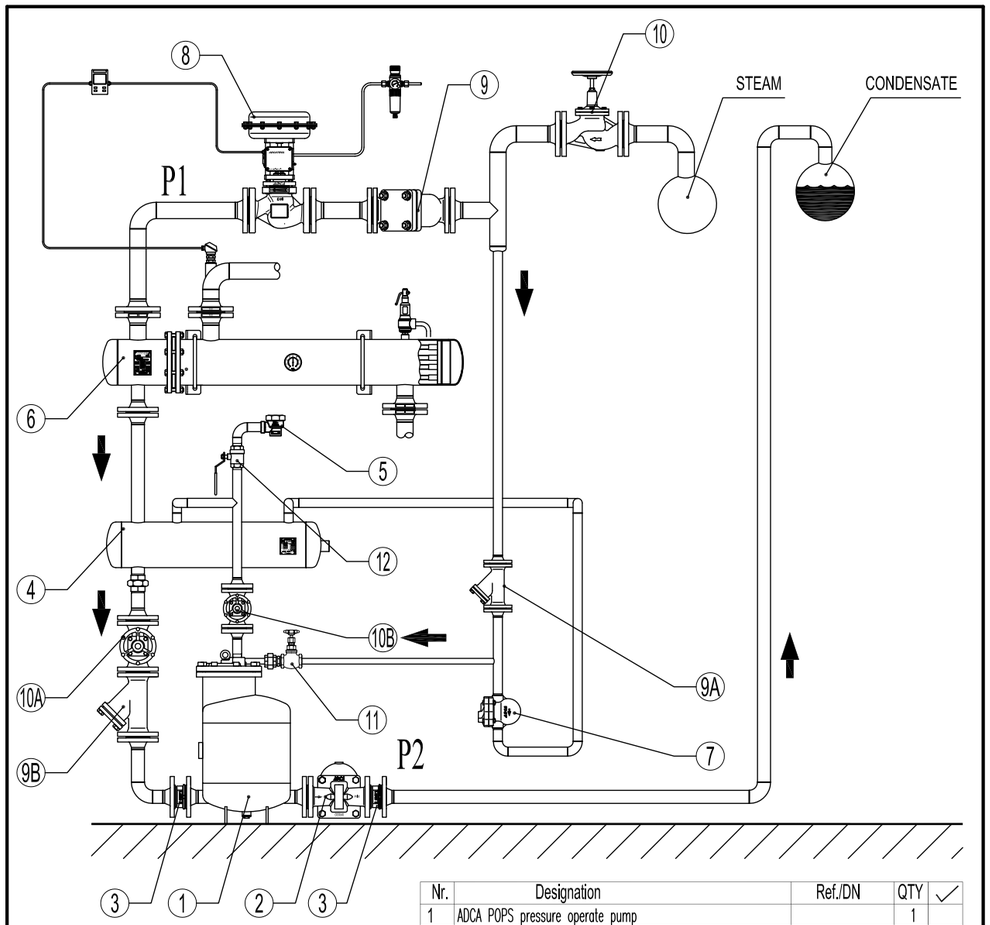

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA POPS pressure operate pump		1	
2	ADCA FLT17 Float & thermostatic steam trap		1	
3	ADCA RD40 Check valve		1	
4	Receiver		1	
5	ADCA TH13A Thermostatic steam trap and air eliminator		1	
6	ADCATHERM STH Heat exchanger		1	
7	ADCA FLT17LC/FLT16 Float & thermostatic steam trap		1	
8	ADCATROL PV16/PV25 Two way control valve with linear actuator		1	
9	ADCA IS16F Y strainer		1	
9A	ADCA IS16F Y strainer		1	
9B	ADCA IS16F Y strainer		1	
10	ADCA VF16 Globe valve		1	
10A	ADCA VF16 Globe valve		1	
10B	ADCA VF16 Globe valve		1	
11	ADCA GB32B Globe valve		1	
12	Ball valve		1	

	Data	Rubrica
Proj.	09/12/11	F.Soares
Des.	09/12/11	Paulo S.
Verif.		

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escalas 1/20

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

Descrição:
ADCAMAT PUMP-CLOSED LOOP
Arrangement with steam trap
(Steam operated only)
P2 Pressure does not always exceed P1

Des.Nº:
ADPOPS.01.4058
Rev: 00 Em: 00/00/00

Mod.A4-V

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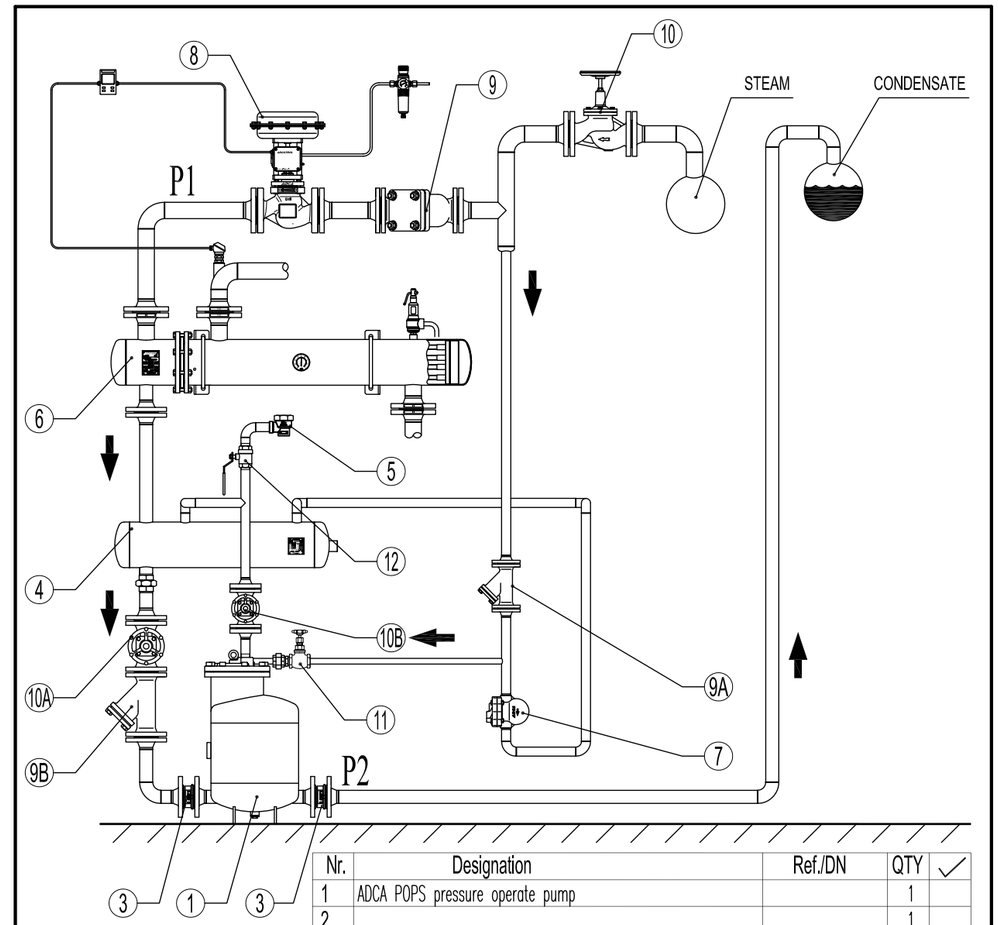

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA POPS pressure operate pump		1	
2			1	
3	ADCA RD40 Check valve		1	
4	Receiver		1	
5	ADCA TH13A Thermostatic steam trap and air eliminator		1	
6	ADCATHERM STH Heat exchanger		1	
7	ADCA FLT17LC/FLT16 Float & thermostatic steam trap		1	
8	ADCATROL PV16/PV25 Two way control valve with linear actuator		1	
9	ADCA IS16F Y strainer		1	
9A	ADCA IS16F Y strainer		1	
9B	ADCA IS16F Y strainer		1	
10	ADCA VF16 Globe valve		1	
10A	ADCA VF16 Globe valve		1	
10B	ADCA VF16 Globe valve		1	
11	ADCA GB32B Globe valve		1	
12	Ball valve		1	

	Data	Rubrica
Proj.	09/12/11	F.Soares
Des.	09/12/11	Paulo S.
Verif.		

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escalas 1/20

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

Descrição:
ADCAMAT PUMP-CLOSED LOOP
Arrangement without steam trap
P2 Pressure is always higher than P1

Des.Nº:
ADPOPS.02.4059
Rev: 00 Em: 00/00/00

Mod.A4-V

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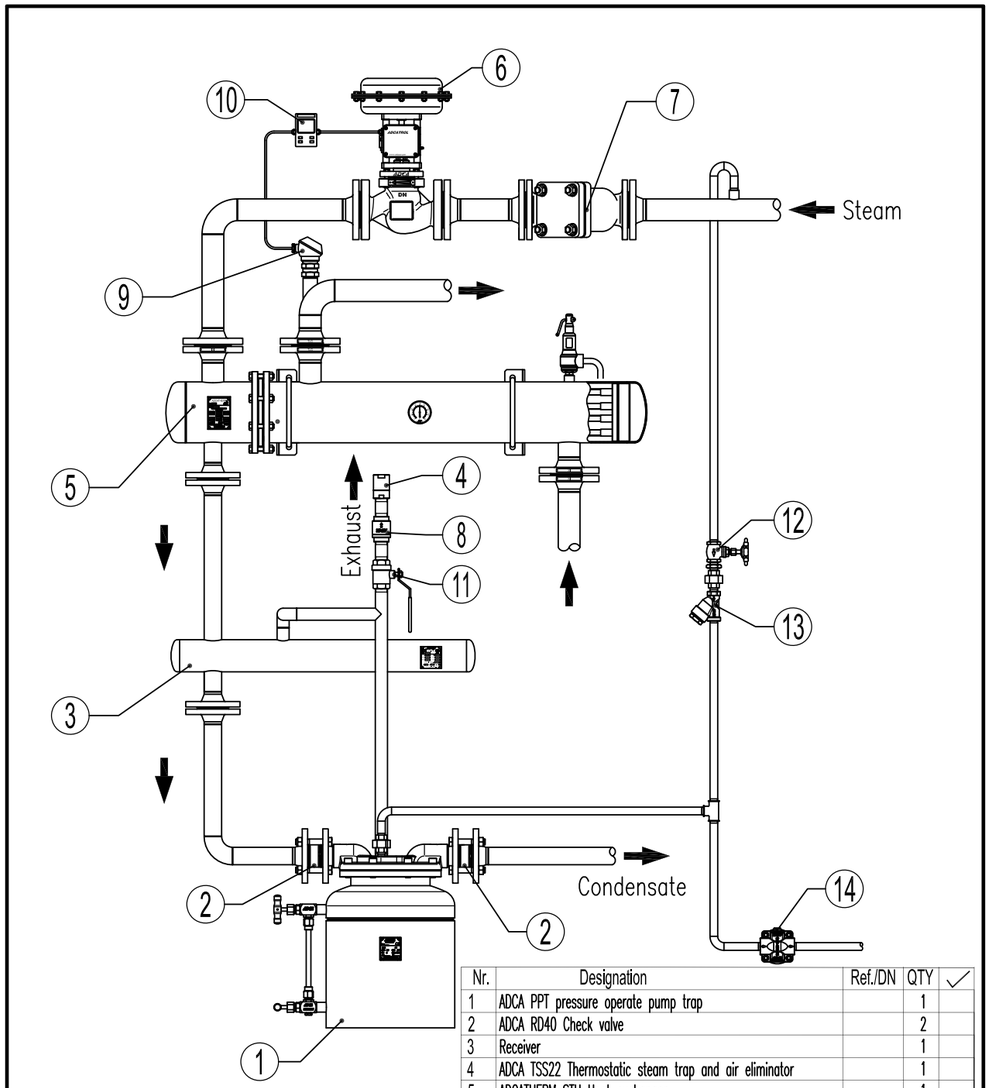

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA PPT pressure operate pump trap		1	
2	ADCA RD40 Check valve		2	
3	Receiver		1	
4	ADCA TSS22 Thermostatic steam trap and air eliminator		1	
5	ADCATHERM STH Heat exchanger		1	
6	ADCATROL PV16/PV25 Two way control valve with linear actuator		1	
7	ADCA IS16F Y strainer		1	
8	ADCA RT25 Check valve		1	
9	PT100 Temperature probe		1	
10	Temperature controler		1	
11	Ball valve		1	
12	ADCA GV32B Globe valve		1	
13	ADCA IS140 Y strainer		1	
14	ADCA FLT17LC Float & thermostatic steam trap		1	

	Data	Rubrica
Proj.	13/05/30	F.Soares
Des.	13/05/30	Nuno M.
Verif.		

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escalas 1/15

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

Descrição:
ADCAMAT PUMP TRAP PPT
(Steam operated only)

Des.Nº:
ADPPT.01.5433
Rev: 00 Em: 13/05/30

Mod.A4-V

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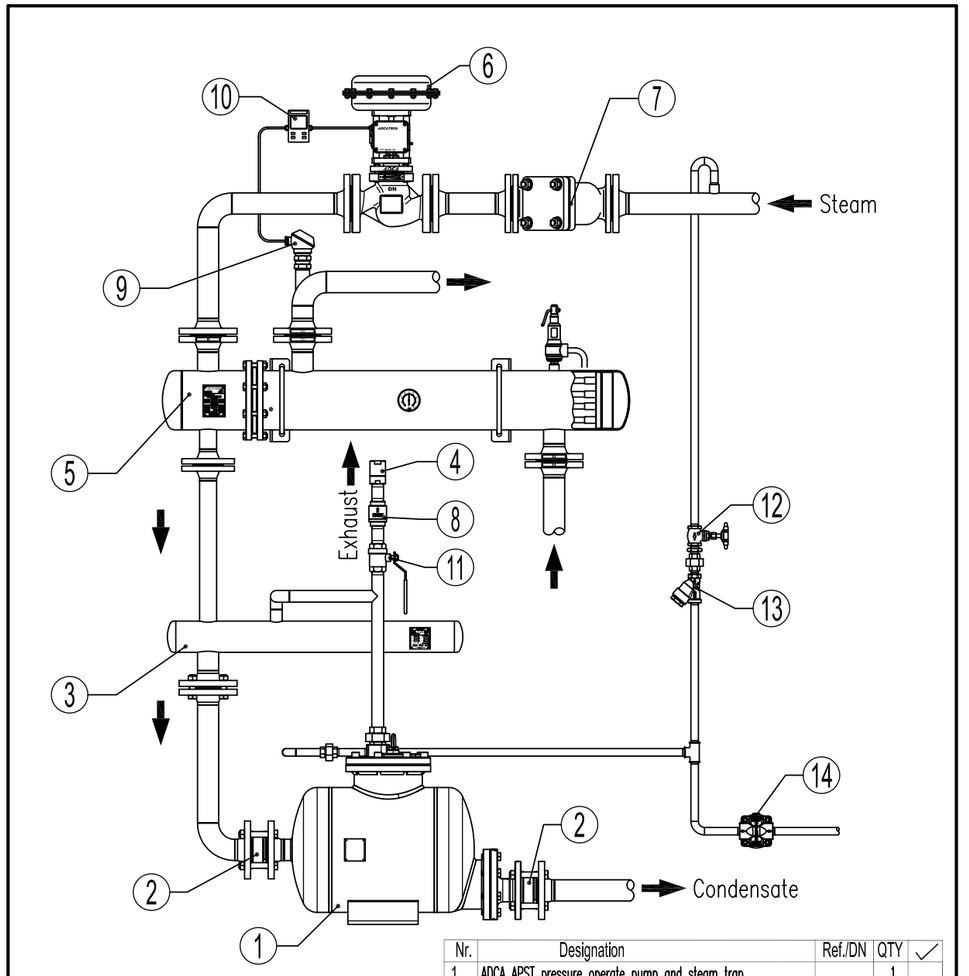

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA APST pressure operate pump and steam trap		1	
2	ADCA RD40 Check valve		2	
3	Receiver		1	
4	ADCA TSS22 Thermostatic steam trap and air eliminator		1	
5	ADCATHERM STH Heat exchanger		1	
6	ADCATROL PV16/PV25 Two way control valve with linear actuator		1	
7	ADCA IS16F Y strainer		1	
8	ADCA RT25 Check valve		1	
9	PT100 Temperature probe		1	
10	Temperature controler		1	
11	Ball valve		1	
12	ADCA GV32B Globe valve		1	
13	ADCA IS140 Y strainer		1	
14	ADCA FLT17LC Float & thermostatic steam trap		1	

	Data	Rubrica
Proj.	15/12/29	F.Soares
Des.	15/12/29	Nuno M.
Verif.		

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escalas 1/15

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

Descrição:
ADCAMAT PUMP AND STEAM TRAP APST
(Steam operated only)

Des.Nº:
ADAPST.02.8405
Rev: 00 Em: 15/12/29

Mod.A4-V

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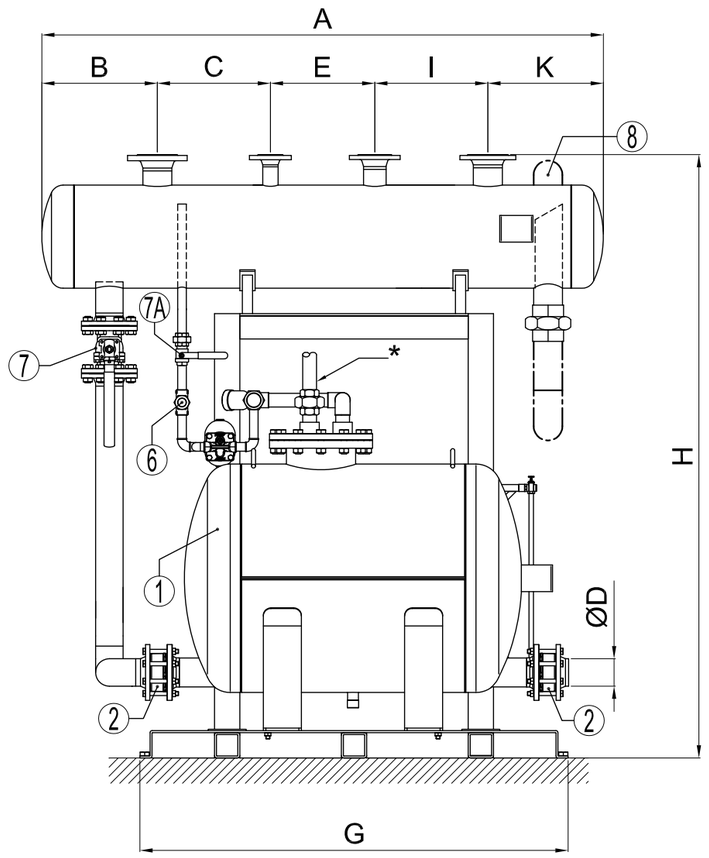

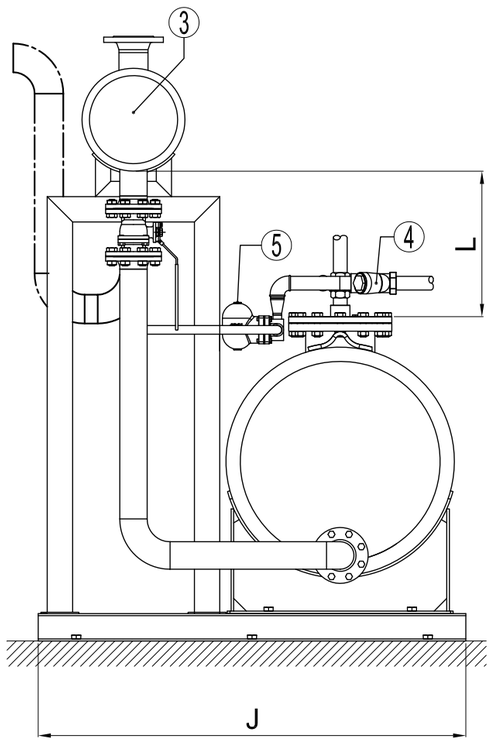

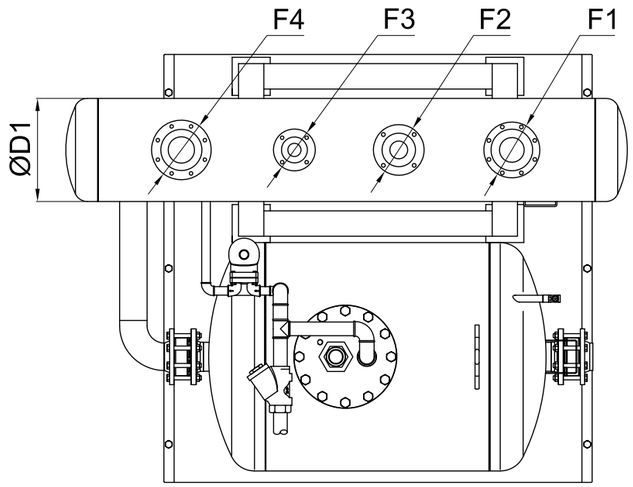

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA POPS pressure operate pump		1	
2	ADCA RD40 Check valve		2	
3	Receiver		1	
4	ADCA IS140 Y strainer		1	
5	ADCA FLT17 Float & thermostatic steam trap		1	
6	ADCA DW40S Sigh glass		1	
7	Ball valve		1	
7A	Ball valve		1	
8	Overflow		1	

DIMENSIONS (mm)	
A	
B	
C	
øD	
øD1	
E	
F1	
F2	
F3	
F4	
G	
H	
I	
J	
K	
L	* Min. 570mm

	Data	Rubrica
Proj.	11/03/14	F.Soares
Des.	11/03/14	Pascoal R.
Rect.		

Escalas /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Descrição:
ADCAMAT PUMP POPS-K - DN100
Packeged vented system
(Steam operated)

Proc. 0.490

Des.N°:
ADPOPK100.01.4800
Rev: 00 Em: 00/00/00

Mod.A3-H

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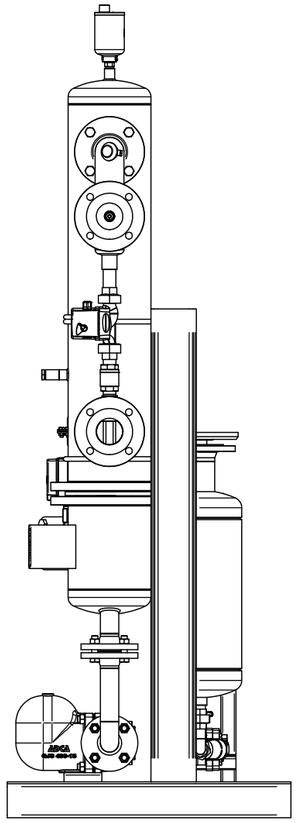

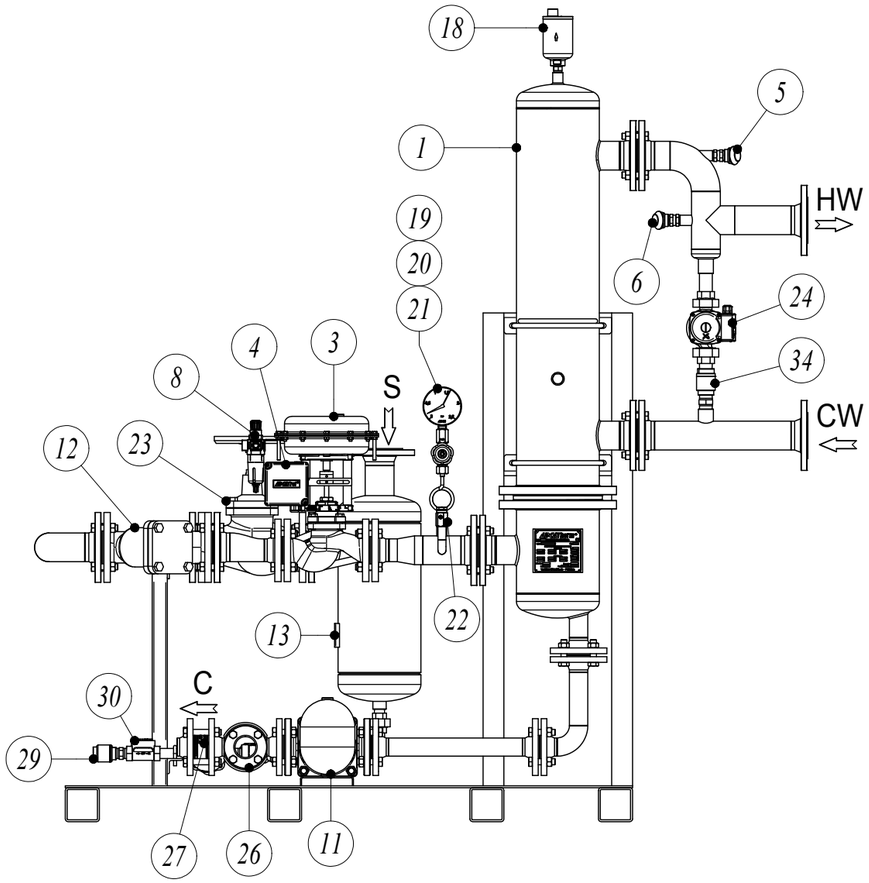

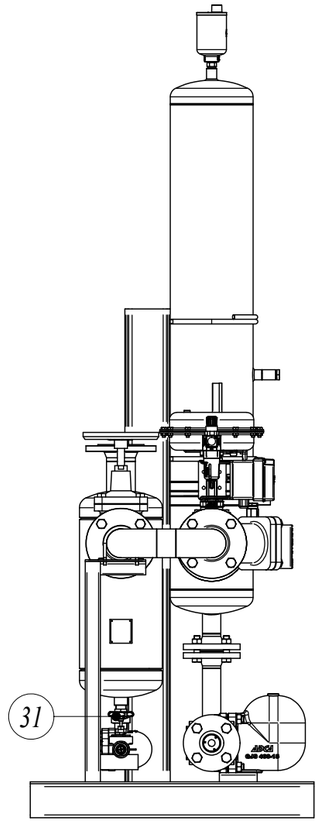

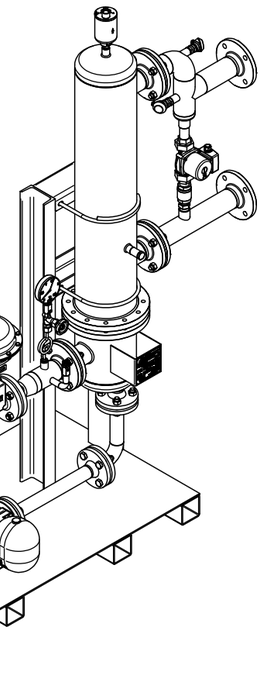

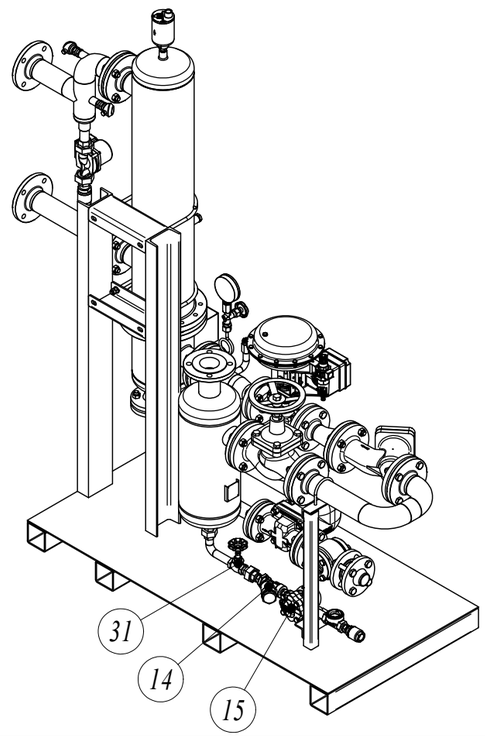

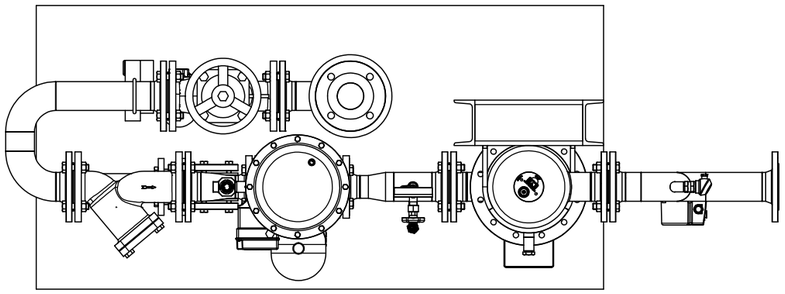

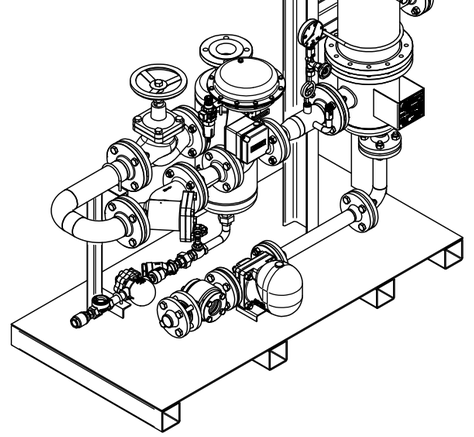

S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	06.10.31	F.Soares
Des.	06.10.31	Nuno M.
Rect.	13.01.14	Nuno M.

Escala	Tolerancias n/ especificadas	
	Dimensões	Desvios
1:15	> 0 a 5	±0.2
	> 5 a 30	±0.3
	> 30 a 120	±0.5
	>120	±0.8
	Angulos +/-30'	
	Chanfros / Rolos 0.3	

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit
STV/FLT

Des.N°.
ADPWHU.01.2439

Rev.: 04 Em: 13.01.14

Pagina 1 de 1

Mod.A3

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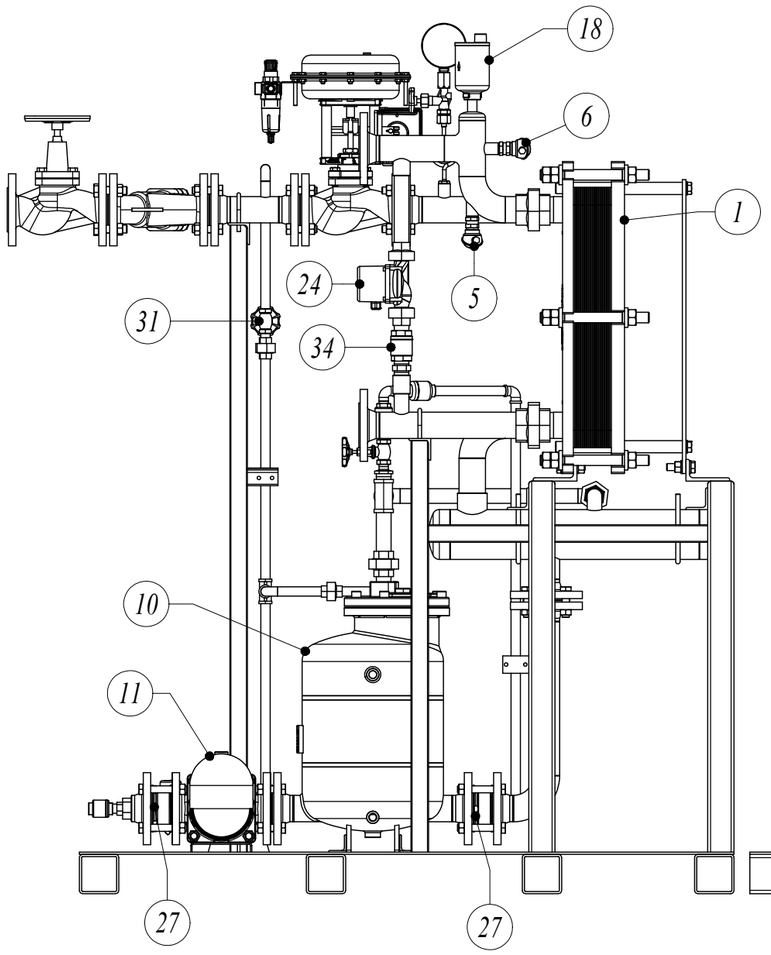
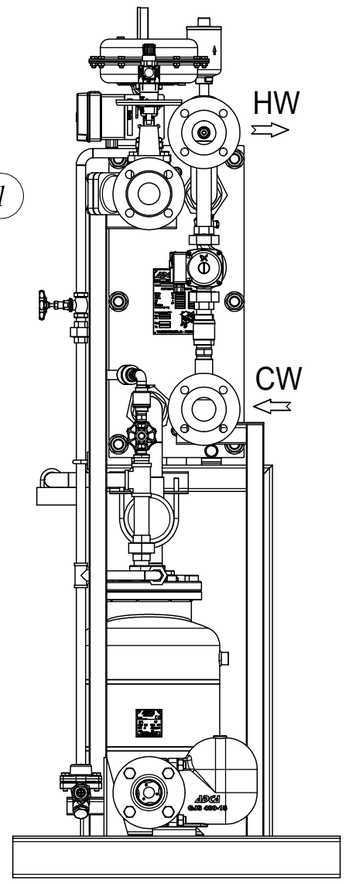
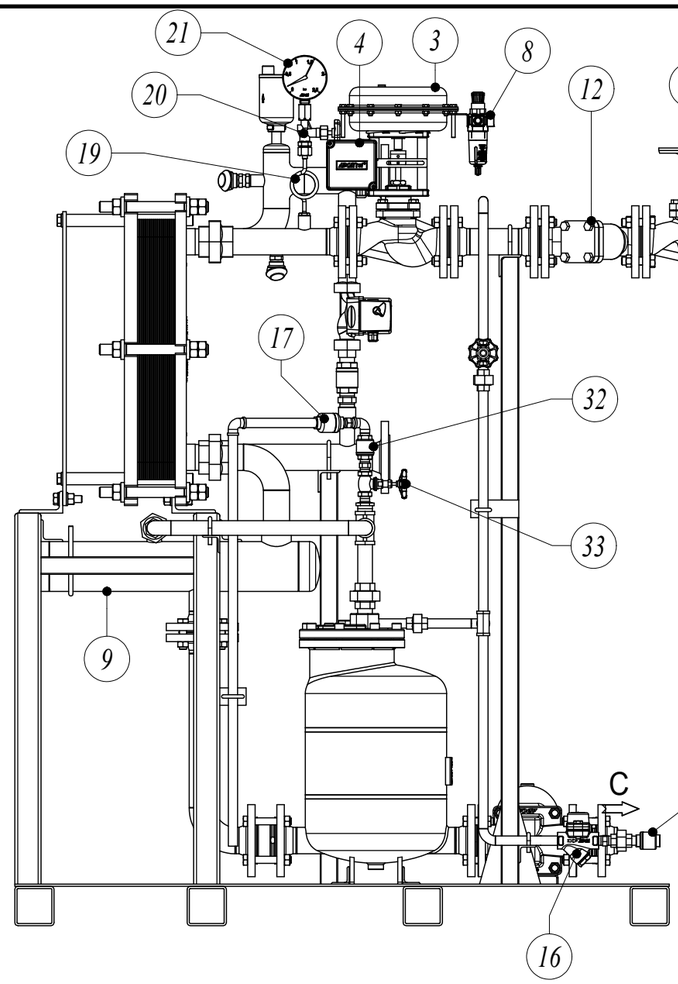
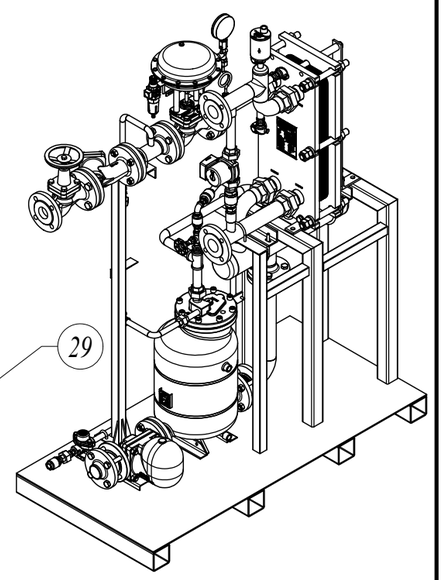
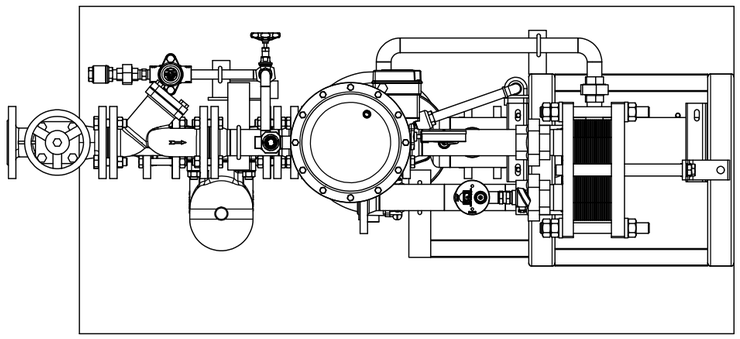
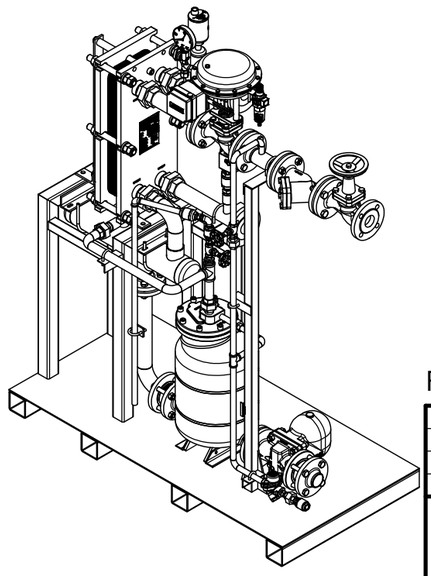












S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	12.12.28	F.Soares
Des.	12.12.28	Nuno M.
Rect.	13.01.04	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/-30'
Chanfros / Raios 0.3

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit
PAT/POP/FLT

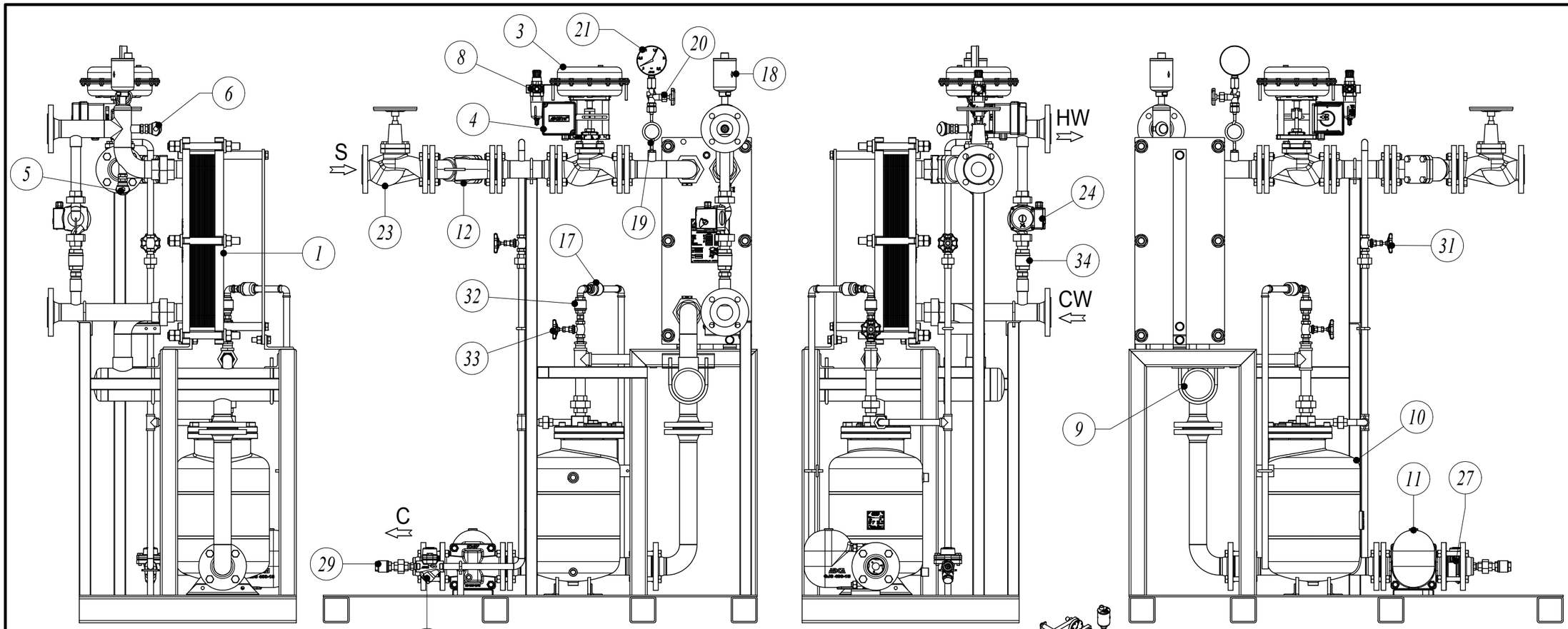
Des.Nº.
ADPWHU.03.5857

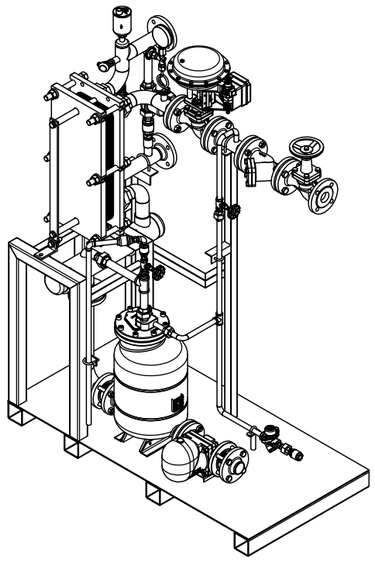
Rev.: 00 Em: 13.01.04

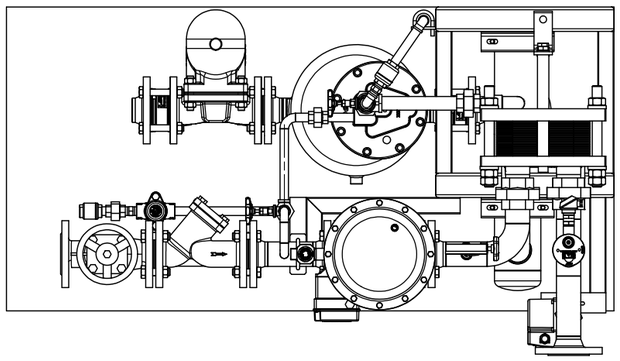
Pagina 1 de 1

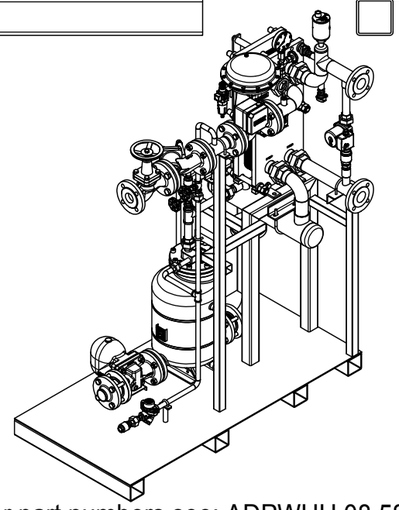
Mod.A3

Este projecto e desenho é propriedade de Valsteam Adca Eng. SA. O seu uso ou reprodução são reservados.









S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	12.12.28	F.Soares
Des.	12.12.28	Nuno M.
Rect.	13.01.09	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificados

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/- 30'
Chanfros / Rolos 0.3

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit
PAT/POP/FLT

Des.N°. ADPWHU.04.5858
Rev.: 00 Em: 13.01.09
Pagina 1 de 1

Mod.A3

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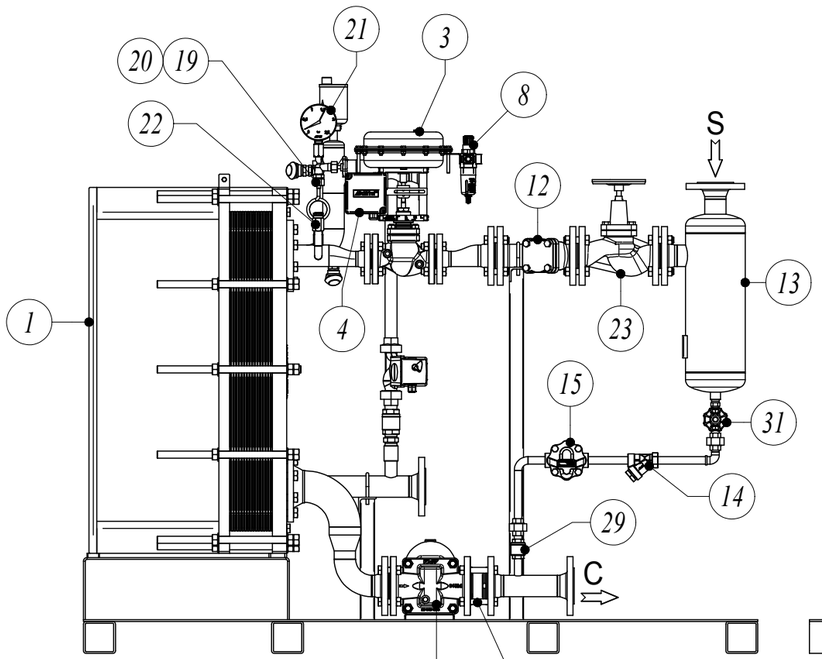

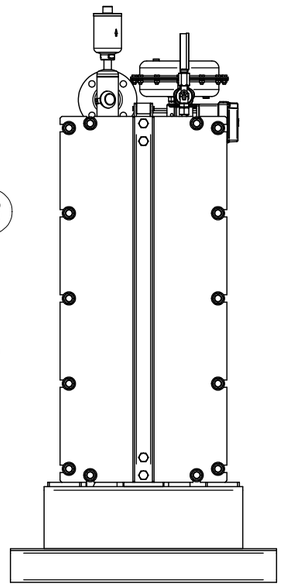

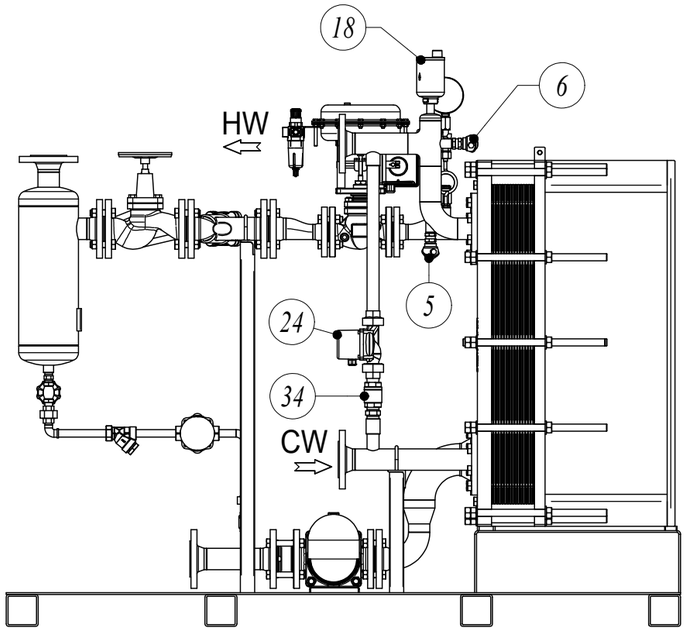

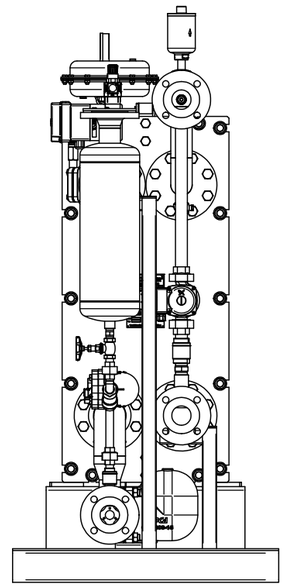

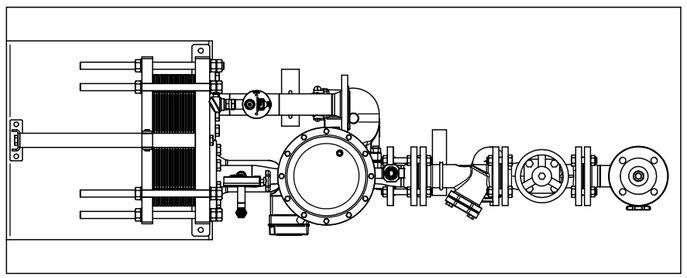

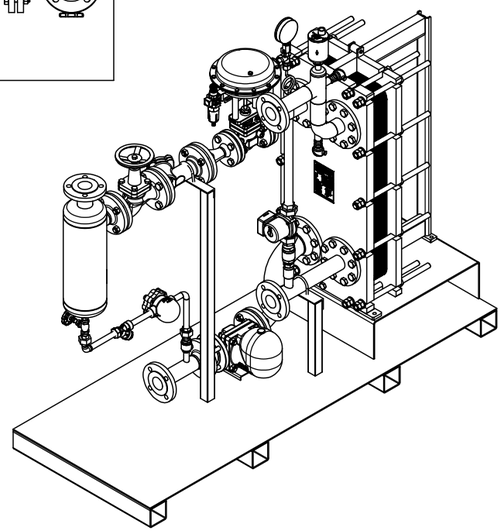

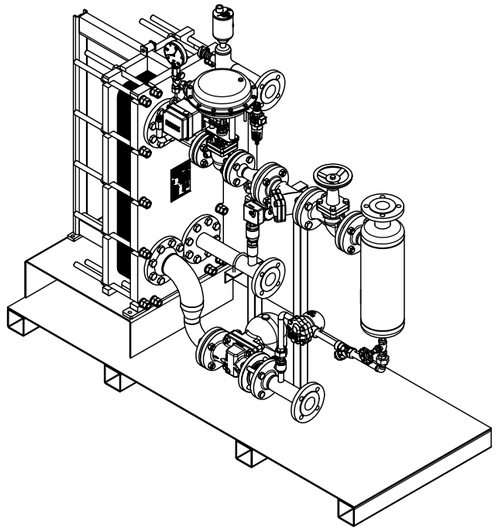

S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	12.12.28	F.Soares
Des.	12.12.28	Nuno M.
Rect.	13.01.10	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/-30'
Chanfros / Raios 0.3

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit
PAT/FLT

Des.N°. ADPWHU.05.5862

Rev.: 00 Em: 13.01.10

Pagina 1 de 1

Mod.A3

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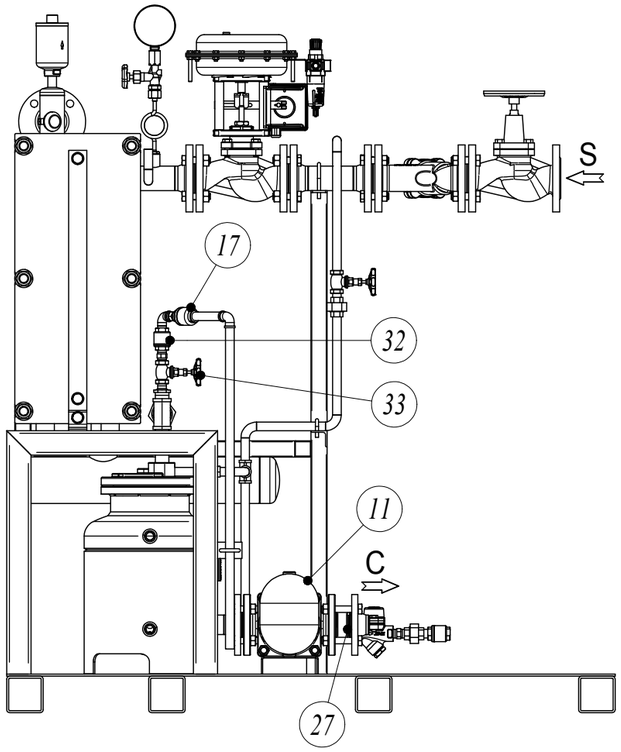
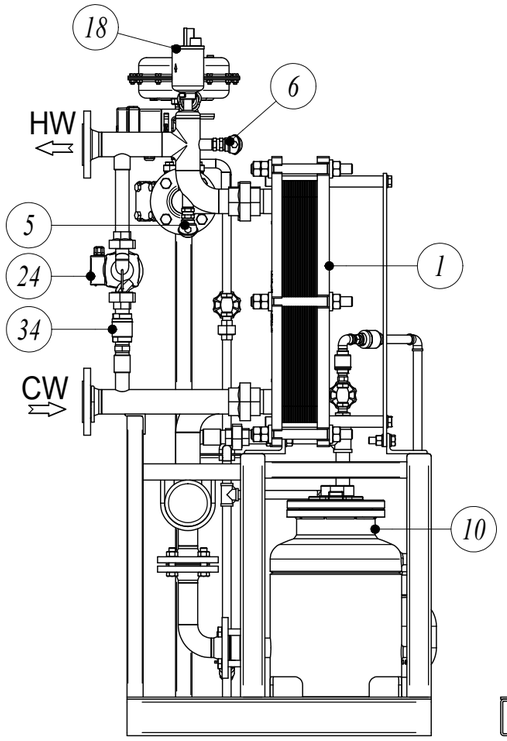
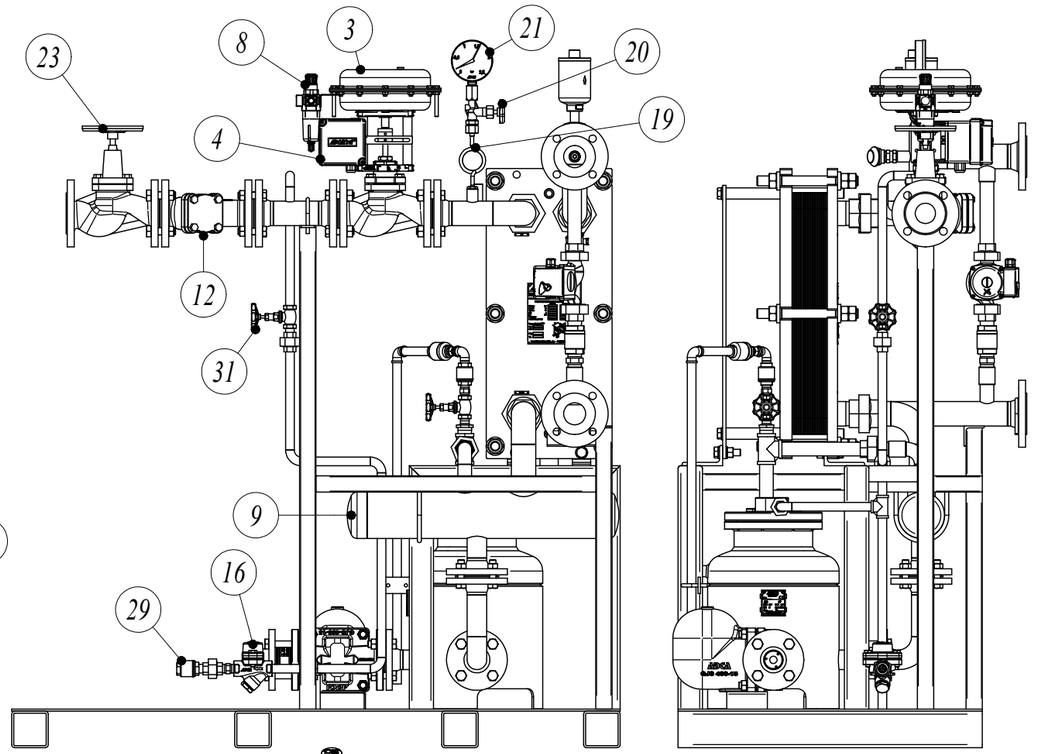
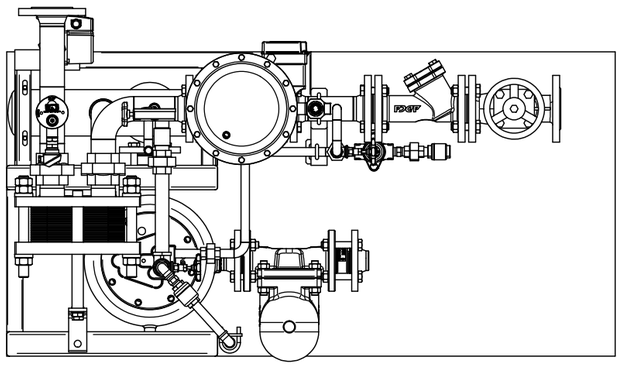
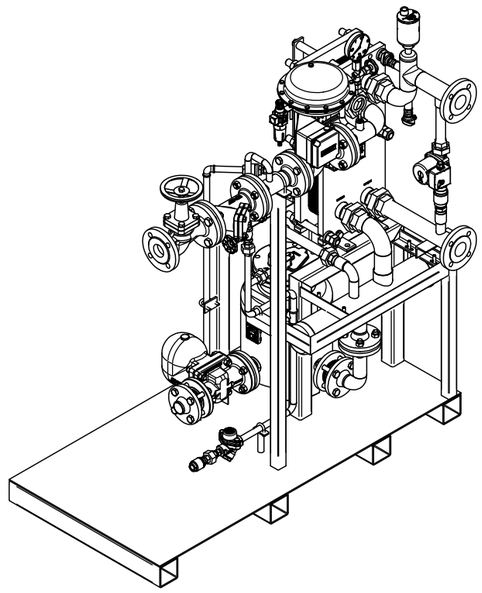
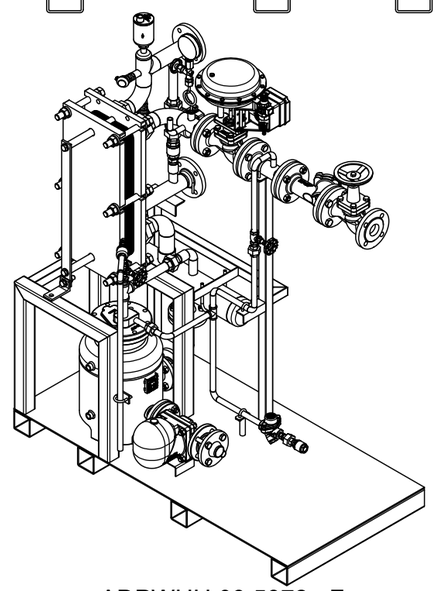












S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	12.12.28	F.Soares
Des.	12.12.28	Nuno M.
Rect.	13.01.09	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Rolos 0.3	

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit
PAT/POP-LC/FLT

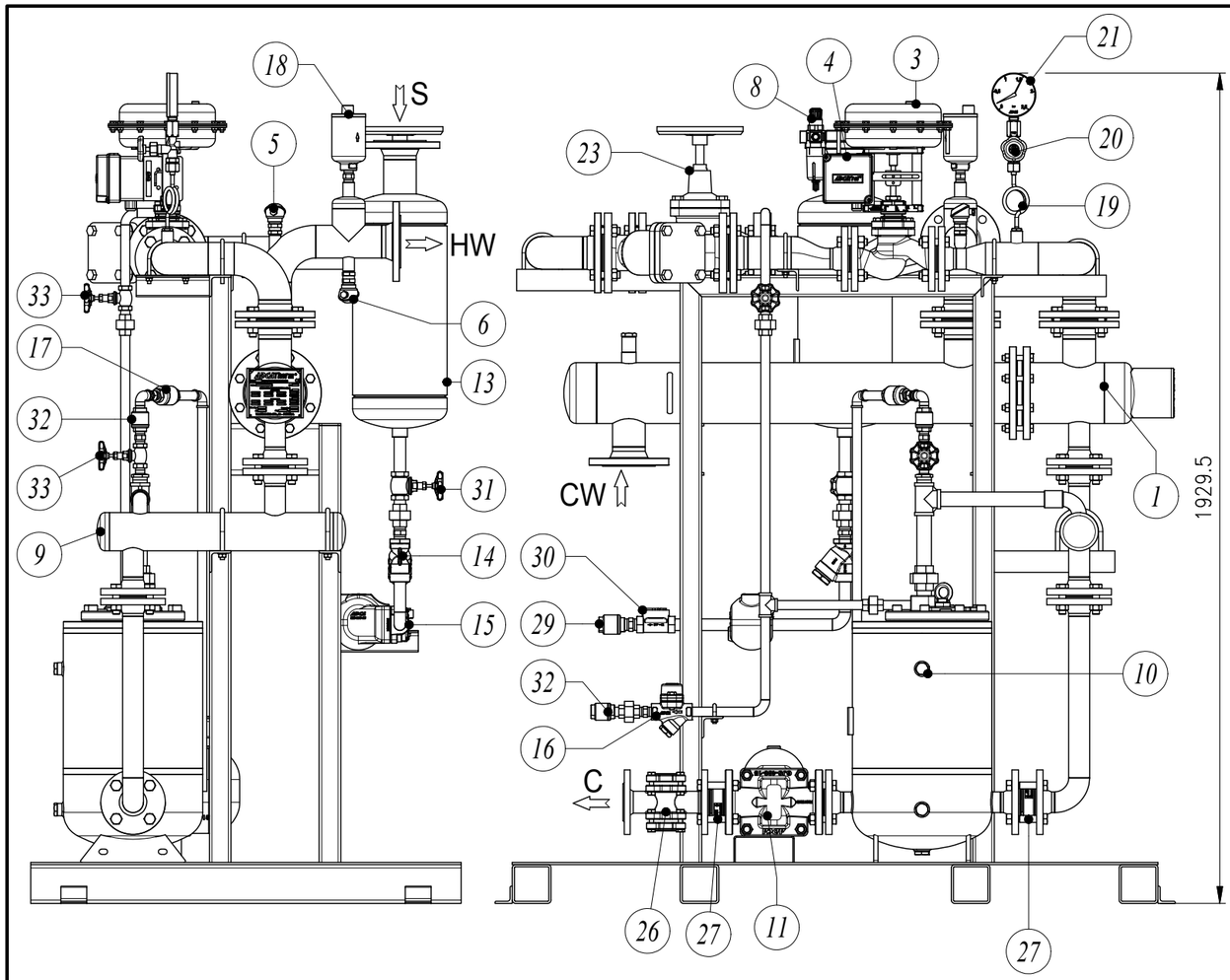
Des.Nº.
ADPWHU.06.5870

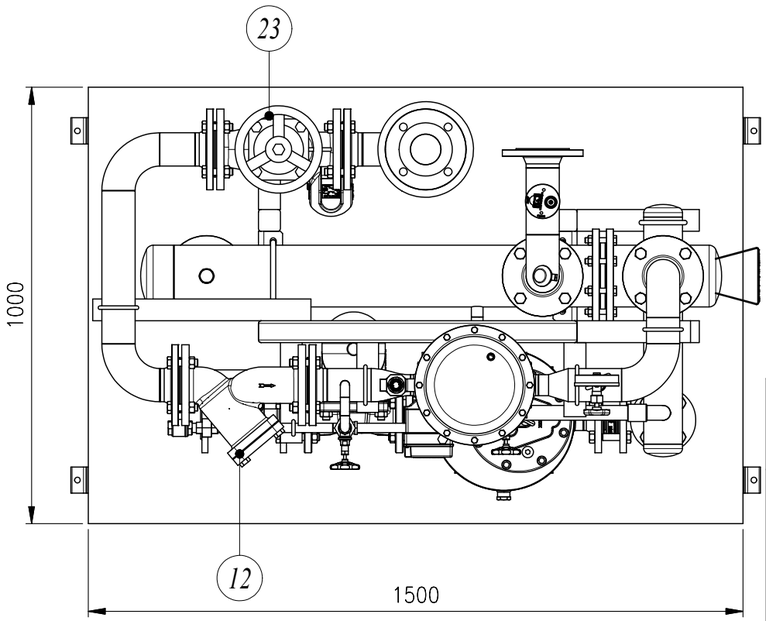
Rev.: 00 Em: 13.01.09

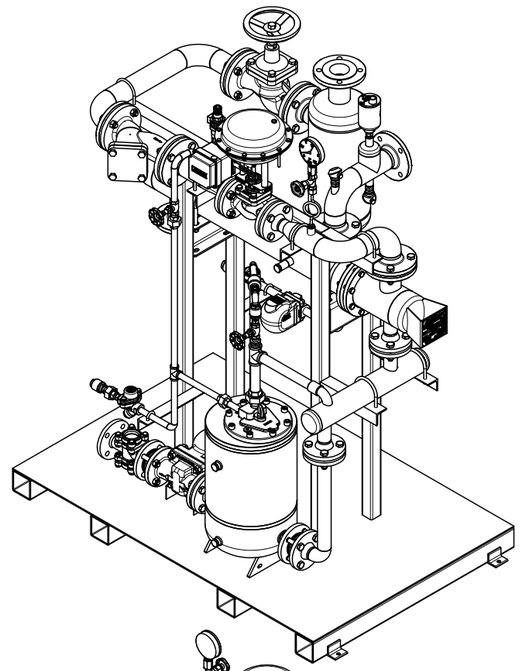
Pagina 1 de 1

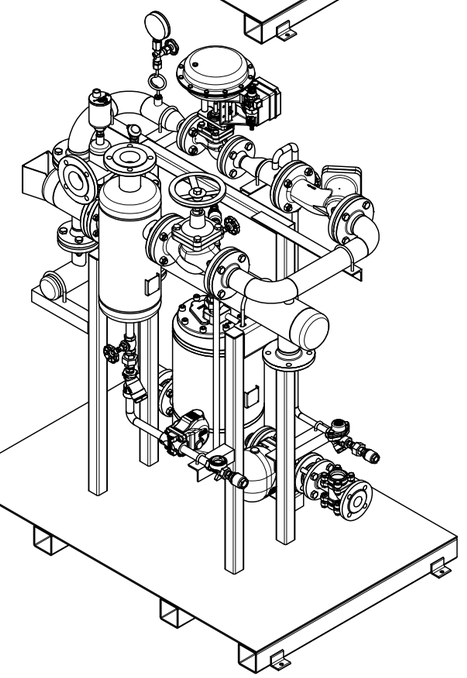
Mod.A3

Este projecto e desenho é propriedade de Valsteam Adca Eng. SA. O seu uso ou reprodução são reservados.









S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	13.06.13	F.Soares
Des.	13.06.13	Nuno M.
Rect.	13.06.13	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Raios 0.3	

Descrição
ADCATHERM "PWHU"
Packaged Water Heating Unit

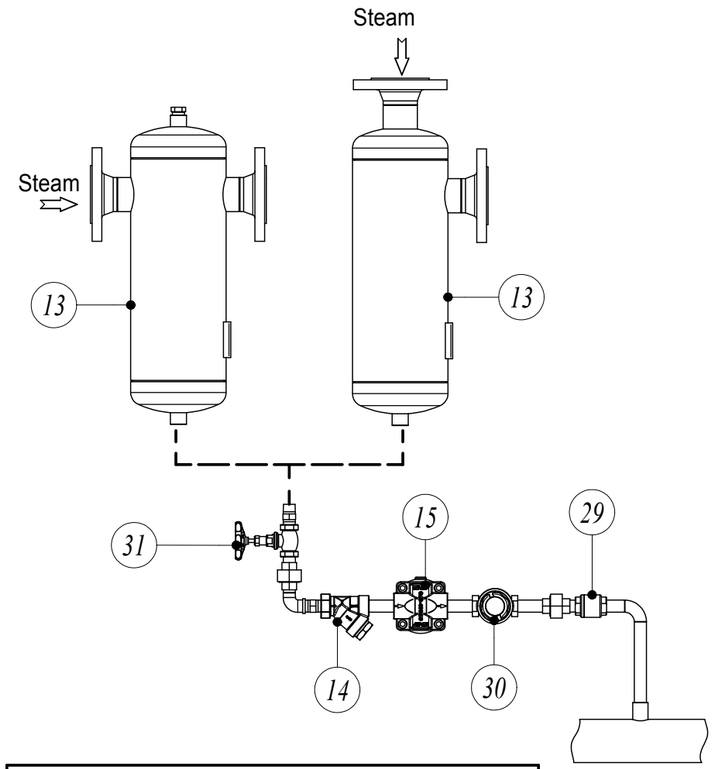
STH/POP/FLT

Des.N°.
ADPWHU.09.6158

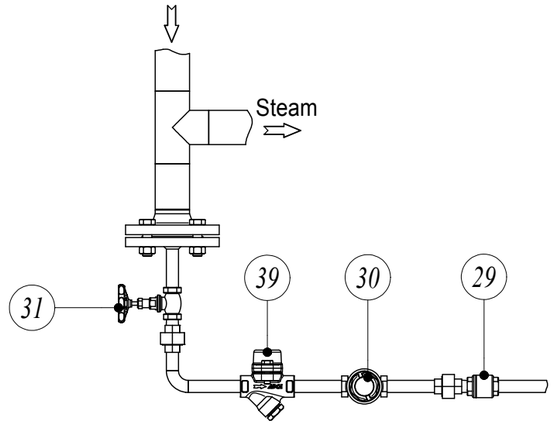
Rev.: 00 Em: 13.06.13
Peso/Weight: 453,061 kg
Pagina: 1 de 1

Mod.A3

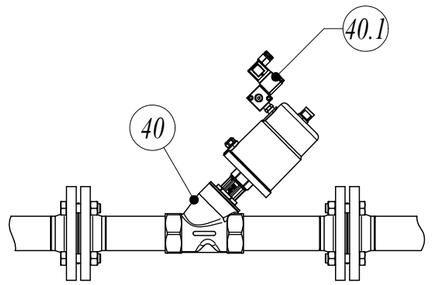
Este projecto e desenho é propriedade de Valsteam Adca Eng. SA. O seu uso ou reprodução são reservados.



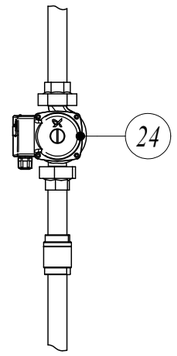
Option-1: Humidity Separator and Steam Trap



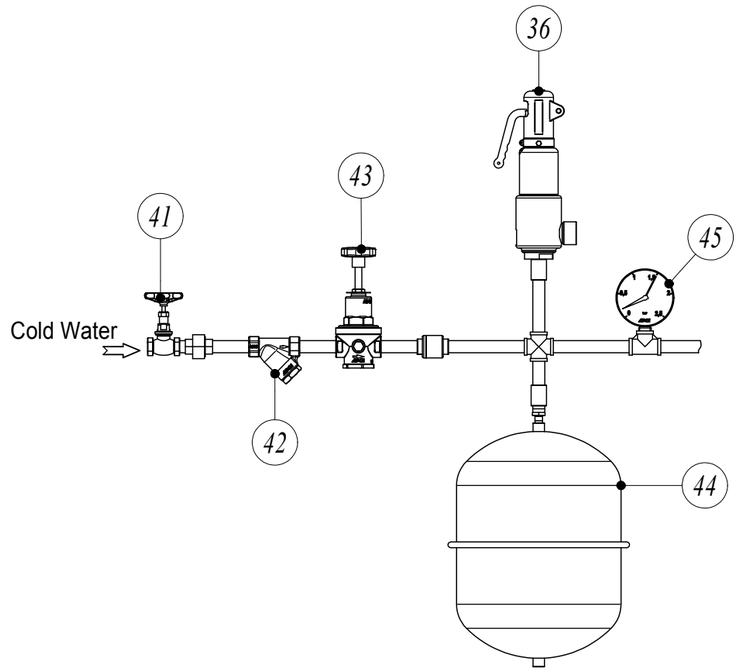
Option-2: Steam Trap (Drip Point)



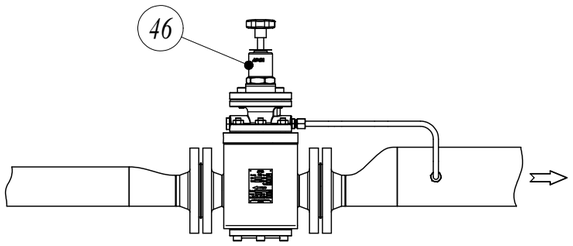
Option-3: High Temperature Limit Valve



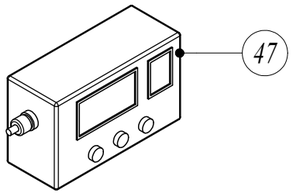
Option-5: Recirculating Pump



Option-4: Pressure Regulator and Expansion Vessel



Option-6: Pressure Reduction Station



Option-7: Electrical Control Panel

	Data	Rubrica
Proj.	13.01.15	F.Soares
Des.	13.01.15	Nuno M.
Rect.	13.01.15	Nuno M.

Escala: /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/-30'

Chanfros / Raios 0.3

VALSTEAM
ADCA ENGINEERING,SA

Descrição
ADCATHERM "PWHU" AND "WAVE"
Assembly options

Proc. 0.490

Des.Nº.
ADPWHU.07.5871

Rev.: 00 Em: 13.01.15

Pagina 1 de 1

Mod.A3

Este projecto e desenho é propriedade de Valsteam Adca Eng. SA. O seu uso ou reprodução são reservados.

Ref.	Quant.	Designação	Medidas	Material	Observações
47	1	Electrical control panel			
46	1	ADCA PRV47 Pressure reduction valve			
45	1	ADCA MAN-100 Pressure gauge			
44	1	Expansion vessel			
43	1	ADCA PRV30SS Pressure reduction valve			
42	1	ADCA IS116 Y Strainer			
41	1	ADCA GV32B Globe valve			
40.1	1	ADCA Pilot solenoid valve			
40	1	ADCA PAV21 Pneumatic angle type on-off valve			
39	1	ADCA BM20 Bimetallic steam trap & air eliminator			
38	1	Ball valve			
37	1	Temperature indicator			
36	1	ADCA AU2S Safety valve			
35	1	Ball valve			
34	1	ADCA RT25 Check valve			
33	1	ADCA GV32B Globe valve			
32	1	ADCA RT25 Check valve			
31	1	ADCA GV32B Globe valve			
30	1	ADCA DW12 Sigh glass			
29	1	ADCA RT25 Check valve			
28	1	ADCA VF16 Globe valve			
27	1	ADCA RD40 Check valve			
26	1	ADCA DW12/DW40S Sight glass			
25	1	Recirculation pump			
24	1	Recirculation pump			
23	1	ADCA VF16 Globe valve			
22	1	ADCA VB21 Vacuum breaker			
21	1	ADCA MAN-100 Pressure gauge			
20	1	ADCA GC-400 Gauge cock			
19	1	ADCA GSC-40 Gauge siphon			
18	1	ADCA AE16SS Air eliminator			
17	1	ADCA TSS22 Thermostatic steam trap & air eliminator			
16	1	ADCA TH32Y Thermostatic steam trap & air eliminator			
15	1	ADCA FLT Float & thermostatic steam trap			
14	1	ADCA IS140 Y Strainer			
13	1	ADCA S25-S/S25-VH Humidity separator			
12	1	ADCA IS16F Y Strainer			
11	1	ADCA FLT Float & thermostatic steam trap			
10	1	ADCAMAT Pressure operated pump			
9	1	Condensate manifold			
8	1	ADCA P10 Air filter regulator			
7	1	ADCATROL Temperature controler			
6	1	Pt100 Temperature sensor			
5	1	Pt100 Temperature sensor			
4	1	ADCATROL Electropneumatic positioner			
3	1	ADCATROL Control valve			
2	1	ADCATHERM Storage vessel			
1	1	ADCATHERM Heat exchanger			

	Data	Rubrica
Proj.	13.01.16	F.Soares
Des.	13.01.16	Nuno M.
Rect.	13.01.16	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Toleroncias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/-30'
Chanfros / Rolos 0.3

Descrição
ADCATHERM "PWHU" AND "WAVE"
Parts list

Des.N°.
ADPWHU.08.5872

Rev.: 00 Em: 13.01.16

Pagina 1 de 1

Mod.A4

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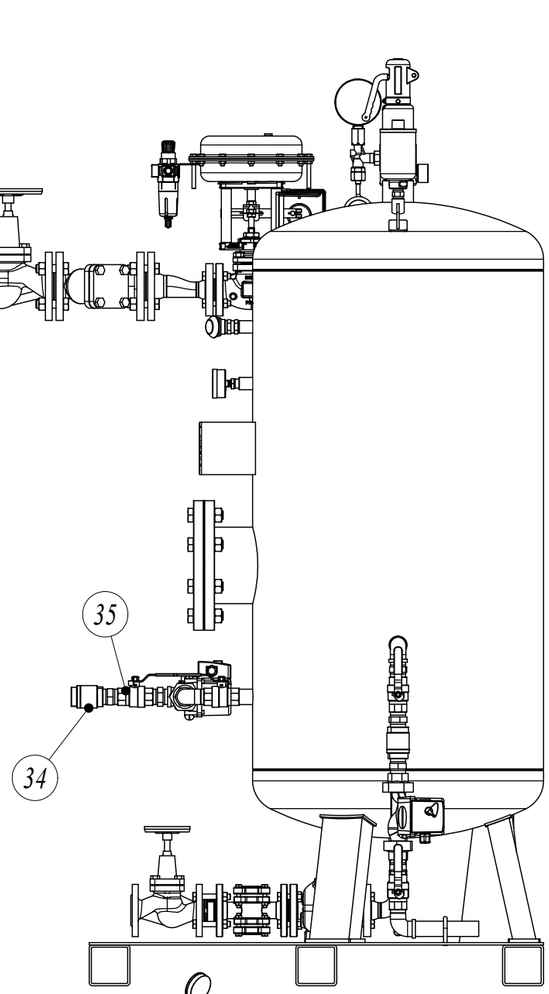

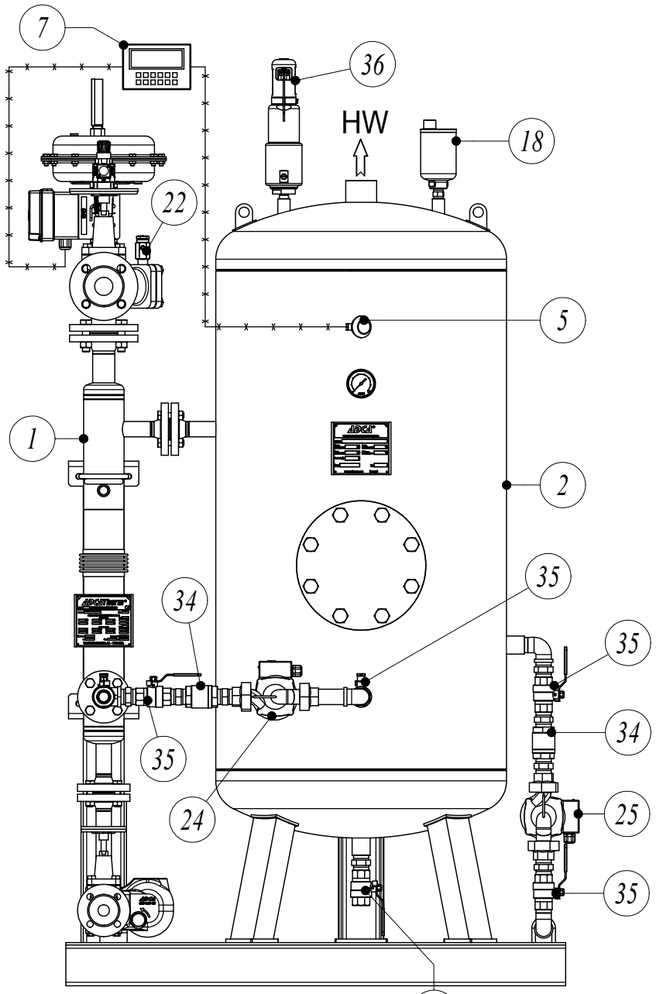

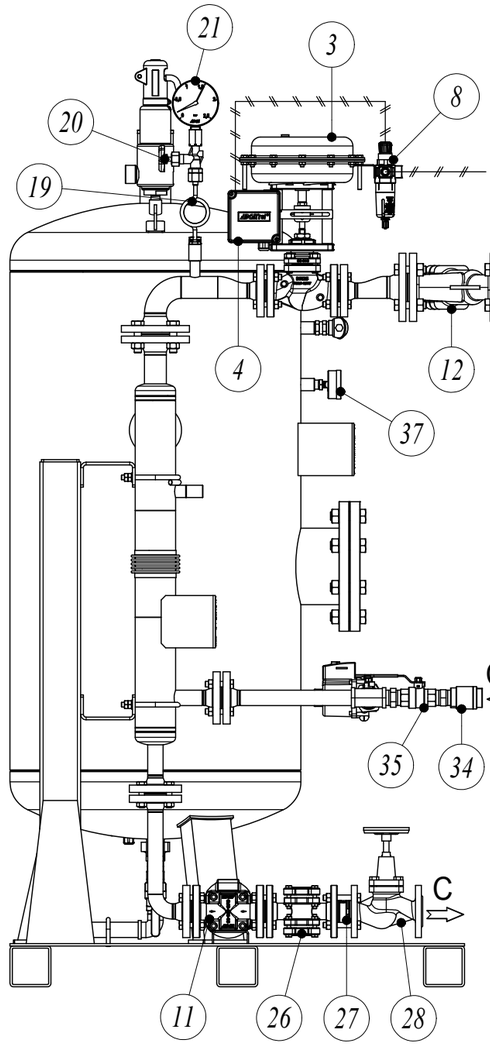

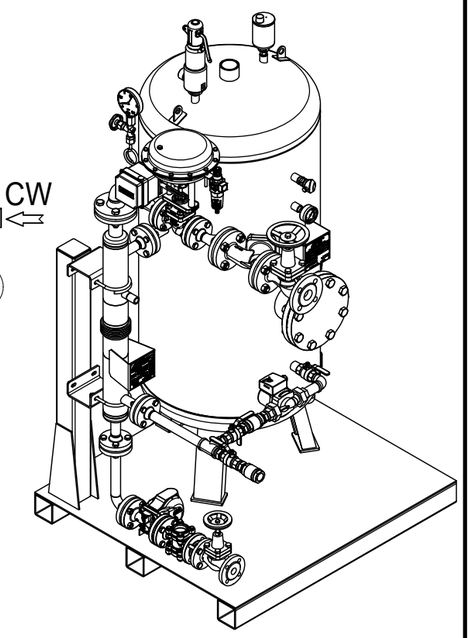

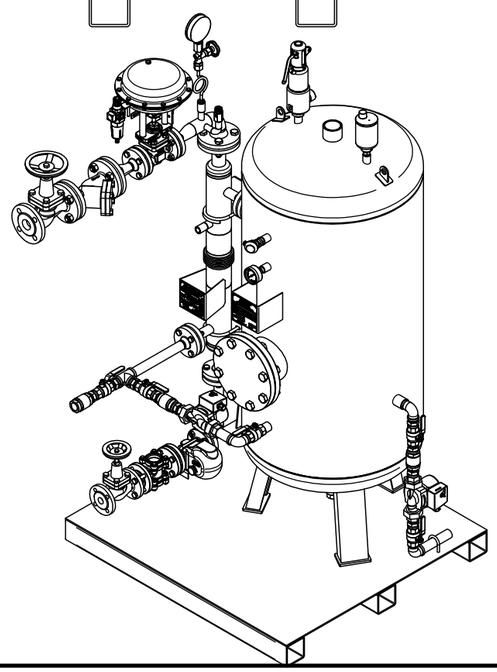

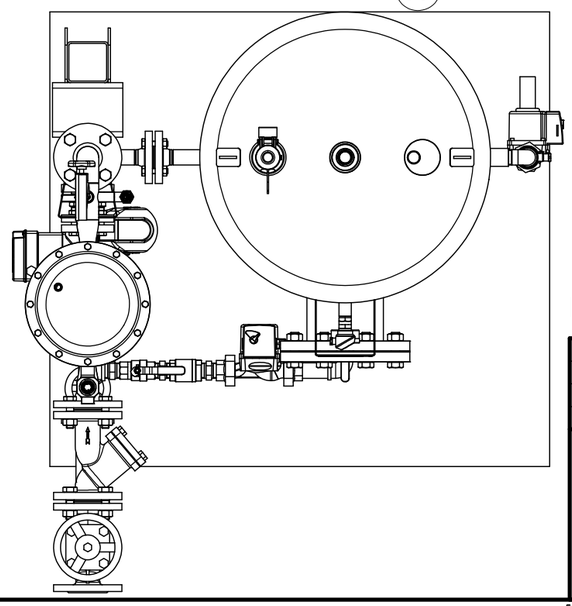

S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	13.01.15	F.Soares
Des.	13.01.15	Paulo S.
Rect.	13.01.15	Paulo S.

Escala 1/10

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Raios 0.3	

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição
ADCATHERM WAVE-P
Water heating vessels
Packaged system

Des.Nº. ADWAVEP.02.2848

Rev.: 03 Em: 13.01.15

Pagina 1 de 1

Mod.A3

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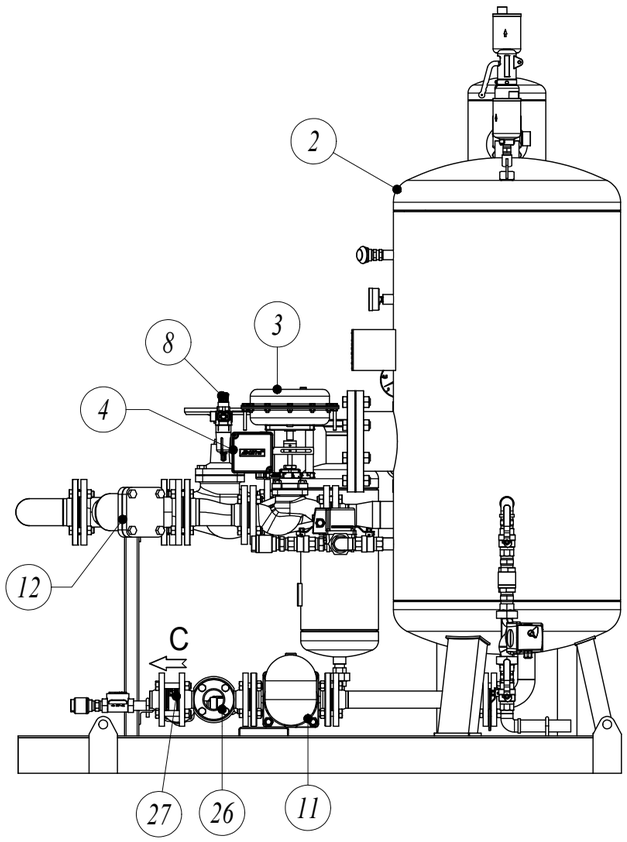

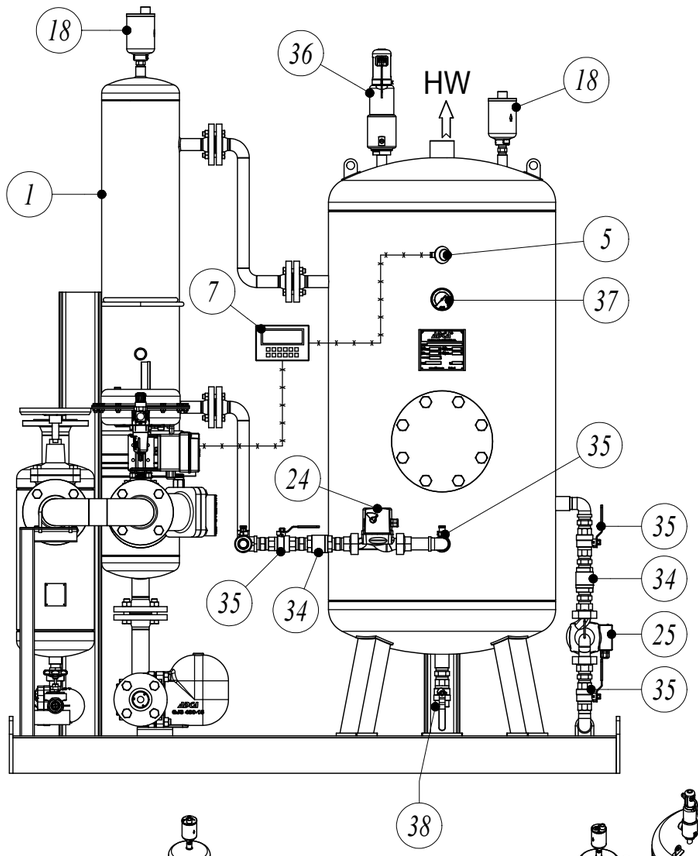

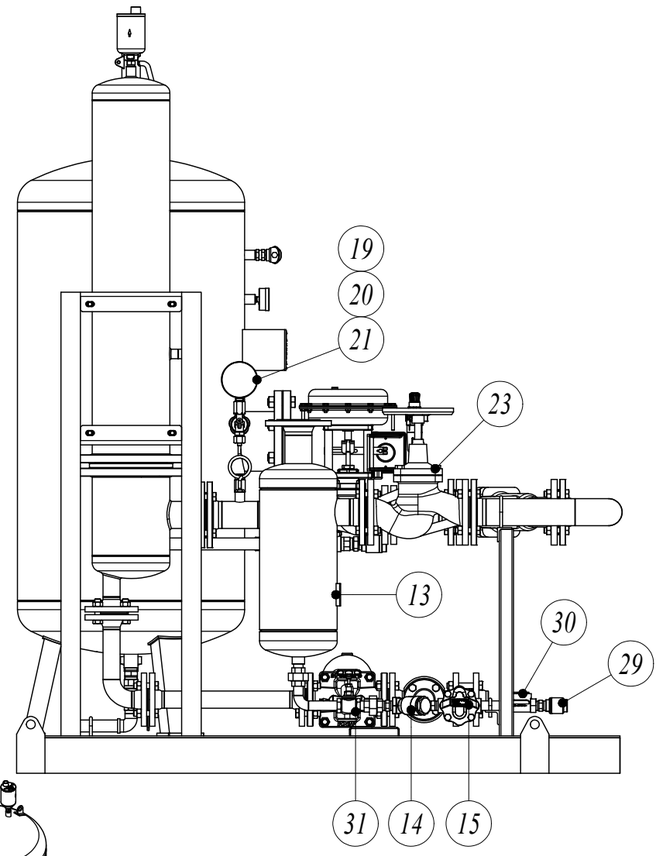

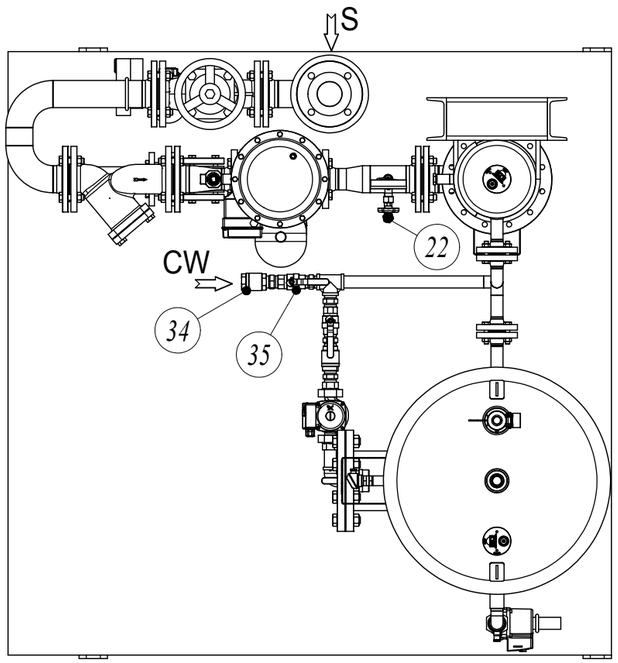

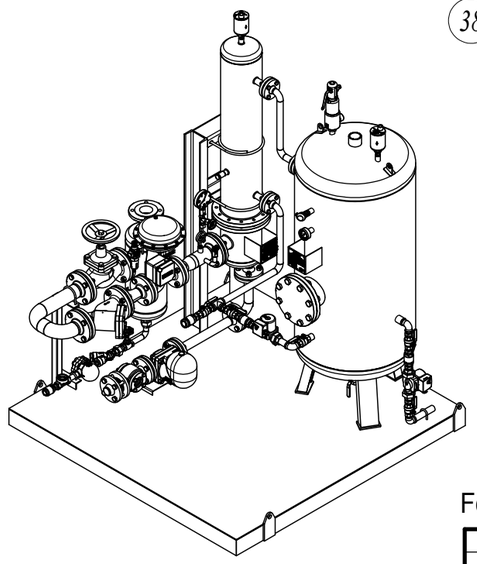

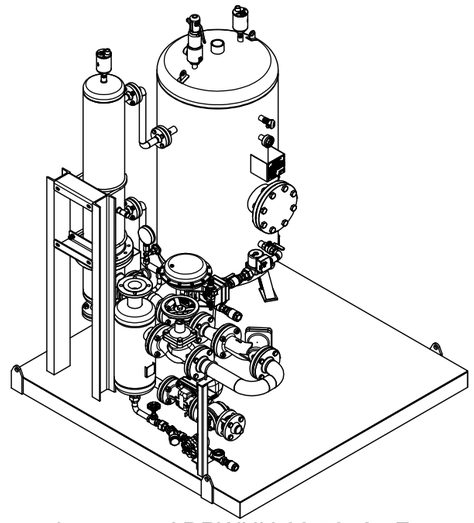

S- Steam supply
C- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADPWHU.08.5872; For assembly options see: ADPWHU.07.5871.

	Data	Rubrica
Proj.	07.09.26	F.Soares
Des.	07.09.26	Nuno M.
Rect.	13.01.18	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8

Angulos +/-30'
Chanfros / Raios 0.3

Descrição
ADCATHERM "WAVE-S"
Water heating vessels
Split system

Des.Nº.
ADWAVES.01.2847

Rev.: 03 Em: 13.01.18

Pagina 1 de 1

Mod.A3

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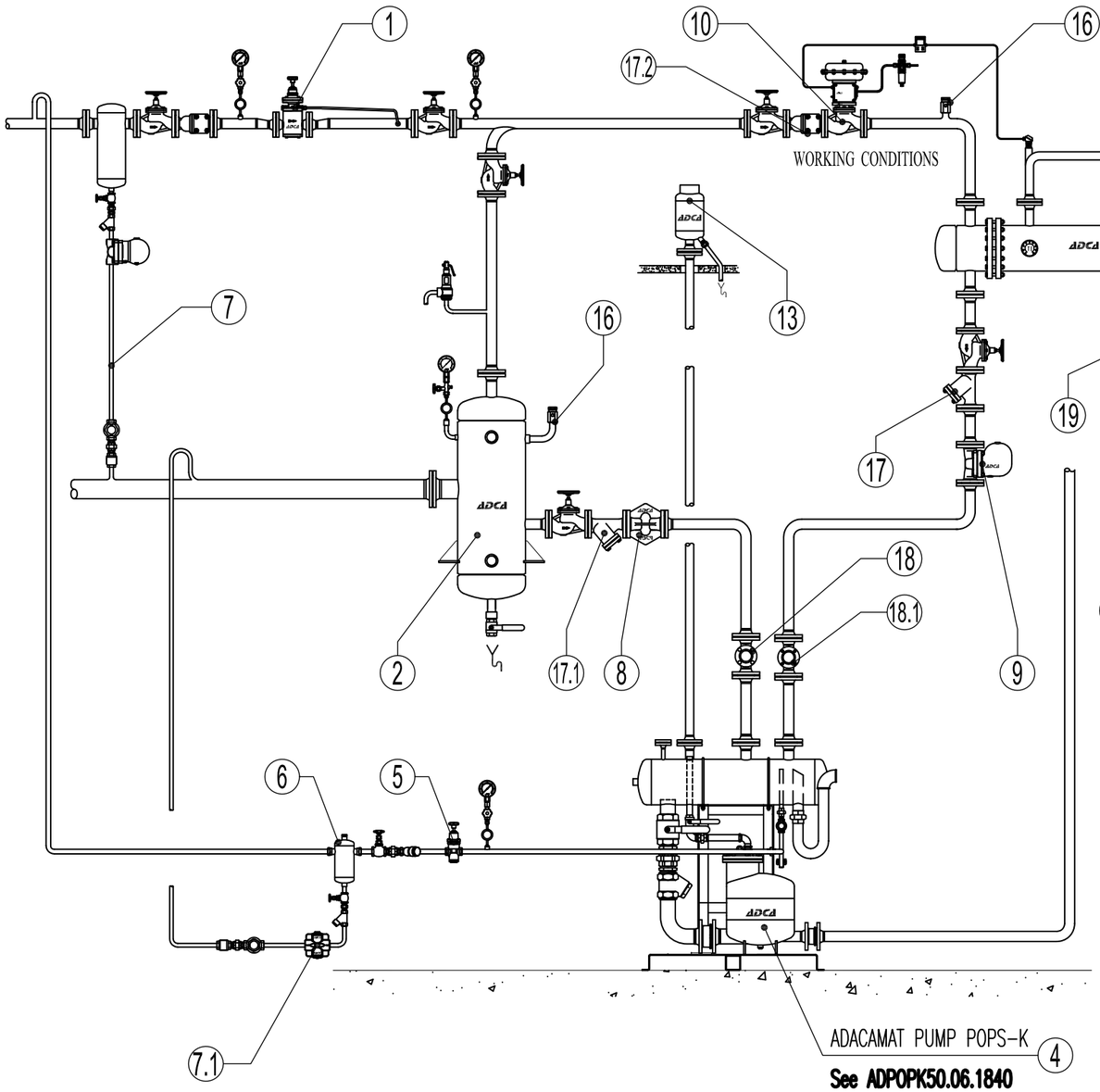

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA Pressure reducing valve station (See ADCR.01.2172)		1	
2	ADCA RV Flash vessel		1	
3	ADCATHERM Heat exchanger		1	
4	ADCA POP-K Packaged automatic pump		1	
5	ADCA PRV25___ Pressure reducing valve		1	
6	ADCA S16S Humidify separator		1	
7	ADCA Steam trap vertical instalation (See ADPC.01.2167)		1	
7.1	ADCA Steam trap horizontal instalation (See ADPC.01.2167)		1	
8	ADCA FLT17HC Float & thermostatic steam trap		1	
9	ADCA FLT17 Float & thermostatic steam trap		1	
10	ADCATROL Two way control valve with linear actuator		1	
11	ADCATROL Three way control valve with linear actuator		1	
12	ADCA AS centrifugal air and dirt separator		1	
13	ADCA EH Exhaust head		1	
14	ADCA AE16SS Air eliminator		1	
15	ADCA RD40 Non return valve		1	
16	ADCA VB21 Vacuum breaker		1	
17	ADCA IS16F Y Strainer		1	
17.1	ADCA IS16F Y Strainer		1	
17.2	ADCA IS16F Y Strainer		1	
18	ADCA DW40S sight glass		1	
18.1	ADCA DW40S sight glass		2	
19	Circulating pump		1	
•			1	

	Data	Rubrica
Proj.	08/08/28	F.Soares
Des.	08/08/28	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:

FLASH VESSEL RV

Typical installation

Des.N°:
ADTRV.01.3395

Rev: 01 Em: 09/11/12

ModA3-H

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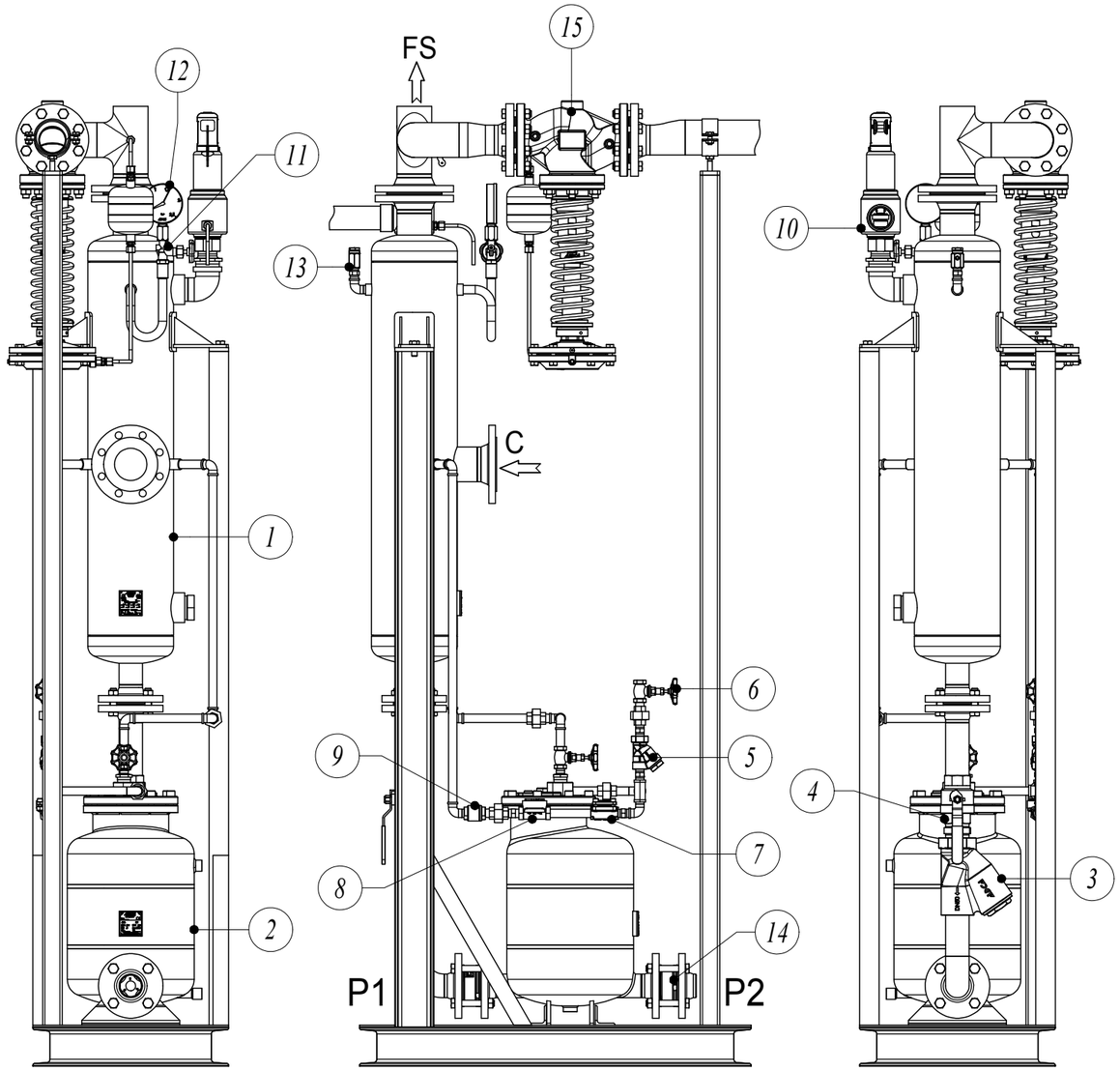

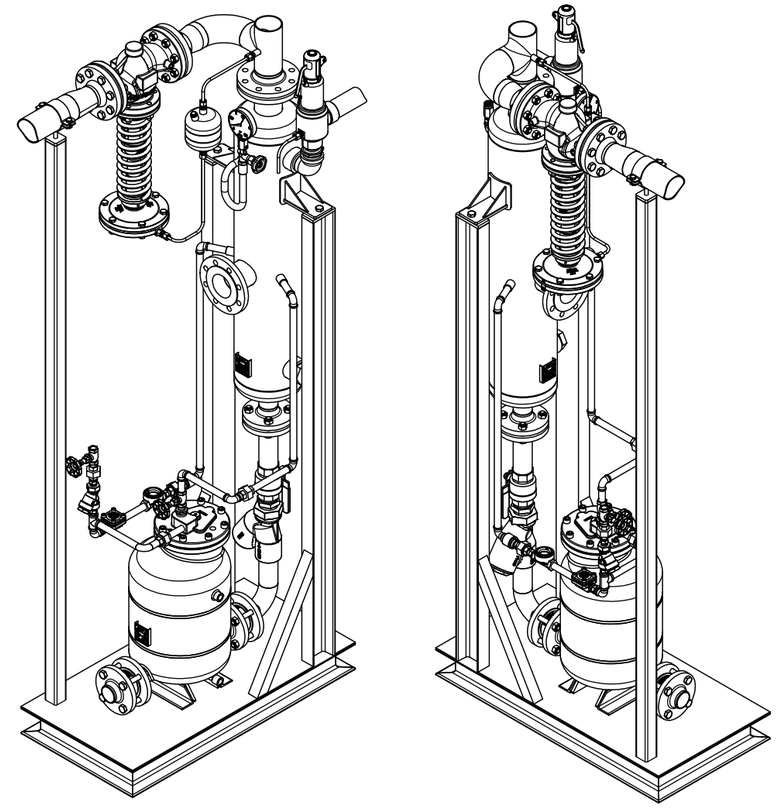

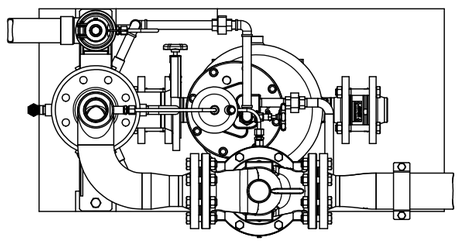

C- Condensate
FS- Flash steam

Ref.	Quant.	Designação	Medidas	Material	Observações
15	1	ADCATROL RP45 Pressure regulator			PRV Station on request
14	2	ADCA RD40 Check valve			
13	1	ADCA VB21 Vacuum breaker			
12	1	ADCA MAN-100 Pressure gauge			
11	1	ADCA GC-400 Gauge cock			
10	1	ADCA AU2S Safety valve			
9	1	ADCA RT25 Check valve			
8	1	ADCA SW12 Sight glass			
7	1	ADCA TH21 Thermostatic steam trap & air eliminator			
6	2	ADCA GV32B Globe valve			
5	1	ADCA IS140 Y Strainer			
4	1	Ball valve			
3	1	ADCA IS140 Y Strainer			
2	1	ADCAMAT Pressure operated pump			
1	1	ADCATHERM RV Flash vessel			

	Data	Rubrica
Proj.	13.01.28	F.Soares
Des.	13.01.28	Nuno M.
Rect.	13.01.31	Nuno M.

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Rolos 0.3	

Descrição
ADCATHERM "FVP"
Flash Vessel and Pump Packaged
(Pressure P1<P2)

Des.N°.
ADFVP.01.5915
Rev.: 00 Em: 13.01.31
Pagina 1 de 1

Mod.A3

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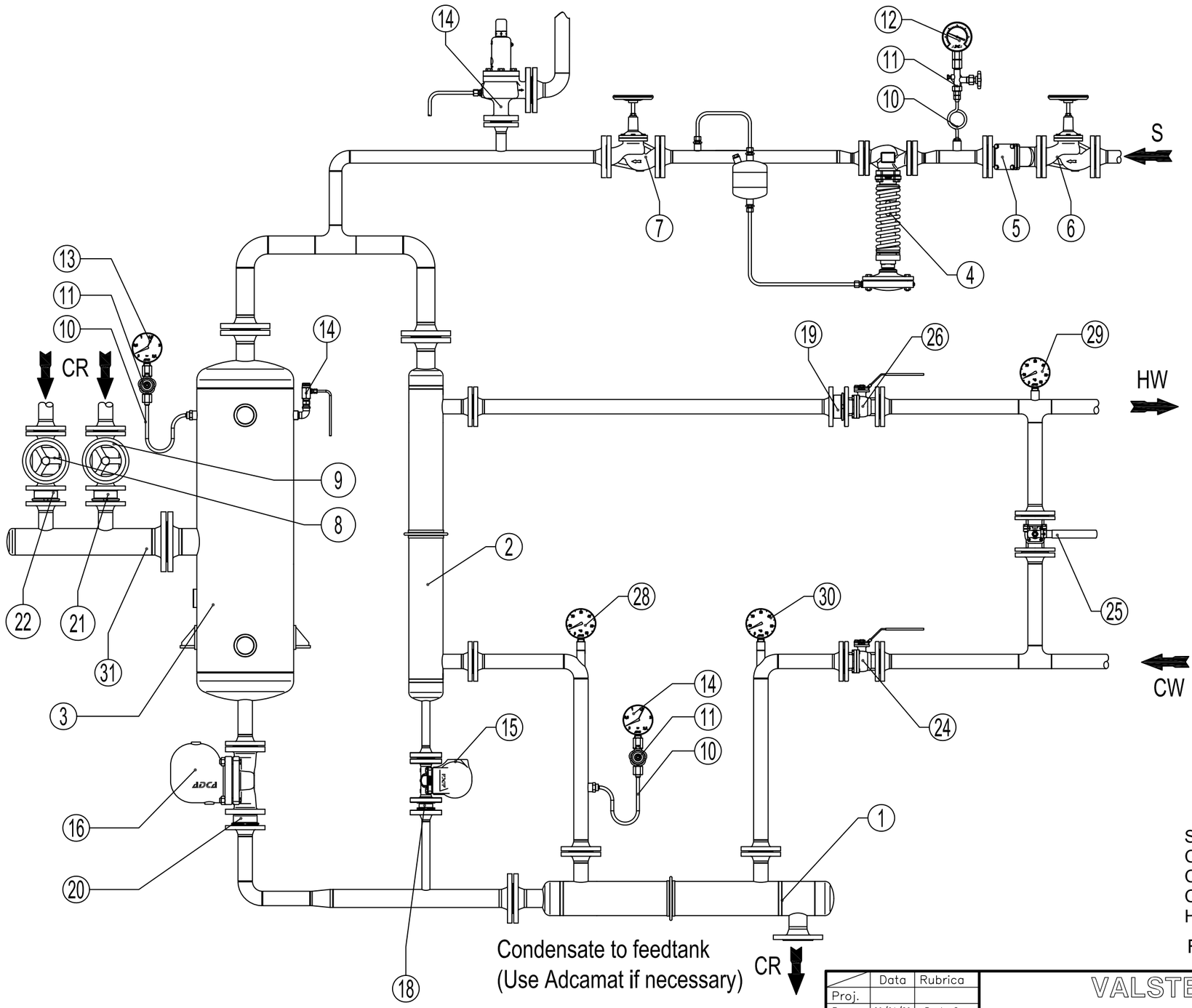

S- Steam supply
CS- Condensate supply
CR- Condensate return
CW- Cold water inlet
HW- Hot water outlet

For part numbers see: ADFRECO.03.7053

	Data	Rubrica
Proj.		
Des.	09/01/20	Paulo S.
Rect.	14/09/18	Paulo S.

Escalas

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Descrição:
ADCATHERM FRECO
Flash steam heat recovery
X

Proc. 0.490

Des.Nº:
ADFRECO.01.3970

Rev: 01 Em: 14/09/18

Mod.A3-H

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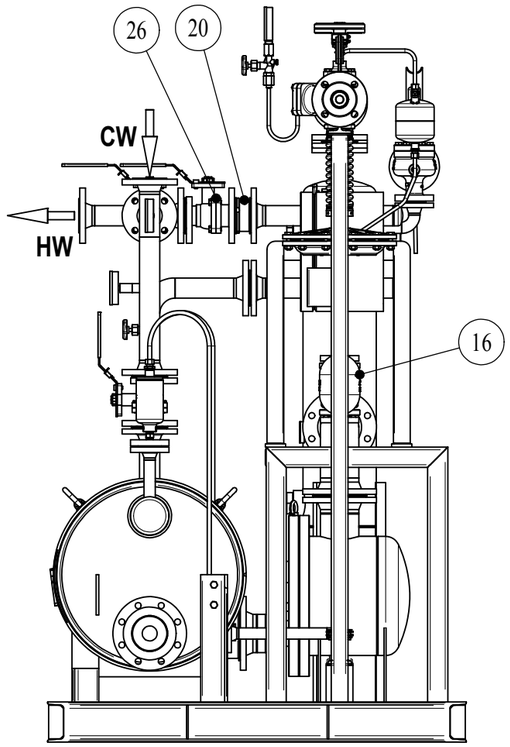

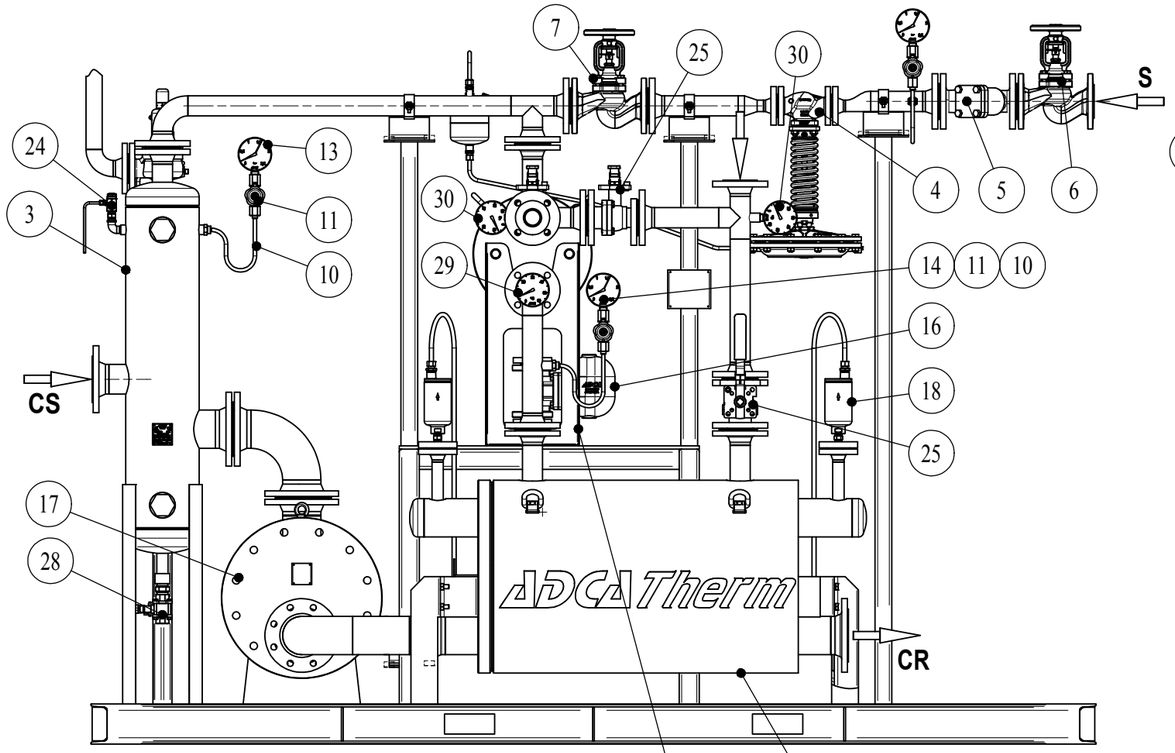

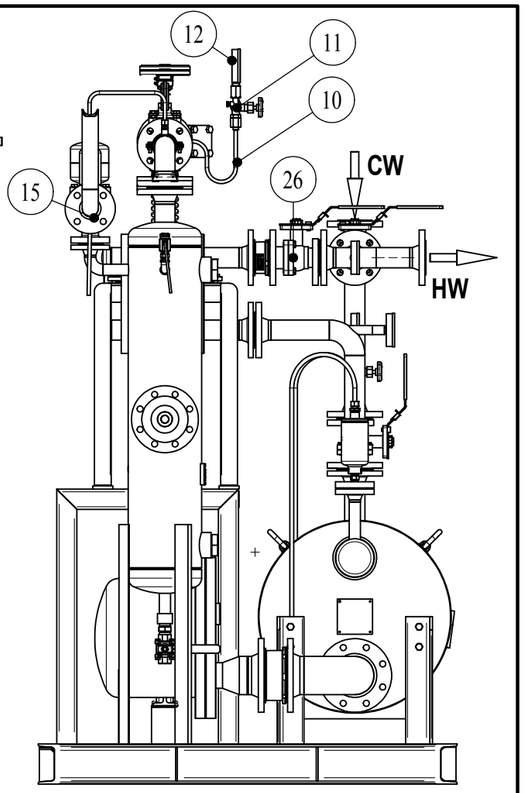

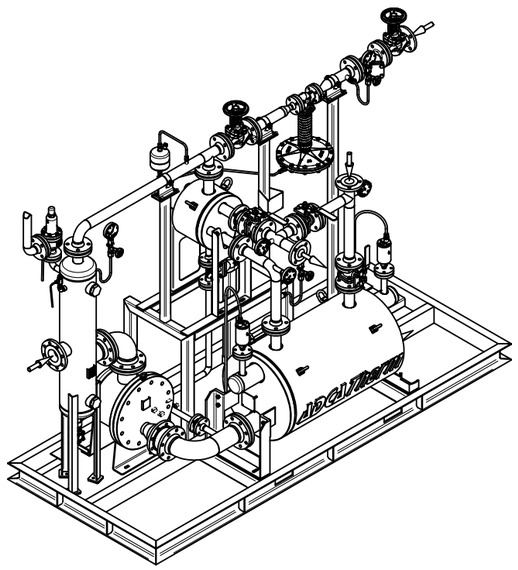

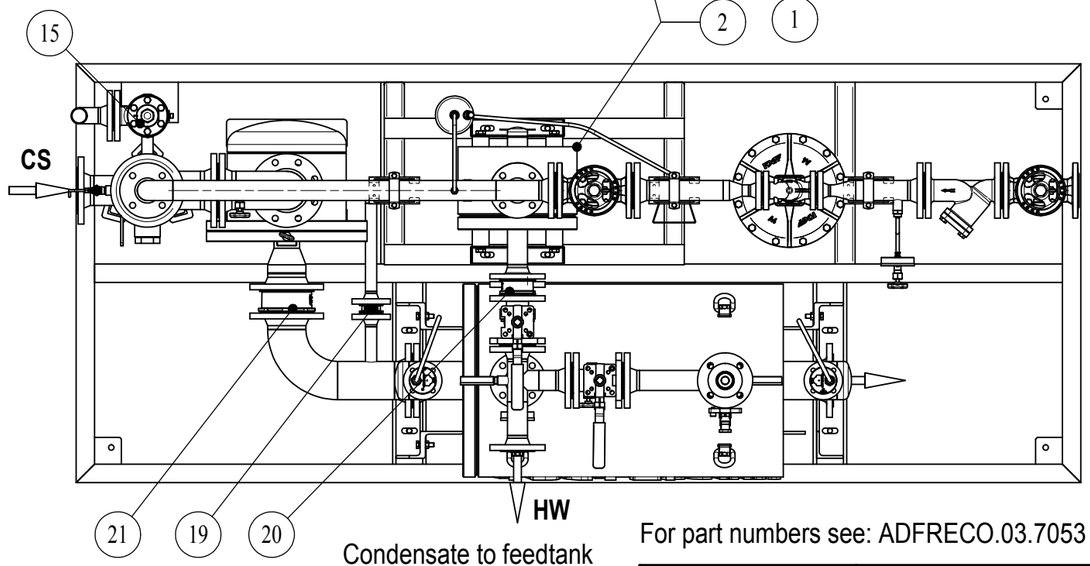

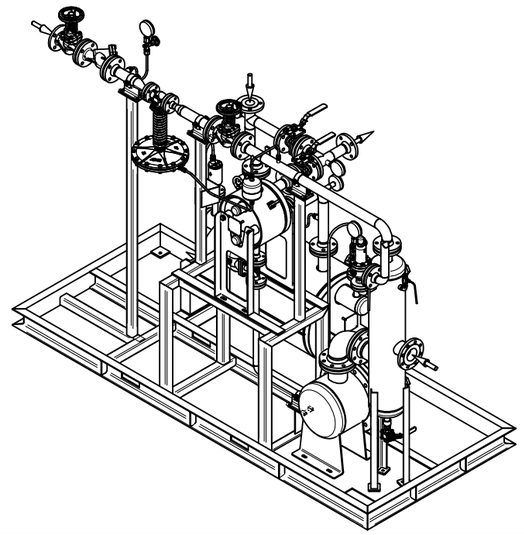

Condensate to feedtank
(Use Adcamat if necessary)

For part numbers see: ADFRECO.03.7053

S- Steam supply
CS- Condensate supply
CR- Condensate return
CW- Cold water inlet
HW- Hot water outlet

	Data	Rubrica
Proj.	14.09.17	F.Soares
Des.	14.09.17	Paulo S.
Rect.	14.09.17	

Escala: /

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Rolos 0.3	

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição
ADCATHERM FRECO
Flash steam heat recorevy

Des.N°.
ADFRECO.02.7052

Rev.: 00 Em: 14.09.17
Peso/Weight: ---
Pagina: 1 de 1

Mod.A3

Este projecto e desenho é propriedade de Valsteam Adca Eng. SA. O seu uso ou reprodução são reservados.

Ref.	Quant.	Designação	Medidas	Material	Observações
32	1	Manifold			
31	1	Temperature indicator			
30	1	Temperature indicator			
29	1	Temperature indicator			
28	1	Ball valve			
27	1	Ball valve			
26	1	Ball valve			
25	1	Ball valve			
24	1	ADCA VB21 vacuum breaker			
23	1	ADCA RD40 Check valve			
22	1	ADCA RD40 Check valve			
21	1	ADCA RD40 Check valve			
20	1	ADCA RD40 Check valve			
19	1	ADCA RD40 Check valve			
18	2	ADCA AE_____ Air eliminator			
17	1	ADCA FLT_____ Float & thermostatic steam trap			
16	1	ADCA FLT_____Float & thermostatic steam trap			
15	1	Safety valve			
14	1	ADCA MAN-100 Pressure gauge			
13	1	ADCA MAN-100 Pressure gauge			
12	1	ADCA MAN-100 Pressure gauge			
11	3	ADCA GC-400 Gauge cock			
10	3	ADCA GS___ Gauge siphon			
9	1	ADCA VF20 Globe valve			
8	1	ADCA VF20 Globe valve			
7	1	ADCA VF20 Globe valve			
6	1	ADCA VF20 Globe valve			
5	1	ADCA IS16F Y strainer			
4	1	ADCA RP45 Pressure reducing valve			
3	1	ADCA RV Flash vessel			
2	1	ADCATHERM Heat exchanger			
1	1	ADCATHERM Heat exchanger			

	Data	Rubrica
Proj.	14.09.18	F.Soares
Des.	14.09.17	Paulo S.
Rect.	14.09.18	

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Escala: /

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
>120	±0.8
Angulos +/-30'	
Chanfros / Rolos 0.3	

Descrição

ADCATHERM FRECO

Flash steam heat recovery

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Des.N°.
ADFRECO.03.7053

Rev.: 00 Em: 14.09.18

Peso/Weight:

Pagina: 1 de 1

Mod.A4

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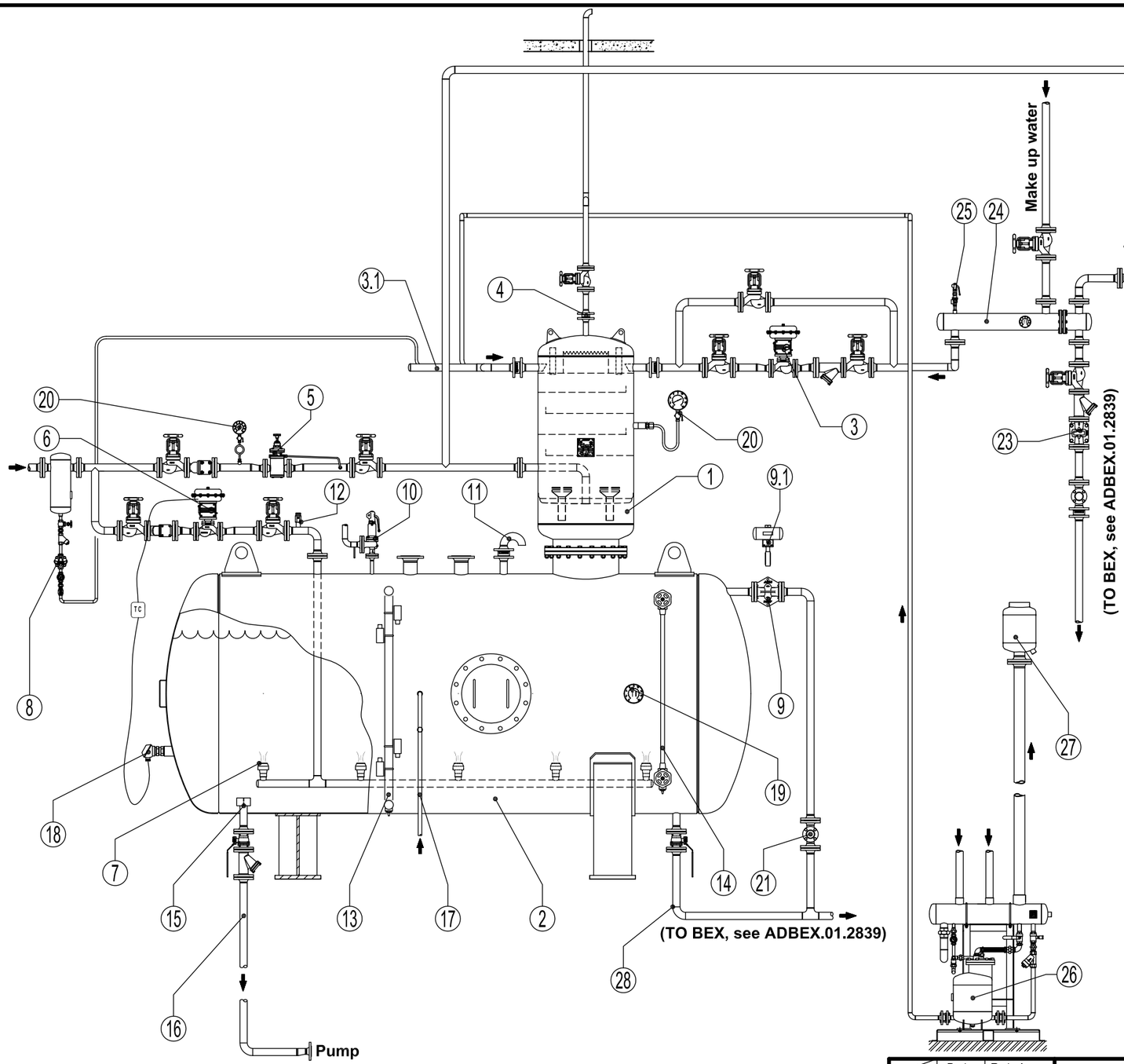

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM–TDG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make–up water		1	
3.1	Condensate return		1	
4	Regulating cone		1	
5	ADCA PRV47 steam pressure red. station		1	
6	ADCATROL storage water temp. control		1	
7	ADCA SI steam injection system		1	
8	ADCA S25 humidity separator with trap		1	
9	ADCA FLT steam trap overflow		1	
9.1	Alternative mot. valve overflow		1	
10	Safety valve		1	
11	ADCA RD40 check v. vacuum breaker		1	
12	ADCA VB21 Vacuum breaker		1	
13	Level control		1	
14	Level indicator		1	
15	Vortex breaker		1	
16	Service supply		1	
17	Dosing chemical supply		1	
18	Rtd probe		1	
19	Temperature indicator		1	
20	ADCA MAN 100 pressure indicator		2	
21	ADCA DW sight glass		1	
22	ADCA RV flash vessel		1	
23	ADCA FLT steam trap		1	
24	ADCATHERM STH heat exchanger cond.		1	
25	Safety valve		1	
26	ADCA POP–K packaged automatic pump		1	
27	ADCA EH exhaust heads		1	
28	Drain		1	

	Data	Rubrica
Proj.	07/09/24	F.Soares
Des.	08/02/08	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/–30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
THERMAL DEAERATOR TDG–V
Double stage with TDS heat recover
Typical installation

Des.N°:
ADTDGV.05.3062

Rev: 00 Em: 00/00/00

Mod.AJ–H

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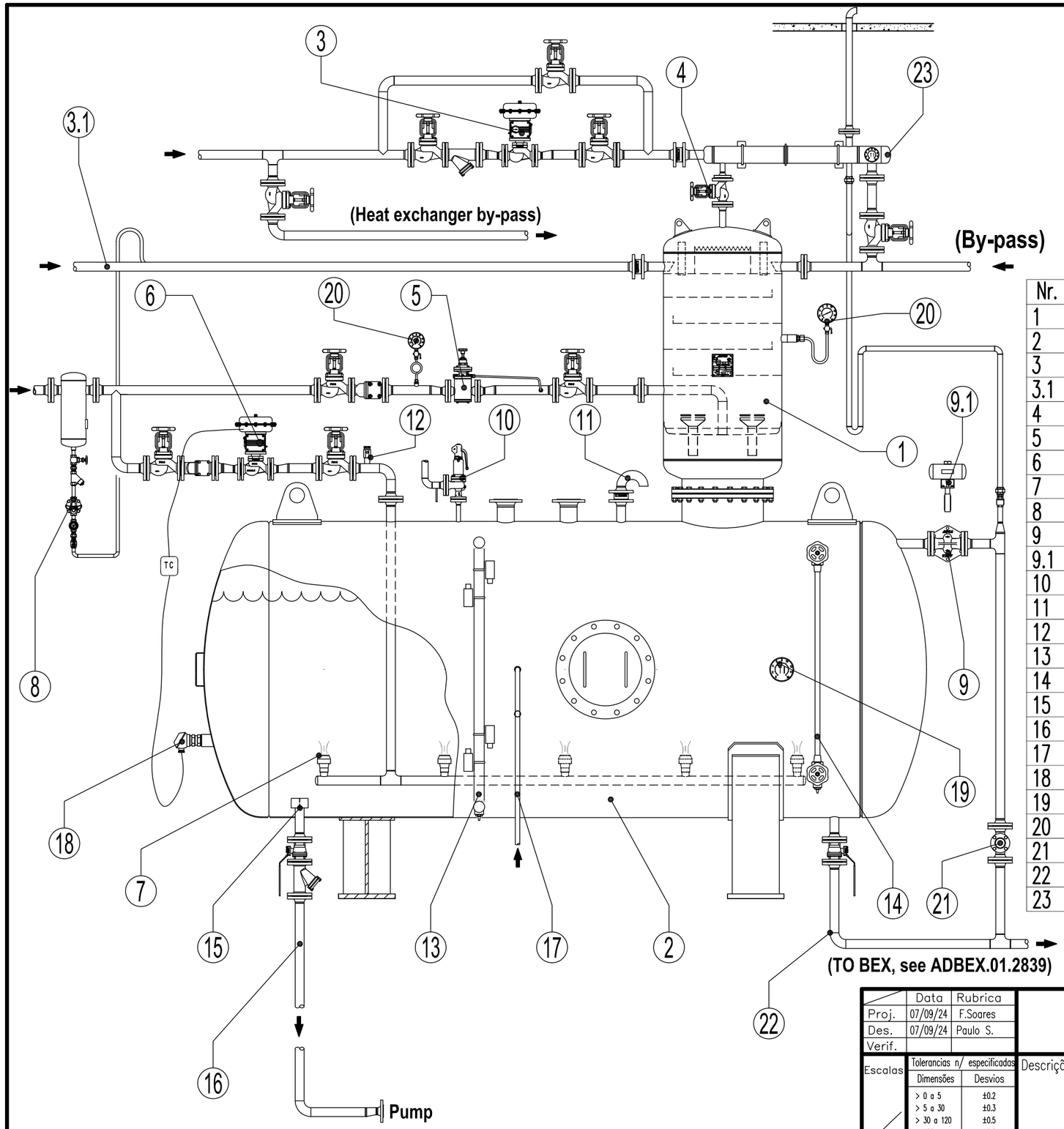

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM-TDG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make-up water		1	
3.1	Condensate return		1	
4	Vent valve with regulating cone		1	
5	ADCA PRV47 steam pressure red. station		1	
6	ADCATROL storage water temp. control		1	
7	ADCA SI steam injection system		1	
8	ADCA S25 humidity separator with trap		1	
9	ADCA FLT steam trap overflow		1	
9.1	Alternative mot. valve overflow		1	
10	Safety valve		1	
11	ADCA RD40 check v. vacuum breaker		1	
12	ADCA VB21 Vacuum breaker		1	
13	Level control		1	
14	Level indicator		1	
15	Vortex breaker		1	
16	Service supply		1	
17	Dosing chemical supply		1	
18	Rtd probe		1	
19	Temperature indicator		1	
20	ADCA MAN 100 pressure indicator		2	
21	ADCA DW sight glass		1	
22	Drain		1	
23	ADCATHERM STS heat exchanger cond.		1	

	Data	Rubrica
Proj.	07/09/24	F.Soares
Des.	07/09/24	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30°
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
THERMAL DEAERATOR TDG-V
With vent condenser
Typical installation

Des.Nº:
ADTDGV.02.2841

Rev: 00 Em: 00/00/00

Mod.A3-H

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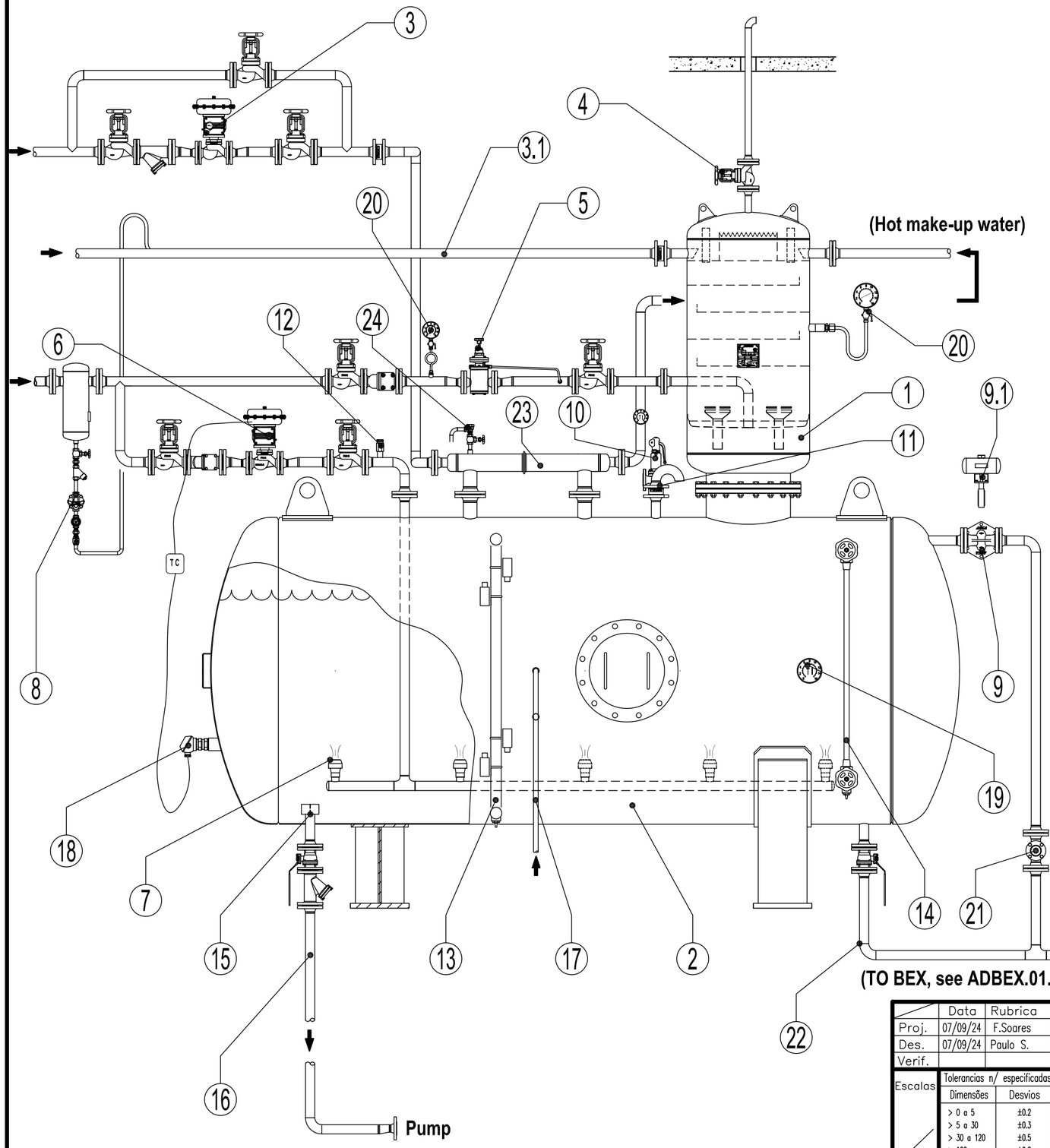

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM–TDG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make–up water		1	
3.1	Condensate return		1	
4	Vent valve with regulating cone		1	
5	ADCA PRV47 steam pressure red. station		1	
6	ADCATROL storage water temp. control		1	
7	ADCA SI steam injection system		1	
8	ADCA S25 humidity separator with trap		1	
9	ADCA FLT steam trap overflow		1	
9.1	Alternative mot. valve overflow		1	
10	Safety valve		1	
11	ADCA RD40 check v. vacuum breaker		1	
12	ADCA VB21 Vacuum breaker		1	
13	Level control		1	
14	Level indicator		1	
15	Vortex breaker		1	
16	Service supply		1	
17	Dosing chemical supply		1	
18	Rtd probe		1	
19	Temperature indicator		1	
20	ADCA MAN 100 pressure indicator		2	
21	ADCA DW sight glass		1	
22	Drain		1	
23	ADCATHERM STS heat exchanger cond.		1	
24	ADCA TH air eliminator		1	

	Data	Rubrica
Proj.	07/09/24	F.Soares
Des.	07/09/24	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/–30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
THERMAI DEAERATOR TDG–V
With Pre heating make up water exchanger
Typical instalation

Des.N°:
ADTDGV.03.2842

Rev: 00 Em: 00/00/00

Mod.A3–H

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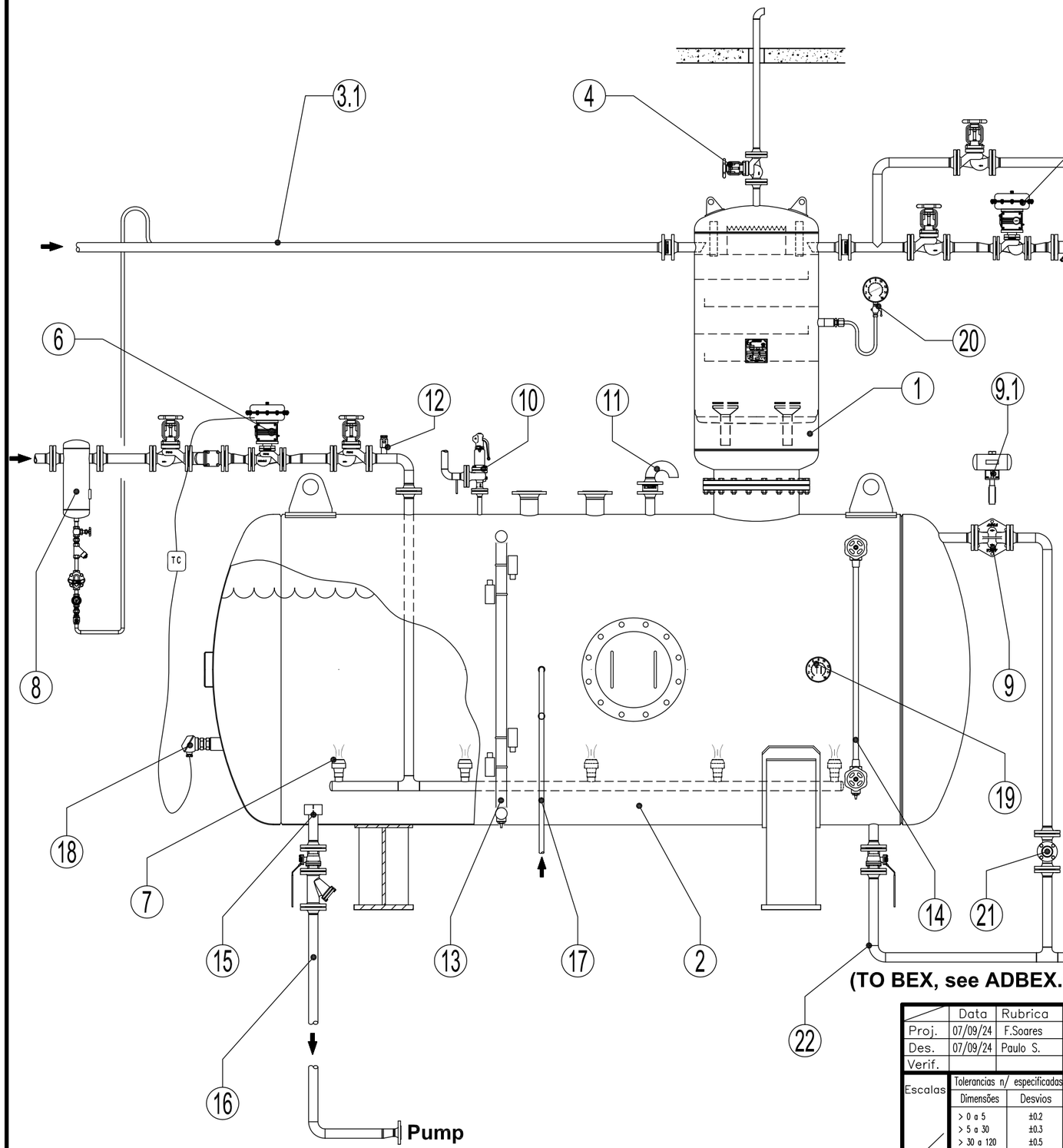

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM–TDG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make–up water		1	
3.1	Condensate return		1	
4	Vent valve with regulating cone		1	
5	.		1	
6	ADCATROL storage water temp. control		1	
7	ADCA SI steam injection system		1	
8	ADCA S25 humidity separator with trap		1	
9	ADCA FLT steam trap overflow		1	
9.1	Alternative mot. valve overflow		1	
10	Safety valve		1	
11	ADCA RD40 check v. vacuum breaker		1	
12	ADCA VB21 Vacuum breaker		1	
13	Level control		1	
14	Level indicator		1	
15	Vortex breaker		1	
16	Service supply		1	
17	Dosing chemical supply		1	
18	Rtd probe		1	
19	Temperature indicator		1	
20	ADCA MAN 100 pressure indicator		1	
21	ADCA DW sight glass		1	
22	Drain		1	

	Data	Rubrica
Proj.	07/09/24	F.Soares
Des.	07/09/24	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/–30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
THERMAL DEAERATOR TDG–V
Without steam dome injection
Typical installation

Des.N°:
ADTDGV.04.2843

Rev: 00 Em: 00/00/00

Mod.A3–H

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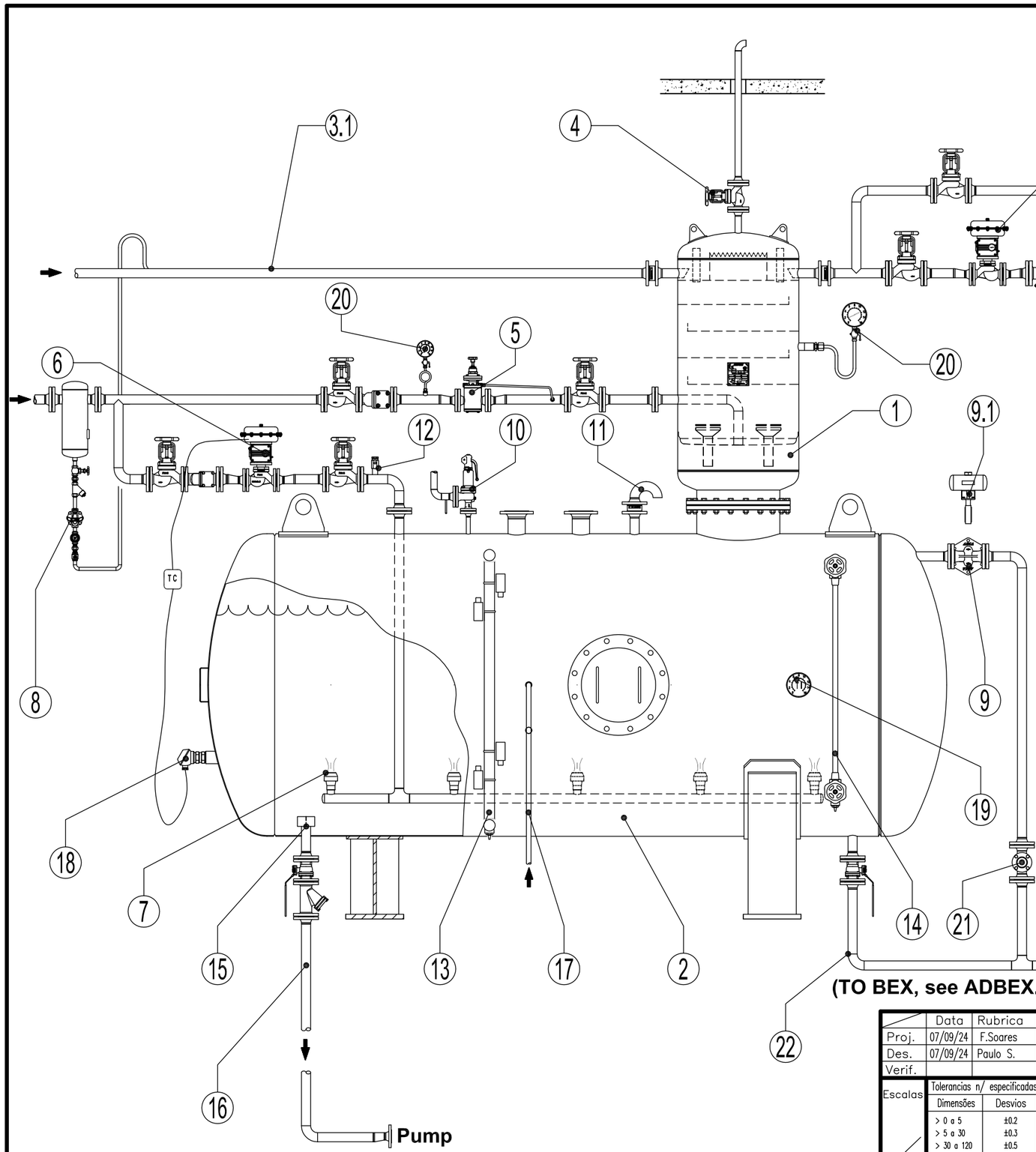

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM–TDG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make–up water		1	
3.1	Condensate return		1	
4	Vent valve with regulating cone		1	
5	ADCA PRV47 steam pressure red. station		1	
6	ADCATROL storage water temp. control		1	
7	ADCA SI steam injection system		1	
8	ADCA S25 humidity separator with trap		1	
9	ADCA FLT steam trap overflow		1	
9.1	Alternative mot. valve overflow		1	
10	Safety valve		1	
11	ADCA RD40 check v. vacuum breaker		1	
12	ADCA VB21 Vacuum breaker		1	
13	Level control		1	
14	Level indicator		1	
15	Vortex breaker		1	
16	Service supply		1	
17	Dosing chemical supply		1	
18	Rtd probe		1	
19	Temperature indicator		1	
20	ADCA MAN 100 pressure indicator		2	
21	ADCA DW sight glass		1	
22	Drain		1	

	Data	Rubrica
Proj.	07/09/24	F.Soares
Des.	07/09/24	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/–30'
Chanfros / Rolos: 0.3

VALSTEAM
ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
THERMAL DEAERATOR TDG–V
With cold make up water
Typical installation

Des.N°:
ADTDGV.01.2597

Rev: 00 Em: 00/00/00

Mod.AJ–H

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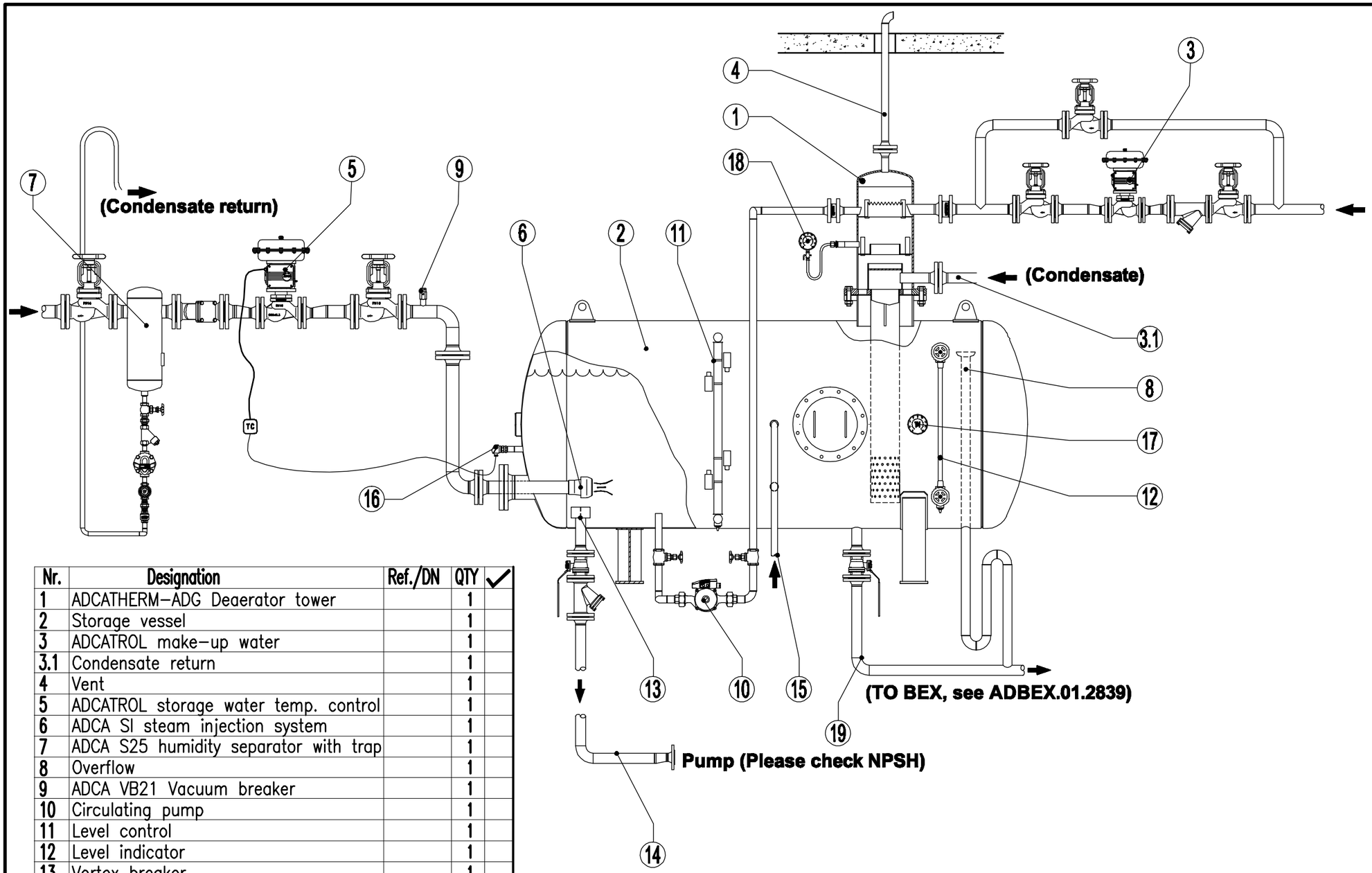

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM–ADG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make–up water		1	
3.1	Condensate return		1	
4	Vent		1	
5	ADCATROL storage water temp. control		1	
6	ADCA SI steam injection system		1	
7	ADCA S25 humidity separator with trap		1	
8	Overflow		1	
9	ADCA VB21 Vacuum breaker		1	
10	Circulating pump		1	
11	Level control		1	
12	Level indicator		1	
13	Vortex breaker		1	
14	Service supply		1	
15	Dosing chemical supply		1	
16	Rtd probe		1	
17	Temperature indicator		1	
18	ADCA MAN 100 pressure indicator		1	
19	Drain		1	

	Data	Rubrica
Proj.	07/09/25	F.Soares
Des.	07/09/25	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas	
Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/–30'
Chanfros / Rolos: 0.3

VALSTEAM ADCA ENGINEERING,SA

Proc. 0.490

Descrição:
ATMOSPHERIC SEMI DEAERATOR ADG–V
With cold make up water
Typical installation

Des.Nº:
ADADGV.01.2844

Rev: 00 Em: 00/00/00

Mod.A3–H

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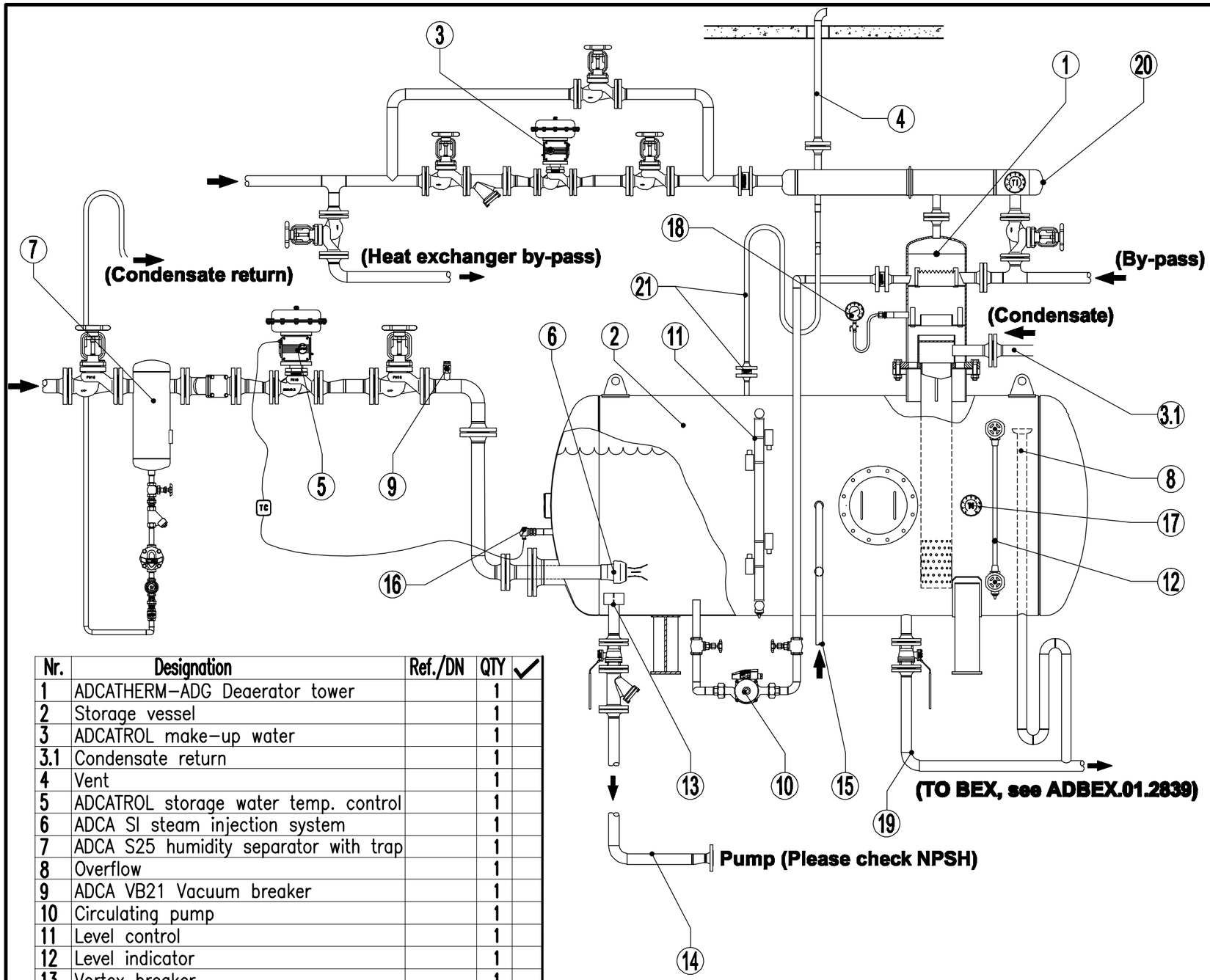

Nr.	Designation	Ref./DN	QTY	✓
1	ADCATHERM-ADG Deaerator tower		1	
2	Storage vessel		1	
3	ADCATROL make-up water		1	
3.1	Condensate return		1	
4	Vent		1	
5	ADCATROL storage water temp. control		1	
6	ADCA SI steam injection system		1	
7	ADCA S25 humidity separator with trap		1	
8	Overflow		1	
9	ADCA VB21 Vacuum breaker		1	
10	Circulating pump		1	
11	Level control		1	
12	Level indicator		1	
13	Vortex breaker		1	
14	Service supply		1	
15	Dosing chemical supply		1	
16	Rtd probe		1	
17	Temperature indicator		1	
18	ADCA MAN 100 pressure indicator		1	
19	Drain		1	
20	ADCATHERM STS heat exchanger cond.		1	
21	ADCA RD40 check valve drain		1	

	Data	Rubrica
Proj.	07/09/25	F.Soares
Des.	07/09/25	Paulo S.
Verif.		

Escalas

Tolerancias n/ especificadas

Dimensões	Desvios
> 0 a 5	±0.2
> 5 a 30	±0.3
> 30 a 120	±0.5
> 120	±0.8

Angulos +/-30'
Chanfros / Rolos: 0.3

VALSTEAM ADCA ENGINEERING,SA

Descrição:
ATMOSPHERIC SEMI DEAERATOR ADG-V
With vent condenser
Typical installation

Proc. 0.490

Des.Nº:
ADADGV.02.2845

Rev: 00 Em: 00/00/00

Mod.A3-H

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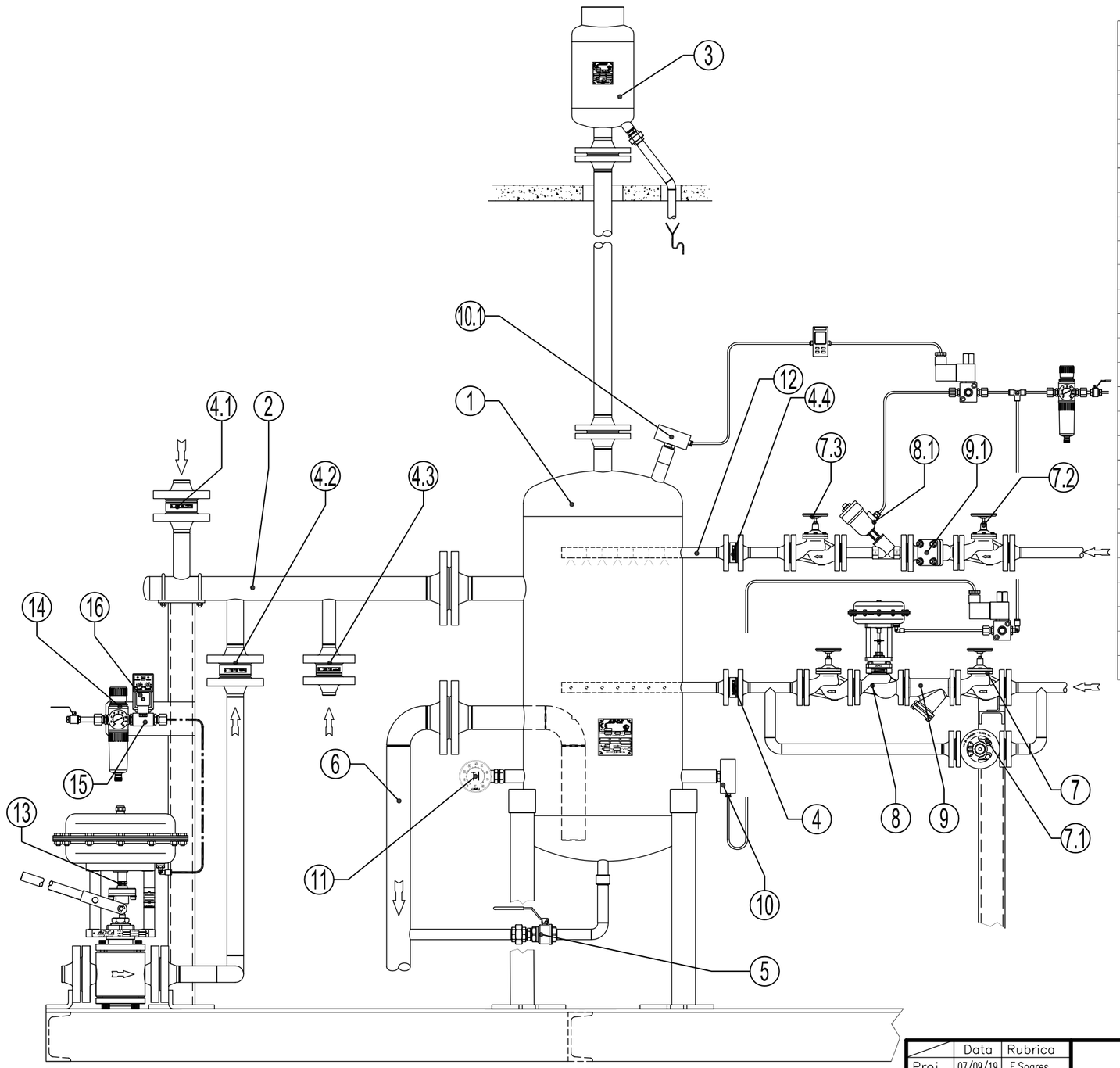

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA BEX Blowdown expansion and cooling unit		1	
2	Manifold		1	
3	ADCA EH Exhaust head		1	
4	ADCA RD40 Check valve		1	
4.1	ADCA RD40 Check valve		1	
4.2	ADCA RD40 Check valve		1	
4.3	ADCA RD40 Check valve		1	
4.4	ADCA RD40 Check valve		1	
5	Ball valve		1	
6	Drain pipe		1	
7	ADCA VF16 Globe		2	
7.1	ADCA VF16 Globe		1	
7.2	ADCA VF16 Globe		1	
7.3	ADCA VF16 Globe		1	
8	ADCATROL PV16___/PV25___ON-OFF Control valve		1	
8.1	ADCATROL PAV21 ON-OFF Control valve		1	
9	ADCA IS16F Y strainer		1	
9.1	ADCA IS16F Y strainer		1	
10	Thermostat		1	
10.1	Thermostat		1	
11	Temperature indicator		1	
12	Flash steam cooling water		1	
13	ADCATROL VPA26 blowdown valve		1	
14	ADCA P10 air filter regulator		1	
15	ADCA SV32C solenoide valve 3/2		1	
16	ADCA control timer		1	

	Data	Rubrica
Proj.	07/09/19	F.Soares
Des.	07/09/19	Paulo S.
Verif.	— —	F.Soares

Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

VALSTEAM ADCA

Proc. 0.490

Descrition / Descrição:

BLOWDOWN EXPANSION AND COOLING UNIT

Typical instalation with Adcatrol PV16G valve

Des.N°: **ADBEX.01.2839**

Rev: 02 Em: 09/11/12

Mod.AJ-H

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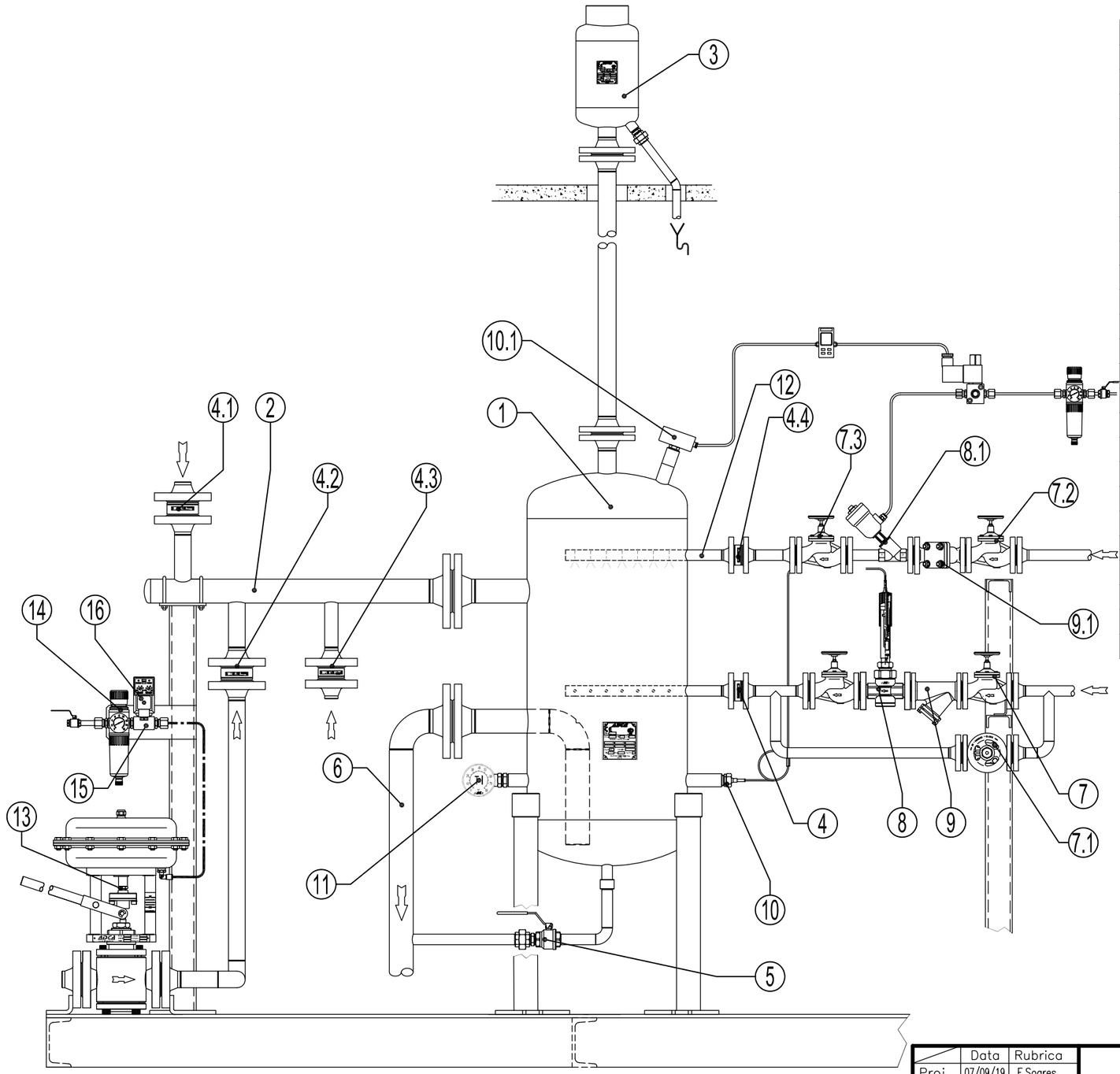

Nr.	Designation	Ref./DN	QTY	✓
1	ADCA BEX Blowdown expansion and cooling unit		1	
2	Manifold		1	
3	ADCA EH Exhaust head		1	
4	ADCA RD40 Check valve		1	
4.1	ADCA RD40 Check valve		1	
4.2	ADCA RD40 Check valve		1	
4.3	ADCA RD40 Check valve		1	
4.4	ADCA RD40 Check valve		1	
5	Ball valve		1	
6	Drain pipe		1	
7	ADCA VF16 Globe		2	
7.1	ADCA VF16 Globe		1	
7.2	ADCA VF16 Globe		1	
7.3	ADCA VF16 Globe		1	
8	ADCATROL TR25 temperature regulators		1	
8.1	ADCATROL PAV21 ON-OFF Control valve		1	
9	ADCA IS16F Y strainer		1	
10	Thermostat		1	
10.1	Thermostat		1	
11	Temperature indicator		1	
12	Flash steam cooling water		1	
13	ADCATROL VPA26 blowdown valve		1	
14	ADCA P10 air filter regulator		1	
15	ADCA SV32C solenoide valve 3/2		1	
16	ADCA control timer		1	

	Data	Rubrica
Proj.	07/09/19	F.Soares
Des.	07/09/19	Paulo S.
Verif.	— —	F.Soares

Escalas: /

Tolerancias n/ especificadas: Dimensões | Desvios

VALSTEAM ADCA

Proc. 0.490

Descrition / Descrição:

BLOWDOWN EXPANSION AND COOLING UNIT

Typical instalation with Adcatrol TR25S/R valve

Des.Nº: **ADBEX.02.3028**

Rev: 02 Em: 09/11/12

Mod.A3-H

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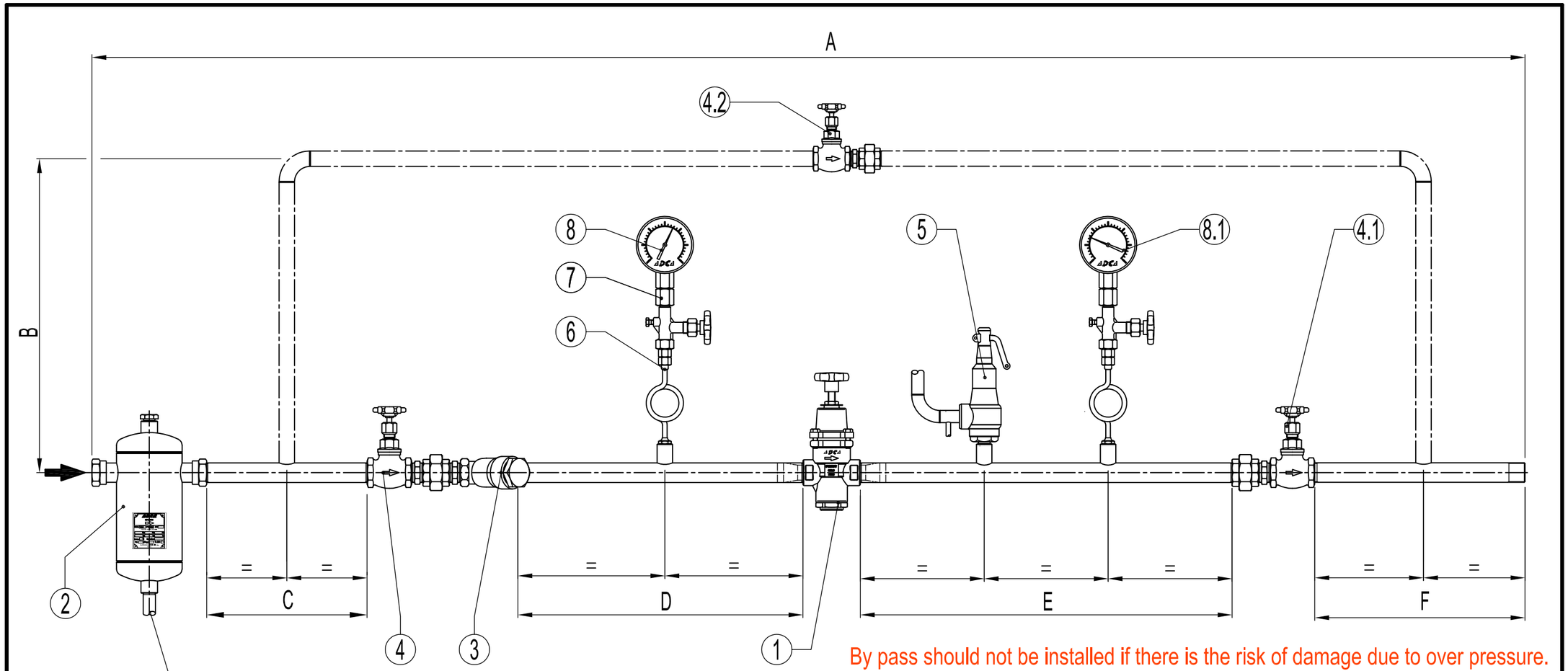

By pass should not be installed if there is the risk of damage due to over pressure.

Ref.	Quant.	Designation / Designação	Size/Medidas	Material	Remarcks / Observações
8.1	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
08	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
07	02	ADCA GC-400 Gauge Cock	DN____	____ ____	---
06	02	ADCA GSC-40 Gauge siphon	DN____	____ ____	---
05	01	Safety valve	DN____	____ ____	Spring _____
4.2	01	ADCA GV32B Globe valve	DN____	____ ____	---
4.1	01	ADCA GV32B Globe valve	DN____	____ ____	---
04	01	ADCA GV32B Globe valve	DN____	____ ____	---
03	01	ADCA IS16 Y Strainer	DN____	____ ____	---
02	01	ADCA S16S Humidify separator	DN____	____ ____	
01	01	ADCA PRV25____Pressure reducing valve	DN____	____ * ____	---

DIMENSIONS (mm)	
A	
B	
C	
D	
E	
F	
G	
H	

* See IS catalogue.

	Data	Rubrica
Proj.	06/11/07	F.Soares
Des.	06/11/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Descrition / Descrição:

PRESSURE REDUCING VALVE STATION

CONJUNTO REDUTOR ARMADO

PRV25 Series

Des.Nº:

ADCR.01.2172

Rev: 01 Em: 08/09/18

Mod.A3-H

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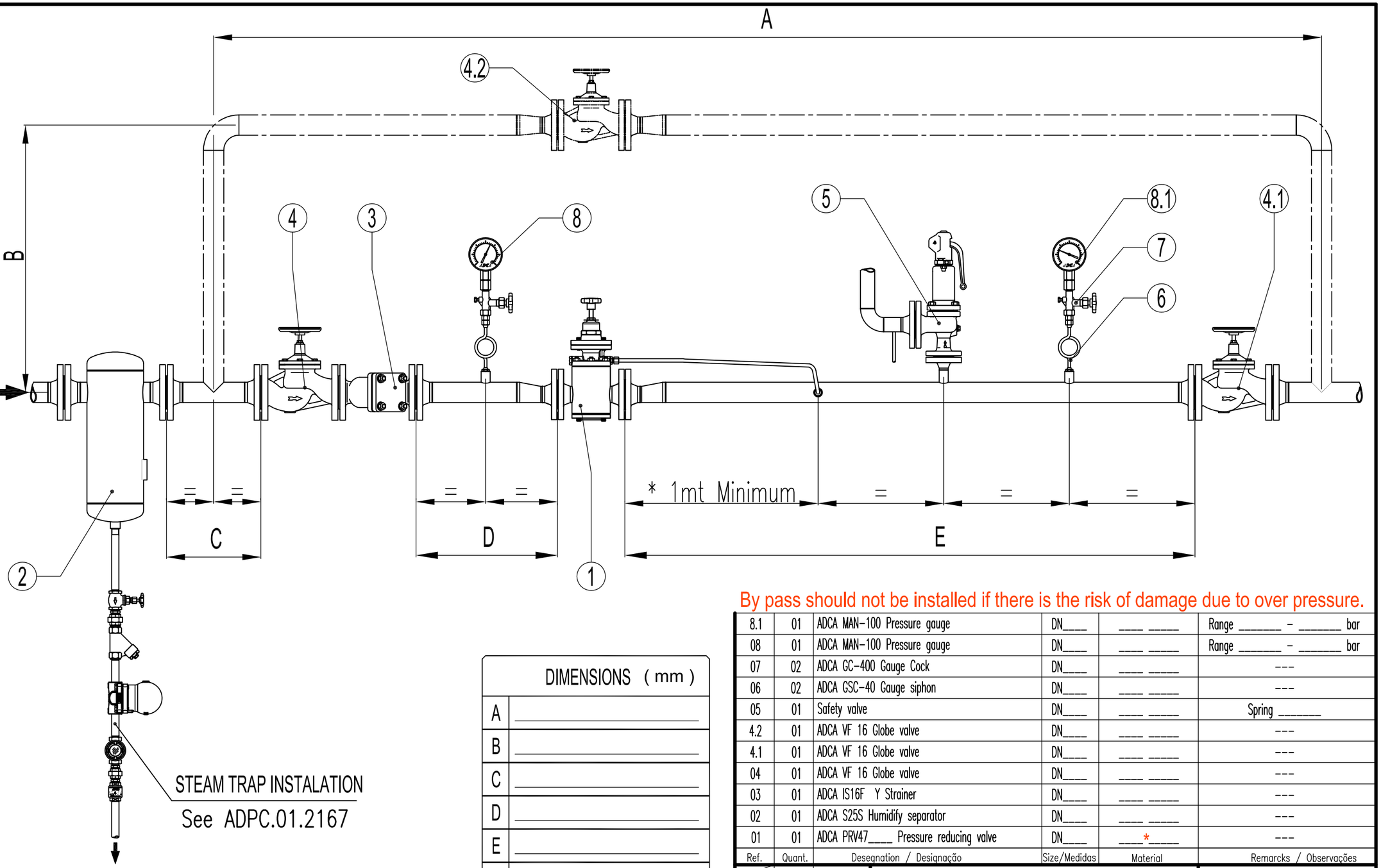

STEAM TRAP INSTALATION

See ADPC.01.2167

DIMENSIONS (mm)	
A	
B	
C	
D	
E	
F	
G	
H	

* See IS catalogue

By pass should not be installed if there is the risk of damage due to over pressure.

Ref.	Quant.	Designation / Designação	Size/Medidas	Material	Remarcks / Observações
8.1	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
08	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
07	02	ADCA GC-400 Gauge Cock	DN____	____ ____	---
06	02	ADCA GSC-40 Gauge siphon	DN____	____ ____	---
05	01	Safety valve	DN____	____ ____	Spring _____
4.2	01	ADCA VF 16 Globe valve	DN____	____ ____	---
4.1	01	ADCA VF 16 Globe valve	DN____	____ ____	---
04	01	ADCA VF 16 Globe valve	DN____	____ ____	---
03	01	ADCA IS16F Y Strainer	DN____	____ ____	---
02	01	ADCA S25S Humidify separator	DN____	____ ____	---
01	01	ADCA PRV47____ Pressure reducing valve	DN____	____*____	---

	Data	Rubrica
Proj.	06/07/07	F.Soares
Des.	06/07/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Description / Descrição:

PRESSURE REDUCING VALVE STATION

CONJUNTO REDUTOR ARMADO

PRV47S

Des.N°: **ADCR.02.2375**

Rev: 01 Em: 08/09/19

Mod.A3-h

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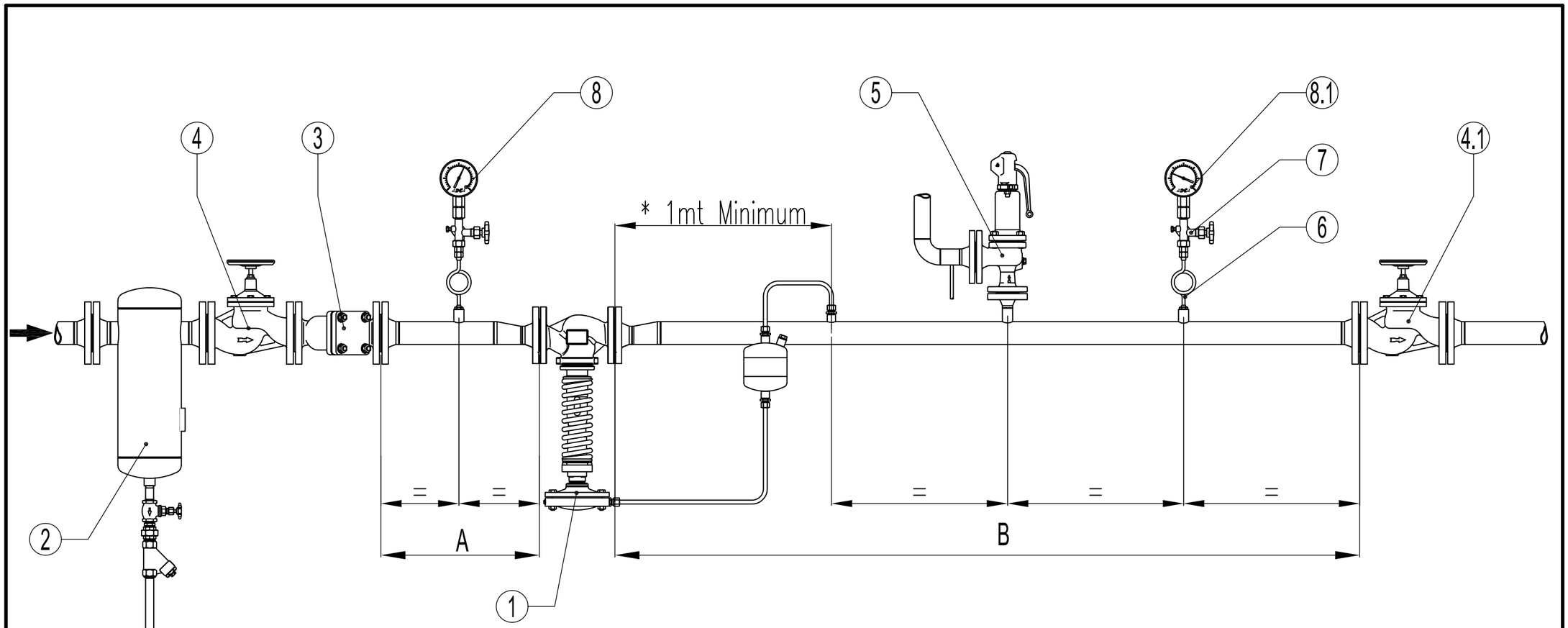

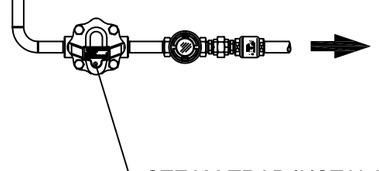

STEAM TRAP INSTALATION

See ADPC.01.2167

DIMENSIONS (mm)	
A	
B	
C	
D	
E	
F	
G	
H	

* See IS catalogue

Ref.	Quant.	Desegnation / Designação	Size/Medidas	Material	Remarcks / Observações
8.1	01	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
08	01	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
07	02	ADCA GC-400 Gauge Cock	DN____	____ _____	---
06	02	ADCA GSC-40 Gauge siphon	DN____	____ _____	---
05	01	Safety valve	DN____	____ _____	Spring _____
4.1	01	ADCA VF 16 Globe valve	DN____	____ _____	---
04	01	ADCA VF 16 Globe valve	DN____	____ _____	---
03	01	ADCA IS16F Y Strainer	DN____	____ _____	---
02	01	ADCA S25S Humidify separator	DN____	____ _____	---
01	01	ADCA ADCA RP45 Pressure reducing valve	DN____	____*_____	---

	Data	Rubrica
Proj.	06/07/07	F.Soares
Des.	06/07/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Descrition / Descrição:

PRESSURE REDUCING VALVE STATION

CONJUNTO REDUTOR ARMADO

RP45

Des.N°:

ADCR.04.3055

Rev: 02 Em: 09/11/12

Mod.A3-h

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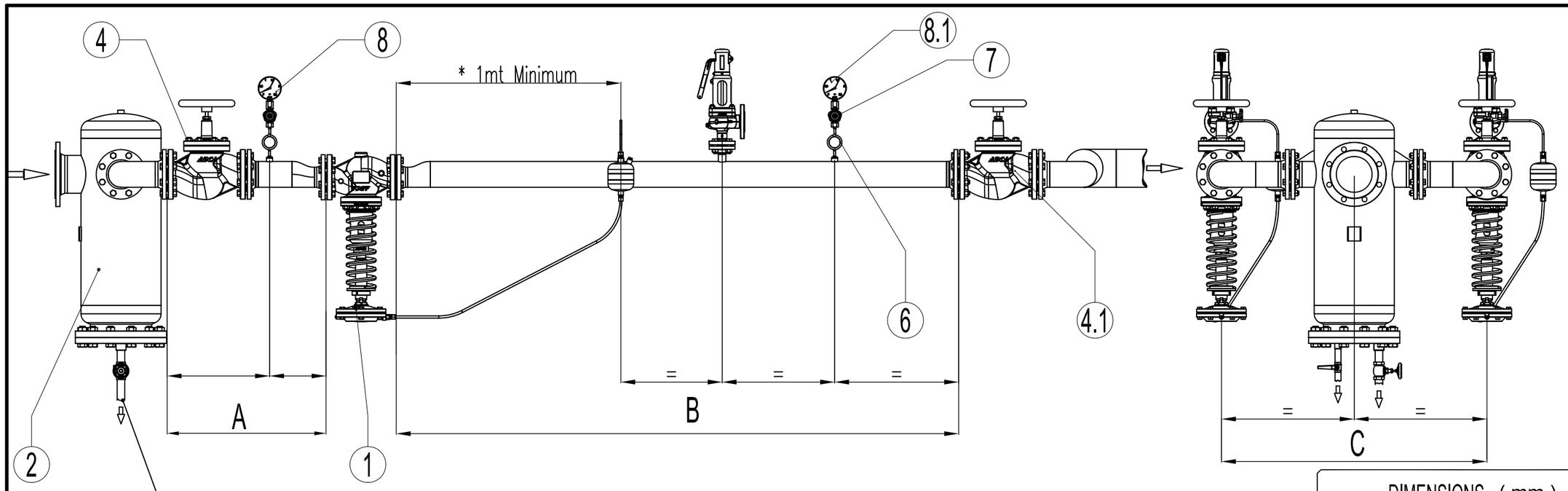
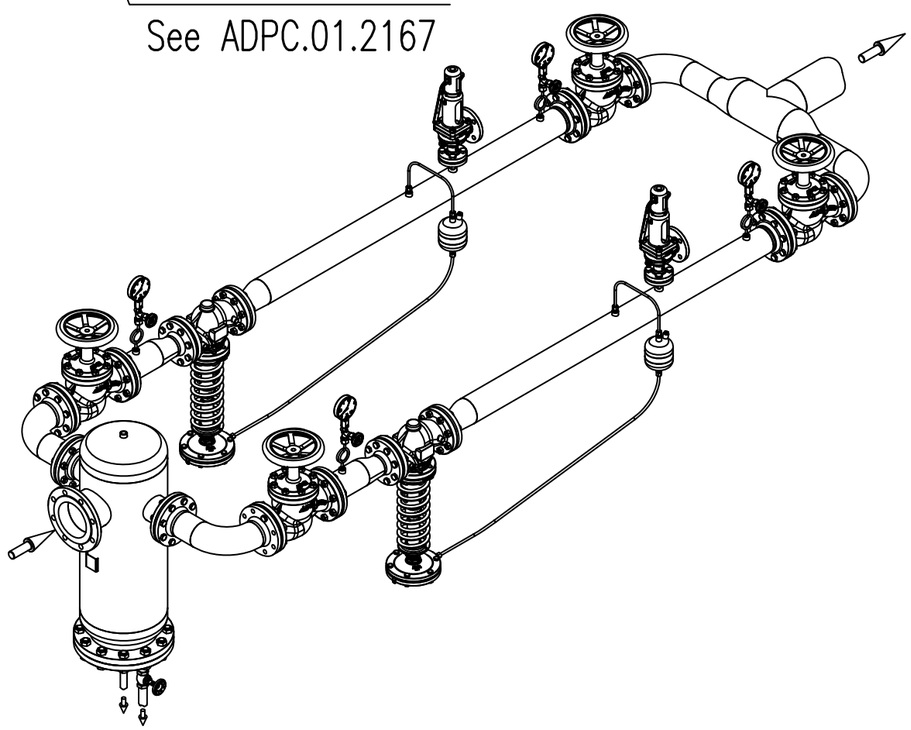


STEAM TRAP INSTALATION

See ADPC.01.2167



DIMENSIONS (mm)	
A	
B	
C	

* See IS catalogue

Ref.	Quant.	Designation / Designação	Size/Medidas	Material	Remarcks / Observações
8.1	02	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
08	02	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
07	04	ADCA GC-400 Gauge Cock	DN____	____ _____	---
06	04	ADCA GSC-40 Gauge siphon	DN____	____ _____	---
05	01	Safety valve	DN____	____ _____	Spring _____
4.1	02	ADCA VF 16 Globe valve	DN____	____ _____	---
04	04	ADCA VF 16 Globe valve	DN____	____ _____	---
02	01	ADCA S252F Humidify separator/Strainer	DN___x___x___	____ _____	---
01	02	ADCA ADCA RP45 Pressure reducing valve	DN____	____*_____	---

	Data	Rubrica
Proj.	11/03/07	F.Soares
Des.	11/03/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Description / Descrição:

PRESSURE REDUCING VALVE STATION

CONJUNTO REDUTOR ARMADO

RP45 TW

Des.Nº:

ADCR.05.4805

Rev: 00 Em: 00/00/00

Mod.A3-H

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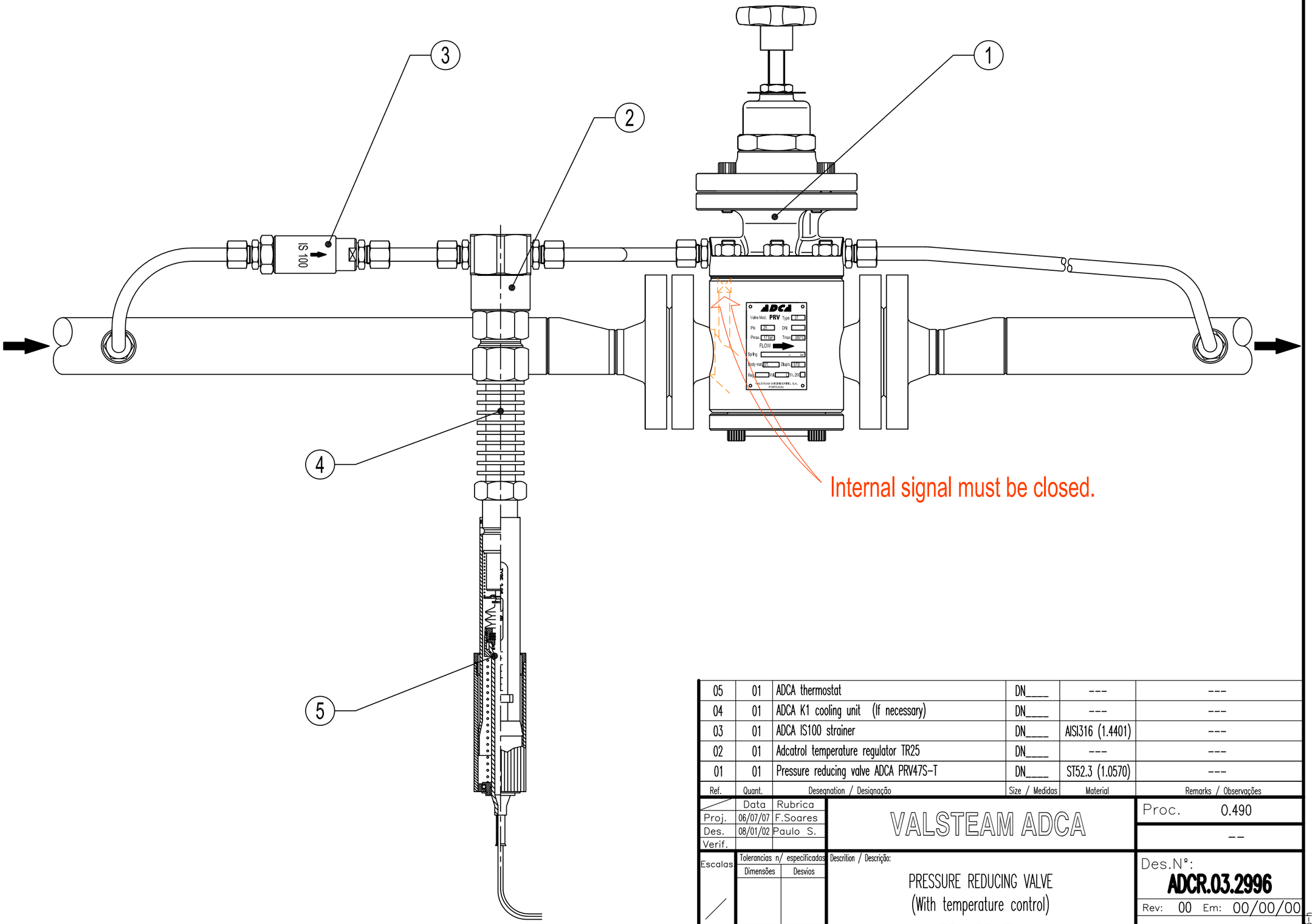

Ref.	Quant.	Designation / Designação	Size / Medidas	Material	Remarks / Observações
05	01	ADCA thermostat	DN____	---	---
04	01	ADCA K1 cooling unit (If necessary)	DN____	---	---
03	01	ADCA IS100 strainer	DN____	AISI316 (1.4401)	---
02	01	Adcatrol temperature regulator TR25	DN____	---	---
01	01	Pressure reducing valve ADCA PRV47S-T	DN____	ST52.3 (1.0570)	---

	Data	Rubrica
Proj.	06/07/07	F.Soares
Des.	08/01/02	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas

Dimensões	Desvios

Descrition / Descrição:

PRESSURE REDUCING VALVE
(With temperature control)
PRV47S-T

Des.N°:
ADCR.03.2996

Rev: 00 Em: 00/00/00

Mod.AJ-h

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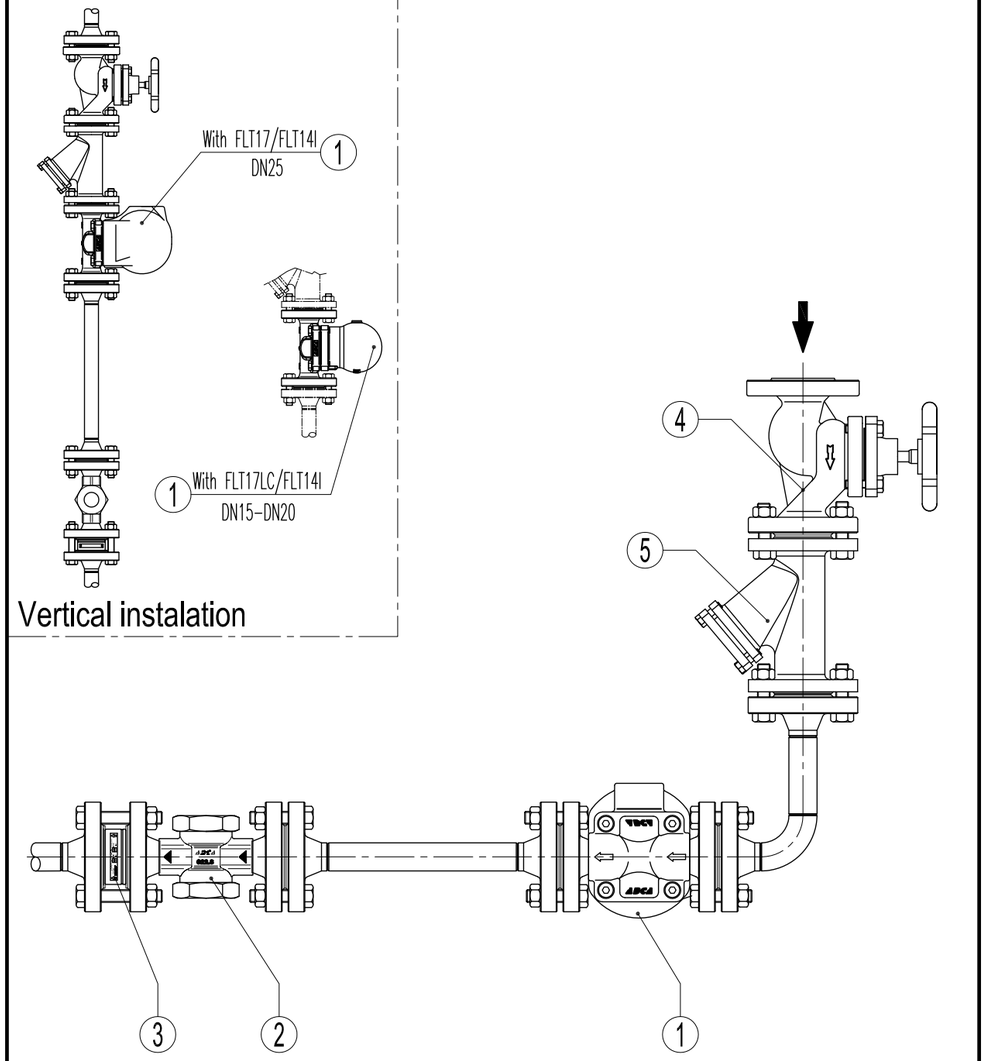

Ref.	Quant.	Designation / Designação	Size / Medidas	Material	Remarcks / Observações
05	01	ADCA IS16F Y strainer	DN____	--- ---	---
04	01	ADCA VF16 Globe valve	DN____	--- ---	---
03	01	ADCA RD40 Wafer type non return valve	DN____	--- ---	---
02	01	ADCA DW40S Double window sight glass	DN____	--- ---	---
01	01	ADCA FLT17/FLT17LC/FLT14I Steam trap D.P_____bar	DN____	--- ---	Specify differential pressure

	Data	Rubrica
Proj.	06/11/08	F.Soares
Des.	06/11/08	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões / Desvios

Descrition / Descrição:

STEAM TRAP INSTALATION

CONJUNTO DE PURGA

FLT17LC/FLT17/FLT4I

Des.N°: ADPC.02.2168

Rev: 01 Em: 08/09/23

Mod.A4-V

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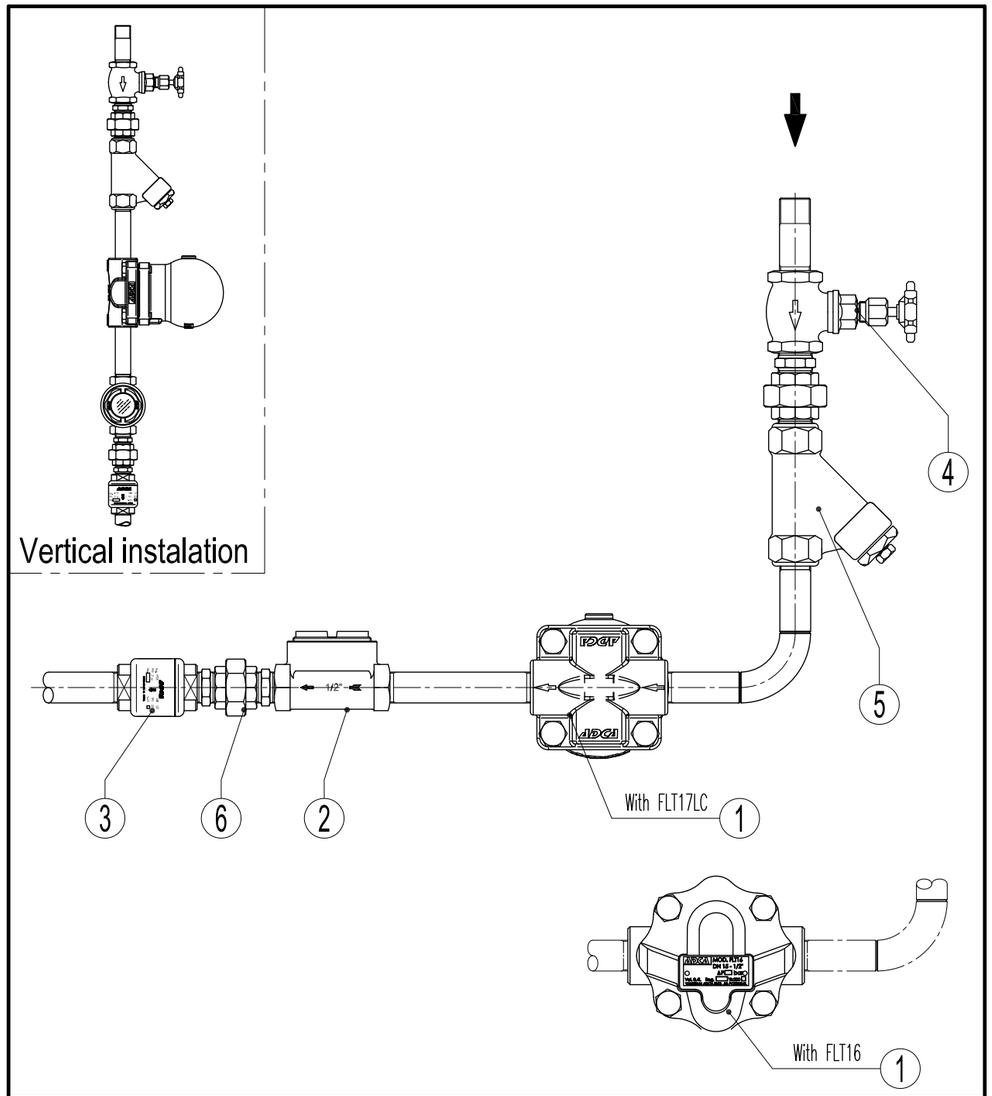

Ref.	Quant.	Designation / Designação	Size/Medidas	Material	Remarcks / Observações
06	02	Unions	DN____	A105 (1.0432)	---
05	01	ADCA IS16 strainer Cast iron pipeline	DN____	GGG40.3 (0.7033)	---
04	01	ADCA GV32B Globe valve	DN____	Brass (CuZn39b2)	---
03	01	ADCA RT25 Non return valve	DN____	AISI316 (1.4401)	---
02	01	ADCA SW12 Single window sight glass	DN____	Brass (CuZn39b2)	---
01	01	ADCA FLT17LC/FLT16 Steam trap D.P_____bar	DN____	GGG40 (0.7040)	Specify differential pressure

	Data	Rubrica
Proj.	06/11/08	F.Soares
Des.	06/11/08	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões / Desvios

Descrition / Descrição:

STEAM TRAP INSTALATION

CONJUNTO DE PURGA

FLT17LC/FLT16

Des.N°: ADPC.01.2167

Rev: 01 Em: 08/09/19

Mod.A4-V

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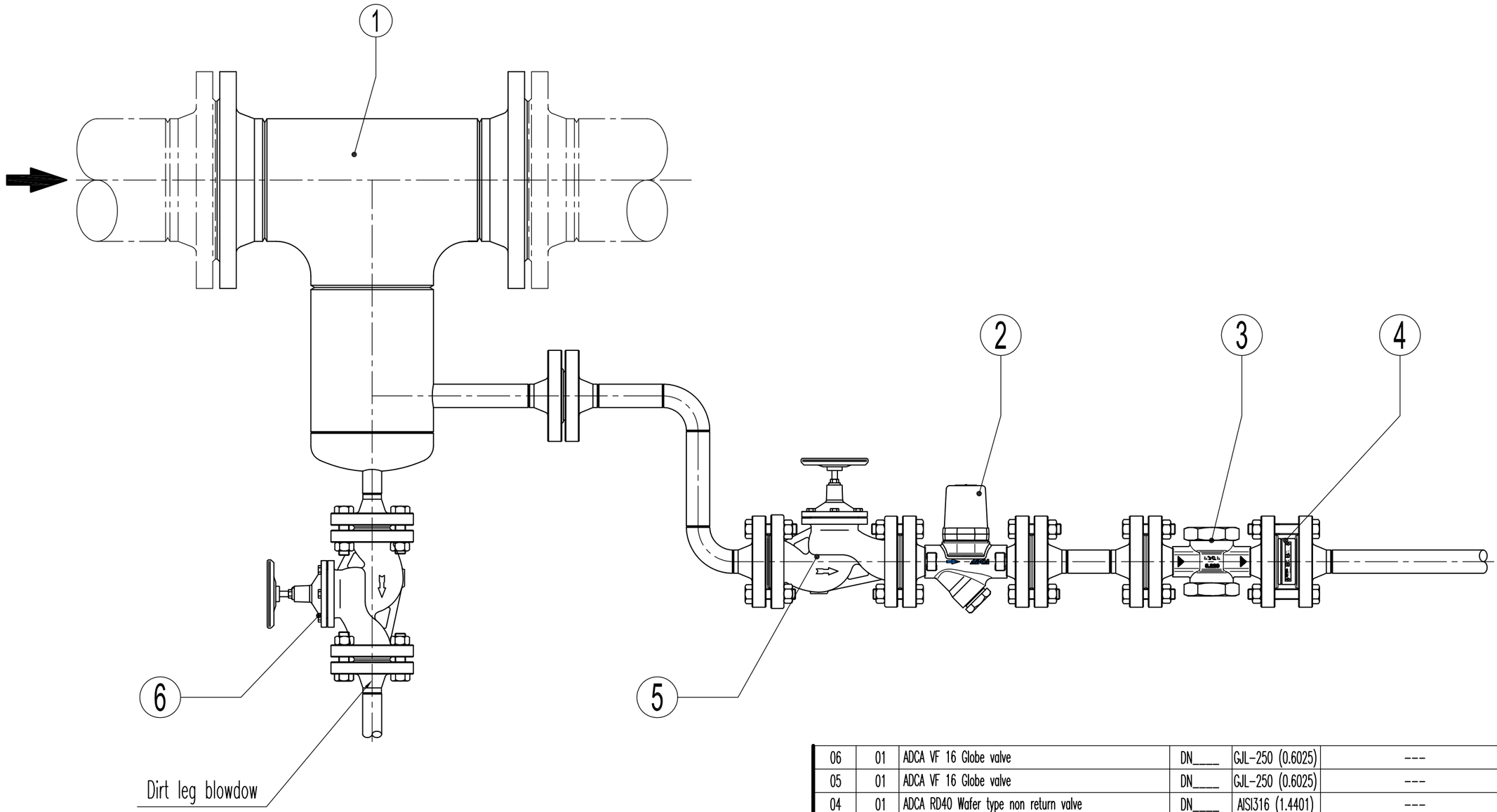

Ref.	Quant.	Deseqnation / Designação	Size / Medidas	Material	Remarcks / Observações
06	01	ADCA VF 16 Globe valve	DN____	GJL-250 (0.6025)	---
05	01	ADCA VF 16 Globe valve	DN____	GJL-250 (0.6025)	---
04	01	ADCA RD40 Wafer type non return valve	DN____	AISI316 (1.4401)	---
03	01	ADCA DW40S Double window sight glass	DN____	P250GH (1.0460)	
02	01	ADCA BM24/BM32 Bimetallic steam trap and air eliminator	DN____	P250GH (1.0460)	----
01	01	Steam main drips	DN____	P235GH (1.0305)	ADPL.01.2164

	Data	Rubrica
Proj.	06/11/07	F.Soares
Des.	06/11/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas

Dimensões	Desvios

Descrition / Descrição:

DRAINAGE OF PIPES / PURGAS DE TUBAGENS

Steam main drips / Purga de linha

BM24/BM32

Des.Nº:

ADPL.02.2165

Rev: 01 Em: 08/09/26

Mod.A3-h

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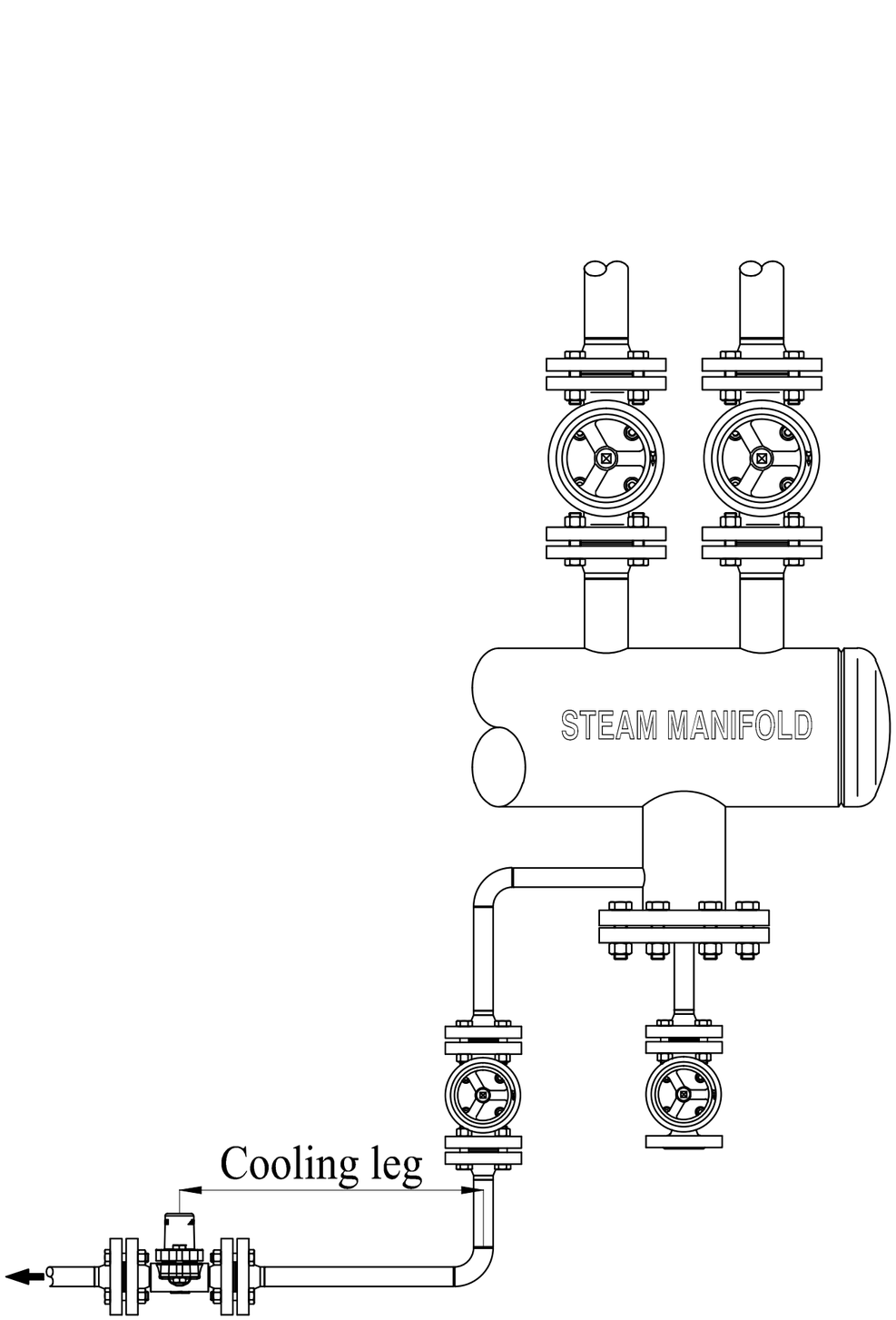

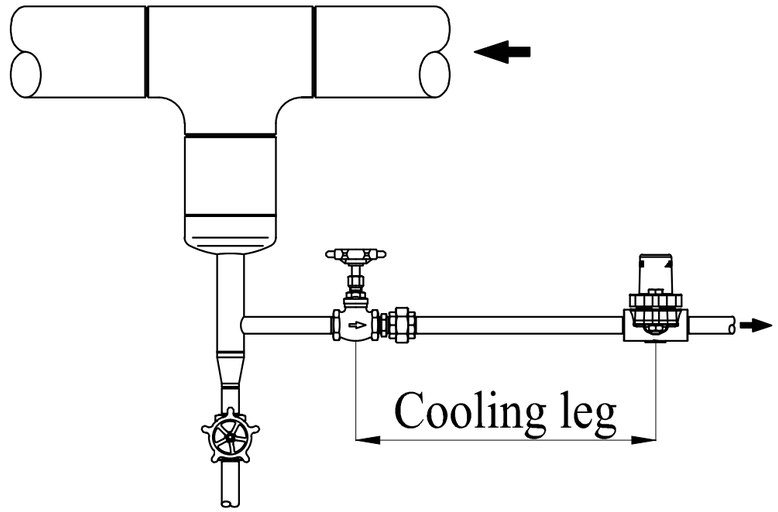

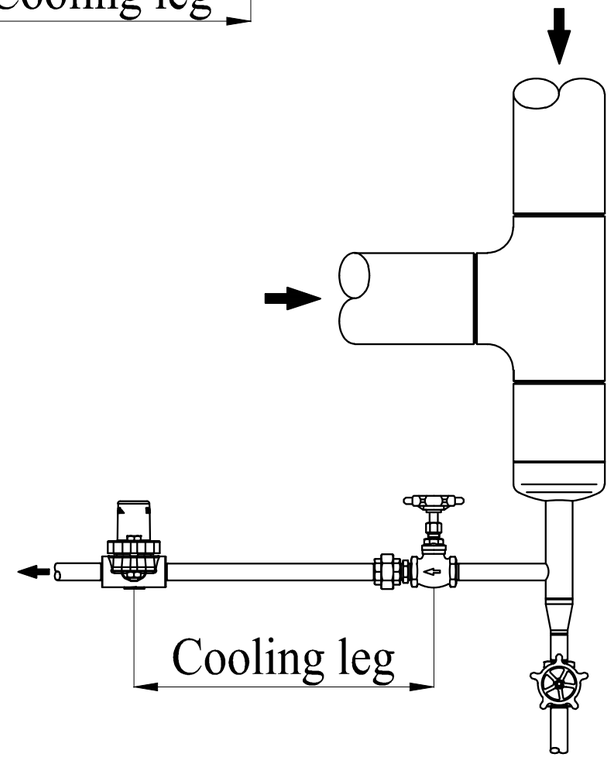

	Data	Rubrica
Proj.	10/08/18	F.Soares
Des.	10/08/18	Paulo S.
Verif.		

Escalas	Tolerancias n/ especificadas	
	Dimensões	Desvios
/		

VALSTEAM ADCA

Descrition / Descrição:

DRAINAGE OF PIPES / PURGAS DE TUBAGENS

Bimetallic traps

Typical installation

BS32

Proc. 0.490

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Des.N°:

ADPL.03.4487

Rev: 00 Em: 00/00/00

Mod.A3-h

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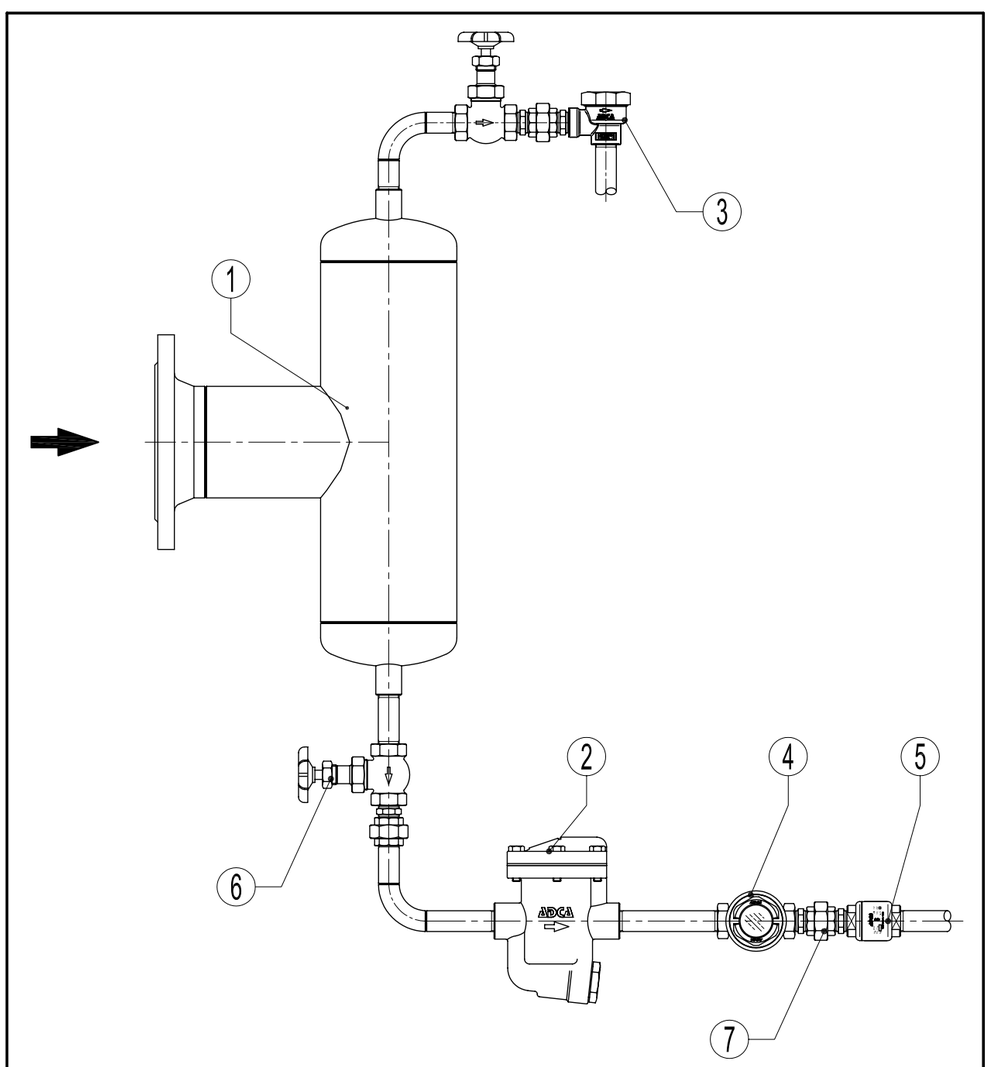

Ref.	Quant.	Desegnation / Designação	Size / Medidas	Material	Remarcks / Observações
07	03	Unions	DN____	A105 (1.0432)	---
06	02	Globe valve	DN____	_____	---
05	01	Non return valve ADCA RT25	DN____	AISI316 (1.4401)	---
04	01	Single window sight glass ADCA SW12	DN____	Brass (CuZn39b2)	---
03	01	Thermostatic steam trap and air eliminator ADCA TH13A	DN 1/2"	Brass (CuZn39b2)	---
02	01	Inverted bucket steam trap ADCA IB12 D.P____	DN____	GGG40 (0.7040)	Specify differential pressure
01	01	Blind ends draining	DN____	St35.8 (1.0305)	ADFL.01.2161

	Data	Rubrica
Proj.	06/11/07	F.Soares
Des.	06/11/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas: /

Tolerancias n/ especificadas: Dimensões | Desvios

Descrition / Descrição:

DRAINAGE OF PIPES / PURGAS DE TUBAGENS

Blind ends draining / Purga fim de linha

IB12–TH13A

Des.Nº: ADFL.02.2163

Rev: 00 Em: 00/00/00

Mod.A4–V

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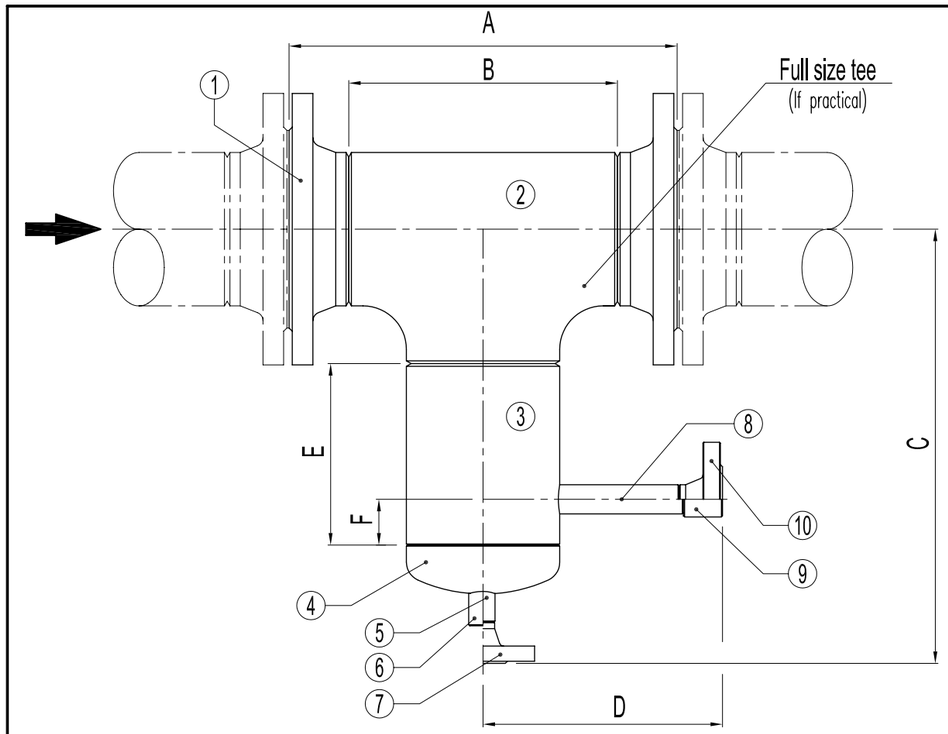

Refª.	Qty	Designation	Standard	Size
1	1	Flange _____	_____	DN ____
2	1	Equal tee _____	_____	DN ____
3	1	Pipe _____	_____	DN ____
4	1	Cap _____	_____	DN ____
5	1	Pipe _____	_____	DN ____
6	1	Socket _____	_____	DN ____
7	1	Flange _____	_____	DN ____
8	1	Pipe _____	_____	DN ____
9	1	Socket _____	_____	DN ____
10	1	Flange _____	_____	DN ____

DIMENSIONS (mm)	
A	_____
B	_____
C	_____
D	_____
E	_____
F	_____

Remarks : _____ Nº. of pieces: _____

	Data	Rubrica
Proj.	05/11/07	F.Soares
Des.	05/11/07	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

--

Escalas: 1/5

Tolerancias n/ especificadas: Dimensões | Desvios

Descrição:

DRAINAGE OF PIPES

PURGAS DE TUBAGENS

Steam main drips

Purga de linha

Des.Nº: ADPL.01.2164

Rev: 00 Em: 00/00/00

Mod.A4–V

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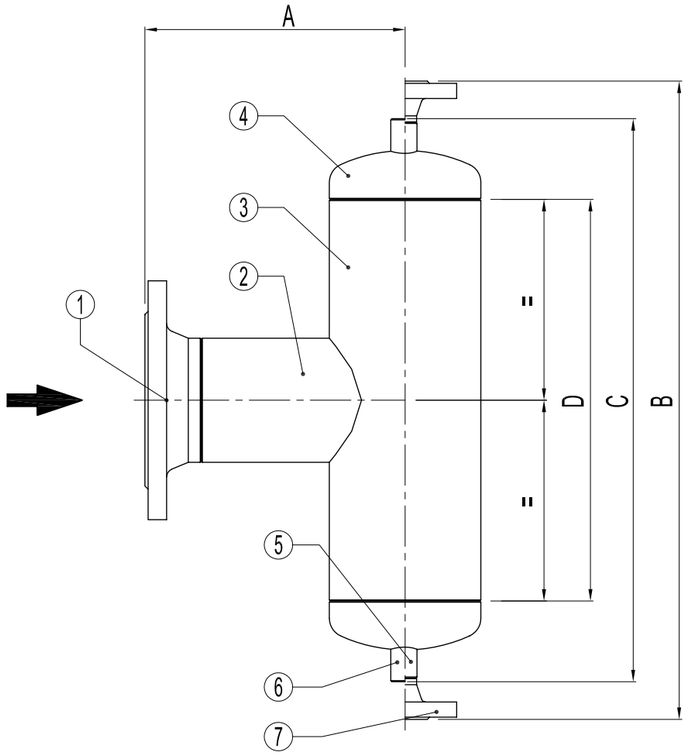

Refª.	Qty	Designation	Standard	Size	DIMENSIONS (mm)	
1	1	Flange		DN	A	
2	1	Pipe		DN	B	
3	1	Pipe		DN	C	
4	2	Cap		DN	D	
5	2	Pipe		DN	E	
6	2	Socket		DN		
7	2	Flange		DN		

Remarks : Nº. of pieces:

	Data	Rubrica
Proj.	05/11/03	F.Soares
Des.	05/11/03	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas: 1/5

Tolerancias n/ especificadas: Dimensões | Desvios

Descrição:
DRAINAGE OF PIPES
PURGAS DE TUBAGENS
Blind ends draining
Purga fim de linha

Des.Nº:
ADFL.01.2161

Rev: 00 Em: 00/00/00

Mod.A4-V

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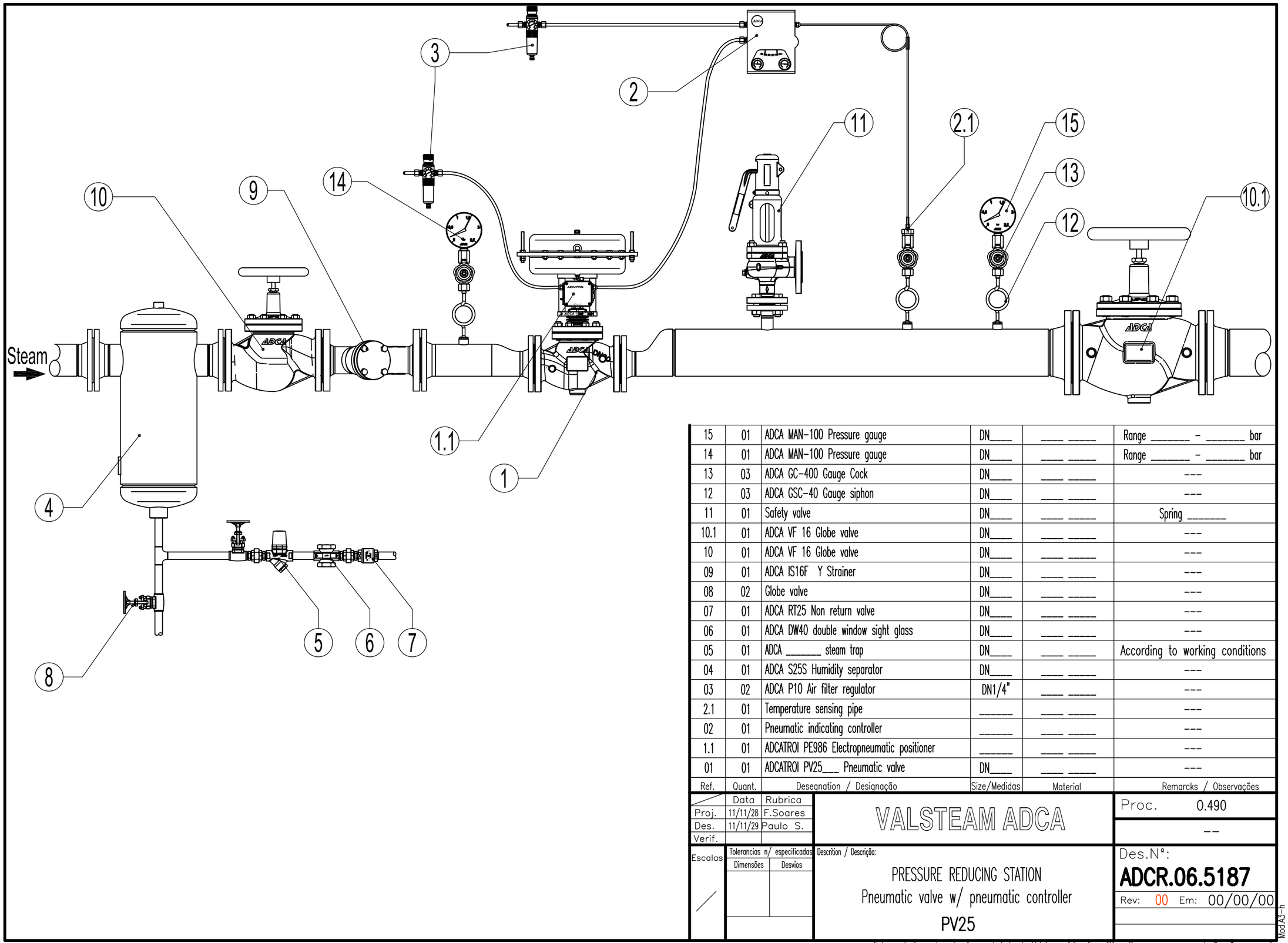

Ref.	Quant.	Designation / Designação	Size/Medidas	Material	Remarcks / Observações
15	01	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
14	01	ADCA MAN-100 Pressure gauge	DN____	____ _____	Range _____ - _____ bar
13	03	ADCA GC-400 Gauge Cock	DN____	____ _____	---
12	03	ADCA GSC-40 Gauge siphon	DN____	____ _____	---
11	01	Safety valve	DN____	____ _____	Spring _____
10.1	01	ADCA VF 16 Globe valve	DN____	____ _____	---
10	01	ADCA VF 16 Globe valve	DN____	____ _____	---
09	01	ADCA IS16F Y Strainer	DN____	____ _____	---
08	02	Globe valve	DN____	____ _____	---
07	01	ADCA RT25 Non return valve	DN____	____ _____	---
06	01	ADCA DW40 double window sight glass	DN____	____ _____	---
05	01	ADCA _____ steam trap	DN____	____ _____	According to working conditions
04	01	ADCA S25S Humidity separator	DN____	____ _____	---
03	02	ADCA P10 Air filter regulator	DN1/4"	____ _____	---
2.1	01	Temperature sensing pipe	_____	____ _____	---
02	01	Pneumatic indicating controller	_____	____ _____	---
1.1	01	ADCATROI PE986 Electropneumatic positioner	_____	____ _____	---
01	01	ADCATROI PV25___ Pneumatic valve	DN____	____ _____	---

	Data	Rubrica
Proj.	11/11/28	F.Soares
Des.	11/11/29	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Description / Descrição:

PRESSURE REDUCING STATION

Pneumatic valve w/ pneumatic controller

PV25

Des.N°:

ADCR.06.5187

Rev: 00 Em: 00/00/00

Mod.A3-h

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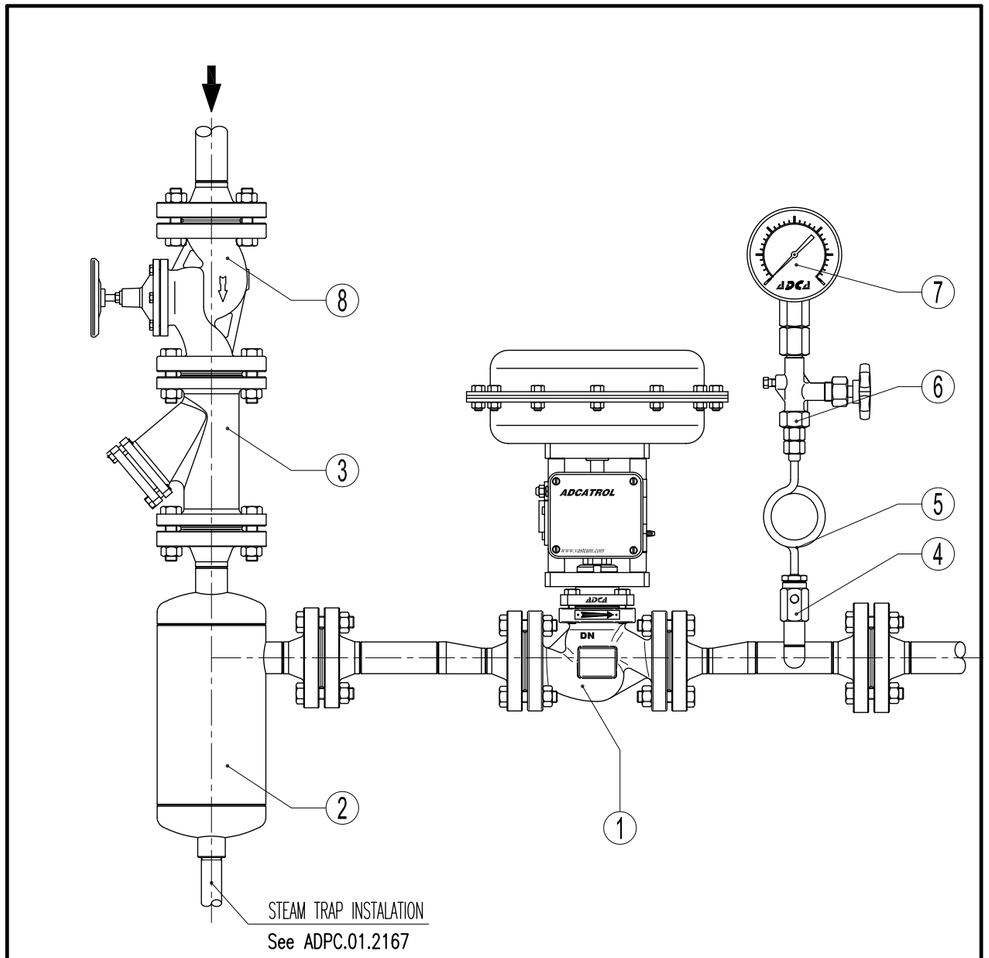

Ref.	Quant.	Desegnation / Designação	Size / Medidas	Material	Remarcks / Observações
08	01	ADCA VF 16 Globe valve	DN____	____ ____	---
07	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
06	01	ADCA GC-400 Gauge Cock	DN____	____ ____	---
05	01	ADCA GSC-40 Gauge siphon	DN____	____ ____	---
04	01	ADCA VB21 Vacuum breaker	DN 1/2"	____ ____	---
03	01	ADCA IS16F Y Strainer	DN____	____ ____	---
02	01	ADCA S25___Centrifugal separator	DN____	____ ____	---
01	01	ADCATROI PV16___/PV25___ Pneumatic control valve	DN____	____ ____	---

	Data	Rubrica
Proj.	06/11/09	F.Soares
Des.	06/11/09	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Descrition / Descrição:

CONTROL VALVE INSTALATION
MONTAGEM DE VALVULA DE CONTROLO
ADCATROL PV16/PV25

Des.N°:
ADVC.01.2169

Rev: 01 Em: 08/09/26

Mod.A4-V

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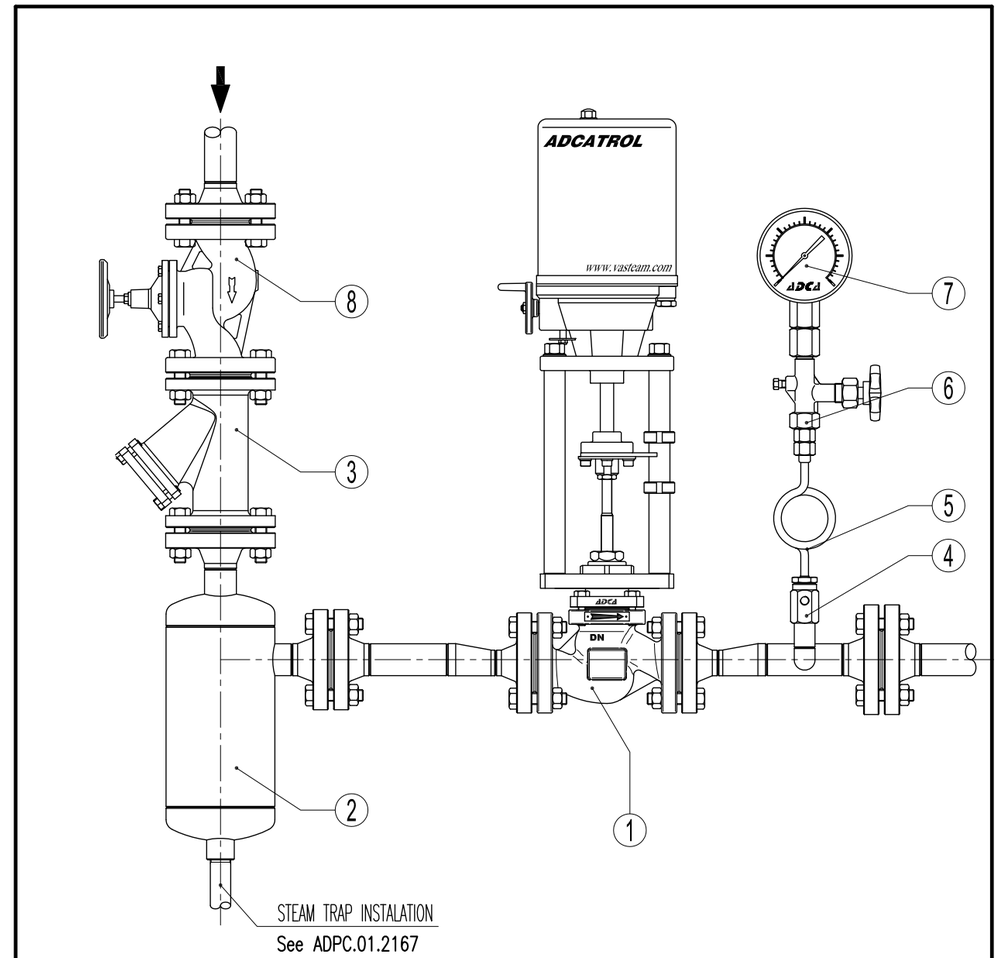

Ref.	Quant.	Desegnation / Designação	Size / Medidas	Material	Remarcks / Observações
08	01	ADCA VF 16 Globe valve	DN____	____ ____	---
07	01	ADCA MAN-100 Pressure gauge	DN____	____ ____	Range _____ - _____ bar
06	01	ADCA GC-400 Gauge Cock	DN____	____ ____	---
05	01	ADCA GSC-40 Gauge siphon	DN____	____ ____	---
04	01	ADCA VB21 Vacuum breaker	DN 1/2"	____ ____	---
03	01	ADCA IS16F Y Strainer	DN____	____ ____	---
02	01	ADCA S25___Centrifugal separator	DN____	____ ____	---
01	01	ADCATROI EV16___/EV25___ Electric control valve	DN____	____ ____	---

	Data	Rubrica
Proj.	06/11/09	F.Soares
Des.	08/09/29	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas: Dimensões | Desvios

Descrition / Descrição:

CONTROL VALVE INSTALATION
MONTAGEM DE VALVULA DE CONTROLO
ADCATROL EV16/EV25

Des.N°:
ADVC.02.3401

Rev: 00 Em: 00/00/00

Mod.A4-V

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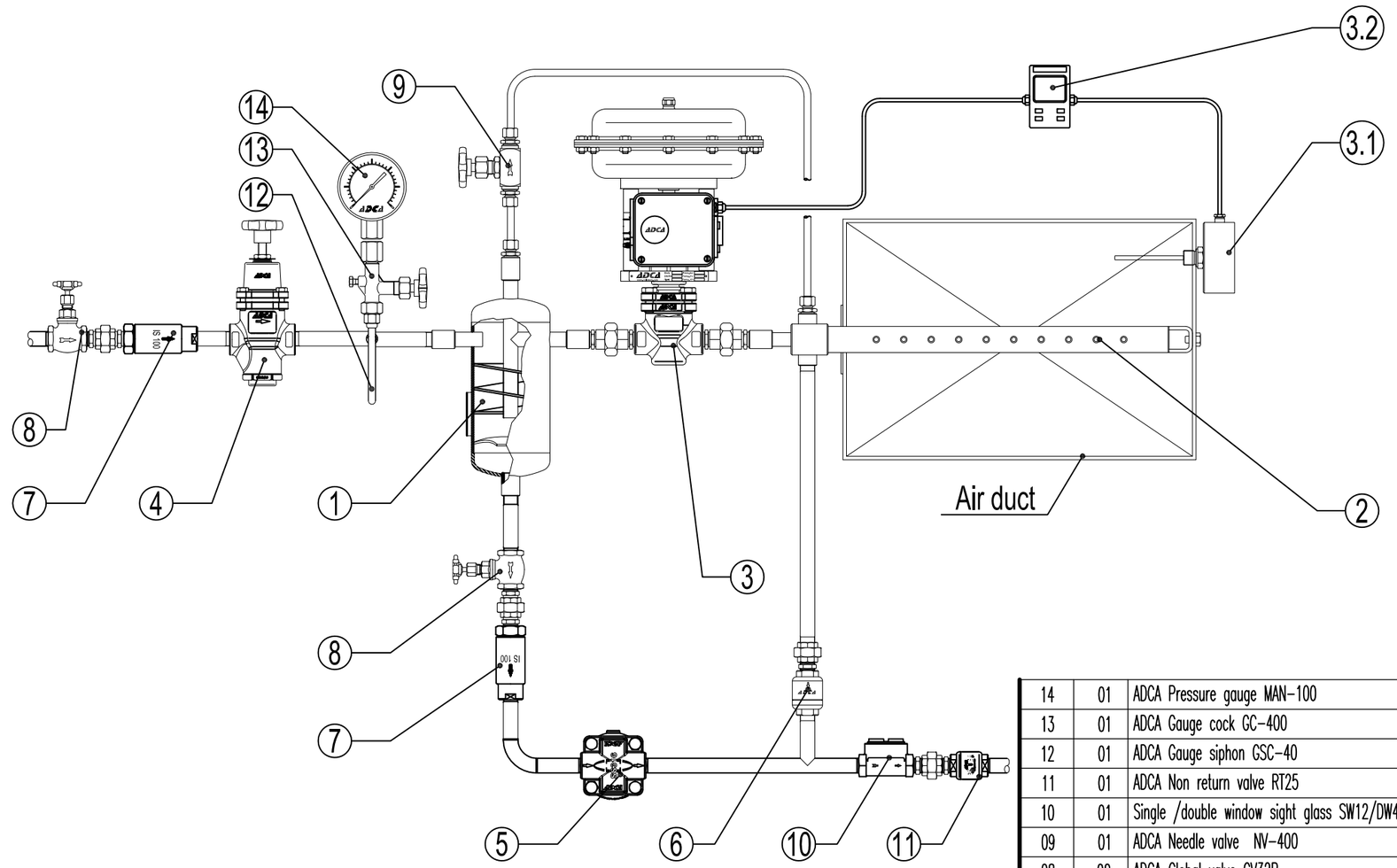

Ref.	Quant.	Designation / Designação	Size / Medidas	Material	Remarcks / Observações
14	01	ADCA Pressure gauge MAN-100	DN____	_____	Range _____ - _____ bar
13	01	ADCA Gauge cock GC-400	DN____	STAINLESS STEEL	---
12	01	ADCA Gauge siphon GSC-40	DN____	_____	---
11	01	ADCA Non return valve RT25	DN____	AISI316 (1.4401)	---
10	01	Single /double window sight glass SW12/DW40SS	DN____	BRASS/AISI316 (1.4401)	---
09	01	ADCA Needle valve NV-400	DN____	AISI316 TI (1.4571)	---
08	02	ADCA Global valve GV32B	DN____	BRONZE	---
07	02	ADCA IS100 strainer	DN____	AISI316 (1.4401)	---
06	01	Steam trap ADCA TSS22	DN____	AISI316 (1.4401)	---
05	01	Steam strap ADCA FLT14I	DN____	CF8M (1.4408)	D.P____bar
04	03	Pressure reducing valve ADCA PRV25I	DN____	CF8M (1.4408)	Spring _____
3.2	01	Humidity controler	---	_____	---
3.1	01	Humidity transmitter	---	_____	---
03	01	"ADCATROL" Pneumatic control valve ADCA PV25I	DN____	CF8M (1.4408)	---
02	01	Injection tube ADCA DSH	DN____	AISI304 (1.4301)	---
01	01	Centrifugal separator ADCA DSH	DN____	AISI316 (1.4401)	---

	Data	Rubrica
Proj.	08/08/19	F.Soares
Des.	08/08/19	Paulo S.
Verif.		

VALSTEAM ADCA

Proc. 0.490

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Escalas /

Tolerancias n/ especificadas

Dimensões	Desvios

Descrition / Descrição:

DIRECT STEAM HUMIDIFIER
Typical installation
DSH

Des.N°:
ADDSH.01.3356

Rev: 01 Em: 09/11/12

Mod.A3-n

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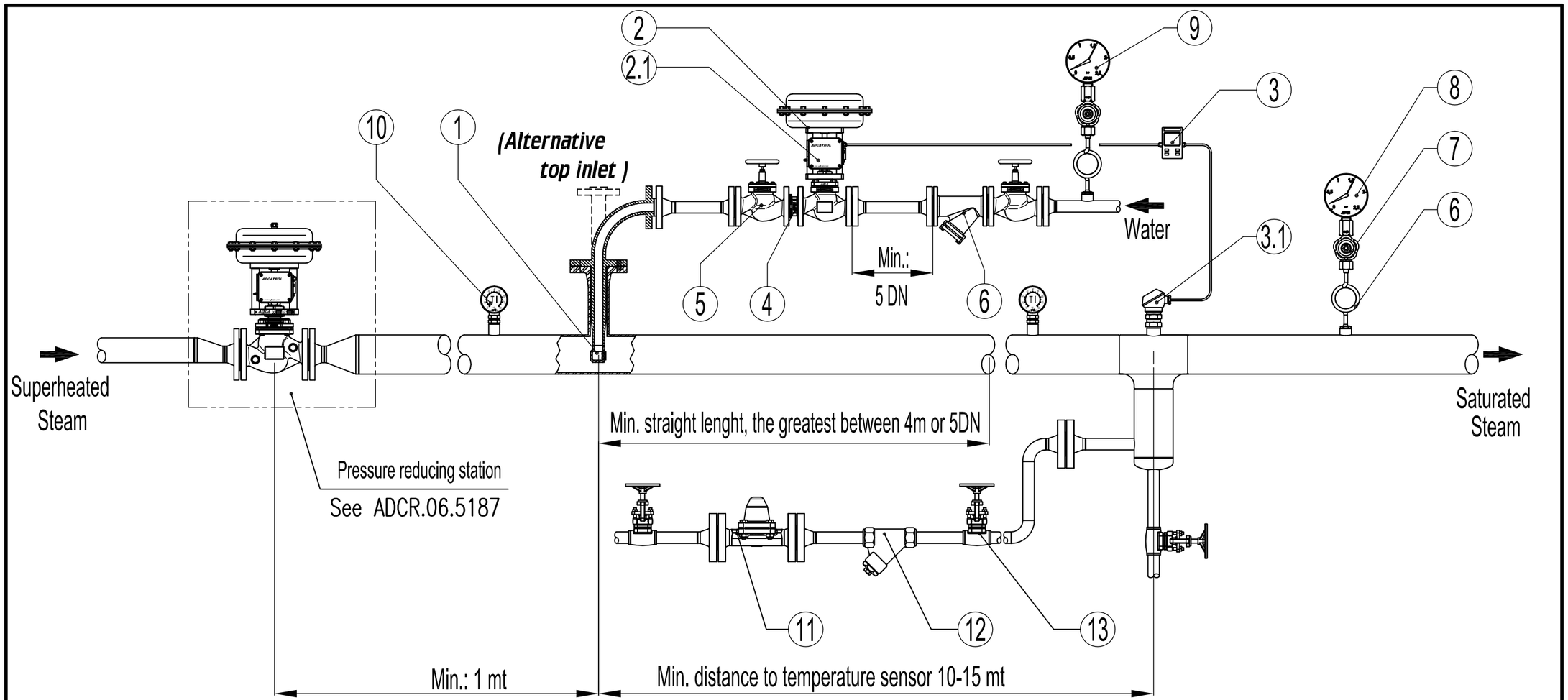

Ref.	Quant.	Desegnation / Designação	Size / Medidas	Material	Remarcks / Observações
13	03	Globe valve	___	___ ___	___
13	01	ADCA IS116 Forged steel strainer	___	___ ___	___
12	01	ADCA BM... Bimetallic steam trap and air eliminator	___	___ ___	According to working conditions
11	02	Temperature indicator	___	___ ___	___
10	01	ADCA MAN-100 Pressure gauge	___	___ ___	Range _____ - _____ bar
09	01	ADCA MAN-100 Pressure gauge	___	___ ___	Range _____ - _____ bar
08	02	ADCA GC-400 Gauge cock	___	___ ___	___
07	02	ADCA GSC-40 Gauge siphon	___	___ ___	___
06	01	ADCA IS16F Y Strainer	___	___ ___	___
05	02	ADCA VF 16 Globe valve	___	___ ___	___
04	01	ADCA RD40 Wafer type non return valve	___	___ ___	___
3.1	01	PT100 Temperature probe	___	___ ___	___
03	01	Temperature controler	___	___ ___	___
2.1	01	ADCATROI PE986 Electropneumatic positioner	___	___ ___	___
02	01	ADCATROI PV25___ Pneumatic control valve	___	___ ___	___
01	01	Fixed area desuperheater DES-FX	___	___ ___	___

	Data	Rubrica
Proj.	11/11/08	F.Soares
Des.	11/11/08	Paulo S.
Verif.		

Escalas /

Tolerancias n/ especificados

Dimensões	Desvios

VALSTEAM ADCA

Descrition / Descrição:

FIXED AREA DESUPERHEATER STATION

DES-FX

Proc. 0.490

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Des.N°:

ADFX.01.5185

Rev: 00 Em: 00/00/00

Mod.A3-h

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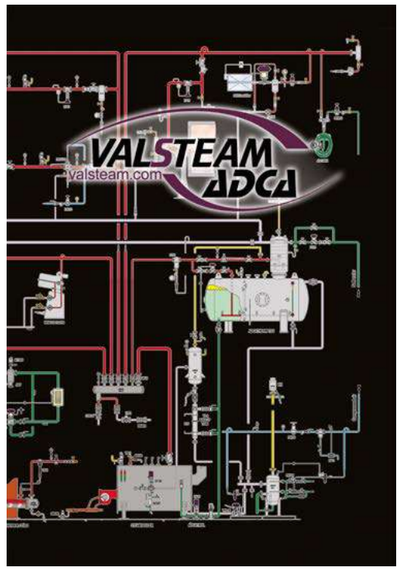

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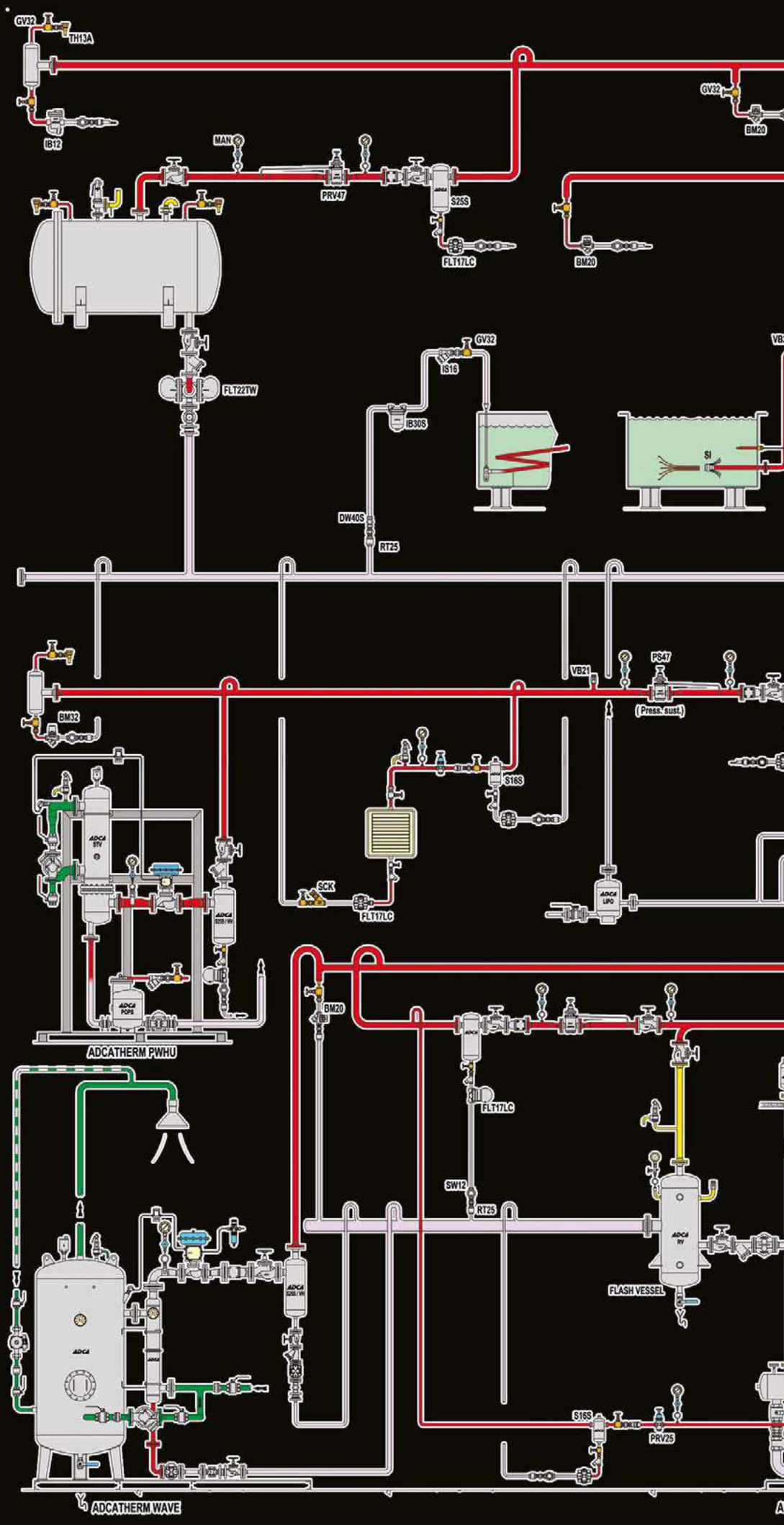

VALSTEAM ADCA

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