

SIGHT GLASSES

INSTALLATION, OPERATION AND MAINTENANCE

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1 - GENERAL INFORMATION

These operating instructions provide information on mounting and maintaining the sight glasses. Please contact the supplier or the manufacturer in case of problems which cannot be solved by reference to the operating instructions.

They are binding on the transport, storage, installation, start-up, operation, maintenance and repair.

The notes and warnings must be observed and adhered to.

- Handling and all work must be carried out by expert personnel or all activities must be supervised and checked.

It is the owner's responsibility to define areas of responsibility and competence and to monitor the personnel.

- In addition, current regional safety requirements must be applied and observed when taking the fittings out of service as well as when maintaining and repairing them.

2 - NOTES ON POSSIBLE DANGERS

2.1 - SIGNIFICANCE OF SYMBOLS



Warning of general danger

2.2 - EXPLANATORY NOTES ON SAFETY INFORMATION

In these Operating and Installation Instructions dangers, risks and items of safety information are highlighted to attract special attention.

Information marked with the above symbol and "CAUTION!" describe practices, a failure to comply with which can result in serious injury or danger of death for users or third parties or in material damage to the system or the environment. It is vital to comply with these practices and to monitor compliance.

All other information not specifically emphasized such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage to property.

3 - STORAGE AND TRANSPORT



- Protect against external force (like impact, vibration, etc.).
- Valves must not be used to take external forces, e.g. they are not designed for use as climbing aids, or as connecting points for lifting gear.
- Suitable materials handling and lifting equipment should be used. See applicable drawing for weights.

Storage shall be performed at -20°C to +65°C temperature range.

Standard painting is a base coat to protect against corrosion during transportation and storage. Do not damage paint protection.

4 - DESCRIPTION

4.1 - SCOPE OF APPLICATIONS

Double window sight glasses are used for the checking of media flow in pipelines and the monitoring of apparatus and system function.



- Refer to the data sheet for applications, limits on use and possibilities.
- Certain media require or preclude the use of special materials.
- The valves are designed for standard operating conditions. If conditions exceed these requirements, e.g. aggressive or abrasive media, the operator should state the higher requirements when ordering.

4.2 - OPERATING PRINCIPLES

(refer to Fig. 2 page 4)

The double window sight glass allows visual inspection of flow in pipelines. It has no moving parts.

The double window sight glass is installed in the pipeline upstream of the steam trap.

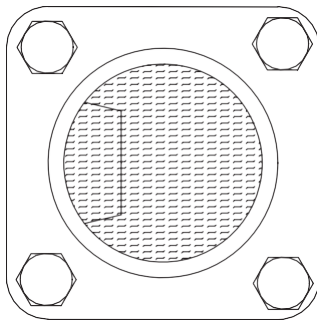
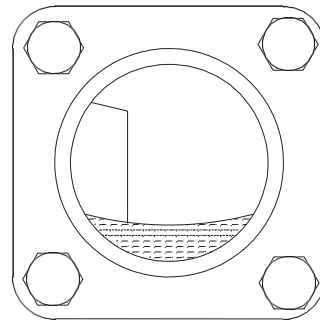


Fig. 1

Back pressure of condensate

If the pipeline is flooded due to back pressure, condensate (will back up) fill the glass with liquid.



Steam flow

On steam flow, the liquid level is lowered.

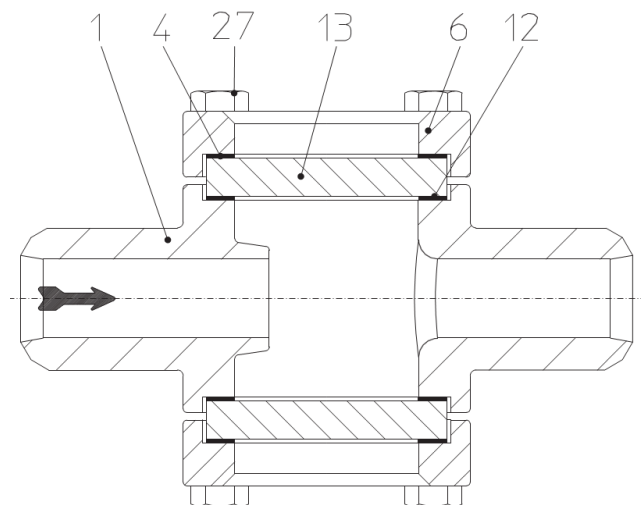
Intensive mixture of water and steam can lead to an intensive bubbling.

4.3 - DIAGRAM

Fig. 2:

Double window sight glass
PN16/40 DN10-125

Refer to the data sheet for information about materials with designations and figure numbers.



4.4 - TECHNICAL DATA - REMARKS

For:

- Principal dimensions,
- Pressure, temperature, ratings, operating limits,
- Valves with different types of connections, etc.

refer to datasheet.

5 – INSTALLATION

5.1 – GENERAL NOTES ON INSTALLATION

The following points should be taken into account besides the general principles governing installation work:

- Remove flange covers if present.
- The interior of valve and pipeline must be free from foreign particles.
- Installation in any position. Note installation position with reference to flow, see mark on valve.
- Steam line systems should be designed to prevent water accumulation.
- Lay pipelines so that damaging transverse, bending and torsional forces are avoided.
- Protect valves from dirt during construction work.
- Connection flanges must mate precisely.
- Valves must not be used to take external forces, e.g. they are not designed for use as climbing aids, or as connecting points for lifting gear.
- Suitable materials handling and lifting equipment should be used. See data sheet for weights.
- Centre gaskets between the flanges.
- Precautions against freezing should be taken in any facilities susceptible to frost.



- Planners / construction companies or operators are responsible for positioning and installing products.
- The valves are designed for application, not influenced from weather.
- For application outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapours, etc.), special constructions or protective measures are recommended.

5.2 – GENERAL NOTES ON INSTALLATION

(refer to Fig. 2 page 4)

Please note that only qualified persons using appropriate equipment and working in accordance with technical rules are allowed to install fittings by welding.

The responsibility for this lies with the system owner.

Please refer to the catalogue sheet for information on type and instructions relating to welding socket weld ends/butt weld ends.

When welding products to the pipeline system these should be adequately cooled to prevent any adverse effect on the sight glass plate (Pos. 13), the interlayer (Pos. 4) and the flat gasket (Pos. 12). The heat-affected zone should be restricted to the immediate weld seam area!

5.3 – INSTALLATION POSITION

(refer to Fig. 2 page 4)

The double window sight glass can be operated in a horizontal and vertical installation position without modification.

It should be installed upstream of the steam trap.

6 – PUTTING THE VALVE INTO OPERATION

- Before putting the valve into operation, check material, pressure, temperature and direction of flow.
- Regional safety instructions must be adhered to.
- Residues in piping and valves (dirt, weld beads, etc.) inevitably lead to leakage.
- Touching the valve when it is operating at high (> 50 °C) or low (< 0 °C) media temperatures can cause injury.

Affix warning notice or protective insulation as appropriate!

Before putting a new plant into operation or restarting a plant after repairs or modification, always make sure that:

- All works has been completed!
- The valve is in the correct position for its function.
- Safety devices have been attached.



7 – CARE AND MAINTENANCE

Maintenance and maintenance-intervals have to be defined by the operator according to the requirements.



- refer to item 10.0 and 11.0 prior to dismantling and repair work
- refer to item 6.0 before restarting the plant

After start-up the sight glass unions (Pos. 28) should be carefully retightened. (see 7.1).

If sight glasses are replaced, the seals (Pos. 12) and interlayer (Pos. 4) should be replaced at the same time.

7.1 – TIGHTENING TORQUES

Refer to Fig. 2

Pos.	Double window sight glass PN16/40	Torque (Nm)	
		DN10-25	DN40-125
28	Hex. nut	30	60

8 – TROUBLESHOOTING

In the event of malfunction or faulty operating performance check that the installation and adjustment work has been carried out and completed in accordance with these Operating Instructions.



It is essential that the safety regulations are observed when identifying faults.

If malfunctions cannot be eliminated with the help of the following table “9.0 troubleshooting table”, the supplier or manufacturer should be consulted.

9 – TROUBLESHOOTING TABLE



- refer to item 10.0 and 11.0 prior to dismantling and repair work
- refer to item 6.0 before restarting the plant

Fault	Possible cause	Corrective measures
No flow	Flange covers not removed	Remove flange covers
Little flow	Piping system clogged	Check piping system
External leakage	Hexagon nuts (Pos. 28) on cover not properly tightened	Tighten; see 7.1

10 – DISMANTLING THE VALVE OR THE BODY



The following points must be observed:

- Relieve pressure from pipe system.
- Medium must be cool.
- Plant must be drained.

For any technical request or assistance, feel free to contact Trust Valves Quality Department at:

quality@trust-valves.com - +39 02 9675 4324