

Ball-Float Steam Trap

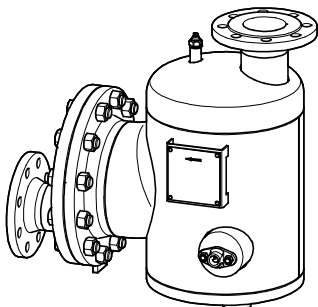
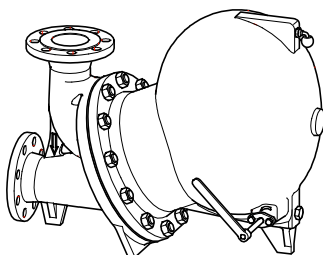
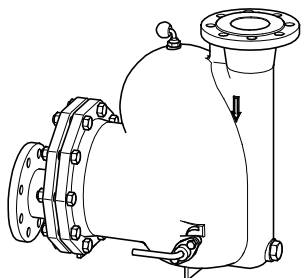
UNA–Special

Type 62B

PN 25

PN 63

UNA PN 25



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Foreword

This installation & operating manual will help you use the following types of equipment safely and efficiently for their intended purpose.

- ▶ UNA–Special type 62B
- ▶ UNA–Special PN 25
- ▶ UNA–Special PN 63
- ▶ UNA PN 25

These types will be called equipment in this document.

This installation & operating manual is intended for anyone commissioning, using, operating, servicing, cleaning or disposing of this equipment and, in particular, for professional after-sales service technicians, qualified personnel and authorised and trained staff.

All of these persons must read and understand the content of this installation & operating manual.

Following the instructions given in this installation & operating manual helps avoiding danger and increases the reliability and service life of the equipment. Please note that in addition to the instructions given in this installation & operating manual you must also observe all locally applicable rules and regulations concerning the prevention of accidents as well as approved safety guidelines for good professional practice.

Availability

Keep this installation & operating manual together with the plant documentation for future reference. Make sure that this installation & operating manual is available to the operator.

The installation & operating manual is part of the equipment. Please hand over this installation & operating manual when selling the equipment or passing it on.

Formatting features in the document

Certain text elements of this installation & operating manual feature a specific typographic design. You can easily distinguish the following text elements:

Standard text

Cross-reference

- ▶ Listing
 - ▶ Sub-items in listings
- Steps for action.



Here you will find additional useful information and tips serving to assist you in using the equipment to its fullest potential.

Safety

Use for the intended purpose

UNA Special and UNA PN 25 are designed for draining condensate from steam systems.

Equipment with control unit SIMPLEX can also be used for discharging condensate from other gases or gas mixtures.

Equipment with control unit DUPLEX is designed for additional air venting the installation.

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.

Correct use includes compliance with the instructions given in this installation & operating manual, in particular obedience to all safety instructions.

Any other use of the equipment is considered to be improper.

Note that the equipment is also used incorrectly if the materials of the equipment are not suitable for the fluid.

Basic safety notes

Risk of severe injuries

- ▶ The equipment is under pressure during operation and may be hot. Before carrying out any work on the equipment make sure that the following requirements are met:
 - ▶ The pipes must be depressurized (0 bar).
 - ▶ The fluid must be completely removed from the pipes and the equipment.
 - ▶ During work on the equipment the installation must be switched off and protected against unauthorised or unintended activation.
 - ▶ The pipes and the equipment must have cooled down to room temperature (approx. 20 °C).
- ▶ If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment. Before working on the equipment make sure that it is completely decontaminated. Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- ▶ The equipment must only be used with fluids that do not attack the material and the gaskets and sealings of the equipment. Otherwise leaks may occur and hot or toxic fluid could escape.
- ▶ The equipment and its component parts must only be mounted or removed by qualified personnel. A qualified person must be acquainted with and experienced in the following:
 - ▶ Making pipe connections.
 - ▶ Selecting suitable lifting gear and understanding the rules for its safe use.
 - ▶ Working with dangerous (contaminated, hot or pressurized) fluids.
- ▶ If the admissible operating limits are exceeded, the equipment may be destroyed and hot or pressurised medium may escape. Make sure that the equipment is always used within the admissible operating limits.
You can find information on the operating limits in the "*Technical data*" section.

- ▶ If unsuitable lifting gear is used or the gear is used improperly the equipment or parts of it could fall down.
 - ▶ Make sure that only qualified personnel lifts the equipment or parts of it.
 - ▶ Make sure that nobody is standing or working below the hoisted equipment.
 - ▶ Make sure that the lifting gear is of sufficient strength for the load to be hoisted and that the load is properly secured and attached to it. For more information on the nature and weight of the components and safe lifting points please contact the manufacturer.
 - ▶ Make sure that all locally applicable regulations on safety and the prevention of accidents are strictly adhered to.

Risk of minor injuries

- ▶ Sharp edges on internals present the danger of cuts to hands. Always wear industrial gloves when servicing the equipment.
- ▶ If the support of the equipment during installation is insufficient the equipment might fall down, thereby causing bruises or injuries. Make sure the equipment is safely held in place during installation and cannot fall down. Wear protective safety footwear.

Information on property damage or malfunctions

- ▶ Malfunctions will occur if the equipment is installed in a wrong position or with the flow arrow pointing in the opposite direction of the fluid flow. This may result in damage to the equipment or the installation. Make sure that the flow arrow on the equipment body matches the indicated direction of the fluid flow in the pipe.
- ▶ If the material is unsuitable for the fluid, increased wear may occur and fluid may escape. Make sure that the material is suitable for the fluid used in your installation.

Qualification of personnel

A qualified person must be acquainted with and experienced in the following:

- ▶ the pertinent on-site rules and regulations for preventing fire and explosions as well as industrial safety regulations
- ▶ working on pressure equipment
- ▶ making pipe connections
- ▶ working with dangerous (hot or pressurized) fluids
- ▶ lifting and transporting loads
- ▶ observing all notes and instructions in this installation & operating manual and the applicable documents

Protective gear

The operator must ensure that anyone working on the equipment must wear the required protective clothing and safety gear stipulated for the site of installation. The protective clothing must be suitable for the used media and must protect the wearer against safety and health hazards associated with a particular job to be carried out at the site of installation. Protective clothing & equipment must provide protection from potential hazards, in particular from injuries to:

- ▶ Head
- ▶ Eyes
- ▶ Body
- ▶ Hand
- ▶ Feet
- ▶ Hearing

Note that this list is not exhaustive. The operator must establish personal protective equipment guidelines and specify any additional protective gear that is required if the worker is exposed to a specific risk at the site of installation.

Typographic features of warning notes



DANGER

Notes with the heading **DANGER** warn against imminent dangerous situations that can lead to death or serious injuries.



WARNING

Notes with the heading **WARNING** warn against possibly dangerous situations that could lead to death or serious injuries.



CAUTION

Notes with the heading **CAUTION** warn against dangerous situations that could lead to minor or moderate injuries.

Formatting features for warnings of property damage

Attention!

This information warns of a situation leading to property damage.

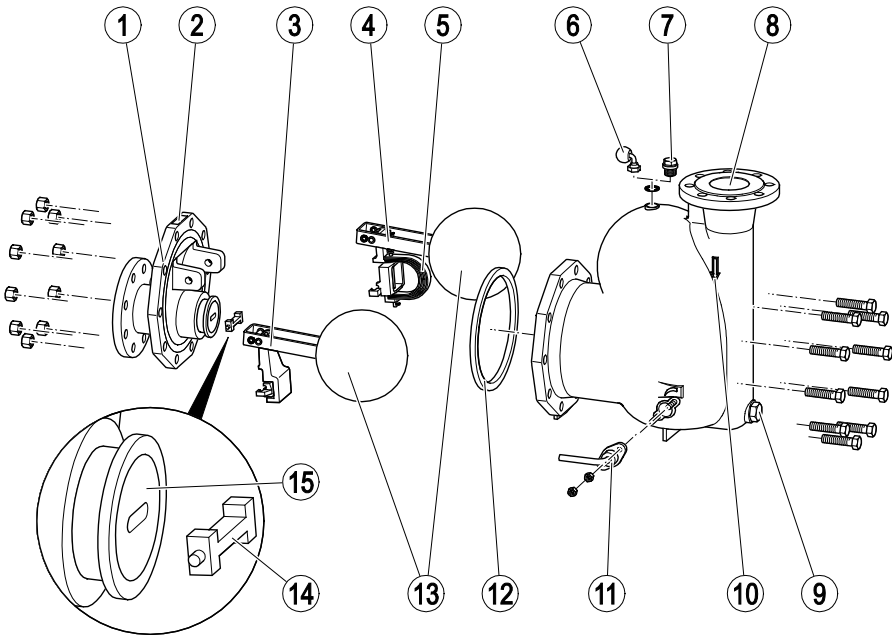
Description

Scope of supply and equipment specification

Scope of supply

Our equipment is delivered packed and ready for assembly.

Component parts



No.	Designation
1	Connecting element
2	Name plate
3	Control unit SIMPLEX
4	Control unit DUPLEX
5	U-clamp for thermostat
6	Hand vent valve
7	Sealing plug
8	Body

No.	Designation
9	Drain plug
10	Direction of flow arrow
11	Manual lifting device
12	Gasket
13	Ball float
14	Slider
15	Seat (orifice)

Optional extras

The equipment is available with a control unit DUPLEX as optional extra for automatic air-venting.

Equipment without control unit DUPLEX is provided as standard with a hand-vent valve.



The following drawings show equipment with control unit DUPLEX.

The maximum differential pressure ΔPMX of the equipment depends on the orifice (AO) used.

The control unit is available with different versions of orifice ("AO").

AO	ΔPMX	UNA-Special			UNA PN 25 DN 80-100
	[bar]	PN 25	PN 63	Type 62B	
2	2	X ¹	—	X ²	X
3.5	3.5	X ³	—	X	X
5	5	X	—	X	X
8	8	—	—	—	X
10	10	X	—	X	—
12	12	—	—	—	X
16	16	X	X	X	X
22	22	X	X	—	X
32	32	—	X	—	—
40	40	—	X	—	—
45	45	—	X	—	—

- 1 Not available for DN 50.
- 2 Not available for DN 80.
- 3 Not available for DN 65.



Depending on the size of the orifice, the seat of the orifice can be provided with two or three slots.

End connections

The equipment is available with the following end connections:

- Flanges

The following flange types are available:

- Flange to EN
- Flange to ASME
- Flange to EN, drilled to ASME

Name plate

The nameplate can be located at different positions:

- On top of the body
- On top of the flange between body and connecting element
- On the side of the flange between body and connecting element

The indications on the name plates vary according to the equipment type.

The name plate may specify the following:

- Manufacturer
- Type designation
- Design
- Nominal size
- Pressure rating
- Orifice or max. admissible differential pressure
- CE marking
- Date of manufacturing

The following items are indicated on the equipment body:

- Material
- Identification marking of material testing
- Batch code
- CE marking
- Direction of flow

The manufacturing date is located at different positions depending on the equipment type.

- ▶ on the name plate
- ▶ on the body next to the name plate
- ▶ on the body next to the connection

The manufacturing date is stated as quarter and year of the production.

Example: "3/10" reads: manufactured in the third quarter of 2010.

The following items are indicated on the end connections:

- ▶ Flange size
- ▶ Flange face type (RJ number)

Application of European Directives

Pressure Equipment Directive

The equipment conforms to this directive (see "Manufacturer's Declaration" section) and can be used for the following media:

UNA–Special type 62B, PN 16:

- ▶ Fluids of group 2

UNA–Special PN 25,
UNA–Special PN 63,
UNA PN 25:

- ▶ Fluids of group 1
- ▶ Fluids of group 2

ATEX Directive

The equipment does not have its own potential ignition source and is not subject to this directive (see "Manufacturer's Declaration" section).

When installed, static electricity may arise between the equipment and the connected system.

When used in potentially explosive atmospheres, the plant manufacturer or plant operator is responsible for discharging or preventing possible static charge.

If it is possible for medium to escape, e.g. through actuating mechanisms or leaks in threaded joints, the plant manufacturer or plant operator must take this into consideration when dividing the area into zones.

Task and function

Purpose

UNA Special and UNA PN 25 are designed for draining condensate from steam systems.

Equipment with control unit SIMPLEX can also be used for discharging condensate from other gases or gas mixtures.

Equipment with control unit DUPLEX is designed for additional air venting the installation.

Function

The ball float 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.

The float-lifting lever allows you to lift the float manually.

The optional hand-vent valve is a manual air venting facility.

Storing and transporting the equipment

Attention!

Equipment can be damaged if stored or transported improperly.

- Close all openings with the sealing plugs or covers supplied with the equipment or use similar sealing covers.
- Protect the equipment against moisture and corrosive atmospheres.
- Please contact the manufacturer if the specified transport and/or storage requirements cannot be met.

Storing the equipment

- Please observe the following items when storing the equipment:
 - ▶ Do not store the equipment for more than 12 months.
 - ▶ Use the supplied sealing plugs or other suitable seal caps in order to seal off all openings of the equipment.
 - ▶ Protect the sealing surfaces and contact areas against mechanical damage.
 - ▶ Protect the equipment and all components against hard shocks and impacts.
 - ▶ Store the equipment only in closed rooms that meet the following environmental conditions:
 - ▶ Air humidity below 50 %, not condensing
 - ▶ Indoor air: clean, salt-free and non-corrosive
 - ▶ Temperature 5–40 °C.
- Make sure that all these requirements are always met when storing the equipment.
- Please contact the manufacturer if you cannot comply with the recommended storage conditions.

Transporting the equipment



CAUTION

Do not drop the equipment. If it falls down it may cause bruises and injuries.

- To transport and mount the equipment safely use suitable lifting gear.
- Connect the noose strap of the lifting gear to the body.
- Provide sufficient support for the equipment during transport and installation.
- Wear protective safety footwear.

Lightweight equipment may be transported and mounted without using any lifting gear.

To lift equipment the weight of which exceeds approx. 25 kg, you need the help of a second person or suitable lifting gear.

Your physical strength and on-site regulations and conditions determine what weight can be lifted and if support is required.

- Meet the requirements for storage also when transporting the equipment.
- Prior to transport seal off connections with sealing plugs.



If you do not have the sealing plugs supplied with the equipment use appropriate seal caps to seal off the connections.



DANGER

Risk of bruises if the equipment or component parts fall down.

- Always wear protective gear when working on the equipment.
- Use suitable lifting gear when moving or lifting the equipment and/or component parts.
- Make sure that the equipment cannot topple over.
- To lift the equipment use only the valve body or the bonnet.
- Make sure that nobody is standing below the lifted equipment.

The protective gear must comprise at least the following:

- Safety helmet to EN 397
- Safety footwear to EN ISO 20345
- Protective leather gloves to EN 388

For more information on suitable safety clothing and safety gear refer to the safety data sheet of the fluid in question.

The lifting gear must be of sufficient strength for the equipment including the actuator.

For more information on the weight of the equipment see the attached documents. For more information on the weight of the actuator see the documents provided by the actuator manufacturer.

- For short distances (only a few metres) you can transport the equipment unpacked.
- When transporting the equipment over larger distances use the original packaging.
- If you do not have the original packaging use a box that protects the equipment adequately against corrosion and physical damage.



For a short period of time the equipment may be transported even if the temperature is below 0 °C, provided that the equipment is completely empty and dry.

Mounting and connecting the equipment

Preparing installation



DANGER

Risk of bruises if the equipment or component parts fall down.

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The lifting gear must be of sufficient strength for the equipment including the actuator.

For more information on the weight of the equipment see the attached documents. For more information on the weight of the actuator see the documents provided by the actuator manufacturer.

- Take the equipment out of the transport packaging.
- Check the equipment for transport damage.
- Contact the manufacturer if you detect any kind of shipping damage.

When supplied by the factory, the connections may be sealed off with sealing plugs.

- Remove sealing plugs before mounting the equipment.
- Keep the sealing plugs and the packing for further use.



DANGER

Personnel working on pipes are exposed to safety risks and may suffer severe injuries, poisoning or even loss of life.

- Make sure that no hot or hazardous fluid is in the equipment or the pipes.
- Make sure that the pipes upstream and downstream of the equipment are depressurised.
- Make sure that the installation is switched off and protected against unauthorised or unintended activation.
- Make sure that the equipment and the pipes have cooled down to room temperatures.
- Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.

For more information on suitable protective clothing and safety gear refer to the safety data sheet of the fluid in question.

- Drain pipes until they are empty.
- Make sure that all pipelines upstream and downstream of the equipment are depressurised.
- Switch the installation off and protect it against unauthorised or unintended re-activation.

Connecting the equipment



DANGER

Incorrectly connected equipment can cause fatal accidents or severe injuries.

- Make sure that only qualified skilled personnel connect the equipment to pipes.
- Make sure that the flow arrow on the equipment body matches the direction of flow in the pipe.

Specialist personnel must be highly qualified and fully experienced in making pipe connections for the respective type of end connection.

Attention!

Equipment will be damaged if the end connections are undersized.

- Make sure that the connections are strong and rigid enough to support the weight of the equipment and to withstand the forces that occur during operation.

To allow easy access for routine servicing and exchanging components, leave sufficient space between the connecting element and adjacent installation parts.

- The following table indicates the required withdrawal distance for the different types of equipment:

Type	Service dimension [mm]
UNA–Special type 62B PN 16	
DN 80	490
DN 100	700
UNA–Special PN 25	
DN 50	440
DN 65	470
UNA–Special PN 63	
DN 65	550
DN 80	680
DN 100	700
UNA PN 25	
DN 80	470
DN 100	570

- Make sure that the pipe system of the plant is clean.
- Make sure that the equipment is free from foreign matter.

Attention!

Malfunions may occur if the equipment is installed incorrectly.

- The equipment must be installed with the inlet end at the top and with the float arm in a horizontal plane so that it rises and falls vertically.
-
- Make sure that the equipment is safely mounted and that all connections are made correctly.

Operation

Do not work on the equipment while it is operating.



DANGER

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- Make sure that the pipes upstream and downstream of the equipment are depressurised.
- Make sure that the installation is switched off and protected against unauthorised or unintended activation.
- Make sure that the equipment and the pipes have cooled down to room temperatures.
- Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.

For more information on suitable protective clothing and safety gear refer to the safety data sheet of the fluid in question.

The hand vent valve allows manual gas venting.

- To vent gas or air open the hand vent valve.
- Close the hand vent valve handtight after venting.

The drain plug allows you to empty the equipment.

- Loosen the drain plug and allow the fluid to drain completely from the equipment.
- After draining close the drain plug handtight.

The optional float-lifting lever allows the float to be manually lifted irrespective of the liquid level in the trap. It can be used to purge any dirt out of the equipment and away from the seat area by opening the orifice and draining the liquid.

- To open the equipment turn the lever clockwise when viewed from the body.
- To close the equipment turn the float-lifting lever anticlockwise when viewed from the body.

After operation



DANGER

If fluid escapes personnel may suffer severe injuries, poisoning or even loss of life.

- After working on the equipment make sure that all connections and valves are tight.
 - Make sure that the gaskets of the body are leakproof.
-



DANGER

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
 - Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
 - Make sure that the equipment is completely decontaminated before carrying out any service work.
 - Follow the pertinent instructions for handling the hazardous substances in question.
-



DANGER

Personnel working on pipes are exposed to safety risks and may suffer severe injuries, poisoning or even loss of life.

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 - Make sure that the pipes upstream and downstream of the equipment are depressurised.
 - Make sure that the installation is switched off and protected against unauthorised or unintended activation.
 - Make sure that the equipment and the pipes have cooled down to room temperatures.
 - Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.
-

For more information on suitable protective clothing and safety gear refer to the safety data sheet of the fluid in question.

Attention!

Frost damage may occur when the installation is shut down.

- Drain the equipment if ambient temperatures below 0 °C (frost) are to be expected.
-

Removing external dirt deposits

- To remove dirt deposits rinse the equipment with fresh water and wipe it with a clean, lint-free cloth.
- To remove any persistent residues use a cleaning agent that is suitable for the material and carefully wipe the equipment with a clean, lint-free cloth.

Maintaining the equipment

For work on the equipment you will need the following tools:

- ▶ Combination spanners of various sizes
- ▶ Several torque spanners to DIN ISO 6789, covering a torque range of 10–500 Nm
- ▶ Copper punch, 20–30 mm
- ▶ Hammer

To fix the seat of the UNA Special PN 63 firmly in place you need welding equipment.



Malfunctions may occur if the equipment is used with different types of condensate: The following condensates in particular cause problems:

- very oily condensates
- condensates that resinify or become gummy
- condensates that recrystallize
- condensates that contain solid matter.

In these cases check the equipment at regular intervals for contamination and, if necessary, remove dirt deposits.

To reduce contamination we recommend installing a sedimentation vessel or a dirt pocket arrangement upstream of the equipment.

Normally you do not have to clean the internal parts of the equipment.

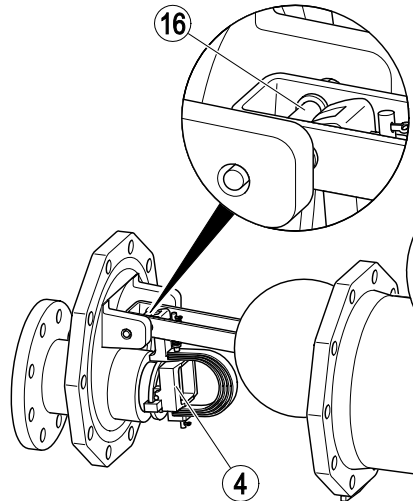
To clean the equipment completely take off the connecting element and remove the control unit.

Removing the connector

- Loosen the screws between the body and the connecting element.
- Detach the connecting element from the body.
- Remove the gasket.
- For the disposal of the gasket observe the pertinent on-site regulations concerning waste disposal.

Removing control unit

- Detach the connector from the body, as described on page 14.
- Take out the pin (16).
- Remove the control unit (4) from the connector.



Cleaning the equipment

Check the equipment at regular intervals for contamination. The intervals depend on the amount of dirt in the system. The operator must determine the maintenance intervals.



Malfunctions may occur if the equipment is used with different types of condensate: The following condensates in particular cause problems:

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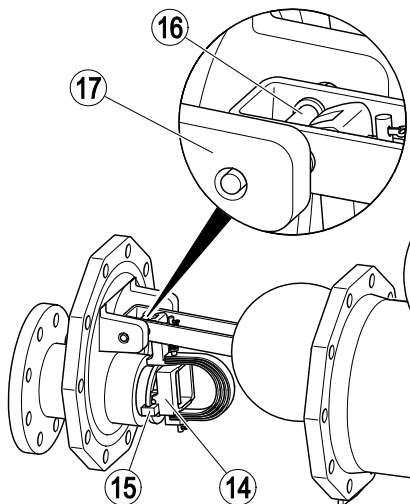
- Remove any parts that are dirty and cannot be cleaned properly.

To clean the inside of the equipment proceed as follows:

- Detach the connector from the body, as described on page 14.
- Take out the control unit, as described on page 14.
- To remove dirt deposits rinse the equipment with fresh water and wipe it with a clean, lint-free cloth.
- To remove any persistent residues use a cleaning agent that is suitable for the material and carefully wipe the equipment with a clean, lint-free cloth.
- Fit the control unit to the equipment, as described on page 15.
- Affix the connector to the body, as described on page 16.

Fitting control unit in place

- Push both retaining claws of the slider (14) over the collar of the seat (15).
- Insert the control unit between the two lugs (17) of the connector.
- Push the pin (16) through the holes in the lugs (17) of the connector and in the control unit.



- Affix the connector to the body, as described on page 16.

Mounting the connector

Attention!

Equipment may leak if the gasket is damaged.

- It is therefore essential that you always insert a new gasket before re-attaching the connecting element.
- Make sure that the connecting element is properly aligned and not tilted or skewed when refitted.

-
- Clean the gasket surfaces of the connecting element and body.
 - Apply heat-resistant lubricant (OKS 217) to the threads of the screws and the gasket surface of the connecting element.
 - Insert a new gasket in the body.
 - Put the connecting element onto the body.

Different equipment types require different torques for tightening the screws.

- The following table gives the required tightening torques:

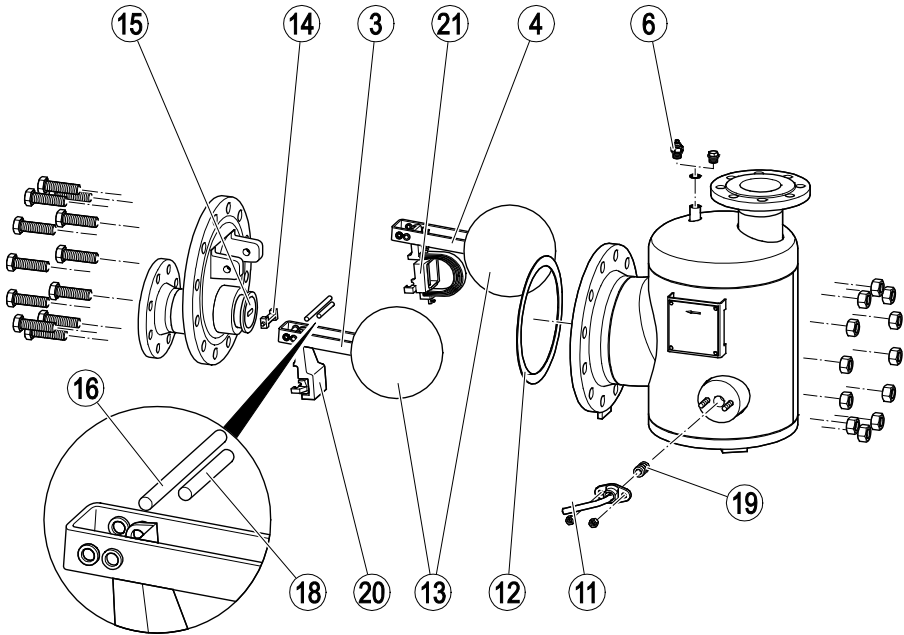
Type	Torque [Nm]
UNA–Special type 62B PN 16	
DN 80	140
DN 100	240
UNA–Special PN 25	
DN 50, DN 65	80
UNA–Special PN 63	
DN 65	275
DN 80	340
DN 100	425
UNA PN 25	
DN 80	160
DN 100	240

- Fasten screws / nuts & bolts with the following tightening torque evenly in diagonally opposite pairs:

Servicing the equipment and installing spare parts

You may exchange the following component parts in case of wear or damage:

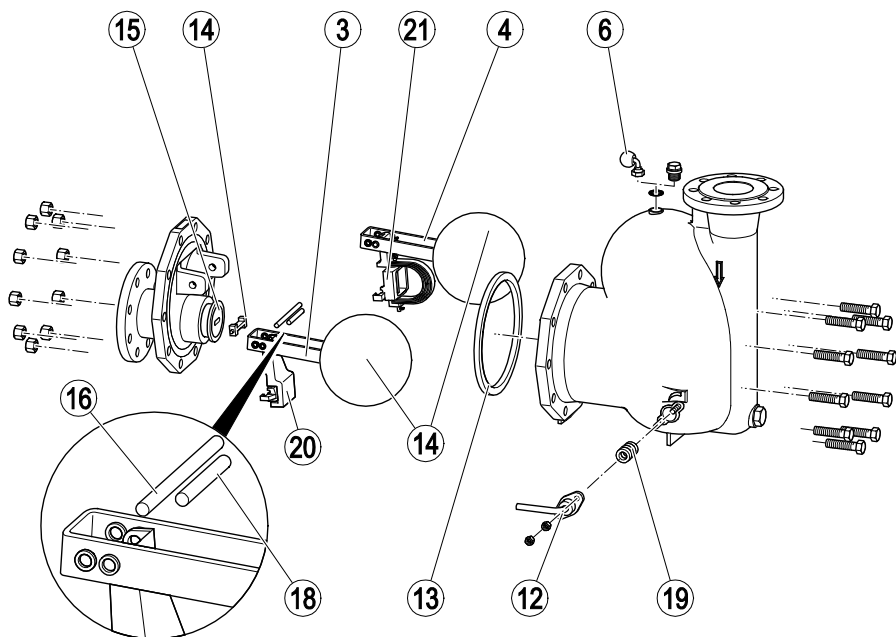
Spare parts for UNA–Special type 62B, PN 16



No.	Designation		Order number	
			DN 80	DN 100
6	Manual vent valve, complete with sealing ring and socket wrench		560676	
11	Socket wrench for manual lifting device		210301	210302
12	Gasket for body and connector		221423	221617
13	Ball float		210453	210283
14	Slider	A0 2	–	210361
		A0 3.5	210355	221526
		A0 5	210372	221528
		A0 10	210384	221530
		A0 16	210383	210397
15	Seat	A0 2	–	210314
		A0 3.5	210311	221525
		A0 5	210325	221527
		A0 10	210337	221529
		A0 16	210336	210353
16	Pin between control unit and connector		210281	210477
18	Pin between control unit and slider		210463	210465
19	Stuffing box for manual lifting device ¹		221703	
20	Slide rod	SIMPLEX	200840	221315
21	Slide rod	DUPLEX	221690	–

1 2x required

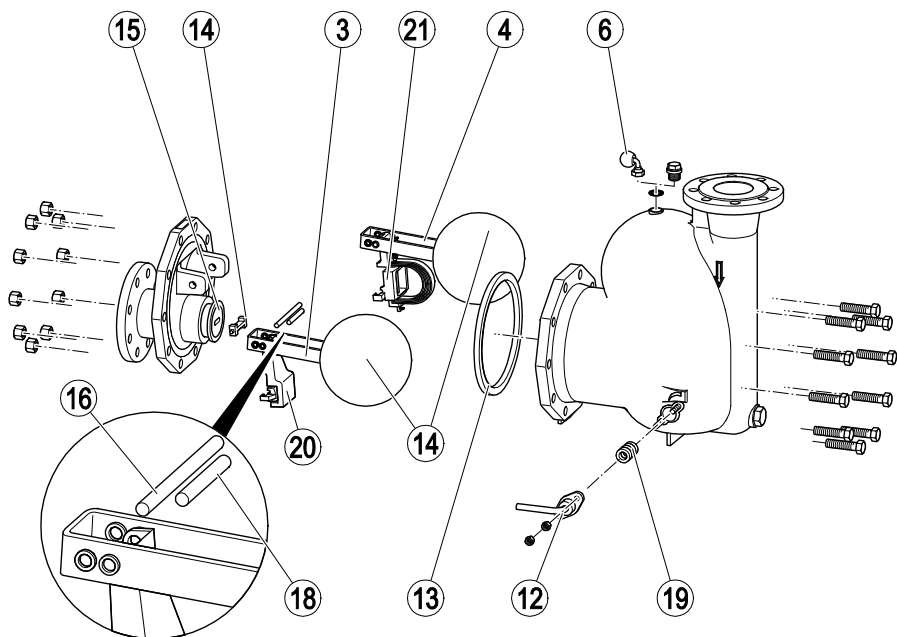
Spare parts for UNA-Special PN 25



No.	Designation		Order number	
			DN 50	DN 65
6	Manual vent valve, complete with sealing ring and socket wrench		560676	
11	Socket wrench for manual lifting device		210301	
12	Gasket for body and connector		221472	221423
13	Ball float		210452	210453
14	Slider	AO 2	–	210355
		AO 3.5	210372	–
		AO 5	210371	210372
		AO 10	210383	210384
		AO 16	210395	210383
		AO 22	209547	210395
15	Seat	AO 2	–	210311
		AO 3.5	210325	–
		AO 5	210324	210325
		AO 10	210336	210337
		AO 16	210351	210336
		AO 22	208702	210351
16	Pin between control unit and connector		210277	210281
18	Pin between control unit and slider		210463	
19	Stuffing box for manual lifting device ¹		221703	
20	Slide rod	SIMPLEX	200840	
21	Slide rod	DUPLEX	221690	

1 2x required

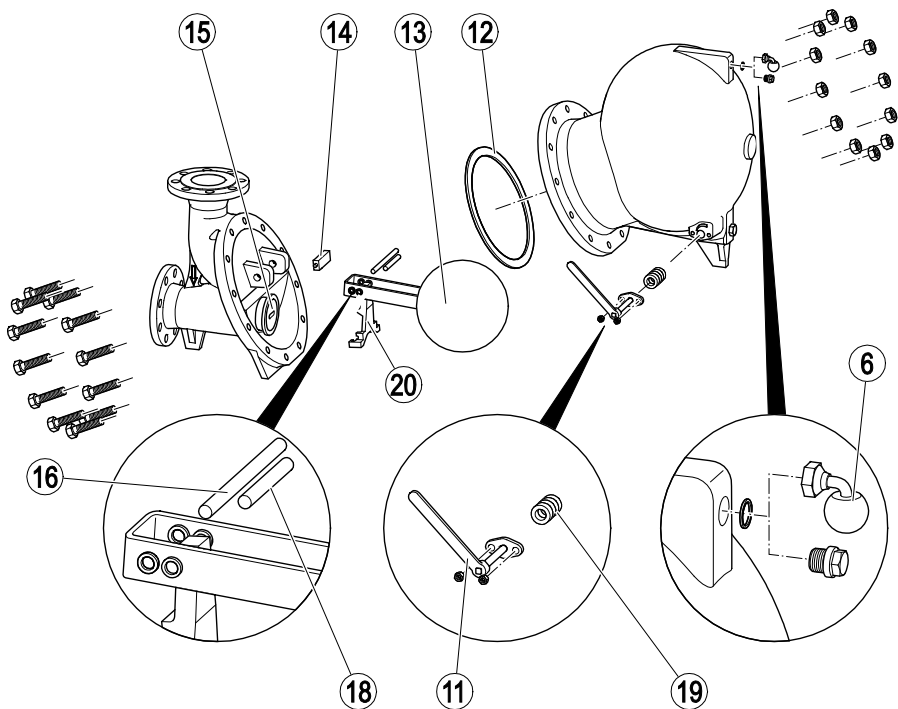
Spare parts for UNA–Special PN 63



No.	Designation		Order number		
			DN 65	DN 80	DN 100
6	Manual vent valve, complete with sealing ring and socket wrench		560676		
11	Socket wrench for manual lifting device		210301		
12	Gasket for body and connector		212053	555541	212055
13	Ball float		212043	207915	212044
14	Slider	AO 16	211966	211967	211977
		AO 22	211981	211982	211967
		AO 32	211984	211985	211982
		AO 40	211987	211984	211981
		AO 45	–	211987	212013
15	Seat	AO 16	211891	211892	211893
		AO 22	211894	211895	211892
		AO 32	211897	211901	211895
		AO 40	211903	211897	211894
		AO 45	211907	211903	211912
16	Pin between control unit and connector		212037	212041	
18	Pin between control unit and slider		210463	212036	
19	Stuffing box for manual lifting device ¹		84588		
20	Slide rod, SIMPLEX		200799	200800	

1 7 stuffing box rings required

Spare parts for UNA PN 25



No.	Designation		Order number	
			DN 80	DN 100
6	Manual vent valve, complete with sealing ring and socket wrench		560676	
11	Socket wrench for manual lifting device		210302	
12	Gasket for body and connector		221670	221617
13	Ball float		209266	210283
14	Slider	AO 2	221514	210361
		AO 3.5	221516	221526
		AO 5	221518	221528
		AO 8	208915	221532
		AO 12	208927	208931
		AO 16	208942	210397
		AO 22	208954	208955
15	Seat	AO 2	221513	210314
		AO 3.5	221515	221525
		AO 5	221517	221527
		AO 8	209074	221531
		AO 12	209086	209087
		AO 16	209101	210353
		AO 22	209113	209114
16	Pin between control unit and connector		210477	
18	Pin between control unit and slider		210465	
19	Stuffing box for manual lifting device ¹		221703	
20	Slide rod	SIMPLEX	209281	221315

1 2x required

Exchanging the control unit

- Detach the connector from the body, as described on page 14.
- Take out the control unit, as described on page 14.
- Fit the control unit to the equipment, as described on page 15.
- Affix the connector to the body, as described on page 16.

Exchanging the hand-vent valve

- Unscrew the hand vent valve or the sealing plug off the bore.



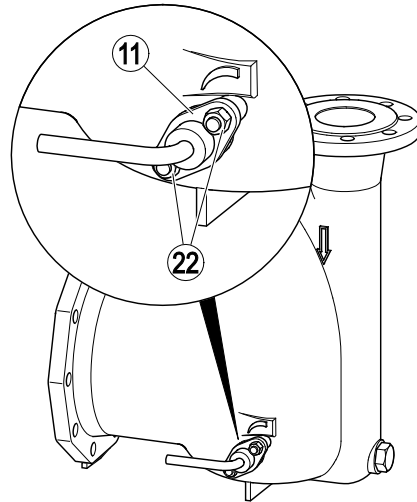
Danger

Fluid may escape if connections are leaking or sealing rings are damaged.

- Insert a new gasket before re-installation.
 - Use the sealing plug to close the vent hole if you do not mount the hand vent valve.
-
- Insert a new gasket into the bore.
 - Screw the hand vent valve or the sealing plug hand tight into the bore.
 - Tighten the hand vent valve or the sealing plug to a torque of 75 Nm.

Exchanging the float-lifting lever

- Slacken the nuts (22).
- Using the lever of the manual lifting device, pull the flange (11) out of the threaded pin in the body.



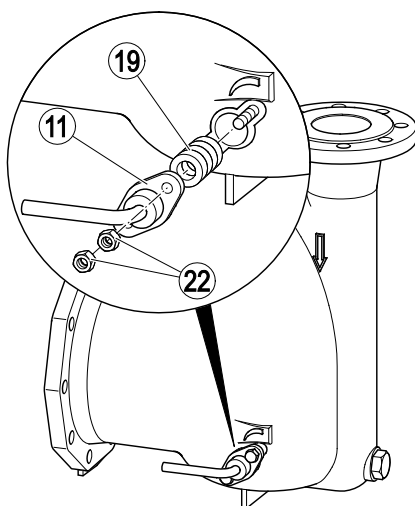


Danger

Medium can escape if connections are leaky or gaskets are damaged.

- Use a new stuffing box when reinstalling.

-
- Insert a new stuffing box (19).
 - Place the flange (11) on the threaded pin.
 - Hand-tighten the two nuts (22) on the threaded pins.



Attention!

Equipment may not work properly or get damaged if nuts are tightened with the wrong torque.

- Tighten the nuts as follows:
-

The torque required for tightening the nuts depends on the condition of the stuffing-box packing. Tighten the nuts until the following requirements are met:

- ▶ The flange must not leak fluid.
- ▶ The float-lifting lever must be able to move freely.
- If it is not possible to meet both requirements you have to replace the stuffing-box packing.
- Tighten the nuts to the recommended torque.
- Check the float-lifting lever for normal operation.
- If the float-lifting lever does not move smoothly, slightly slacken the nuts.
- Repeat these two steps until the float-lifting lever works properly.
- Check the flange for leaks.
- If you detect any leaks re-tighten the nuts.
- Check again the float-lifting lever for normal operation.
- If the flange is tight but the float-lifting lever cannot work properly, you have to replace the gland packing.

Replacing the orifice



You can exchange the orifice. For this purpose you have to replace the seat and the slide.

The following section describes how to replace the slide support. This is necessary if you want to replace the control unit SIMPLEX with a control unit DUPLEX.

You can customize the equipment to your precise applications.

The drawings in the following section show the equipment with control unit DUPLEX.

Proceed as follows:

- Detach the connector from the body, as described on page 14.
- Take out the control unit, as described on page 14.



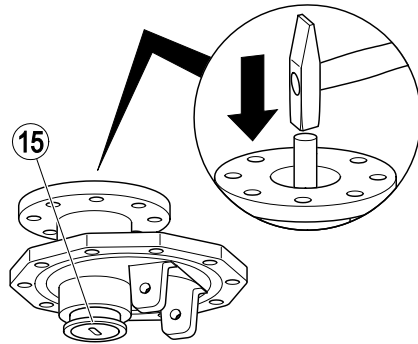
For equipment types UNA–Special PN 63 and UNA-Special type 62B, the seat is fixed to the connector by three spot welds.

- To detach the seat of these models, you need to grind off the spot welds.

Attention!

The seat might get damaged.

- Do not hit the seat.
 - Use only a punch made from copper or soft iron.
-
- Knock the seat (15) of the orifice out of the connector using a hammer and mandrel, as shown

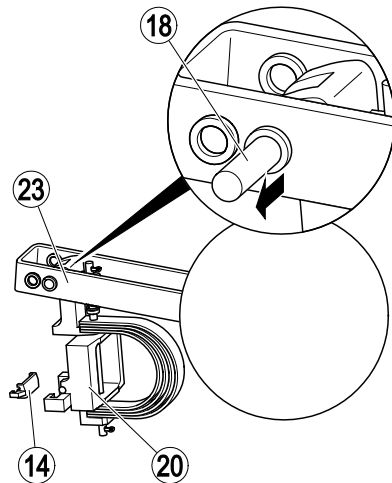


- Push the slider (14) out of the slider holder.
- Insert a new slider in the retaining claws of the slider holder.

If you only want to exchange the slide, you can now fix the seat in place as described from page 28 onwards.

If you want to exchange the entire orifice, continue as follows:

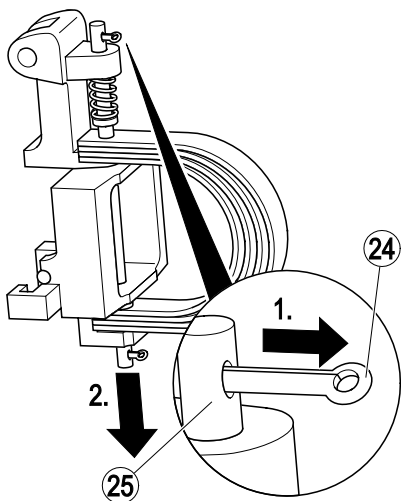
- Pull out the pin (18) between the slide rod (20) and the float arm (23).



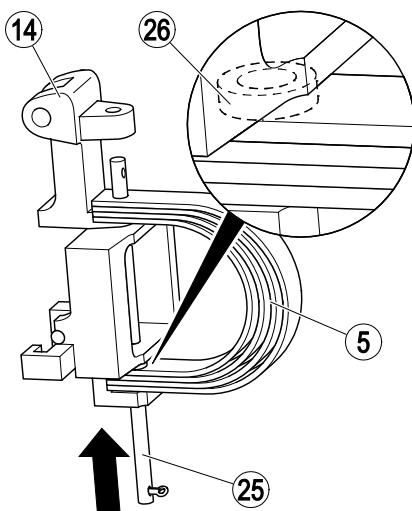
i The following drawing and instructions refer to equipment with control unit DUPLEX.

➤ To replace the entire slide proceed as follows:

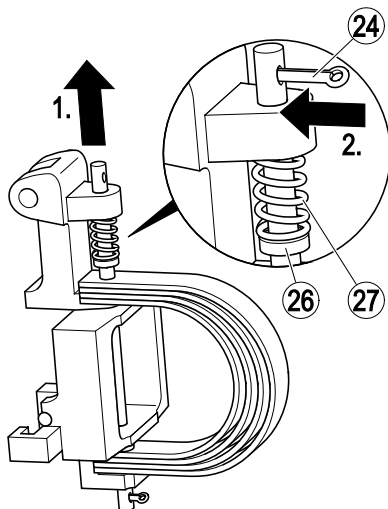
- Pull the split-pin (24) out of the retaining rod (25) (1.).
- Detach the retaining rod from the slider (2.)



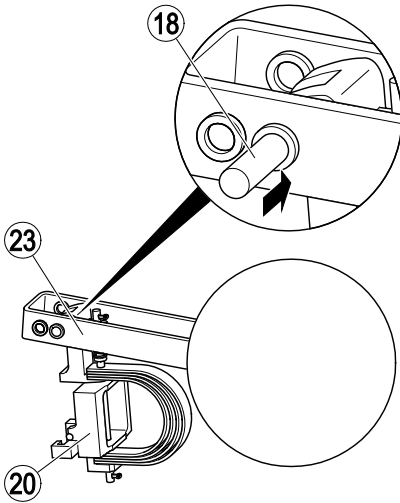
- Push the retaining rod (25) through the holes in the new slider (14), in the thermostat bracket (5) and through the washer (26), as shown.



- Insert the second washer (26) and the spring (27).
- Push the retaining rod through the holes as far as it will go.
- Insert a split-pin (24) in the hole in the retaining rod.
- Bend open the split-pin retainer.



- Insert the pin (18) in the holes in the slide rod (20) and float arm (23).



Attention!

Malfunctions may occur if the orifice was tilted or in misalignment when fitted.

- When installing the orifice make sure that the slot is in a horizontal position.

- i** Depending on the size of the orifice, the seat of the orifice can be provided with two or three slots.

To check the correct alignment of the slide on the seat proceed as follows:

- Attach the seat to the connecting element.
- Make sure that the slide covers all openings in the seat.
- If necessary, re-align the seat.
- Fix the seat permanently to the connecting element as follows:

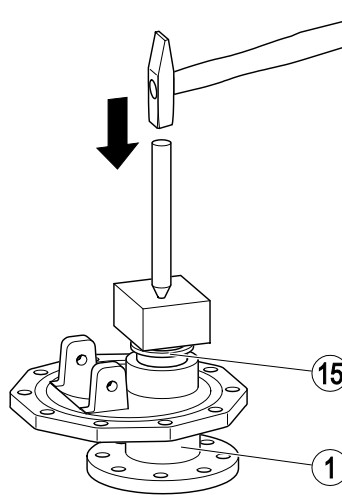
To fix the seat in place proceed as follows:

Attention!

The seat might get damaged.

- Do not hit the seat.
- Use only a punch made from copper or soft iron.
- Put a block of wood between the seat and the punch.

- Knock the seat (15) into the connector (1) as shown.



- i** For equipment types UNA–Special PN 63 and UNA–Special type 62B, the seat is fixed to the connector by spot welds.
 - To secure the seat in these types, you must produce three spot welds from the rear.
- Fit the control unit to the equipment, as described on page 16.
- Affix the connector to the body, as described on page 16.

Troubleshooting

Problem	Cause	Remedy
The discharge capacity is too low. Insufficient thermal output of the user.	The equipment is undersized.	Use equipment with a larger discharge capacity.
The discharge capacity is too low. Insufficient thermal output of the user.	Steam pressure and condensate flowrate fluctuate considerably. The pressure upstream of the equipment is too low for the used equipment type.	Use equipment with a larger discharge capacity. If necessary, use a pump steam trap or a condensate return unit.
Fluid escapes (equipment is leaking).	The body has been damaged by corrosion or erosion.	Replace the equipment with a new one. Use equipment made of material that is suitable for the application.
Fluid escapes (equipment is leaking).	The equipment has been damaged by waterhammer.	Replace the equipment with a new one. Take appropriate measures to protect the equipment against waterhammer. Use e. g. non-return valves or a pump steam trap.
The discharge capacity is too low. Insufficient thermal output of the user.	The differential pressure is too small.	Increase the steam pressure. Lower the pressure in the condensate line. Use equipment with a larger discharge capacity. If necessary, use a pump steam trap or a condensate return unit.
The discharge capacity is too low. Insufficient thermal output of the user.	Insufficient deaeration.	Connect an additional air vent.
Condensate does not flow into the equipment.	The pressure in the vent line is too high.	Connect the vent line as shown in the installation sketch in these Installation Instructions.
The discharge capacity is too low. Insufficient thermal output of the user.	The pipes do not have a continuous fall in flow direction.	Make sure that the lines run with a continuous fall in flow direction.

Problem	Cause	Remedy
Fluid escapes (equipment is leaking).	The equipment has been damaged by frost.	Replace the equipment with a new one. When shutting down the installation make sure that all lines and the equipment are completely drained.
The discharge capacity is too low. The equipment is cold or only warm to the touch.	The shut-off valves for fluid flow are closed.	Fully open the shut-off valves.
Condensate does not flow into the equipment.	The shut-off valve for the vent line is closed.	Fully open the shut-off valve.
The equipment is cold or only warm to the touch.	The sealing plugs are still attached to the connections.	Remove the equipment. Remove the sealing plugs. Mount the equipment.
Fluid escapes (equipment is leaking).	The equipment or the body is damaged.	Replace the equipment with a new one.
Fluid escapes (equipment is leaking).	A gasket is damaged.	Replace the gasket with a new one. Clean gasket seating surfaces.
Fluid escapes (equipment is leaking).	The connections are not tight.	Provide the connections with leakproof seals.
Fluid escapes (equipment is leaking).	The stuffing box packing has not been tightened enough.	Tighten the stuffing-box packing hand tight. Make sure that the stuffing box packing does not impair the movement of the internals.
Fluid escapes (equipment is leaking).	The stuffing-box packing is damaged.	Replace the stuffing-box packing.
The flow rate is too low. The consumers have insufficient heat output.	The orifice with slotted seat aperture is incorrectly mounted.	Mount the aperture of the orifice horizontally. The slider must cover the orifice. The orifice must fit the slider.
The equipment is losing steam.	The orifice with slotted seat aperture is incorrectly mounted.	Mount the aperture of the orifice horizontally. The slider must cover the orifice. The orifice must fit the slider.
The discharge capacity is too low. The equipment is cold or only warm to the touch. Insufficient thermal output of the user.	The inlet, outlet or the equipment is dirty.	If fitted, operate the float-lifting lever. Clean the pipes. Clean all internals. If necessary, replace internals or the whole equipment.

Problem	Cause	Remedy
The equipment is blowing off live steam.	The control unit is damaged or worn.	Replace the control unit.
The equipment is blowing off live steam.	Dirt deposits, precipitated solids or foreign particles have accumulated in the equipment.	If fitted, operate the float-lifting lever. Clean the pipes. Clean all internals. If necessary, replace internals or the whole equipment.

- If faults occur that are not listed above or cannot be corrected, please contact our Technical Service or authorized agency in your country.

Putting the equipment out of operation

Removing harmful substances



DANGER

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
- Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- Make sure that the equipment is completely decontaminated before carrying out any service work.
- Follow the pertinent instructions for handling the hazardous substances in question.

Qualified personnel must have extensive experience with and a working knowledge of:

- ◆ pertinent rules and regulations concerning handling hazardous substances
- ◆ special regulations for handling the hazardous substances encountered on site
- ◆ using the required personal protective equipment (PPE) and clothing



Caution

Environmental damage may be caused by poisonous fluid residues.

- Before disposing of the equipment make sure that it is clean and free of fluid residues.
 - For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.
-
- Remove all residues from the equipment.
 - For the disposal of all residues observe the pertinent legal regulations concerning waste disposal.

Removing the equipment



DANGER

Personnel working on pipes are exposed to safety risks and may suffer severe injuries, poisoning or even loss of life.

- Make sure that no hot or hazardous fluid is in the equipment or the pipes.
- Make sure that the pipes upstream and downstream of the equipment are depressurised.
- Make sure that the installation is switched off and protected against unauthorised or unintended activation.
- Make sure that the equipment and the pipes have cooled down to room temperatures.
- Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.

For more information on suitable protective clothing and safety gear refer to the safety data sheet of the fluid in question.

- Make sure that all pipelines upstream and downstream of the equipment are depressurised.



CAUTION

Risk of injuries if the equipment falls down.

- When removing the equipment make sure the it is safely held in place and cannot fall down.

Suitable measures are for instance:

- ▶ Equipment that is not too heavy may be supported by a second person.
- ▶ For heavy equipment use suitable lifting equipment of sufficient strength.
- Detach the end connections of the equipment from the pipes.
- Put the equipment onto a suitable base.
- Store the equipment as described on page 9.

Re-using equipment after storage

Observe the following instructions if you want to remove the equipment and use it again somewhere else:

- ▶ Make sure that the equipment is free of any fluid residues.
- ▶ Make sure that all connections are in good condition and leak-free.
- Use the equipment only for its intended purpose and the service conditions for which it was specified.

Disposing of the equipment



Caution

Environmental damage may be caused by poisonous fluid residues.

- Before disposing of the equipment make sure that it is clean and free of fluid residues.
- For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.

The equipment is made from the following materials:

Materials of UNA–Special type 62B, PN 16

Component	EN number (name in brief)	ASTM ¹
Body (8)	Steel	Steel
Connector (1)	Steel	Steel
Bolts	Steel, galvanised	Steel, galvanised
Nuts	Steel, galvanised	Steel, galvanised
Ball float (13)	1.4301	A182-F304
Slider (14)	1.4021	A276-420
Seat (15)	1.4034	–
Manual vent valve (6)	Stainless steel	
Sealing plug (7)	Steel	
Manual lifting device (11)	Stainless steel/graphite	
Gasket (12)	Graphite-CrNi	
Thermostat bracket (5)	Bimetallic/CrNi-stainless steel	

- 1 ASTM material is comparable to EN material. Note the differences in chemical and physical properties. Please contact the manufacturer for more details.

Materials for UNA Special PN 25

Component	EN number (name in brief)	ASTM¹
Body (8)	1.0619	A216-WCB
Connector (1)	1.0619	A216-WCB
Bolts	1.7709	–
Nuts	1.7709	–
Ball float (13)	1.4301	A182-F304
Slider (14)	1.4021	A276-420
Seat (15)	1.4034	–
Manual vent valve (6)	Stainless steel	
Sealing plug (7)	Steel	
Manual lifting device (11)	Stainless steel/graphite	
Gasket (12)	Graphite-CrNi	
Thermostat bracket (5)	Bimetallic/CrNi-stainless steel	

- 1 ASTM material is comparable to EN material. Note the differences in chemical and physical properties. Please contact the manufacturer for more details.

Materials for UNA Special PN 63

Component	EN number (name in brief)	ASTM ¹
Body (8)	1.5419	A217-WC1
Connector (1)	1.5419	A217-WC1
Bolts	1.7709	–
Nuts	1.7709	–
Ball float (13)	1.4301	A182-F304
Slider (14)	1.4021, steel-clad	A276-420
Seat (15)	1.4301, steel-clad	A182-F304
Manual vent valve (6)	Stainless steel	
Sealing plug (7)	Steel	
Manual lifting device (11)	Stainless steel/graphite	
Gasket (12)	Graphite-CrNi	
Thermostat bracket (5)	Bimetallic/CrNi-stainless steel	

¹ ASTM material is comparable to EN material. Note the differences in chemical and physical properties. Please contact the manufacturer for more details.

Materials for UNA PN 25

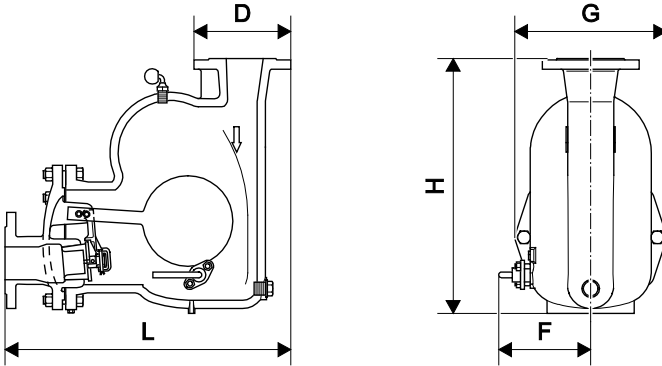
Component	EN number (name in brief)	ASTM ¹
Body (8)	1.0619	A216-WCB
Connector (1)	1.0619	A216-WCB
Bolts	1.7709	–
Nuts	1.7709	–
Ball float (13)	1.4301	A182-F304
Slider (14)	1.4301, steel-clad	A182-F304
Seat (15)	1.4034	–
Manual vent valve (6)	Stainless steel	
Sealing plug (7)	Steel	
Manual lifting device (11)	Stainless steel/graphite	
Gasket (12)	Graphite-CrNi	
Thermostat bracket (5)	Bimetallic/CrNi-stainless steel	

- 1 ASTM material is comparable to EN material. Note the differences in chemical and physical properties. Please contact the manufacturer for more details.

Technical data

Dimensions and weights

Weights and dimensions of UNA–Special



Weights and dimensions of UNA–Special type 62B, PN 16

DN		Dimensions [mm]					No. of holes	Weight [kg]
[mm]	[inch]	L	H	G	F	D		
80	3	590	530	310	190	200	8	110
100	4	810	720	455	275	220	8	235

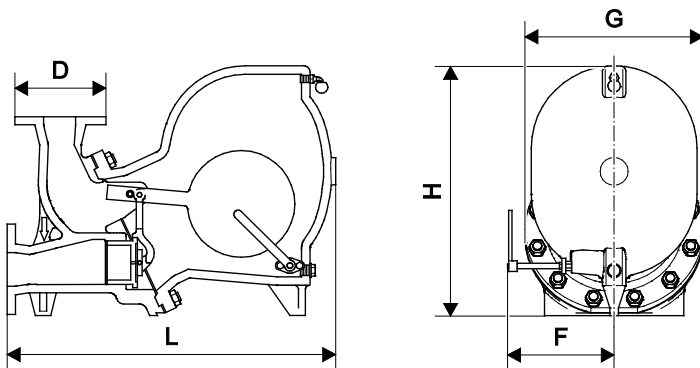
Dimensions and weights for UNA Special PN 25

DN		Dimensions [mm]					Number of holes	Weight [kg]
[mm]	[inch]	L	H	G	F	D		
50	2	527	445	290	185	165	4	68
65	2½	563	500	310	190	185	8	82
80	3	740	545	395	195	200	8	134
100	4	875	655	460	275	235	8	220

Dimensions and weights for UNA Special PN 63

DN		Dimensions [mm]					Number of holes	Weight [kg]
[mm]	[inch]	L	H	G	F	D		
65	2½	668	530	370	200	205	8	125
80	3	798	580	415	200	215	8	140
100	4	825	610	455	200	250	8	225

Weights and dimensions of PN 25



DN		Dimensions [mm]					Number of holes	Weight [kg]
[mm]	[inch]	L	H	G	F	D		
80	3	740	545	395	195	200	8	134
100	4	875	655	460	275	235	8	220

Pressure & temperature ratings

Operating limits of UNA–Special type 62B, PN 16

Type of connection	p (pressure) [bar]	T (temperature) [°C]
Flange, PN 16	16	20
	13.7	100
	13.3	150
	12.4	200
	11.3	250
	10.2	300

Ratings for strength of body and cover to EN 1092-1

Pressure and temperature ratings for UNA Special PN 25 and UNA PN 25

Type of connection	p (pressure) [bar]	T (temperature) [°C]
Flange, PN 25	25	20
	25	120
	22	200
	17.2	300
	16	350
	14.8	400

Rates for strength of body and cover up to 200° C to DIN 2401, and above this to EN 1092-1

Pressure and temperature ratings for UNA Special PN 63

Type of connection	p (pressure) [bar]	T (temperature) [°C]
Flange, PN 63	63	20
	63	200
	61.5	250
	54	300
	51	350
	47.1	400
	43.5	450

Ratings for strength of body and cover to EN 1092-1

For the flowrate as a function of the differential pressure see the capacity chart in the data sheet.

Manufacturer's declaration

For more information on the Conformity Assessment according to European rules refer to our Declaration of Conformity or our Declaration by Manufacturer.

To download the current Declaration of Conformity or Declaration by Manufacturer go to www.gestra.com/documents or contact:

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



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