

GESTRA

Steam Trap

BK 15

(DN40, DN 50)

EN
English

Installation & Operating Manual
810682-03

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Important Notes

Usage for the intended purpose

Use the BK 15 steam trap only for discharging condensate from steam or for air venting. Use in pipes for discharging condensate from steam, paying attention to the admissible pressure and temperature ratings and the impact of chemicals and corrosion on the pressure equipment.

Safety Note

The equipment may only be installed, brought into service, maintained and refitted by authorised staff who have the required knowledge and have undergone specific training.



Danger

The equipment is under pressure and hot during operation. Risk of injuries and severe burns to the entire body.
Only perform installation and maintenance work when the equipment is not under pressure (0 bar) and is cold (20 °C).
Before performing installation or maintenance work, vent the equipment and isolate it from both upstream and downstream pressure.
Sharp edges on inner parts present a danger of cuts to hands.
Always wear industrial gloves when working on the equipment.



Attention

The rating plate specifies the technical features of the equipment.
Do not bring into service or operate any equipment that does not bear its own specific rating plate. The pressure and temperature data on the trap's rating plate must conform to the requirements of the system.

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 fluids: ■ Group 2 fluids

ATEX Directive

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

Once installed, static electricity may arise between the equipment and the connected system. During use in potentially explosive atmospheres, the discharge or prevention of possible electrostatic charging is the responsibility of the manufacturer or owner of the system.

If there is a possibility of fluid escaping, e.g. via actuating devices or leaks in screwed couplings, the manufacturer or owner of the system must take this into consideration when dividing the area into zones.

Notes on the Declaration of Conformity/ Manufacturer's Declaration

You can find details on the conformity assessment in accordance with European Directives in our Declaration of Conformity or Manufacturer's Declaration.

You can request the valid Declaration of Conformity or Manufacturer's Declaration from the address below:

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Modifications to the equipment not approved by us will cause this Declaration to lose its validity.

Scope of supply

BK 15

1 Steam trap BK 15
1 Installation & Operating Manual

Description

Thermostatic steam trap with corrosion-resistant, water hammer-resistant Thermovit (Duo stainless steel) regulator. The Thermovit regulator can be adjusted from the outside. With integral strainer and non-return valve unit. Asbestos-free body gasket (graphite). Installation in any position.

The steam trap is factory-set to discharge condensate with virtually no banking-up.

Greater supercooling can be set manually from the outside after installation.

The trap vents independently both when the system is started up and during operation.

The BK 15 can also be used as an air vent.

Design

BK 15:

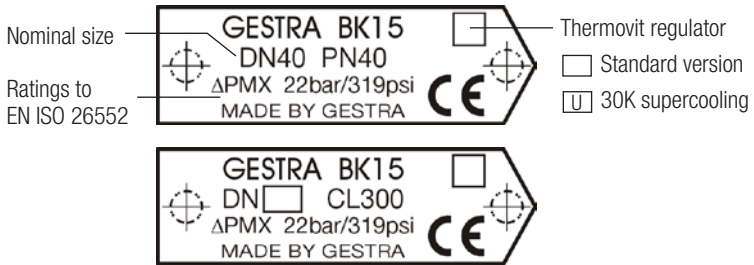
Version for installation in horizontal and vertical pipes.

Rating plate/markings

For pressure and temperature ratings, see the marking on the body or the information on the rating plate. For further information, see GESTRA publications such as data sheets and Technical Information booklets.

The type and version are indicated on the rating plate or body:

- ▶ Manufacturer's name/logo
- ▶ Type designation
- ▶ Pressure class PN or Class
- ▶ Material number
- ▶ Direction of flow
- ▶ Stamp on body/rating plate, e.g. $\frac{1}{10}$ indicates the quarter and year of manufacture (example: 1st quarter of 2010).



Component parts of BK 15

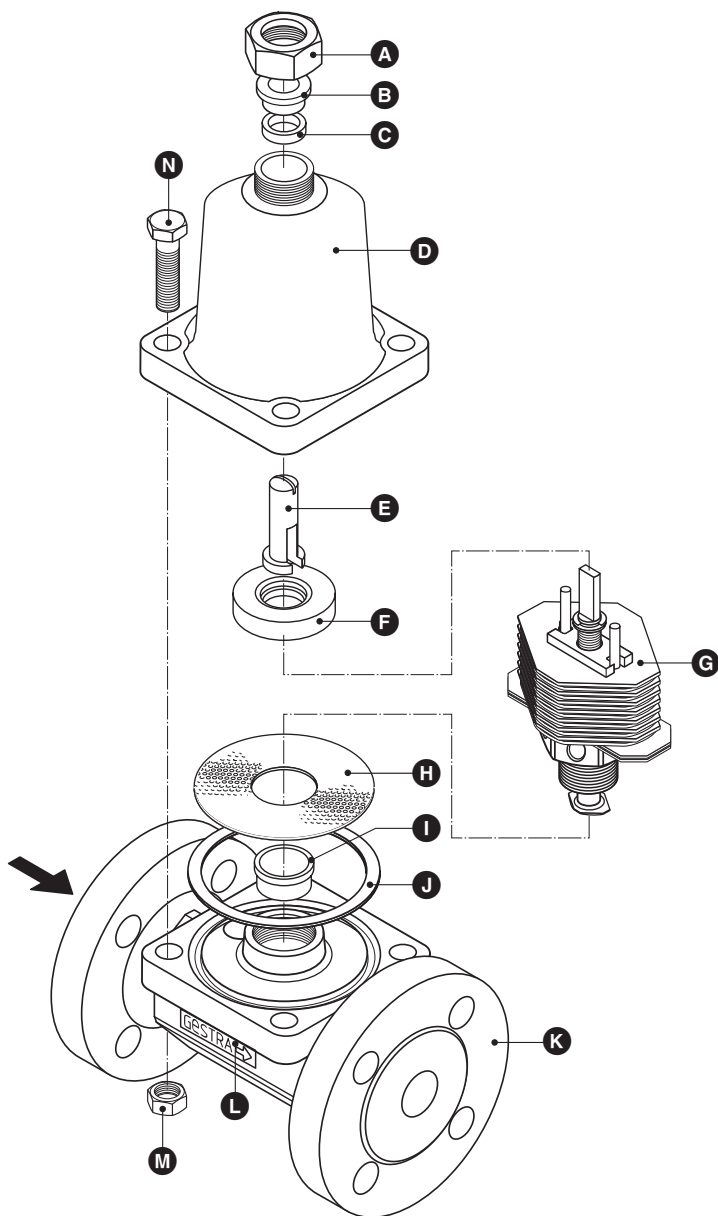


Fig. 2

Key

- A** Union nut G $\frac{3}{4}$
- B** Stuffing box ring
- C** Packing 9 x14 x 7
- D** Cover
- E** Adjusting fork
- F** Guide ring
- G** Thermovit regulator
- H** Strainer
- I** Bush (force-fit, no spare part)
- J** Body gasket 92,7 x 102 x 1
- K** Body
- L** Rating plate
- M** Hexagon nut M12
- N** Hexagon bolt M12

BK 15

Any installation position is possible, as long as the direction of flow arrow is complied with. If installed in a horizontal pipe, it is best to have the cover facing upwards. We recommend that you do not insulate the steam trap.



Danger

The equipment is under pressure and hot during operation. Risk of injuries and severe burns to the entire body.

Only perform installation and maintenance work when the equipment is not under pressure (0 bar) and is cold (20 °C).

Before performing installation or maintenance work, isolate the equipment from upstream and downstream pressure, and vent it.

Sharp edges on inner parts present a danger of cuts to hands. Always wear industrial gloves when working on the equipment.


Flanged version

1. Ensure the correct installation position.
2. Ensure the correct direction of flow. The direction of flow arrow is on the trap body.
3. Leave sufficient space for servicing. When the trap is installed, a minimum space of **90 mm** is required for opening cover **D**.
4. Remove the plastic plugs. They are used **only** as transit protection.
5. Clean the sealing surfaces of both flanges.
6. Install the trap.

Socket-weld version

1. Ensure the correct installation position.
2. Ensure the correct direction of flow. The direction of flow arrow is on the trap body.
3. Leave sufficient space for servicing. When the trap is installed, a minimum space of **90 mm** is required for opening cover **D**.
4. Remove the plastic plugs. They are used **only** as transit protection.
5. Remove the Thermovit regulator as described in the **Maintenance** section.
6. Clean the socket weld end.
7. Install **only** using arc welding (welding process 111 and 141 to DIN EN 24063), or equivalent standard.

Butt-weld version

1. Ensure the correct installation position.
2. Ensure the correct direction of flow. The direction of flow arrow is on the trap body.
3. Leave sufficient space for servicing. When the trap is installed, a minimum space of **90 mm** is required for opening cover .
4. Remove the plastic plugs. They are used **only** as transit protection.
5. Clean the butt weld ends
6. Install using arc welding (welding process 111 and 141 to DIN EN 24063) or gas welding (welding process 3 to DIN EN 24063), or equivalent standard.



Attention

- ▶ Steam traps may only be welded in pipes by welders with test certification to DIN EN 287 or equivalent qualifications.

Heat treatment of welds

Subsequent heat treatment of welds is not necessary provided the pipe is made from similar material to the trap body.

If pipes are of a material that render heat treatment necessary, this must be restricted to the immediate vicinity of the weld. If this is not possible, remove the Thermovit regulator before heat treatment.

Bringing into Service

Make sure that all connections have undergone a suitable pressure test in conformity with the applicable regulations.



Danger

The equipment is under pressure and hot during operation. Risk of injuries and severe burns to the entire body.

Only perform installation and maintenance work when the equipment is not under pressure (0 bar) and is cold (20 °C).

Before performing installation or maintenance work, isolate the equipment from upstream and downstream pressure, and vent it.

Sharp edges on inner parts present a danger of cuts to hands. Always wear industrial gloves when working on the equipment.

When union nut **A** is slackened to adjust the regulator, hot water or steam escapes.

Adjusting the regulator (supercooling, controlled steam flowrate)

The Thermovit regulators of the BK 15 are factory-set to ensure they close steam-tight and remove condensate with virtually no banking-up. If greater supercooling and resulting banking-up of condensate is required, e.g. for a heating process, this can be set when bringing into service or during operation:

1. Pay attention to the Danger note! Slacken union nut **A** **one** turn and turn adjustment screw **E** clockwise using a screwdriver. A $\frac{1}{8}$ turn corresponds to a 4 K change in temperature. Starting from the factory setting, you can turn adjustment screw **E** clockwise a maximum of 1.5 turns.
2. A controlled steam flowrate can also be set if required. To do this, you can turn adjustment screw **E** clockwise a maximum of 1.5 turns, starting from the factory setting.
3. Tighten union nut **A** to the torque indicated in the table.

Restoring the factory settings

The Thermovit regulators of the BK 15 are factory-set to ensure they close steam-tight and remove condensate with virtually no banking-up. If necessary, you can restore the factory settings as follows:

1. Depressurize the steam trap and let it cool to room temperature (20°C).
2. Slacken union nut **A** and turn adjustment screw **E** clockwise with a screwdriver until resistance is felt.
3. Turn adjustment screw **E** three turns anti-clockwise. The steam trap will now discharge condensate virtually without banking-up (factory setting).
4. Tighten union nut **A** to the torque indicated in the table.

Tools

- Screwdriver 5.5/100, DIN 5265, form A
- Combination spanner size 36 mm AF, DIN 3113, form B
- Torque wrench 20–160 Nm, DIN ISO 6789

Operation

BK 15

The BK 15 can be serviced (see **Maintenance**).

Maintenance

We recommend periodic tests and maintenance to ensure correct functioning of the equipment. For critical applications, we recommend continuous monitoring.



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The equipment is under pressure and hot during operation. Risk of injuries and severe burns to the entire body.

Only perform installation and maintenance work when the equipment is not under pressure (0 bar) and is cold (20 °C).

Before performing installation or maintenance work, isolate the equipment from upstream and downstream pressure, and vent it.

Sharp edges on inner parts present a danger of cuts to hands.

Always wear industrial gloves when working on the equipment.

Checking the steam trap

The BK 15 steam trap can be checked during operation using a GESTRA VAPOPHONE® ultrasonic measuring unit or TRAPtest®.

If live steam leakage is detected, clean the trap or replace the regulator.

Cleaning/replacing the Thermovit regulator and strainer

1. Pay attention to the Danger note on page 4!
2. Undo hexagon bolt **N** and take cover **D** off body **K**.
3. Fully unscrew Thermovit regulator **G** and clean it.
4. Remove and clean strainer **H**.
5. Clean body **K**, inner parts and all sealing surfaces.
6. Replace Thermovit regulator **G** if it shows visible signs of wear or damage.
7. Coat all threads and sealing surfaces with heat-resistant lubricant (e.g. OKS 217).
8. Insert a new body gasket **J**.
9. Insert strainer **H**.
10. Screw in Thermovit regulator **G** and tighten to the torque specified in the table.
11. Place cover **D** on body **K**, and tighten hexagon bolts **N** and hexagon nuts **M** cross-wise to the torques specified in the table.

Tools

- Screwdriver 5.5/100, DIN 5265, form A
- Combination spanner size 36 mm AF, DIN 3113, form B
- Torque wrench 20–160 Nm, DIN ISO 6789

Torques

Item	Designation	Torque [Nm]
G	Thermovit regulator	140
N M	Hexagon bolts/hexagon nuts	45
A	Union nuts	30

All torques are based on room temperature 20°C, threads without lubricant.

Spare Parts

Spare parts list

Item	Designation	Stock code
C	Packing 9 x 14 x 7 *)	376552
C G J	Thermovit regulator, set of gaskets	098847
H J	Strainer, body gasket	375698
J	Body gasket *) 92.7 x 102 x 1, graphite	375699

*) Min. order quantity 20 items. For smaller quantities, please contact your specialist retailer.

Taking out of Service



Danger

The equipment is under pressure and hot during operation. Risk of injuries and severe burns to the entire body.

Only perform installation and maintenance work when the equipment is not under pressure (0 bar) and is cold (20 °C).

Before performing installation or maintenance work, isolate the equipment from upstream and downstream pressure, and vent it.

Sharp edges on inner parts present a danger of cuts to hands.

Always wear industrial gloves when working on the equipment.



Attention

- ▶ If there is a risk of frost, drain the trap.

Disposal

The equipment must be disposed of in accordance with statutory waste disposal regulations.

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