

## GESTRA Steam Systems

**UNA 23**

**UNA 25**

**UNA 26**

**UNA 27**



### **Installation Instructions 810516-06**

Steam Traps

UNA 23, UNA 25, UNA 26, UNA 26h Stainless Steel, UNA 27h

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## Important Notes

### Usage for the intended purpose

#### **UNA 23, UNA 25:**

Use the steam traps only for the discharge of condensed steam within the admissible pressure/temperature ratings.

Contact the factory for specific recommendations concerning the chemical resistance and suitability of the valve material for the application in question.

#### **UNA 26, UNA 26h Stainless Steel, UNA 27h:**

Use the steam traps only for the discharge of condensates, liquids and condensable gases in pipes. Use the equipment only within the specified pressure and temperature ratings and check corrosion resistance and chemical suitability for the application in question.

### Safety note

The equipment must only be installed and commissioned by qualified staff.

Maintenance and service work must only be performed by adequately trained persons who have a recognised level of competence.



#### **Danger**

The steam trap is under pressure during operation.

When loosening flanged connections or sealing plugs, hot water, steam, corrosive liquids or toxic gases may escape. This presents the danger of severe burns and scalds to the whole body or severe cases of poisoning.

Installation and maintenance work should only be carried out when the system is depressurized. Isolate the trap from both upstream and downstream pressure.

The steam trap becomes hot during operation. This presents the risk of severe burns to hands and arms. Installation and maintenance work should only be carried out at room temperatures.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves for installation and maintenance work.



#### **Attention**

The name plate indicates the technical specification of the equipment.

Do not commission or operate a steam trap without name plate.

### PED (Pressure Equipment Directive)

The equipment fulfills the requirements of the Pressure Equipment Directive PED 97/23/EC. UNA 23 and UNA 25 for applications with fluids of group 2; UNA 26, UNA 26h stainless steel and UNA 27h for applications with fluids of group 1 and 2.

With CE marking (apart from equipment according to section 3.3).

### ATEX (Atmosphère Explosible)

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 can be used in potentially explosive areas 0, 1, 2, 20, 21, 22 (1999/92/EC). The equipment is not Ex marked.

## Explanatory Notes

### Scope of supply

#### **UNA 23h/v, UNA 25h/v, UNA26h/v, UNA 26h stainless steel, UNA 27h**

1 Steam trap UNA 2..  
1 Installation manual

#### **UNA 2.. with Simplex control**

1 Steam trap UNA 2..  
1 Hand vent valve with gasket  
1 Installation manual

#### **UNA 2.. with float lifting lever**

1 Steam trap UNA 2..  
Float lifting lever installed  
1 Lever extension  
1 Installation manual

### Description

UNA 2.. are ball float traps with rolling ball closing mechanisms.

The steam traps work independently of back pressure, thus ensuring universal application.

The steam trap UNA features a body with bolted cover and a control unit. Two different control units are available: Level-dependent SIMPLEX control for cold condensate and superheated steam, and temperature-dependent DUPLEX control with automatic deaeration for saturated steam systems.

Optional item: sightglass cover with integral water-level gauge glass (UNA 23, PN 16).

### Function

The ball valve of the control unit is operated by the float as a function of the condensate level in the trap. The cross-sectional area (CSA) of the orifice dictates the max. flowrate when the valve is completely open. The max. admissible differential pressure of the control unit is a function of the CSA of the orifice and the density of the fluid to be discharged. There are different closing units (orifices) available which can also be exchanged subsequently. Float traps equipped with control units DUPLEX enable automatic temperature-dependent deaeration of saturated steam systems during start-up and in continuous operation.

### Design

#### **UNA 23h, UNA 25h, UNA 26h, UNA 26h stainless steel:**

for installation in horizontal pipes

#### **UNA 23v, UNA 25v, UNA 26v:**

for installation in vertical pipes

#### **UNA 23h, UNA 23v:**

with sightglass cover (integrated reflexion water level indicator)

## Technical Data

### UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 27h

Orifices (O) (Seat design)	Max. admissible differential pressure <sup>1) 2)</sup> $\Delta PMX$ [bar]	UNA 23h/v	UNA 25h/v UNA 26h/v UNA 26h stainless steel	UNA 27h
0 2	2	●	●	
0 4	4	●	●	
0 8	8	●	●	
0 13	13	●	●	
0 16	16			●
0 22	22		●	
0 28	28			●
0 32	32		●	
0 45	45			●

<sup>1)</sup> Observe pressure/temp. specifications.

<sup>2)</sup> **Inlet** pressure minus **outlet** pressure.

### Pressure / Temperature Ratings

#### UNA 2... without sightglass cover:

For pressure / temperature ratings see indications on trap body or name plate: pressure class PN / Class, material number, max. temperature, max. pressure, max. differential pressure.

**UNA 23h/v:** max. admissible temperature: 300 °C

**UNA 25h/v:** max. admissible temperature: 350 °C

**UNA 26h stainless steel:** max. admissible temperature: 300 °C

**UNA 26h/v:** max. admissible temperature: 400 °C

**UNA 23h/v with sightglass cover:** max. admissible temperature: 240 °C

Reduced temperature limits for sightglass cover with integrated reflexion water level indicator.

If the pH value is above 9.0 and the fluid temperature exceeds 200 °C the glass will get more wear.

### Corrosion Resistance

When used for its intended purpose the safe functioning of the steam trap will not be impaired by corrosion.

### Sizing

The trap body must not be subjected to sharp increases in pressure.

The dimensional allowances for corrosion reflect the latest state of technology.

### Name Plate / Marking

For pressure and temperature ratings see indications on trap body or name plate.

According to EN 19 the name plate must specify:

- Manufacturer
- Type designation
- Pressure class PN or Class
- Material number
- Max. temperature
- Stamp on name plate, e. g.  $\frac{4}{04}$  specifies the manufacturing year and the quarter, in this case the 4<sup>th</sup> quarter in 2004.



Fig. 1

# Design

## Component Parts UNA 23h, UNA 25h, UNA 26h

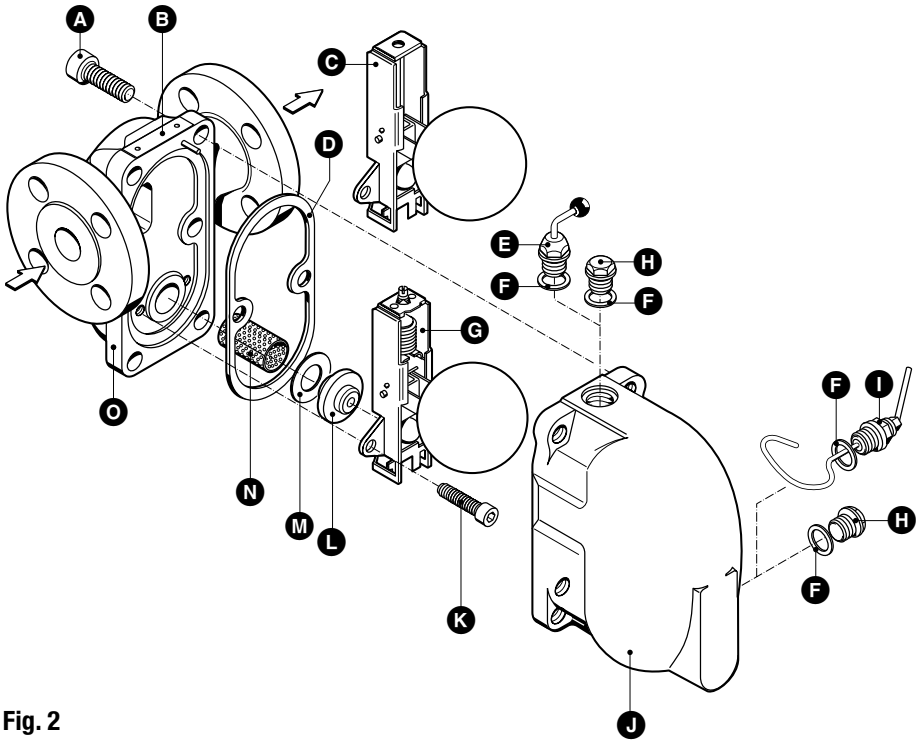
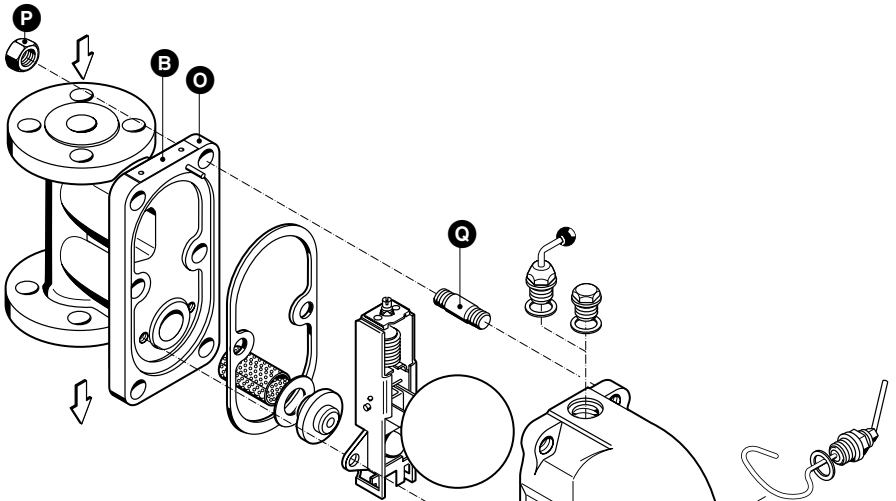


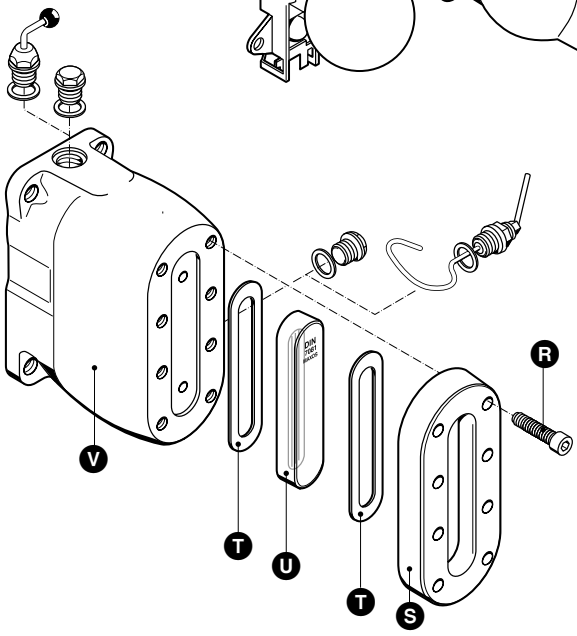
Fig. 2



**Component Parts UNA 23v, UNA 25v, UNA 26v, UNA 23h/v (sightglass cover)**



**Fig. 3**



**Fig. 4**

Component Parts UNA 27h

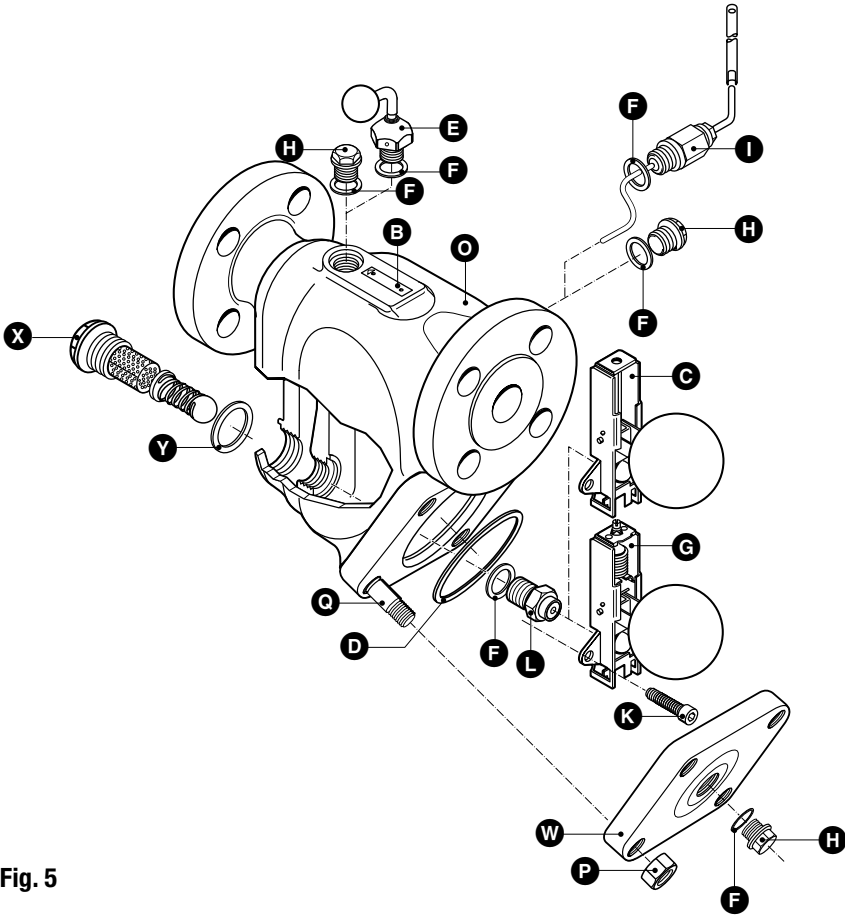


Fig. 5

### Key to Component Parts

- A** Hexagon-socket screw
- B** Name plate
- C** Control unit Simplex
- D** Body gasket (graphite/CrNi)
- E** Hand vent valve
- F** Gasket
- G** Control unit Duplex
- H** Plug
- I** Float lifting lever with handle
- J** Cover
- K** Hexagon-socket screw
- L** Orifice
- M** Seat gasket (graphite/CrNi)
- N** Deflector
- O** Body
- P** Hexagon nut
- Q** Fixing stud
- R** Hexagon-socket screw
- S** Flange for sightglass cover
- T** Gasket (graphite/CrNi)
- U** Water-level gauge glass
- V** Sightglass cover
- W** Body lid
- X** Non-return valve, cpl.
- Y** Gasket

## Installation

### UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 27h

The float traps can – depending on their body design – be installed in horizontal or vertical pipelines with downward flow.

#### Flanged Traps

1. Take care of correct position of installation. Name plate **B** must always be on top.
2. Take care of flow direction. The flow arrow is on the trap body.
3. Consider space required for opening trap. When the trap is installed a minimum space of at least 130 mm (DN 15-25) / 200 mm (DN 40, 50) is required for removing the cover **J** or **V** **C**.
4. Remove plastic plugs. They are only used as transit protection.
5. Clean seating surfaces of both flanges.
6. Install steam trap.

#### Screwed-Socket Traps

1. Take care of correct position of installation. Name plate **B** must always be on top.
2. Take care of flow direction. The flow arrow is on the trap body.
3. Consider space required for opening trap. When the trap is installed a minimum space of at least 130 mm (DN 15-25) / 200 mm (DN 40, 50) is required for removing the cover **J** or **V** **C**.
4. Remove plastic plugs. They are only used as transit protection.
5. Clean threads of screwed sockets.
6. Install steam trap.

#### Socket-Weld Traps

1. Take care of correct position of installation. Name plate **B** must always be on top.
2. Take care of flow direction. The flow arrow is on the trap body.
3. Consider space required for opening trap. When the trap is installed a minimum space of at least 130 mm (DN 15-25) / 200 mm (DN 40, 50) is required for removing the cover **J** or **V** **C**.
4. Remove plastic plugs. They are only used as transit protection.
5. Clean socket-weld ends.
6. Arc-weld trap only manually (welding process 111 and 141 in accordance with ISO 4063).

#### Butt-Weld Traps

1. Take care of correct position of installation. Name plate **B** must always be on top.
2. Take care of flow direction. The flow arrow is on the trap body.
3. Consider space required for opening trap. When the trap is installed a minimum space of at least 130 mm (DN 15-25) / 200 mm (DN 40, 50) is required for removing the cover **J** or **V** **C**.
4. Remove plastic plugs. They are only used as transit protection.
5. Clean butt-weld ends.
6. Arc-weld trap only manually (welding process 111 and 141 in accordance with ISO 4063) or use gas-welding process (welding process 3 in accordance with ISO 4063).

## Installation – continued –



### Attention

- Only qualified welders certified e. g. according to EN 287-1 may weld the steam trap into pressurized lines.  
The responsibility lies with the owner of the installation.

### Heat treatment of welds

A subsequent heat treatment of the welds is only required if this is necessary for the material in question, e. g. for 1.7335 (13CrMo4-5) / A182-F12 (not standard material).

### Hand vent valve

1. Remove plug **H**.
2. Insert gasket **F**, fit hand vent valve **E** in place.  
For torque see table “Torques” on page 15.
3. Close the hand vent valve.

### Tools

- Spanner A. F. 22 mm to DIN 3113, form B
- Torque spanner 20 – 120 Nm, to DIN ISO 6789

### Floating lifting lever (optional extra)

1. Take heed of the note “Danger” on page 4.
2. Remove plug **H**.
3. Mount float lifting lever **I** together with gasket **F**. Attach handle to float-lifting lever and hold it in a vertical position. For torque see table “Torques” on page 15.

## Commissioning

### UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 27h

Make sure that all flanged connections, the hand vent valve and the float lifting lever are firmly fixed to the trap, ensuring a tight, leakproof joint.

If the steam trap is to be used in a new installation which has not been rinsed yet, it may be necessary to check and – if required – clean the trap.

## Operation

### Hand vent valve

1. Take heed of the note “Danger” on page 4.
2. Open the hand vent valve if necessary.
3. Close hand vent valve firmly after the venting process.

### Float lifting lever

1. Take heed of the note “Danger” on page 4.
2. Attach handle to float-lifting lever **1**, **Fig. 2**.
3. Turn float-lifting lever **1** according to the direction arrow on the cover **J** / **V**.
4. Turn float-lifting lever **1** in the opposite direction of the arrow to close the valve and remove the handle.

## Maintenance

GESTRA steam traps type UNA do not require any special maintenance.

However, if used in new installations which have not been rinsed it may be necessary to check and clean the trap.

### Check steam trap

You can check the trap UNA for steam loss during operation using the ultrasonic measuring unit VAPOPHONE® or the test unit TRAPtest®.

In case of steam loss clean the trap and/or replace the control unit or orifice (closing unit).

### Clean / exchange control unit

1. Take heed of the note “Danger” on page 4.
2. Undo the body screws **A** or hexagon nuts **P**. Remove cover **J** / **V** from body **O**.
3. Unscrew hexagon-socket screws **K**, remove control unit **C** or **G** and orifice **L**.
4. Replace control unit **C** or **G** and orifice **L** in case of visible signs of wear or damage.
5. Clean body, internals and all gasket surfaces.
6. Apply heat-resistant lubricant to all threads and the seating surfaces of the closing unit and cover (use for instance WINIX® 2150).
7. Insert orifice **L**, attach control unit **C** or **G** and tighten screws **K** alternately. For torque see table “Torques” on page 15.
8. Insert a new body gasket **D**.
9. Put cover onto the body. Tighten body screws **A** or hexagon nuts **P** alternately in several steps to the torque indicated in the table on page 15.

## Tools

- Spanner A. F. 17, 19, 22 and 24 mm to DIN 3113, form B.
- Allen key A. F. 5, 6, 10 mm to ISO 2936
- Torque spanner 10–60 Nm, 60–120 Nm; DIN ISO 6789

## Clean/exchange sightglass cover

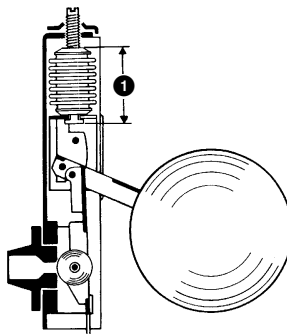
1. Take heed of note “Danger” on page 4.
2. Undo hexagon-socket screws **R**. Remove flange **S** from body **V**.
3. Remove and clean water-level gauge glass **U**.
4. Replace water-level gauge glass **U** and gaskets **T** in case of visible signs of wear or damage.
5. Clean all gasket surfaces.
6. Apply heat-resistant lubricant to all threads and seating surfaces of the flange (use for instance WINIX® 2150).
7. Insert gasket **T** and water-level gauge glass **U**. Install flange **S** and tighten the screws **R** alternately and evenly. For torque see table “Torques” on page 15.



### Attention

Do not change the factory setting of the bellows (thermostatic element). In case of inadvertent misadjustment restore the factory setting. When the float ball is pushed right down the dimension **1** (length of bellows) should be as follows:

Type	Size	Design	Dimension <b>1</b>
UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 26h stainless steel	DN 15 - 25	Control unit up to 13 bar (soft bellows)	34.5 mm
	DN 15 - 25	Control unit up to 32 bar (hard bellows)	32.0 mm
	DN 40, 50	Control unit 2 up to 32 bar	34.5 mm
UNA 27h	DN 15 - 25	Control unit 16 up to 45 bar	32.0 mm
	DN 40, 50	Control unit 16 up to 45 bar	51.5 mm



## Torques

Designation	Torque [Nm]							
	UNA 23h/v		UNA 25h/v UNA 26h/v		UNA 26h stainless steel		UNA 27h	
	DN 15-25	DN 40, 50	DN 15-25	DN 40, 50	DN 15-25	DN 40, 50	DN 25	DN 40, 50
Hexagon-socket screw <b>A</b>	40 <sup>1)</sup>		60 <sup>1)</sup>		60			
Hand vent valve <b>E</b>	75	75	75	75	140	140	140	140
Plug <b>H</b>	75	75	75	75	140	140	140	140
Float lifting <b>I</b>	75	75	75	75	140	140	170	170
Hexagon-socket screw <b>K</b>	5	10	5	10	5	10	5	10
Orifice <b>L</b>							180	240
Hexagon nut <b>P</b>	40 <sup>2)</sup>	75	60 <sup>2)</sup>	115		180	115	115
Hexagon-socket screw <b>R</b>	15	15						

<sup>1)</sup> UNA..h for installation in horizontal pipes

<sup>2)</sup> UNA..v for installation in vertical pipes



## Spare Parts

### Spare part list UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 27h

Item	Designation	Ref. no.	Ref. no.	
		DN 15 – 25	DN 40 + 50	
<b>D</b>	Body gasket <sup>1)</sup> (graphite/CrNi)	560 491	560 492	
<b>F</b>	Gasket <sup>1)</sup> 17 x 23	560 486	560 486	
<b>T</b>	Sightglass gasket <sup>2)</sup> (graphite/CrNi)	560 487	560 488	
<b>U T</b>	Reflection sightglass with gasket	560 481	560 480	
<b>M</b>	Seat gasket <sup>1)</sup> (graphite/CrNi)	560 489	560 490	
<b>G L M</b> <b>K D</b>	Control unit Duplex, complete	Orifice 2	560 073	560 088
		Orifice 4	560 074	560 089
		Orifice 8	560 075	560 090
		Orifice 13	560 076	560 091
		Orifice 22	560 077	560 092
		Orifice 32	560 078	560 093
<b>C L M</b> <b>K D</b>	Control unit Simplex, complete	Orifice 2	560 067	560 082
		Orifice 4	560 068	560 083
		Orifice 8	560 069	560 084
		Orifice 13	560 070	560 085
		Orifice 22	560 071	560 086
		Orifice 32	560 072	560 087

<sup>1)</sup> Minimum order quantity 20 items.

<sup>2)</sup> Minimum order quantity 10 items. Contact your local dealer for smaller quantities.

## Spare Parts – continued –

### Spare part list UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 27h – continued –

Item	Designation	Ref. no.	Ref. no.	
		DN 15–25	DN 40 + 50	
<b>C M K</b> <b>D</b>	Control unit Simplex, complete <b>without</b> orifice	560 079	560 094	
<b>G M K</b> <b>D</b>	Control unit Duplex up to 13 bar, complete <b>without</b> orifice	560 080	560 095	
<b>G M K</b> <b>D</b>	Control unit Duplex above 13 bar, complete <b>without</b> orifice	560 081	560 096	
<b>L M K</b>	Orifice, complete <b>without</b> control unit	Orifice 2	560 040	560 046
		Orifice 4	560 041	560 047
		Orifice 8	560 042	560 048
		Orifice 13	560 043	560 049
		Orifice 22	560 044	560 050
		Orifice 32	560 045	560 051
<b>E F</b>	Hand vent valve with gasket	560 058		

## Spare part list UNA 26h Stainless Steel

Item	Designation	Ref. no.		
		DN 15 – 25	DN 40 + 50	
<b>D</b>	Body gasket <sup>1)</sup> (graphite/CrNi)	560 491	560 492	
<b>F</b>	Gasket <sup>1)</sup> 17 x 23	560 514	560 514	
<b>M</b>	Seat gasket <sup>1)</sup> (graphite/CrNi)	560 489	560 490	
<b>G L M</b> <b>K D</b>	Control unit Duplex, complete	Orifice 2	560 394	560 388
		Orifice 4	560 395	560 389
		Orifice 8	560 396	560 390
		Orifice 13	560 397	560 391
		Orifice 22	560 398	560 392
		Orifice 32	560 399	560 393
<b>C L M</b> <b>K D</b>	Control unit Simplex, complete	Orifice 2	560 097	560 104
		Orifice 4	560 098	560 105
		Orifice 8	560 099	560 106
		Orifice 13	560 100	560 107
		Orifice 22	560 101	560 108
		Orifice 32	560 102	560 109

<sup>1)</sup> Minimum order quantity 20 items.

<sup>2)</sup> Minimum order quantity 10 items. Contact your local dealer for smaller quantities.

## Spare Parts – continued –

### Spare part list UNA 26h Stainless Steel – continued –

Item	Designation	Ref. no	Ref. no.	
		DN 15–25	DN 40 + 50	
<b>C M K</b> <b>D</b>	Control unit Simplex, complete <b>without</b> orifice	560 103	560 110	
<b>G M K</b> <b>D</b>	Control unit Duplex up to 13 bar, complete <b>without</b> orifice	560 401	560 403	
<b>G M K</b> <b>D</b>	Control unit Duplex above 13 bar, complete <b>without</b> orifice	560 400	560 402	
<b>L M K</b>	Orifice, complete <b>without</b> control unit	Orifice 2	560 111	560 117
		Orifice 4	560 112	560 118
		Orifice 8	560 113	560 119
		Orifice13	560 114	560 120
		Orifice 22	560 115	560 121
		Orifice 32	560 116	560 122
<b>E F</b>	Hand vent valve with gasket	560 125		

## Spare part list UNA 27h

Item	Designation	Ref. no.	Ref. no.	
		DN 25	DN 40 + 50	
<b>D</b>	Body gasket <sup>1)</sup> (graphite/CrNi)	522 247	522 248	
<b>F</b>	Gasket <sup>1)</sup> 17 x 23	560 514	560 514	
<b>G L M</b> <b>K D</b>	Control unit Duplex, complete	Orifice 16	560 376	560 379
		Orifice 28	560 377	560 380
		Orifice 45	560 378	560 381
<b>C L M</b> <b>K D</b>	Control unit Simplex, complete	Orifice 16	560 370	560 373
		Orifice 28	560 371	560 374
		Orifice 45	560 372	560 375
<b>C M K</b> <b>D</b>	Control unit Simplex, complete <b>without</b> orifice	560 366	560 368	
<b>G K</b> <b>D</b>	Control unit Duplex, complete <b>without</b> orifice	560 367	560 369	
<b>L M K</b>	Orifice, complete <b>without</b> control unit	Orifice 16	560 384	560 387
		Orifice 28	560 383	560 386
		Orifice 45	560 382	560 385
<b>X</b>	Non-return valve, complete	560 406	560 407	
<b>E F</b>	Hand vent valve with gasket	560 058		

<sup>1)</sup> Minimum order quantity 10 items. Contact your local dealer for smaller quantities.

## Annex

### CE Declaration of Conformity

We hereby declare that the pressure equipment **UNA 23h/v, UNA 25h/v, UNA 26h/v, UNA 26h stainless steel and UNA 27h**, conform to the following European Directive:

- EC Pressure Equipment Directive (PED) No. 97/23 of 29 May 1997 – apart from equipment according to section 3.3

Applied conformity assessment procedure acc. to Annex III: module H, verified by the Notified Body 0525.

This declaration is no longer valid if modifications are made to the equipment without prior consultation with us.

Bremen, 10<sup>th</sup> December 2004  
GESTRA AG



Head of Design Dept.  
Uwe Bledschun  
(Academically qualified engineer)



Quality Assurance Representative  
Lars Bohl  
(Academically qualified engineer)

**For your notes**



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