

Condensate collection / Steam distribution

CODI® S 671/672 - 02 to 18

with gland packing
ANSI150 / 300

Vertical installation:

- with flanges (Fig. 671....1)
- with socket weld ends (Fig. 671....3)
- with butt weld ends (Fig. 671....4)

Horizontal installation:

- with flanges (Fig. 672....1)
- with socket weld ends (Fig. 672....3) Forged steel
- with butt weld ends (Fig. 672....4) Stainless steel

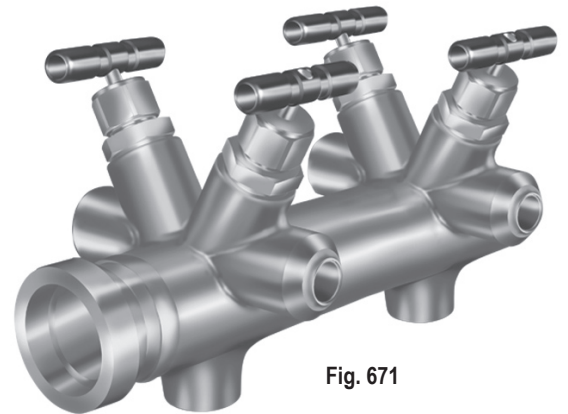
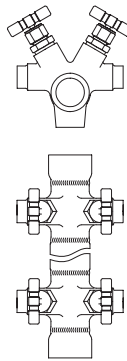


Fig. 671

CODI® B 675/676 - 02 to 18

with bellows seal (maintenance-free)
ANSI150 / 300

Vertical installation:

- with flanges (Fig. 675....1)
- with socket weld ends (Fig. 675....3)
- with butt weld ends (Fig. 675....4)

Horizontal installation:

- with flanges (Fig. 676....1)
- with socket weld ends (Fig. 676....3) Forged steel
- with butt weld ends (Fig. 676....4) Stainless steel

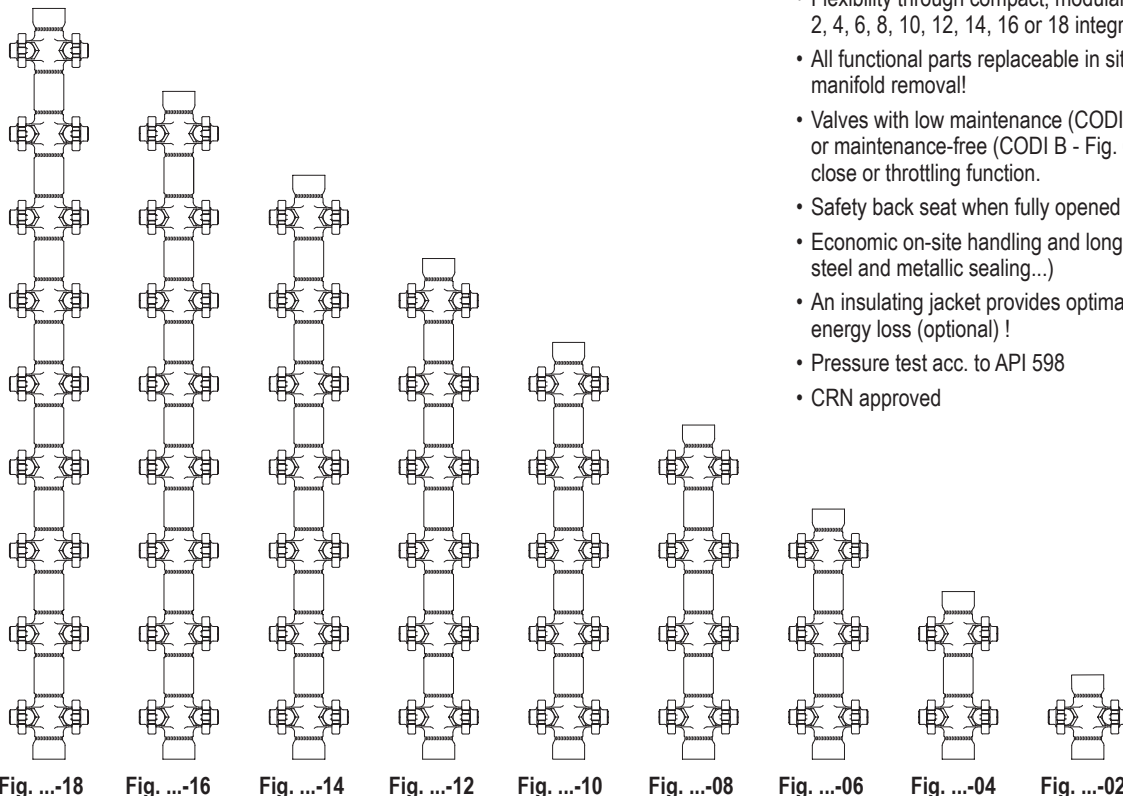
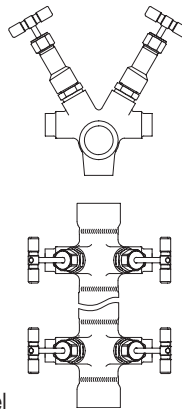


Fig.18 Fig.16 Fig.14 Fig.12 Fig.10 Fig.08 Fig.06 Fig.04 Fig.02

Features:

- Flexibility through compact, modular design (available with 2, 4, 6, 8, 10, 12, 14, 16 or 18 integrated stop valves!)
- All functional parts replaceable in situ - no need for manifold removal!
- Valves with low maintenance (CODI S - Fig. 671 / 672) or maintenance-free (CODI B - Fig. 675 / 676) with open-close or throttling function.
- Safety back seat when fully opened valve!
- Economic on-site handling and long life (through forged steel and metallic sealing...)
- An insulating jacket provides optimal protection against energy loss (optional) !
- Pressure test acc. to API 598
- CRN approved

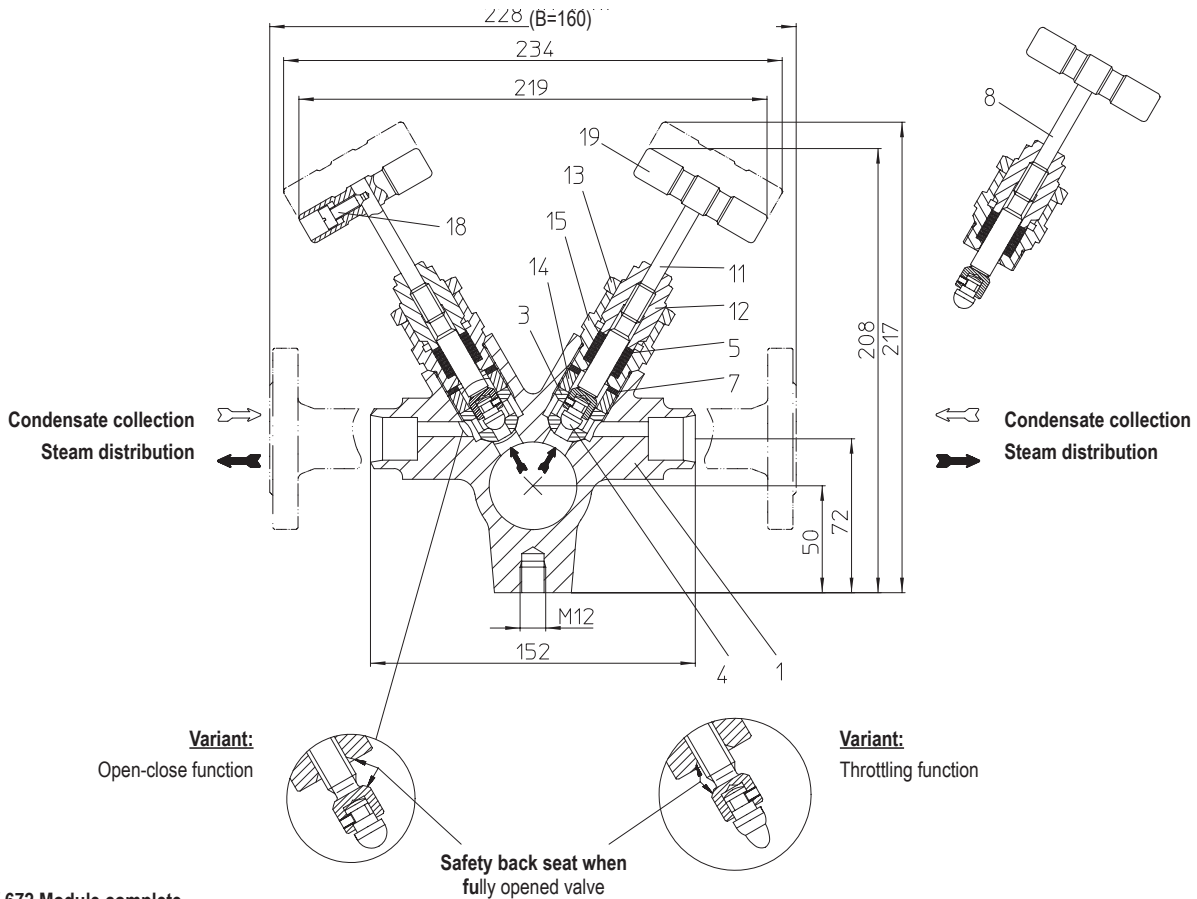
Manifolds for condensate collection and steam distribution with stuffing box (Forged steel)


Fig. 671 / 672 Module complete

Figure	Nominal pressure	Material	NPS / Nominal diameter	Operating pressure PS	Inlet temperature TS
42.671... 42.672...	ANSI150	SA105	Primary connection 1" / 1 1/2" / 2" Secondary connection 1/2" / 3/4" / 1"	13 barg	225 °C
...-02 (each 1 second. connection) ...-04 (each 2 second. connection)				5,5 barg	427 °C
45.671... 45.672...	ANSI300	SA105		32 barg	411 °C
...-06 (each 3 second. connection) ...-08 (each 4 second. connection)				28 barg	427 °C
52.671... 52.672...	ANSI300	SA182F321 or SA182F316L		13 barg	225 °C
...-10 (each 5 second. connection) ...-12 (each 6 second. connection) ...-14 (each 7 second. connection)				2,4 barg	510 °C
55.671... 55.672...	ANSI300	SA182F321	32 barg	377 °C	
...-16 (each 8 second. connection) ...-18 (each 9 second. connection)			27 barg	510 °C	

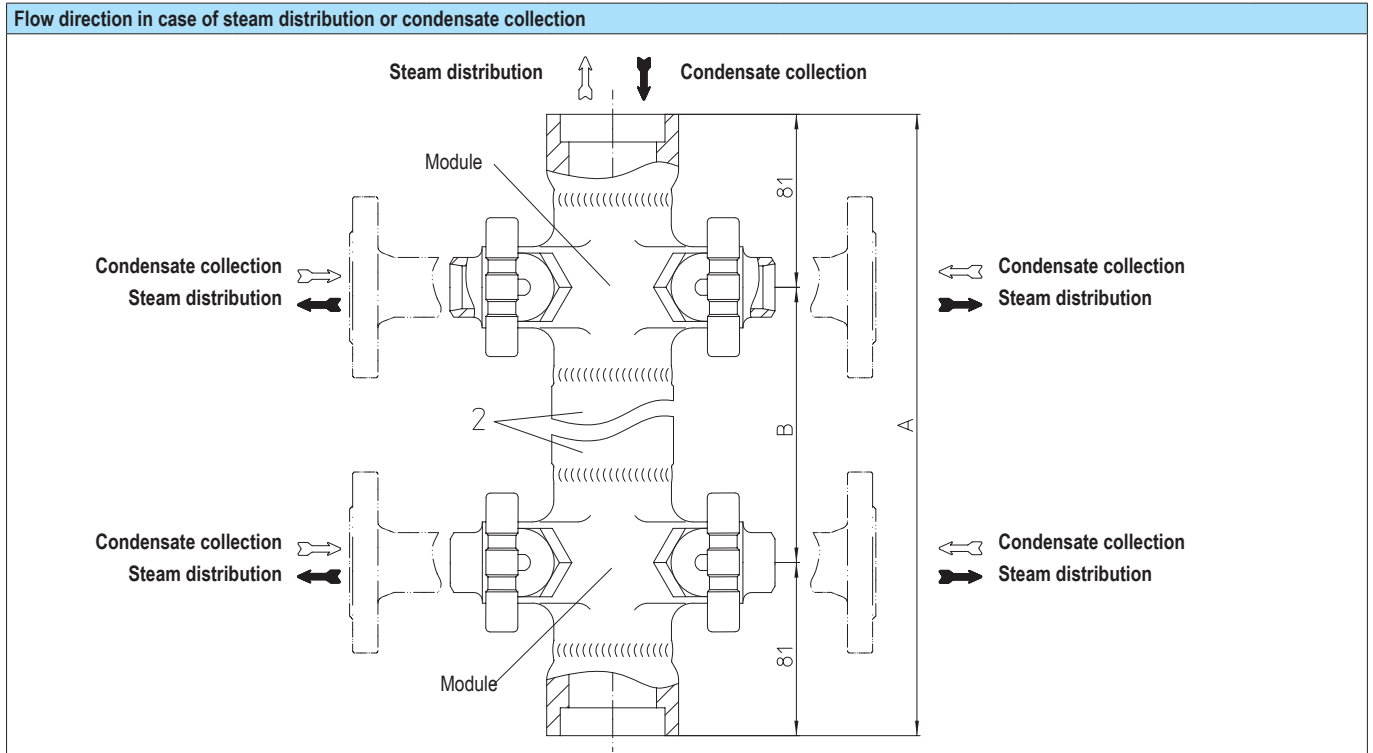
DIN/EN-Constructions refer to data sheet CODI®

Plug design	
standard:	• Isolation plug (Open-close function)
optional:	• Throttling plug (Throttling function)
Safety back seat when fully opened valve	
Types of connection (Standard)	
Other types of connection on request.	
Primary connections: (top and bottom)	• Flanges1 _____ acc. to ASME B16.5 • Screwed sockets2 _____ NPT thread acc. to ANSI B1.20.1 or Rp thread acc. to DIN EN 10226-1
Secondary connection: (left and right)	• Socket weld ends3 _____ acc. to ASME B16.11 • Butt weld ends4 _____ ASME B16.25 (Note restriction on operating pressure / inlet temperature depending to design!)
Features	
• Flexibility through compact, modular design (available with 2, 4, 6, 8, 10, 12, 14, 16 or 18 integrated stop valves!) • All functional parts replaceable in situ - no need for manifold removal! • Safety back seat when fully opened valve! • Economic on-site handling and long life (through forged steel and metallic sealing...)	
Mounting position	
• Preferably vertical	Threaded connection M12 are provided at the back for the attachment to a supporting structure.
Options	
(Design refer to page 8)	
• Insulating jacket	• Fastening parts (set)
• Immersion tube	• Mounting wrench

Parts				
Pos.	Sp.p.	Description	Fig. 42.671 / 42.672 Fig. 45.671 / 45.672	Fig. 52.671 / 52.672 Fig. 55.671 / 55.672
1		Body	SA105	SA182F321 or SA182F316L
2		Connection between the modules	SA106Gr.B	SA182F321
3	x	Seat	AISI303	
4		Valve ball	AISI440	
5	x	Packing ring	Pure graphite	
7		Sealing ring	Graphite	
8	x	Assembly stop valve, cpl.	SA240Gr.316Ti	
11		Stem	SA479Gr.316L	
12		Threaded bush	AISI440	
13		Safety nut	AISI303	
14		Banjo bolt	AISI303	
15		Fitting	AISI303	
18	x	Cheese head screw	A2-70	
19	x	Hand grip	SA479Gr.430	
		Other interior parts	Stainless steel	
	L Spare parts			

Information / restriction of technical rules need to be observed!
 Resistance and fitness must be verified (or contact the manufacturer for information).
 Operating and installation instructions can be downloaded at www.ari-armaturen.com.

NPS		1/2"	3/4"	1"	1 1/2"	2"
Length B1	B = 120 mm (mm)	81	81	81	81	81
	B = 160 mm (mm)	118	118	118	138	138



Dimensions and weights		Face-to-face acc. to data sheet resp. customer request								
Fig. 671 / 672		... -02	... -04	... -06	... -08	... -10	... -12	... -14	... -16	... -18
ANSI150/300 B = 120 mm		Standard-flange dimensions refer to page 7								
Dimension A	(mm)	162	282	402	522	642	762	882	1002	1122
Weight (approx.)	(kg)	3,5	7,2	10,7	14,7	17,7	21,2	24,7	28,2	31,7
ANSI150/300 B = 160 mm		Standard-flange dimensions refer to page 7								
Dimension A	(mm)	280	416	573	736	896	1056	1216	1376	1536
Weight (approx.)	(kg)	3,5	7,5	11	14,5	18	21,5	25	28,5	32

Condensate collection and Steam distribution with bellows seal maintenance-free (Forged steel)

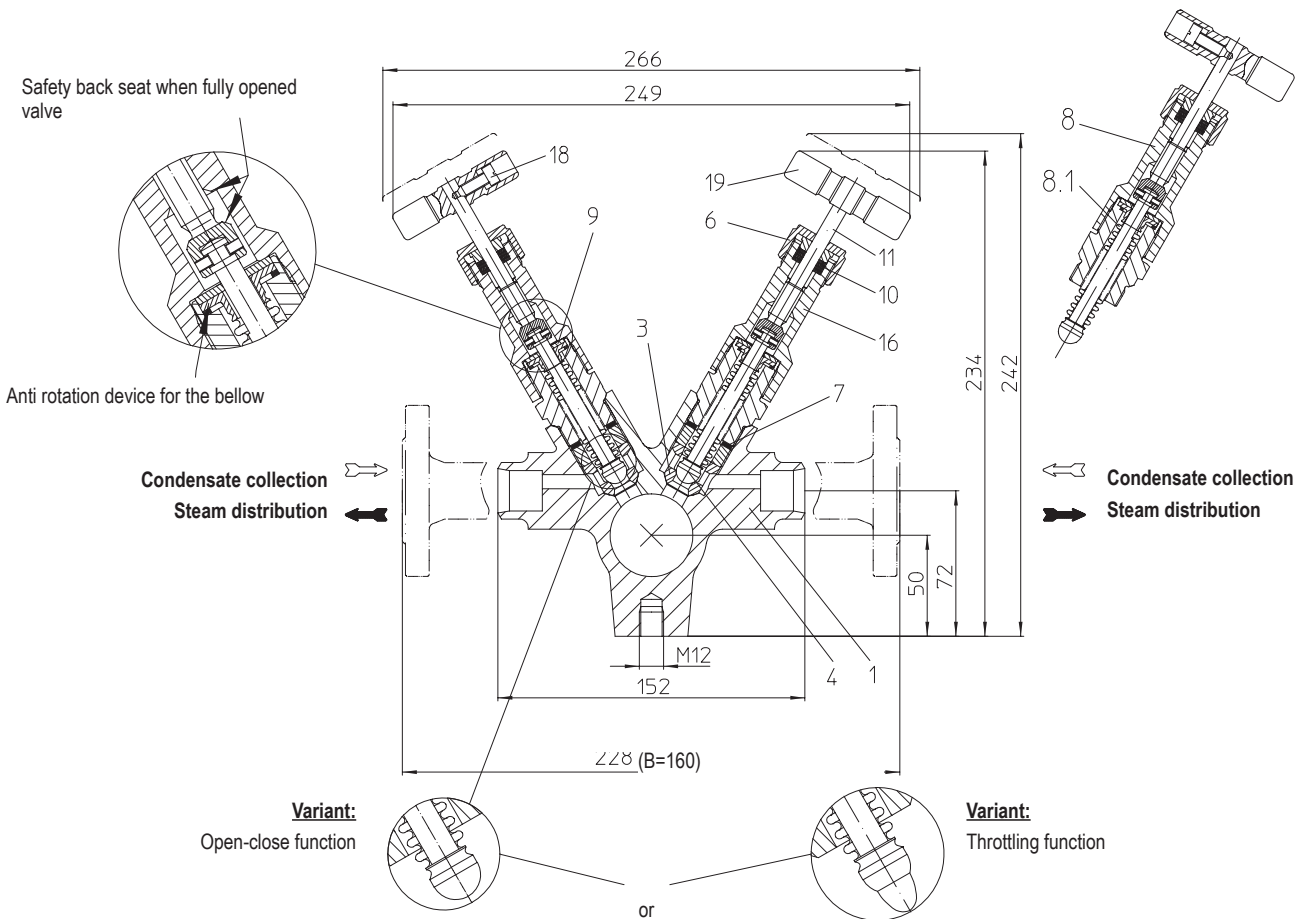


Fig. 675 / 676 Module complete

Figure	Nominal pressure	Material	Nominal diameter / NPS	Operating pressure PS	Inlet temperature TS
42.675... 42.676...	ANSI150	SA105	Primary connections 1" / 1 1/2" / 2" Secondary connection 1/2" / 3/4" / 1"	13 barg	225 °C
...-02 (each 1 second. connection) ...-04 (each 2 second. connection)				5,5 barg	427 °C
45.675... 45.676...	ANSI300	SA105		32 barg	411 °C
...-06 (each 3 second. connection) ...-08 (each 4 second. connection)				28 barg	427 °C
52.675... 52.676...	ANSI300	SA182F321 or xxxx		13 barg	225 °C
...-10 (each 5 second. connection) ...-12 (each 6 second. connection) ...-14 (each 7 second. connection)				2,4 barg	510 °C
55.675... 55.676...	ANSI300	SA182F321	32 barg	377 °C	
...-16 (each 8 second. connection) ...-18 (each 9 second. connection)			27 barg	510 °C	

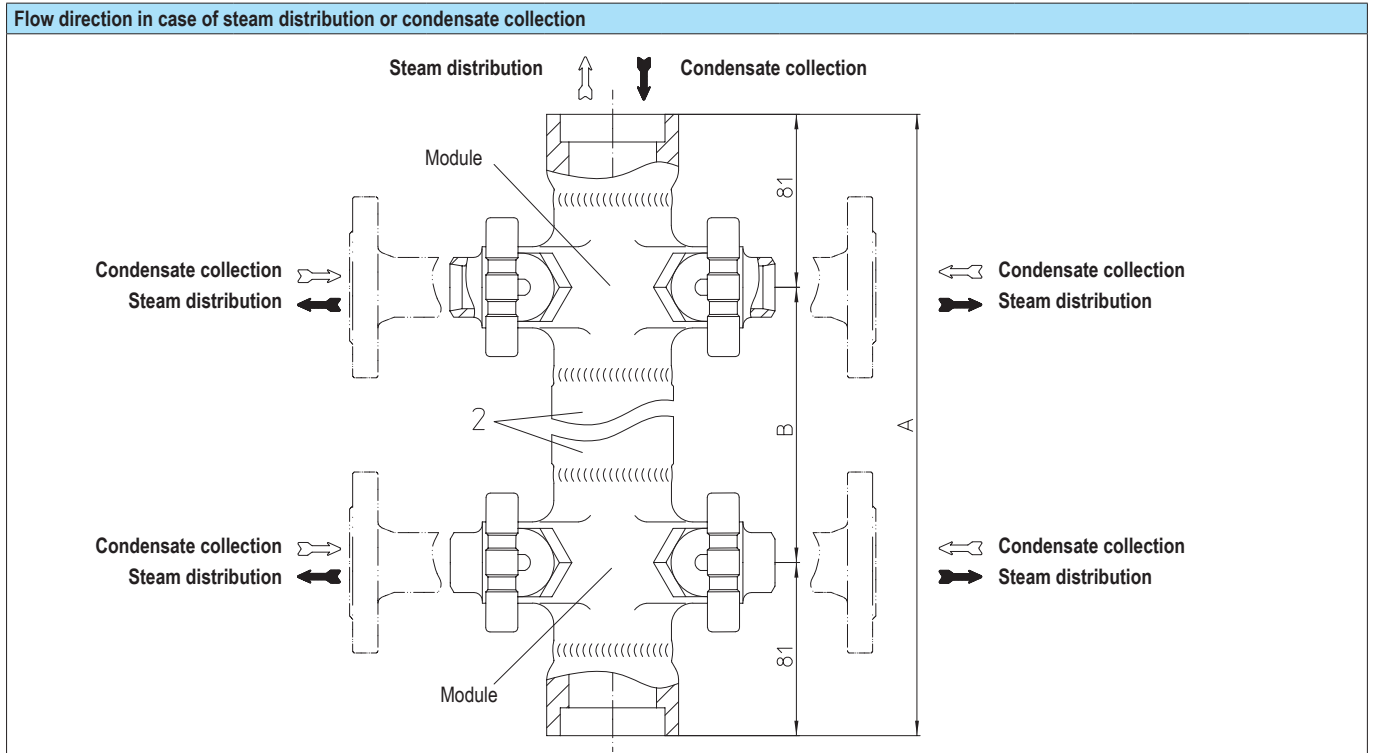
DIN/EN-Constructions refer to data sheet CODI®

Plug design	
standard:	• Isolation plug (Open-close function)
optional:	• Throttling plug (Throttling function)
Safety back seat when fully opened valve	
Types of connection (Standard)	
Other types of connection on request.	
Primary connections: (top and bottom)	• Flanges1 _____ acc. to ASME B16.5 • Screwed sockets2 _____ NPT thread acc. to ANSI B1.20.1 or Rp thread acc. to DIN EN 10226-1
Secondary connection: (left and right)	• Socket weld ends3 _____ acc. to ASME B16.11 • Butt weld ends4 _____ ASME B16.25 (Note restriction on operating pressure / inlet temperature depending to design!)
Features	
<ul style="list-style-type: none"> • Flexibility through compact, modular design (available with 2, 4, 6, 8, 10, 12, 14, 16 or 18 integrated stop valves!) • All functional parts replaceable in situ - no need for manifold removal! • Safety back seat when fully opened valve! • Economic on-site handling and long life (through forged steel and metallic sealing...) 	
Mounting position	
• Preferably vertical	Threaded connection M12 are provided at the back for the attachment to a supporting structure.
Options	
(Design refer to page 8)	
• Insulating jacket	• Fastening parts (set)
• Immersion tube	• Mounting wrench

Parts				
Pos.	Sp.p.	Description	Fig. 42.675 / 42.676 Fig. 45.675 / 45.676	Fig. 52.675 / 52.676 Fig. 55.675 / 55.676
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2		Connection between the modules	SA106Gr.B	SA182F321
3	x	Seat	AISI303	
4		Valve ball	AISI440	
6		Union nut	AISI430F	
7		Sealing ring	Graphite	
8	x	Assembly stop valve, cpl.	SA240Gr.316Ti	
8.1		Bellows seal	Stainless steel	
9		Safety washer	SA240Gr.304	
10	x	Packing ring	Pure graphite	
11		Stem	SA479Gr.316L	
16		Stem guiding	AISI303	
18	x	Cheese head screw	A2-70	
19	x	Hand grip	SA479Gr.430	
		Other interior parts	Stainless steel	
	L Spare parts			

Information / restriction of technical rules need to be observed!
 Resistance and fitness must be verified (or contact the manufacturer for information).
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NPS		1/2"	3/4"	1"	1 1/2"	2"
Length B1	B = 120 mm (mm)	81	81	81	81	81
	B = 160 mm (mm)	118	118	118	138	138



Dimensions and weights		Face-to-face acc. to data sheet resp. customer request								
Fig. 675 / 676		... -02	... -04	... -06	... -08	... -10	... -12	... -14	... -16	... -18
ANSI150/300 B = 120 mm		Standard-flange dimensions refer to page 7								
Dimension A	(mm)	162	282	402	522	642	762	882	1002	1122
Weight (approx.)	(kg)	3,5	7,2	10,7	14,7	17,7	21,2	24,7	28,2	31,7
ANSI150/300 B = 160 mm		Standard-flange dimensions refer to page 7								
Dimension A	(mm)	280	416	573	736	896	1056	1216	1376	1536
Weight (approx.)	(kg)	3,5	7,5	11	14,5	18	21,5	25	28,5	32

Operating ranges

Fig. 671/672 and Fig. 675/676 both can be applied as condensate collector or steam distributor. Applications are wide spread piping systems, steam tracers on pipes and apparatus. The flow media can be steam, water, oil etc. On the application as steam distributor the steam inlet is at the top flange. At the bottom outlet flange a steam trap shall be installed. On the application as condensate collector the outlet is at the top flange. At the bottom flange a blowdown valve shall be installed. In case of a vertical installation a siphon pipe should be applied. This ensures even temperature distribution thus pressure shocks and noise on condensate return are reduced..

The design is based on a robust module construction with integral stop valves (ball/seat). Body and stop valve are threaded together with a hard seal (metal to metal).

Integral stop valves on CODI S require low maintenance. All functional parts are replaceable in situ. There is no need for manifold removal from the pipe. Fig. 676 (CODI B bellows seal design for horizontal installation) and Fig. 675 (CODI B bellows seal design for vertical installation) are designed for those installations where we find the highest requirements for tight sealing to the open and maintenance free operation of the valve.

Die Fig. 676 (CODI B Design with bellows seal, waagerechte Mounting position) and Fig. 675 (CODI B Design with bellows seal, senkrechte Mounting position) ist besonders in solchen Einsatzbereichen geeignet, wo bezüglich der Wartungsfreiheit und der Shut off class der Armatur acc. to außen höchste Requirement erfüllt werden müssen.

A clearance of 50 mm between the construction bracket and the condensate collector/steam distributor ensures that the insulation jacket can be wrapped around it.

During welding at the primary and secondary connections the integral stop valves have to be in an open position. Further precautions are not required..

Handling

The integral stop valves with shut-off plugs shall not be used for throttling of condensate or steam flows. For throttling purposes the throttling plug shall be applied. The valves are generally equipped with back seats.

The advantage of Fig. 671/ 672 is that this additional back seat sealing protects the graphite packing and multiples it's longevity.

On Fig. 675/676 the back seat may be advantageous in case of damages to the bellows. On CODI B 675/676 no twist to the bellow will be effected due to the non-rotation lock.

The stop valves are screwed into the body without using a gasket (hard seal) If necessary, the union nut (pos. 6) can be tightened, but the stem must to be turned with normal forces!

Basic types

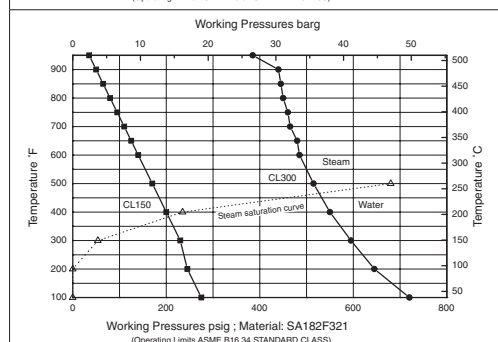
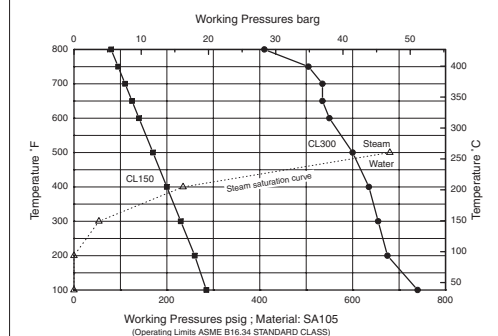
Vertical installation		recommended for attachment
Fig. 671 / 675	-02	1 screw
Fig. 671 / 675	-04	2 screws
Fig. 671 / 675	-06	3 screws
Fig. 671 / 675	-08	3 screws
Fig. 671 / 675	-10	4 screws
Fig. 671 / 675	-12	4 screws
Fig. 671 / 675	-14	5 screws
Fig. 671 / 675	-16	5 screws
Fig. 671 / 675	-18	6 screws

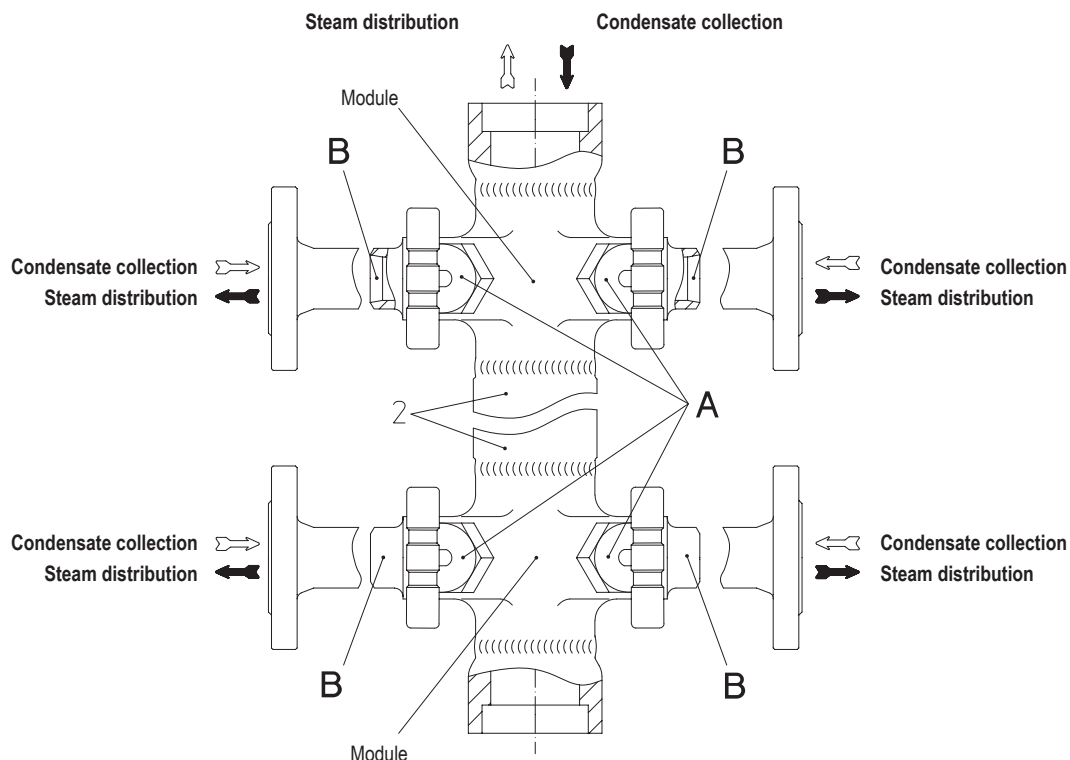
Horizontal installation		recommended for attachment
Fig. 672 / 676	-02	1 screw
Fig. 672 / 676	-03	2 screws
Fig. 672 / 676	-04	3 screws
Fig. 672 / 676	-05	3 screws
Fig. 672 / 676	-06	4 screws
Fig. 672 / 676	-07	4 screws
Fig. 672 / 676	-08	5 screws
Fig. 672 / 676	-09	5 screws

Installation position Preferably vertical.

Threaded connection M12 are provided at the back for the attachment to a supporting structure.

Pressure-Temperature-Diagram



Working principle

Condensate collection

- Condensate inlet in port B side (lateral)
- Condensate outlet usually at the top
- Opening and closing of the port B side with stop valves A

Steam distribution

- Steam inlet at the top
- Steam outlet through port B sides (lateral)
- Opening and closing of the port B side with stop valves A

Informations about pipe welding
Welding groove acc. to DIN 2559

The material used for ARI valves with butt weld ends are: SA105
SA182F321

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

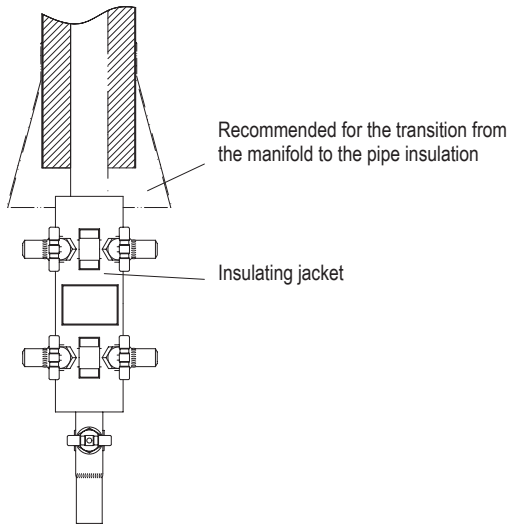
Because of the different material compositions and wall thickness of the steam traps and the pipe gas welding shall not be applied. Quenching cracks and coarse grain structure may develop.

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!

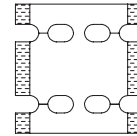
Standard-flange dimensions acc. to ASME B16.5			Primary connections				
			Secondary connection		1	1 1/2	2
NPS			1/2	3/4	1	1 1/2	2
ANSI150	ØD	(mm)	3.50	3.90	4.25	5.00	6.00
	ØK	(mm)	2.36	2.70	3.10	3.85	4.76
	n x Ød	(mm)	4 x 0.62	4 x 0.62	4 x 0.62	4 x 0.62	4 x 0.75
ANSI300	ØD	(mm)	3.75	4.62	4.88	6.12	6.50
	ØK	(mm)	2.62	3.25	3.50	4.50	5.00
	n x Ød	(mm)	4 x 0.62	4 x 0.75	4 x 0.75	4 x 0.88	8 x 0.75

Insulating jacket / pipe connection



Insulating jacket in mounted position

Insulating jacket preventing radiation of heat

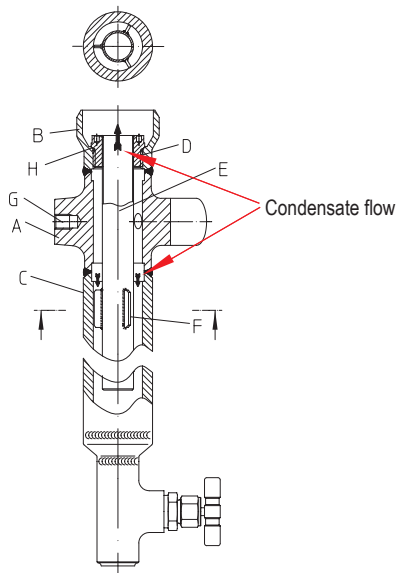


Cona insulating jackets provide a simple and effective heat insulation (suitable for every condensate collection / steam distribution)

Advantages:

- energy saving
- less radiation of heat to the atmosphere
- safety of the operation personal
- robust, non ageing
- resistance to heat
- low weight and flexible
- clean handling (no contact with the insulating material)
- free from asbestos
- water repellent
- simple disassembly and reusable

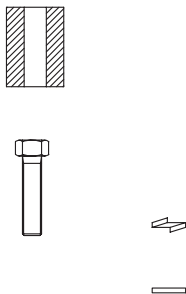
Immersion tube



Condensate collector with immersion tube

Part	Description	
A	CODI® Module	
B	But weld end	
C	Welding bushing for the connection with an additional module	
D	Banjo bolt	SA240Gr.304
E	Immersion tube	SA182F321
F	Spacer	SA240Gr.304
G	Fixing point	
H	Metal-to-metal seal between banjo bolt and welding bush	

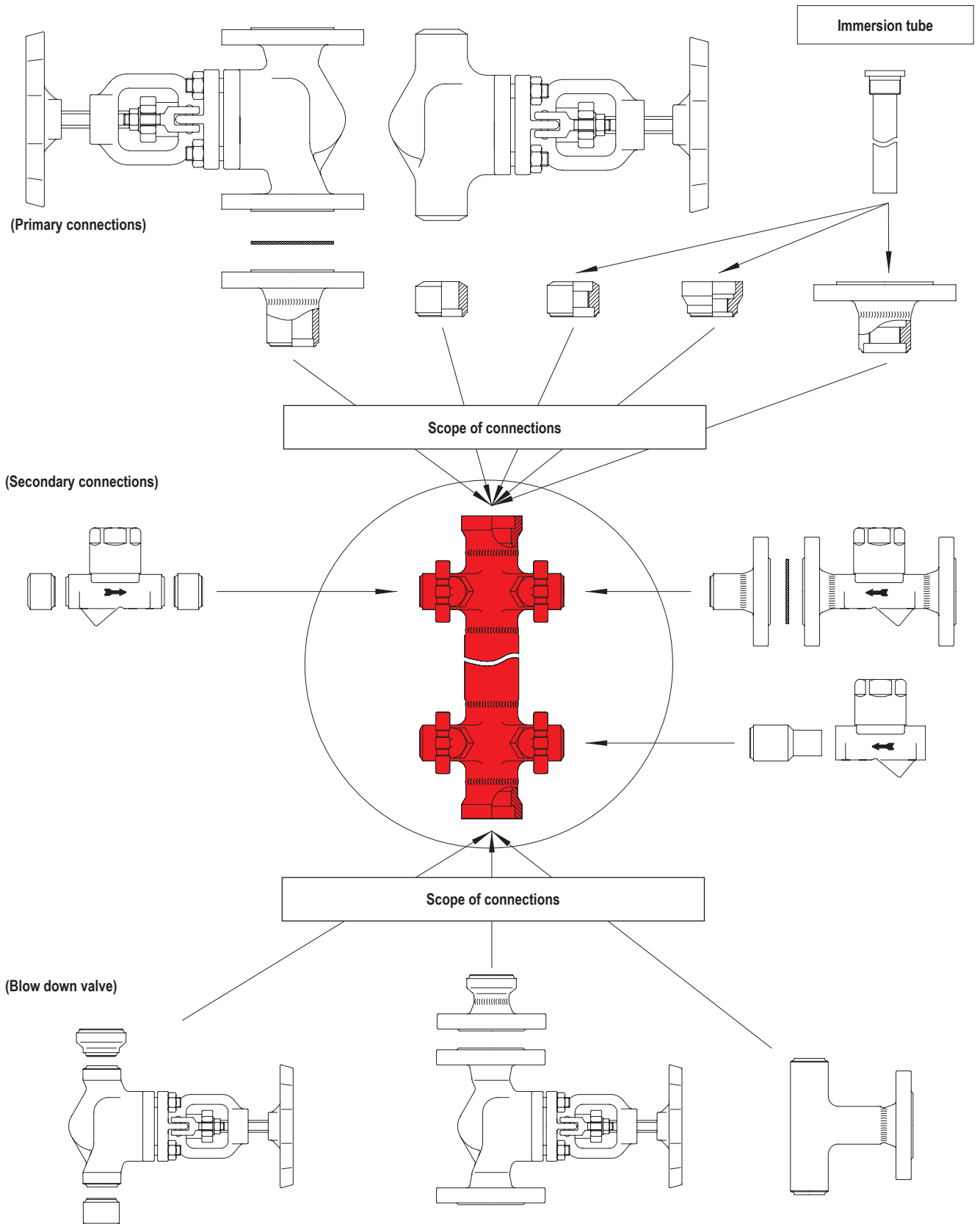
Fastening parts

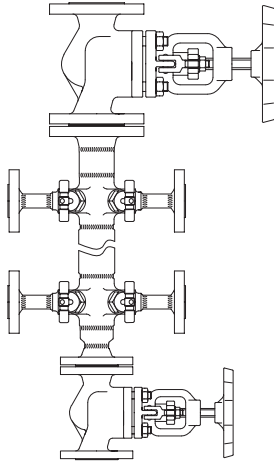


- 1 Satz consisting of:
 - Distance sleeve
 - Hexagon bolt M12
 - Washer
 - Washer



- Mounting wrench



Preferred vertical installation


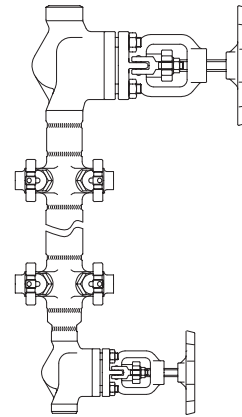
... **primary stop valve (flanged) for welding neck flange**

NPS 1 1/2" acc. to ASME B16.5 or
NPS 2" acc. to DIN ASME B16.5

... **secondary connections (flanged)**

NPS 1/2" to 1" acc. to ASME B16.5

... **design with blow down valve**



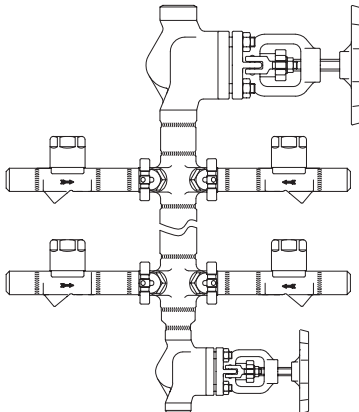
... **primary stop valve (butt weld ends)**

NPS 1 1/2" and 2" acc. to ASME B16.25

... **secondary connections (butt weld ends)**

NPS 1/2" to 1" acc. to ASME B16.25

... **design with blow down valve**



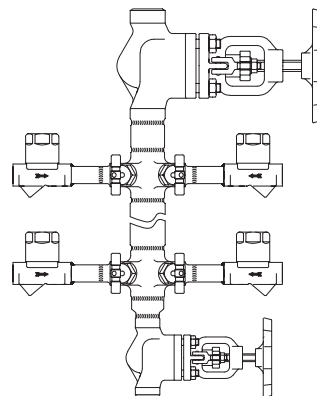
... **primary stop valve (butt weld ends)**

NPS 1 1/2" and 2" acc. to ASME B16.25

... **secondary connections with steam trap (butt weld ends)**

NPS 1/2" to 1" acc. to ASME B16.25

... **design with blow down valve**



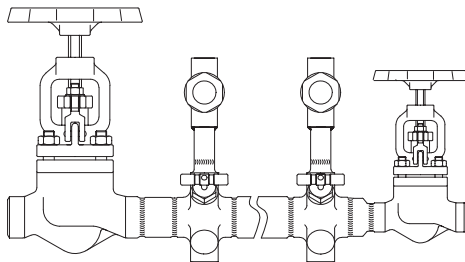
... **primary stop valve (butt weld ends)**

NPS 1 1/2" and 2" acc. to ASME B16.25

... **secondary connections with steam trap (socket weld ends)**

NPS 1/2" to 1" acc. to ASME B16.11

... **design with blow down valve**

Horizontal installation


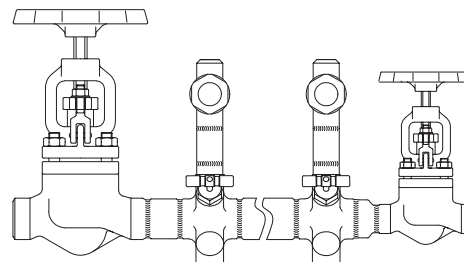
... **primary stop valve (butt weld ends)**

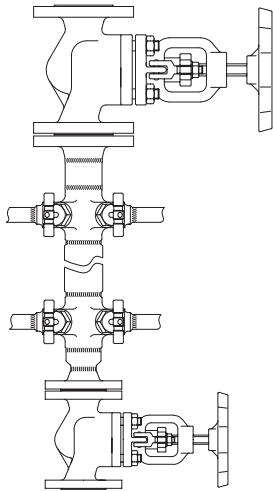
NPS 1 1/2" and 2" acc. to ASME B16.25

... **secondary connections with steam trap (socket weld ends or butt weld ends)**

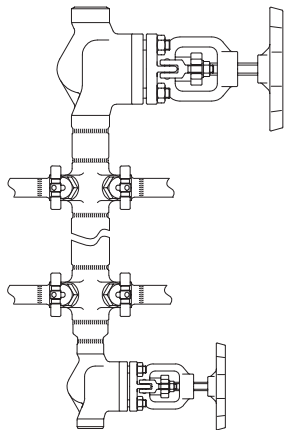
NPS 1/2" to 1" acc. to DIN EN 12760 or NPS 1/2" to 1" acc. to ASME B16.11/ASME B16.25 (butt weld ends)

... **design with blow down valve**

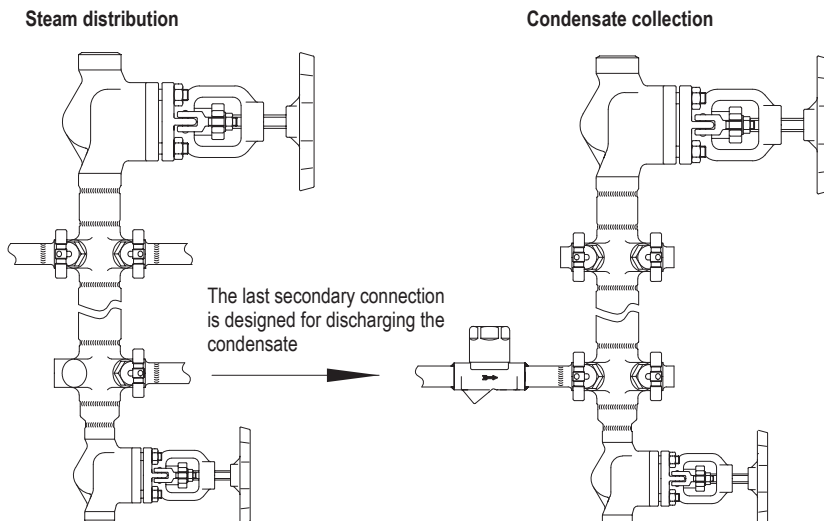




... primary stop valve and secondary connections - design with blow down valve



... primary stop valve and secondary connections - design with blow down valve



... primary stop valve and secondary connections - design with blow down valve

... steam trap at the condensate collector

Offer-No.:

Inquiry-No.:

 Inquiry
 Order

- Series:**
- CODI® S** with gland packing Fig. 671
 Fig. 672
- CODI® B** with bellows seal (maintenance-free) Fig. 675
 Fig. 676

From:

.....

.....

Telephone:

.....

Fax:

- Vertical installation**
- Fig. 671 / 675 -02
 Fig. 671 / 675 -04
 Fig. 671 / 675 -06
 Fig. 671 / 675 -08
 Fig. 671 / 675 -10
 Fig. 671 / 675 -12
 Fig. 671 / 675 -14
 Fig. 671 / 675 -16
 Fig. 671 / 675 -18
- Horizontal installation**
- Fig. 672 / 676 -02
 Fig. 672 / 676 -03
 Fig. 672 / 676 -04
 Fig. 672 / 676 -05
 Fig. 672 / 676 -06
 Fig. 672 / 676 -07
 Fig. 672 / 676 -08
 Fig. 672 / 676 -09

- Types:**
- Application:**
- Condensate collection
 Steam distribution

Connections:

Connection	Top Inlet- / Outlet	Bottom Inlet- / Outlet	Secondary connection
	ANSI	ANSI	ANSI
Screwed sockets Rp			
Screwed sockets NPT			
Butt weld ends			
Socket weld ends			
Flange			
NPS 1/2"			
NPS 3/4"			
NPS 1"			
NPS 1 1/2"			
NPS 2"			

- Sizing acc. to:**
- ANSI 150 - SA105 ANSI 150 - SA182F321
 ANSI 300 - SA105 ANSI 300 - SA182F321

- Certification:**
- Material certificates acc. to DIN EN 10204 / 2.2 Material certificates acc. to DIN EN 10204 / 3.1

- Pressure test:**
- acc. to API 598

- Options**
- Stop valve at the top inlet/outlet Drainage at the bottom
- Tracer (secondary) connection incl. steam traps **Control principle:**
- Tracer (secondary) connection incl. return temperature control valve Capsule
 Bimetallic
 Thermodynamic

- Accessories:**
- Immersion tube
 Insulation
 Set of fastening parts
 Mounting wrench

- Heat transfer fluid:**
- Steam
 Water
 Oil
 other

Specials:

Quantity: