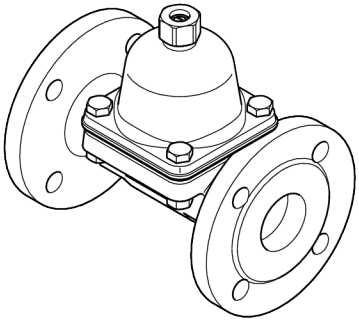
GESTRA®



Steam Trap

# BK 15

EN
English

Original Installation Instructions

**810682-04**

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## Foreword

This installation & operating manual will help you use the steam trap safely and efficiently for its intended purpose.

- BK 15

These steam traps 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

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 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 on by unauthorised persons.
  - Pipes and the equipment must have cooled to lukewarm, or around 20 °C.
- The equipment may only be used with fluids that are not aggressive in contact with material and seals. Otherwise, leaks may occur and hot 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 (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.

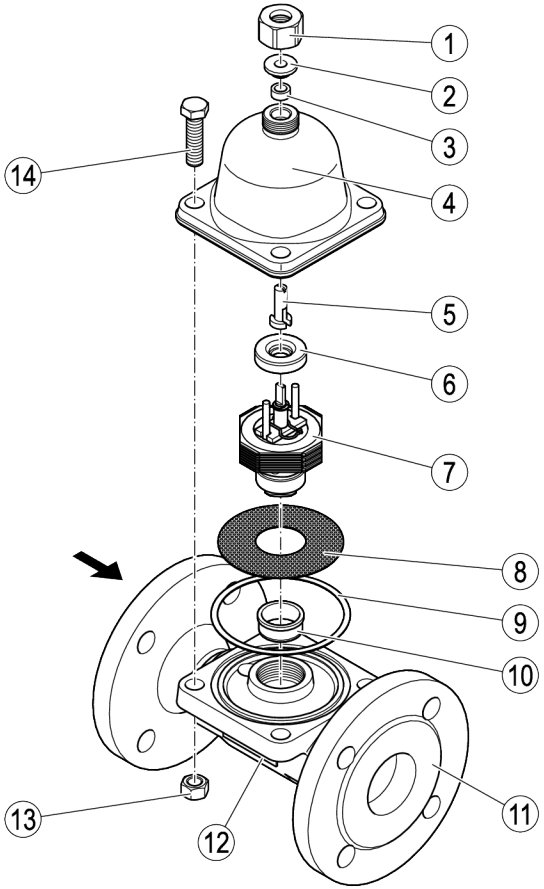
# Description

## Scope of supply and equipment specification

### Scope of supply

Our equipment is delivered packed and ready for assembly.

**Equipment specification**




| No. | Designation |
|---|---|
| 1 | Union nut (G ¾) |
| 2 | Stuffing box ring |
| 3 | Packing (9 × 14 × 7) |
| 4 | Cover |
| 5 | Adjusting fork |
| 6 | Guide ring |
| 7 | Thermovit regulator |

| No. | Designation |
|---|---|
| 8 | Strainer |
| 9 | Body gasket (92.7 × 102 × 1) |
| 10 | Bushing (interference fit) |
| 11 | Body |
| 12 | Rating plate as direction of flow arrow |
| 13 | Nut M 12 (4 ×) |
| 14 | Bolt M 12 (4 ×) |

### End connections

The equipment is available with the following end connections:

- Flanges
- Screwed sockets
- Socket-weld ends
- Butt-weld ends

### Name plate/identification

The following items are indicated on the name plate:

- Manufacturer
- Type designation
- Code letter for opening temperature of Thermovit regulator (only if different from standard value)
- Nominal size
- Pressure rating
- Max. admissible differential pressure
- Direction of flow
- Mark (if required), e.g. CE, UKCA, EAC

The following items are indicated on the equipment body:

- Material
- Batch code
- Date of manufacturing

## 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):

- 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

BK 15 equipment is used to discharge condensate from steam in pipes and for venting steam lines.

The equipment features integrated non-return valve action.

### Function of the Thermovit controller

The equipment is fitted with a Thermovit regulator that regulates the flow of the fluid. The Thermovit regulator is screwed into the body.

The Thermovit regulator consists of a stack of several bimetallic plates. As the fluid temperature rises the plates deflect, thereby moving the stage nozzle. The orifice is being closed.

When the installation is cold the Thermovit regulator is open.

You can change the Thermovit regulator settings so that the trap opens or closes at higher or lower temperatures.

In the event of backflow, the pressure of the fluid forces the nozzle stem into the nozzle support. As a result the orifice is being closed.

## 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.

**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.
- ➢ 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 distances and allow for clearances to adjacent installation parts.

For more information see page 21.

- ➢ Make sure that the pipe system of the plant is clean.
- ➢ Make sure that the equipment is free from foreign matter.
- ➢ Install the equipment in the desired, permitted installation position.
- ➢ Make sure that the equipment is safely mounted and that all connections are made correctly.

***Attention!***

Malfunctions may occur if the equipment or condensate line is insulated.

- ➢ Make sure that the heat generated by the equipment or the condensate line is dissipated.

## Operation

You can check the equipment for correct operation using the GESTRA ultrasonic measuring unit VAPOPHONE®.

➢ For more details refer to the installation & operating manual of the ultrasonic measuring unit.

For critical applications, the equipment can be fitted with a steam trap monitor.

➢ For this, read the Installation & Operating Manual of the steam trap monitor.

You can set the Thermovit regulator during operation.

## Changing the settings of the Thermovit regulator

You can adjust the opening temperature on the Thermovit regulator.

➢ Have the following tools to hand:

- Screwdriver 5.5/100
- Combination spanner size 36

### WARNING

There is a risk of injury from burns, freezing or intoxication when undoing the union nut.

➢ Wear temperature-resistant protective clothing when setting the Thermovit regulator.

➢ Make sure that the equipment is not under pressure and has cooled to lukewarm (20 °C).

To change the setting of the opening temperature, proceed as follows:

➢ Carefully unscrew the union nut (1) by maximum 1 turn.

A ¼ turn of the adjusting fork (5) changes the temperature setting by 8 K.

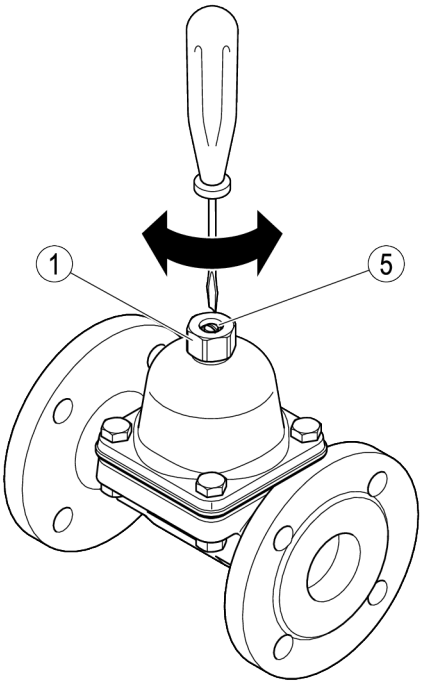
➢ To lower the opening temperature, turn the adjusting fork (5) clockwise.

The adjusting fork cannot be rotated more than 1½ turns from the factory setting. This reduces the opening temperature by 48 K.

➢ To raise the opening temperature, turn the adjusting fork (5) anti-clockwise.

The adjusting fork cannot be rotated more than 1½ turns from the factory setting. This raises the opening temperature by 48 K.

➢ Tighten the union nut to a torque of 30 Nm.



## After operation

### 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.

### 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.

### *Attention!*

Frost damage can occur when the system is switched off.

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

## Restoring the factory settings of the Thermovit regulator

To restore the factory-set opening temperature, proceed as follows:

- ➢ Have the following tools to hand:
  - ◗ Screwdriver 5.5/100
  - ◗ Combination spanner size 36

### WARNING

There is a risk of injury from burns, freezing or intoxication when undoing the union nut.

- ➢ Wear temperature-resistant protective clothing when setting the Thermovit regulator.
- ➢ Make sure that the equipment is not under pressure and has cooled to lukewarm (20 °C).

- ➢ Unscrew the union nut by maximum 1 turn.
- ➢ Using a screwdriver, turn the adjusting fork clockwise as far as it will go.
- ➢ Turn the adjusting fork 3¼ turns anti-clockwise.
- ➢ Tighten the union nut to a torque of 30 Nm.

## 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

The equipment does not require any particular maintenance.

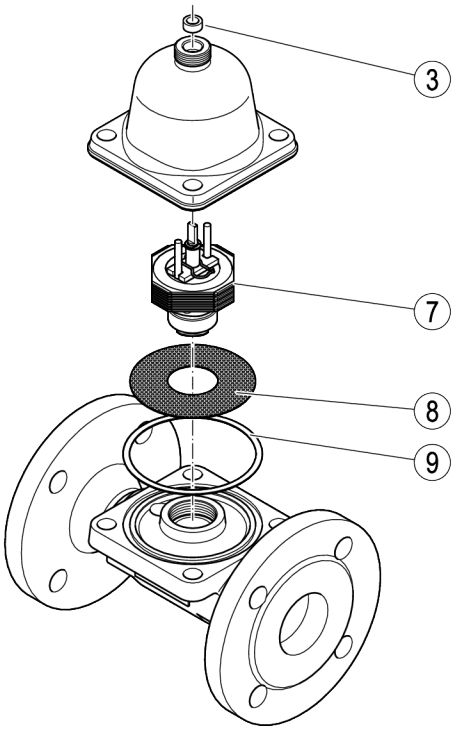
To clean the Thermovit regulator and strainer, you need to dismantle the equipment, as described on page 13 ff.

## Servicing the equipment and installing spare parts

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

- Thermovit regulator
- Strainer
- Body gasket
- Sealing ring

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




| No. | Designation | Stock code |
|---|---|---|
| 7, 9 | Thermovit regulator with body gasket | 098847 |
| 8, 9 | Strainer with body gasket | 375698 |
| 9 | Body gasket* | 375699 |
| 3 | Packing* | 376552 |

* Pack of 20. Smaller quantities must be purchased from your specialist retailer.

➢ Have the following tools to hand:

◗ Screwdriver 5.5/100

◗ Combination spanner size 18

◗ Combination spanner size 30

◗ Combination spanner size 36

**Replacing the packing**

➢ Unscrew the union nut from the cover.

➢ Remove the stuffing box ring.

➢ Remove the packing.

➢ Insert new packing.

➢ Insert the stuffing box ring.

➢ Screw the union nut into the cover.

➢ Tighten the union nut to a torque of 30 Nm.

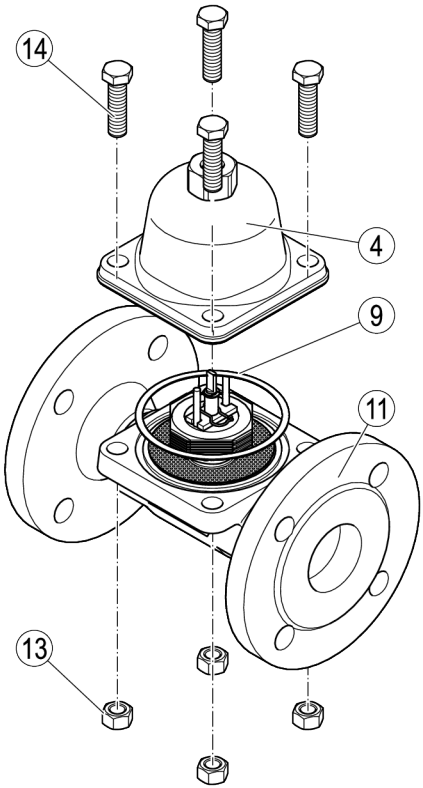
**Removing Thermovit regulator**

To clean the Thermovit regulator and, if necessary, replace it with a new one proceed as follows:

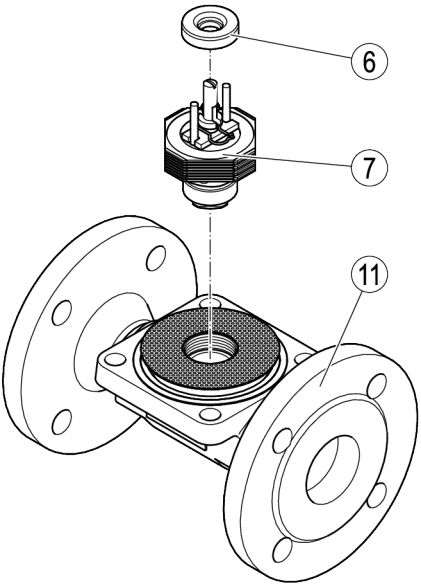
➢ Remove the 4 nuts (13) and bolts (14).

➢ Remove the cover (4) from the body (11).

➢ Remove the body gasket (9).



- Unscrew the Thermovit regulator (7) from the body (11).
- Detach the guide ring (6) from the Thermovit regulator.




**Cleaning Thermovit regulator**

- Clean the Thermovit regulator with fresh water and a clean lint-free cloth.
- Clean gasket seating surfaces.

**Checking the component parts for damage**

- Check the removed parts for visible signs of wear or damage.
- Discard and replace any damaged part.

**Installing Thermovit regulator**

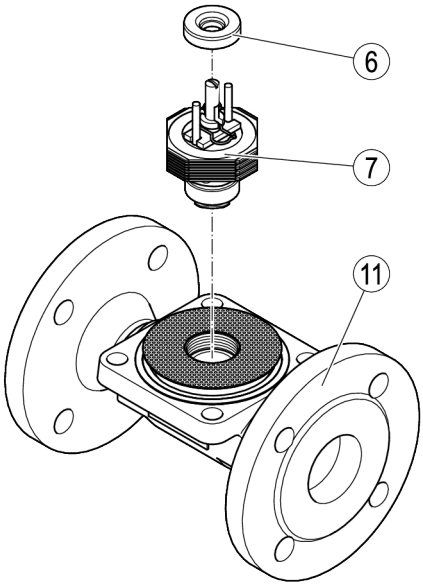
To fit the Thermovit regulator proceed as follows:

➢ Apply heat-resistant lubricant to the following surfaces:

- all threads
- the seating surface of the nozzle insert

➢ Screw the Thermovit regulator (7) into the body (11) with a torque of 140 Nm.

➢ Place the guide ring (6) on the Thermovit regulator.




***Attention!***

The equipment may leak if the body gasket is damaged.

➢ Make sure the cover is not tilted when placed on the body.

The manufacturer recommends using a new body gasket whenever you re-attach the cover.

➢ Clean the sealing surfaces of the cover (4) and body (11).

➢ Coat the threads of the hexagon socket head bolts and the sealing surfaces with temperature-resistant lubricant.

The lubricant must have the same properties as OKS® 217.

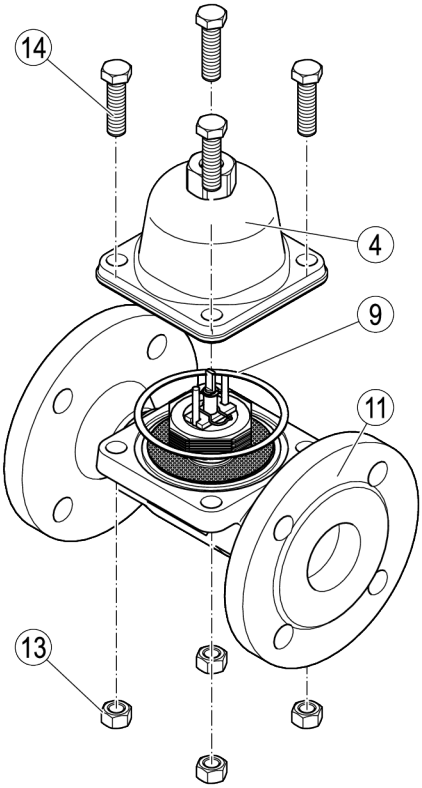
➢ If necessary, place a new body gasket (9) on the body.

➢ Place the cover (4) on the body (11).

➢ Insert the 4 bolts (14) through the cover into the body.

➢ Screw the 4 nuts (13) onto the bolts.

➢ Tighten the bolts crosswise to a torque of 45 Nm.

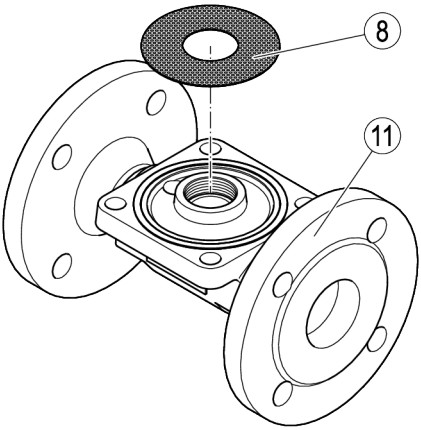



➢ Set the opening temperature, as described on page 10 ff.

### Removing and cleaning the strainer

To clean the strainer, proceed as follows:

- ➢ Remove the Thermovit regulator from the body, as described on page 13 ff.
- ➢ Take the strainer (8) out of the body (11).
- ➢ Clean the strainer with clean water and a lint-free cloth.

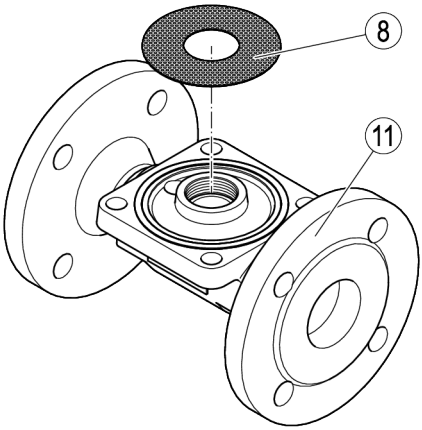



### Checking the component parts for damage

- ➢ Check the removed parts for visible signs of wear or damage.
- ➢ Discard and replace any damaged part.

### Mounting the strainer

- ➢ Insert the strainer (8) in the body (11).




- ➢ Install the Thermovit regulator in the body, as described on page 15 ff.

## Troubleshooting

| Problem | Cause | Remedy |
|---|---|---|
| The discharge capacity is too low.<br>Insufficient thermal output of the user. | The equipment is undersized. | Use equipment with a larger discharge capacity. |
| The discharge capacity is too low.<br>Insufficient thermal output of the user. | Steam pressure and condensate flowrate fluctuate considerably.<br>The pressure upstream of the equipment is too low for the used equipment type. | Use equipment with a larger discharge capacity.<br>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.<br>Use equipment made of material that is suitable for the application. |

| Problem | Cause | Remedy |
|---|---|---|
| Fluid escapes (equipment is leaking). | The equipment has been damaged by waterhammer. | Replace the equipment with a new one.<br>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.<br>Insufficient thermal output of the user. | The differential pressure is too small. | Increase the steam pressure.<br>Lower the pressure in the condensate line.<br>Use equipment with a larger discharge capacity.<br>If necessary, use a pump steam trap or a condensate return unit. |
| The discharge capacity is too low.<br>Insufficient thermal output of the user. | Insufficient deaeration. | Connect an additional air vent. |
| The flow rate is too low.<br>Loads have insufficient heat capacity.<br>The response time is too slow. | The equipment is too close to the drainage point. | Install the equipment on an incline about 1–2 m away from the drainage point.<br>Do not insulate the equipment or the pipe to the equipment. |
| The discharge capacity is too low.<br>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.<br>When shutting down the installation make sure that all lines and the equipment are completely drained. |
| The discharge capacity is too low.<br>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.<br>Remove the sealing plugs.<br>Mount the equipment. |

| Problem | Cause | Remedy |
|---|---|---|
| The flow rate is too low.<br>Loads have insufficient heat capacity. | The condensate temperature is higher than the operating temperature of the equipment.<br>The control unit opens with a delay, or not at all. | Do not insulate the equipment or the pipe to 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.<br>Clean gasket seating surfaces. |
| Fluid escapes (equipment is leaking). | The connections are not tight. | Provide the connections with leakproof seals. |
| The flow rate is too low. | The strainer is clogged. | Clean the strainer. |
| The flowrate is too low.<br>The equipment is cold or only lukewarm.<br>Insufficient heat output of consumers. | Contamination in the inflow, outflow or equipment. | Clean the pipe.<br>Clean all inner parts.<br>Replace inner parts or equipment if damaged. |

➢ 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.

**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 8.

## 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 8.

➢ 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:

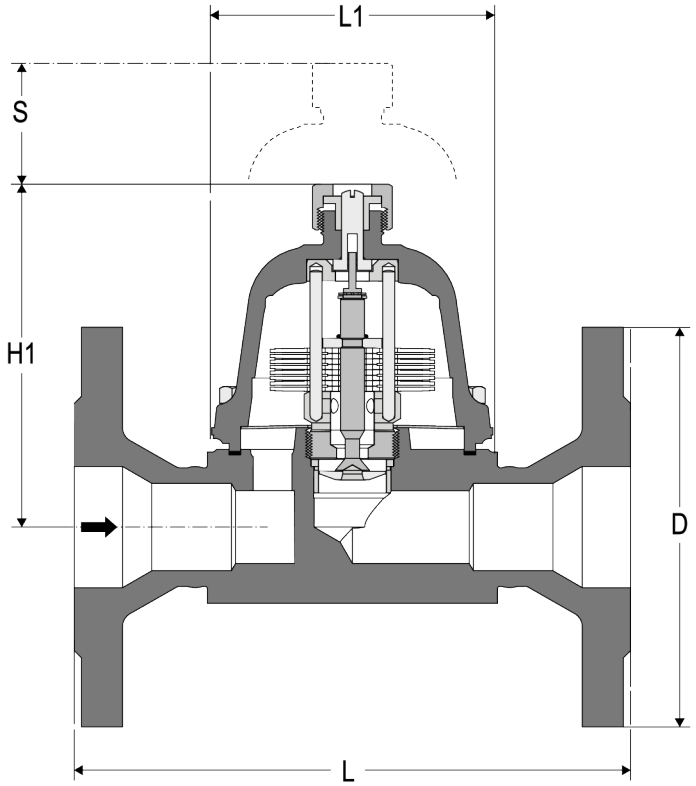
| Component | EN | ASTM/ ASME |
|---|---|---|
| Body and cover | 1.0460 | SA105 |
| Bolts | 1.7225 | A193 B7/ SA193 B7 |
| Nuts | 1.7225 | A194 B7/ SA194 B7 |
| Body gasket | Graphite | |
| Thermovit regulator | Stainless steel | |
| Other internal parts | Stainless steel | |

# Technical data

## Dimensions and weights

**All equipment**

| | mm | in” |
|---|---|---|
| H1 | 140 | 5.5” |
| L1 | 115 | 4.5” |
| S Service dimensions of cover | 90 | 3.5” |



**BK 15 flange PN40, CL150, CL300**

| | | PN40 | | CL150 | | CL300 | |
|---|---|---|---|---|---|---|---|
| Nominal size | DN | 40 | 50 | 40 | 50 | 40 | 50 |
| | NPS | 1½“ | 2” | 1½“ | 2” | 1½“ | 2” |
| L Length | mm | 230 | | | | | |
| | in” | 9.1” | | | | | |
| D Flange Ø | mm | 150 | 165 | 125 | 150 | 155 | 165 |
| | in” | 5.9” | 6.5” | 4.9” | 5.9” | 6.1” | 6.5” |
| Weight | kg | 11.0 | 12.5 | 11.0 | 12.5 | 11.0 | 12.5 |
| | lb | 24.3 | 27.6 | 24.3 | 27.6 | 24.3 | 27.6 |

**BK 15 screwed socket G, screwed socket NPT, socket-weld end EN/ASME**

| Nominal size | DN | 40 | 50 |
|---|---|---|---|
| | NPS | 1½“ | 2” |
| L Length | mm | 130 | 230 |
| | in” | 5.1” | 9.1” |
| Weight | kg | 6.3 | 7.7 |
| | lb | 13.9 | 17.0 |

**BK 15 butt-weld end EN**

| Nominal size | DN | 40 | 50 |
|---|---|---|---|
| L Length | mm | 250 | 250 |
| Butt-weld end via transition pieces | mm | 48.3 × 2.6 | 60.3 × 2.9 |
| Weight | kg | 6.8 | 7.5 |

## Pressure & temperature ratings

**Flange PN40, butt-weld end EN**

| p Pressure[1] | barg | 40.0 | 33.3 | 27.6 | 25.7 | 23.8 | 17.1 |
|---|---|---|---|---|---|---|---|
| T Temperature[1] | °C | –10 — 20 | 200 | 300 | 350 | 400 | 420 |
| Δ PMX Max. admissible differential pressure | barg | 22 | | | | | |

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

**Flange CL150**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| p Pressure[1] | barg | 19.6 | 13.8 | 10.2 | 8.4 | 6.5 | 5.5 |
| T Temperature[1] | °C | –29 — 38 | 200 | 300 | 350 | 400 | 425 |
| Δ PMX Max. admissible differential pressure | barg | 19.6 | | | | | |
| | | | | | | | |
| p Pressure[1] | psig | 285 | 260 | 200 | 140 | 110 | 80 |
| T Temperature[1] | °F | –20 — 100 | 200 | 400 | 600 | 700 | 800 |
| Δ PMX Max. admissible differential pressure | psig | 284 | | | | | |

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

**Flange CL300, screwed socket G, screwed socket NPT, socket-weld end EN/ASME CL3000**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| p Pressure[1] | barg | 51.1 | 43.8 | 39.8 | 37.6 | 34.7 | 28.8 |
| T Temperature[1] | °C | –29 — 38 | 200 | 300 | 350 | 400 | 425 |
| Δ PMX Max. admissible differential pressure | barg | 22 | | | | | |
| | | | | | | | |
| p Pressure[1] | psig | 740 | 680 | 635 | 570 | 530 | 410 |
| T Temperature[1] | °F | –20 — 100 | 200 | 400 | 600 | 700 | 800 |
| Δ PMX Max. admissible differential pressure | psig | 319 | | | | | |

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

You can find precise information on the pressure and temperature ratings of your equipment on the name plate and in the data sheet.

## Declaration of Conformity – Standards and Directives

You can find details on the conformity of the equipment and the applicable standards and directives in the Declaration of Conformity and the relevant certificates.

You can download the latest Declaration of Conformity at www.gestra.com. You can request the relevant certificates by writing to the following address:

**GESTRA GmbH**
Münchener Straße 77
28215 Bremen
Germany
Phone +49 421 3503-0
Fax +49 421 3503-393
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 the certificates.

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

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