

Diaphragm type chemical seal

"Quick coupling"

**Process connection : union nut
or thread neck to DIN 11 851,
SMS-, IDF-, APV/RJT-Norm
or clamp**



Description

Chemical seals are used when media can falsify the pressure measurements due to high temperature, high viscosity (media in paste form) or their propensity to crystallise.

Chemical seals transmit the process pressure to the measuring instrument, with the diaphragm forming a hermetic seal between the medium and measuring instrument.

Hygiene regulations, such as those in the pharmaceuticals or food and beverages industries, which require cleaning of measuring point so as to leave no residue and thus ensure a sterile process sequence, can be fulfilled by the use of a chemical seal in "Quick coupling" design.

The design ensures that the process connection can be easily and rapidly released and the pressure chamber easily cleaned.

The parts of these chemical seals in contact with the medium are manufactured in stainless steel as standard. In connection with a Bourdon tube pressure gauge or a transducer, they are suitable for pressure ranges from 0...0.6 bar to 0...40 bar.

The medium wetted parts can be manufactured in special materials for particular service conditions.

The liquid used to transmit the process pressure to the measuring instrument is foodstuff compatible.

Features

- o Various process connections
- o Quick coupling
- o Flush diaphragm at the front
- o Foodstuffs compatible filling liquids
- o Special materials for extreme service requirements

Pressure ranges

0 ... 0.6 bar to 0 ... 40 bar

Rated pressure










max. PN 40

Applications

Pharmaceutical, food and beverage industries,
Plant and apparatus construction,
Process engineering

**Models: P3010, P3011, P3012,
P3013, P3014, P3015,
P3016, P3017, P3018**

Technical data

| Models | P3010 | P3012 | P3014 | P3016 | Options |
|---|---|--|--|--|--|
| Process connection with union nut |  DIN 11851 DN 25; DN 32; DN 40; DN 50; |  SMS 1½" 2" |  IDF 1½" 2" |  APV/RJT 1½" 2" | Others on request |
| Models | P3011 | P3013 | P3015 | P3017 | |
| Process connection with thread neck |  DIN 11851 DN 25; DN 32; DN 40; DN 50; |  SMS 1½" 2" |  IDF 1½" 2" |  APV/RJT 1½" 2" | |
| Models | P3018 | | | | |
| Process connection clamp |  Clamp 1½" 2" 2 ½" 3" | | | | |
| Instrument connection Female thread to DIN 16288 | G ¼ with DN25 G ½ with DN32 to DN50 and 1½" to 2" | G ½ | | | G ¼, Capillary welded with body and gauge adapter for gauge mounting bracket completely stainless steel; Cooling element (with direct mounting and temperature > 100°C) |
| Upper body | Stainless steel 1.4571 | | | | Stainless steel 1.4404; 1.4435; 1.4541; Hastelloy B2, C4, C276; Monel 400; Nickel |
| Diaphragm | Stainless steel 1.4571, welded with upper body | | | | Stainless steel 1.4404; 1.4435; 1.4541; Hastelloy B2, C4, C276; Monel 400; Nickel |
| Sealing ring | NBR (Perbunan) Only model P3010 to DIN 11851 | | | | PTFE Only model P3010 to DIN 11851 |
| Filling liquid | Glycerine/water, FFL-Nr. 6 | | | | Others available in consideration of process conditions |
| Operating temperature | Tmin -10°C Tmax 120°C | | | | Tmin -10°C Tmax 250°C |

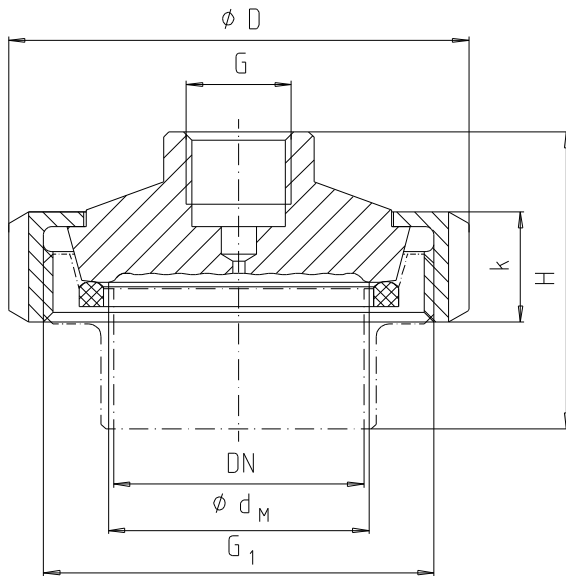
Important notes on the selection of chemical seals

The process pressure to be measured is applied to the measuring instrument by the chemical seal with the aid of a liquid. The chemical seal and measuring instrument can be connected together by capillary lines (length up to max. 15 m) for system related reasons and in order to prevent the exposure of measuring instruments to impermissibly high temperatures. The temperature drop between the instrumentation and control unit and the chemical seal can be several 100° C. Measuring errors resulting from temperature are therefore possible and may be of a magnitude several times the accuracy of the measuring instrument. The particular operating conditions can be taken into account in the manufacture of I&C device-chemical seal combinations.

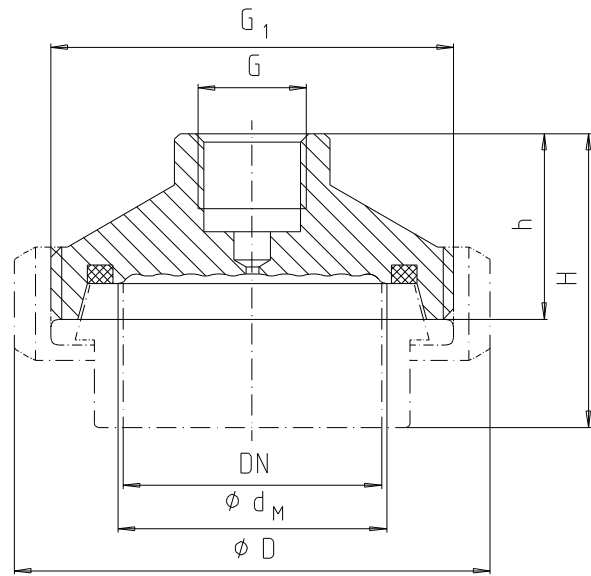
Matching of the chemical seal and pressure measuring instrument therefore requires expertise, and we shall be pleased to assist you. We recommend you to request our special questionnaire on service conditions and order data.

Dimensions (mm)

with union nut
Models P3010, P3012, P3014, P3016



with thread neck
Models P3011, P3013, P3015, P3017



| Union nut | DN 1) | PN | Dimensions (mm) | | | | | | | Weight (kg) |
|------------------------------------|-------|----|-----------------|----|-----------|-----------|----|-----------------|-------------|-------------|
| | | | d_M | D | $H_{ca.}$ | $h_{ca.}$ | k | G_1 | G_2 | |
| DIN 11851 Model P3010 | 25 | 40 | 25 | 63 | 60 | - | 21 | $G \frac{1}{4}$ | Rd 52 x 1/6 | 0.40 |
| | 32 | 40 | 32 | 70 | 69 | - | 21 | $G \frac{1}{2}$ | Rd 58 x 1/6 | 0.50 |
| | 40 | 40 | 40 | 78 | 55 | - | 21 | $G \frac{1}{2}$ | Rd 65 x 1/6 | 0.75 |
| | 50 | 25 | 52 | 92 | 59 | - | 22 | $G \frac{1}{2}$ | Rd 78 x 1/6 | 0.80 |
| SMS-Norm Model P3012 | 1½" | 40 | 40 | 74 | 51 | - | 25 | $G \frac{1}{2}$ | Rd 60 x 1/6 | 0.75 |
| | 2" | 40 | 52 | 84 | 51 | - | 26 | $G \frac{1}{2}$ | Rd 70 x 1/6 | 0.90 |
| IDF-Norm Model P3014 | 1½" | 40 | 32 | 64 | 53 | - | 30 | $G \frac{1}{2}$ | 1½" IDF | 0.70 |
| | 2" | 40 | 52 | 79 | 53 | - | 30 | $G \frac{1}{2}$ | 2" IDF | 0.85 |
| APV/RJT-Norm Model P3016 | 1½" | 40 | 32 | 72 | 60 | - | 21 | $G \frac{1}{2}$ | 2 5/16 x 8" | 0.77 |
| | 2" | 40 | 40 | 86 | 65 | - | 22 | $G \frac{1}{2}$ | 2 7/8 x 6" | 0.86 |

Effective diaphragm $\phi = d_M$

| Thread neck | DN 1) | PN | Dimensions (mm) | | | | | | | Weight (kg) |
|------------------------------------|-------|----|-----------------|----|-----------|-----------|---|-----------------|-------------|-------------|
| | | | d_M | D | $H_{ca.}$ | $h_{ca.}$ | k | G_1 | G_2 | |
| DIN 11851 Model P3011 | 25 | 40 | 25 | 63 | 60 | 44 | - | $G \frac{1}{4}$ | Rd 52 x 1/6 | 0.50 |
| | 32 | 40 | 32 | 70 | 55 | 36 | - | $G \frac{1}{2}$ | Rd 58 x 1/6 | 0.60 |
| | 40 | 40 | 40 | 78 | 55 | 36 | - | $G \frac{1}{2}$ | Rd 65 x 1/6 | 0.85 |
| | 50 | 25 | 52 | 92 | 57 | 36 | - | $G \frac{1}{2}$ | Rd 78 x 1/6 | 0.90 |
| SMS-Norm Model P3013 | 1½" | 40 | 40 | 74 | 61 | 38 | - | $G \frac{1}{2}$ | Rd 60 x 1/6 | 0.90 |
| | 2" | 40 | 52 | 84 | 61 | 38 | - | $G \frac{1}{2}$ | Rd 70 x 1/6 | 1.00 |
| IDF-Norm Model P3015 | 1½" | 40 | 32 | 64 | 63 | 40 | - | $G \frac{1}{2}$ | 1½" IDF | 0.73 |
| | 2" | 40 | 52 | 79 | 63 | 40 | - | $G \frac{1}{2}$ | 2" IDF | 0.88 |
| APV/RJT-Norm Model P3017 | 1½" | 40 | 32 | 72 | 60 | 35 | - | $G \frac{1}{2}$ | 2 5/16 x 8" | 0.85 |
| | 2" | 40 | 52 | 86 | 65 | 35 | - | $G \frac{1}{2}$ | 2 7/8 x 6" | 1.10 |

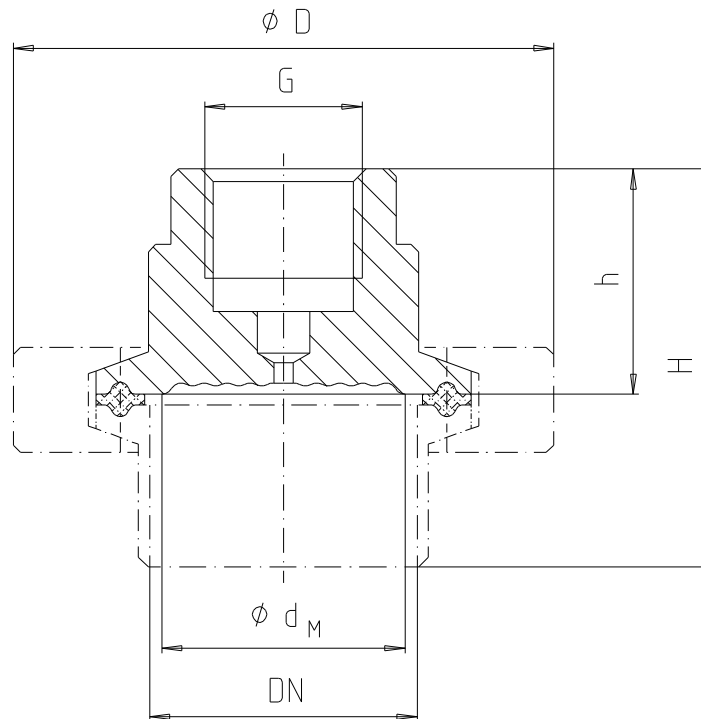
Effective diaphragm $\phi = d_M$

1) The dash dotted screwed connections in the dimensional drawings are available on request.

Dimensions (mm)

Clamp connection

Model P3018



| Clamp | DN 1) | PN | Dimensions (mm) | | | | | Weight (kg) |
|-------------|-------|----|-----------------|-----------|-----------|-----------|-----|-------------|
| | | | d_M | $D_{ca.}$ | $H_{ca.}$ | $h_{ca.}$ | G | |
| Model P3018 | 1½" | 40 | 32 | 60 | 58 | 35 | G ½ | 0.60 |
| | 2" | 40 | 40 | 75 | 58 | 35 | G ½ | 0.75 |
| | 2½" | 25 | 52 | 82 | 65 | 35 | G ½ | 0.95 |
| | 3" | 25 | 72 | 104 | 65 | 35 | G ½ | 1.30 |

Effective diaphragm $\phi = d_M$

1) The dash dotted screwed connections in the dimensional drawings are available on request.

Ordering details :

Model / process connection (Size / Norm) / Material (wetted parts) / Instrument connection / Filling liquid / Installation at pressure gauge / Process conditions as per questionnaire.