

# Diaphragm Seals

## Threaded Design, Large Volume Diaphragm

Threaded Process Connection • Model 990.40

Flanged Process Connection • Model 990.41

## Diaphragm Seals

### Service intended

Diaphragm seal to combine with pressure gauges and differential pressure gauges with diaphragm or transmitters for low pressure ranges. Suitable for corrosive, contaminated or hot pressure media.

### Design

Internal diaphragm with contoured diaphragm bed

### Process connection

Model 990.40: threaded connection  
 Model 990.41: open flanged connection  
 Flanges DN 15, 25, 50 resp.  
 NPS ½", 1", 2" per EN/ASME

### Pressure rating

PN 16 with Ø 124 mm diaphragm  
 PN 40 with Ø 72 mm diaphragm

### Suitable pressure ranges

100 mbar and up, depending on diaphragm size and process conditions

### Standard features

#### Upper body

Stainless steel 316L

#### Diaphragm

Stainless steel 316L, welded with upper body

#### Sealing ring

PTFE (Teflon)

#### Lower body (process connection)

Stainless steel 316L

Model 990.40: G ½ B (male) EN 837-1 /7.3.5

Model 990.41: Flanges DN 15, 25, 50 following EN 1092-1, sealing face form B1 or NPS ½", 1", 2" per ASME B 16.5 RF

#### Bolting

Stainless steel 316L

#### Capillary extension

Armoured capillary stainless steel 1.4571, welded with upper body.

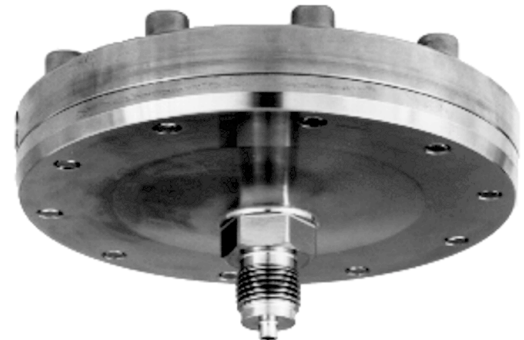
Armour material stainless steel 1.4301

Standard extension 1, 1.6, 2.5, 4, 6, 8, 10, 15 m

Minimum curve radius 50 mm

#### Instrument connection

Adaptor G ½ female per EN 837-1 /7.3, welded with capillary.



Model 990.40

### Optional extras

#### Upper body

- Stainless steel 1.4571, 1.4541

#### Diaphragm

- Stainless steel 1.4571, 1.4435, 1.4541, duplex 1.4462  
 - Hastelloy B3, C4, C276, Monel 400, Nickel, Inconel 600, Incoloy 825, tantalum, titanium, zirconium (upper housing titanium)  
 - Silver foil max. 150 °C, PTFE foil max. 260 °C ≤ 100 bar  
 - PFA coating max. 260 °C  
 - ECTFE (Halar®) coating max. 150 °C

#### Lower body (process connection)

- Lining or coating of special material see diaphragm  
 - ½ NPT female  
 - G ½ B male (lower housing massive),  
 - ½ NPT male, (others feasible)  
 - Sealing faces per EN 1092-1, form B2 or per ASME B 16.5, RF 125 AA, 500AA, RFSF; EN 1092-1 groove and tongue; projection and recess; ASME B 16.5 snap ring groove form RJF (limited for special materials, please inquire)  
 - Flushing connection (not with coating)

#### Armour

- Soft polyethylene

#### Instrument connection

- Adaptor with optional welding or pipe thread nipple  
 - Axially welded gauge adaptor per EN 837-1  
 - Various adaptors for directly mounted transmitters  
 - Cooling tower for directly mounted gauge when fluid temperature > 100 °C

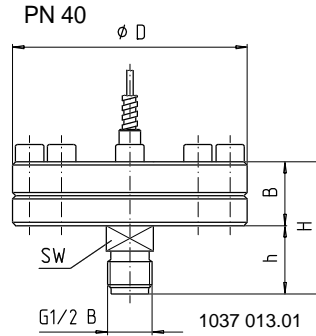
## Dimensions

### Standard version

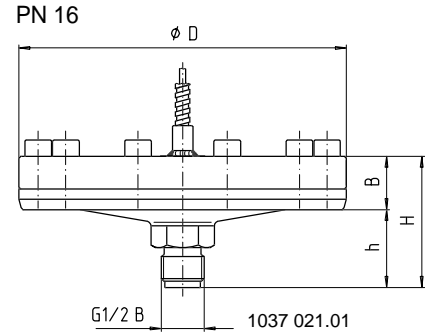
Model 990.40 with threaded process connection

Threaded connection per EN 837-1

PN [bar]	Dimensions [mm]					
	D	Mb	H	h	B	SW
40	110	72	62	37	30	22
16	160	124	64	38	24	27



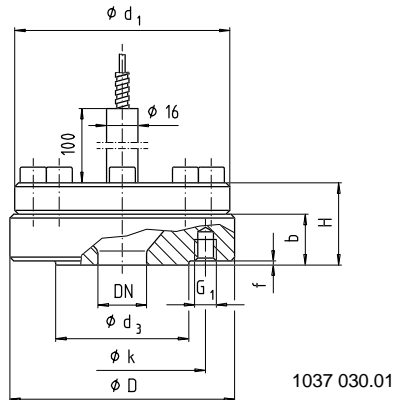
Effective diameter Mb  
of diaphragm = 72 mm



Effective diameter Mb  
of diaphragm = 124 mm

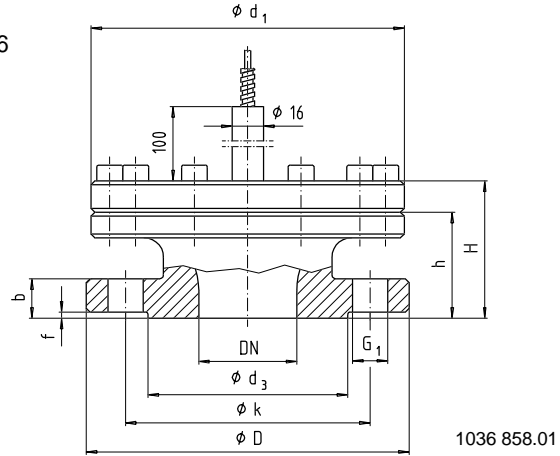
Model 990.41 with flanged process connection

PN 40



Effective diameter Mb of diaphragm = 72 mm

PN 16



Effective diameter Mb of diaphragm = 124 mm

Flange connection following EN 1092-1 form B1

DN [mm]	PN [bar]	Dimensions [mm]									Thread / Bore	
		Mb	D	d <sub>1</sub>	d <sub>3</sub>	k	H	h	b	f	Size G <sub>1</sub>	No.
15	40	72	110	110	45	65	48	-	32	2	M 12	4
15	40	124	95	160	45	65	79	63	16	2	Ø 14	4
25	40	72	115	110	68	85	42	-	26	2	M 12	4
50	40	72	165	110	102	125	44	-	28	3	M 16	4
50	16	124	165	160	102	125	70	54	20	3	Ø 18	4

Flange connection per ASME B 16.5, raised face

NPS [in.]	PN [class]	Dimensions [mm]									Thread / Bore	
		Mb	D	d <sub>1</sub>	d <sub>3</sub>	k	H	h	b	f	Size G <sub>1</sub>	No.
½	300	72	110	110	35	66.5	48	-	32	1.6	½"	4
½	150	72	110	110	35	60.5	50	-	34	1.6	½"	4
1	300	72	125	110	51	89	42	-	26	1.6	⅝"	4
2	300	72	165	110	92	127	42	-	26	1.6	⅝"	8
2	150	124	150	160	92	120.5	70	54	18	1.6	Ø 20	4

## Ordering information

Model / Size, pressure rating and applicable standard of connection / Material of wetted parts / Size of instrument connection / Filling liquid / Pressure instrument desired / Process conditions as per questionnaire / Optional extras required

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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