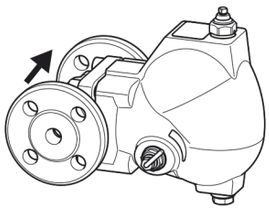
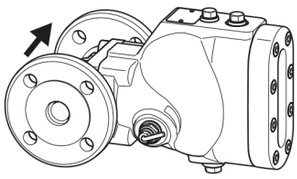
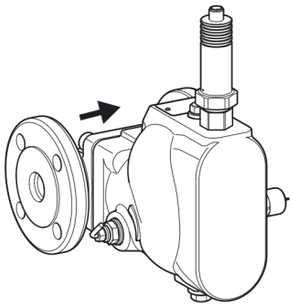
Trampa de vapor flotador UNA45



UNA 45 hl, UNA 46 hl, UNA 46A hl



UNA 45 hl Sightglass cover



UNA 45 hl Cover for mounting electrodes

Ball Float Steam Trap

UNA 45, UNA 46, UNA 46A
DN 15, 20, 25, 40, 50, 65
PN 40/Class 300

Description Float traps type UNA 45 are designed for removing condensate from steam or compressed air.

Float traps type UNA 46 and UNA 46A are designed for removing condensate from steam or other gases / gas mixtures.

Equipment fitted with control unit SIMPLEX and SIMPLEX-P is operated and controlled by the float and the rolling ball. Equipment with this type of control unit is particularly suitable for cold condensate and cold distillates.

The rolling ball of the control unit SIMPLEX-P is made of Perbunan® rubber, which ensures tight shut-off of the seat.

Equipment with control unit DUPLEX may also be used for air venting the installation. This type of control unit is particularly suitable for saturated steam systems. The control unit DUPLEX consists of a float operated rolling ball valve and a temperature dependent air-venting facility. Do not expose the membrane regulator capsule of the DUPLEX control unit to superheat conditions above 5 K.

By means of the externally adjustable internal bypass it is possible to adjust a bypass passage that flows past the control unit.

The equipment must only be used within the allowable pressure and temperature limits and only if the chemical and corrosive influences on the equipment are taken into account.

Function

The control unit opens the orifice as a function of the liquid level. A rising level results in a proportional opening of the equipment. The max. discharge capacity depends on the orifice size when the ball is completely lifted off its seat and the orifice is fully open.

Optional extras

Vent hole and drain hole
Float-lifting lever allows the float to be manually lifted (for purging any dirt away from the seat area)
Hand-vent valve allows manual air-venting the pipeline
Strainer
Horizontal flow direction (hr) from left to right (when viewed from the body end)
Control unit SIMPLEX-P with Perbunan® rolling ball
Externally adjustable inner bypass
Sightglass cover
Special cover for installing measuring electrodes NRG 16-19 or NRG 16-27

End connections

Flange EN 1092-1 B1 PN 40
Flange ASME B 16.5 Class 150 RF, 300 RF
Screwed sockets G: ISO 228/1
Screwed sockets NPT: ASME B 16.11
Socket-weld ends to DIN EN 12760
Socket-weld ends ASME B 16.11 Class 3000
Butt-weld ends via transition pieces to EN 12627, welded joint geometry ISO 9692-1 code number 1.3 (30° chamfer)
Butt-weld ends via transition pieces ASME B 16.25 ASME B 36.10

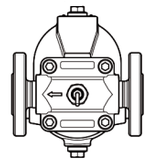
The different equipment versions allow you to adjust the flow direction of the equipment to the flow pattern of your installation. The flow arrow must correspond to the direction of the fluid flow. The following positions of installation are possible:

v



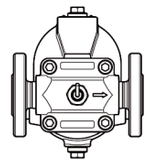
"v" for installation in vertical pipework with downward flow

hl



"hl" for horizontal left

hr



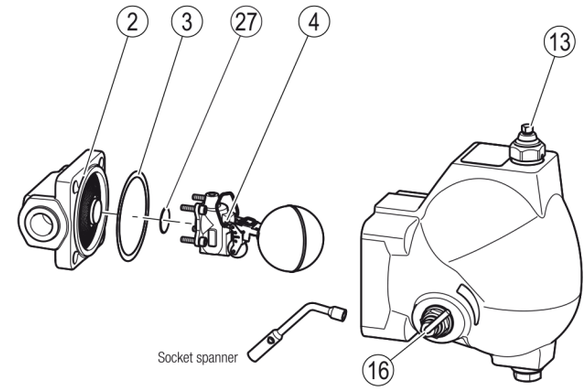
"hr" for horizontal right

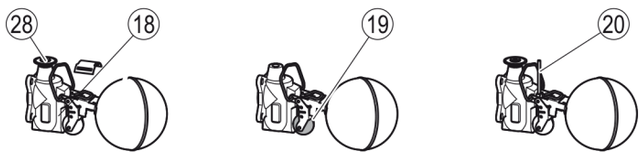
Materials

Component part	Type	EN	ASTM
Body	UNA 45, UNA 46	1.0460	A105
	UNA 46A	1.4404	A182-F316L
Cover	UNA 45 sightglass cover / cover for installing electrodes	5.3103	A395[1]
	UNA 46	1.0619	A216-WCB
	UNA 46A	1.4408	A351-CF8M
Body gasket, control unit gasket	all	Graphite CrNi	
Other components	all	Stainless steel	

1) Physical and chemical properties comply with EN grade. ASTM nearest equivalent grade is stated for guidance only.

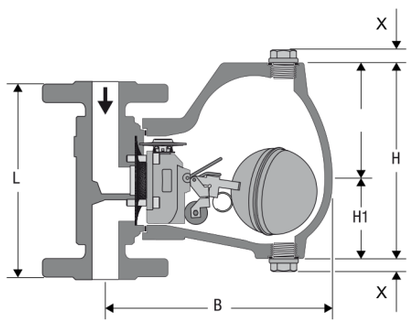
Components UNA 45, UNA 46, UNA 46A



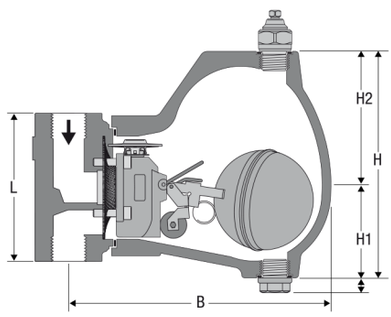


Item no.	Designation
2	Body
3	Body gasket
4	Control unit SIMPLEX
13	Hand-vent valve
16	Float-lifting lever

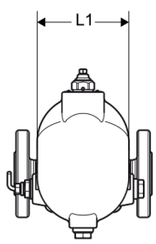
Item no.	Designation
18	Control unit DUPLEX
19	Control unit SIMPLEX-P with Perbunan® rolling ball
20	Control unit DUPLEX with externally adjustable internal bypass
27	Gasket
28	Body gasket

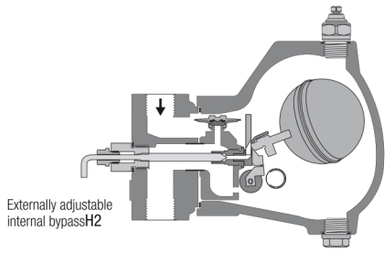


UNA 45, UNA 46, UNA 46A
Control unit DUPLEX
with flanged ends



UNA 45, UNA 46, UNA 46A
Control unit DUPLEX
with screwed connections





Externally adjustable
internal bypass**H2**

Dimensions and weights

Equipment with flanges EN 1092-1 PN 10–40

Nominal size	DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")	DN 65 (2½")
Overall length L [mm (in)]	150 (5.9)		160 (6.3)	230 (9.1)		290 (11.4)
B [mm (in)]						
Standard cover	171 (6.7)			287 (11.3)		
Sightglass cover	213 (8.4)			333 (13.1)		
Cover for mounting electrodes	186 (7.3)			306 (12.0)		
H1 [mm (in)]	60 (2.4)			107 (4.2)		
H2 [mm (in)]	90 (3.5) 1)			151 (5.9) 1)		
Total height H [mm (in)]	150 (5.9) 1)			258 (10.2) 1)		
Width L1 [mm (in)]	110 (4.3) 2)			170 (6.7) 2)		
X [mm (in)]	13 (0.5)					
Weight [kg]						
Standard cover	6.8	7.3	7.8	24.8	26.2	28.6
Sightglass cover	9.7	10.2	10.7	30.5	31.9	34.3
Cover for mounting electrodes	8.5	9.0	9.5	28.0	29.4	31.8
Weight [lb]						
Standard cover	15.0	16.1	17.2	54.7	57.8	63.1
Sightglass cover	21.4	22.5	23.6	67.2	70.3	75.6
Cover for mounting electrodes	18.7	19.8	20.9	61.7	64.8	70.1

1) If equipped with hand-vent valve add 25 mm (1 in).
2) If equipped with hand vent valve or bypass add 35 mm (1.4 in.)

Equipment with flange ASME B16.5 Class 150/300

Nominal size	DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")	DN 65 (2½")
Overall length L [mm (in)]	150 (5.9)		160 (6.3)	241 (9.5)	267 (10.5)	292 (11.5)
B [mm (in)]						
Standard cover	171 (6.7)			287 (11.3)		
Sightglass cover	213 (8.4)			333 (13.1)		
Cover for mounting electrodes	186 (7.3)			306 (12.0)		
H1 [mm (in)]	60 (2.4)			107 (4.2)		
H2 [mm (in)]	90 (3.5) 1)			151 (5.9) 1)		
Total height H [mm (in)]	150 (5.9) 1)			258 (10.2) 1)		
Width L1 [mm (in)]	110 (4.3) 2)			170 (6.7) 2)		
X [mm (in)]	13 (0.5)					
Weight Class 150						
Weight [kg]						
Standard cover	6.2	6.6	7.2	23.8	25.9	29.4
Sightglass cover	9.1	9.5	10.1	29.5	31.6	35.1
Cover for mounting electrodes	7.9	8.3	8.9	27.0	29.1	32.6
Weight [lb]						
Standard cover	13.7	14.6	15.9	52.5	57.1	64.8
Sightglass cover	20.1	20.9	22.3	65.0	69.7	77.4
Cover for mounting electrodes	17.4	18.3	19.6	56.2	60.8	68.6
Weight Class 300						
Weight [kg]						
Standard cover	6.6	7.4	8.2	26.0	27.5	31.1
Sightglass cover	9.5	10.3	11.1	31.7	33.2	36.8
Cover for mounting electrodes	8.3	9.1	9.9	29.2	30.7	34.3
Weight [lb]						
Standard cover	14.6	16.3	18.1	57.3	60.6	68.6
Sightglass cover	20.9	22.7	24.5	69.9	73.2	81.1
Cover for mounting electrodes	18.3	20.1	21.8	64.4	67.7	75.6

1) If equipped with hand-vent valve add 25 mm (1 in).
2) If equipped with hand vent valve or bypass add 35 mm (1.4 in.)

Equipment with socket-weld end, butt-weld end via transition pieces

Nominal size	DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")	DN 65 (2½")
Overall length L [mm (in)]	95 (3.7)			165 (6.5)	267 (10.5)	292 (11.5)
	(Socket-weld end)			(Butt-weld end via transition pieces EN, ASME)		
B [mm (in)] Standard cover Sightglass cover Cover for mounting electrodes	171 (6.7) 213 (8.4) 186 (7.3)			287 (11.3) 333 (13.1) 306 (12.0)		
H1 [mm (in)]	60 (2.4)			107 (4.2)		
H2 [mm (in)]	90 (3.5) 1)			151 (5.9) 1)		
Total height H [mm (in)]	150 (5.9) 1)			258 (10.2) 1)		
Width L1 [mm (in)]	110 (4.3) 2)			170 (6.7) 2)		
X [mm (in)]	13 (0.5)					
Weight [kg] Standard cover Sightglass cover Cover for mounting electrodes	5.3 8.2 7.0	5.2 8.1 6.9		21.2 26.9 24.4	21.9 27.6 25.1	24.6 30.3 27.8
Weight [lb] Standard cover Sightglass cover Cover for mounting electrodes	11.7 18.1 15.4	11.5 17.9 15.2		46.7 59.3 53.8	48.3 60.8 55.3	54.5 67.0 61.5

1) If equipped with hand-vent valve add 25 mm (1 in).
2) If equipped with hand vent valve or bypass add 35 mm (1.4 in.)

Equipment with screwed socket

Nominal size	DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")
Overall length L [mm (in)]	95 (3.7)			165 (6.5)	
B [mm (in)] Standard cover Sightglass cover Cover for mounting electrodes	171 (6.7) 213 (8.4) 186 (7.3)			287 (11.3) 333 (13.1) 306 (12.0)	
H1 [mm (in)]	60 (2.4)			107 (4.2)	
H2 [mm (in)]	90 (3.5) 1)			151 (5.9) 1)	
Total height H [mm (in)]	150 (5.9) 1)			258 (10.2) 1)	
Width L1 [mm (in)]	110 (4.3) 2)			170 (6.7) 2)	
X [mm (in)]	13 (0.5)				
Weight [kg] Standard cover Sightglass cover Cover for mounting electrodes	5.3 8.2 7.0	5.2 8.1 6.9	5.1 8.0 6.8	21.2 26.9 24.4	20.9 26.6 24.1
Weight [lb] Standard cover Sightglass cover Cover for mounting electrodes	11.7 18.1 15.4	11.5 17.9 15.2	11.2 17.6 15.0	46.7 59.3 53.8	46.1 58.6 53.1

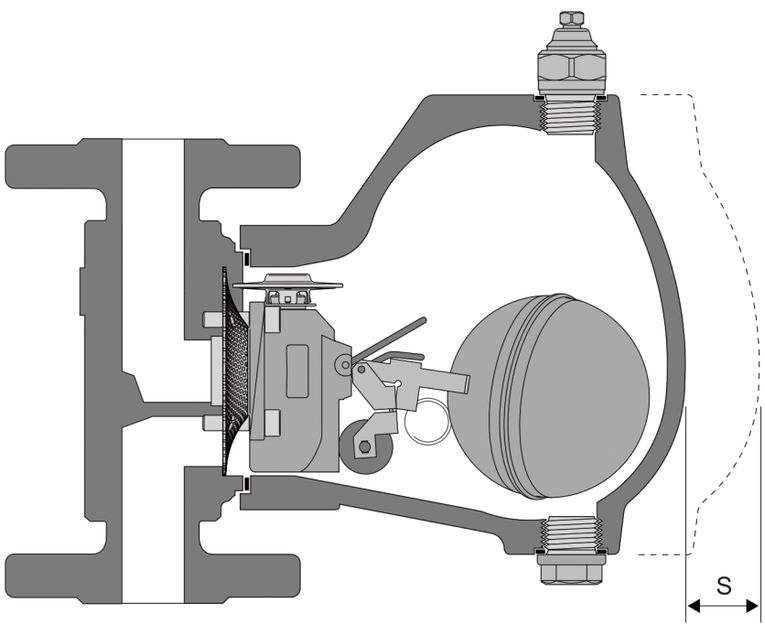
1) If equipped with hand-vent valve add 25 mm (1 in).
2) If equipped with hand vent valve or bypass add 35 mm (1.4 in.)

Nominal size	DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")	DN 65 (2½")
Overall length L [mm (in)]	200 (7.9)			241 (9.5)	267 (10.5)	292 (11.5)
B [mm (in)] Standard cover Sightglass cover Cover for mounting electrodes	171 (6.7) 213 (8.4) 186 (7.3)			287 (11.3) 333 (13.1) 306 (12.0)		
H1 [mm (in)]	60 (2.4)			107 (4.2)		
H2 [mm (in)]	90 (3.5) 1)			151 (5.9) 1)		
Total height H [mm (in)]	150 (5.9) 1)			258 (10.2) 1)		
Width L1 [mm (in)]	110 (4.3) 2)			170 (6.7) 2)		
X [mm (in)]	13 (0.5)					
Weight [kg] Standard cover Sightglass cover Cover for mounting electrodes	5.6 8.5 7.3		5.7 8.6 7.4	21.3 27.0 24.5	21.6 27.3 24.8	22.5 28.2 25.7
Weight [lb] Standard cover Sightglass cover Cover for mounting electrodes	12.3 18.7 16.1		12.6 19.0 16.3	47.0 59.5 54.0	47.6 60.2 54.7	49.6 62.2 56.7

1) If equipped with hand-vent valve add 25 mm (1 in).
2) If equipped with hand vent valve or bypass add 35 mm (1.4 in.)

Space required for servicing To remove the cover a withdrawal space S of 240/350 mm (depending on size) is required.

If the supplied socket spanner is attached to the equipment an additional clearance of 100 mm is required.



Pressure & temperature ratings

The values indicated in the following apply to standard equipment.
Note that the type of end connection used may restrict the use of the equipment to below the pressure/temperature limits quoted.
All equipment specific values are indicated on the nameplate.

Limiting conditions for UNA 45 and UNA 46: Flange PN 40, screwed sockets G

Pressure[1] p	[barg]	40	37.1	33.3	27.6	25.7	13.1[2]
Temperature[1] T	[°C]	–10/20	100	200	300	350	450[2]
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, 22, 32					
	[psi]	29, 58, 116, 188, 320, 465					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1] p	[psig]	580	538	483	400	373	190[2]
Temperature[1] T	[°F]	14/68	212	392	572	662	842[2]

1) Limit values for body/cover to EN 1092-1
2) Not for UNA 45

Limiting conditions for UNA 45 and UNA 46: Flange Class 150

Pressure[1] p	[barg]	19.6	17.7	13.8	10.2	8.6	5.5[2]
Temperature[1] T	[°C]	–29/20	100	200	300	345	425[2]
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13 (19,6 bar with orifice (AO) 22, 32)					
	[psi]	29, 58, 116, 188 (284 psi with orifice (AO) 22, 32)					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1] p	[psig]	285	260	200	140	125	80[2]
Temperature[1] T	[°F]	– 20/100	200	400	600	650	800[2]

1) Limit values for body/cover to ASME B 16.5
2) Not for UNA 45

Limiting conditions for UNA 45 and UNA 46: Flange Class 300, screwed socket NPT, socket-weld end, butt-weld end

Pressure[1] p	[barg]	51.1	46.6	43.8	39.8	37.8	28.8[2]
Temperature[1] T	[°C]	–29/20	100	200	300	345	425[2]
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, 22, 32					
	[psi]	29, 58, 116, 188, 320, 465					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1] p	[psig]	740	280	635	570	550	410[2]
Temperature[1] T	[°F]	– 20/100	200	400	600	650	800[2]

1) Limit values for body/cover to ASME B 16.5
2) Not for UNA 45

Limiting conditions for UNA with sightglass cover, flange PN 16, screwed sockets G

Pressure[1] p	[barg]	16.0	14.8	14.0	13.3	12.3
Temperature[1] T	[°C]	–10/20	100	150	200	240
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, (16 bar with orifice (AO) 22, 32)				
	[psi]	29, 58, 116, 188, (230 psi with orifice (AO) 22, 32)				
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K					
Pressure[1] p	[psig]	232	215	203	193	178
Temperature[1] T	[°F]	14/68	212	302	392	464

1) Limit values for body/cover to EN 1092-1

Pressure & Temperature ratings

Limiting conditions for UNA 45 with sightglass cover, flange Class 150, screwed sockets NPT, socket-weld end, butt-weld end

Pressure[1]) p	[barg]	19.6	17.7	15.8	13.8	12.4
Temperature[1]) T	[°C]	–29/20	100	150	200	240
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, (19,6 bar with orifice (A0) 22, 32)				
	[psi]	29, 58, 116, 188, (284 psi with orifice (A0) 22, 32)				
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K					
Pressure[1]) p	[psig]	285	260	230	200	180
Temperature[1]) T	[°F]	–20/100	200	300	400	465

[1]) Limit values for body/cover to ASME B 16.5

Limiting conditions for UNA 46A, flange PN 40, screwed sockets G

Pressure[1]) p	[barg]	40.0	37.9	31.8	27.6	25.7	25
Temperature[1]) T	[°C]	–10/20	100	200	300	400	450
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, 22, 32					
	[psi]	29, 58, 116, 188, 320, 465					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1]) p	[psig]	580	550	461	400	373	363
Temperature[1]) T	[°F]	14/68	212	392	572	752	842

[1]) Limit values for body/cover to EN 1092-1

Limiting conditions for UNA 46A, flange Class 150

Pressure[1]) p	[barg]	15.9	13.3	11.2	10.0	6.5	5.5
Temperature[1]) T	[°C]	–29/20	100	200	300	400	425
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, (15,9 bar with orifice (A0) 22, 32)					
	[psi]	29, 58, 116, 188 (230 psi with orifice (A0) 22, 32)					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1]) p	[psig]	230	195	160	140	95	80
Temperature[1]) T	[°F]	– 20/100	200	400	600	750	800

[1]) Limit values for body/cover to ASME B 16.5

Limiting conditions for UNA 46A, flange Class 300, screwed socket NPT, socket weld end, butt-weld end

Pressure[1]) p	[barg]	41.4	34.8	29.2	26.1	24.3	23.9
Temperature[1]) T	[°C]	–29/20	100	200	300	400	425
Max. admissible differential pressure ΔPMX	[bar]	2, 4, 8, 13, 22, 32					
	[psi]	29, 58, 116, 188, 320, 465					
Admissible service temperature	Control unit DUPLEX: Saturated steam temperature plus 5 K						
Pressure[1]) p	[psig]	600	510	420	370	355	345
Temperature[1]) T	[°F]	–20/100	200	400	600	750	800

[1]) Limit values for body/cover to ASME B 16.5

Operating data

Equipment with sightglass cover:

PN 16: max. service temperature 240 °C at 12.3 bar service pressure

Class 150: max. service temperature 240 °C at 12.4 bar service pressure. If the pH value is above 9.0 and the fluid temperature exceeds 200 °C the glass will wear down faster.

Equipment with measuring electrode NRG 16-19 or NRG 16-27,

PN 40/Class 300: max. service temperature 238 °C at 32 bar service pressure

Equipment with control unit SIMPLEX-P with Perbunan rolling ball:
max. service temperature 40 °C at ΔPMX 16 bar.

Equipment with control unit DUPLEX:
The max.service temperature corresponds to the saturated steam temperature +5 K.

According to the Body of Regulations AD 2000 300 °C is the limit temperature for resistance to intercrystalline corrosion occurring in UNA 46A made from material 1.4408.

Capacity Chart

for the various orifices.

The capacities are dependent on the differential pressure (working pressure).

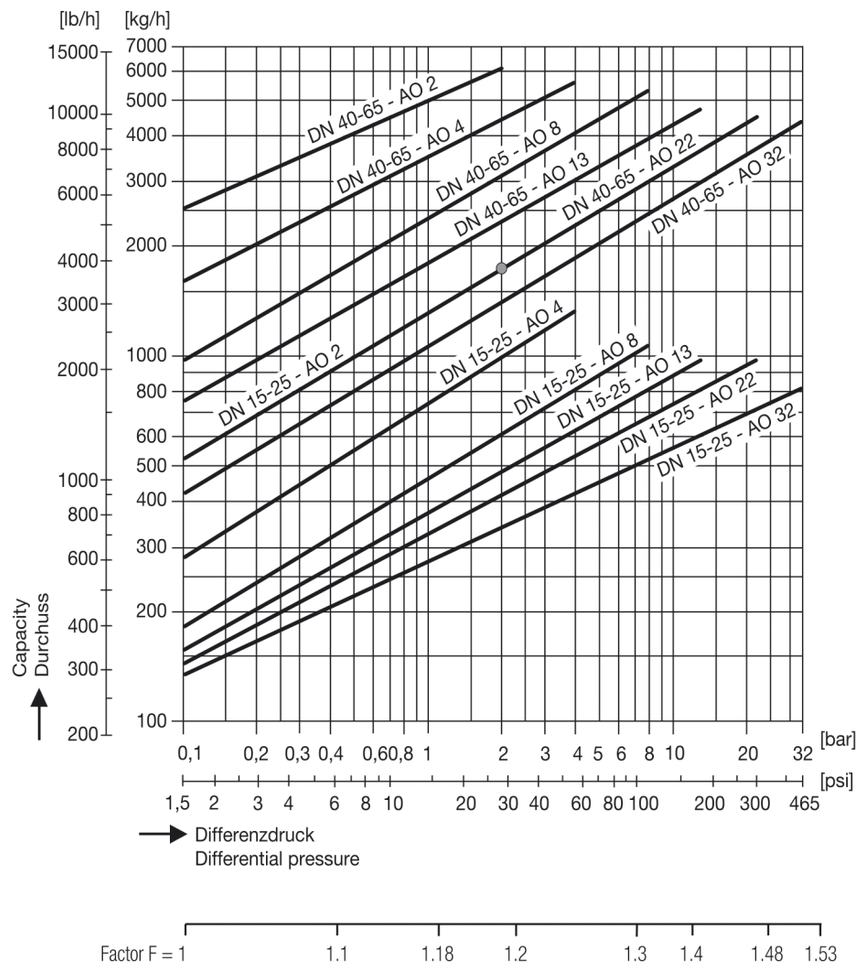
The differential pressure is the difference between inlet and outlet pressure and depends among other things on the run of the condensate line. If the condensate downstream of the trap is lifted, the differential pressure is reduced by approximately 1 bar for 7 m lift.

The max. admissible differential pressure is a function of the cross-sectional area of the orifice and the density of the fluid to be discharged.

The graphs in the chart show the hot water flowrates that the steam traps UNA 45, UNA 46 and UNA 46A can discharge with virtually no banking up.

The cold water capacities of steam traps with control unit SIMPLEX / DUPLEX are: Capacity multiplied by factor F.

Capacity Chart



The max. differential pressure Δ PMX of the equipment depends on the type of orifice (AO) used.

Orifice	ΔPMX [bar]	Diameter of bore [mm]	
		DN 15-25	DN 40-65
2	2	8	15.0
4	4	6	12.5
8	8	4.8	10.0
13	13	4.1	8.5
22	22	3.5	7.0
32	32	3.0	6.5

Ball Float Steam Trap

UNA 45, UNA 46, UNA 46A
DN 15, 20, 25, 40, 50, 65
PN 40/Class 300

Inspection & Certification

Documentation regarding material tests and in-house examination with test report to EN 10204 available at extra cost. All inspection requirements have to be stated with the enquiry or order. After supply of the equipment certification cannot be established. Charges and extent of the above mentioned test certificates as well as the different tests confirmed therein are listed in our Price List "Test and Inspection Charges for Standard Equipment". For other tests and inspections please consult us.

Pressure Equipment Directive

The equipment fulfills the requirements of the Pressure Equipment Directive PED 97/23/EC and can be used for the following fluids:

UNA 45
Fluids of group 2

UNA 46 und UNA 46A
Fluids of group 1
Fluids of group 2

The equipment has a CE marking on the name plate.

The following types of equipment are excluded from the scope of the PED according to Article 3.3 and must not bear a CE marking.

Equipment with DN 15 up to DN 25

Equipment with PN 16 or Class 150 and DN 40 or DN 50

ATEX

The equipment does not have its own potential source of ignition and is therefore not subject to the ATEX Directive 94/9/EC.

The equipment is not Ex marked.

Please observe the following notes if the equipment is to be used in explosion-risk areas:

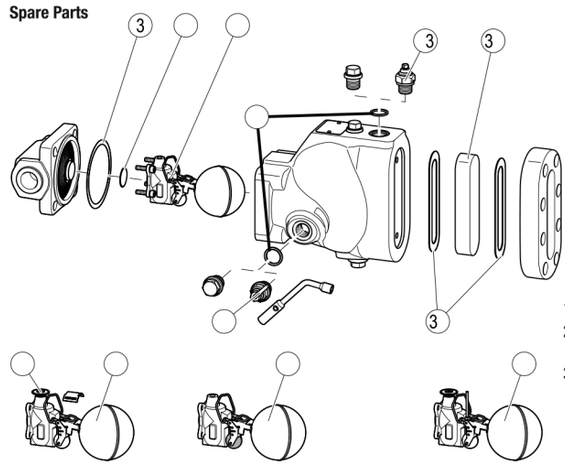
The equipment can be used in zones (surrounding atmosphere acc. to Directive 1999/92/EC) 0, 1, 2, 20, 21 and 22 (ATEX Directive 94/9/EC).

Make sure that the operating fluid does not generate a surface temperature that exceeds the limit specified for the place of installation.

If the equipment is electrically insulated when installed between pipe end connections, appropriate measures must be taken to discharge any static electricity.

Supply in accordance with our general terms of business.

Spare Parts



1 Delivery quantity: 20 pcs.
2 560486: Material 1.4301
560514: Material 1.4571
3 Comprises:
4 joint rings 3/8"
1 joint ring 1/4"
1 body gasket
1 gasket for control unit

Item no.	Designation	Orifice	DN 15-25			DN 40-65		
			Standard cover	Cover for mounting electrodes	Sightglass cover	Standard cover	Cover for mounting electrodes	Sightglass cover
			Stock code #					
3, 4, 27	Control unit SIMPLEX, cpl. with body gasket and gasket for control unit	2	560656			560669		
		4	560657			560670		
		8	560658			560671		
		13	560659			560672		
		22	560660		–	560673		–
		32	560661		–	560674		–
3, 19, 27	Control unit SIMPLEX-P, cpl. with body gasket and gasket for control unit	16	560662			560675		
3, 18, 27, 28	Control unit DUPLEX, cpl. with body gasket and gasket for control unit	2	560650			560663		
		4	560651			560664		
		8	560652			560665		
		13	560653			560666		
		22	560654		–	560667		–
		32	560655		–	560668		–
3, 28	Membrane regulator capsule 5N2, cpl. with body gasket	all	560494			560687		
12, 13	Hand vent valve, complete with gasket	all	560676	–	560676	560676	–	560676
12, 16	Float-lifting lever, complete with gasket	all	560677	–		560678	–	
3	Body gasket[1]	all	560493			560680		
12	Joint ring for sealing plug 3/8", manual float-lifting lever, hand-vent valve or bypass[1]	all	560486[2] or 560514[2]					
27	Gasket for control unit[1]	all	560681			560682		
3, 12, 27	Gasket set[3]	all	560683		–	560684		–
31, 32	Sightglass, incl. gasket	all	–		560685	–		560480