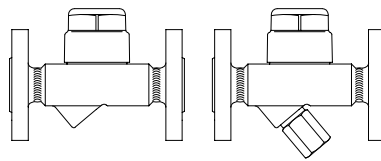




Thermodynamic steam trap PN40

- with flanges (BR 640/641....1)
- with screwed sockets (BR 640/641....2)
- with socket weld ends (BR 640/641....3)
- with butt weld ends (BR 640/641....4)



Forged steel
High temperature steel
Stainless steel
BR 640 / BR 641 (Y)

Page 2

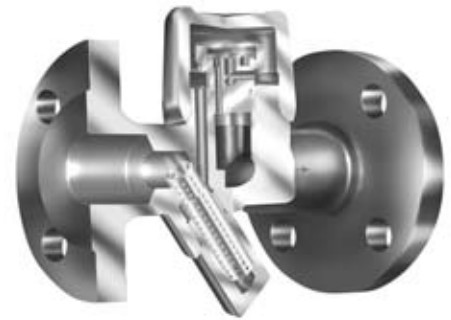
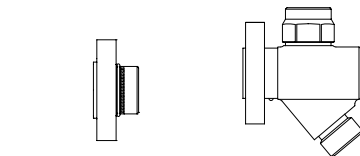


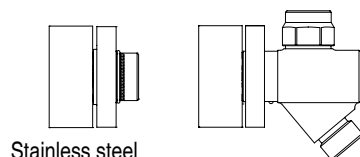
Fig. 641...1

Thermodynamic steam trap for quick assembly/disassembly on AWH and foreign system connectors Class 300

- loose flange (BR 642/643....7)
- with system connectors
- screwed sockets (BR 642/643....2)
- socket weld ends (BR 642/643....3)



with system connectors

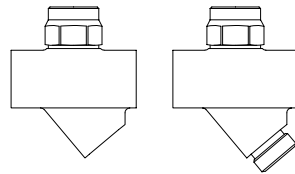


Stainless steel
BR 642 / BR 643 (Y)

Page 4

Thermodynamic steam trap PN63

- with screwed sockets (BR 640/641....2)



Stainless steel
BR 640 / BR 641 (Y)

Page 6

Features:

- For the discharge of condensate close to the saturated steam temperature
- intermittent mode of operation
- Robust and insensitive to water hammer
- Integrated non return protection (BR640/641)
- Design:
 - with inside strainer - BR 640
 - without strainer - BR 642 / 640 PN63
 - with outside strainer - BR 641 / 643 (Y)
- Optimized design for quick installation
- Gasketless sealing of the screw cap
- Installation in any position
- Cap with heat chamber (on PN 40 DN 15-25) minimizes the effects from the weather conditions to the function of the trap such as low ambient temperatures, rain, wind etc.
- Replaceable controller-unit (BR640/641)
- Special LC variant for low capacities

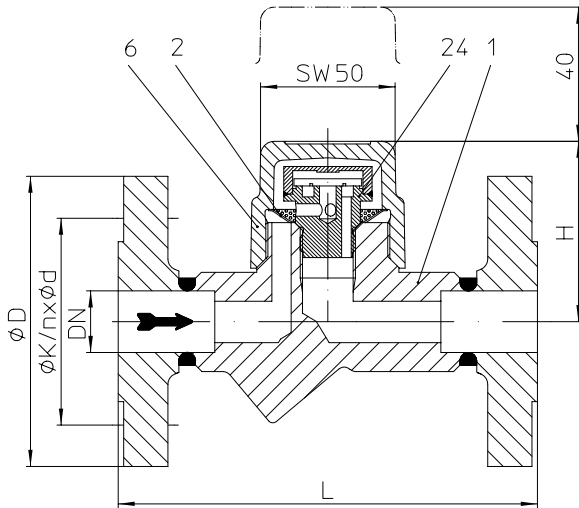
Thermodynamic steam trap made of forged steel, high temperature steel, stainless steel


Fig. 640...1 with flanges

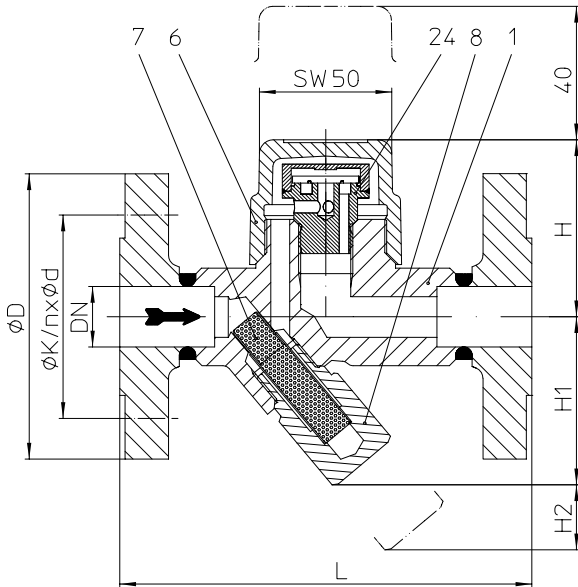


Fig. 641...1 with flanges

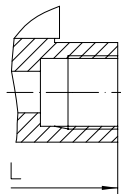


Fig. 640 / 641...2 with screwed sockets

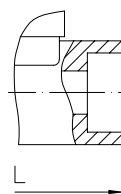


Fig. 640 / 641...3 with socket weld ends

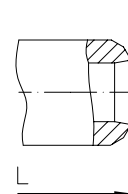


Fig. 640 / 641...4 with butt weld ends

- Thermodynamic steam trap with replaceable controller-unit and cap with heat chamber which minimizes the effects from the weather conditions to the function of the trap such as low ambient temperatures, rain, wind etc.
- Intermittent mode of operation
- Cap with heat chamber minimizes the effect from ambient conditions
- Robust water hammer proof design
- Integrated non return protection
- Design:
 - with inside strainer - BR 640
 - with outside strainer - BR 641 (Y)
- Optimized design for quick installation
- Service advantage thanks to screw cap without sealing
- Installation in any position
- Special LC variant for low capacities
- Option:
 - outside strainer with blow down valve

Fig. 45.640 / 45.641: PN40 - C22.8	Operating limits		
Operating pressure PS (bar-g)	32	22	14,5
Operating temperature TS (°C)	250	385	450
allowable diff. press. ΔPMX (bar): permissible pressure ratio (bar-g):	32 Back press./ Inlet press. ≤0,8		
Minimal operating pressure (bar-g)	1		

Fig. 85.640 / 85.641: PN40 - 16Mo3	Operating limits		
Operating pressure PS (bar-g)	35	32	28
Operating temperature TS (°C)	300	335	450
allowable diff. press. ΔPMX (bar): permissible pressure ratio (bar-g):	32 Back press./ Inlet press. ≤0,8		
Minimal operating pressure (bar-g)	1		

Fig. 55.640 / 55.641: PN40 - 1.4541	Operating limits	
Operating pressure PS (bar-g)	32	22
Operating temperature TS (°C)	350	400
allowable diff. press. ΔPMX (bar): permissible pressure ratio (bar-g):	32 Back press./ Inlet press. ≤0,8	
Minimal operating pressure (bar-g)	1	

Types of connection	
Flanges1	DIN PN 40 ANSI 150 RF and 300 RF
Screwed sockets2	R- and NPT-thread
Socket weld ends3	
Butt weld ends4	

Dimensions and weights		Types of connection								
		Flanges			Screwed sockets Socket weld ends			Butt weld ends		
Nominal diameters	mm inch	15 1/2	20 3/4	25 1	15 1/2	20 3/4	25 1	15 1/2	20 3/4	25 1
Dimensions (mm)	L*	150	150	160	95	95	95	250	250	250
	H	65	65	65	65	65	65	65	65	65
	H1	62	62	62	62	62	55	62	62	62
	H2	24	24	24	24	24	13	24	24	24
Weight approximate (kg)		2,7	3,3	3,7	1,4	1,3	1,8	1,8	1,9	2

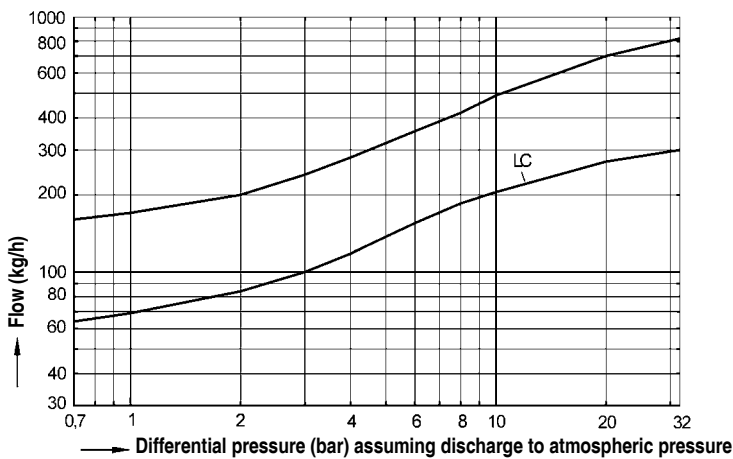
* other face-to-face dimensions on request

Standard-flange dimensions refer to page 9

Parts

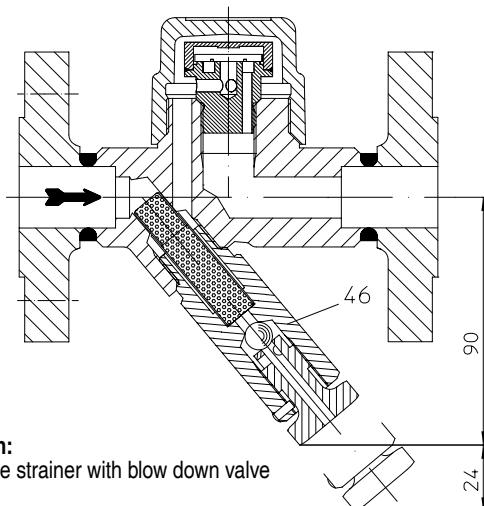
Pos.	Description	Material (Material-No.)					
		DIN	comparable with ASTM / AISI	DIN	comparable with ASTM / AISI	DIN	comparable with ASTM / AISI
1	Body	C22.8, 1.0460	SA 105	16 Mo 3, 1.5415	SA 182 F1	X6CrNiTi18-10, 1.4541	SA 182 F 321
2	Strainer screen *	X5CrNi18-10, 1.4301	SA 240 Gr.304	X5CrNi18-10, 1.4301	SA 240 Gr.304	X5CrNi18-10, 1.4301	SA 240 Gr.304
6	Screw cap	C22.8, 1.0460	SA 105	16 Mo 3, 1.5415	SA 182 F1	X6CrNiTi18-10, 1.4541	SA 182 F 321
7 (Y)	Strainer screen *	X5CrNi18-10, 1.4301	SA 240 Gr.304	X5CrNi18-10, 1.4301	SA 240 Gr.304	X5CrNi18-10, 1.4301	SA 240 Gr.304
8 (Y)	Strainer plug *	X8CrNiS18-9, 1.4305	AISI 303	X8CrNiS18-9, 1.4305	AISI 303	X8CrNiS18-9, 1.4305	AISI 303
24	Controller *	X20Cr13+QT, 1.4021+QT	AISI 420	X20Cr13+QT, 1.4021+QT	AISI 420	X20Cr13+QT, 1.4021+QT	AISI 420
46	Blow down valve	X8CrNiS18-9, 1.4305	AISI 303	X8CrNiS18-9, 1.4305	AISI 303	X8CrNiS18-9, 1.4305	AISI 303

* Spare parts

Capacity chart

Capacity chart

The capacity chart shows the maximum flow quantities of hot condensate for the standard controller and the LC-variant for low capacities.

The flow quantity of cold condensate at 20°C is about 1,5 times the quantity of hot condensate.



Option:
Outside strainer with blow down valve

Thermodynamic steam trap made of stainless steel

- Thermodynamic steam trap in compact design with or without AWH system connector for the condensate-discharge of steam systems.
- Intermittent mode of operation
- Robust water hammer proof design
- Design:
 - without strainer - BR 642
 - with outside strainer - BR 643 (Y)
- Optimized design for quick installation
- Installation in any position
- Special LC variant for low capacities (Option)

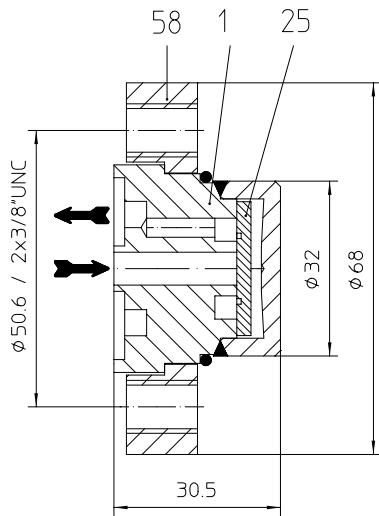


Fig. 642...7 with loose flange

Fig. 55.642 / 55.643: Class 300 - 1.4021 / 1.4006	Operating limits		
Operating pressure PS (bar-g)	50	37	30
Operating temperature TS (°C)	38	350	400
allowable diff. press. ΔPMX (bar): permissible pressure ratio (bar-g):	30 Back press./ Inlet press. ≤0,8		
minimal operating pressure (bar-g)	1		

Types of connection	
System connection with screwed sockets2	R- and NPT-thread
System connection with socket weld ends3	DIN and ANSI
Loose flange7	Holes 3/8" UNC
Other types of connection on request.	

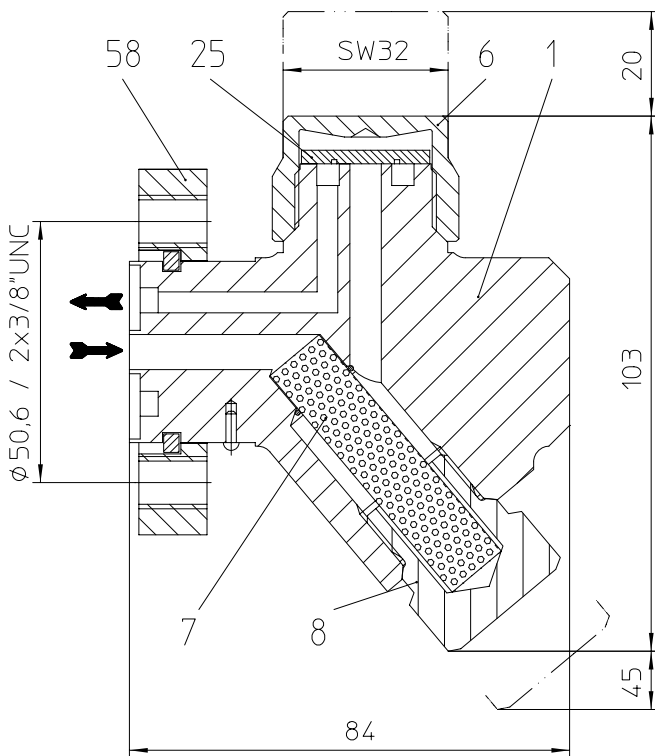


Fig. 643...7 with loose flange

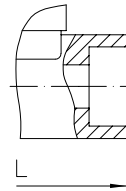


Fig. 642 / 643...3 with socket weld ends at system connectors

Dimensions and weights		Types of connection			
		Screwed sockets Socket weld ends			Loose flange
Nominal diameters	mm inch	1/2	3/4	1	--
Dimensions (mm)	L*	70	70	80	--
	D	30	35	42	--
Weight approximate (kg)	BR 642	1,4	1,5	1,7	0,4
	BR 643	1,9	2,4	2,6	1,3

* other face-to-face dimensions on request

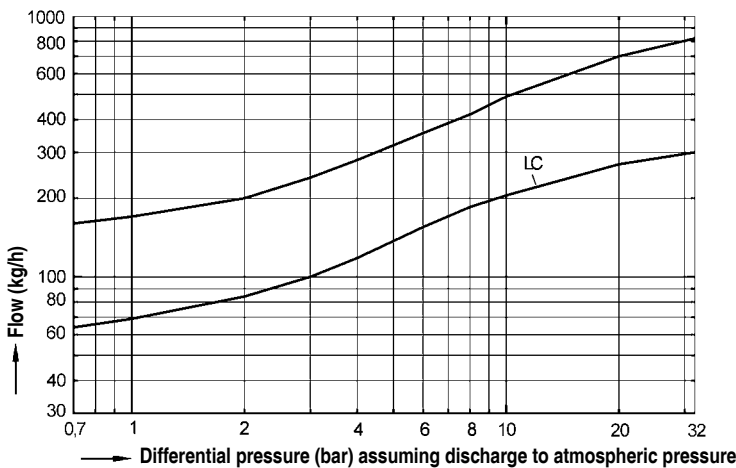
Standard-flange dimensions refer to page 9

Parts

Pos.	Bezeichnung	Material (Material-No.)			
		BR 642		BR 643	
		DIN	comparable with ASTM / AISI	DIN	comparable with ASTM / AISI
1	Body	X20Cr13+QT, 1.4021+QT	AISI 420	X 12 Cr 13, 1.4006	SA 182 F A6
6	Screw cap	--	--	X8CrNiS18-9, 1.4305	AISI 303
7 (Y)	Strainer screen *	--	--	X5CrNi18-10, 1.4301	SA 240 Gr.304
8 (Y)	Strainer plug *	--	--	X6CrNiTi18-10, 1.4541	SA 182 F321
11	Sealing ring (inside)	Spiral-wound gasket with graphite		Spiral-wound gasket with graphite	
17	Sealing ring (outside)	Spiral-wound gasket with graphite		Spiral-wound gasket with graphite	
25	Disc	X39CrMo17-1+QT, 1.4122+QT	AISI 440	X39CrMo17-1+QT, 1.4122+QT	AISI 440
27	Hexagon screw	21CrMoV5-7, 1.7709	SA 193 Gr. B16	21CrMoV5-7, 1.7709	SA 193 Gr. B16
58	Loose flange	X6CrNiTi18-10, 1.4541	SA 182 F321	X6CrNiTi18-10, 1.4541	SA 182 F321
59	System connector	X6CrNiTi18-10, 1.4541	SA 182 F321	X6CrNiTi18-10, 1.4541	SA 182 F321

* Spare part

Capacity chart



Capacity chart

The capacity chart shows the maximum flow quantities of hot condensate for the standard controller and the LC-variant for low capacities.

The flow quantity of cold condensate at 20°C is about 1,5 times the quantity of hot condensate.

AWH-design with system connectors

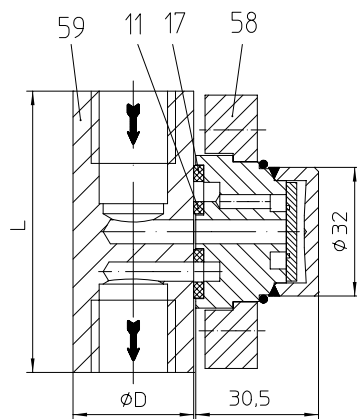


Fig. 642...2 with system connector with screwed sockets

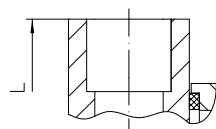


Fig. 642...3 / 643...3 with system connector with socket weld ends

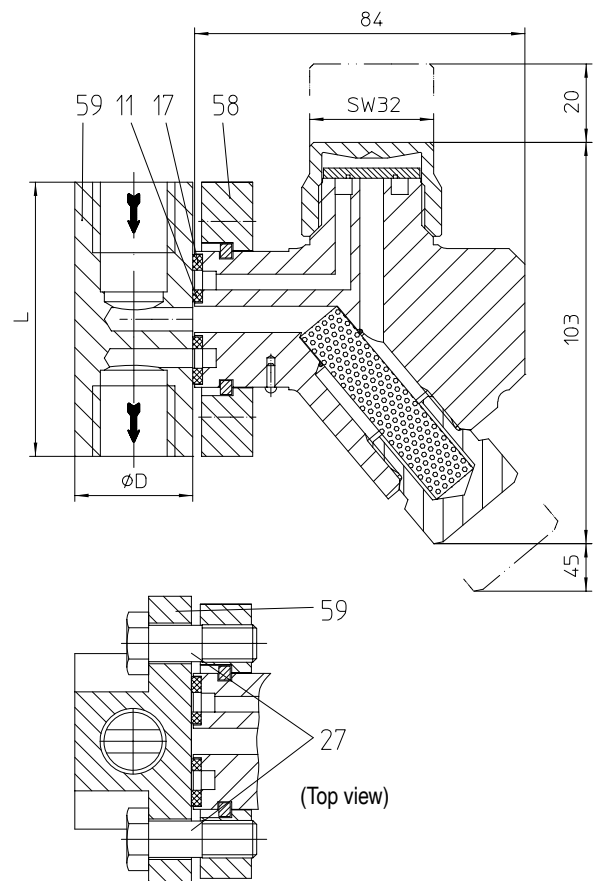


Fig. 643...2 with system connector with screwed sockets

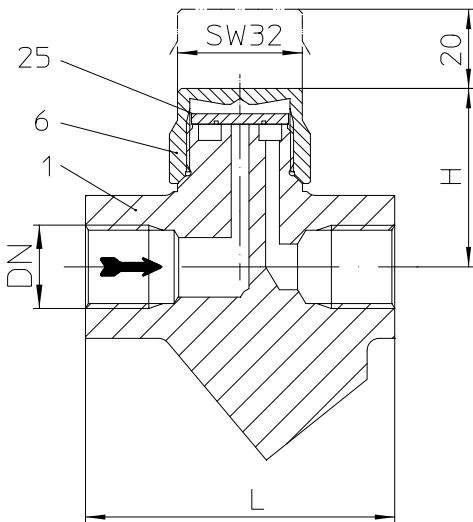
Thermodynamic steam trap made of stainless steel


Fig. 640...2 with screwed sockets

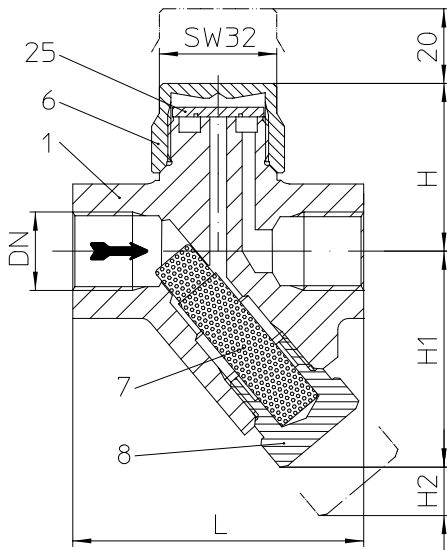


Fig. 641...2 with screwed sockets

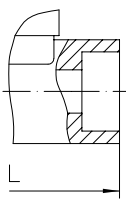


Fig. 640 / 641...3 with socket weld ends

- Thermodynamic steam trap of stainless steel for the condensate-discharge from all kinds of steam systems
- Intermittent mode of operation
- Robust water hammer proof design
- Integrated non return protection
- Design:
 - without strainer - BR 640
 - with outside strainer - BR 641 (Y)
- Optimized design for quick installation
- Service advantage thanks to screw cap without sealing
- Installation in any position
- Special LC variant for low capacities

Fig. 56.640 / 56.641: PN63 - 1.4006	Operating limits
Operating pressure PS (bar-g)	42
Operating temperature TS (°C)	400
allowable diff. press. ΔPMX (bar): permissible pressure ratio (bar-g):	42 Back press./ Inlet press. $\leq 0,8$
Minimal operating pressure (bar-g)	1

Types of connection	
Screwed sockets ...2	R- and NPT-thread
Socket weld ends3 (only DN15 and DN20)	
Other types of connection on request.	

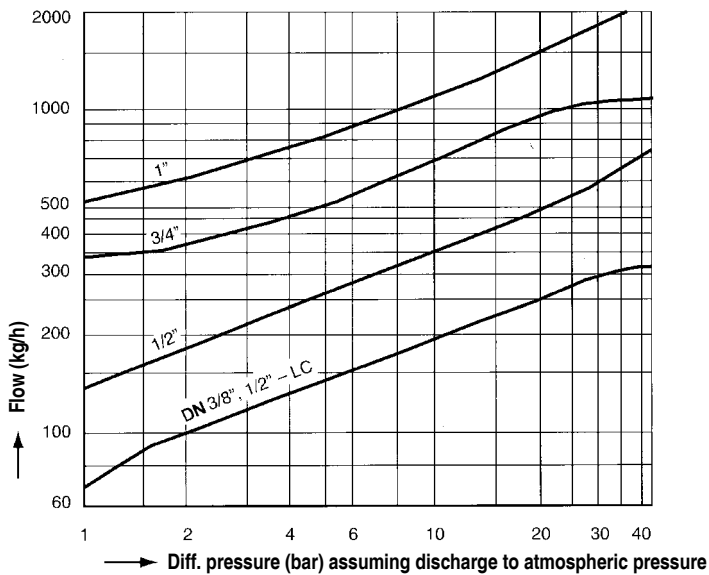
Dimension and weights		Types of connection			
		Screwed sockets Socket weld ends ¹⁾			
Nominal diameters	mm inch	3/8	15 1/2	20 3/4	25 1
Dimensions (mm)	L*	78	78	90	95
	H	47	47	50	50
	H1	56	56	56	56
	H2	45	45	45	45
Weight approximate (kg)		0,8	0,8	0,8	0,9

* other face-to-face dimensions on request ¹⁾ only DN15 and DN20

Parts

Pos.	Description	Material (Material-No.)	
		DIN	comparable with ASTM / AISI
1	Body	X 12 Cr 13, 1.4006	SA 182 F6 A
6	Screw cap	X8CrNiS18-9, 1.4305	AISI 303
7 (Y)	Strainer screen (Y) *	X5CrNi18-10, 1.4301	SA 240 Gr.304
8 (Y)	Strainer plug (Y) *	X8CrNiS18-9, 1.4305	AISI 303
25	Disc *	X39CrMo17-1+QT, 1.4122+QT	AISI 440
46	Blow down valve	X8CrNiS18-9, 1.4305	AISI 303

* Spare parts

Capacity chart

Capacity chart

The capacity chart shows the maximum flow quantities of hot condensate for the standard controller and the LC-variant for low capacities.

The flow quantity of cold condensate at 20°C is about 1,5 times the quantity of hot condensate.

Flanges according to DIN 2501

Screwed sockets according to data sheet resp. customer request

Socket weld ends according to DIN EN 12760 (previous DIN 3239 T2) resp. customer request

Butt weld ends according to DIN EN 12627 (previous DIN 3239 T1)

Loose flanges according to data sheet resp. customer request

Face-to-face acc. to data sheet resp. customer request

Informations about pipe welding of steam traps

Welding groove acc. to DIN 2559

The body materials of our steam traps which are for welding into the pipe are as following:	1.0460	C 22.8 acc. to DIN 17243 / SA 105
	1.5415	15 Mo 3 acc. to DIN EN 10028, DIN 17155 / SA 182 F1
	1.4006	X 12 Cr 13 acc. to DIN 17440 / SA 182 F6

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.

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!

Allocation of types

BR		formerly designation of types
<i>different types of connection</i>		
640...	<ul style="list-style-type: none">1 Flanges2 Screwed sockets3 Socket weld ends4 Butt weld ends7 Loose flanges 	C....
641...		A....
642...		B....
643...		B....
	H (AH, BH, CH)
	HY (AHY, BHY, CHY)
		--
		--

Information / restriction of technical rules to be observed!

Operating instructions can be ordered on request by phone (+49 52 07) 994-0 or fax (+49 52 07) 994-158 or 159.

Selection criteria:

- Steam pressure
- Back pressure
- quantity of condensate
- Nominal diameter / pressure
- Type of connection
- Material
- Place of service or kind of steam consumer

Example for order data:

=> Thermodynamic steam trap CONA® TD,
BR 640, PN 40, DN 15, C22.8, Face-to-face dimension 150 mm, LC-variant

Dimensions in mm resp. inch
Weights in kg
1 bar $\hat{=}$ 10 ⁵ Pa $\hat{=}$ 0,1 MPa
Kvs in m ³ /h
1 bar $\hat{=}$ 14,5 PSI
1 inch $\hat{=}$ 25,4 mm

Standard - flange dimensions (DIN)

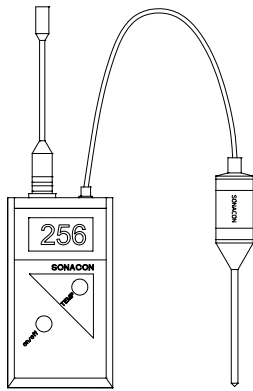
DN	PN 40		
	Ø D		n x Ø d1
15	95		4 x 14
20	105		4 x 14
25	115		4 x 14
50	165		4 x 18

Standard - flange dimensions (ANSI)

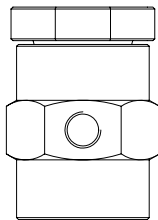
DN		ANSI 300					
		Ø D		Ø K		n x Ø d	
mm	inch	mm	inch	mm	inch	mm	inch
15	1/2	95	3,75	66,5	2,62	4x16	4x0,62
20	3/4	117	4,62	82,5	3,25	4x19	4x0,75
25	1	124	4,88	89	3,50	4x19	4x0,75

Steam traps according to ASTM / AISI

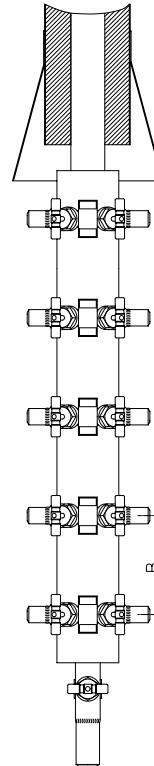
- Pressure bearing parts made of ASTM / AISI -materials
- Studs and nuts made of ASTM-materials, but metric screw-threads
- Face-to-face acc. to data sheet resp. customer request
- Flanges acc. to ANSI
- Pressure test acc. to API 598



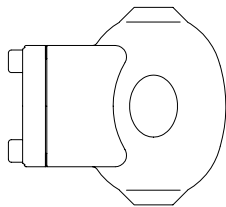
Testing device Sonacon



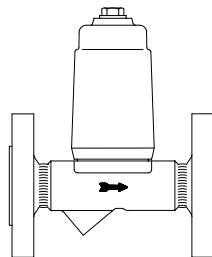
Vacuum breaker BR655



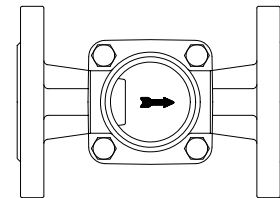
Prefabricated manifolds for
condensate collection (B = 160), steam distribution (B = 120)
CODI[®]S with stuffing box BR671/672;
CODI[®]B with bellows seal, maintenance-free BR675/676



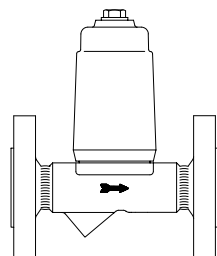
Automatic air vent for liquid systems
BR 656



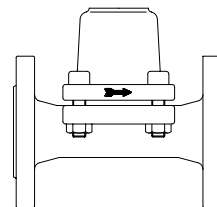
Condensate discharge temperature limiter
BR645/647



Double window sight glasses
BR660/661



Return temperature limiter BR650



Liquid drainer BR665

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