Diaphragm seal with flange connection
With internal diaphragm
Model 990.26

For further approvals,
see page 5

Applications

- Aggressive, highly viscous, crystallising or hot media
- Process industry
- Small flange process connections

Special features

- Flange with internal, fully welded diaphragm
- Compact design

Diaphragm seal with flange connection, model 990.26

Description

Diaphragm seals are used for the protection of pressure measuring instruments in applications with difficult media. In diaphragm seal systems, the diaphragm of the diaphragm seal effects the separation of the instrument and the medium. The pressure is transmitted to the measuring instrument via the system fill fluid which is inside the diaphragm seal system.

For the implementation of demanding customer applications, there is a wide variety of designs, materials and system fill fluids available.

For further technical information on diaphragm seals and diaphragm seal systems, see IN 00.06 “Application, operating principle, designs”.

The model 990.26 diaphragm seal is particularly well suited for use with small process connections. Due to the internal diaphragm low measuring ranges can be realised. The large diameter of the diaphragm effects a lower deviation at the measuring instrument when the temperature changes.

Mounting of the diaphragm seal to the measuring instruments may be made via direct mounting, for high temperatures via a cooling element or via a flexible capillary.

For the material selection, WIKA offers a variety of solutions, in which the upper body of the diaphragm seal and the wetted parts can be made of identical or different materials. The wetted parts can, as an alternative, be coated.

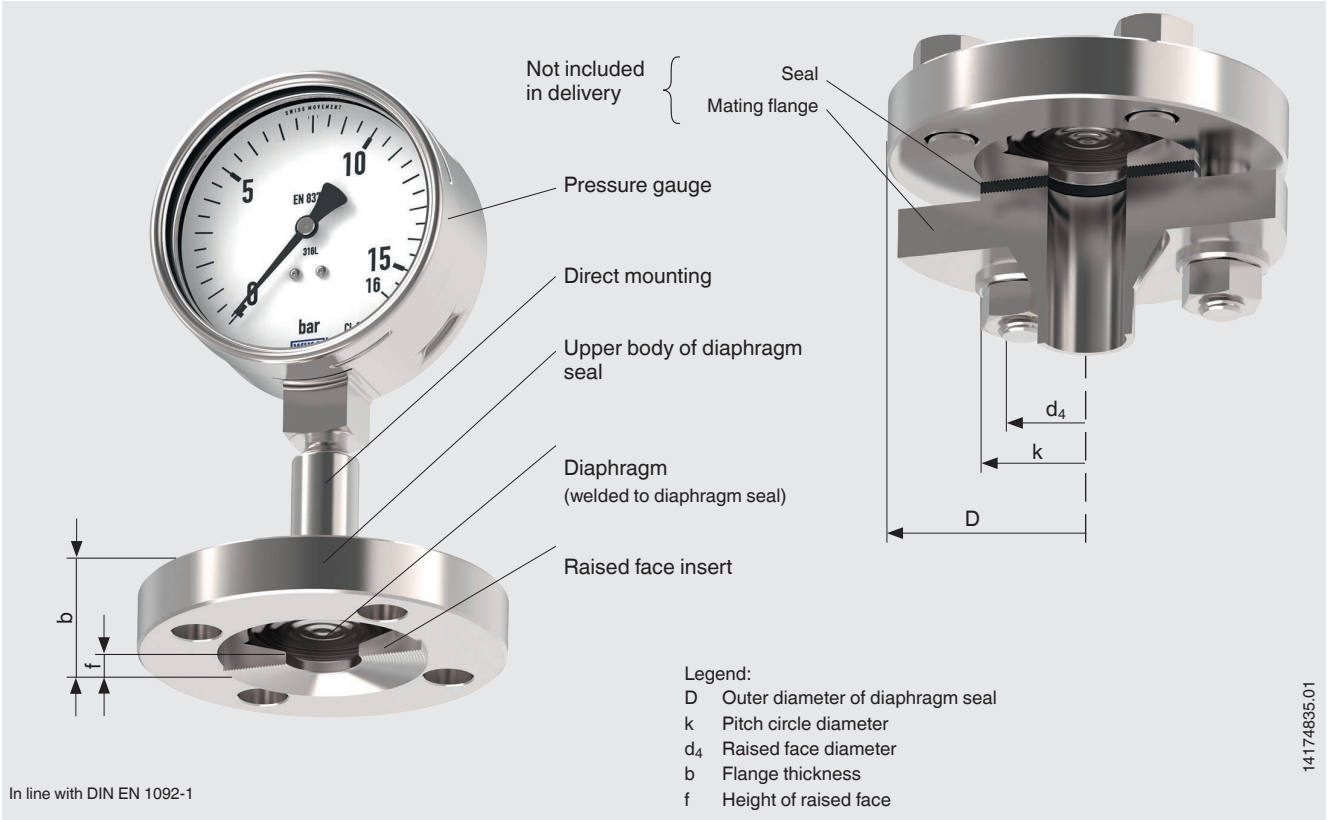
Smart in sensing

Data sheets showing similar products:
Diaphragm seal with flange connection; model 990.27; see data sheet DS 99.27

Specifications

Model 990.26	Standard	Option
Pressure range	From 400 mbar [5.8 psi] depending on diaphragm diameter For diaphragm seal systems with pressure gauges from 6 bar [87 psi]	
Level of cleanliness of wetted parts	Oil- and grease-free per ASTM G93-03 level F WIKA standard (< 1,000 mg/m²)	Oil- and grease-free per ASTM G93-03 level D and ISO 15001 (< 220 mg/m²)
Origin of wetted parts	International	EU, CH, USA
Connection to the measuring instrument	Axial connection adapter	Axial connection adapter with female thread G ½, G ¼, ½ NPT or ¼ NPT
Mounting type	Direct mounting	■ Capillary ■ Cooling element
Version per NACE	-	■ MR 0175 ■ MR 0103
Vacuum service (see IN 00.25)	Basic service	■ Premium service ■ Advanced service
Instrument mounting bracket (only for capillary option)	-	■ Form H per DIN 16281, 100 mm, aluminium, black ■ Form H per DIN 16281, 100 mm, stainless steel ■ Bracket for pipe mounting, for pipe Ø 20 ... 80 mm, steel (see data sheet AC 09.07)

Installation example, model 990.26 with mounted pressure gauge



In line with DIN EN 1092-1

Legend:
D Outer diameter of diaphragm seal
k Pitch circle diameter
d_4 Raised face diameter
b Flange thickness
f Height of raised face

14174835.01

Process connection, flange

Standard	Flange size	Sealing face	
		Standard	Option
In line with DIN EN 1092-1	DN 15	Form B1	Form B2
	DN 20		
	DN 25		
In line with ASME B16.5	½"	RF 125 ... 250 AA	RFSF
	¾"		
	1"		
In line with GOST 33259	DN 15	Type B	-
	DN 20		
	DN 25		
In line with JIS B 2220	DN 15A	RF	-
	DN 20A		
	DN 25A		

Further flanges and options on request

Material combinations

Upper body of diaphragm seal	Wetted parts		Maximum permissible process temperature [1] in °C [°F]
	Raised face insert	Diaphragm	
Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	Stainless steel 1.4435 (316L)	400 [752]
	Stainless steel 1.4404 (316L)	Stainless steel 1.4404 (316L)	
	Stainless steel 1.4539 (904L)	Stainless steel 1.4539 (904L)	
	Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)	
	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4571 (316Ti)	
	Stainless steel 1.4404 (316L) with PTFE lining	PFA (perfluoroalkoxy) coating, FDA	260 [500]
	Stainless steel 1.4404 (316L) with PTFE lining	PFA (perfluoroalkoxy) coating, antistatic	
	Hastelloy C22 (2.4602)	Hastelloy C22 (2.4602)	260 [500]
	Hastelloy C276 (2.4819)	Hastelloy C276 (2.4819)	400 [752]
	Inconel 600 (2.4816)	Inconel 600 (2.4816)	
	Inconel 625 (2.4856)	Inconel 625 (2.4856)	
	Incoloy 825 (2.4858)	Incoloy 825 (2.4858)	
	Monel 400 (2.4360)	Monel 400 (2.4360)	
	Tantalum	Tantalum	300 [572]
Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)	Stainless steel 1.4435 (316L)	400 [752]
Stainless steel 1.4539 (904L)	Stainless steel 1.4539 (904L)	Stainless steel 1.4539 (904L)	
Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)	Stainless steel 1.4541 (321)	
Stainless steel 1.4571 (316Ti)	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4571 (316Ti)	
Duplex 2205 (1.4462)	Duplex 2205 (1.4462)	Duplex 2205 (1.4462)	300 [572]
Superduplex (1.4410)	Superduplex (1.4410)	Superduplex (1.4410)	
Hastelloy C22 (2.4602)	Hastelloy C22 (2.4602)	Hastelloy C22 (2.4602)	400 [752]
Hastelloy C276 (2.4819)	Hastelloy C276 (2.4819)	Hastelloy C276 (2.4819)	
Inconel 600 (2.4816)	Inconel 600 (2.4816)	Inconel 600 (2.4816)	
Inconel 625 (2.4856)	Inconel 625 (2.4856)	Inconel 625 (2.4856)	
Incoloy 825 (2.4558)	Incoloy 825 (2.4858)	Incoloy 825 (2.4858)	
Monel 400 (2.4360)	Monel 400 (2.4360)	Monel 400 (2.4360)	
Nickel 201 (2.4068)	Nickel 201 (2.4068)	Nickel 201 (2.4068)	
Nickel 200 (2.4060, 2.4066)	Nickel 200 (2.4060, 2.4066)	Nickel 200 (2.4060, 2.4066)	
Titanium grade 2 (3.7035)	Titanium grade 2 (3.7035)	Titanium grade 2 (3.7035)	
Titanium grade 7 (3.7235)	Titanium grade 7 (3.7235)	Titanium grade 11 (3.7225)	
Titanium grade 11 (3.7225)	Titanium grade 11 (3.7225)	Titanium grade 11 (3.7225)	

1) The maximum permissible process temperature of the diaphragm seal system is limited by the joining method, by the system fill fluid and by the measuring instrument.

Further material combinations for special process temperatures on request

Approvals

Logo	Description	Country
EAC	**EAC (option)** Pressure Equipment Directive	Eurasian Economic Community
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada
-	**MTSCHS (option)** Permission for commissioning	Kazakhstan

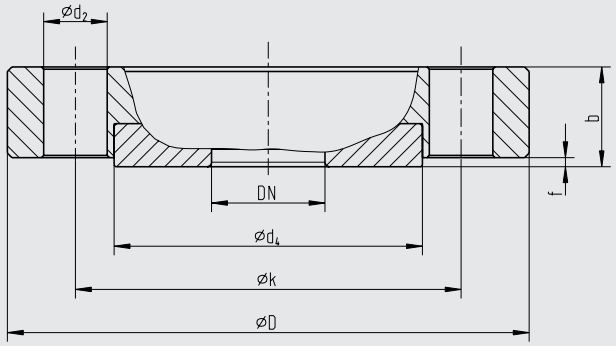
Certificates (option)

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy for diaphragm seal systems)
- 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy for diaphragm seal systems)

For approvals and certificates, see website

Dimensions in mm [in]

Flange connection in line with DIN EN 1092-1, form B1



1387987.02

Legend:

Mb	Effective diameter of diaphragm
D	Outer diameter of diaphragm seal
b	Flange thickness
d_2	Bore diameter
f	Height of raised face
k	Pitch circle diameter
d_4	Raised face diameter
x	Number of screws

DN	PN	Dimensions in mm [in]							x	Weight in kg [lbs]
		Mb	D	b	d_2	f	k	d_4		
15	10-40	40 [1.575]	95 [3.74]	22 [0.866]	14 [0.551]	2 [0.079]	65 [2.559]	45 [1.772]	4	1 [2.2]
20	10-40	40 [1.575]	105 [4.134]	22 [0.866]	14 [0.551]	2 [0.079]	75 [2.953]	58 [2.283]	4	1.3 [2.9]
25	10-40	52 [2.047]	115 [4.528]	22 [0.866]	14 [0.551]	2 [0.079]	85 [3.346]	68 [2.677]	4	1.5 [3.3]

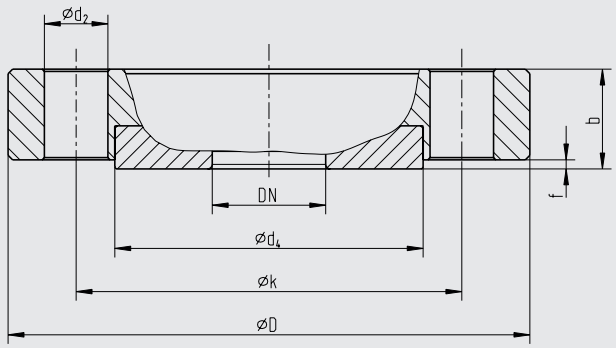
Further dimensions and higher nominal pressures on request

Special case: flange made of nickel

Nickel materials are not described in the DIN EN 1092-1 standard. For identical dimensions, lower values apply for the maximum allowable pressure. The values can be found in the table below.

Flange material	DN	PN	Maximum allowable pressure in bar [psi] at ambient temperature 21 °C [60.8 °F]
Nickel 200 (2.4066)	15, 20, 25	10	7.4 [107]
		16	11.9 [172]
		25	18.6 [269]
		40	29.7 [430]
Nickel 201 (2.4068)	15, 20, 25	10	6.2 [89]
		16	10 [145]
		25	15.6 [226]
		40	25 [362]

Flange connection per ASME B 16.5, RF 125 ... 250 AA



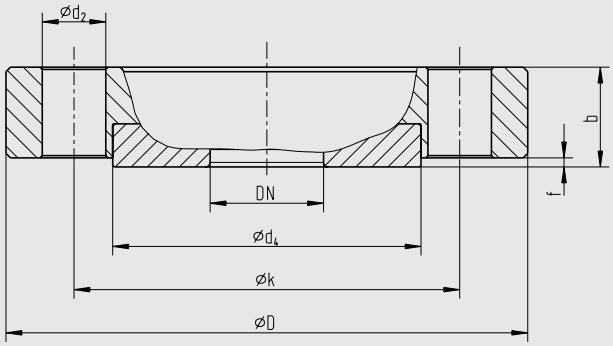
1387987.02

Legend:
Mb Effective diameter of diaphragm
D Outer diameter of diaphragm seal
b Flange thickness
d_2 Bore diameter
f Height of raised face
k Pitch circle diameter
d_4 Raised face diameter
x Number of screws

DN	Class	Dimensions in mm [in]							x	Weight in kg [lbs]
		Mb	D	b	d_2	f	k	d_4		
½"	150	32 [1.26]	90 [3.543]	22 [0.866]	16 [0.63]	2 [0.079]	60.3 [2.374]	34.9 [1.374]	4	1 [2.2]
	300	40 [1.575]	95 [3.740]	22 [0.866]	16 [0.63]	2 [0.079]	66.7 [2.626]	34.9 [1.374]	4	1 [2.2]
¾"	150	40 [1.575]	100 [3.937]	22 [0.866]	16 [0.63]	2 [0.079]	69.9 [2.752]	42.9 [1.689]	4	1.1 [2.4]
	300	40 [1.575]	115 [4.528]	22 [0.866]	19 [0.748]	2 [0.079]	82.6 [3.252]	42.9 [1.689]	4	1.6 [3.5]
1"	150	52 [2.047]	110 [4.331]	22 [0.866]	16 [0.63]	2 [0.079]	79.4 [3.126]	50.8 [2]	4	1.4 [3]
	300	52 [2.047]	125 [4.921]	22 [0.866]	19 [0.748]	2 [0.079]	88.9 [3.5]	50.8 [2]	4	1.7 [3.7]

Further dimensions and higher nominal pressures on request

Flange connection in line with GOST 33259, type B



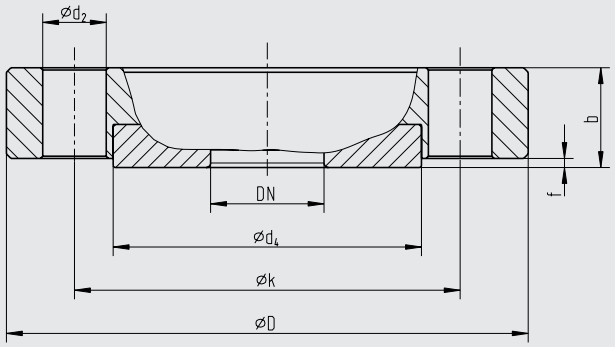
1387987.02

Legend:
Mb Effective diameter of diaphragm
D Outer diameter of diaphragm seal
b Flange thickness
d_2 Bore diameter
f Height of raised face
k Pitch circle diameter
d_4 Raised face diameter
x Number of screws

DN	PN	Dimensions in mm [in]							x	Weight in kg [lbs]
		Mb	D	b	d_2	f	k	d_4		
15	10-40	40 [1.575]	95 [3.74]	22 [0.866]	14 [0.551]	2 [0.079]	65 [2.559]	47 [1.85]	4	1 [2.2]
20	10-40	40 [1.575]	105 [4.134]	22 [0.866]	14 [0.551]	2 [0.079]	75 [2.953]	58 [2.283]	4	1.3 [2.9]
25	10-40	52 [2.047]	115 [4.528]	22 [0.866]	14 [0.551]	2 [0.079]	85 [3.346]	68 [2.677]	4	1.5 [3.3]

Further dimensions and higher nominal pressures on request

Flange connection per JIS B 2220



1387987.02

Legend:
Mb Effective diameter of diaphragm
D Outer diameter of diaphragm seal
b Flange thickness
d_2 Bore diameter
f Height of raised face
k Pitch circle diameter
d_4 Raised face diameter
x Number of screws

DN	PN	Dimensions in mm [in]							x	Weight in kg [lbs]
		Mb	D	b	d_2	f	k	d_4		
15	10K - 20K	40 [1.575]	95 [3.74]	21 [0.827]	15 [0.591]	1 [0.04]	70 [2.756]	51 [2.008]	4	1 [2.2]
20	10K - 20K	40 [1.575]	100 [3.937]	21 [0.827]	15 [0.591]	1 [0.04]	75 [2.953]	56 [2.205]	4	1.3 [2.9]
25	10K - 20K	52 [2.047]	125 [4.921]	21 [0.827]	19 [0.748]	1 [0.04]	90 [3.543]	67 [2.638]	4	1.7 [3.7]

Further dimensions and higher nominal pressures on request

Special case: flange made of nickel, Monel, Inconel, Incoloy or titanium

Nickel, Monel, Inconel, Incoloy and titanium materials are not described in the JIS B 2220 standard. For identical dimensions, lower values apply for the maximum allowable pressure. The values can be found in the table below.

Flange material	DN	PN	Maximum allowable pressure in MPa [psi] at ambient temperature 21 °C [60.8 °F]
Nickel 200 (2.4066)	15, 20, 25	10K	0.7 [101]
		16K	1.4 [202]
		20K	1.8 [261]
Nickel 201 (2.4068)	15, 20, 25	10K	0.9 [130]
		16K	1.7 [246]
		20K	2.1 [304]
Monel 400 (2.4360)	15, 20, 25	10K	1 [145]
		16K	1.8 [261]
		20K	2.3 [333]
Inconel 600 (2.4816)	15, 20, 25	10K	1 [145]
		16K	1.9 [275]
		20K	2.4 [348]
Incoloy 825 (2.4558)	15, 20, 25	10K	1.2 [174]
		16K	2.4 [348]
		20K	3 [435]
Titanium grade 2 (3.7035)	15, 20, 25	10K	1.2 [174]
		16K	2.3 [333]
		20K	2.9 [420]
Titanium grade 7 (3.7235)	15, 20, 25	10K	1.2 [174]
		16K	2.3 [333]
		20K	2.9 [420]

Ordering information

Diaphragm seal:

Diaphragm seal model / Process connection (standard, flange size, nominal pressure, sealing face) / Materials (upper body of diaphragm seal, raised face insert, diaphragm) / Level of cleanliness of wetted parts / Origin of wetted parts / Version per NACE / Connection to the measuring instrument / Certificates

Diaphragm seal system:

Diaphragm seal model / Pressure measuring instrument model (per data sheet) / Mounting (direct mounting, cooling element, capillary) / Materials (upper body of diaphragm seal, raised face insert, diaphragm) / Min. and max. process temperature / Min. and max. ambient temperature / Vacuum service / System fill fluid / Certificates / Height difference / Level of cleanliness of wetted parts / Origin of wetted parts / Version per NACE / Diaphragm seal for mounting to zone 0 / Instrument mounting bracket / Process connection (standard, flange size, nominal pressure, sealing face)

© 02/2004 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.
In case of a different interpretation of the translated and the English data sheet, the English wording shall prevail.

ICS Schneider Messtechnik GmbH
Briesestrasse 59
D-16562 Hohen Neuendorf / OT Bergfelde
Tel.: +49 3303 5040-66
Fax: +49 3303 5040-68
E-Mail: info@ics-schneider.de

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.de