

**PFAUDLER**

— Glass-Lined Technology

# Filling Hole Covers

More insight with  
the right system



**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





# The Pfaudler Fillook®

## More insight with the right system

The Pfaudler Fillook filling and handhole covers three functions in one:

**Clear insight combined with increased safety** are guaranteed by the Glasslook® sightglass fused into a glasslined steel rim. By combining glasteel and soda-lime glass, an extremely homogeneous pressure tension distribution is achieved within the entire temperature range and the actual glass.

**Easy filling/ easy removal of product** is ensured by the quick-action closing system comprising four tommy screws made of stainless steel which do not require any additional tools. Pfaudler supplies also manhole covers with an integrated filling hole cover, a lamp, and two more nozzles DN50.

### One reactor opening can be used for a variety of functions

Fillook® is ideally suited for the food and pharmaceutical industry, e.g., for quick inspections of the reactor inside before and after cleaning processes.

### The benefits of Fillook®:

- Easy to clean outside and inside, no "contaminated spots". Cleaning devices for flange connection are available
- No gaskets on the sight glass
- CIP- and GMP-optimized
- Optimized for pharmaceutical applications
- Fracture-proof

Total failure of the sight glass is not possible.

### Reduced effort, increased safety

Working on the reactor becomes easier and safer in many respects:

- Fewer screws and fastening elements
- Reduced number of gaskets
- Fewer parts necessary

### Improved handling

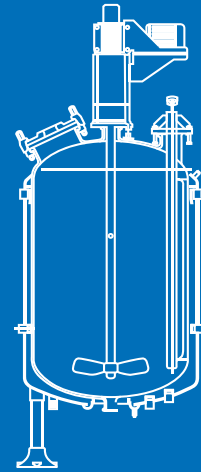
- Four stainless steel tommy screws provide for quick opening and closing of the filling hole cover – without any tools.





**ACID  
CONCENTRATION  
H<sub>2</sub>SO<sub>4</sub> | HNO<sub>3</sub>**

**MIXING**



**GLASTEEL**

—  
ANTI CORROSION  
ANTI STICK  
ANTI STATIC

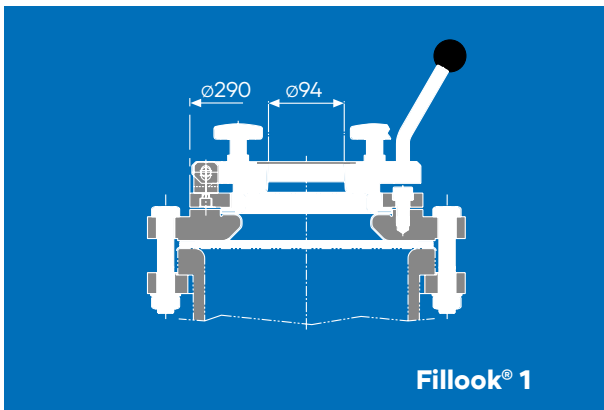
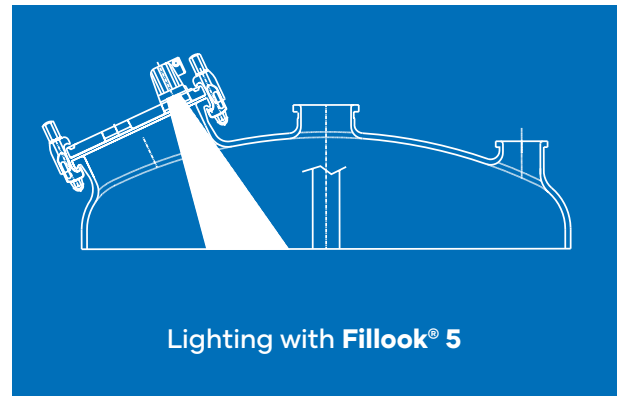
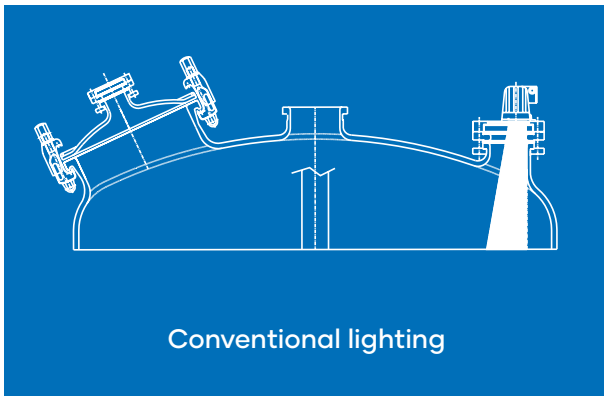


# Fillook® System For All Needs

## Übersicht der Daten

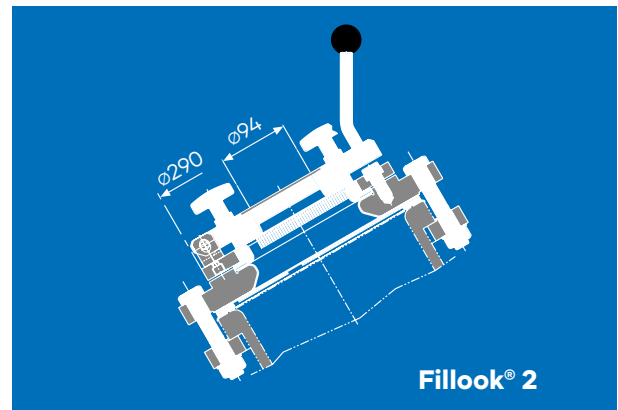
In order to meet all requirements, Pfaudler Fillook® filling hole covers are available in various designs.

All Fillook® filling hole covers are also available in hybrid (H) and stainless (SL) design.



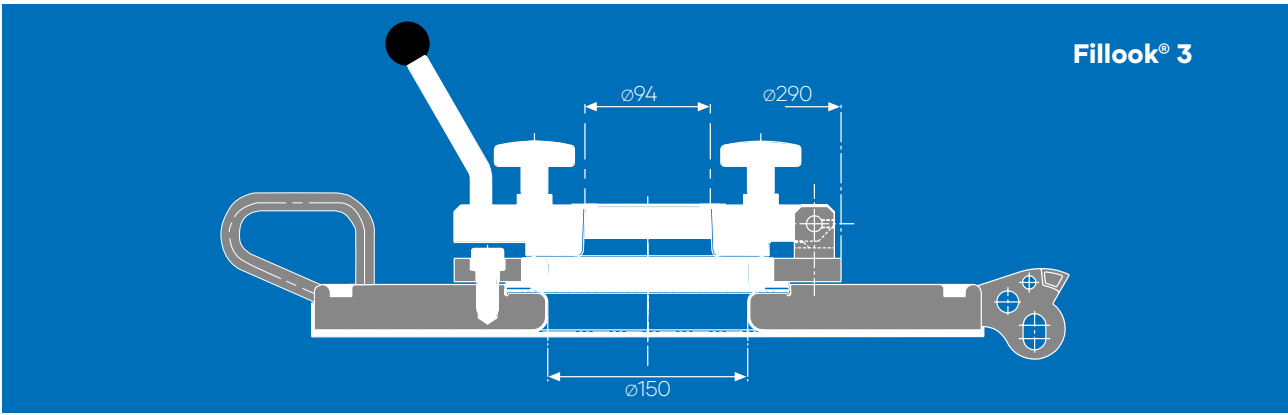
**Fillook® 1** is attached to reactor nozzles DN100 - DN300 using a split flange and for stand-alone nozzle; fastened with split flange.

**Nominal diameter:** DN100, DN110, DN150, DN200, DN250, DN300



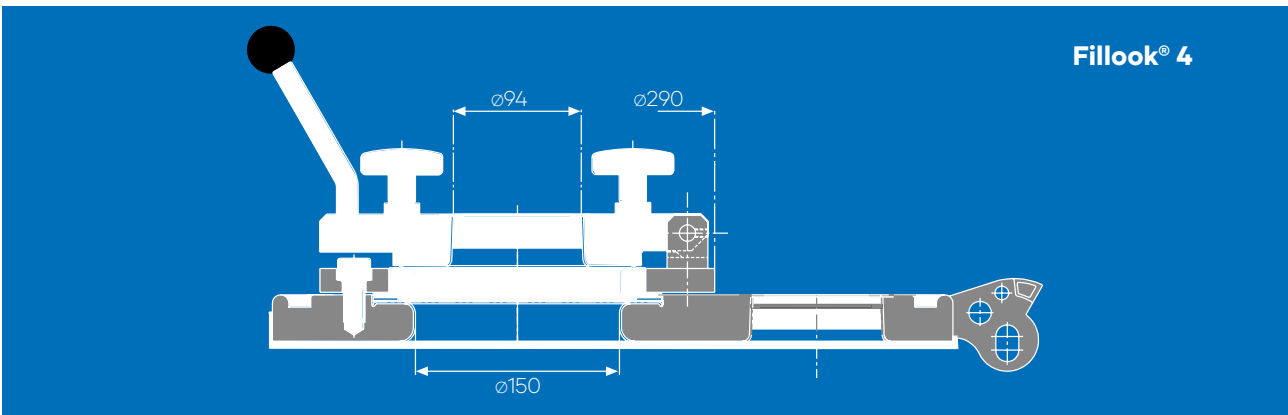
**Fillook® 2** is suitable for handholes on reactors type AE, DG and T with profiled ring fastening and for handholes on AE, DG & T; fastened with profiled ring.

**Nominal diameter:** DN100, DN150, DN200, DN250



**Fillook® 3** is a filling hole cover mounted on top of a manhole cover and manhole cover with integrated filling hole cover.

**Nominal diameter:** DN320/420, DN350/450, DN500, DN600



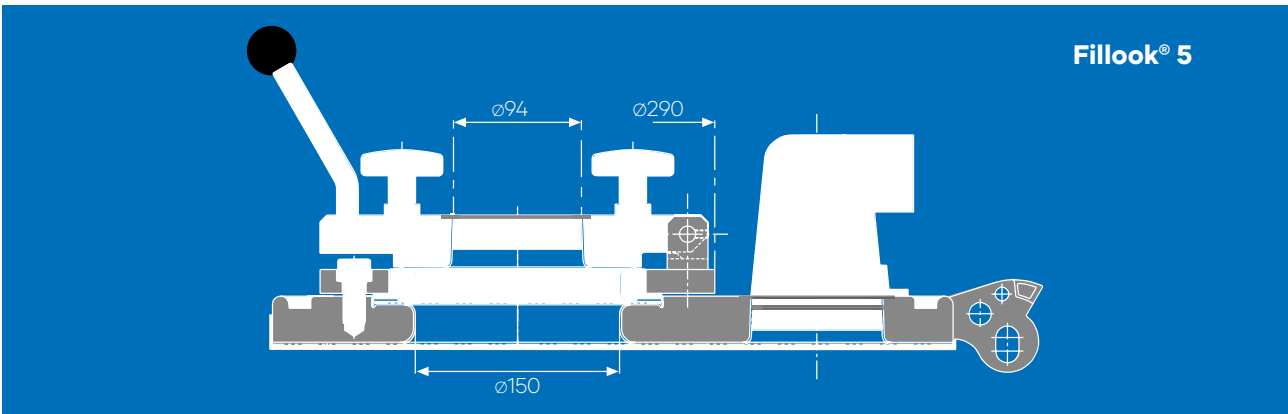
**Fillook® 4** is similar to Fillook® 3, however, it is supplemented by an additional Glasslook® sight glass fused directly into the manhole cover and manhole cover with integrated filling hole cover and additional - Glasslook® sight glass.

**Nominal diameter:** DN320/420, DN350/450, DN500, DN600

**Fillook® 4 Multiport** Manhole cover with integrated filling hole cover, additional sight glass and 2 additional nozzles DN50.

**Nominal diameter:** DN500, DN600

**Fillook® 4** and **5** are optionally also available with two additional nozzles DN50 on the manhole covers DN500 and DN600.



**Fillook® 5** is equipped with a second sight glass and a lamp, for stand-alone nozzle; fastened with split flange.

**Nominal diameter:** DN320/420, DN350/450, DN500, DN600

**Fillook® 5 Multiport** Manhole cover with integrated filling hole cover, additional sight glass with 20W lamp and 2 additional nozzles DN50.

**Nominal diameter:** DN500, DN600

# Fillook<sup>®</sup>

## Technical Perfection

To the very detail

Liquid and solid product components can be added to the reactor contents through the optional stainless steel funnel tube - a clean solution that avoids spills.

Cleaning processes are carried out more easily and thoroughly using the matching CIP lancets made from PVDF/PTFE or stainless steel.

The immersion depth can be freely defined, depending on the reactor.



**REACTION  
ENGINEERING**

**ACID  
CONCENTRATION  
H<sub>2</sub>SO<sub>4</sub> | HNO<sub>3</sub>**

**ION SENSITIVE  
pH Value 2.0**





# Fillook® Multiport

## Fillook® Standard

The gasteel design with a sight glass DN100 fused-in without any gaskets, a steel filling hole cover, galvanized, preferably for chemical apparatuses.

## Fillook® Hybrid

Filling hole cover made of stainless steel 1.4571 with fused-in sight glass DN100 without gaskets, all areas in contact with product are glassed. Preferably for fine chemistry and pharmaceutical applications.

## Fillook® Stainless

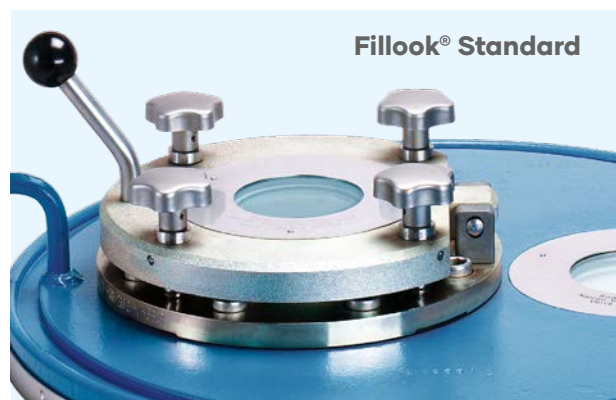
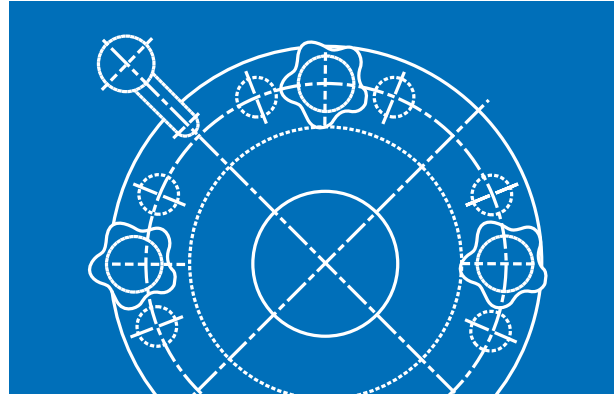
The design that is completely made of stainless steel, standard 1.4571. Other stainless steel types available on request.

## Always the right material

The Fillook® manhole covers are made for different applications and needs and from different materials or material combinations - steel/steel, steel/stainless steel, and full stainless steel design.

## Even more application ranges

With two additional nozzles DN50, Fillook® Multiport adds even more functionality to the manhole cover. The nozzles can be used, e.g., for two more measuring probes or other monitoring devices.



Fillook® Multiport  
is function x 4



**ACID  
CONCENTRATION**  
**H<sub>2</sub>SO<sub>4</sub> | HNO<sub>3</sub>**

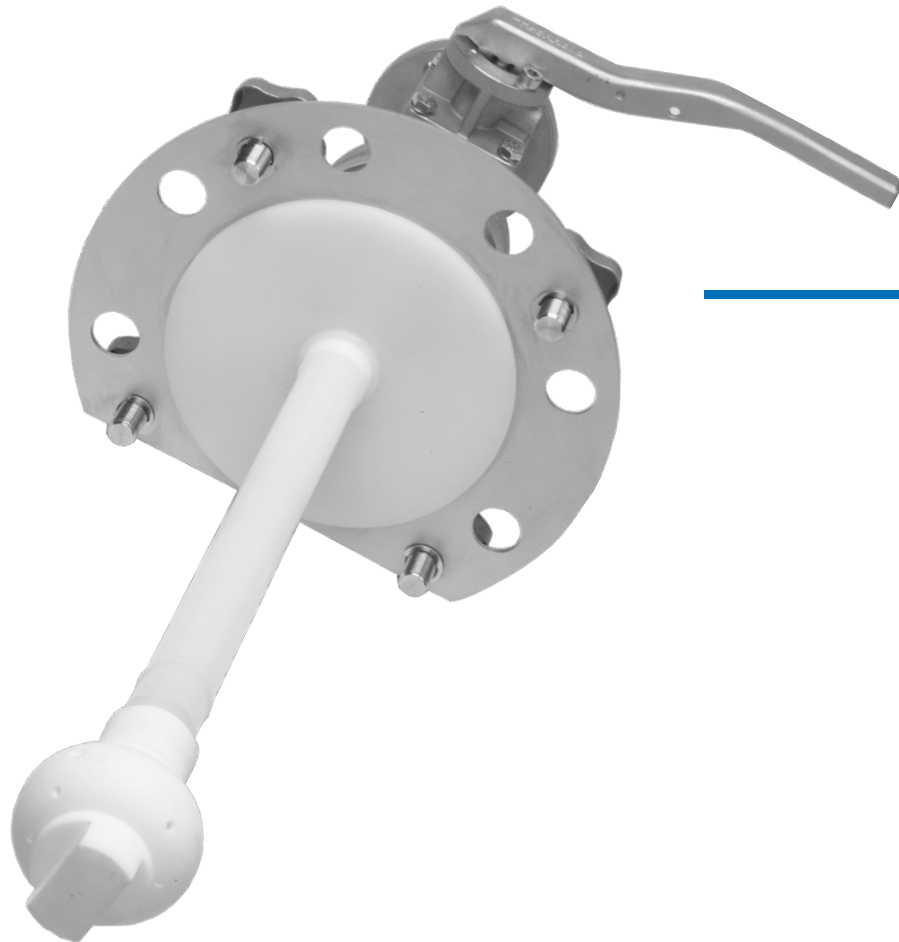
**REACTION  
ENGINEERING**



## Technical data

|                                       |  |
|---------------------------------------|--|
| Pressure                              | -1/+6 bar with Fillook® Standard and Stainless<br>-1/+10 bar with Hybrid Fillook |
| Temperature                           | -60/+200 °C  |
| <b>Materials</b>                      |  |
| Sight glass                           | Lime-soda glass, DIN 8902  |
| Pressure-bearing steel parts          | P 275 NH/1.4571/customer specification   |
| Other components                      | stainless steel  |
| Surface finishing                     | galvanic coat DIN 50961-Fe/Zn8C or stainless steel                               |
| Glasslining                           | standard glass WWG, blue or white  |
| O-ring                                | FEP-coated Viton*  |
| <b>Chemical resistance</b>            |  |
| Only limited by glass and glasslining |  |

\* Other materials available on request, also with FDA approval.





# 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

# Our Global Contacts

## Europe

|                |  |  |
|----------------|--|--|
| Germany        | <ul style="list-style-type: none"><li>■ Waghäusel</li><li>■ Ilmenau</li><li>■ Hofheim-Wallau</li></ul> | <ul style="list-style-type: none"><li>sales-de@pfaudler.com</li><li>sales-normag@pfaudler.com</li><li>sales-interseal@pfaudler.com</li></ul> |
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