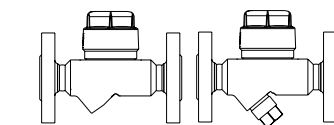


Thermodynamic steam trap

Thermodynamic steam trap

PN40

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



Forged steel
High temperature steel
Stainless steel

Fig. 640/641 (Y)

Page 4

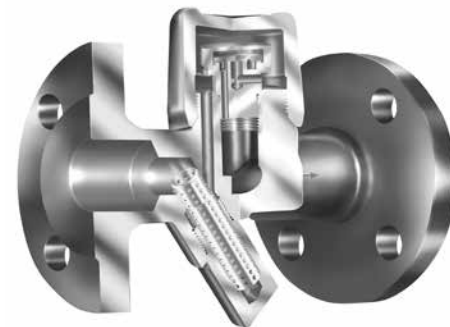
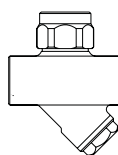


Fig. 641....1

Thermodynamic steam trap

PN63

- with screwed sockets (Fig. 641....2)
- with socket weld ends (Fig. 641....3)



Stainless steel

Fig. 641 (Y)

Page 6

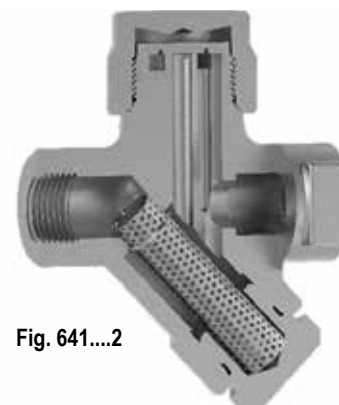
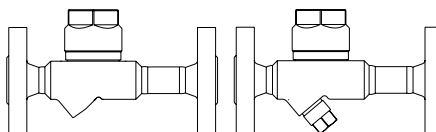


Fig. 641....2

Thermodynamic steam trap

PN63

- with flanges (Fig. 640/641....1)
- with socket weld ends (Fig. 640/641....3)
- with butt weld ends (Fig. 640/641....4)



High temperature steel

Fig. 640/641 (Y)

Page 8



Description

Thermodynamic steam trap are used for discharging of slight to highly sub-cooled condensate. Discharge is continuous. Steam traps can be supplied in EN materials and alternatively in ASME materials.

Features

- Intermittent mode of operation
- Robust and resistant to water-hammer
- Integrated non return protection
- Constructions:
 - With inside strainer - Fig. 640
 - With outside strainer - Fig. 641 (Y)
- Optimized design for quick installation
- Gasket-free sealing of the screwed cap
- Can be installed in any position, except with the cap facing downwards
- Heat chamber minimizes the impact of weather conditions on the trap's performance (except Fig. 56.641)
- Replaceable controller-unit (except Fig. 56.641)

Options

- Blow down valve

Types of connection (depends on material and nominal pressure)

- Flanges with flange facing and drilling acc. to DIN EN 1092-1
- Screwed sockets Rp acc. to DIN EN 10226-1
- Socket weld ends acc. to DIN EN 12760
- Butt weld ends with joint preparation type 1.3 acc. to EN ISO 9692-1
- Other connection types on request



Pressure-temperature limits

Pressure-temperature-limits			Intermediate values of the max. allowable operating pressures may be calculated by linear interpolation between the nearest lower and higher temperature valves.								
Fig.	Material	TS (°C)	-10 - 20	100	150	200	250	300	350	400	450
45.640 45.641	1.0460	PS (barg)	40	37,1	35,2	33,3	30,4	27,6	25,7	23,8	13,1
Fig.	Material	TS (°C)	-10 - 200				250	300	350	400	450
85.640 85.641	1.5415	PS (barg)	40				39	34,2	32,3	29,9	27,6
Fig.	Material	TS (°C)	-60 - 100			150	200	250	300	350	400
55.640 55.641	1.4541	PS (barg)	40			37,3	35,4	33,7	31,8	30,6	29,7
Fig.	Material	TS (°C)	-10 - 120			200	250	300	350	400	450
56.641	A743CA40	PS (barg)	63			42					--
Fig.	Material	TS (°C)	-10 - 200				250	300	350	400	450
86.640 86.641	1.5415	PS (barg)	63				61,5	54	51	47,1	43,5

Thermodynamic steam trap (Forged steel, High temperature steel, Stainless steel)

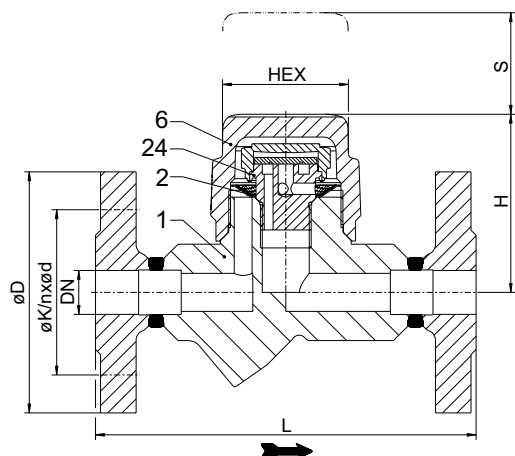


Fig. 640....1 with flanges

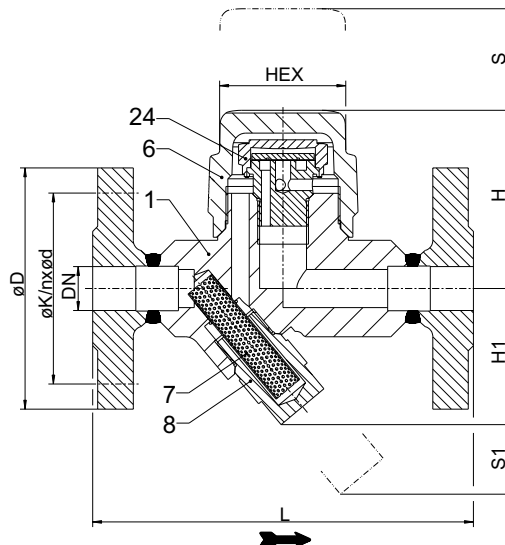


Fig. 641....1 with flanges

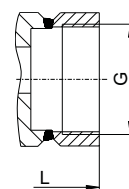


Fig. 640/641....2
with screwed sockets

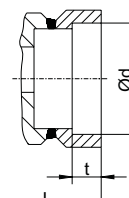


Fig. 640/641....3
with socket weld ends

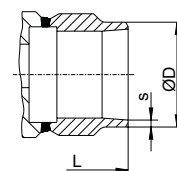


Fig. 640/641....4
with butt weld ends

Figure	Nominal pressure	Material	Nominal diameter / NPS	max. allowable pressure PMA	min. allowable temperature TSmin	max. allowable temperature TMA	allowable differential pressure ΔPMX	perm. pressure ratio / min. operating pressure
45.640 45.641 (Y)	PN40	1.0460	15 - 25 / 1/2" - 1"	40 bar @20°C	-10°C	450°C @13,1 bar	32 bar	perm. pressure ratio: Back pressure / Inlet pressure ≤ 0,8 barg min. operating pressure: 0,7 barg
85.640 85.641 (Y)	PN40	1.5415	15 - 25 / 1/2" - 1"	40 bar @200°C	-10°C	450°C @27,6 bar		
55.640 55.641 (Y)	PN40	1.4541	15 - 25 / 1/2" - 1"	40 bar @100°C	-60°C	400°C @29,7 bar		

For versions rated to Class 150 / Class 300 refer to data sheet CONA®TD-ANSI

Types of connection

Other types of connection on request.

- Flanges1 _____ acc. to DIN EN 1092-1
- Screwed sockets2 _____ Rp thread acc. to DIN EN 10226-1 or NPT thread acc. to ANSI B1.20.1
- Socket weld ends3 _____ acc. to DIN EN 12760
- Butt weld ends4 _____ Weld preparation acc. to EN ISO 9692 identification No. 1.3 and 1.5
(Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Thermodynamic steam trap with replaceable controller-unit and cap with heat chamber wich minimize the effects from the weather conditions to the function of the trap such as low ambient temperatures, rain, wind, etc.
- Intermittent mode of operation
- Heat chamber minimizes the impact of weather conditions on the trap's performance
- Robust and resistant to water-hammer
- Integrated non return protection
- With inside strainer - BR640 / With outside strainer - BR641 (Y)
- Can be installed in any position, except with the cap facing downwards
- Optimized design for quick installation
- Maintenance simplified due to screwed cap without sealing

Options

- Outside strainer with blow down valve (Pos. 46)

Types of connection	Flanges			Screw sockets Socket weld ends			Butt weld ends		
DN	15	20	25	15	20	25	15	20	25
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 11.
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	13	24	24	24
HEX	(mm)	50	50	50	50	50	50	50	50	50

Connection dimensions standard socket weld end										
ød	(mm)	--	--	--	22	27,3	34	--	--	--
t	(mm)	--	--	--	10	13	13	--	--	--

Connection dimensions standard butt weld end										
øD	(mm)	--	--	--	--	--	--	21,3	26,9	33,7
s	(mm)	--	--	--	--	--	--	2,0	2,3	2,6

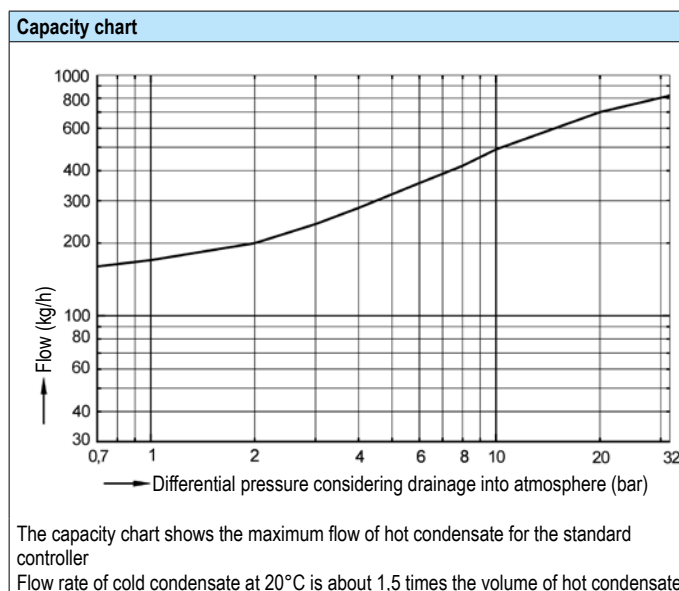
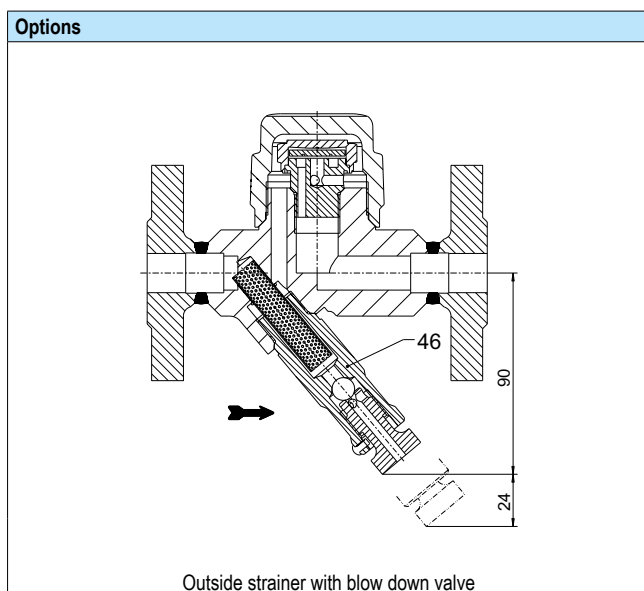
Weights										
Fig. 640 / 641(app.)	(kg)	2.7	3.3	3.7	1.4	1.3	1.8	1.8	1.9	2

Parts					
Pos.	Sp.p.	Description	Fig. 45.640 / 45.641	Fig. 85.640 / 85.641	Fig. 55.640 / 55.641
1		Body	1.0460	1.5415	1.4541
2	x	Strainer	1.4301		
6		Cap	1.0460	1.5415	1.4541
7	x	Strainer	1.4301		
8	x	Strainer plug	1.4541		
24	x	Controller, cpl.	1.4122+QT		
46	x	Blow down valve, cpl.	1.4541		
└ 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.



Thermodynamic steam trap (Stainless steel)

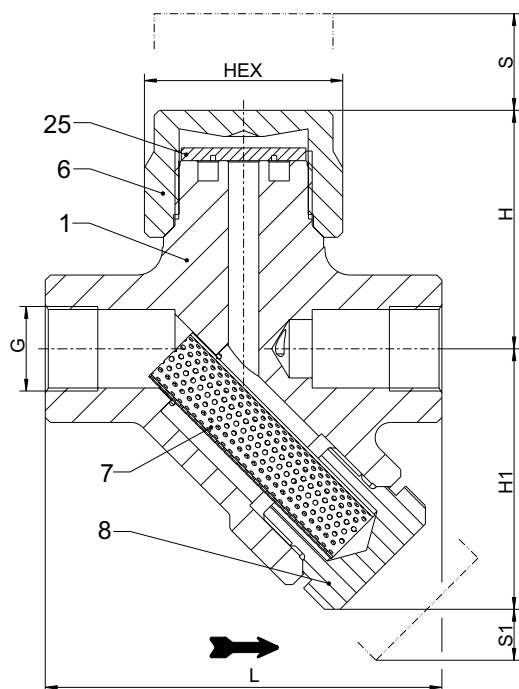


Fig. 641....2 with screwed sockets

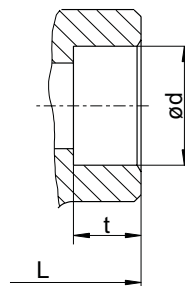


Fig. 641....3
with socket weld ends

Figure	Nominal pressure	Material	Nominal diameter / NPS	max. allowable pressure PMA	min. allowable temperature TSmin	max. allowable temperature TMA	allowable differential pressure ΔPMX	perm. pressure ratio / min. operating pressure
56.641 (Y)	PN63	A743CA40	10 - 25 3/8"-1"	63 bar @120°C	-10°C	400°C @42 bar	42 bar	perm. pressure ratio: Back pressure / Inlet pressure ≤ 0,8 barg min. operating pressure: 1 barg

For versions rated to Class 400 refer to data sheet CONA®TD-ANSI

Types of connection

Other types of connection on request.

- Screwed sockets2 ___ Rp thread acc. to DIN EN 10226-1 or NPT thread acc. to ANSI B1.20.1
- Socket weld ends3 ___ acc. to DIN EN 12760

Features

- Thermodynamic steam trap of stainless steel for the condensate-discharge from all kinds of steam systems
- Intermittent mode of operation
- Robust and resistant to water-hammer
- It acts as a check valve in the event of reverse flow
- With outside strainer
- Can be installed in any position, except with the cap facing downwards
- Optimized design for quick installation
- Maintenance simplified due to screwed cap without sealing



Types of connection	Screwed sockets (NPS 3/8" - 1") Socket weld ends (DN 10-25)			
	10	15	20	25
DN				
NPS	3/8"	1/2"	3/4"	1"

Face-to-face acc. to data sheet resp. customer request				
L	(mm)	78	78	90
				95

Dimensions					Standard-flange dimensions refer to page 11.	
H	(mm)	47	47	47		60
H1	(mm)	51	53	53		58
S	(mm)	20	20	20		20
S1	(mm)	45	45	45		45
HEX	(mm)	36	36	36		43

Connection dimensions standard socket weld end				
ød	(mm)	17.8	22	27.3
t	(mm)	10	10	13

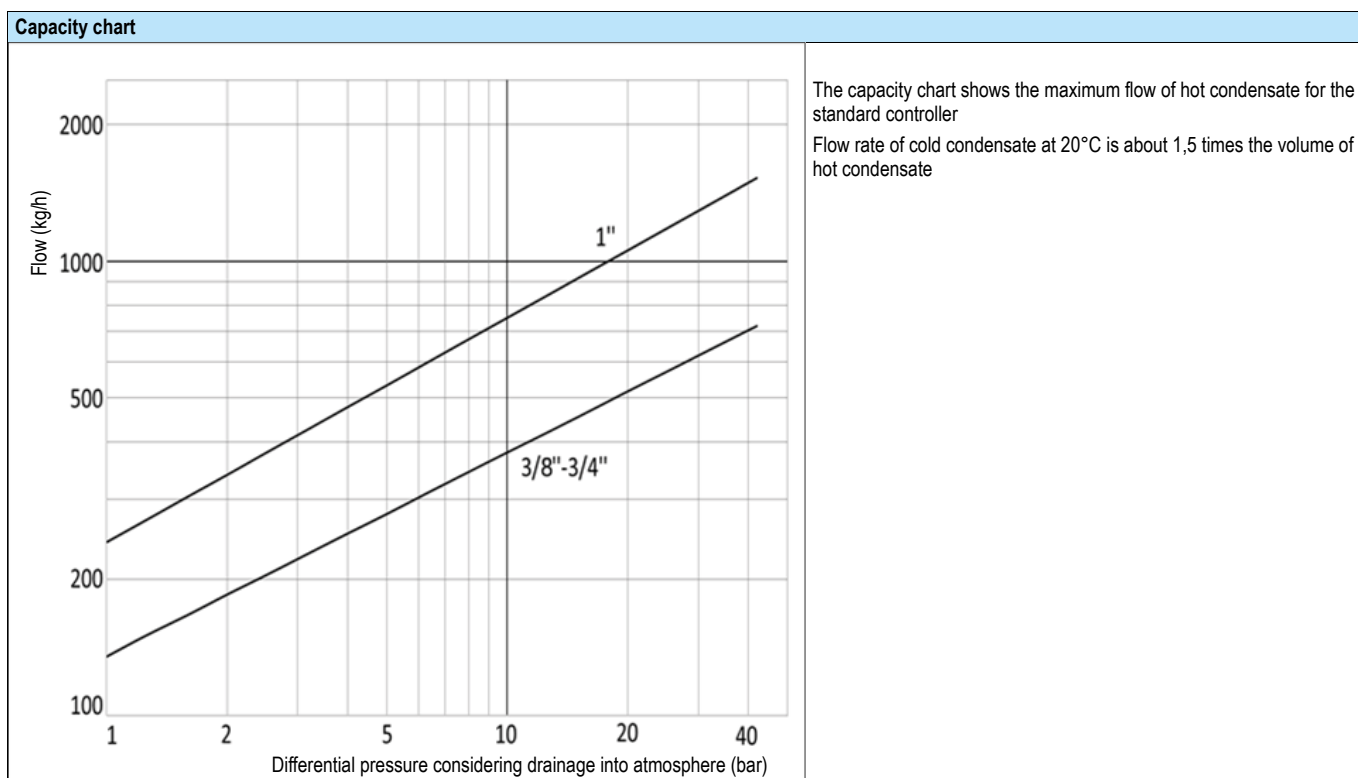
Weights				
Fig. 641 (approx.)	(kg)	0,8	0,9	0,9
				1,5

Parts			
Pos.	Sp.p.	Description	Fig. 56.641
1		Body	A743CA40
6		Cap	SA479Gr.304
7	x	Strainer	SA240Gr.304
8		Strainer plug	SA479Gr.304
25	x	Disc	AISI420
	L 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.



Thermodynamic steam trap (High temperature steel)

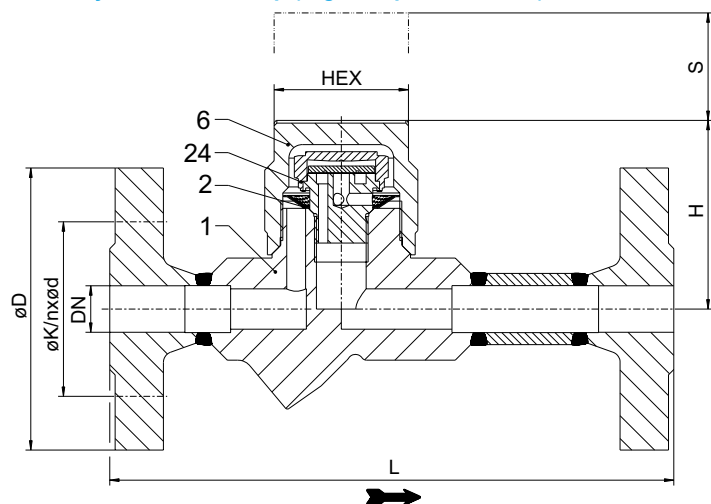


Fig. 640....1 with flanges

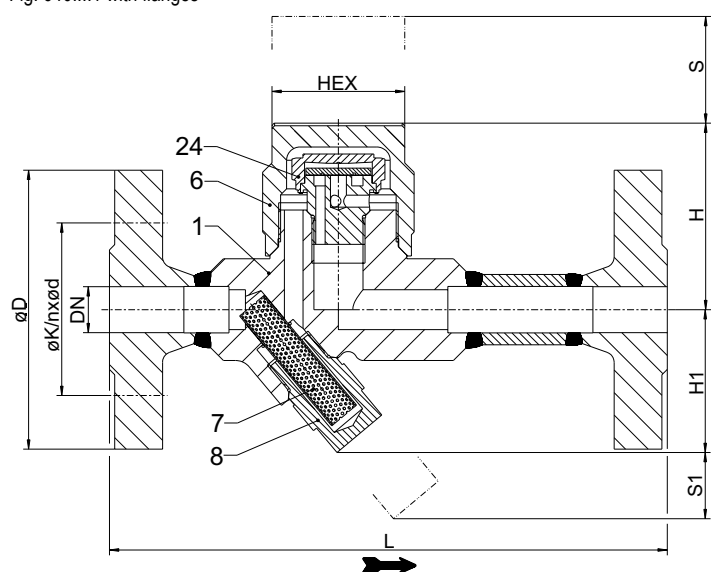


Fig. 641....1 with flanges

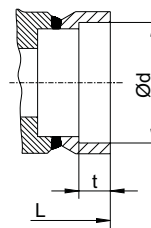


Fig. 640/641....3
with socket weld ends

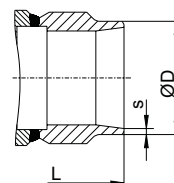


Fig. 640/641....4
with butt weld ends

Figure	Nominal pressure	Material	Nominal diam. / NPS	max. allowable pressure PMA	min. allowable temperature TSmin	max. allowable temperature TMA	allowable differential pressure ΔPMX	perm. pressure ratio / min. operating pressure
86.640 86.641 (Y)	PN63	1.5415	15 - 25 / 1/2" - 1"	63 bar @200°C	-10°C	450°C @43,5 bar	42 bar	perm. pressure ratio: Back pressure / Inlet pressure ≤ 0,8 barg min. operating pressure: 0,7 barg

For versions rated to Class 400 refer to data sheet CONA®TD-ANSI

Types of connection

Other types of connection on request.

- Flanges1 _____ acc. to DIN EN 1092-1
- Socket weld ends3 _____ acc. to DIN EN 12760
- Butt weld ends4 _____ Weld preparation acc. to EN ISO 9692 identification No. 1.3 and 1.5
(Note restriction on operating pressure / inlet temperature depending to design!)

Features

- Thermodynamic steam trap with replaceable controller-unit and cap with heat chamber wich minimize the effects from the weather conditions to the function of the trap such as low ambient temperatures, rain, wind, etc.
- Intermittent mode of operation
- Heat chamber minimizes the impact of weather conditions on the trap's performance
- Robust and resistant to water-hammer
- Integrated non return protection
- With inside strainer - BR640 / With outside strainer - BR641 (Y)
- Can be installed in any position, except with the cap facing downwards
- Optimized design for quick installation
- Maintenance simplified due to screwed cap without sealing



Types of connection	Flanges			Socket weld ends			Butt weld ends ¹⁾		
DN	15	20	25	15	20	25	15	20	25
NPS	1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"

¹⁾ Please indicate dimension of the tube when ordering

Face-to-face acc. to data sheet resp. customer request										
L	(mm)	210	210	230	95	95	95	250	250	250

Dimensions										Standard-flange dimensions refer to page 11.
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	13	24	24	24
HEX	(mm)	50	50	50	50	50	50	50	50	50

Connection dimensions standard socket weld end										
ød	(mm)	--	--	--	22	27,3	34	--	--	--
t	(mm)	--	--	--	10	13	13	--	--	--

Connection dimensions standard butt weld end										
øD	(mm)	--	--	--	--	--	--	21,3	26,9	33,7
s	(mm)	--	--	--	--	--	--	2,0	2,6	2,6

Weights											
Fig. 640 / 641	(approx.)	(kg)	3.7	5.2	6.6	1.3	1.2	1.7	1.8	1.9	2.0

Parts				
Pos.	Sp.p.	Description	Fig. 86.640	Fig. 86.641
1		Body	1.5415	
2	x	Strainer	1.4301	--
6		Cap	1.5415	
7	x	Strainer	--	1.4301
8	x	Strainer plug	--	1.4541
24	x	Controller, cpl.	1.4122+QT	
L 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 of hot condensate for the standard controller. Flow rate of cold condensate at 20°C is about 1,5 times the volume of hot condensate.





Informations about pipe welding

Welding groove acc. to DIN 2559

The material used for ARI valves with butt weld ends are:	1.0460	P250GH acc. to DIN EN 10222-2
	1.5415	16Mo3 acc. to DIN EN 10222-2
	A743CA40	acc. to ASTM A743/A743M-98a
	1.4006	X12Cr13 acc. to DIN EN 10250-4

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.

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 DIN EN 1092-1

DN			15	20	25
NPS			1/2"	3/4"	1"
PN40	ØD	(mm)	95	105	115
	ØK	(mm)	65	75	85
	n x Ød	(mm)	4 x 14	4 x 14	4 x 14
PN63	ØD	(mm)	105	130	140
	ØK	(mm)	75	90	100
	n x Ød	(mm)	4 x 14	4 x 18	4 x 18

Selection criteria:

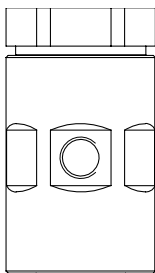
- Steam pressure
- Back pressure
- Quantity of condensate
- Nominal diameter / pressure
- Type of connection
- Material
- Place of service or kind of steam consumer

Example for order data:

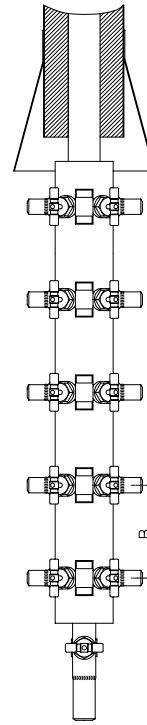
Thermodynamic steam trap CONA® TD,
Fig. 640, PN 40, DN 15, 1.0460, with flanges, Face-to-face dimension 150 mm



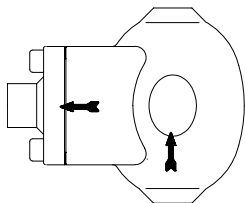
Multifunction tester
Sonaphone



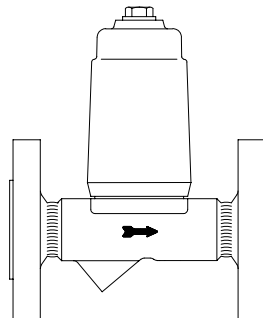
Vacuum breaker
Fig. 655



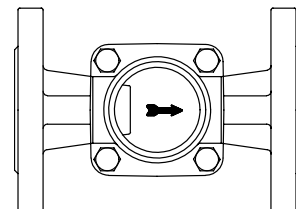
Condensate collection (B = 160), steam distribution (B = 120)
CODI®S with gland packing Fig. 671/672;
CODI®B with bellows seal, maintenance-free Fig. 675/676



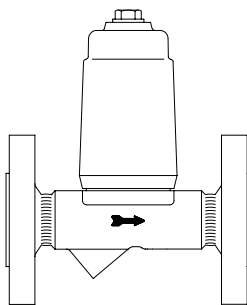
Automatic air vent for liquid systems
Fig. 656



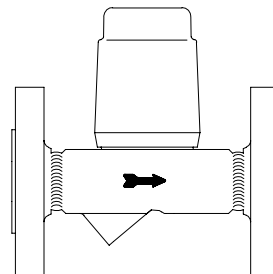
Condensate discharge temperature limiter
Fig. 645/647



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.)