5 Port Solenoid Valve

VQ7-6/7-8 Series

Metal Seal | Rubber Seal **ISO Standard Size 1/Size 2**

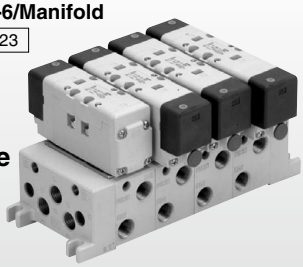
CE [Option]

VQ7-6/Single unit
P.1118

Conforms to ISO standard 5599-1
Interface conforms to ISO standard Size 1 (VQ7-6) and Size 2 (VQ7-8).

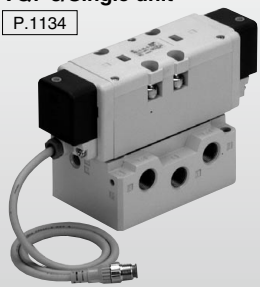
Outstanding high speed response and long service life

VQ7-6/Manifold
P.1123



Enclosure IP65 compliant Dusttight/Low jetproof type

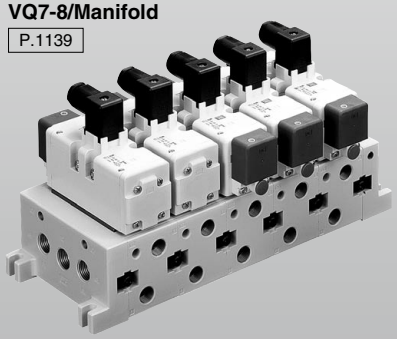
VQ7-8/Single unit
P.1134



A wide variety of manifold options
Manifolds can be configured with a wide range of interface options to meet a variety of application requirements.

Lighter weight
Size 1 (3 position) 0.48 kg ···24% less
Size 2 (3 position) 0.75 kg ···15% less (Compared with previous series)

VQ7-8/Manifold
P.1139

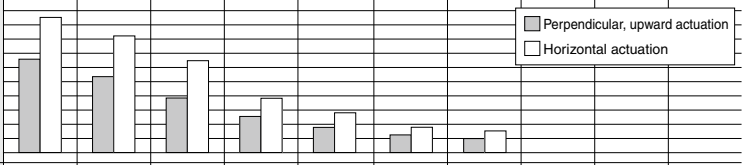
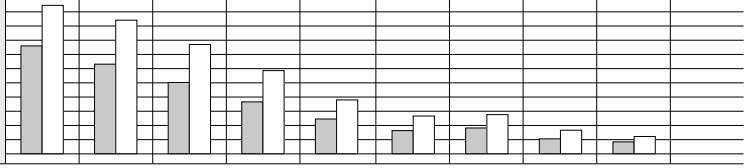


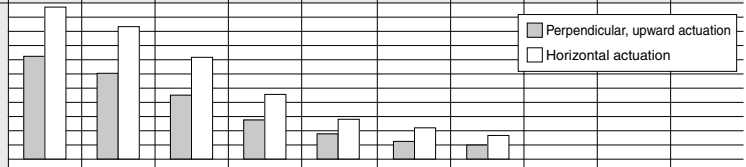
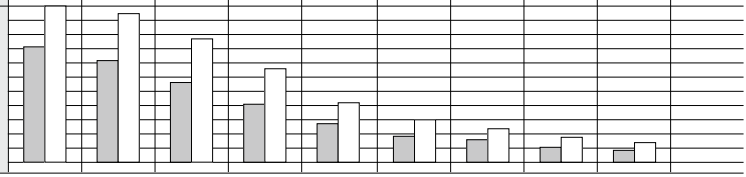
Space-saving profile
Installation space·····13% reduction
Installation volume····10% reduction
(Compared with previous series)

Choice of metal or rubber seal increases compatibility with various operating and environmental conditions.

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size: MB, CA2 series Pressure 0.5 MPa Load factor 50% Stroke 500 mm					CS1/CS2 series Pressure 0.5 MPa Load factor 50% Stroke 1000 mm				
		ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	ø200
VQ7-6-FG-S-□A02	1000 900 800 700 600 500 400 300 200 100 0										
VQ7-6-FG-S-□A03	1000 900 800 700 600 500 400 300 200 100 0										

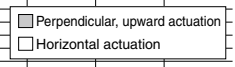
Series	Average speed (mm/s)	Bore size: MB, CA2 series Pressure 0.5 MPa Load factor 50% Stroke 500 mm					CS1/CS2 series Pressure 0.5 MPa Load factor 50% Stroke 1000 mm				
		ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	ø200
VQ7-6-FG-S-□RA02	1000 900 800 700 600 500 400 300 200 100 0										
VQ7-6-FG-S-□RA03	1000 900 800 700 600 500 400 300 200 100 0										

∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load mass x 9.8)/Theoretical force) x 100%

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size: MB, CA2 series Pressure 0.5 MPa Load factor 50% Stroke 500 mm				CS1/CS2 series Pressure 0.5 MPa Load factor 50% Stroke 1000 mm						
		ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	ø200	ø250	ø300
VQ7-8-FG-S-□A03 **VQ7-8-FG-S-□RA03**	1100 1000 900 800 700 600 500 400 300 200 100 0											
VQ7-8-FG-S-□A04 **VQ7-8-FG-S-□RA04**	1100 1000 900 800 700 600 500 400 300 200 100 0											



∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load mass x 9.8)/Theoretical force) x 100%

Conditions

Base mounted		MB, CA2 series	CS1/CS2 series
VQ7-6-FG-S-□A02	SGP (Steel pipe) dia. x Length	6A x 1 m	
	Speed controller	AS4000-02	
	Silencer	AN20-02	
VQ7-6-FG-S-□A03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS420-03	
	Silencer	AN30-03	
VQ7-6-FG-S-□RA02	SGP (Steel pipe) dia. x Length	6A x 1 m	
	Speed controller	AS4000-02	
	Silencer	AN20-02	
VQ7-6-FG-S-□RA03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS420-03	
	Silencer	AN30-03	

Base mounted		MB, CA2 series	CS1/CS2 series
VQ7-8-FG-S-□A03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS4000-03	
	Silencer	AN30-03	
VQ7-8-FG-S-□A04	SGP (Steel pipe) dia. x Length	15A x 1 m	
	Speed controller	AS420-04	
	Silencer	AN40-04	
VQ7-8-FG-S-□RA03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS4000-03	
	Silencer	AN30-03	
VQ7-8-FG-S-□RA04	SGP (Steel pipe) dia. x Length	15A x 1 m	
	Speed controller	AS420-04	
	Silencer	AN40-04	

ISO Standard Solenoid Valve
VQ7-6 Series
Size 1/Single Unit

CE [Option]

How to Order Valves

VQ7 − 6 − FG − S − 3 □ □ □ □ □ □ − □

Passage symbol

FG	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)
YZ*	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)
FHG	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)
FJG	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)
FPG	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)
FIG	(A) (B) 4 2 / 5 1 3 (R1)(P)(R2)

* Semi-standard

Number of solenoids

S	Single
D	Double

Coil rated

1	100 VAC, 50/60Hz
2	200 VAC, 50/60Hz
3	24 VDC
4	12 VDC
5	110 VAC, 50/60Hz
6	220 VAC, 50/60Hz

For other rated voltages, please consult with SMC.

Option

Nil	None
Z	Light/Surge voltage suppresor
N	With indicator light

Pilot exhaust

Nil	Common exhaust
V	Individual exhaust

Seal

Nil	Metal seal
R	Rubber seal

Sub-plate port size

Nil	Without sub-plate
A02	Side ported 1/4*
A03	Side ported 3/8
B02	Bottom ported 1/4*
B03	Bottom ported 3/8

* Port R is 3/8

Thread type

Nil	Rc
F	G
T	NPTF

Connector

Nil	DIN terminal block (With connector)
O	DIN terminal block (Without connector)
SC	Pre-wired connector

CE-compliant

Nil	—
Q	CE-compliant

How to Order Sub-plate

VS7 − 1 − A02 □

Port size

A02	Side ported 1/4*
A03	Side ported 3/8
B02	Bottom ported 1/4*
B03	Bottom ported 3/8

* Port 3(R2) and 5(R1) are 3/8

Thread type

Nil	Rc
F	G
T	NPTF

Specifications

Model	Porting specifications			Weight (kg)
	Piping location	1(P), 2(B), 4(A) port size	3(R2), 5(R1) port size	
VS7-1-A02□	Side	1/4	3/8	0.37
VS7-1-A03□		3/8		
VS7-1-B02□	Bottom	1/4	3/8	
VS7-1-B03□		3/8		

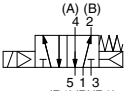
Model

Series	Number of positions		Model		Port size	Flow rate characteristics						(1) Response time (ms)	(2) Weight (kg)
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)				
						C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv		
VQ7-6	2 position	Single	Metal seal	**VQ7-6-FG-S-□**	1/4	4.1	0.10	0.9	5.2	0.10	1.1	20 or less	0.40
			Rubber seal	**VQ7-6-FG-S-□R**		5.0	0.13	1.1	6.0	0.11	1.4	25 or less	
		Double	Metal seal	**VQ7-6-FG-D-□**		4.1	0.10	0.9	5.2	0.10	1.1	12 or less	0.45
			Rubber seal	**VQ7-6-FG-D-□R**		5.0	0.13	1.1	6.0	0.11	1.4	15 or less	
	3 position	Closed center	Metal seal	**VQ7-6-FHG-D-□**		4.1	0.10	0.9	5.2	0.10	1.1	40 or less	0.48
			Rubber seal	**VQ7-6-FHG-D-□R**		5.0	0.13	1.1	5.6	0.20	1.3	45 or less	
		Exhaust center	Metal seal	**VQ7-6-FJG-D-□**		4.1	0.10	0.9	5.2	0.10	1.1	40 or less	0.48
			Rubber seal	**VQ7-6-FJG-D-□R**		4.8	0.16	1.1	6.0	0.17	1.4	45 or less	
		Double check	Metal seal	**VQ7-6-FPG-D-□**		1.4	–	–	3.1	–	–	50 or less	0.84
			Rubber seal	**VQ7-6-FPG-D-□R**		1.4	–	–	3.1	–	–	50 or less	
		Pressure center	Metal seal	**VQ7-6-FIG-D-□**		4.1	0.10	0.9	5.2	0.08	1.1	40 or less	0.48
			Rubber seal	**VQ7-6-FIG-D-□R**		5.6	0.15	1.2	5.9	0.08	1.3	45 or less	

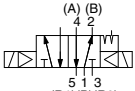
Note 1) Based on JIS B 8419: 2010 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using clean air.)
Response time values will change depending on pressure and air quality.
Value when ON for double type.
Note 2) Weight without sub-plate. (Sub-plate: 0.37 kg)

Symbol

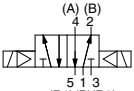
2 position single



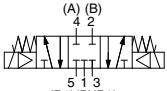
2 position double (Metal)



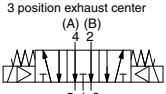
2 position double (Rubber)



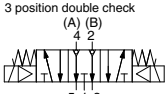
3 position closed center



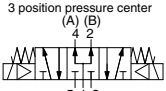
3 position exhaust center



3 position double check



3 position pressure center



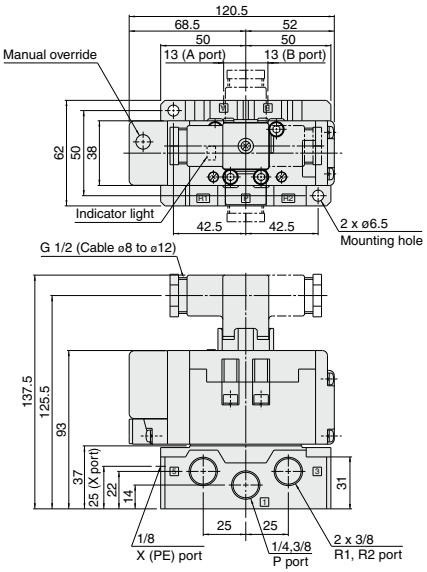
Standard Specifications

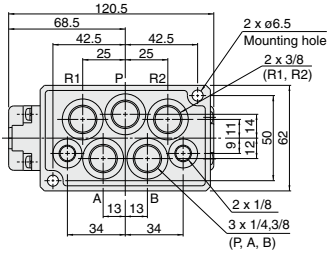
Valve specifications	**Valve construction**		Metal seal	Rubber seal
	Fluid		Air	
	Maximum operating pressure		1.0 MPa	
	Min. operating pressure	**Single**	0.15 MPa	0.20 MPa
		Double	0.15 MPa	0.15 MPa
		3 position	0.15 MPa	0.20 MPa
	Ambient and fluid temperature		–10 to 60°C (1)	–5 to 60°C (1)
	Lubrication		Not required	
	Manual override		Push type (Tool required)	
	Impact/Vibration resistance		150/30 m/s² (2)	
	Enclosure		IP65 (Dusttight, Low jetproof)	
Solenoid specifications	**Coil rated voltage**		12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC, 240 VAC (50/60Hz)	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Class B or equivalent	
	Power consumption (Current)	**24 VDC**	1W DC (42 mA)	
		12 VDC	1W DC (83 mA)	
		100 VAC (3)	1.2 VA (12 mA)	
		110 VAC (3)	1.3 VA (11.5 mA)	
		120 VAC (3)	1.5 VA (12 mA)	
		200 VAC (3)	2.5 VA (12.5 mA)	
		220 VAC (3)	2.6 VA (13 mA)	
		230 VAC (3)	2.8 VA (12.5 mA)	
		240 VAC (3)	3 VA (13 mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Note 3) The valve with an AC coil comes with a rectifying device; therefore, there is no difference in the consumption current when it is in the inrush and holding states.

DIN Terminal Type

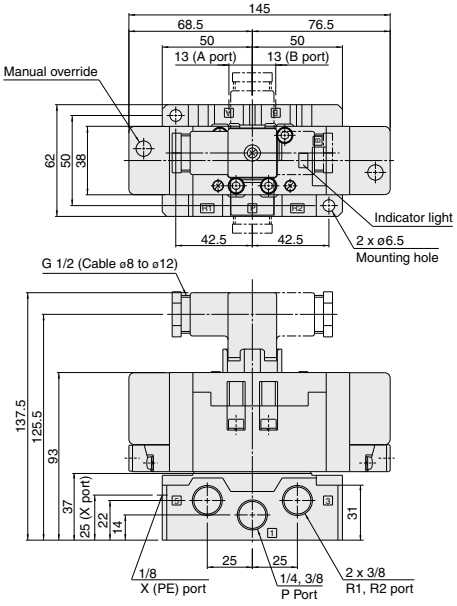
2 position single : VQ7-6-FG-S
single (Reverse pressure): VQ7-6-YZ-S



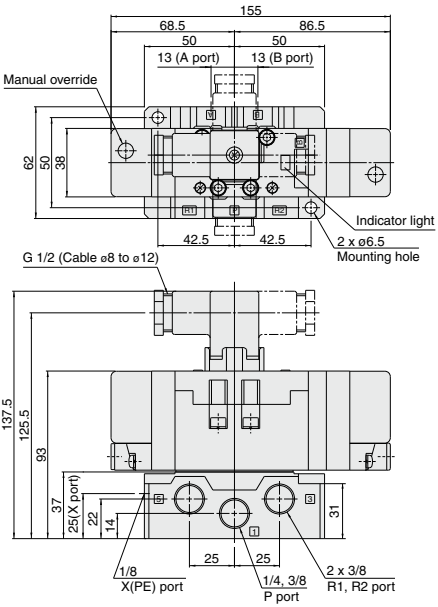


Bottom ported drawing

2 position double : VQ7-6-FG-D
double (Reverse pressure): VQ7-6-YZ-D

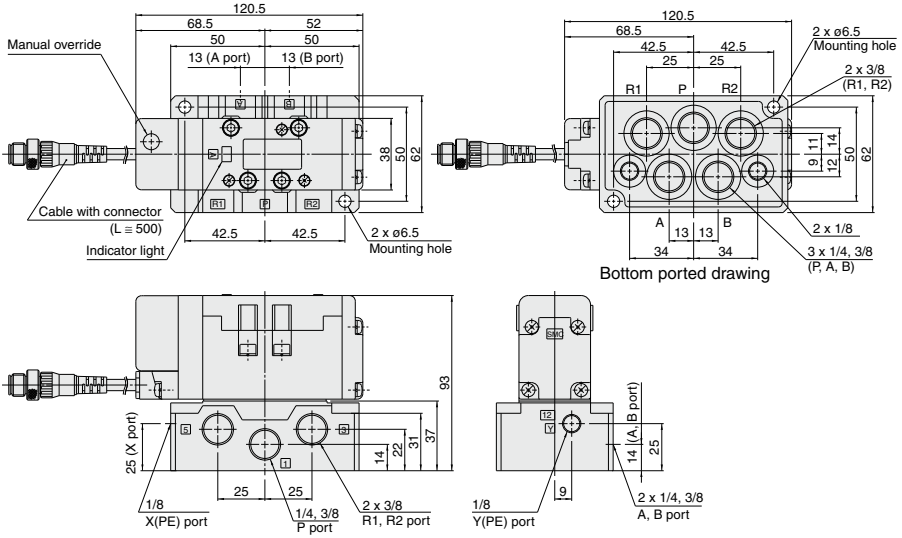


3 position closed center : VQ7-6-FHG-D
exhaust center : VQ7-6-FJG-D
pressure center: VQ7-6-FIG-D

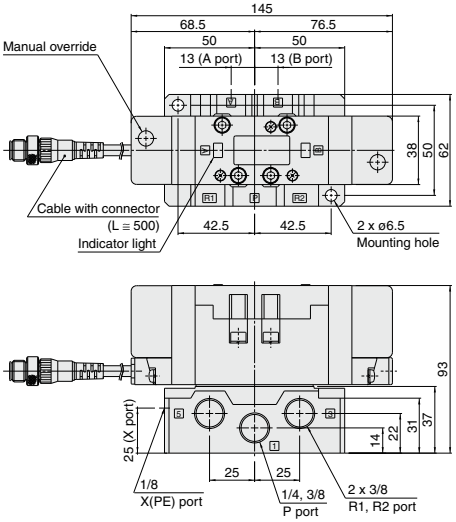


Prewired Connector Type

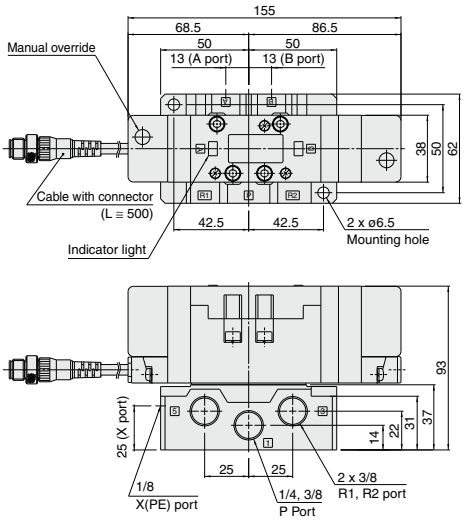
2 position single : VQ7-6-FG-S□□□□SC
single (Reverse pressure): VQ7-6-YZ-S□□□□SC



2 position double : VQ7-6-FG-D-□□□□SC
double (Reverse pressure): VQ7-6-YZ-D-□□□□SC



3 position closed center : VQ7-6-FHG-D-□□□□SC
exhaust center : VQ7-6-FJG-D-□□□□SC
pressure center: VQ7-6-FIG-D-□□□□SC

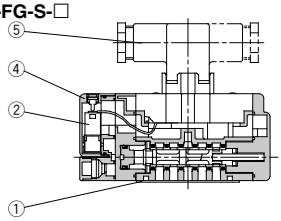


Construction

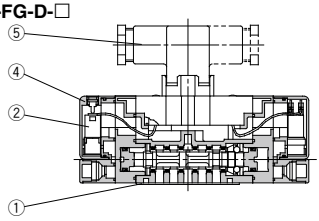
DIN Terminal Type

Metal seal type

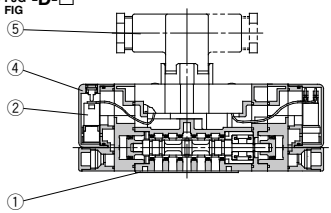
VQ7-6-FG-S-□



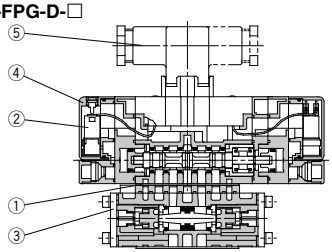
VQ7-6-FG-D-□



VQ7-6-$^{FHG}_{FJG}$$_{FIG}$-D-□

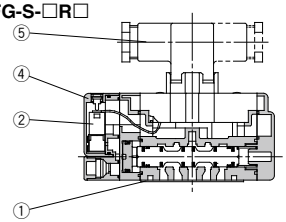


VQ7-6-FPG-D-□

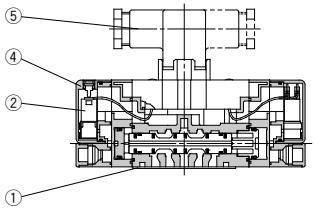


Rubber seal type

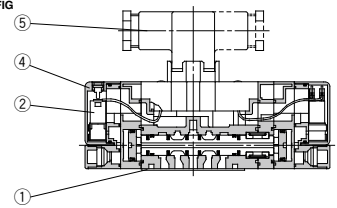
VQ7-6-FG-S-□R□



VQ7-6-FG-D-□R□



VQ7-6-$^{FHG}_{FJG}$$_{FIG}$-D-□R□



Replacement Parts (For valve)

No.	Description	VQ7-6-FG-S-□	VQ7-6-FG-D-□	VQ7-6-$^{FHG}_{FJG}$$_{FIG}$-D-□	VQ7-6-FPG-D-□	VQ7-6-FG-S-□R□	VQ7-6-FG-D-□R□	VQ7-6-$^{FHG}_{FJG}$$_{FIG}$-D-□R□
1	**Gasket**	VQ7060-13-4-1						
2	**Pilot valve assembly** (1) (2)	VQZ110Q-□ (5: 24 VDC, 6: 12 VDC, 1: For AC (3))						
3	**Double check spacer**	—			VV71-FPG	—		
4	**Pilot valve cover**	VQ7060-9A-1						
5	**DIN terminal**	UKL-S1						

Note 1) When the voltage is the same, the replacement of pilot valve assembly is possible.
Note 2) Since the substrate circuit in the valve is different, voltage cannot be changed with the pilot valve assembly.
Note 3) The pilot valve for 100 to 240 VAC is common.

Manifold *VV71 Series*
VQ7-6 Series

CE [Option]

How to Order Manifold

VV71 [6] – [02R] [ ] – [ ] [02D] [ ] [ ] [ ] – [ ]

Stations

1	1 station
⋮	⋮
10	10 stations

Note) When equipped with control unit, 1 or 2 stations are used for mounting.

2 (B), 4 (A) port connection

02R	1/4 (R side)
03R	3/8 (R side)
02L	1/4 (L side)
03L	3/8 (L side)
02Y	1/4 (Bottom side)
03Y	3/8 (Bottom side)
C6R	One-touch fitting ø6 (R side)
C8R	One-touch fitting ø8 (R side)
C10R	One-touch fitting ø10 (R side)
C6L	One-touch fitting ø6 (L side)
C8L	One-touch fitting ø8 (L side)
C10L	One-touch fitting ø10 (L side)
*	Mixed

Note) When ports are mixed, indicate piping specifications by means of the manifold specification sheet.

Thread type

Nil	Rc
F	G
T	NPTF

Note) With One-touch fittings: Nil

1(P), 3(R2), 5(R1) port connection

02D	1/4 (D side)
02U	1/4 (U side)
02B	1/4 (Both sides)
03D	3/8 (D side)
03U	3/8 (U side)
03B	3/8 (Both sides)
C12D	One-touch fitting ø12 (D side)
C12U	One-touch fitting ø12 (U side)
C12B	One-touch fitting ø12 (Both sides)
*	Mixed

Note) When ports are mixed, indicate piping specifications by means of the manifold specification sheet.

Silencer box

Nil	None
SB	With

Note) The silencer box is mounted on the end plate located on the side (D, U, B) that is selected in "1(P), 3(R2), 5(R1) port connection".

Air release valve coil rating

Nil	None
1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3	24 VDC
4	12 VDC
5	110 VAC, 50/60 Hz
6	220 VAC, 50/60 Hz

For other rated voltages, please consult with SMC.

Thread type

Nil	Rc
F	G
T	NPTF

Note) With One-touch fittings: Nil

CE-compliant

Nil	—
Q	CE-compliant

Control unit type (See pages 1130 and 1131 for details.)

Control equipment \ Symbol	Nil	A	AP	M	MP	F	G	C	E
Air filter with auto-drain		○	○			○			
Air filter with manual drain				○	○		○		
Regulator		○	○	○	○	○	○		
Air release valve		○	○	○	○			○	○
Pressure switch			○		○				
Blanking plate (Air release valve)						○	○		
Blanking plate (Filter, Regulator)								○	
Blanking plate (Pressure switch)		○		○		○	○	○	
Number of manifold blocks required for mounting (stations)		2	2	2	2	2	2	2	1

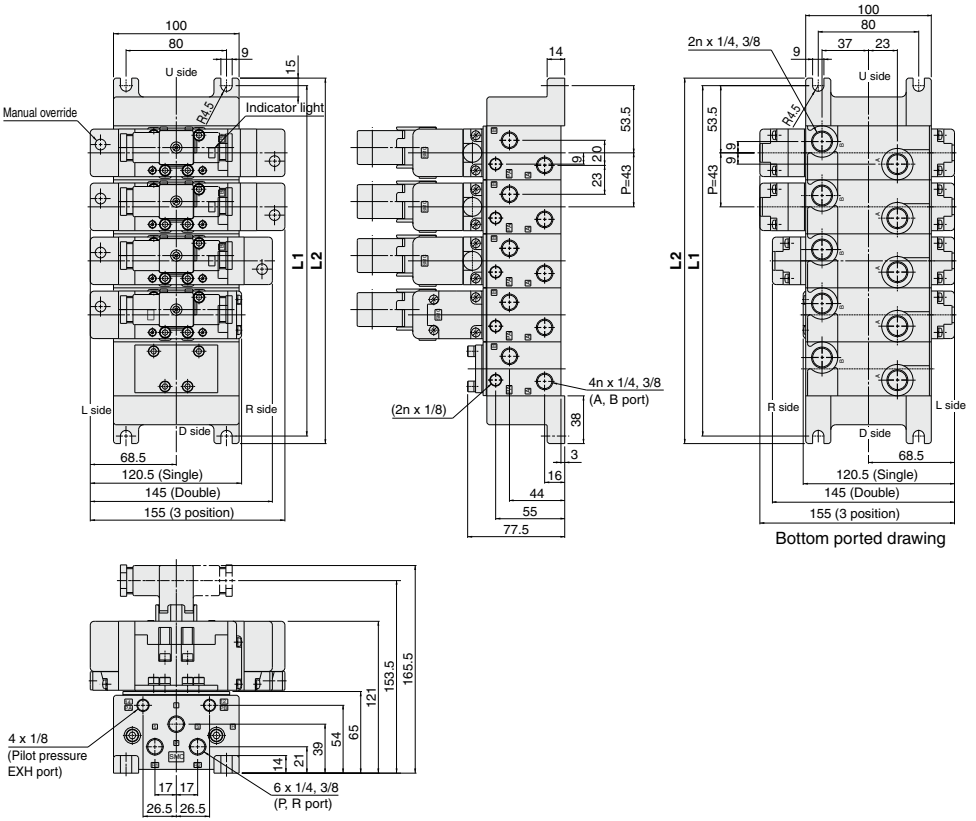
Manifold Specifications

Manifold block size	Applicable solenoid valve	Porting specifications: 2(B), 4(A) port – Port location	Porting specifications: 2(B), 4(A) port – Port size	Porting specifications: 1(P), 3(R2) 5(R1) port size	Stations	Weight (kg)
ISO size 1	VQ7-6 Series ISO size 1	Right, Left	1/4 3/8 C6 (ø6) C8 (ø8) C10 (ø10)	1/4 3/8 C12 (ø12)	Note) Max. 10 stations	0.43n + 0.49 (n: Stations)
		Bottom	1/4 3/8			

Note) When equipped with control unit, 1 or 2 stations are used for mounting.

DIN Terminal Type

VV71□-□-□□□



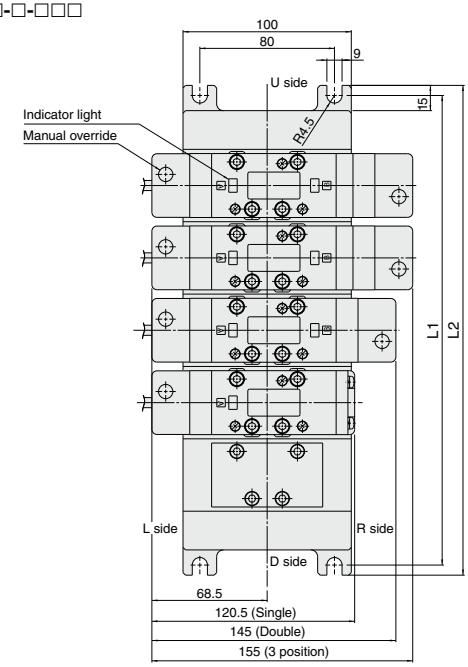
L Dimension

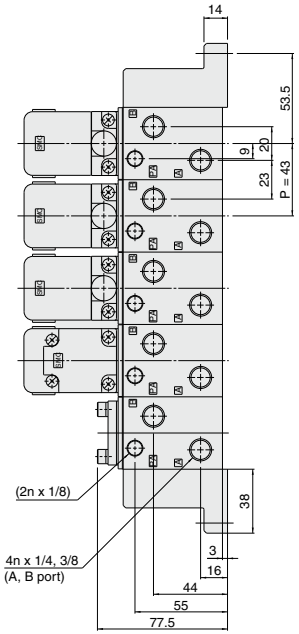
n: Stations

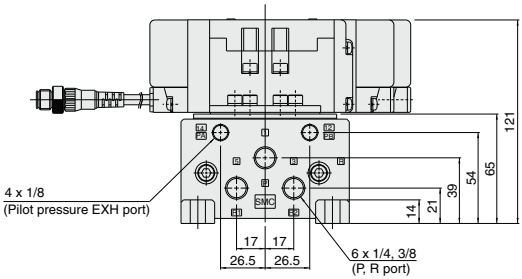
	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	L1 = 43n + 64
L2	119	162	205	248	291	334	377	420	463	506	L2 = 43n + 76

Prewired Connector Type

VV71□-□-□□□







L Dimension

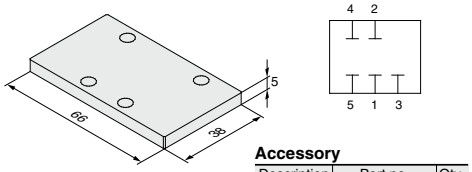
n: Stations

	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	L1 = 43n + 64
L2	119	162	205	248	291	334	377	420	463	506	L2 = 43n + 76

Manifold Option Parts

Blanking plate assembly
AXT502-9A

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

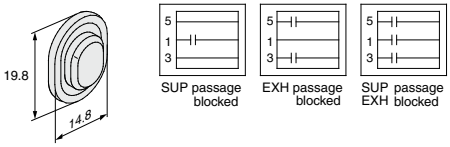


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-2	4

Block plate (For SUP/EXH passages)
AXT502-14

When two or more different high pressures are supplied to one manifold, block plates are installed between stations having different pressures.
Also, in cases such as when valve exhaust effects other stations in a circuit, block plates are used for exhaust at stations where the exhaust is to be separated.



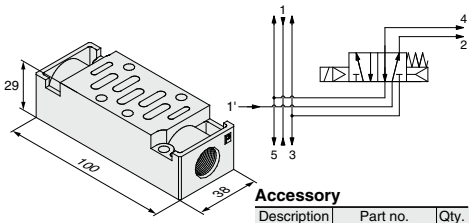
Individual SUP spacer
VV71-P-$^{02}_{03}_{C10}$ □

● **Thread type**

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.

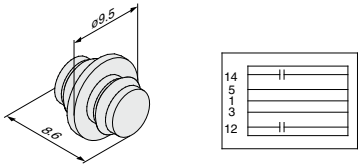


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

Block plate (For pilot EXH passage)
AZ503-53A

When a valve's pilot valve exhaust effects other valves in a circuit, block plates are used between stations where the pilot exhaust passages are to be separated.



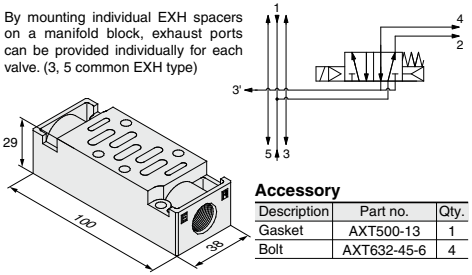
Individual EXH spacer
VV71-R-$^{02}_{03}_{C12}$ □

● **Thread type**

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (3, 5 common EXH type)

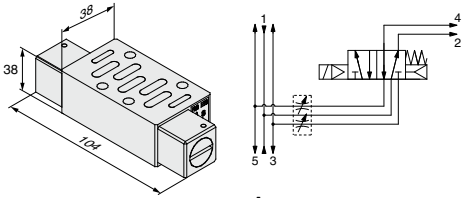


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

Throttle valve spacer
AXT503-23A

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.



Accessory

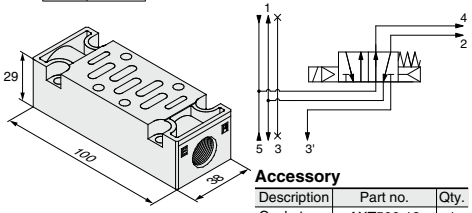
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-5	4

Reverse pressure spacer
AXT502-21A-1□

Thread type

Nil	Rc
F	G
T	NPTF

With reverse pressure control manifold specifications, when pressure is changed individually on one side (ex. high speed cylinder return), pressure can be supplied individually to the R2 side by mounting a reverse pressure spacer. {Port 3 (R2) is individual and 5 (R1) is common.}

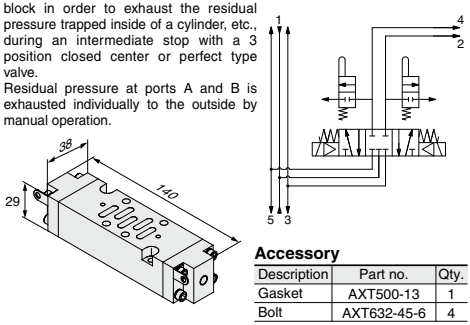


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

Residual pressure release valve spacer
VV71-R-AB

This is used by mounting on a manifold block in order to exhaust the residual pressure trapped inside of a cylinder, etc., during an intermediate stop with a 3 position closed center or perfect type valve.
Residual pressure at ports A and B is exhausted individually to the outside by manual operation.



Accessory

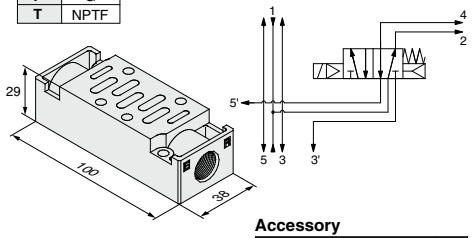
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

R1, R2 individual EXH spacer
VV71-R2-03□

Thread type

Nil	Rc
F	G
T	NPTF

By mounting an individual EXH spacer on a manifold block, individual exhaust is possible from both R1 and R2. {3 (R2) and 5 (R1) are individual ports.}



Accessory

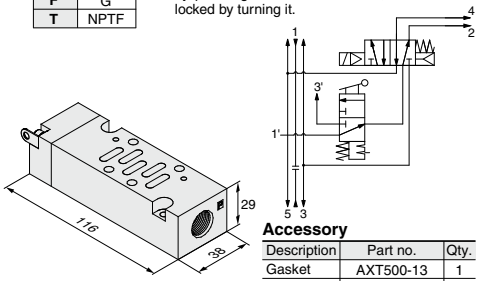
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

Individual SUP spacer with residual pressure release valve
VV71-PR-$^{02}_{03}$□

Thread type

Nil	Rc
F	G
T	NPTF

This is used by mounting on a manifold block in order to stop the inlet side supply pressure in an individual supply spacer, while at the same time exhausting the residual pressure are performed by pressing the manual override, which can be locked by turning it.

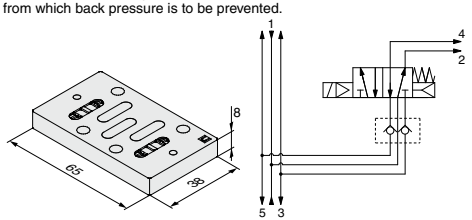


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

Main EXH back pressure check plate
AXT503-37A

In cases where back pressure effects actuator operation due to simultaneous operation of manifold valves, etc., this effect can be eliminated by installing a plate between the manifold block and the valve from which back pressure is to be prevented.



Accessory

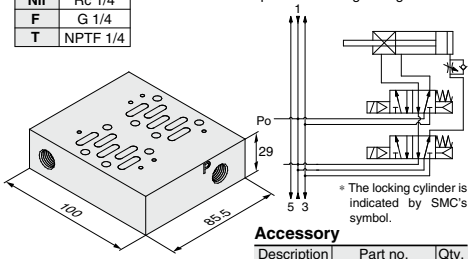
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-4	4

Adapter plate for locked-up cylinder
AXT502-26A□

Thread type

Nil	Rc 1/4
F	G 1/4
T	NPTF 1/4

When using a locked-up cylinder with 2 valves for control, this spacer can be used by mounting on a manifold block. It consists of a circuit equipped with a function to prevent lurching during release.



∗ The locking cylinder is indicated by SMC's symbol.

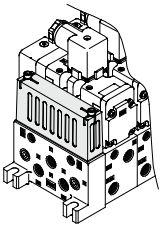
Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	2
Bolt	AXT632-45-6	8

Manifold Option Parts

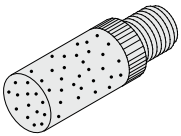
Silencer box
VV71-□□□-□□-SB

This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labor.



Pilot EXH silencer
AN110-01

This is used by mounting on the pilot exhaust port in order to reduce manifold and single type pilot exhaust noise, and to prevent the entry of dust.

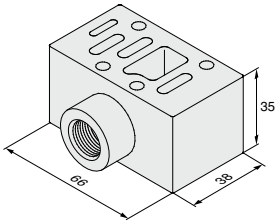


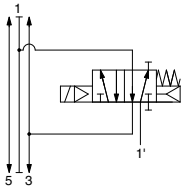
Release valve spacer
AXT502-17A□

Combination of VQ7-6-FG-S (Single) and release valve spacer can be used as air release valve.
Note) Mounting on 2 position double and 3 position valves is not possible.

Thread type

Nil	Rc 3/8
F	G 3/8
T	NPTF 3/8





Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT643-45-7	4

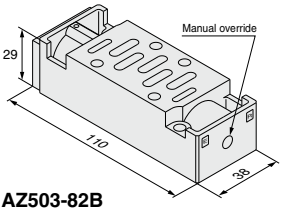
Residual pressure release valve spacer
AZ503-82□

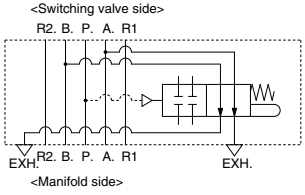
At the same time as pilot pressure is released, residual pressure between the cylinder and valve is released.
There are two pilot types: internal pilot and external pilot types.

Pilot type

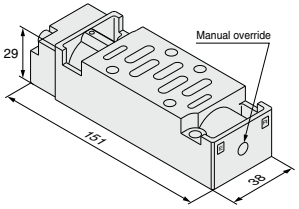
A	Internal pilot
B	External pilot

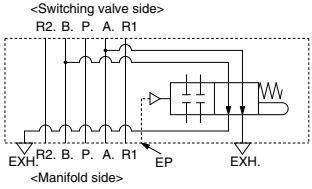
AZ503-82A





AZ503-82B





Accessory

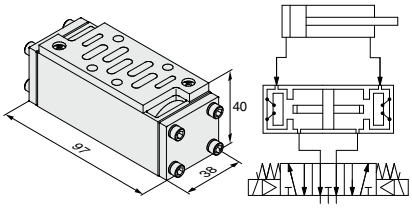
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-6	4

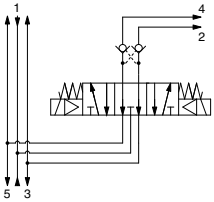
Specifications

Model	AZ503-82A	AZ503-82B
Switching signal type (Pilot type)	Internal pilot	External pilot
Applicable solenoid valve	VQ7-6	
Applicable sub-plate	ISO standard size 1	
Max. operating pressure	1.0 MPa	
Min. operating pressure	0.15 MPa (Pressure generated when the valve element is switched to the stopping side.)	
Ambient and fluid temperature	5 to 60°C	
Lubrication	Non-lube (Use turbine oil Class 1 (ISO VG32), if lubricated.)	

Double check spacer
VV71-FPG

By combining a 3 position exhaust center valve with a double check spacer, an intermediate stopping position of a cylinder can be held for an extended period. It can also be used for drop prevention at the cylinder stroke end when releasing residual supply pressure, by combining it with a 2 position single or double valve.



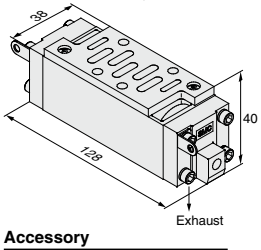


Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-8	4

Double check spacer with residual pressure release valve
VV71-FPGR

This is a double check spacer equipped with a residual pressure release function, to release residual pressure inside a cylinder during maintenance or adjustment, etc.



Accessory

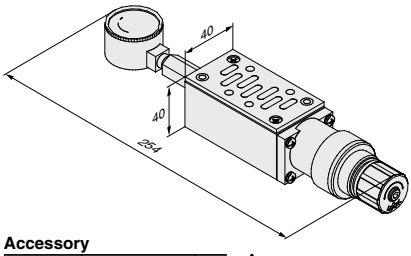
Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-8	4

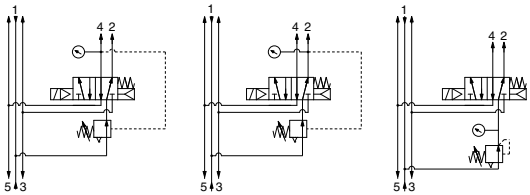
⚠Caution

- Since extended cylinder stops are not possible if there are leaks from piping between the valve and cylinder or from fittings, etc., check for leakage using a neutral liquid detergent.
- Since One-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.
- Combination of 3 position, closed center and pressure center valves is not possible.
- Set the load weight so that the cylinder side pressure is less than two times the supply side pressure.
- When using the residual pressure release function, confirm the action of actuators, etc., and operate after providing for safety measures.
- Be aware that if the exhaust side of perfect spacer is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.
- To combat the effects of back pressure, when required, we recommend installing an individual EXH spacer between the double check spacer and the manifold.

Interface regulator
ARB250-00-$^{P}_{A}$ $_{B}$

Spacer Interface regulators can be placed on top of the manifold block to reduce the pressure of each of the valves.





Regulating port A | Regulating port B | Regulating port P

Accessory

Description	Part no.	Qty.
Gasket	AXT500-13	1
Bolt	AXT632-45-8	4

Part No.

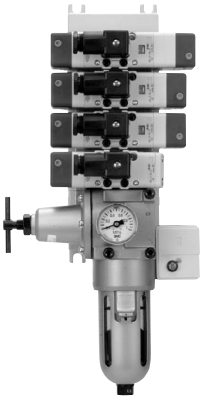
P reduced pressure	ARB250-00-P
A reduced pressure	ARB250-00-A
B reduced pressure	ARB250-00-B

⚠Caution

- When combining a pressure center valve and interface regulator with reduced pressure at ports A and B, use model ARB210-$^{A}_{B}$.
- When combining a reverse pressure valve and interface regulator, use model ARB210-$^{A}_{B}$. Further, it cannot be used with reduced pressure at port P.
- When combining a double check valve and an interface regulator, use a manifold or sub-plate as a basis, and stack them in the following order; the perfect spacer → the interface regulator → the valve.
- When a closed center valve is combined with the interface regulator's A, B port regulation, note that it cannot be used for intermediate stops of a cylinder because there is leakage from relief port on the regulator.

Control Unit

Control equipment (filters, regulators, pressure switches, air release valves) has been made into standardized units which can be mounted on manifolds without any modifications.



Control Unit Specifications

Air filter (With auto-drain/With manual drain)	
Filtration degree	5 μm
Regulator	
Set pressure (Outlet pressure)	0.05 to 0.85 MPa
Pressure switch	
Pressure adjustment range	0.1 to 0.7 MPa
Contact	1 ab
Rated current	(Induction load) 125 VAC 15 A, 250 VAC 15 A
Air release valve (Single only)	
Operating pressure range	0.15 to 1.0 MPa

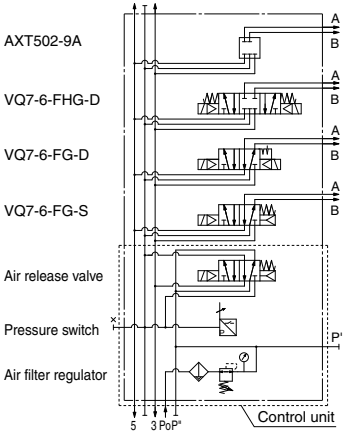
Options

Blanking plate	AXT502-9A (For manifold)
	AXT502-18A (For release valve adapter plate)
	MP2 (For control equipment/filter regulator)
	MP3-1 (For pressure switch)
Release valve adapter plate	AXT502-17A
Pressure switch	IS3100-X230

Control Unit Type

Ordering symbol / Control equipment	Nil	A	AP	M	MP	F	G	C	E
Air filter with auto-drain		○	○			○			
Air filter with manual drain				○	○		○		
Regulator		○	○	○	○	○	○		
Air release valve		○	○	○	○			○	○
Pressure switch			○		○				
Blanking plate (Air release valve)						○	○		
Blanking plate (Filter, Regulator)								○	
Blanking plate (Pressure switch)		○		○		○	○	○	
Number of manifold blocks required for mounting (stations)		2 stations	2 stations	2 stations	2 stations	2 stations	2 stations	2 stations	1 station

Manifold specifications example



Use of Control Unit

<Construction and piping >

1. The supply pressure (Po) passes through the regulator with filter ① and is adjusted to the prescribed pressure. Next, it goes through the release valve ② (downstream residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).

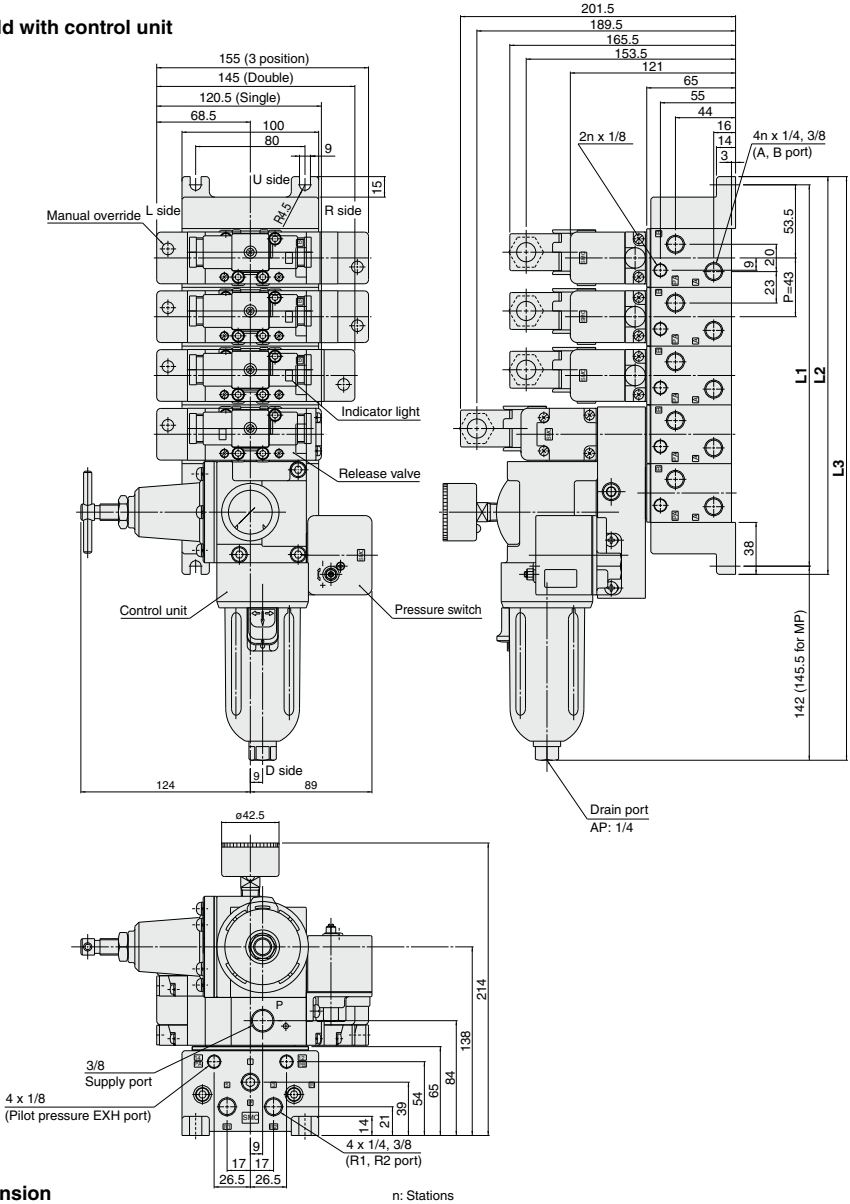
2. When the release valve ② is OFF, the supply pressure from port Po is blocked, and the air which was being supplied to the manifold side port P passes through the release valve ② and is discharged from port R1.

3. The pressure switch is piped into the outlet side of the release valve ②. (It operates when the release valve ② is energized.) Also, since there is an internal voltage drop of 4V, it may not be possible to confirm the OFF and ON states with a tester, etc.

⚠Caution

• In the case of air filters with auto-drain or manual drain, mount so that the air filter is at the bottom.

Manifold with control unit



L Dimension

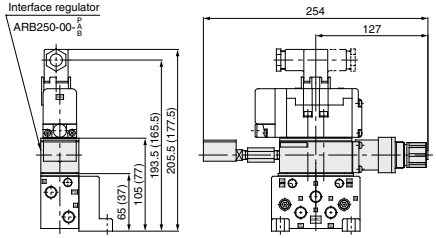
n: Stations

	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	L1 = 43n + 64
L2	119	162	205	248	291	334	377	420	463	506	L2 = 43n + 76
L3	255	298	341	384	427	470	513	556	599	642	L3 = 43n + 212 (215.5)
	(258.5)	(301.5)	(344.5)	(387.5)	(430.5)	(473.5)	(516.5)	(559.5)	(602.5)	(645.5)	

L3 dimensions inside ( ) are for MP.

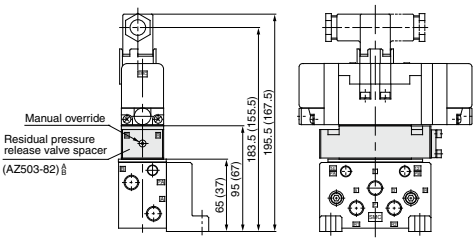
Manifold Option Parts

Interface regulator
ARB250-00-P/A/B



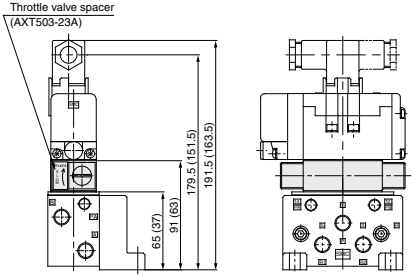
∗ Dimensions inside ( ) are for sub-plate.

Residual pressure release valve spacer
AZ503-82A/B



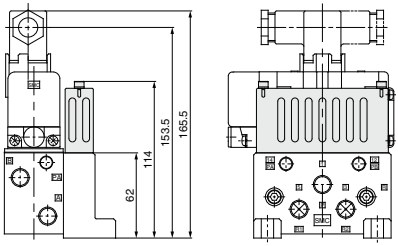
∗ Dimensions inside ( ) are for sub-plate.

Throttle valve spacer
AXT503-23A



∗ Dimensions inside ( ) are for sub-plate.

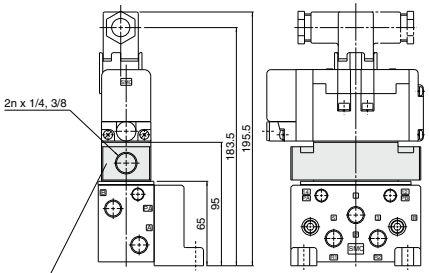
Silencer box
AXT503-60A



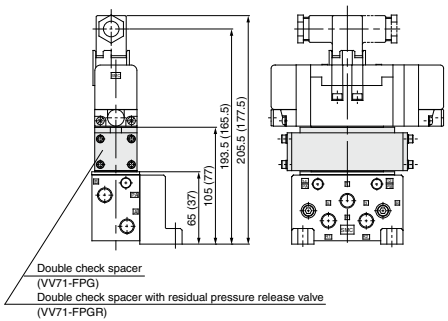
Spare parts

Description	Part no.
Element	AXT503-60-2-4

Individual SUP spacer **VV71-P-□**
Individual EXH spacer **VV71-R-□**
R1, R2 individual EXH spacer **VV71-R2-03**
Reverse pressure spacer **AXT502-21A-1**

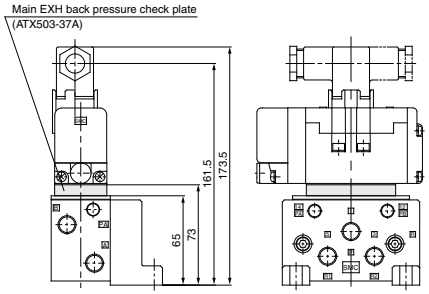


Double check spacer **VV71-FPG**
Double check spacer with residual pressure release valve **VV71-FPGR**

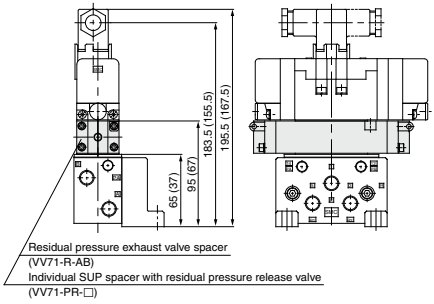


∗ Dimensions inside ( ) are for sub-plate.

Main EXH back pressure check plate
AXT503-37A



Residual pressure release valve spacer **VV71-R-AB**
Individual SUP spacer with residual pressure release valve **VV71-PR-□**



∗ Dimensions inside ( ) are for sub-plate.