FISCHER
MESS- UND REGELTECHNIK

# Type MD 03

## General Description

Diaphragm seals of the MD 03 series are designed for used in food and beverages industries, and conform to DIN 11851 standard specifications.

## Applications

Diaphragm seals are used to isolate pressure / differential pressure measuring instruments such as gauges, transmitters, or sensors, from the media to be measured.

In the food and drinks industry, diaphragm seals must conform to standards of hygiene. Materials and manufacturing proceesses used ensure that they have the necessary corrosion resistance and functional safety.

All surfaces coming into contact with the product are processed extremely carefully to a fine degree of surface finish, and all media contact parts are free of undercuts and recesses, so that there are no places for micro-organisms or bacteria to accumulate.

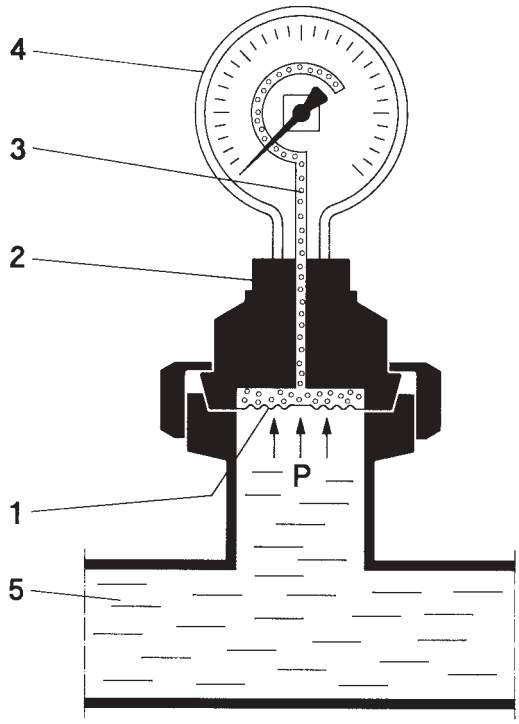
Conformity to DIN 11851 standards ensures quick installation and removal of diaphragm seals and measuring instruments, and therefore makes cleaning or sterilisation very simple.

## Important Features

- can be sterilised
- easy installation and removal
- corrosion resistant materials
- conforms to DIN 11851 specifications

## Principles of Operation

A diaphragm seal provides a fluid-filled isolation stage between the pressure medium (5) and sensitive parts of the measuring device (4). A flexible diaphragm (1) of suitable material (generally stainless steel) is the primary barrier between the pressure media and the measuring device. The space between the isolating diaphragm and the sensing surface of the measuring device is filled with special liquid (3), in this case vegetable oil. Media pressure (P) is transferred to the measuring device through the flexible diaphragm and filling liquid.




1. Diaphragm
2. Diaphragm seal housing
3. Filling liquid
4. Pressure measuring device
5. Pressure medium

032 M/2/0601 E

# Specifications

## Selection Criteria

To select a suitable diaphragm seal for a particular application, serval factors need to be considered:

- application details
- required displacement volume
- temperature of the pressure media

The manufacturer's recommendations should be followed.

| | | | | | |
|---|---|---|---|---|---|
| Nominal size: | DN | 25 | 32 | 40 | 50 |
| Nominal pressure: | PN | 40 | 40 | 40 | 25 |
| Displacement volume: | cc | 0.3 | 0.3 | 0.35 | 0.35 |

Instrument connection: Threaded socket: G½ or G¼

Process connection: DIN standard hygenic female threaded coupling

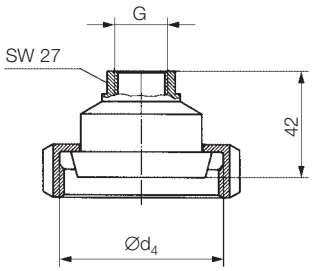
Liquid filling: Vegetable oil

Operating temperature: –10°C to +120°C

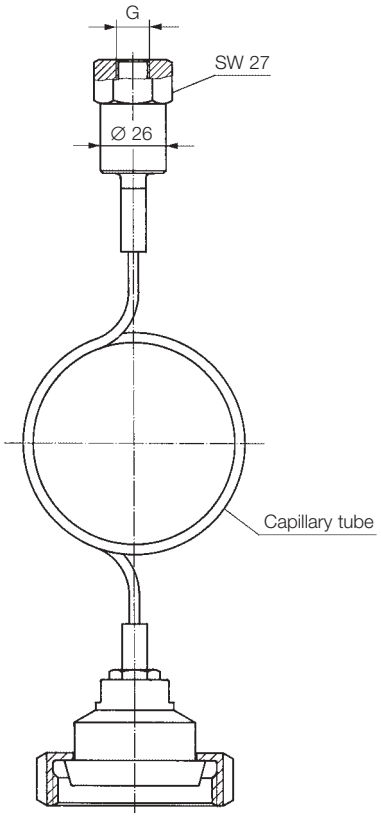
Instrument assembly: MD 03 diaphragm seals are available without or with capillary tube separation (1, 2.5, 5, 10 m). Without capillary tubing the diaphragm seal is directly coupled to the measuring device.

## Materials

| | |
|---|---|
| Diaphragm seal casing | Stainless steel 1.4571 |
| Diaphragm | Stainless steel 1.4571 |
| Process coupling | Stainless steel 1.4305 |
| Capillary tubes and instrument socket | Stainless steel 1.4571 |




| DIN | $d_5$ to DIN 405 T1 | G |
|---|---|---|
| 25 | RD 52 x 1/6 | G½ |
| 32 | RD 58 x 1/6 | G½ |
| 40 | RD 65 x 1/6 | G½ |
| 50 | RD 78 x 1/6 | G½ |




## Odering Code

### Diaphragm seals for food and beverage industries (per DIN 11851)

**Type MD 03** — V

**Nominal size**

| | | |
|---|---|---|
| DN 25 (nominal pressure 40 bar) ▷ | 2 | 5 |
| DN 32 (nominal pressure 40 bar) ▷ | 3 | 2 |
| DN 40 (nominal pressure 40 bar) ▷ | 4 | 0 |
| DN 50 (nominal pressure 25 bar) ▷ | 5 | 0 |

**Nominal pressure rating**

| | |
|---|---|
| 25 bar ▷ | G |
| 40 bar ▷ | H |

**Material of measuring system**

**Instrument connection**

| | | | | |
|---|---|---|---|---|
| Threaded socket G ½" (F) ▷ | O | 3 | 0 | |
| 1 m capillary tube with threaded coupling G ¼" (F) ▷ | K | 1 | 1 | |
| 2,5 m capillary tube with threaded coupling G ¼" (F) ▷ | K | 1 | 2 | |
| 5 m capillary tube with threaded coupling G ¼" (F) ▷ | K | 1 | 3 | |
| 10 m capillary tube with threaded coupling G ¼" (F) ▷ | K | 1 | 4 | |
| 1 m capillary tube with threaded coupling G ½" (F) ▷ | K | 3 | 1 | |
| 2,5 m capillary tube with threaded coupling G ½" (F) ▷ | K | 3 | 2 | |
| 5 m capillary tube with threaded coupling G ½" (F) ▷ | K | 3 | 3 | |
| 10 m capillary tube with threaded coupling G ½" (F) ▷ | K | 3 | 4 | |

**Assembly**

| | |
|---|---|
| Diaphragm seal only ▷ | 0 |
| Diaphragm seal assembled with pressure gauge/transmitter ▷ | 1 |