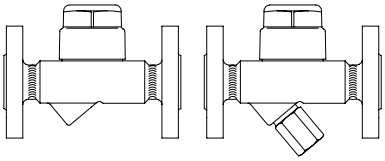
Thermostatic steam trap

Thermostatic steam trap
ANSI150 / 300

- with flanges (Fig. 610/612....1)
- with screwed sockets (Fig. 610/612....2)
- with socket weld ends (Fig. 610/612....3)
- with butt weld ends (Fig. 610/612....4)



Forged steel
Stainless steel
Fig. 610/612 (Y) Page 2

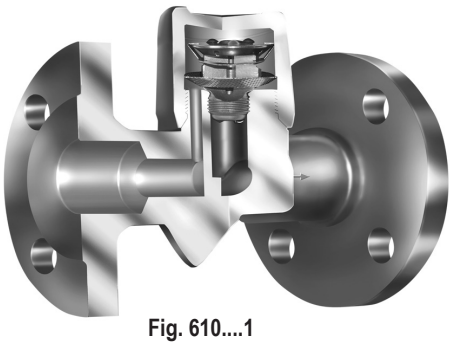
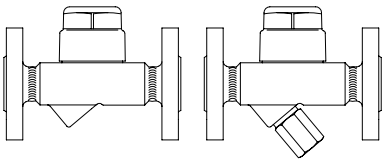


Fig. 610....1

Thermostatic steam trap
With seat for higher flow capacity than Fig. 610/612
ANSI150 / 300

- with flanges (Fig. 611/613....1)
- with screwed sockets (Fig. 611/613....2)
- with socket weld ends (Fig. 611/613....3)
- with butt weld ends (Fig. 611/613....4)



Forged steel
Stainless steel
Fig. 611/613 (Y) Page 4

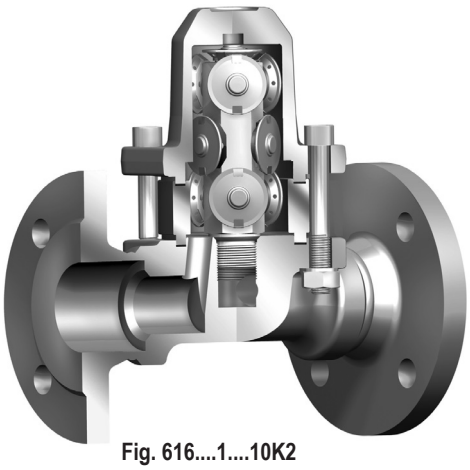
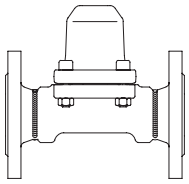


Fig. 616....1....10K2

Thermostatic steam trap
With multi capsule for very high flow capacity
ANSI150 / 300

- with flanges (Fig. 616....1)
- with screwed sockets (Fig. 616....2)
- with socket weld ends (Fig. 616....3)
- with butt weld ends (Fig. 616....4)



Forged steel
Fig. 616 Page 6

Features:

- For discharging of slight to highly sub-cooled condensate
- Automatic air-venting during start up and operation of the plant
- High sensitivity
- Exact control characteristic
- Robust and resistant to water-hammer
- Integrated non return protection (Fig. 610/612; 611/613 (not at controller R5))
- Constructions:
  - With inside strainer
  - With outside strainer - Fig. 612 / 613 (Y)
- Optimized design for quick installation (except Fig. 616)
- Gasket-free sealing of the screwed cap (NPS 1/2 -1)
- Installation in any position (except cover/screwed cap downwards)
- Available types of capsule (sub-cooling from 5K to 40K)
- Pressure test acc. to API 598
- CRN approved

Thermostatic steam trap (Forged steel, Stainless steel)

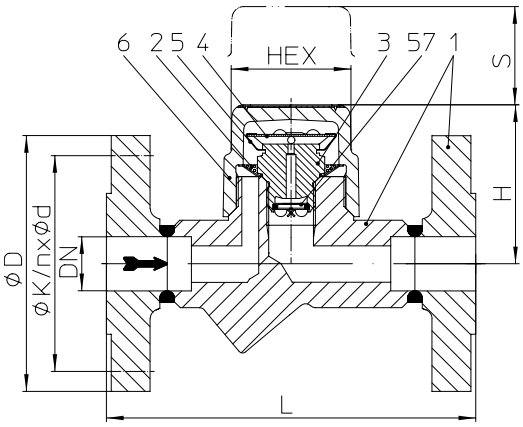


Fig. 610....1 with flanges

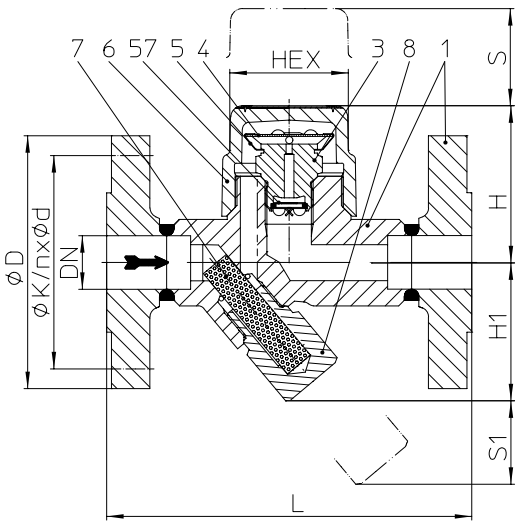


Fig. 612....1 with flanges

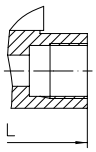


Fig. 610/612....2
with screwed sockets

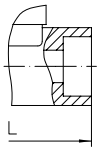


Fig. 610/612....3
with socket weld ends

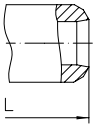


Fig. 610/612....4
with butt weld ends

Figure	Nominal pressure	Material	NPS	Operating pressure PS	Inlet temperature TS	allowable differential pressure ΔPMX	for controller
42.610 42.612 (Y)	ANSI150	SA105	1/2“ - 1“	13 bar	225 °C	22 bar 5 bar	R22 R5
				5,5 bar	427 °C		
45.610 45.612 (Y)	ANSI300	SA105	1/2“ - 1“	22 bar	427 °C		
52.610 52.612 (Y)	ANSI150	SA182 F321	1/2“ - 1“	13 bar	225 °C		
				5 bar	441 °C		
				2,4 bar	510 °C		
55.610 55.612 (Y)	ANSI300	SA182 F321	1/2“ - 1“	22 bar	510 °C		
DIN-Constructions refer to data sheet CONA®M							

Types of connection — Other types of connection on request.

- Flanges ....1 _____ acc. to ASME B16.5
- Screwed sockets ....2 ___ NPT thread acc. to ANSI B1.20.1 or Rp thread acc. to DIN EN 10226-1
- Socket weld ends ....3 ___ acc. to ASME B16.11
- Butt weld ends ....4 _____ ASME B16.25 (Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Thermostatic steam trap with noncorrosive and robust water hammer proofed capsule
- Non return protection (not at controller R5)
- With inside strainer - Fig. 610 / With outside strainer - Fig. 612 (Y)
- Installation in any position, optimal filter effect at horizontal installation
- Optimized design for quick installation
- Maintenance simplified due to screwed cap without sealing

Capsule — (chooseable for operating range)

- Capsule No. 1 _____ for condensate discharge at boiling temperature - applicable up to 5 bar inlet pressure
- Capsule No. 2 _____ for condensate sub-cooling about approx. 10K (Standard)
- Capsule No. 3 _____ for condensate sub-cooling about approx. 30K
- Capsule No. 4 _____ for condensate sub-cooling about approx. 40K - applicable up to 16 bar inlet pressure, especially suitable for tracing systems with low and medium pressure steam

Options — (Design refer to page 5)

- Outside strainer with blow down valve (Pos. 46)
- Ball valve for blow down (pos. 56) with internal strainer (Observe operating and installation instructions!)

Types of connection		Flanges			Screwed sockets Socket weld ends			Butt weld ends		
NPS		1/2	3/4	1	1/2	3/4	1	1/2	3/4	1
Face-to-face acc. to data sheet resp. customer request										
L	(mm)	150	150	160	95	95	95	250	250	250
Dimensions										Standard-flange dimensions refer to page 9.
H	(mm)	65	65	65	65	65	74	65	65	65
H1	(mm)	62	62	62	62	62	55	62	62	62
S	(mm)	40	40	40	40	40	40	40	40	40
S1	(mm)	24	24	24	24	24	24	24	24	24
HEX	(mm)	50	50	50	50	50	50	50	50	50
Weights										
(approx.)	(kg)	2,7	3,3	3,7	1,4	1,3	1,8	1,8	1,9	2

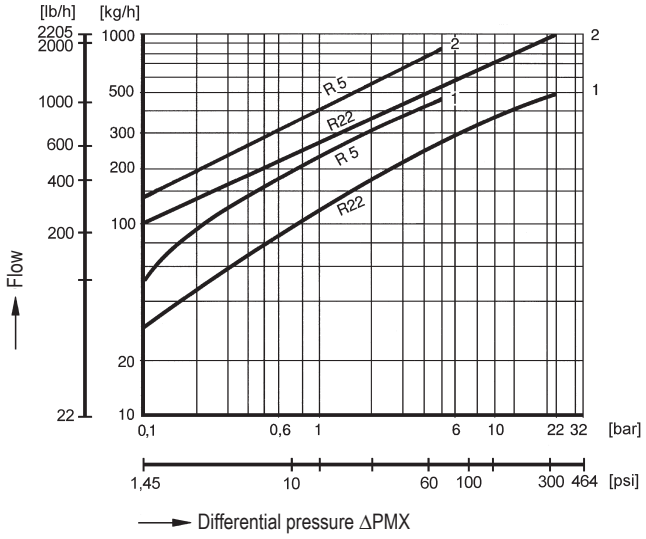
Parts				
Pos.	**Sp.p.**	**Description**	**Fig. 42.610/612; 45.610/45.612**	**Fig. 52.610/612; 55.610/612**
1		Body	SA105	SA182F321
2	x	Strainer	SA240Gr.304	
3	x	Seat	AISI303	
4	x	Capsule (Diaphragm / Capsule)	Hastelloy / SA240Gr.304	
5	x	Spring actuated clip	AISI301	
6		Cap	SA105	SA182F321
7	x	Strainer	SA240Gr.304	
8	x	Strainer plug	SA182F321	
46	x	Blow down valve, cpl.	SA182F321	
56	x	Ball valve for blow down (G 3/8”)	SA351CF8M	
57		Non return protection	SA240Gr.304	
	└ Spare parts			

Information / restriction of technical rules need to be observed!

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Operating and installation instructions can be downloaded at www.ari-armaturen.com.

Capacity chart

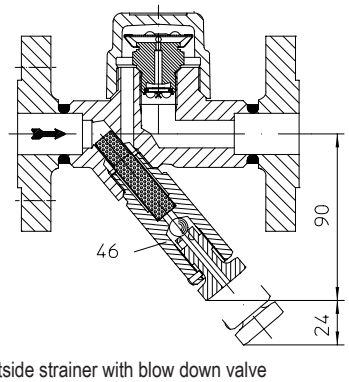


The capacity chart shows the maximum flow rates.

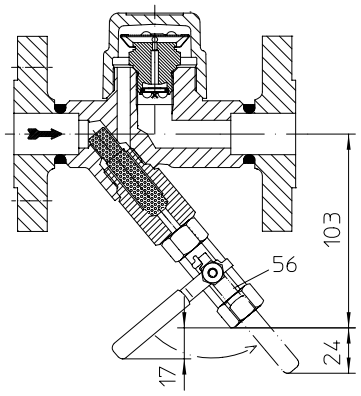
Curve 1: Maximum flow of hot condensate for capsule No. 1, 2, 3 and 4.

Curve 2: Maximum flow at cold condensate at about 68°F / 20°C.

Options

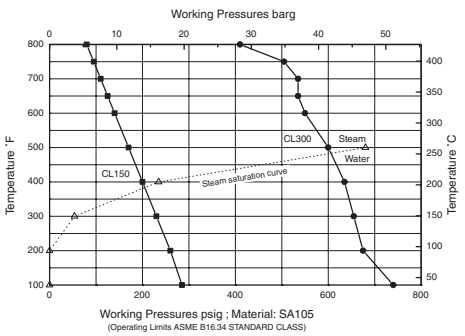


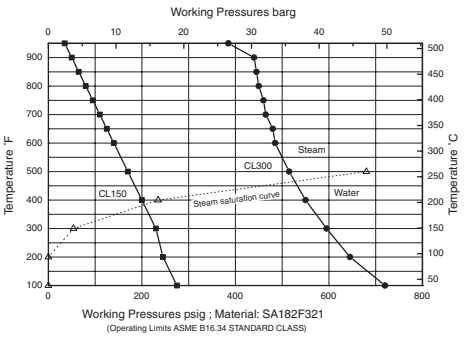
Outside strainer with blow down valve



Ball valve with adapter for blow down with internal strainer
(restricted to 16 bar, 210°C)

Druck-Temperatur-Diagramm





Thermostatic steam trap for higher flow capacity (Forged steel, High temperature steel, Stainless steel)

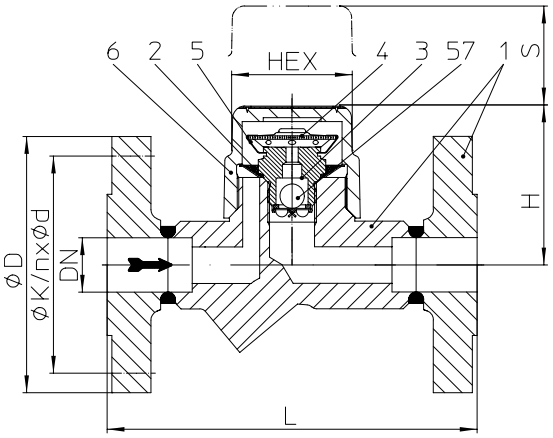


Fig. 611....1 with flanges

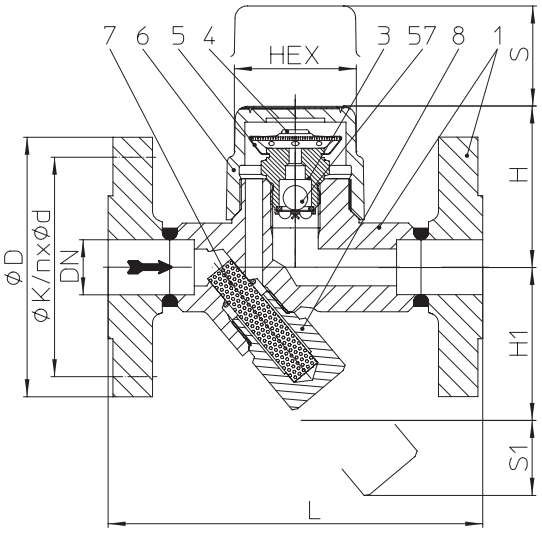


Fig. 613....1 with flanges

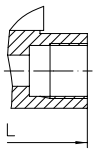


Fig. 611/613....2
with screwed sockets

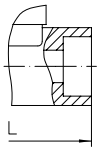


Fig. 611/613....3
with socket weld ends

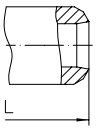


Fig. 611/613....4
with butt weld ends

Figure	Nominal pressure	Material	NPS	Operating pressure PS	Inlet temperature TS	allowable differential pressure ΔPMX	for controller
42.611 42.613 (Y)	ANSI150	SA105	1/2“ - 1“ / DN15-25	13 bar	225 °C	32 bar	R32
				5,5 bar	427 °C		
45.611 45.613 (Y)	ANSI300	SA105	1/2“ - 1“ / DN15-25	32 bar	411 °C		
				28 bar	427 °C		
52.611 52.613 (Y)	ANSI150	SA182 F321	1/2“ - 1“ / DN15-25	13 bar	225 °C		
				2,4 bar	510 °C		
55.611 55.613 (Y)	ANSI300	SA182 F321	1/2“ - 1“ / DN15-25	32 bar	377 °C		
				27 bar	510 °C		
DIN-Constructions refer to data sheet CONA®M							

Types of connection — Other types of connection on request.

- Flanges ....1 _____ acc. to ASME B16.5
- Screwed sockets ....2 ___ NPT thread acc. to ANSI B1.20.1 or Rp thread acc. to DIN EN 10226-1
- Socket weld ends ....3 ___ acc. to ASME B16.11
- Butt weld ends ....4 _____ ASME B16.25 (Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Thermostatic steam trap with noncorrosive and robust water hammer proofed capsule
- **With seat for higher flow capacity than Fig. 610/612**
- Non return protection
- With inside strainer - Fig. 611 / With outside strainer - Fig. 613 (Y)
- Installation in any position, optimal filter effect at horizontal installation
- Optimized design for quick installation
- Maintenance simplified due to screwed cap without sealing

Capsule — (chooseable for operating range)

- Capsule No. 1 _____ for condensate discharge at boiling temperature - applicable up to 5 bar inlet pressure
- Capsule No. 2 _____ for condensate sub-cooling about approx. 10K (Standard)
- Capsule No. 3 _____ for condensate sub-cooling about approx. 30K

Options — (Design refer to page 5)

- Outside strainer with blow down valve (Pos. 46)
- Ball valve for blow down (pos. 56) with internal strainer (Observe operating and installation instructions!)

Types of connection		Flanges			Screwed sockets Socket weld ends			Butt weld ends		
NPS		1/2	3/4	1	1/2	3/4	1	1/2	3/4	1
Face-to-face acc. to data sheet resp. customer request										
L	(mm)	150	150	160	95	95	95	250	250	250
Dimensions										Standard-flange dimensions refer to page 9
H	(mm)	65	65	65	65	65	74	65	65	65
H1	(mm)	62	62	62	62	62	55	62	62	62
S	(mm)	40	40	40	40	40	40	40	40	40
S1	(mm)	24	24	24	24	24	24	24	24	24
HEX	(mm)	50	50	50	50	50	50	50	50	50
Weights										
(approx.)	(kg)	2,7	3,3	3,7	1,4	1,3	1,8	1,8	1,9	2

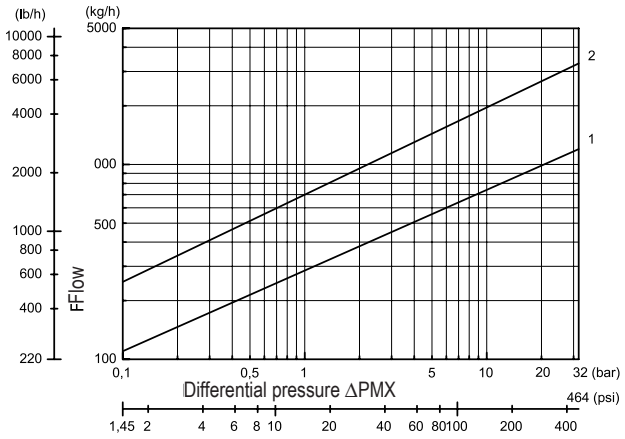
Parts				
Pos.	**Sp.p.**	**Description**	**Fig. 42.611/613; 45.611/45.613**	**Fig. 52.611/613; 55.611/613**
1		Body	SA105	SA182F321
2	x	Strainer *	SA240Gr.304	
3	x	Seat *	AISI303	
4	x	Capsule B (Diaphragm / Capsule) *	Hastelloy / SA240Gr.304	
5	x	Spring actuated clip *	AISI301	
6		Cap	SA105	SA182F321
7	x	Strainer	SA240Gr.304	
8	x	Strainer plug *	SA182F321	
46	x	Blow down valve, cpl. *	SA182F321	
56	x	Ball valve for blow down (G 3/8”) *	SA351CF8M	
57		Non return protection	SA240Gr.304	
	└ Spare parts			

Information / restriction of technical rules need to be observed!

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Operating and installation instructions can be downloaded at www.ari-armaturen.com.

Capacity chart

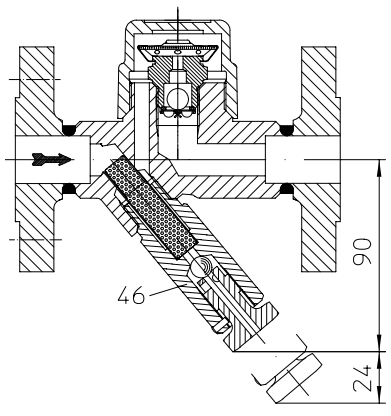


The capacity chart shows the maximum flow rates.

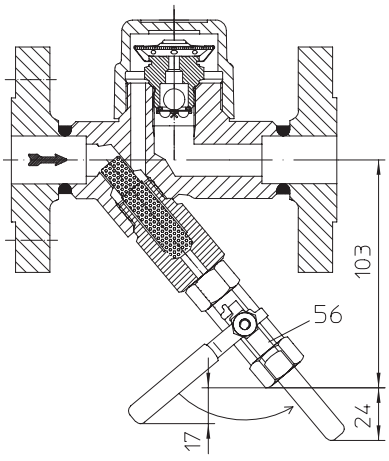
Curve 1. The capacity chart shows the maximum flow of hot condensate for capsule No. 1, 2 and 3.

Curve 2. Maximum flow at cold condensate at about 20°C.

Options

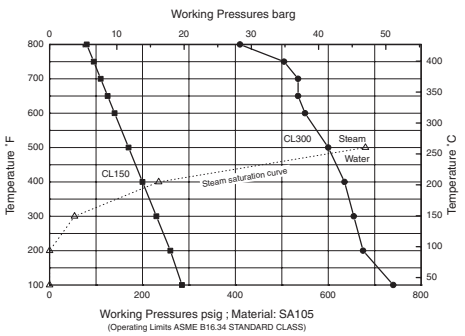


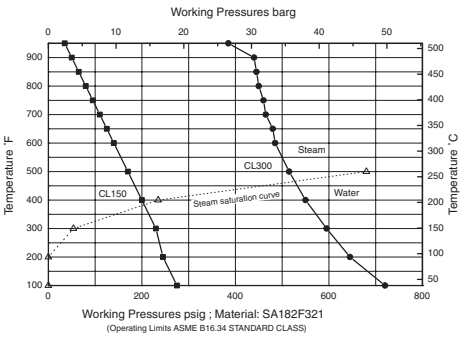
Outside strainer with blow down valve



Ball valve with adapter for blow down with internal strainer
(restricted to 16 bar, 210°C)

Druck-Temperatur-Diagramm





Thermostatic steam trap with multi capsule for very high flow capacity (Forged steel)

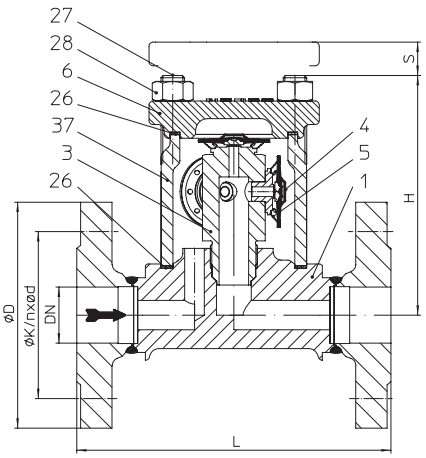


Fig. 616....1....4K2 (NPS 1“)
with 4 capsules, with flanges

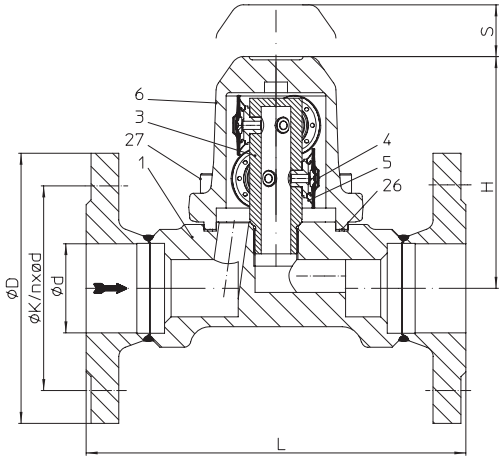


Fig. 616....1....6K2 (NPS 1 1/2“ - 2“)
with 6 capsules, with flanges

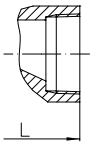


Fig. 616....2
with screwed sockets

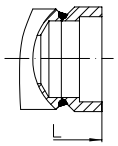


Fig. 616....3
with socket weld ends

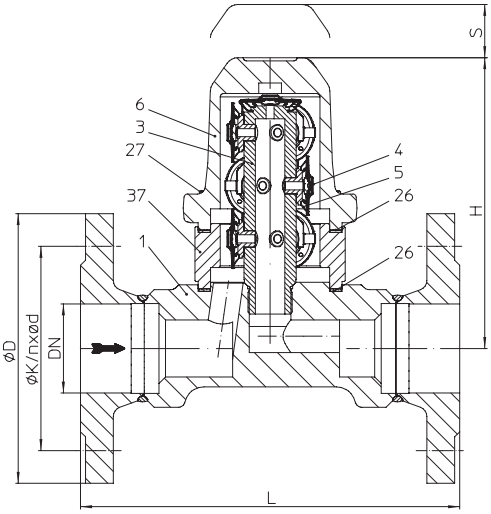


Fig. 616....1....10K2 (NPS 1 1/2“ - 2“)
with 10 capsules, with flanges

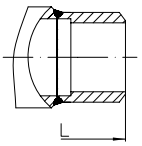


Fig. 616....4
with butt weld ends

Figure	Nominal pressure	Material	NPS	Operating pressure PS	Inlet temperature TS	allowable differential pressure ΔPMX	for controller
42.616....4K2 **with 4 capsules**	ANSI150	SA105	1“	13 bar	225 °C	32 bar	R32
				5,5 bar	427 °C		
45.616....4K2 **with 4 capsules**	ANSI300	SA105	1“	32 bar	411 °C		
				28 bar	427 °C		
42.616....6K2 **with 6 capsules**	ANSI150	SA105	1 1/2“ - 2“	13 bar	225 °C		
				5,5 bar	427 °C		
45.616....6K2 **with 6 capsules**	ANSI300	SA105	1 1/2“ - 2“	32 bar	411 °C		
				28 bar	427 °C		
42.616....10K2 **with 10 capsules**	ANSI150	SA105	1 1/2“ - 2“	13 bar	225 °C		
				5,5 bar	427 °C		
45.616....10K2 **with 10 capsules**	ANSI300	SA105	1 1/2“ - 2“	32 bar	411 °C		
				28 bar	427 °C		

We recommend a ARI Strainer Fig. 050 in front of the steam trap. [1] SA182F321 on request

DIN/EN-Constructions refer to data sheet CONA®M

Types of connection Other types of connection on request.

- Flanges ....1 _____ acc. to ASME B16.5
- Screwed sockets ....2 ___ NPT thread acc. to ANSI B1.20.1 or Rp thread acc. to DIN EN 10226-1
- Socket weld ends ....3 ___ acc. to ASME B16.11
- Butt weld ends ....4 _____ ASME B16.25 (Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Thermostatic steam trap with noncorrosive and robust water hammer proofed capsule
- **With multi capsule for discharge of very high flow capacity**
- Installation in any position, except cover downwards

Capsule

- Capsule No. 2 _____ for condensate sub-cooling about approx. 10K (Standard)

Types of connection			Flanges			Screwed sockets Socket weld ends			Butt weld ends		
NPS			1	1 1/2	2	1	1 1/2	2	1	1 1/2	2
Face-to-face acc. to data sheet resp. customer request											
L		(mm)	160	230	230	on request					
Dimensions											Standard-flange dimensions refer to page 9
H	4 capsules	(mm)	125	--	--	on request					
	6 capsules	(mm)	--	144	144						
	10 capsules	(mm)	--	185	185						
S		(mm)	65	90	90						
Weights											
(approx.)		(kg)	6,5	11,3	12,1	on request					

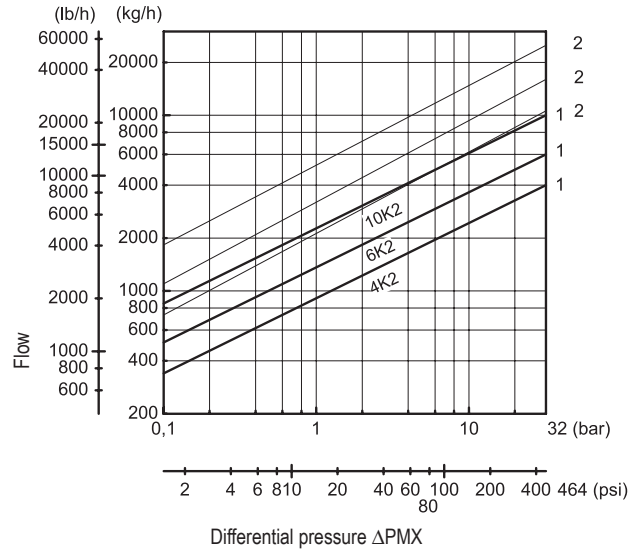
Parts					
Pos.	**Sp.p.**	**Description**	**Fig. 42./45.616....4K2, with 4 capsules**	**Fig. 42./45.616....6K2 with 6 capsules**	**Fig. 42./45.616....10K2 with 10 capsules**
1		Body	SA105		
3	x	Seat	AISI303		
4	x	Capsule (Diaphragm / Capsule)	SA240Gr.304		
5	x	Spring actuated clip	AISI301		
6		Cover	SA105		
26	x	Gasket	Graphite (CrNi laminated with graphite)		
27		Cheese head screw	--	SA193Gr.B16	
27		Stud	SA194Gr.4	--	
28		Hexagonal nut	SA194Gr.4	SA194Gr.4	
37		Intermediate flange	--		SA105
	└ Spare parts				

Information / restriction of technical rules need to be observed!

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Operating and installation instructions can be downloaded at www.ari-armaturen.com.

Capacity chart

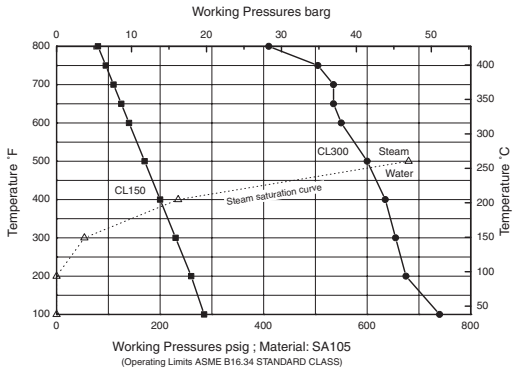


The capacity chart shows the maximum flow rates for controller.

Curve 1: Maximum flow of hot condensate.

Curve 2: Maximum flow at cold condensate at about 20°C.

Druck-Temperatur-Diagramm



myValve® - Ihr VAlve SIzing-Program.

myValve is a powerful software tool that not only helps you size your system components; it also gives you instant access to all other data about the selected product, such as order information, spare parts drawings, operating instructions, data sheets, etc., whenever you need it.

myValve - VAlve SIzing-Program

Contents:

Module ARI-Steam trap CONA-Calcuation

- Sizing (calculation of steam trap systems with given flow capacity or heat capacity)
- Calculation of nominal diameter acc. to given pressure, condensate quantity, condensate sub-cooling and speed

Media:

- Steam (saturated and superheated)
- Compressed air

Special Features

- Project administration of the calculation and product data incl. spare part drawings concerning to project and tag number
- Direct output or calculation and product data in PDF format
- Product data could be taken for a direct order
- SI- and ANSI-units with direct conversion to another databank
- Settings with over pressure or absolute pressure
- All ARI products are integrated in one databank
- Direct access concerning to the product on data sheets, operating instructions, pressure-temperature-diagram and spare part drawings
- Operation in company networks possible (no complex installations on individually PC's necessary)
- Extensive catalogue extending over several product groups

System Requirements:

Windows operating systems, Linux, etc.

Informations about pipe welding

Welding groove acc. to ASME B16.25

The material used for ARI valves with butt weld ends are: SA105

SA182F321

Note:

Note restriction on operating pressure / inlet temperature depending to design!

Due to our experience, we recommend to apply an electric welding process.

Because of the different material compositions and wall thickness of the steam traps and the pipe gas welding shall not be applied. Quenching cracks and coarse grain structure may develop.

On bimetallic steam traps face-to-face of 95 mm or less, the bimetallic controller has to be disassembled prior to welding. After the traps have cooled down to the ambient temperature the bimetallic controller shall be fitted again into the body.

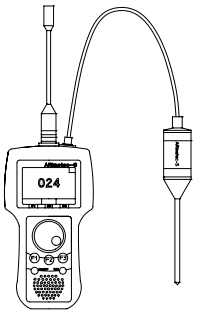
Steam traps with socket-weld ends shall only be welded by arc welding (welding process 111 acc. to DIN EN 24063).

If during the time of warranty others than the manufacturer or by the manufacturer authorized persons are interfering in the product and/or the setting, the right of claim for warranty will lapse!

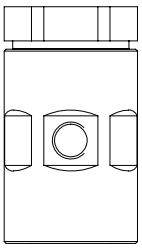
Standard-flange dimensions acc. to ASME B16.5

NPS			1/2	3/4	1	1 1/4	1 1/2	2
ANSI150	ØD	(mm)	89	99	108	117	127	153
	ØK	(mm)	60	70	79	78	98	121
	n x Ød	(mm)	4 x 16	4 x 16	4 x 16	4 x 16	4 x 16	4 x 19
ANSI300	ØD	(mm)	95	117	124	133	155	165
	ØK	(mm)	66,5	82,5	89	99	114	127
	n x Ød	(mm)	4 x 16	1 4 x 9	4 x 19	4 x 19	4 x 22	8 x 19

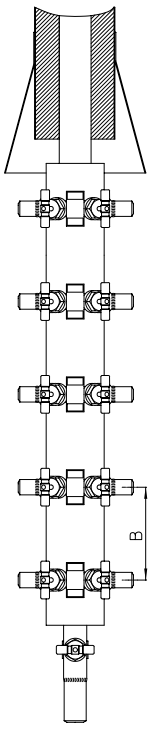
Selection criteria:		Example for order data:
• Steam pressure	• Type of connection	**Thermostatic steam trap CONA® M,** **Fig. 610, ANSI300, NPS 1/2“, SA105, Capsule-No. 2, with Flanges, Face-to-face dimension 150 mm**
• Back pressure	• Controller	
• Quantity of condensate	• Material	
• Nominal diameter / pressure	• Place of service or kind of steam consumer	



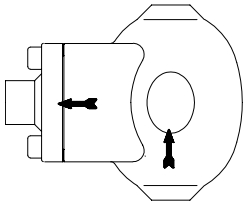
Multifunction tester
ARImetec®-S



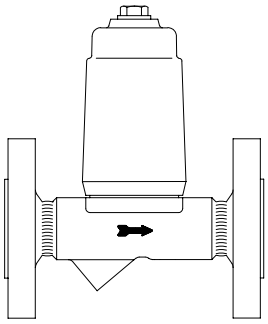
Vacuum breaker
Fig. 655



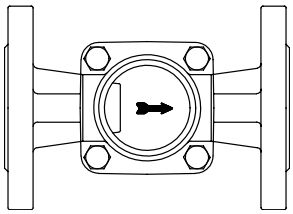
Condensate collection (B = 160), steam distribution (B = 120)
CODI ®S with gland packing Fig. 671/672;
CODI ®B with bellows seal, maintenance-free Fig. 675/676



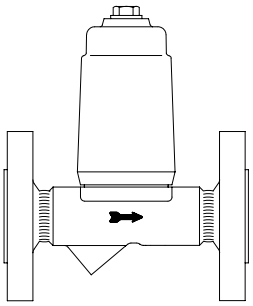
Automatic air vent for liquid systems
Fig. 656



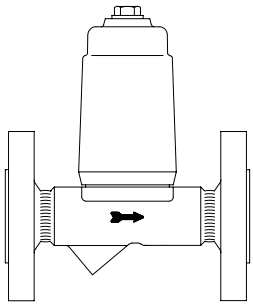
Condensate discharge temperature limiter
Fig. 645/647



Flow indicator
Fig. 660/661



Return temperature limiter
Fig. 650



Liquid drainer
Fig. 665

(Further informations about the accessories can be found in the appropriate data sheets.)

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