



**Operation**

Float traps with Duplex control.

The ball valve is operated by the float as a function of the condensate level in the trap, i. e. the valve opening depends on the amount of condensate formed. The thermostatic element (Duplex control) operates the valve as a function of temperature and ensures automatic deaeration.

The maximum permissible differential pressure is determined by the cross-sectional area of the orifice.

The UNA 23 and UNA 26 are available with different orifices for the following differential pressures:

- UNA 23: 13 bar (185 psi), 8 bar (115 psi), 4 bar (60 psi) and 2 bar (30 psi).
- UNA 26: 32 bar (465 psi), 22 bar (320 psi), 13 bar (185 psi), 8 bar (115 psi), 4 bar (60 psi) and 2 bar (30 psi).

The special features of the UNA 23 and UNA 26 Duplex, such as large capacity, small trap body, automatic deaeration during start-up and in continuous operation and operation independent of back pressure, ensure an almost universal application of the traps.

For draining gas and compressed-air lines and for the discharge of other cold condensates or distillates as well as for trapping superheated steam lines, the UNA 23 and UNA 26 Simplex (without thermostatic element) are suitable.

**Design**

**UNA 23h/UNA26h** (horizontal) for installation in horizontal pipelines. DN 15-50 mm (1/2-2").

**UNA 23v/UNA 26v** (vertical) for installation in vertical pipelines. DN 15-50 mm (1/2-2").

**UNA 23e/UNA 26e** (angle type) for installation in vertical pipelines or pipelines changing their direction. Screwed sockets 1/2" and 3/4".

**Duplex:** with automatic deaeration.

**Simplex:** without thermostatic element, with hand vent valve supplied separately to be fitted before installation of trap.

When ordered, the sightglass cover (water-level indicator) and the lifting device are supplied fitted. The lifting device permits purging of the trap during operation.

**UNA 23e/UNA 26e**

as supplied

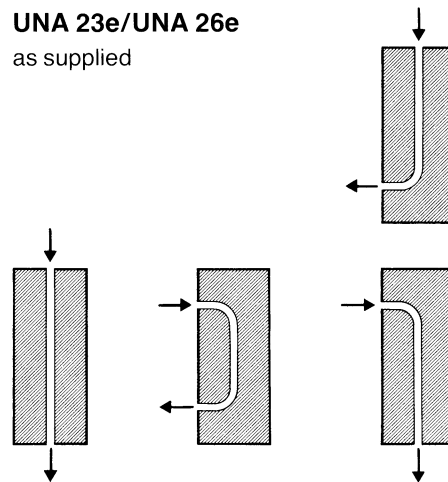


Fig. 1: Further possibilities of installation by repositioning plugs 1.3/1.2

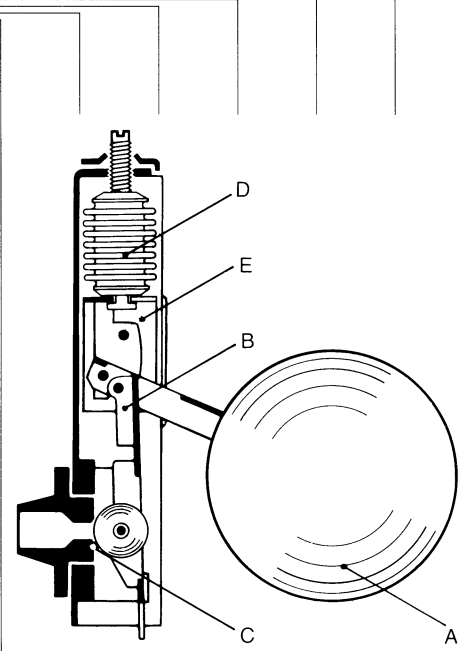


Fig. 2:

**Operating Principle**

Float **A** operates ball valve **C** via link **B** as a function of the condensate level in the trap. The bellows (thermostatic element) **D** is connected to link **B** by carrier **E**. The factory setting of the bellows is such that ball valve **C** is open at temperatures below saturation temperature (at service pressure). Air and incondensable gases can escape. When a condensate/steam mixture flows into the trap, bellows **D** expands, so that ball valve **C** slides in front of the orifice. Drainage now depends on the condensate level in the trap.

Pressure / Temperature Rating according to DIN 2401		UNA 23		UNA 26		
		PN 16	GG-25	PN 40	GS-C 25	
Max. service pressure	barg	16	13	40	32	21
	psig	230	185	580	465	305
Related temperature	°C	120	300	120	250	400
	°F	248	572	248	482	752
Max. differential pressure (inlet pressure minus outlet pressure)		13 bar (185 psi)		32 bar (465 psi)		
Max. temperature for traps with sightglass cover		240 °C (464 °F)				
Traps with sightglass cover: pH values above 9 and temperatures exceeding 200 °C (392 °F) may reduce the life of the sightglass						

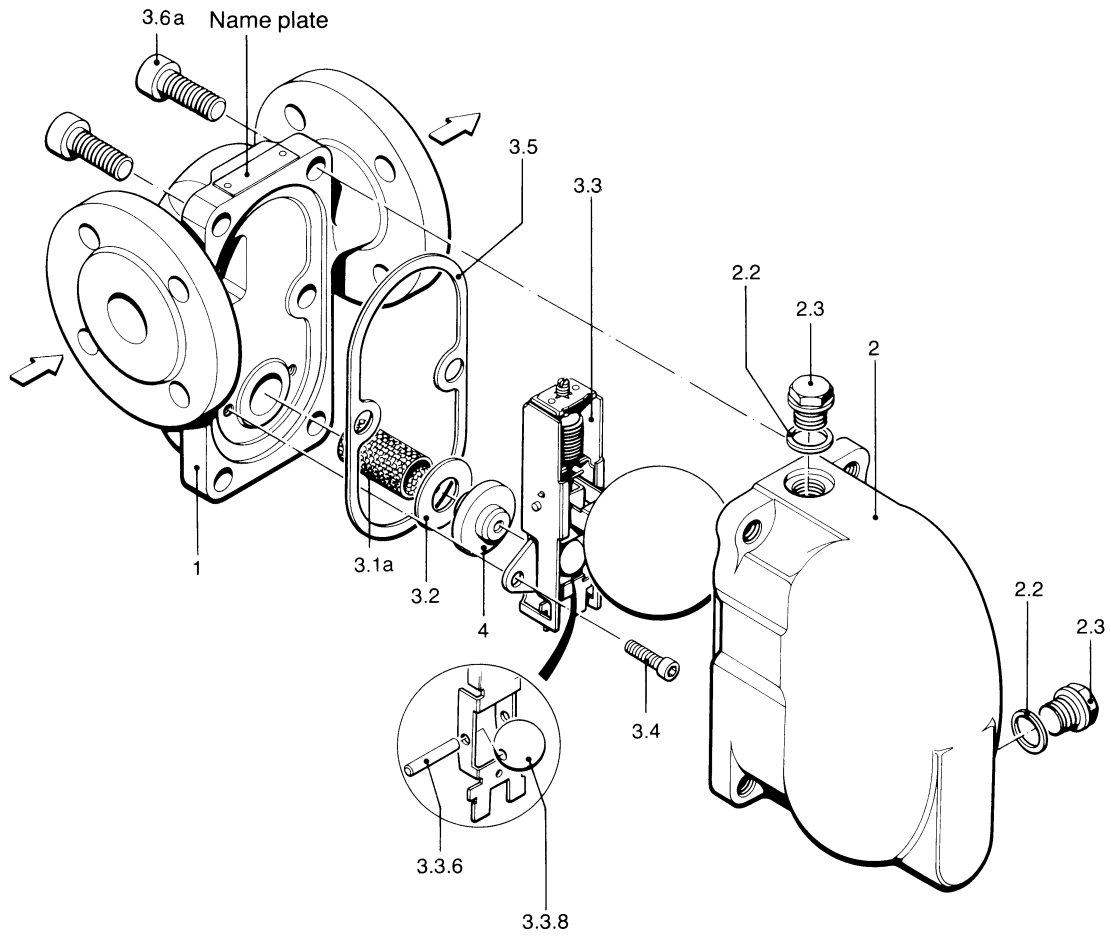


Fig. 3: Horizontal design h

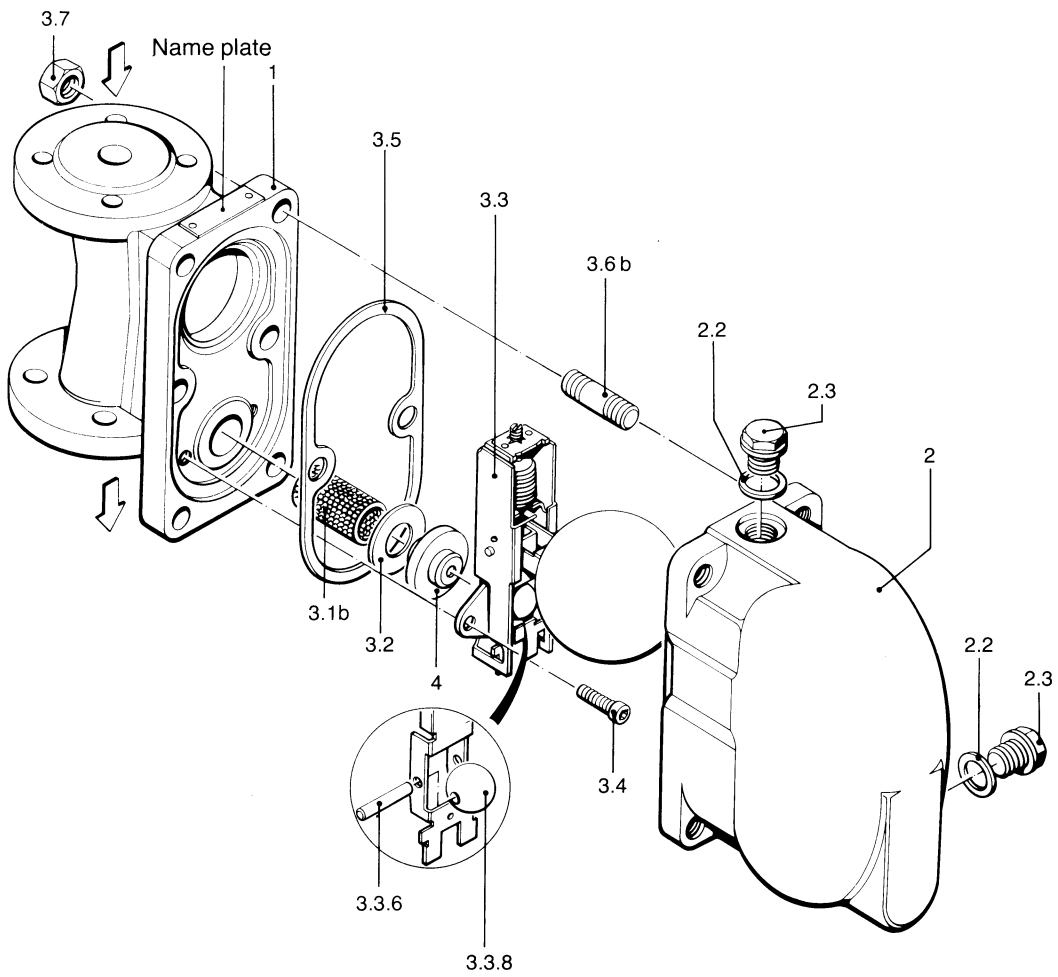
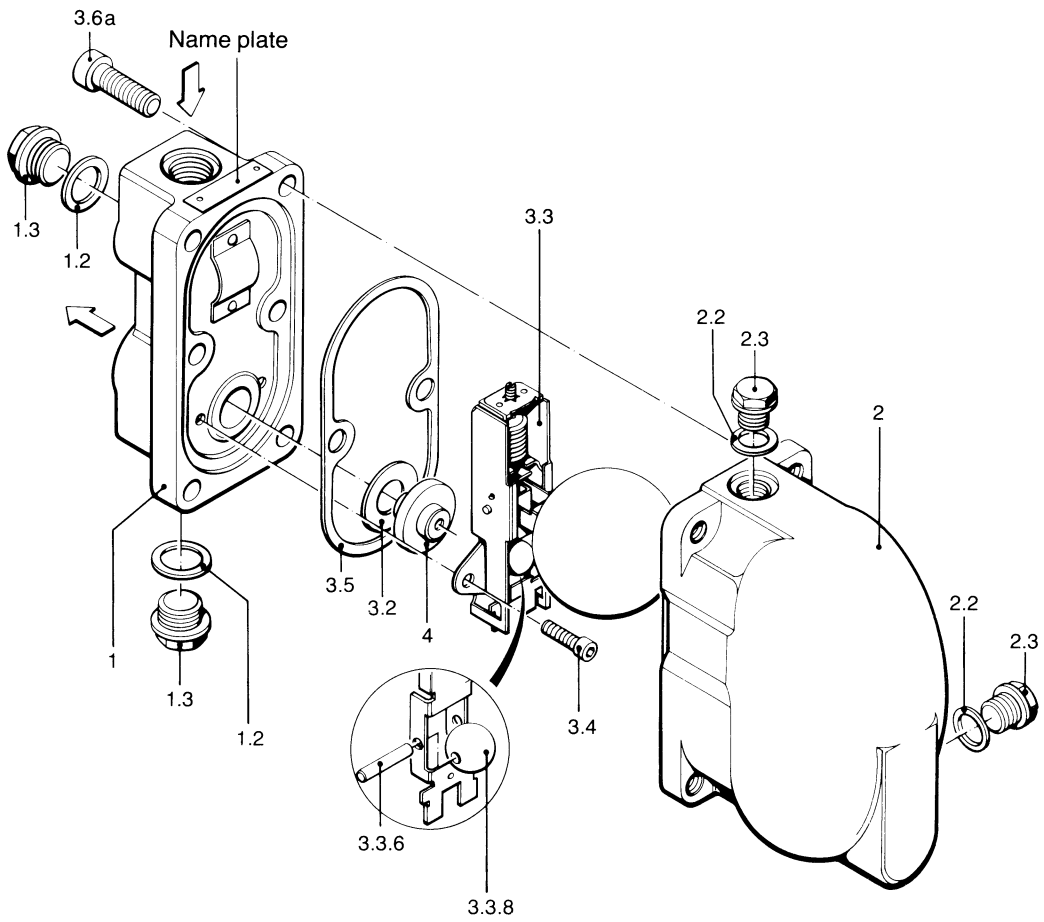
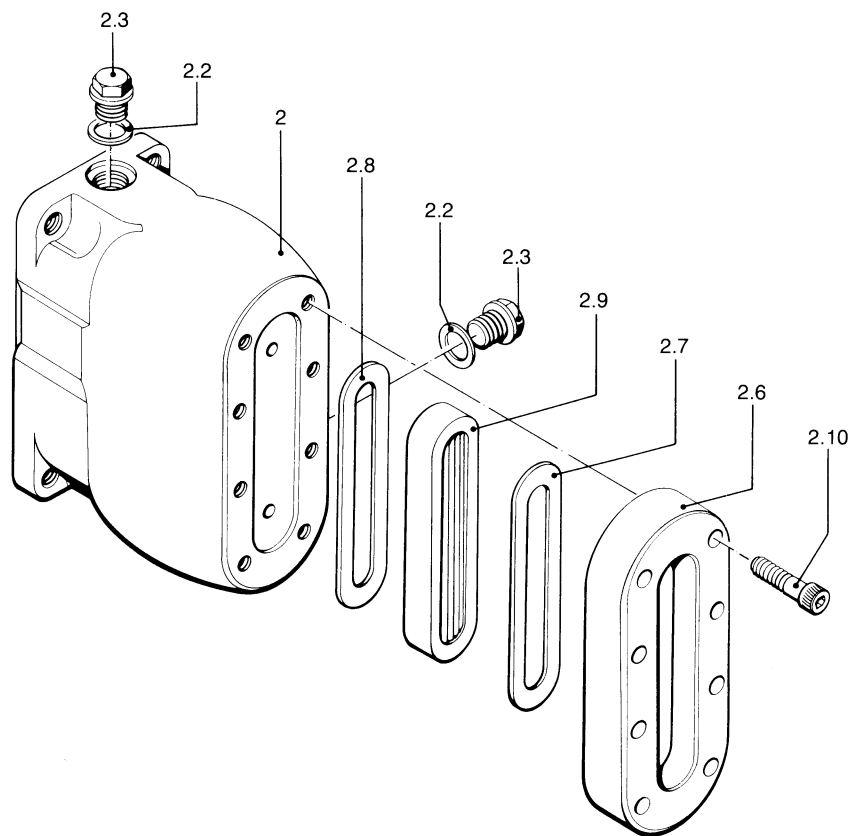


Fig. 4: Vertical design v



**Fig. 5:** Angle design e



**Fig. 6:** Sightglass cover

## Installation of Trap

The direction of flow is indicated by an arrow on the trap body. Take care of correct position of installation – the name plate should always be on top.

## Installation of Hand Vent Valve 2.4

1. The hand vent valve is supplied separately and must be fitted in place of upper plug 2.3 before submitting trap to pressure. Remove upper plug 2.3 with gasket 2.2.
2. Insert vent valve 2.4 ( $\frac{3}{8}$ " BSP) with gasket 2.2 and tighten applying a torque of 75 Nm.
3. Close valve 2.4 turning to the right.

## Lifting Device 2.5

When ordered lifting device 2.5 is supplied fitted. Turning the lever 2.5.7 to the left will lift the float and open the valve.

## Subsequent Installation of Lifting Device 2.5

1. Depressurize trap and remove lower plug 2.3 with gasket 2.2.
2. Insert lifting device 2.5 ( $\frac{3}{8}$ " BSP) with gasket 2.2 (check for damage) so that the lever slides along the bottom of the cover and is positioned underneath the ball float.
3. Tighten screwed joint of lifting device with a torque of 75 Nm. Mount external lever 2.5.7 and turn to the right until a resistance is felt.

## Drainage

1. Cut off steam, in the case of back pressure also shut off condensate line.
2. Carefully unscrew lower plug 2.3 so that the trap body can run empty.
3. If provided, open hand vent valve 2.4 and close immediately all condensate has drained off.
4. Screw in plug 2.3 with gasket 2.2 and tighten. Check gasket for damage.

## Maintenance

The UNA 23 and UNA 26 do not require any particular maintenance. It is, however, recommended to purge the trap from time to time, either

1. by operating the lifting device 2.5 during operation or
2. by unscrewing lower plug 2.3 and a brief opening of the isolating valve in the steam line. Do not forget to depressurize trap before unscrewing plug.

## Exchange of Control Unit 3.3 and Seat 4

1. Cut off steam and depressurize trap.
2. Unscrew socket-head screws 3.6a or hexagonal nuts 3.7 from fixing studs 3.6b and remove cover 2.
3. Unscrew socket-head screws 3.4, take out control unit 3.3 and seat 4.
4. Clean sealing surfaces, renew gasket 3.2.
5. Mount seat 4 and control unit 3.3, insert new gasket 3.5 and replace cover 2.

## Maintenance of Sightglass Cover

1. Unscrew socket-head screws 2.10 and take off flange 2.6.
2. Remove glass 2.9, clean and, if necessary, replace glass.
3. Clean sealing surfaces and insert new gaskets 2.7 and 2.8.
4. Mount glass 2.9 and flange 2.6. Tighten socket-head screws 2.10 in diagonally opposite pairs.

## Tools Required

Spanners A. F. 17, 19, 22, 24 mm  
5, 6 and 10 mm Allen keys  
4 mm screwdriver

## Important Notes

1. Shortly after first use tighten screws 3.6a or nuts 3.7 and screws 2.10 (of sight-glass) in diagonally opposite pairs.
2. The factory setting of the bellows (thermostatic element) must not be modified. If the setting is inadvertently modified, an approximate adjustment may be obtained as follows: Press float slightly down until a resistance is felt. Adjust length of bellows (dimension X in fig. 7) to **32\*mm for DN 15-25 mm ( $\frac{1}{2}$ -1")**  
**51.5 mm for DN 40, 50 mm ( $1\frac{1}{2}$ , 2")**  
\* for traps supplied from the third quarter of manufacture 1982 and up to 13 barg (185 psig) = 34.5 mm
3. After reassembly of trap check that hand vent valve 2.4 is in closed position and lifting lever 2.5.7 in normal position.

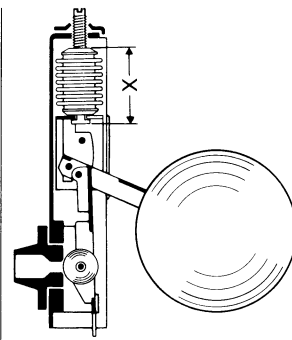


Fig. 7: Control unit Duplex

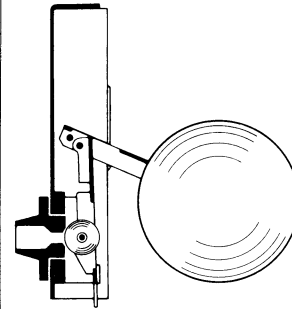


Fig. 8: Control unit Simplex

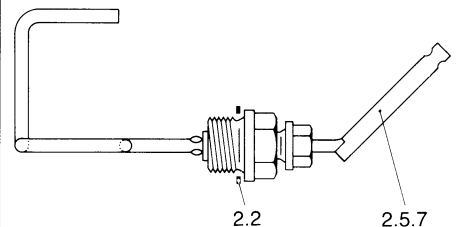


Fig. 9: Lifting device 2.5

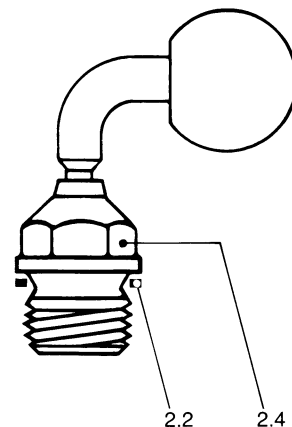


Fig. 10: Hand vent valve 2.4

## Spare Parts

Item No.	Designation	UNA 23 Order No.		UNA 26 Order No.		Number	
		DN 15-25 mm	DN 40, 50 mm	DN 15-25 mm	DN 40, 50 mm		
1	Body	no spare part				1	
2a	Cover for <b>h</b> and <b>e</b> designs with plugs 2.3 (DN 40 and 50 mm including 6 fixing studs 3.6 b)	560 126	560 128	560 129	560 131	1	
2b	Cover for <b>v</b> design with plugs 2.3 and 6 fixing studs 3.6b	560 127	560 128	560 130	560 131	1	
2c	Sightglass cover for <b>h</b> and <b>e</b> designs with parts 2.3 and 2.6-2.10 (DN 40 and 50 mm including 6 fixing studs 3.6 b)	560 135	560 137	560 138	560 140	1	
2d	Sightglass cover for <b>v</b> design with parts 2.3, 2.6-2.10 and 3.6 b	560 136	560 137	560 139	560 140	1	
2.2	Gasket	013 849	013 849	013 849	013 849	2	
2.3	Plug $\frac{3}{8}$ " BSP	012 537	012 537	012537	012537	2	
2.4	Hand vent valve with gasket 2.2	560058	560058	560058	560058	1	
2.5	Lifting device with gasket 2.2 and lever 2.5.7	560061	560062	560061	560062	1	
2.5.7	Lever for lifting device	514220	514220	514220	514220	1	
2.6	Flange for sightglass cover	514202	514201	514203	514205	1	
2.7	Gasket (exterior) for glass	523 248	523 249	523 248	523 249	1	
2.8	Gasket (interior) for glass	513970	514486	513970	514486	1	
2.9	Glass for water-level indicator	513968	514487	513968	514487	1	
2.10	Socket-head screw M 8 x 35	011 874	–	011 874	–	8	
		–	011 874	–	011 874	10	
3.1a	Deflector	<b>h</b> design	513 759	513 760	513 759	513 760	1
3.1b		<b>v</b> design	518 448	513 760	518 448	513 760	1
3.2	Seat gasket	522 388	522 389	522 388	522 389	1	
3.3a	Control unit Duplex including seat gasket 3.2, cover gasket 3.5, 2 socket-head screws 3.4 and seat	Orifice 32	–	–	560078	560093	1
3.3b		Orifice 22	–	–	560077	560092	1
3.3c		Orifice 13	560076	560091	560076	560091	1
3.3d		Orifice 8	560075	560090	560075	560090	1
3.3e		Orifice 4	560074	560089	560074	560089	1
3.3f		Orifice 2	560073	560088	560073	560088	1
3.3g		Orifice 32	–	–	560072	560087	1
3.3h	Orifice 22	–	–	560071	560086	1	
3.3i	Control unit Simplex including seat gasket 3.2, cover gasket 3.5, 2 socket-head screws 3.4 and seat	Orifice 13	560070	560085	560070	560085	1
3.3k		Orifice 8	560069	560084	560069	560084	1
3.3l		Orifice 4	560068	560083	560068	560083	1
3.3m		Orifice 2	560067	560082	560067	560082	1
3.3n	Control unit Simplex with parts 3.2, 3.4 and 3.5, without seat	560079	560094	560079	560094	1	
3.3p	Control unit Duplex with thermostatic element up to 13 barg (185 psig), including parts 3.2, 3.4 and 3.5, without seat	560080	560095	560080	560095	1	
3.3r	As 3.3p, with thermostatic element above 13 barg (185 psig)	–	–	560081	560096	1	
3.3.8	Ball valve with pin 3.3.6	560207	560208	560207	560208	1	
3.4	Socket-head screw	M 6 x 20 – DN 15-25 mm M 8 x 25 – DN 40, 50 mm	013 501	012 565	013 501	012 565	2
3.5	Cover gasket		522 243	522 244	522 243	522 244	
3.6a	Socket-head screw M 12 x 35 – DN 15-25 mm ( <b>h</b> and <b>e</b> designs)		013 121	–	013 121	–	6
3.6b	Fixing stud	M 12 x 35 – DN 15-25 mm, ( <b>v</b> design) M 16 x 45 – DN 40, 50 mm, ( <b>h</b> , <b>e</b> , <b>v</b> designs)	013 545	012 561	013 545	012 562	6
3.7	Hexagonal nut	M 12 – DN 15-25 mm ( <b>v</b> design) M 16 – DN 40, 50 mm ( <b>h</b> , <b>e</b> , <b>v</b> designs)	013 124	012 563	013 124	010 168	6
4a	Seat with gasket 3.2 and 2 socket-head screws 3.4	Orifice 32	–	–	560045	560051	1
4b		Orifice 22	–	–	560044	560050	1
4c		Orifice 13	560043	560049	560043	560049	1
4d		Orifice 8	560042	560048	560042	560048	1
4e		Orifice 4	560041	560047	560041	560047	1
4f		Orifice 2	560040	560046	560040	560046	1

★ Parts subject to wear (stock-keeping recommended)

### Torques Required for Tightening Parts at Room Temperature

Item No.						
2.3	75 Nm	3.4 (DN 15-25 mm)	5 Nm	3.6a (UNA 26, DN 15-25 mm, <b>h</b> and <b>e</b> designs)	60 Nm	
2.4	75 Nm	3.4 (DN 40, 50 mm)	10 Nm	3.7 (DN 15-25 mm, <b>v</b> design)	57 Nm	
2.5	75 Nm	3.6a (UNA 23, DN 15-25 mm, <b>h</b> and <b>e</b> designs)	40 Nm	3.7 (UNA 23v, DN 40, 50 mm)	75 Nm	
2.10	10 Nm			3.7 (UNA 26v, DN 40, 50 mm)	115 Nm	

# A1

**Steam Traps**  
**PN 16 and PN 40**  
**DN 15, 20, 25, 40, 50 mm**  
**(1/2, 3/4, 1, 1 1/2, 2')**

**UNA 23, UNA 26**



# GESTRA

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## Capacity Chart

The chart shows the maximum capacities of boiling hot condensate for the range of orifices (O) and sizes. The cold water capacities are approximately 1.1-1.7 times higher than the corresponding hot condensate figures. The factor increases with rising differential pressures.

The capacities are dependent on the differential pressure (working pressure). The differential pressure is the difference between inlet and outlet pressures and depends among other things on the run of the pipeline. If the condensate downstream of the trap is lifted, the differential pressure (working pressure) is reduced by approximately 1 bar for 7 m (or 2 psi for 3 feet) in lift.

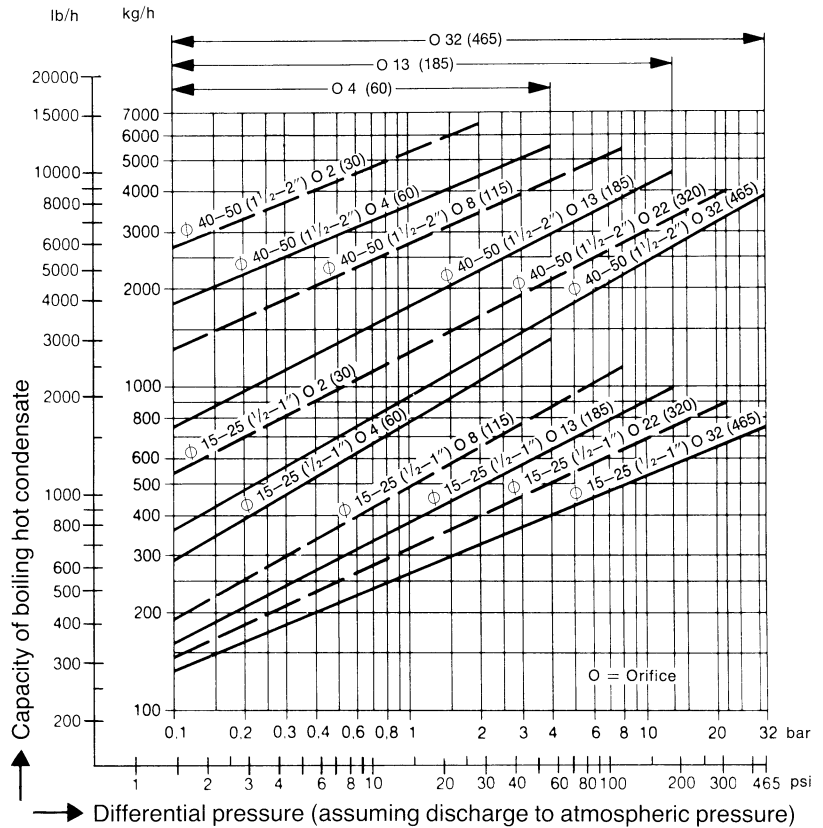
The maximum admissible differential pressure is dependent on the cross-sectional area of the orifice.

The standard designs of the traps are available for the following maximum differential pressures:

UNA 23 : 4 bar (60 psi) or 13 bar (185 psi)  
UNA 26: 13 bar (185 psi) or 32 bar (465 psi)  
(thick lines in the chart)

If, however, larger capacities are required, special orifices are available for differential pressures of:

UNA 23: 2 bar (30 psi) or 8 bar (115 psi)  
UNA 26: 2 bar (30 psi), 4 bar (60 psi),  
8 bar (115 psi) or 22 bar (320 psi)  
(dashed lines in the chart)



Technical modifications reserved.