Steam Traps and Monitoring Equipment

The right choice in every case

Engineering steam performance

Best equipped
with GESTRA steam traps

Steam traps have to work perfectly

In industry, one of steam's most important tasks is to provide thermal energy through condensation, and to heat a variety of media in heat exchangers. During this process, the steam flows through pipes and cools down more and more en route, so that condensate forms here, too.

Condensate prevents the optimum transfer of heat, but also, in particular, leads to erosion and water hammer. To enable steam systems to work reliably and efficiently, steam traps discharge any condensate that builds up, while retaining the valuable steam to the greatest possible extent. How well steam traps perform has a considerable influence on:

- **the system's reliability**
- **availability and**
- **cost efficiency.**

To achieve the very best results here, it needs valves that satisfy all the different requirements in every respect.

Flexible for different requirements

To heat water using steam, at times large quantities of condensate must be discharged as quickly as possible, so that drainage without banking-up can be guaranteed even if load and pressure are fluctuating.

If turbines or pipes with superheated steam are drained, only low condensate flowrates occur during operation. More condensate only forms on start-up. Here, the demand is for robustness, maintenance friendliness, durability and a regulator that closes reliably even at pressures above 200 barg.

This is what sets GESTRA steam traps apart

For steam system operators, the cost of energy production is a key driver. Durable steam traps that work without loss of steam help to keep these costs as low as possible. What's more, they ensure reliable and safe operation.

For decades now, GESTRA steam traps have epitomised optimum energy efficiency and absolute reliability. They satisfy the most demanding quality requirements, and their compact and modular design makes them impressive in the field. In addition, they are very maintenance-friendly and extremely easy and convenient to use.

Best quality for every need

At GESTRA you will find an extensive selection of functional types and versions to suit every requirement. In addition, we offer systems that enable you to reliably test and monitor your steam and condensate systems.

How do I get my optimum steam trap?

We find the optimum steam trap for you, with the best efficiency. To achieve this, what matters most is keeping an eye on the decisive factors:

1. Requirements specific to your application

- Saturated steam pipe
- Superheated steam pipe
- Steam-regulated heat exchanger
- Unregulated heat exchanger or heating coil
- Steam tracing where undercooling is required
- Turbine drainage

2. System and equipment requirements

- Pressure rating
- Type of end connection, e.g. EN flange or socket weld end
- Material of construction

3. Operating parameters

- Pressure upstream from steam trap
- Temperature upstream from steam trap
- Pressure downstream from steam trap
- Condensate flowrate
- Start-up and shut-down cycles
- Load changes

4. Additional options required

- Monitoring
- Dirt strainer
- Drain valve and manual air vent
- Manual vent valve
- Bypass

Online design software

We are happy to advise you on selecting, sizing and configuring the right steam trap for you. But first you can also use our CAE-Sar design software. This shows you the best way to your perfect steam trap.

You can find the easy-to-use CAESar steam trap selection range on our homepage, www.gestra.com, under “Service & Support”.

Steam traps with bimetallic regulator
BK series

Thermostatic steam traps for removing condensate from steam or for air venting steam pipes

In steam traps with GESTRA Thermovit regulators, the opening and closing process is controlled by the interaction of bimetallic plates and a stage nozzle. It is precisely this principle that makes steam traps from the BK series highly responsive, very efficient and extremely resistant.

Use

Robust steam traps for condensate removal from heating processes with small load fluctuations.

Especially recommended for use in:

- Superheated steam pipes
- Saturated steam pipes
- Steam tracing
- Heating coils

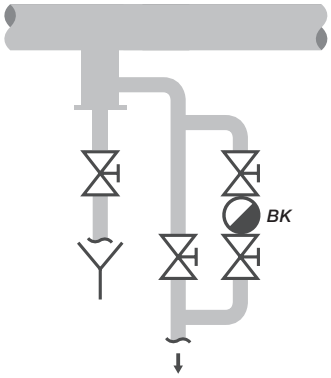
Moreover, the BK series is ideal for use as a fast-acting air vent for steam systems.

Advantages

- Extremely good start-up performance
- No loss of steam
- Suitable for differential pressures up to 275 bar
- Able to cope with the harshest operating conditions
- Any installation position – in horizontal or vertical pipes
- Inner parts of corrosion-resistant stainless steel
- Can be serviced without removing the body from the pipe
- Metal base bushing provides the seal between the body and bimetallic regulator
- Stage nozzle for non-return valve action
- Wear-resistant

Installation example

Superheated steam pipe



BK 15

BK 37, BK 28, BK 29

BK 37-ASME, BK 28-ASME, BK 29-ASME

BK 45, BK 46

BK 212

BK 212-ASME

BK 45/46 in detail:

These steam traps are unaffected by frost and water hammer, resistant to corrosion and require little maintenance.

The traps regulate the flow of medium using a highly responsive GESTRA Thermovit regulator. Specially shaped bimetallic plates arranged one above the other expand as the media temperature rises, moving the stage nozzle. The flow orifice closes. In the cold state, the regulator is fully open. That is why steam traps from the BK series boast an excellent start-up performance.

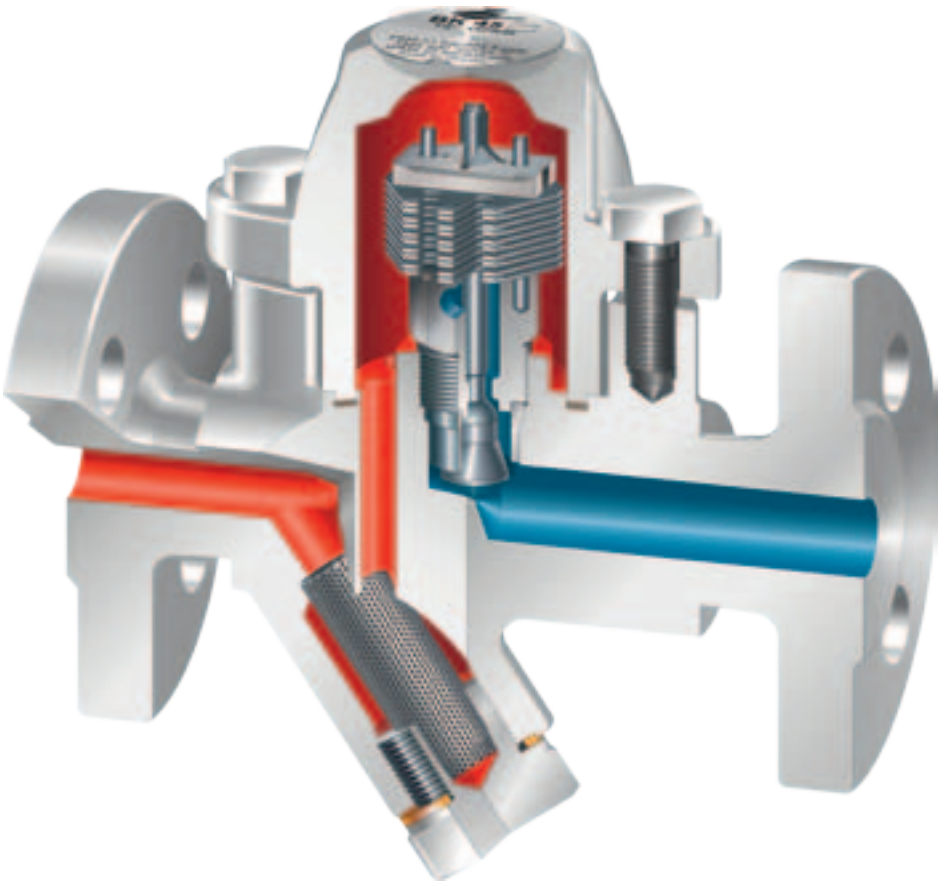
Key data

Robust GESTRA Thermovit regulator for removing condensate from heating processes with small load fluctuations.

- DN 15–25 (NPS ½″–1″)
- PN 40/Cl 300
- Max. differential pressure: 22 or 32 bar
- Easy to install RHOMBUS*line* body with recessed body gasket and metal base bushing
- Integrated non-return valve action
- Dirt strainer with large surface area (Y-strainer)

Options

- Integrated steam trap monitoring for loss of steam and banking-up of condensate
- Blow-down valve



GESTRA steam traps at a glance

Type	Materials, body, cover	Operating principle				
		Bimetallic BK	Membrane MK	Ball float UNA	Thermodynamic DK	Inverted bucket IB
AK 45	1.0460/SA105					
BK 15	1.0460/SA105	x				
BK 27N	1.5415	x				
BK 28	1.5415	x				
BK 28-ASME	1.7335/SA182-F12-2	x				
BK 29	1.7335/SA182-F12-2	x				
BK 29-ASME	1.7335/SA182-F12-2	x				
BK 36A-7	1.4408/SA351-CF8M	x				
BK 37	1.5415	x				
BK 37-ASME	A182-F12	x				
BK 45	1.0460/SA105	x				
BK 45-LT	SA350-LF2	x				
BK 46	1.5415	x				
BK 212	1.7383/A182-F22-3	x				
BK 212-F91	1.4903/SA182-F91	x				
BK 212-1.4901	1.4901 (F92)	x				
BK 212-ASME	1.7383/A182-F22-3	x				
DK 36A-7	1.4408/SA351-CF8M				x	
DK 45	1.0460/SA105				x	
DK 47-L	A743 CA40				x	
DK 47-H	A743 CA40				x	
DK 57-L	AISI 420				x	
DK 57-H	AISI 420				x	
GK 11	5.1301					
GK 21	5.1301					
IB 16A-7	SA240-304L					x
MK 20	5.4202		x			
MK 25/2	1.0460, 1.0619/SA105, SA216-WCB		x			
MK 25/2 S	1.0460, 1.0619/SA105, SA216-WCB		x			
MK 35/31	1.0460/SA105		x			
MK 35/32	1.0460/SA105		x			
MK 35/2S	1.0460/SA105		x			
MK 35/2S3	1.0460/SA105		x			
MK 36A-71	1.4408/SA351-CF8M		x			
MK 36A-72	1.4408/SA351-CF8M		x			
MK 36/51	1.4301/SA479-F304		x			
MK 36/52	1.4301/SA479-F304		x			
MK 45-1	1.0460/SA105		x			
MK 45-2	1.0460/SA105		x			
MK 45 A-1	1.4404/A182-F316L		x			
MK 45 A-2	1.4404/A182-F316L		x			
SMK 22	1.4435		x			
SMK 22-51	1.4404		x			
SMK 22-81	1.4404		x			
SMK 22-82	1.4404		x			
TK 23	5.1301					
TK 24	1.0619/SA216-WCB					
TS 36	1.4408/SA351-CF8M					
UBK 46	1.0460/SA105	x				
UC 36, UCY 36	1.4408/SA351-CF8M					
UNA 14	5.3103			x		
UNA 14P	5.3103			x		
UNA 16	1.0460, 1.0619/SA105, SA216-WCB			x		
UNA 16A	1.4404, 1.4408/A182-316L, SA351-CF8M			x		
UNA 25-PK	5.3103			x		
UNA 25-PS	5.3103			x		
UNA 27h	1.5419			x		
UNA 43	5.1301/A126-B			x		
UNA 45	1.0460, 5.3103/SA105, (A395)			x		
UNA 45 MAX	1.0460, 5.3103/SA105, (A395)			x		
UNA 46	1.0460, 1.0619/SA105, SA216-WCB			x		
UNA 46 MAX	1.0460, 1.0619/SA105, SA216-WCB			x		
UNA 46A	1.4404, 1.4408/A182-316L, SA351-CF8M			x		
UNA 46A MAX	1.4404, 1.4408/A182-316L, SA351-CF8M			x		
UNA 38	1.5415, 1.7357			x		
UNA 39	1.7335/SA182-F12			x		
UNA-Special Typ 62-B	1.0425			x		
UNA PN 25	1.0619/SA216-WCB			x		
UNA-Special PN 63	1.5419			x		

Nominal size											Nominal pressure		Max. permitted differential pressure		Hot condensate	
8 ¼″	10 ⅜″	15 ½″	20 ¾″	25 1″	40 1½″	50 2″	65 2½″	80 3″	100 4″	150 6″	PN	Cl	ΔPMX [bar]	ΔPMX [psi]	[kg/h]	[lb/h]
		x	x	x							40					
					x	x					40	300	22	320	2,550	5,620
					x	x					63		45	650	1,500	3,310
		x	x	x							100		85	1,230	910	2,010
		x	x	x								600	85	1,230	910	2,010
		x	x	x							160		110	1,600	980	2,160
		x	x	x								900	110	1,600	980	2,160
												300	32	465	300	660
		x	x	x							100		45	650	570	1,260
		x	x	x								600	45	650	570	1,260
		x	x	x							40	300	22	320	510	1,120
		x	x	x							40	300	22	320	510	1,120
		x	x	x							40	300	32	465	550	1,210
		x	x	x							630		275	3,988	300	660
		x	x	x							775	2500	275	3,988	300	660
											800		275	3,988	300	660
		x	x	x								2500	275	3,988	300	660
												300	32	465	400	880
		x	x	x							40	300	32	465	510	1,120
		x	x								63	600	42	610	330	730
			x	x							63	600	42	610	2,000	4,410
		x	x								63	600	42	610	550	1,210
			x	x							63	600	42	610	2.100	4,630
							x	x	x	x	16		6	87	380,000	837,740
						x					16		6	87	18,000	39,680
												300	27.6	400	750	1,650
		x	x								6		4.5	65	1,050	2,310
					x	x					40		32	465	5,500	12,130
					x	x					40		32	465	8,200	18,080
	x	x									25		21	305	360	790
	x	x									25		21	305	790	1,740
				x							40		32	465	1,800	3,970
				x							40		32	465	3,100	6,830
												300	32	465	300	660
												300	32	465	450	990
x	x	x	x									300	32	465	500	1,100
x	x	x	x									300	32	465	830	1,830
		x	x	x							40	300	32	465	610	1,340
		x	x	x							40	300	32	465	1.100	2,430
		x	x	x							40	300	32	465	610	1,340
		x	x	x							40	300	32	465	1,100	2,430
	x	x	x	x							10		6	87	270	600
	x	x	x	x							10		6	87	270	600
	x	x	x	x							10		6	87	270	600
				x							10		6	87	400	880
						x	x	x	x		16		10	145	125,000	275,570
						x	x	x	x		25		14	203	140,000	308,640
		x	x	x								300				
		x	x	x							40	300	32	465	170	370
		x	x	x								300				
		x	x	x							25		13	188	650	1,430
		x	x	x							25		16	232	1,000	2,200
		x	x	x							40	300	22	320	650	1,430
		x	x	x							40	300	22	320	650	1,430
					x						40		13	188	3,200	7,050
					x						40		13	188	610	1,340
				x	x	x					63		45	650	4,800	10,580
								x	x	x	16	125	13	188	26,000	57,320
		x	x	x	x	x	x				40	300	32	465	6,050	13,340
					x	x	x				40	300	32	465	15,500	34,170
		x	x	x	x	x	x	x	x	x	40	300	32	465	26,000	57,320
					x	x	x				40	300	32	465	15,500	34,170
		x	x	x	x	x	x				40	300	32	465	6,050	13,340
					x	x	x				40	300	32	465	15,500	34,170
		x	x	x	x	x					100		80	1,160	5,200	11,460
		x		x		x					160	900	140	2,030	6,000	13,230
									x		16		16	232	90,000	198,410
									x		25		22	320	66,000	145,500
							x	x	x		63		45	650	32,000	70,550

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