



Vaposcope® Sightglass

VK 14

VK 16

EN
English

Original Installation Instructions

818577-02

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Important Notes

Usage for the intended purpose

VK 14, VK 16:

Use the sightglass only as sight flow indicator for monitoring flow in pipes. Use the equipment only within the allowable pressure and temperature ratings and only if the chemical and corrosive influences on the equipment are taken into account.

Safety note

Installation, commissioning, retrofitting and maintenance work must only be performed by qualified staff who – through adequate training – have achieved a recognised level of competence.



Danger

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

Installation and maintenance work should only be carried out when the system is depressurized (0 bar) and cold (20 °C).

The equipment must be isolated and vented from both upstream and downstream pressure before installation or maintenance work is performed.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves when servicing the equipment.



Attention

The name plate specifies the technical features of the equipment.

Do not commission or operate any item of equipment that does not bear its specific name plate. The pressure and temperature ratings on the name plate of the equipment must meet the requirements of the installation.

PED (Pressure Equipment Directive)

The equipment fulfills the requirements of the Pressure Equipment Directive PED 97/23/EC.

For use with fluids of group 2.

With CE marking (apart from equipment that is excluded from the scope of the PED as specified in section 3.3).

ATEX (Atmosphère Explosible)

The equipment does not have its own potential source of ignition and is therefore not subject to the ATEX Directive 94/9/EC.

Applicable in Ex zones 0, 1, 2, 20, 21, 22 (1999/92/EC). The equipment is not Ex marked.

Explanatory Notes

Scope of supply

VK 14

- 1 Sightglass Vaposcope® VK 14
- 1 Installation manual

VK 16

- 1 Sightglass Vaposcope® VK 16
- 1 Installation manual

Description

The GESTRA Vaposcope® is a sight flow indicator specially designed for monitoring flow conditions in pipelines. The equipment is installed **upstream of** a steam trap and enables the user to evaluate the performance of the steam trap. The Vaposcope® is used for checking steam traps for **banking up of condensate** or **steam loss**.

- **VK 14** sightglass PN 16.
- **VK 16** sightglass PN 40.

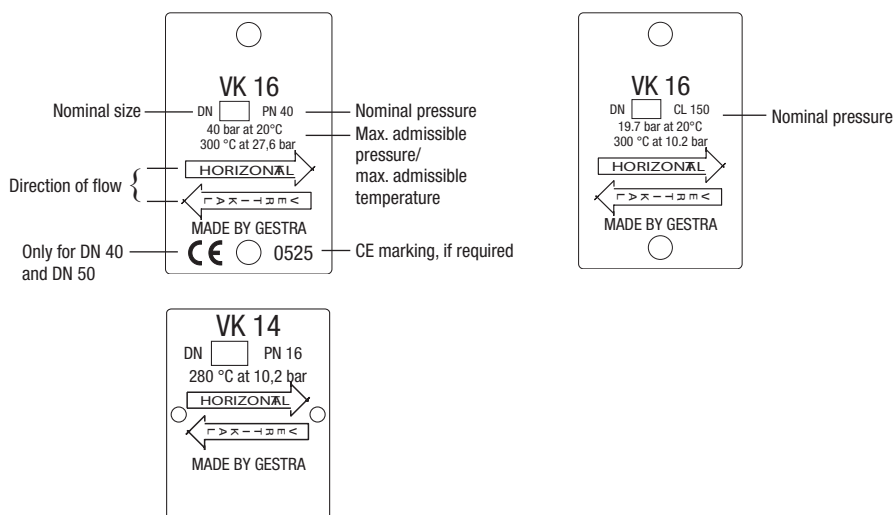
Technical Data

Name plate / marking

The temperature/pressure ratings are indicated on the body or on the name plate. For more information see GESTRA technical documents such as data sheets and the Technical Information.

The name plate or the body indicate the type and design:

- Name/logo of the manufacturer
- Type designation
- Pressure class PN or Class
- Material number
- Direction of flow
- Stamp on body e. g. $\frac{1}{09}$ specifies the quarter and the year of production (example: 1. th quarter 2009)



Design

VK 14, VK 16

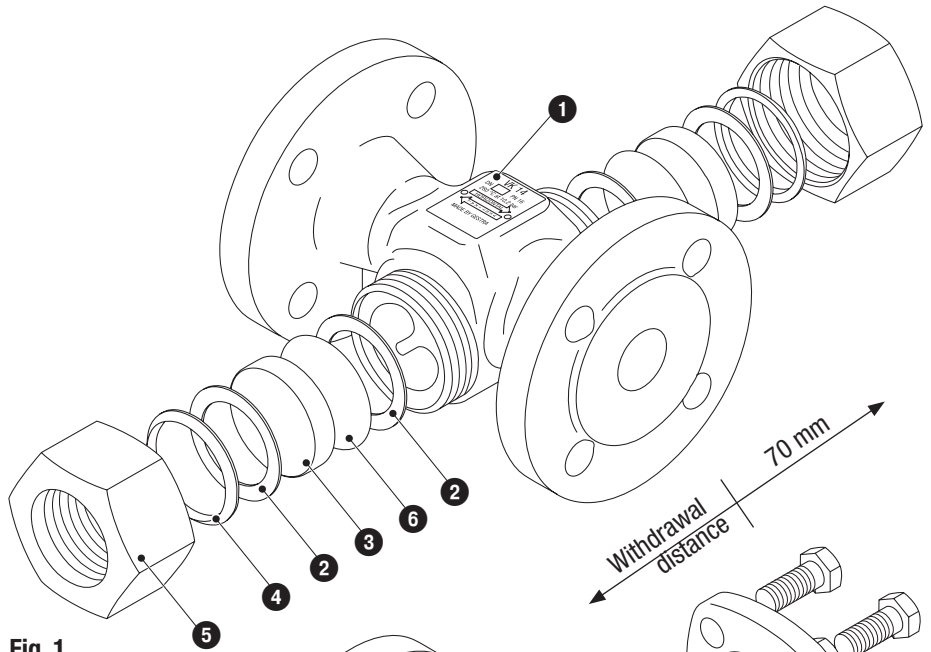


Fig. 1
VK 14, DN 15-25

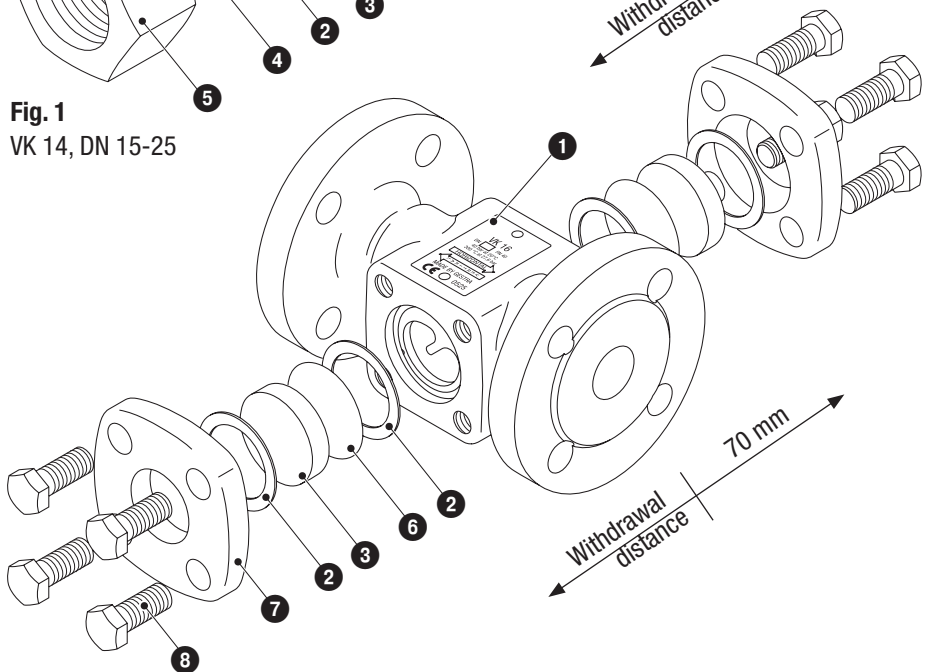


Fig. 2 VK 14, DN 40, 50, VK 16, DN 15-50

Key

- 1 Name plate
- 2 Sightglass gasket
- 3 MAXOS® safety sightglass windows
- 4 Spherical washer
- 5 Union nut
- 6 Mica disk (optional for VK 14)
- 7 Flange
- 8 Hexagon-head cap screw

Installation

VK 14, VK 16

The VK 14 or VK 16 should be installed in accordance with the flow direction arrow and **upstream** of the steam trap with the deflector pointing downwards. The equipment can be used in horizontal and vertical pipelines without any modification.



Danger

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

Installation and maintenance work should only be carried out when the system is depressurized (0 bar) and cold (20 °C).

The equipment must be isolated and vented from both upstream and downstream pressure before installation or maintenance work is performed.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves when servicing the equipment.

Installation instructions

1. The flow arrow on the body must match the steam flow direction.
2. Consider space required for servicing the equipment. When the equipment is installed a minimum withdrawal space for servicing is required for removing component parts (see **Component Parts VK 14, VK 16**).
3. Remove plastic plugs. They are only used as transit protection.
4. Clean end connections.
 - 5.1 Install equipment with releasable end connections (e. g. flanges).
 - 5.2 For equipment with socket-weld ends or butt-weld ends: Apply arc welding processes 111 and 141 according to ISO 4063 (or equivalent standard).



Attention

Welded sightglass installation should only be performed by qualified welders (certified according to EN 287 or equivalent).

Heat treatment of welds

A subsequent heat treatment of the welds is not required.

Commissioning Procedure

Make sure that all connections are subjected to a suitable pressure test according to the pertinent rules and regulations.



Danger

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

Installation and maintenance work should only be carried out when the system is depressurized (0 bar) and cold (20 °C).

The equipment must be isolated and vented from both upstream and downstream pressure before installation or maintenance work is performed.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves when servicing the equipment.

Operation

Some operating modes require maintenance of the VK 14 and VK 16 (see **Maintenance**).

Maintenance

Periodic testing and maintenance of the equipment is recommended to ensure proper functioning. Continuous monitoring is recommended for critical applications.



Danger

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

Installation and maintenance work should only be carried out when the system is depressurized (0 bar) and cold (20 °C).

The equipment must be isolated and vented from both upstream and downstream pressure before installation or maintenance work is performed.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves when servicing the equipment.



Attention

Note that sightglass windows made from borosilicate glass must NOT be used again.

VK 14, DN 15, 20, 25: Replacing MAXOS® sightglass windows

1. Before servicing the equipment observe the danger note!
2. Unscrew union nuts **5** and remove spherical washers **4**, old sightglass gaskets **2**, old sightglass windows **3** and mica disks **6**.
3. Carefully remove old sightglass gaskets **2** from the sealing surfaces of the body.
4. Remove dirt and deposits from the sightglass body.
5. Insert new sightglass gasket **2** in the body.
6. Mount spherical washers **4**, new sightglass gaskets **2**, new MAXOS® sightglass windows **3** and new mica disks **6** into the union nut **5**.
7. Screw in union nuts **5** and tighten them with the torque indicated in the table **Tightening Torques for VK 14**.

VK 14, DN 40, 50: Replacing sightglass windows MAXOS®

1. Before servicing the equipment observe the danger note!
2. Unscrew hexagon-head cap screws ⑧ and remove flange ⑦, old sightglass gaskets ②, old sightglass windows ③ and mica disks ⑥.
3. Carefully remove old sightglass gaskets ② from the sealing surfaces of the body.
4. Remove dirt and deposits from the sightglass body.
5. Insert new sightglass gasket ② in the body.
6. Apply heat-resistant lubricant (e. g. OKS® 217) to hexagon-head cap screws ⑧.
7. Insert new sightglass gaskets ②, new MAXOS® sightglass windows ③ and new mica disks ⑥ with flanges ⑦ and hexagon-head cap screws ⑧.
8. Tighten hexagon-head cap screws ⑧ with the torque indicated in the table **Tightening Torques for VK 14**.

VK 16, DN 15, 20, 25, 40, 50: Replacing MAXOS® safety sightglass windows

1. Before servicing the equipment observe the danger note!
2. Unscrew hexagon-head cap screws ⑧ and remove flange ⑦, old sightglass gaskets ②, old sightglass windows ③ and mica disks ⑥.
3. Carefully remove old sightglass gaskets ② from the sealing surfaces of the body.
4. Remove dirt and deposits from the sightglass body.
5. Insert new sightglass gasket ② in the body.
6. Apply heat-resistant lubricant (e. g. OKS® 217) to hexagon-head cap screws ⑧.
7. Insert new sightglass gaskets ②, new MAXOS® sightglass windows ③ and mica disks ⑥ with flanges ⑦ and hexagon-head cap screws ⑧.
8. Tighten hexagon-head cap screws ⑧ with the torque indicated in the table **Tightening Torques for VK 16**.

Tools

- Combination spanner (US: wrench) A. F. 60 mm, DIN 3113, form B
- Combination spanner (US: wrench) A. F. 24 mm, DIN 3113, form B
- Combination spanner (US: wrench) A. F. 18 mm, DIN 3113, form B
- Torque spanner (US: torque wrench) 25-130 Nm, ISO 6789

Maintenance – continued –

Tightening torques VK 14

Item	Designation	Tightening torques [Nm] DN 15 – 25	Tightening torques [Nm] DN 40 – 50
5	Union nut	130	
8	Hexagon-head cap screws		60

All torques indicated in the table are based at a room temperature of 20°C.

Tightening torques VK 16

Item	Designation	Tightening torques [Nm] DN 15 – 25	Tightening torques [Nm] DN 40 – 50
8	Hexagon-head cap screws	30	60

All torques indicated in the table are based at a room temperature of 20°C.

Spare Parts

Spare parts list VK 14

Item	Designation	Stock code DN 15 – 25	Stock code DN 40, 50
② ③ ⑥	Sightglass windows incl. gaskets and mica disks	703489	
② ③	Sightglass windows incl. gaskets		703488
④	Spherical washer, 1 item	171440	

Spare parts list VK 16

Item	Designation	Stock code DN 15 – 25	Stock code DN 40, 50
② ③ ⑥	Sightglass windows incl. gaskets and mica disks	703489	703490

Decommissioning



Danger

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

Installation and maintenance work should only be carried out when the system is depressurized (0 bar) and cold (20 °C).

The equipment must be isolated and vented from both upstream and downstream pressure before installation or maintenance work is performed.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves when servicing the equipment.

Disposal

For the disposal of the equipment observe the pertinent legal regulations concerning waste disposal.

Annex

Note on the Declaration of Conformity / Declaration by the Manufacturer **CE**

For details on the conformity of our equipment according to the European Directives see our Declaration of Conformity or our Declaration of Manufacturer.

The current Declaration of Conformity / Declaration of Manufacturer are available in the Internet under www.gestra.de/documents or can be requested from us.



Agencies all over the world: www.gestra.de

GESTRA AG

Münchener Straße 77

28215 Bremen

Germany

Telefon +49 421 3503-0

Telefax +49 421 3503-393

E-mail info@de.gestra.com

Web www.gestra.de