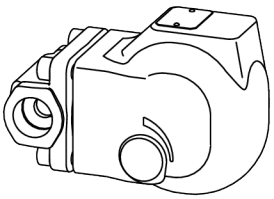
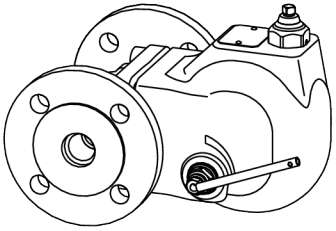
GESTRA®



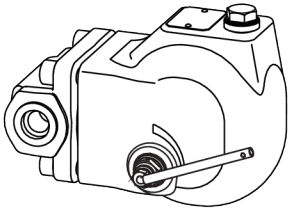
Ball Float Steam Trap

UNA 14
UNA 16
UNA 16A



Float trap for compressed air line drainage

UNA 14P



EN
English

Original Installation Instructions

810877-07

Contents

Foreword

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

- Ball Float Steam Trap UNA 14
- Condensate Drain for Compressed Air/Air Trap UNA 14P
- Ball Float Steam Trap UNA 16
- Ball Float steam trap UNA 16A (stainless steel)

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

Always keep this Installation & Operating Manual together with the system documentation. Make sure that the Installation & Operating Manual is available to the operator.

The Installation & Operating Manual is part of the equipment package. Hand over this Installation & Operating Manual if you sell or pass on the equipment in any way.

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

Type UNA 14, UNA 16 and UNA 16A equipment is used to trap condensate in steam and other gases or gaseous mixtures.

Type UNA 14P equipment is used to trap condensate in compressed air and other gases or gaseous mixtures.

Equipment with SIMPLEX R and DUPLEX control unit is also used to vent the system.

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.

In the case of equipment with DUPLEX control valves, the superheating of the steam at the membrane regulator capsule must not exceed 5 K.

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 can be hot or very cold, depending on the fluid used. Only perform work on the equipment if the following conditions are satisfied:
  - The pipes must not be under pressure.
  - All fluid must be thoroughly removed from pipes and the equipment.
  - Before carrying out any work, the higher-level system must be switched off and secured so it cannot be switched back on by unauthorised persons.
  - Pipes and the equipment must have cooled to a lukewarm temperature, or around 20 °C.
- For equipment used in contaminated areas, there is a risk of serious or fatal injury from harmful substances on the equipment. Only perform work on the equipment after it has been thoroughly decontaminated. Wear the protective clothing specified for the contaminated zone during all work.
- The equipment may only be used with fluids that are not aggressive in contact with material and seals. Otherwise, leaks may occur and hot, cold or toxic fluid may escape.
- The equipment and its components may only be installed or removed by specialist personnel. Specialist personnel must have knowledge and experience in the following areas:
  - Producing pipe connections.
  - Selecting suitable lifting gear for the product and using it safely.
  - Working with hazardous (contaminated, hot, cold or pressurised) fluids.
- If the admissible pressure and temperature ratings are exceeded, the equipment may be destroyed and hot, cold or pressurised fluid may escape. Make sure that the equipment is always used within the admissible pressure and temperature ratings.
  You can find information about the pressure and temperature ratings on the name plate and in the "*Technical data*" section.
- The equipment is under pressure during operation and can become hot or cold, depending on the fluid used. Only bring the equipment into service if contact with surfaces is prevented by insulation or other protection. Always wear protective clothing when working on the equipment and on pipes carrying fluid. You will find information on suitable protective clothing in the safety data sheet for the fluid used.

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 equipment is inadequately supported during installation, there is a risk of getting crushed if it falls. Use the eyebolt to secure lifting gear, if available. Secure the equipment during installation so it cannot fall. Use the eyebolt to do this, if available. Wear sturdy safety boots.

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

Specialist personnel must have knowledge and experience in the following areas:

- Locally applicable explosion & fire protection and occupational health & safety provisions
- Work on pressure equipment
- Producing pipe connections
- Working with hazardous (hot, cold or pressurised) fluids
- Lifting and transporting loads
- All information in this Installation & Operating Manual and other applicable documentation

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.

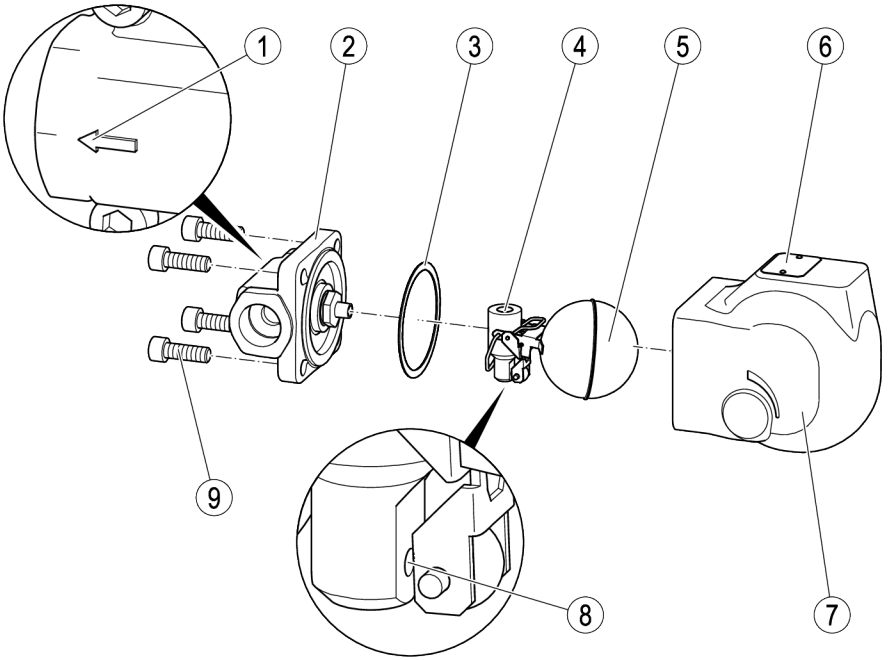
Scope of supply and equipment specification

Scope of supply

Our equipment is delivered packed and ready for assembly.

Equipment specification

For the designation of the individual component parts please refer to the following pages.



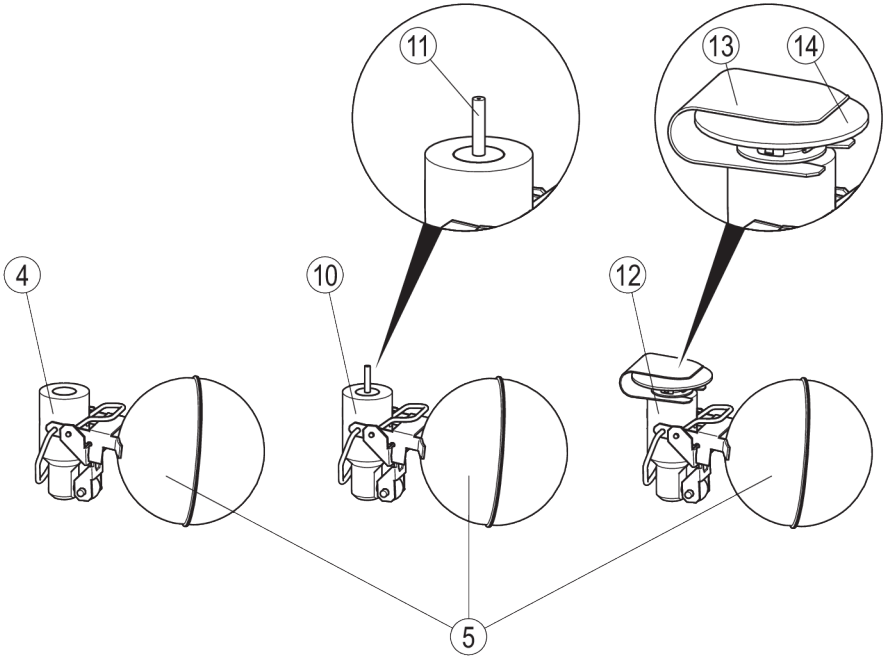
No.	Designation
1	Flow arrow
2	Body
3	Gasket
4	Control unit (here: type SIMPLEX)
5	Float

No.	Designation
6	Name plate
7	Cover
8	Orifice in shut-off unit
9	4 socket-head cap screws

Optional extras

The following types of control unit are available:

- SIMPLEX with level-dependant float control
- SIMPLEX R with level-dependant float control and permanent gas venting
- DUPLEX with level-dependant float control and automatic venting of steam systems



No.	Designation
4	Control unit SIMPLEX or SIMPLEX P
5	Float
10	Control unit Simplex R
11	Permanent air vent (tube)

No.	Designation
12	Control unit DUPLEX
13	Retainer for thermostatic capsule
14	Thermostatic capsule 5N2

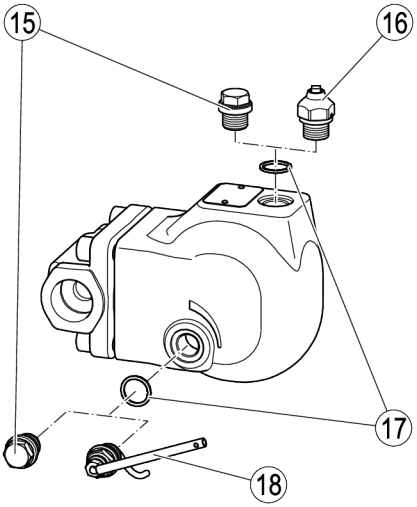
The following types of UNA 14P are available:

- SIMPLEX with level-dependent float control with rolling ball made from stainless steel
- SIMPLEX P with level-dependent float control with rolling ball made from Perbunan ®

The following items are available as optional extra:

- Hand vent valve
- Float-lifting lever with lever extension (standard with UNA 14P)

The vent hole in the cover for the hand-vent valve can also be used for connecting a balance line.



No.	Designation
15	Sealing plug
16	Hand vent valve
17	Gasket
18	Float-lifting lever with lever extension

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").

Orifice	UNA 14	UNA 14P	UNA 16	UNA 16A
AO 4	X	–	X	X
AO 13	X	X	X	X
AO 22	–	–	X	X

End connections

The equipment is available with the following end connections:

- Flanges
- Screwed sockets
- Butt-weld ends via transition pieces
- Socket-weld ends

Name plate/identification

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
- Design temperature
- Max. service temperature
- Max. service pressure
- Orifice or max. admissible differential pressure
- Installation position

The following items are indicated on the equipment body:

- Material
- Identification marking of material testing
- Batch code
- Mark (if required), e.g. CE, UKCA, EAC
- 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)
- Thread type

Application of European Directives

Fluids

The equipment is designed for the following fluids (in accordance with the EU Pressure Equipment Directive or Pressure Equipment (Safety) Regulations in the UK):

UNA 14, UNA 14P:

- Fluids of group 2

UNA 16, UNA 16A (stainless steel):

- Fluids of group 1
- Fluids of group 2

Due consideration must be given to chemical and corrosive influences.

Use in potentially explosive atmospheres

The equipment does not have its own potential source of ignition (as per ATEX Directive). Please pay attention to the following information:

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

This equipment is designed for draining condensate and liquids from steam or gas systems.

The UNA 14P is designed for draining condensate from compressed air or gas systems.

Equipment with control unit SIMPLEX R or DUPLEX are also designed for 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.

A manual float-lifting lever is provided so that the equipment can be manually opened (e. g. to purge the seat area or check the position of the float).

Equipment with a SIMPLEX R control unit is fitted with an internal bypass for air venting. Steam, gas or air is continuously discharged through this vent pipe.

Equipment with a DUPLEX control unit provides automatic air venting as a function of the amount of air/gas formed in the steam system. The thermostatic capsule controls the amount of steam that is discharged.

The hand vent valve is an optional extra and allows the equipment to be vented manually.

The equipment can be installed in horizontal or vertical pipelines. A conversion is possible by turning the control unit by 90 °.

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

- ➢ 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.

- ➢ 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

- ➢ 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.

You can install the equipment in various installation positions.

When using the equipment as a steam trap or condensate drain for compressed air, select an installation position with the name plate on the cover facing up.

Attention!

Malfunctions may occur if the control unit is installed incorrectly.

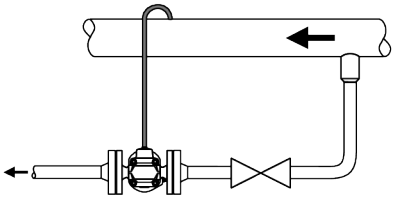
- When installing the equipment make sure that the name plate is on top and the float is free to move up and down.

- To change the position of installation please follow the instructions given from page 19.

In equipment with SIMPLEX control unit connect a balance line to the optional top connection for the hand vent valve.
This is required in particular in the following cases:

- in float traps for compressed air line drainage
- in installations where condensate is lifted upstream of the steam trap.

The balance line improves the condensate flow to the equipment, thereby ensuring the trouble-free operation of equipment with SIMPLEX control unit.



DANGER

Risk of extremely severe injury or death due to burns, freezing or intoxication during work on pipes.

- Make sure that there is no hot or cold fluid in the equipment or pipes.
- Make sure that the equipment pipes are not under pressure.
- Make sure that the system is switched off and secured so it cannot be turned on by unauthorised persons.
- Make sure that the equipment and pipes are lukewarm.
- Wear protective clothing that is suitable for the fluid, and use suitable personal protective equipment if necessary.

Information on suitable protective clothing and PPE can be found in the safety data sheet of the fluid used.

- 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 result in accidents with extremely severe injuries or death.

- Make sure that only specialist personnel connect the equipment to the pipe.
- Make sure that the direction of flow in the pipe matches the flow direction arrow on the equipment.
- Make sure that the connected pipe does not subject the body to any stress (forces or torques) during installation and operation.

Specialist personnel must have knowledge and experience of the type of pipe connection used.

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 observe the indicated withdrawal distance of 120 mm from the cover to adjacent installation parts.

➢ Make sure that the pipe system of the plant is clean.

➢ Make sure that the equipment is free from foreign matter.

Attention!

An incorrect installation position can lead to malfunctions.

- Always install condensate drains with the name plate facing up.

➢ Install the equipment in the desired, permitted installation position.

➢ 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.

The optional hand vent valve allows manual gas venting.

➢ To vent gas or air open the hand vent valve.

➢ Close the hand vent valve fingertight after venting.

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 (viewed from body end) anticlockwise.

➢ To close the equipment turn the float-lifting lever (viewed from body end) clockwise.

After operation

DANGER

Risk of extremely severe injury or death due to burns, freezing or intoxication if fluid escapes.

- Make sure that connections and valves are tight after any work on the equipment.
- Make sure that equipment gaskets are intact.

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.

Attention!

Frost damage can occur when the system is switched off.

- ➢ Drain the equipment if there is a risk of frost.

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

You will require the following tools for working on the equipment:

- ◗ Size 8 Allen key
- ◗ Screwdriver 5.5/125
- ◗ Punch 120/10
- ◗ Hammer, 500 g
- ◗ Torque wrench 20–120 Nm

To remove and install the optional float-lifting lever and manual vent valve, you will also require the following tools:

- ◗ Combination spanner size 17

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 cover and remove the control unit.

Removing cover

- ➢ Undo the four socket-head cap screws of the body.
- ➢ Lift the cover off the body.
- ➢ Remove the gasket.
- ➢ For the disposal of of the gasket observe the pertinent on-site regulations concerning waste disposal.

Removing control unit

➢ Take the cover off the body as described from page 13 onwards.

Attention!

Malfunctions may occur if the mounting support (19) is removed.

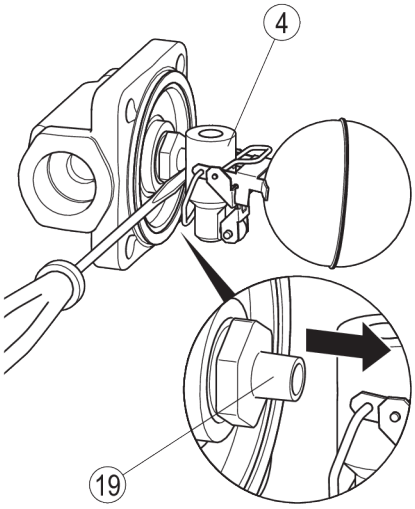
➢ Do not unscrew the mounting support off the body.

➢ Remove the control unit from the mounting support.

The mounting support (19) is firmly attached to the body. You can remove the control unit from the mounting support.

➢ Insert a screwdriver (as shown in the drawing) between the control unit (4) and the mounting support (19).

➢ To remove the control unit from the mounting bracket hit the screwdriver with a hammer.



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.

➢ 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.

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

To clean the inside of the equipment proceed as follows:

➢ Take the cover off the body as described from page 13 onwards.

➢ Remove the control unit as described from page 14 onwards.

➢ 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.

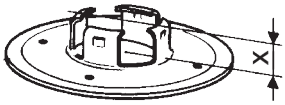
➢ Attach the control unit to the body as described from page 15 onwards.

➢ Attach the control unit to the body as described from page 16 onwards.

Cleaning and checking the membrane regulator capsule

To clean the thermostatic capsule of equipment with a DUPLEX control unit proceed as follows:

- Take the cover off the body as described from page 13 onwards.
- Remove the control unit as described from page 14 onwards.
- Attach the control unit to the body as described from page 18 onwards.
- Clean the thermostatic capsule with cold clean water.
- Use a depth gauge to check the dimension x of the membrane regulator capsule as shown in the following drawing.



The membrane regulator capsule is intact if dimension x exceeds 4.0 mm.

- Discard and replace defective membrane regulator capsule with a new one.
- Attach the control unit to the body as described from page 18 onwards.

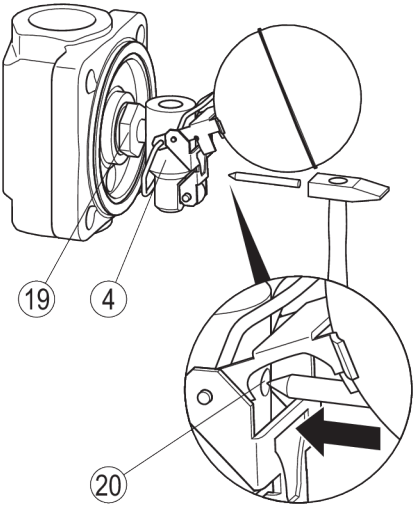
Mounting the control unit

Attention!

Malfunctions may occur if the control unit is installed incorrectly.

- When installing the equipment make sure that the name plate is on top and the float is free to move up and down.
- Make sure that the flow arrow on the equipment body matches the direction of flow in the pipe.
- Make sure that the control unit is firmly pressed into the mounting support.

- Before installation make sure that all component parts are clean.
- Turn the control unit (4) into the desired position of installation.
- Press the control unit into the mounting support.
- Lift the float and hold it in this position.
- Put the punch onto the marking (20).
- Fix the control unit in place by hitting the punch twice with a hammer.



- Attach the control unit to the body as described from page 16 onwards.

Mounting cover

Attention!

Equipment may leak if the gasket is damaged.

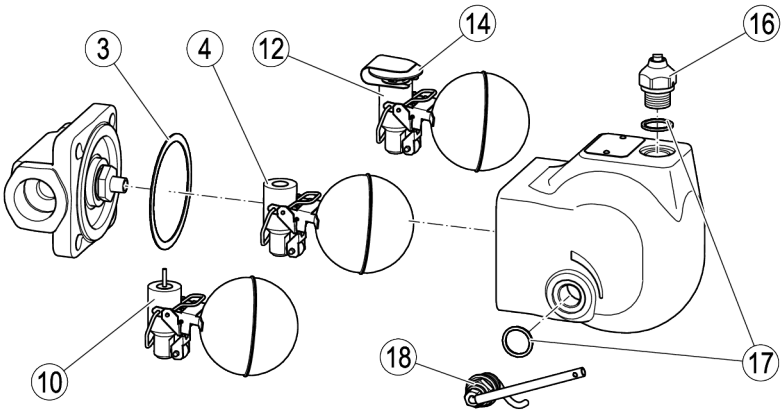
- ➢ It is therefore essential that you always insert a new gasket before re-attaching the cover.
- ➢ Make sure that the cover is not tilted or skewed when refitted.

- ➢ Clean the gasket surfaces of the cover and body.
- ➢ Apply heat-resistant lubricant (OKS 217) to the threads of the socket-head cap screws and the gasket surface of the cover.
- ➢ Insert a new gasket in the body.
- ➢ Put a new cover onto the body, assuring that the name plate is on top.
- ➢ Tighten the four socket-head cap screws evenly in diagonally opposite pairs to a torque of 35 Nm.

Servicing the equipment and installing spare parts

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

- ➢ Replace components only with genuine spare parts from the manufacturer.



No.	Designation		Stock code		
			UNA 14	**UNA 14P**	**UNA 16**
3, 4	SIMPLEX control unit, complete, with gasket	AO 4	560416	–	560416
		AO 13 AO 16 [1]	560415		
		AO 16P [2]	–	560418	–
		AO 22	–		560414
3, 10	SIMPLEX R control unit, complete, with gasket	AO 4	560413	–	560413
		AO 13	560412	–	560412
		AO 22	–		560411
3, 12, 14	DUPLEX control unit, complete, with gasket	AO 4	560410	–	560410
		AO 13	560409	–	560409
		AO 22	–		560408
3, 14	Membrane regulator capsule 5N2, with gasket (graphite/CrNi)		560494	–	560494
16, 17	Manual vent valve, complete, with sealing ring		560676		560676 [3]
17, 18	Manual lifting lever, complete, with sealing ring		560434		560434 [4]
3	Gasket (graphite/CrNi) [5]		560493		
17	Sealing ring[5]		560486		560486 [6]

1 SIMPLEX control unit with steel rolling ball for UNA 14P, up to 120 °C, up to ΔPMX 16 bar

2 SIMPLEX P control unit with Perbunan® rolling ball for UNA 14P, up to 40 °C, up to ΔPMX 16 bar

3 Stock code for UNA 16A (stainless steel): 560676

4 Stock code for UNA 16A (stainless steel): on request

5 Order quantity 20 items. Please purchase smaller quantities from your specialist retailer.

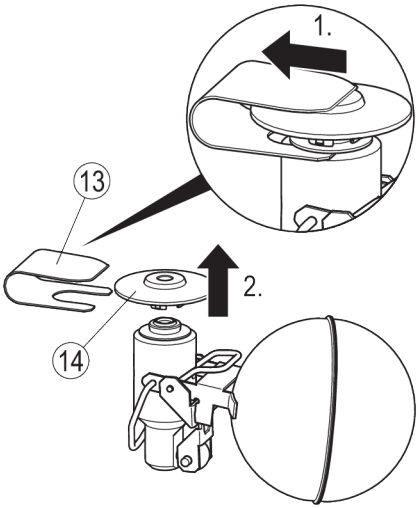
6 Stock code for UNA 16A (stainless steel): 560514
Order quantity 20 items. Please purchase smaller quantities from your specialist retailer.

Exchanging the control unit

- Take the cover off the body as described from page 13 onwards.
- Remove the control unit as described from page 14 onwards.
- Attach the control unit to the body as described from page 15 onwards.
- Attach the control unit to the body as described from page 16 onwards.

Exchanging the membrane regulator capsule

- Take the cover off the body as described from page 13 onwards.
- Remove the control unit as described from page 14 onwards.
- Pull the bracket (13) sideways off the control unit (1.).
- Push the thermostatic capsule (14) upwards and take it off (2.).

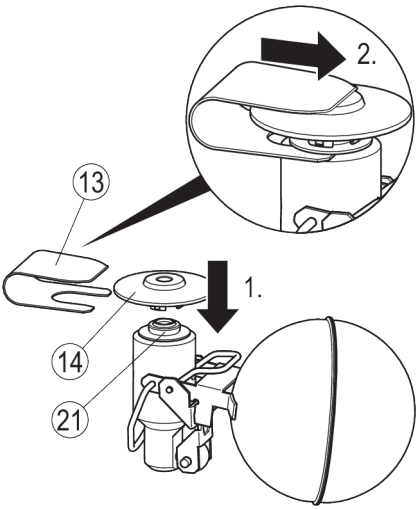


Install a new thermostatic capsule as follows:

- Press the thermostatic capsule (14) onto the seat (21) until it snaps into place.

Slide the tongues of the bracket (13) into the groove underneath the thermostatic capsule.

- Slide the bracket (13) as shown onto the control unit until it snaps into place (2.).
- Rotate the bracket until the two tongues are oriented towards the float.



- Attach the control unit to the body as described from page 15 onwards.
- Attach the control unit to the body as described from page 16 onwards.

Exchanging the hand-vent valve

The hand vent valve is an optional extra for all types of equipment.
The hand vent valve can only be installed to equipment with a special cover for fitting such a 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

The float-lifting lever is an optional extra for all types of equipment.
The float-lifting lever can only be installed to equipment with a special cover for fitting such a device.

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 bore if you do not mount the float-lifting lever.

➢ Insert a new gasket into the bore.

➢ Screw the float-lifting lever or the sealing plug hand tight into the bore.

➢ Tighten the float-lifting lever or the sealing plug to a torque of 75 Nm.

Changing the position of installation

You can install the equipment in various installation positions.

When using the equipment as a steam trap or condensate drain for compressed air, select an installation position with the name plate on the cover facing up.

Attention!

Malfunctions may occur if the control unit is installed incorrectly.

➢ When installing the equipment make sure that the name plate is on top and the float is free to move up and down.

Proceed as follows:

➢ Take the cover off the body as described from page 13 onwards.

➢ Remove the control unit as described from page 14 onwards.

➢ Turn the control unit by 90 ° or 180 ° into the desired position of installation.

➢ Install the control unit such that the float is free to move up and down.

➢ Attach the control unit to the body as described from page 16 onwards.

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.
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.
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.

Problem	Cause	Remedy
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.
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.
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.
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

Risk of extremely severe injury or death due to burns, freezing or intoxication during work on pipes.

- ➢ Make sure that there is no hot or cold fluid in the equipment or pipes.
- ➢ Make sure that the equipment pipes are not under pressure.
- ➢ Make sure that the system is switched off and secured so it cannot be turned on by unauthorised persons.
- ➢ Make sure that the equipment and pipes are lukewarm.
- ➢ Wear protective clothing that is suitable for the fluid, and use suitable personal protective equipment if necessary.

Information on suitable protective clothing and PPE can be found in the safety data sheet of the fluid used.

➢ 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 10.

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.
- If necessary re-work welded connections in order to ensure that they are in good working condition.

➢ Use the equipment only for its intended purpose and the service conditions for which it was specified.

Returning the equipment

You can return the valve to your contractual partner.

➢ Make sure that all harmful substances are removed from the valve.

➢ Insert the stoppers in the connections.

➢ Observe the instructions in section "Transporting the equipment" from page 10.

➢ Pack the valve in its original packaging or in a suitable transport packaging.

The transport packaging must protect the valve from damage in the same way as the original packaging.

➢ Add the completed and signed decontamination declaration to the valve. The decontamination declaration must be attached to the packaging so that it is accessible from outside.

➢ Register the return delivery with your contractual partner before returning the valve.

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:

Component	**EN**	**ASME/ASTM**
Body of UNA 14, UNA 14P, UNA 16	1.0460	SA105
Body of UNA 16A (stainless steel)	1.4404	SA182-F316L
Cover of UNA 14, UNA 14P	5.3103	A395 [1]
Cover of UNA 16	1.0619	SA216-WCB
Cover of UNA 16A (stainless steel)	1.4408	SA351-CF8M
Gasket (3)	Graphite CrNi	
Membrane regulator capsule 5N2	Hastelloy/stainless steel	
Other controller parts, sealing ring (17)	Stainless steel	

1 ASTM material is comparable to EN material. Pay attention to differences in chemical and physical properties.

The rolling ball for UNA 14P, UNA 16 and UNA 16A is also available in Perbunan.

Technical data

Dimensions and weights

All equipment

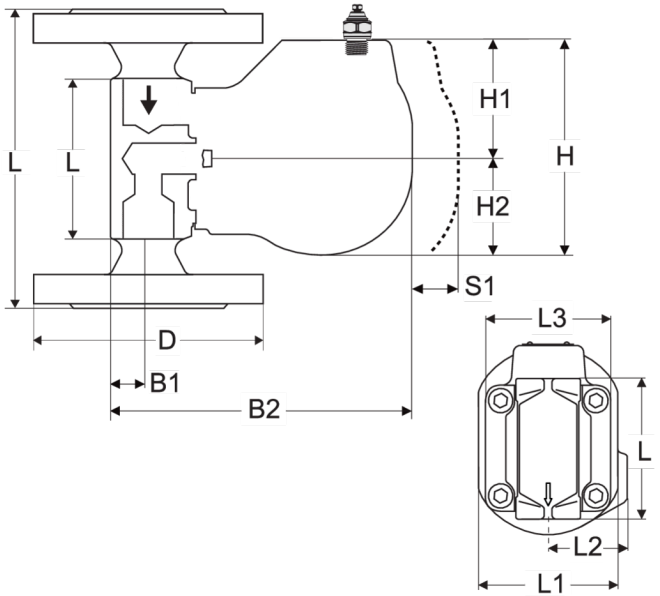
	mm	inches
H	127	5
H1	70	2.8
H2	57	2.2
B1	22	0.9
B2	156	6.1
L1	94	3.7
L2	53	2.1
L3	84	3.3
S1 Service dimensions for cover	120	4.7

Plus 25 mm (1 “) if fitted with manual vent valve.

Plus 35 mm (1.4 “) if fitted with float-lifting lever.

Plus 13 mm (0.5 “) if fitted with sealing plug.

Equipment with attached socket wrench requires additional clearance of 100 mm (4 “).



All equipment

Screwed socket, socket-weld end

Butt-weld end via transition pieces

UNA 14, flange PN 25, UNA 16, UNA 16A, flange PN 40, CL125

		PN			CL		
Nominal size	DN	**15**	**20**	**25**	**15**	**20**	**25**
	NPS	**½”**	**¾”**	**1”**	**½”**	**¾”**	**1”**
L Length	mm	150	150	160	150	150	160
	inches	5.9	5.9	6.3	5.9	5.9	6.3
D Flange ⦰	mm	95.0	105.0	115.0	88.9	98.4	107.9
	inches	3.7	4.1	4.5	3.5	3.9	4.2
Weight of UNA 14	kg	6.5	7.2	7.6	–	–	–
	lb	14.3	15.9	16.8	–	–	–
Weight of UNA 16	kg	7.0	7.5	8.1	6.4	6.9	7.5
	lb	15.4	16.5	17.9	14.1	15.2	16.5
Weight of UNA 16A	kg	7.0	7.7	8.1	6.5	7.1	7.5
	lb	15.4	17.0	17.9	14.3	15.7	16.5

UNA 14, UNA 16, UNA 16A, screwed socket G, screwed socket NPT, socket-weld end EN/ASME

Nominal size	DN	**15**	**20**	**25**
	NPS	**½”**	**¾”**	**1”**
L Length	mm	95		
	inches	3.7		
Weight of UNA 14	kg	5.0	5.0	4.8
	lb	11.0	11.0	10.6
Weight of UNA 16	kg	5.5	5.5	5.3
	lb	12.1	12.1	11.7
Weight of UNA 16A	kg	5.6	5.6	5.4
	lb	12.3	12.3	11.9

UNA 16, butt-weld end EN

Nominal size	DN	**15**	**20**	**25**
	NPS	**½”**	**¾”**	**1”**
For pipe	mm	21.3 × 2.0	26.9 × 2.3	33.7 × 2.6
L Length	mm	200		
Weight of UNA 16	kg	6.0	6.0	6.1
	lb	13.2	13.2	13.4

UNA 14P, flange PN 25

		PN		
Nominal size	DN	**15**	**20**	**25**
	NPS	**½”**	**¾”**	**1”**
L Length	mm	150	150	160
	inches	5.9	5.9	6.3
D Flange ⦰	mm	95.0	105.0	115.0
	inches	3.7	4.1	4.5
Weight of UNA 14P	kg	6.6	7.3	7.7
	lb	14.6	16.1	17.0

UNA 14P, screwed socket G, screwed socket NPT

		PN		
Nominal size	DN	**15**	**20**	**25**
	NPS	**½”**	**¾”**	**1”**
L Length	mm	95		
	inches	3.7		
Weight of UNA 14P	kg	5.1	5.1	4.9
	lb	11.3	11.3	10.8

Pressure & temperature ratings

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

Note that the pressure and temperature limits might be further restricted by the type of end connection used.

Orifice	Δ PMX [bar]
4	4
13	13*
22	22

* Equipment fitted with an orifice 13 have a max. differential pressure Δ PMX of 16 bar at a liquid density of $\rho = 1{,}000$ kg/m^3 .

Pressure and temperature ratings of UNA 14 flange PN25, screwed socket G, screwed socket NPT

p Pressure[1]	barg	25.0	21.4	19.4	17.7	16.0	15.1
T Temperature[1]	°C	–10 — 50	100	200	250	300	350
Δ PMX Max. admissible differential pressure at orifice (O) 4	bar	4					
Δ PMX Max. admissible differential pressure at O 13	bar	13					

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

Pressure and temperature ratings of UNA 14P flange PN25, screwed socket G, screwed socket NPT

p Pressure[1]	barg	25.0	21.4	19.4	17.7	16.0	15.1
T Temperature[1]	°C	–10 — 50	100	200	250	300	350
Δ PMX Max. admissible differential pressure at O 13	bar	16					
Max. admissible temperature for stainless steel rolling ball	°C	120					
Max. admissible temperature for Perbunan rolling ball	°C	40					

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

Pressure and temperature ratings of UNA 16, flange PN40, screwed socket G, screwed socket NPT, socket-weld end EN, butt-weld end EN

p Pressure[1]	barg	40.0	34.2	31.0	25.7	24.1	22.8
T Temperature[1]	°C	–10 — 50	100	200	300	350	400
Δ PMX Max. admissible differential pressure at O 4	bar	4					
Δ PMX Max. admissible differential pressure at O 13[2]	bar	13					
Δ PMX Max. admissible differential pressure at O 22[2]	bar	22					

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

2 Perbunan rolling ball, differential pressure 16 bar max. 40 °C (for O 22 and O 13 only)

Pressure and temperature ratings of UNA 16, flange CL150

p Pressure[1]	barg	19.6	17.7	13.8	10.2	6.5	5.5
T Temperature[1]	°C	–29 — 38	100	200	300	400	425
Δ PMX Max. admissible differential pressure at O 4	bar	4					
Δ PMX Max. admissible differential pressure at O 13	bar	13					

p Pressure[1]	psig	285	260	230	200	170	140
T Temperature[1]	°F	-20-100	200	300	400	500	600
Δ PMX Max. admissible differential pressure at O 4	psi	58					
Δ PMX Max. admissible differential pressure at O 13	psi	188					

1 Ratings for strength of body/cover to ASME B16.5

Pressure and temperature ratings of UNA 16A, flange PN40, screwed socket G, screwed socket NPT

p Pressure[1]	barg	40.0	37.9	34.4	31.8	29.9	27.6
T Temperature[1]	°C	–10 — 50	100	150	200	250	300
Δ PMX Max. admissible differential pressure at O 4	bar	4					
Δ PMX Max. admissible differential pressure at O 13[2]	bar	13					
Δ PMX Max. admissible differential pressure at O 22[2]	bar	22					

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

2 Perbunan rolling ball, differential pressure 16 bar max. 40 °C (for O 22 and O 13 only)

Pressure and temperature ratings of UNA 16A, flange CL150

p Pressure[1]	barg	15.9	13.3	12.0	11.2	10.5	10.0
T Temperature[1]	°C	–29 — 38	100	150	200	250	300
Δ PMX Max. admissible differential pressure at O 4	bar	4					
Δ PMX Max. admissible differential pressure at O 13	bar	13					

p Pressure[1]	psig	230	195	175	160	150	140
T Temperature[1]	°F	-20-100	200	300	400	500	600
Δ PMX Max. admissible differential pressure at O 4	psi	58					
Δ PMX Max. admissible differential pressure at O 13	psi	188					

1 Ratings for strength of body/cover to ASME B16.5

2 Perbunan rolling ball, differential pressure 16 bar max. 40 °C (for O 22 and O 13 only)

For the flowrate as a function of the differential pressure see the capacity chart in the data sheet. Equipment with a DUPLEX control unit has a higher flowrate during start-up with cold water. The corresponding values are indicated in the data sheet.

Declaration of Conformity – Standards and Directives

You can find details on the conformity of the equipment and the relevant standards and directives, where applicable, in the Declaration of Conformity and associated certificates or approvals.

The valid Declaration of Conformity is available to download at www.gestra.com . You can request the associated certificates and approvals by writing to the following address:

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e-mail info@de.gestra.com
Web www.gestra.com

Modifications to the equipment not approved by us will invalidate the Declaration of Conformity and certificates/approvals.

You can find our authorized agents around the world at: **www.gestra.com**

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