

## Diaphragm seal with flange connection For block flange or saddle flange Model 990.15

WIKA data sheet DS 99.35



for further approvals  
see page 4

### Applications

- Specifically for connection with block or saddle flange
- Aggressive, contaminated, highly viscous or hot media
- Process industry

### Special features

- Flush diaphragm
- Process connection to provide for direct threaded connection with block flange or saddle flange



Diaphragm seal with flange connection, model 990.15

## 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 are 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".

Together with a block flange or a saddle flange, the model 990.15 diaphragm seal forms a perfectly matched system. By means of the process connection via block flanges or saddle flanges, compact assemblies can be optimally realised at the measuring point.

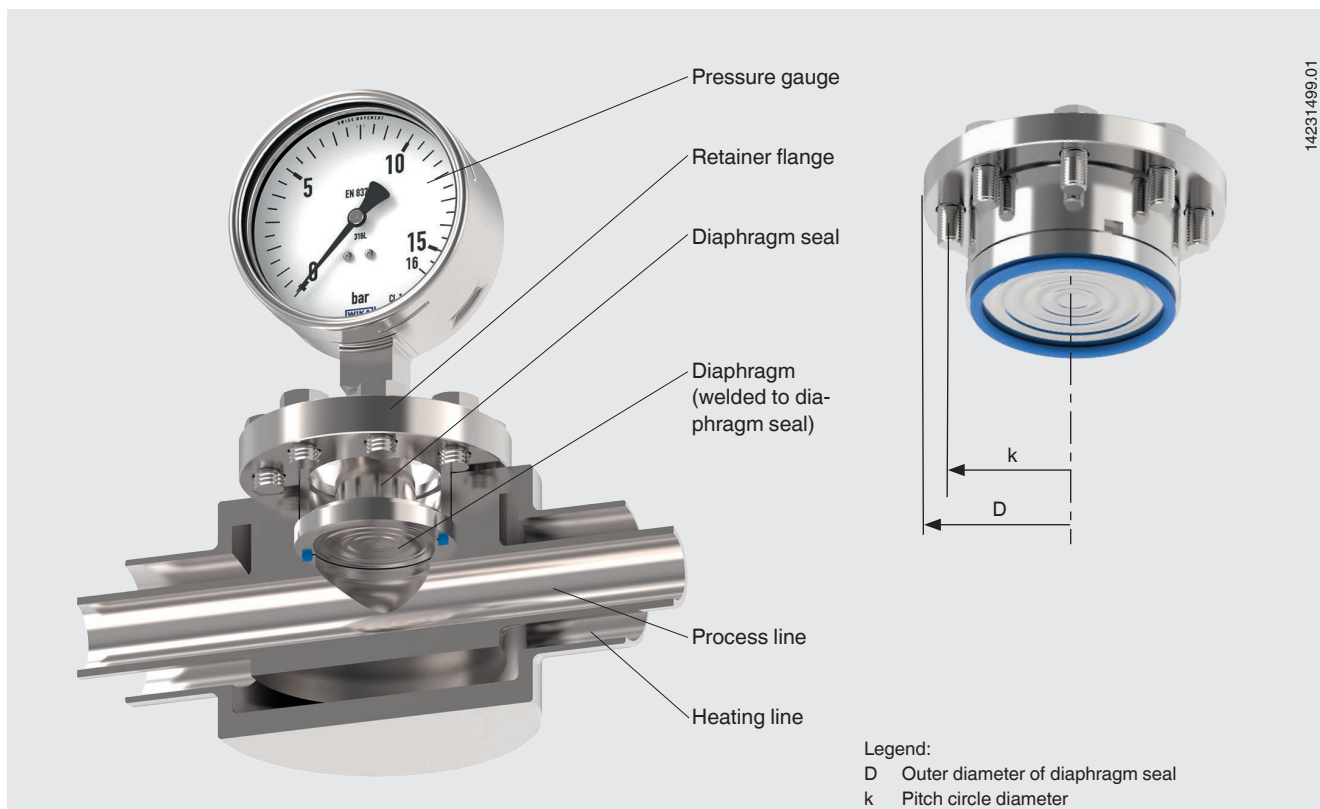
Depending on customer requirements, the model 990.15 can be subsequently integrated into a process by means of the accessory models 910.19, 910.20 and 910.23.

The process connection is designed as a flange connection. The measuring instrument is in a vertical position.

## Specifications

Model 990.15	Standard	Option
<b>Pressure ranges</b>	0 ... 0.6 bar [0 ... 8.7 psi] to 0 ... 250 bar [0 ... 3,600 psi]	
<b>Level of cleanliness of wetted parts</b>	Oil and grease free per ASTM G93-03 level F WIKA standard (< 1,000 mg/m <sup>2</sup> )	<ul style="list-style-type: none"> <li>■ Oil and grease free per ASTM G93-03 level D and ISO 15001 (&lt; 220 mg/m<sup>2</sup>)</li> <li>■ Oil and grease free per ASTM G93-03 level C and ISO 15001 (&lt; 66 mg/m<sup>2</sup>)</li> </ul>
<b>Origin of wetted parts</b>	International	EU, CH, USA
<b>Connection to the measuring instrument</b>	Axial adapter G ½	-
<b>Sealing</b>	FPM to 200 °C [392 °F]	<ul style="list-style-type: none"> <li>■ PTFE to 260 °C [500 °F]</li> <li>■ Metal (1.4571 silver-plated or Inconel silver-plated) to 400 °C [932 °F]</li> </ul>
<b>Type of mounting</b>	Direct mounting	<ul style="list-style-type: none"> <li>■ Capillary</li> <li>■ Cooling element</li> </ul>
<b>Assembly parts for process connection</b>	<ul style="list-style-type: none"> <li>■ Retainer flange</li> <li>■ Hexagon screws</li> <li>■ Pressure ring</li> <li>■ Sealing</li> </ul>	-
<b>Design per NACE</b>	-	<ul style="list-style-type: none"> <li>■ MR 0175</li> <li>■ MR 0103</li> </ul>
<b>Vacuum service (see IN 00.25)</b>	Basic service	<ul style="list-style-type: none"> <li>■ Premium service</li> <li>■ Advanced service</li> </ul>
<b>Instrument mounting bracket (only for capillary option)</b>	-	<ul style="list-style-type: none"> <li>■ Form H per DIN 16281, 100 mm, aluminium, black</li> <li>■ Form H per DIN 16281, 100 mm, stainless steel</li> <li>■ Bracket for pipe mounting, for pipe Ø 20 ... 80 mm, steel (see data sheet AC 09.07)</li> </ul>

### Example: Model 990.15 mounted via block flange, model 910.23




## Material combinations

Upper body of diaphragm seal	Wetted parts	Maximum permissible process temperature <sup>1)</sup> in °C [°F]
<b>Stainless steel 1.4404 (316L)</b>	Stainless steel 1.4404 / 1.4435 (316L), standard version	400 [752]
	Stainless steel 1.4539 (904L)	
	Stainless steel 1.4541 (321)	
	Stainless steel 1.4571 (316Ti)	
	ECTFE coating	150 [302]
	PFA (perfluoroalkoxy) coating, FDA	260 [500]
	PFA (perfluoroalkoxy) coating, antistatic	
	Gold plating	400 [752]
	Ceramic coating wikaramic®	
	Hastelloy C22 (2.4602)	260 [500]
	Hastelloy C276 (2.4819)	400 [752]
	Inconel 600 (2.4816)	
	Inconel 625 (2.4856)	
	Incoloy 825 (2.4858)	
	Monel 400 (2.4360)	
	Nickel 200 (2.4060, 2.4066)	260 [500]
	Titanium grade 2 (3.7035)	150 [302]
Titanium grade 11 (3.7225)		
Tantalum	300 [572]	
<b>Stainless steel 1.4435 (316L)</b>	Stainless steel 1.4435 (316L)	400 [752]
<b>Stainless steel 1.4539 (904L)</b>	Stainless steel 1.4539 (904L)	
<b>Stainless steel 1.4541 (321)</b>	Stainless steel 1.4541 (321)	
<b>Stainless steel 1.4571 (316Ti)</b>	Stainless steel 1.4571 (316Ti)	
<b>Duplex 2205 (1.4462)</b>	Duplex 2205 (1.4462)	300 [572]
<b>Superduplex (1.4410)</b>	Superduplex (1.4410)	
<b>Hastelloy C22 (2.4602)</b>	Hastelloy C22 (2.4602)	400 [752]
<b>Hastelloy C276 (2.4819)</b>	Hastelloy C276 (2.4819)	
<b>Inconel 600 (2.4816)</b>	Inconel 600 (2.4816)	
<b>Inconel 625 (2.4856)</b>	Inconel 625 (2.4856)	
<b>Incoloy 825 (2.4558)</b>	Incoloy 825 (2.4858)	
<b>Monel 400 (2.4360)</b>	Monel 400 (2.4360)	
<b>Nickel 200 (2.4060, 2.4066)</b>	Nickel 200 (2.4060, 2.4066)	
<b>Titanium grade 2 (3.7035)</b>	Titanium grade 2 (3.7035)	
<b>Titanium grade 7 (3.7235)</b>	Titanium grade 11 (3.7225)	

<sup>1)</sup> 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
	<b>EAC (option)</b> Pressure equipment directive	Eurasian Economic Community
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...)	Canada
-	<b>MTSCHS (option)</b> Permission for commissioning	Kazakhstan

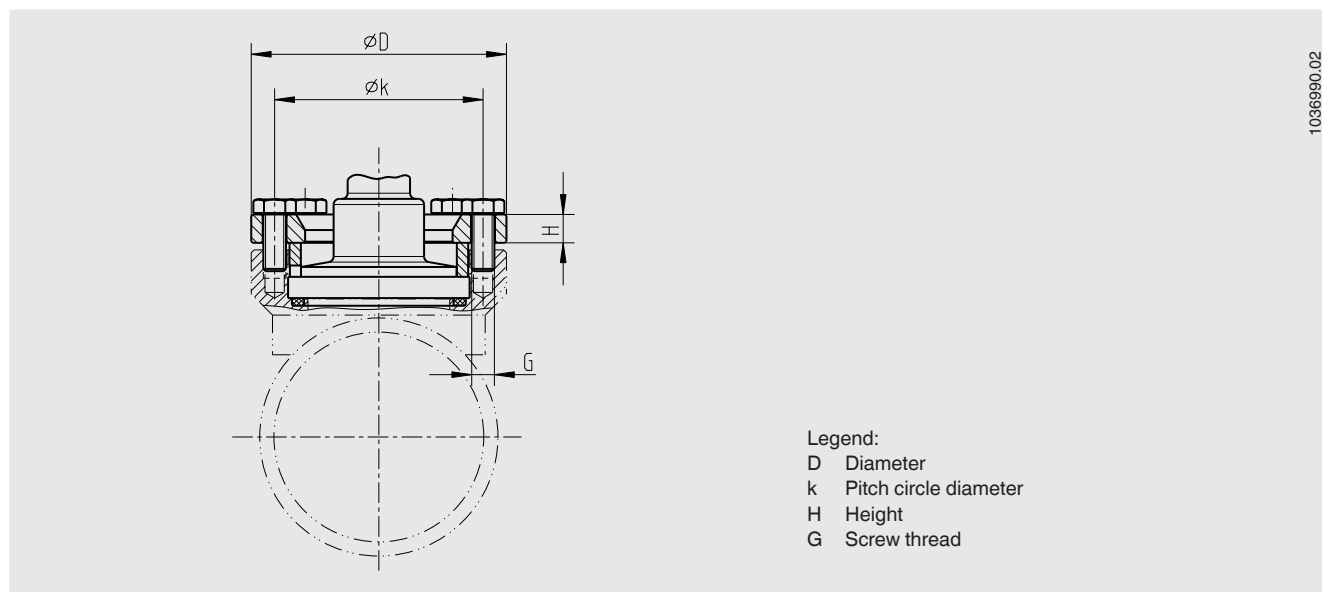
## Certificates (option)

- 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 metallic parts, indication accuracy for diaphragm seal systems)

Approvals and certificates, see website

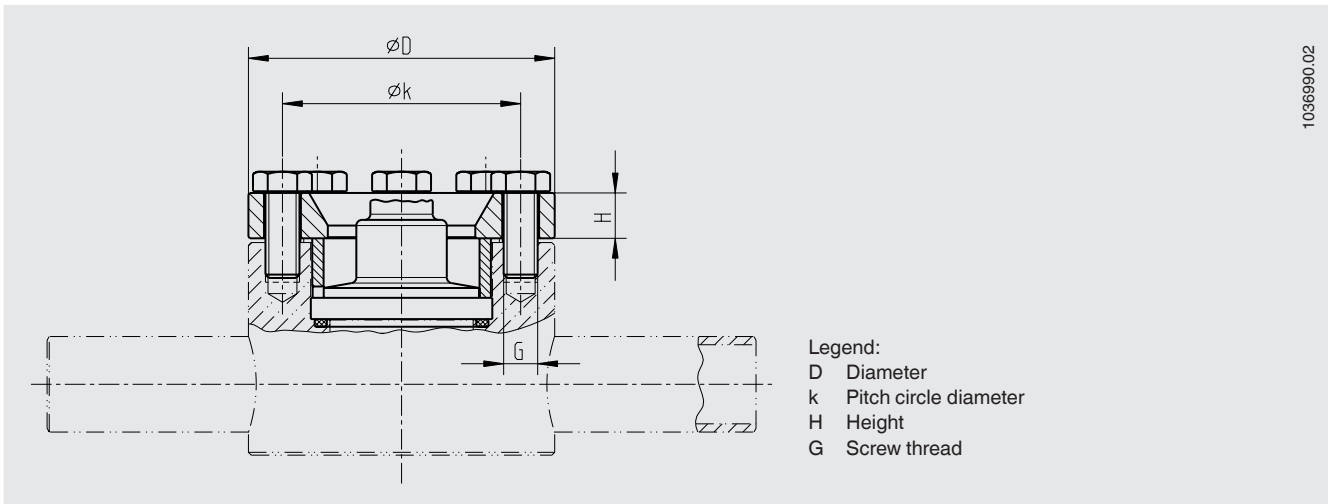
## Dimensions in mm [in]

Model 990.15 mounted via saddle flange, model 910.20



PN in bar [psi]	Dimensions in mm [in]			G
	D	k	H	
0 ... 100 [1,450]	90 [3.543]	73.5 [2.894]	10 [0.394]	M 8
100 ... 250 [1,450 ... 3,600]	108 [4.252]	84 [3.307]	16 [0.63]	M 12

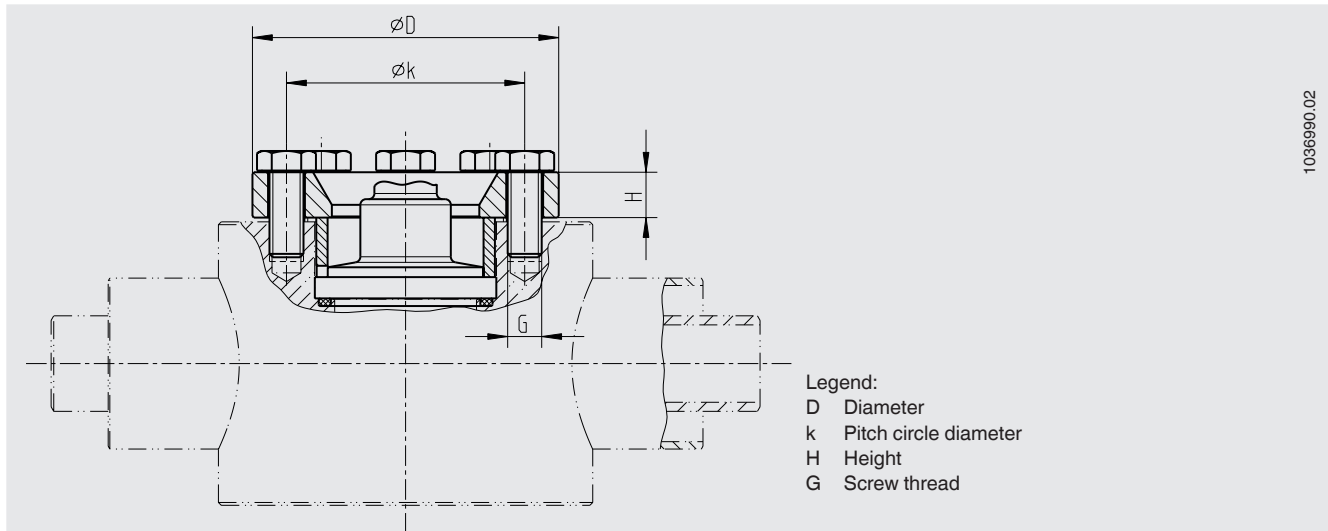
**Model 990.15 mounted via block flange (single pipe), model 910.19**



1036990.02

PN in bar [psi]	Dimensions in mm [in]			G
	D	k	H	
0 ... 100 [1,450]	90 [3.543]	73.5 [2.894]	10 [0.394]	M 8
100 ... 250 [1,450 ... 3,600]	108 [4.252]	84 [3.307]	16 [0.63]	M 12

**Model 990.15 mounted via block flange (double-jacket pipe), model 910.23**



1036990.02

PN in bar [psi]	Dimensions in mm [in]			G
	D	k	H	
0 ... 100 [1,450]	90 [3.543]	73.5 [2.894]	10 [0.394]	M 8
100 ... 250 [1,450 ... 3,600]	108 [4.252]	84 [3.307]	16 [0.63]	M 12

## Ordering information

Diaphragm seal:

Diaphragm seal model / Nominal pressure / Materials (upper body, diaphragm) / Level of cleanliness of wetted parts / Origin of wetted parts / Design 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, diaphragm) / Min. and max. process temperature / Min. and max. ambient temperature / Vacuum service / System fill fluid / Certificates / Nominal pressure / Height difference / Level of cleanliness of wetted parts / Origin of wetted parts / Design per NACE / Diaphragm seal for mounting to zone 0 / Instrument mounting bracket / Accessories (saddle flange, block flange)

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