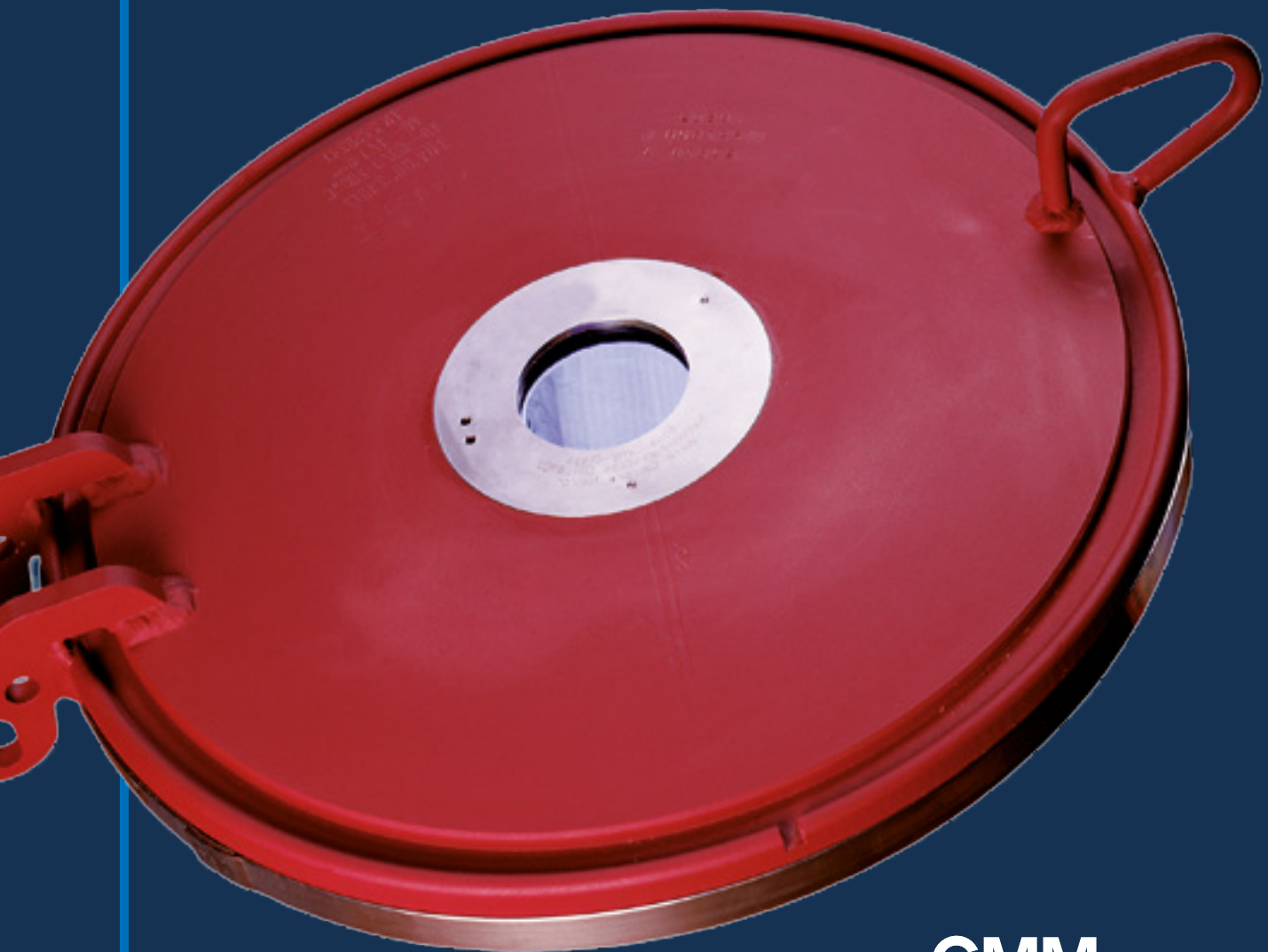


PFAUDLER

— Glass-Lined Technology

Sight Glasses

Glasslook®
fracture proof



GMM
Pfaudler

PFAUDLER

— Glass-Lined Technology

For over 130 years, Pfaudler is the leader in developing new technologies to meet the highly specific chemical processing needs of its clients. One reason why our glass-lined equipment is trusted by over 90% of the world's top chemical companies is the sheer reliability of our reaction technologies and comprehensiveness of our glass-lined accessories. These technologies are critical to the safe containment of corrosive contents, maintaining the vessel pressure and ensuring the final batch quality.

In short, our glass-lined technologies are absolutely integral to an effective process.

PRODUCTS & EQUIPMENT

Glass Lined Reactors

Glass Lined Mixing Systems

Baffling Technologies

Storage Tanks & Receivers

Glass Lined Columns

Accessories

Glass Lined Instrumentation

Glass Lined Heat & Mass Transfer

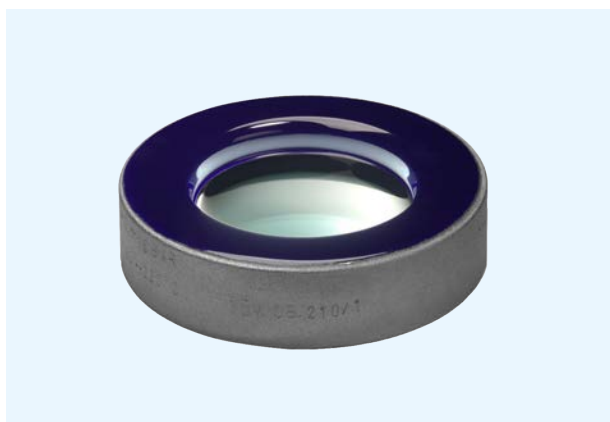
50/5/50t



Glasslook® Sight Glasses

Safety as top priority in chemical plants operation

Pfaunder offers added safety in the field of sight glasses in vessels and pipelines for optical monitoring of the process. Our sight glass type Glasslook® features a sight glass fused into a glasslined steel mount.



The glass and the glasslining are joined into a single compound. The combination of glassteel and soda-lime glass allows to achieve an extremely homogeneous stress distribution over the entire temperature range and the glass itself. This compact combination has been used for more than 25 years where it has proven its efficiency in practice.

Insight according to choice –

Glasslook® sight glasses are available in various designs:

- As sight glass in a glasslined steel mount for installation in the manhole cover or nozzle.
- One or two sight glasses directly fused into the manhole cover.

The option with two sight glasses is also available with a lamp.

Universal application range –

the product gets in contact only with the glass and the glasslining, with equal chemical resistance of both materials. The product is not contaminated.

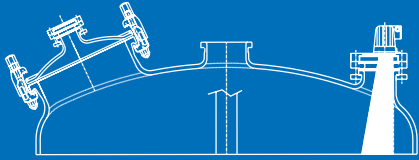
In comparison to other metal-fused sight glasses (Hastelloy, Inconel), the Pfaunder combination offers a broader application range with higher chemical resistance.

Advantages of Glasslook®:

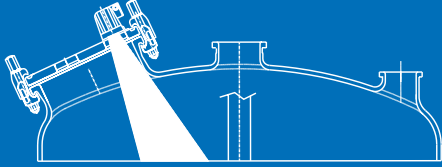
- Resistance to thermal shock due to homogeneous stress distribution within the glassteel compound.
- Leakage-free, higher resistance to pressure with high safety margins.
- Fracture-proof, no total failure, the sight glass remains tight even in the event of cracks.
- Always clear sight, higher scratch resistance, generally less sensitive to mechanical impacts.

New clear insights into the process with additional handling advantages and increased safety are now available from Pfaunder with its range of fused-in sight glasses of the Glasslook family. To meet different application demands, the glasses are even available in four different designs.





Conventional lighting



Lighting with **Glasslook® 5**

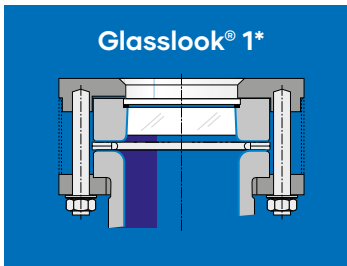


More functions

Few components

The appropriate Glasslook® for each application Glasslook® 1

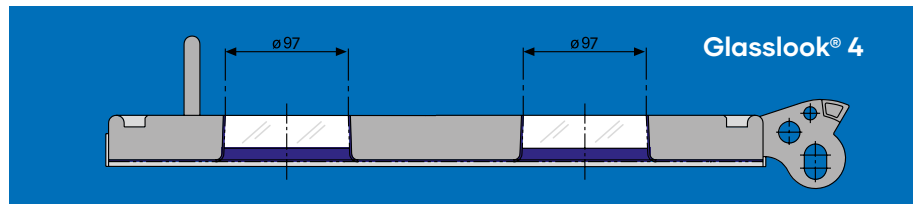
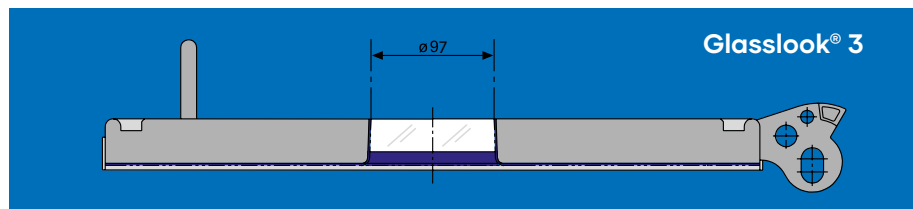
is designed to replace conventional sight glass fittings. The sight glass only has to be fastened to the nozzle with a split flange to provide immediately more safety and more insight.



* The actual design may slightly differ from the one shown

Advantages of Glasslook® 1:

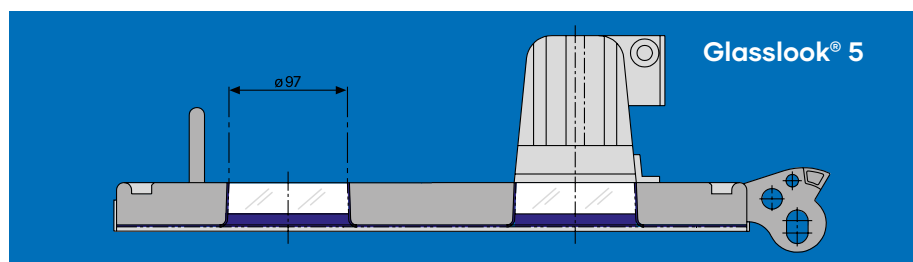
- Safe installation: distortion and damages of the glass when tightening the flange bolts are excluded.
- Fewer contaminated spots, only one gasket at the nozzle.
- GMP-approved design.



Glasslook® 3 and Glasslook® 4 feature one or two sight glasses fused right into a complete manhole cover. These compact units offer convincing advantages. The glasses, just like the manhole cover, are slightly inclined, permitting condensate to run off easily. The view into the inside of the reactor is therefore never obstructed. Cleaning is equally simple: the glass or glasses are easily accessible once the cover has been opened.

Advantages of Glasslook® 3 and 4:

- Sight glasses are easy to clean.
- Condensate runs off quickly due to inclined position.
- Fewer gaskets, more safety.
- Additional glass protects against impacts from outside.
- Longer life, more safety, absolutely maintenance-free after installation.



Glasslook® 5 with additional lamp

In contrast to lamps mounted on a nozzle, Glasslook® 5 offers not only a larger lighting angle of the light source, but also a more favorable position of the light cone. The processes inside the reactor are then much easier to monitor.

Advantages of Glasslook® 5:

- Three-in-one: manhole cover, sight glass unit, and lighting.
- One reactor nozzle remains free and can be used for other purposes.
- Non-dazzling insight/non-dazzling illumination.
- No shading-off by agitator shaft.
- Lamp sight glass is easily accessible and easy to clean.

Glass-clear: selection of options

Technical information

Technical data	
Pressure/Temperature	
Glasslook® 1 DN50–DN100:	
Pressure:	-1/+16 bar
Temperature:	-60/+230 °C
Glasslook® 1 DN150; DN200:	
Pressure:	-1/+10 bar
Temperature:	-60/+230 °C
Glasslook® 3/4/5	
Pressure:	-1/+6 bar
Temperature:	-60/+200 °C

Materials	
Sight glass:	Soda-lime glass to DIN 8902
Steel parts:	TStE 285 for Glasslook® 1 P 275 NH for Glasslook® 3/4/5
Glasslining:	Glasslook® 3/4/5 Pfaudler-WWG, blue or white; Pharmaglass PPG, light blue colour

Surface protection	
Glasslook® 1: Electroplated coating Fe/Zn8C to DIN 50961	
Glasslook® 3/4/5: Aluchrome or paint according to customer specification*	
Chemical resistance: Only limited by glass and glasslining	
Approval: Type approval by TÜV, No. TÜV.Db.210/1 or TÜV.Db.210/2	

* Electroplated coating optionally available

Description	Sizes
Glasslook® 1 Sight glass in glasslined steel mount for installation on manhole cover nozzle or stand-alone nozzle, fastened with split flange same, with protective sleeve	DN50 DN80 DN100 DN100 DN150 DN200
Glasslook® 3 Manhole cover with a fused-in sight glass	DN320/420 DN350/450 DN500 DN600
Glasslook® 4 Manhole cover with two fused-in sight glasses	DN320/420 DN350/450 DN500 DN600
Glasslook® 5 Manhole cover with two fused-in sight glasses and one 20W Lamp	DN320/420 DN350/450 DN500 DN600
Options: 50W Lamp	

Worldwide Presence



GMM Pfaudler is a global leader in corrosion-resistant technologies, systems, and services for the chemical, pharmaceutical, food and energy industry.

Our Branded Product Lines that include PFAUDLER, NORMAG, MAVAG, MIXION, INTERSEAL, EQUILLOY and EDLON, showcase our strength as a group, our capabilities, and our pursuit for constant innovation. With an end-to-end solutions-oriented approach, a global footprint, and a perfectly integrated offering system we are able to meet complex industry demands worldwide.

GMM Pfaudler is driven by 1500+ individuals across 4 continents and 14 global manufacturing facilities around the world. The Group's targeted investments in strategic markets, innovation and competitiveness paves the way forward for GMM Pfaudler's continued legacy.

100
Countries

1500 +
Employees

04
Continents

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