



PRESSURE MEASURING WITH EXT DIAPHRAGM





Introductions

The EXT is typically used in combination with (differential) pressure transmitters for level, flow and pressure measurement, in those applications where the diaphragm need to be flush with the vessel wall or where insulation layers need to be passed. The EXT is recommended when extended seals are required fully in exotic materials and/or when special grade cover flanges are required for pressure temperature rating. The seal body is made of Bar stock or forged material. Its pressure rating is defined by the back-up flange and as such it can be used for pressure ratings determined by the licensor. This design is often used in UREA and fertilizer industry.



Size, rating and Facing

Flange & Extension materials

The threaded flange can be supplied in several materials. Some of the standard materials are:

Flanged Material	Extension Material	Diaphragm Material
AISI 316(L)	AISI 316(L)	AISI 316L Alloy C276 Tantalum Monel 400 Inconel 625
AISI 304L or AISI 316(L)	AISI 304L	AISI 316L
AISI 310 or AISI 316(L)	AISI 310	AISI 316L
AISI 321 or AISI 316(L)	AISI 321	AISI 316L
Alloy 625 or AISI 316(L)	Alloy 625	Alloy 625
AISI 316(L)	Alloy 825	Alloy 625
Alloy C-276 or AISI 316(L)	Alloy C-276	Alloy C-276
Duplex F51/F60 or AISI 316(L)	Duplex F51/F60	AISI 316L
Duplex F53 or AISI 316(L)	Duplex F53	AISI 316L
AISI 316(L)	AISI 316(L)	Nickel 200 Monel 400 Inconel 625
Titanium Gr. 2	Titanium Gr. 2	Titanium Gr. 2

Flange size, rating

ASME B16.5 Size	Rating	Facing
1" to 4" (DN20 to DN100)	cl. 150 - cl. 2500 (PN10-400)	RF, LMF, FF, SGF RJF, SFF SMF, LTF, STF, LGF, LFF



Specification

Gold coatings

Several types of gold coating can be applied on the seals. The selection possibilities are:

- 25 µm chemical resistance
- 40 µm chemical resistance

Polymer coatings

Polymer coatings come in several types. The technical data on thickness and temperature limitation can be found in datasheet “polymer solutions” The applicable selection on BF seals are:

- PTFE coating
- Ceramic coating

Capillary tube and armor (protection)

The standard capillary mounting position is top side (axial) of the seal. Alternatively, the capillary can be placed at the side of the seal (radial). The standard tube material is TP316 (316SS). There are three options in ID of the capillary 1mm. Aramak capillaries are always protected against mechanical forces by armor. This doubled shielded armor consist is standard AISI 304, and optionally AISI 316. Additionally, the armor could be protected with a PVC sleeve in white, black, optionally with Yellow to protect against dust and water ingress and possibly corrosive ambient atmosphere.



Cover Flange

The DFW will be clamped to the process. This can be done with a standard blind flange. However, positioning the seal in line with the flange and gasket will be challenging. Therefore, Aramak offers the option for a cover flange. This flange has a

groove to fit the seal part and fixing holes to fix the seal into the flange. Details can be found in the dimension's section.

Material Certification

Material traceability and related certification are applicable for all process wetted parts. Material certification possibilities depend on the type of seal, the assembly construction and the materials used. Material certification is in accordance with EN10204 3.1 Additional material certification and testing can be provided on request, such as Positive Material Identification (PMI), NACE conformity for ISO-15156 (MR-0175) and/or ISO-17945 (MR-0103), and many more.

Material limitations

Zirconium and Titanium versions of the EXD cannot be welded with stainless steel. This results in a screwed connection. For this occasion we developed a special connection based on the high pressure connection.

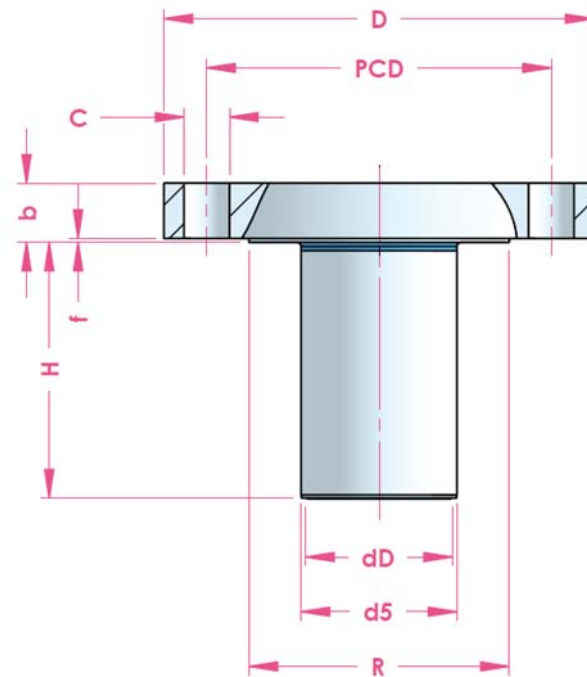
Lifting handles

Larger sizes and ratings of diaphragm seals can weigh up to 50 kg. Handling and installation can become a challenge. As from 15kg it is recommended to apply a set of lifting handles, welded on the sides of the flange of the seal. This can be used to handle it easier and install it in a safer way or have attach lifting tools to it.



Dimensions table

ASME 16.5 RF facing

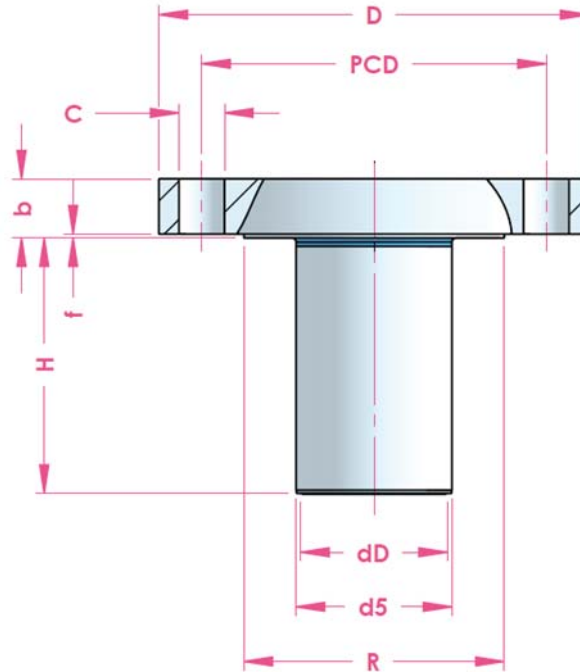


size	rating	D	b	PCD	C / pcs	dD	d5	R	F
1.5"	cl. 150	127.0	18	98.6	16 / 4x				1.5
	cl. 300		21						
	cl. 400-600	155.0	29	114.3	22 / 4x				
	cl. 900-1500	178.0	39	124.0	29 / 4x				6.5
	cl. 2500	203.0	52	146.0	32 / 4x				
2"	cl. 150	152.0	19	120.6	19 / 4x				1
	cl. 300		23						
	cl. 400-600	165.0	33	127.0	19 / 8x				
	cl. 900-1500	216.0	45	165.1	25 / 8x				6.5
	cl. 2500	235.0	58	171.4	29 / 8x				
3"	cl. 150	190.0	25	152.4	19 / 4x				1.5
	cl. 300		29.0						
	cl. 400-600	210.0	39	168.1	22 / 8x				
	cl. 900	241.0	45	190.5	26 / 8x				6.5
	cl. 1500	267.0	55	203.2	32 / 8x				
4"	cl. 2500	305.0	74	228.6	35.0 / 8x				1.5
	cl. 150	229.0	25	190.5	19 / 8x				
	cl. 300		32		22 / 8x				
	cl. 400	254.0	42.0	200.2					1.5
	cl. 600	273.0	45	215.9	22 / 8x				
4"	cl. 900	292.0	52	235.0	32 / 8x				6.5
	cl. 1500	311.0	61.0	241.3	35 / 8x				
	cl. 2500	356.0	83	273.0	41 / 8x				



Dimensions table

EN 1092-1 B1 type



size	rating	D	b	PCD	C / pcs	dD	d5	R	f
DN40	PN10-40	150.0	18.0	110.0	18.0 / 4x				
	PN63-100		26.0						
	PN160	170.0	28.0	125.0	22.0 / 4x				
	PN250	185.0	34.0	135.0	26.0 / 4x	35.0	38.0	88.0	3.0
	PN320	195.0	38.0	145.0					
	PN400	220.0	48.0	165.0	30.0 / 4x				
DN50	PN10-40	165.0	20.0	125.0	18.0 / 4x				
	PN63	180.0	26.0	135.0	22.0 / 4x				
	PN100		28.0						
	PN160	195.0	30.0	145.0	26.0 / 4x	45.0	48.0	102.0	3.0
	PN250	200.0	38.0	150.0	26.0 / 8x				
	PN320	210.0	42.0	160.0					
DN80	PN400	235.0	52.0	180.0	30.0 / 8x				
	PN10-40	215.0	24.0	160.0	18.0 / 8x				
	PN63	215.0	28.0	170.0	22.0 / 8x				
	PN100	230.0	32.0	180.0	26.0 / 8x				
	PN160	230.0	36.0			75.0	78.0	138.0	3.0
	PN250	255.0	46.0	200.0	30.0 / 8x				
DN100	PN320	275.0	55.0	220.0					
	PN400	305.0	68.0	240.0	33.0 / 8x				
	PN10-16	220.0	20.0	180.0	18.0 / 8x			158.0	
	PN25-40	235.0	24.0	190.0	22.0 / 8x				
	PN63	250.0	30.0	200.0	26.0 / 8x				
	PN100	265.0	36.0	210.0	30.0 / 8x	89.0	93.0	162.0	3.0
DN100	PN160		40.0						
	PN250	300.0	54.0	235.0	33.0 / 8x				
	PN320	335.0	65.0	265.0	36.0 / 8x				
	PN400	370.0	80.0	295.0	39.0 / 8x				



Ordering Information

EXT-	XX	XX	XX	XX	XXX	XXX	XX	XX	XX	XXX
Standards										
ASME 16.5 RF facing	RF									
ASME 16.5 RTJ	RJ									
EN 1092-1 B1 type	EN									
ISO 10423 6BX Type	IS									
Other	OT									
Size										
DN 25 (1 in.)		25								
DN 40 (1 1/2 in.)		40								
DN 50 (2 in.)		50								
DN 65 (2 1/2 in.)		65								
DN 80 (3 in.)		80								
DN 90 (3 1/2 in.)		90								
DN 100 (4 in.)		10								
Others		999								
Rating										
ANSI Class 150			A1							
ANSI Class 300			A2							
ANSI Class 600			A3							
ANSI Class 900			A4							
ANSI Class 1500			A5							
ANSI Class 2500			A6							
PN 10			P1							
PN 16			P2							
PN 25			P3							
PN 40			P4							
PN 63			P5							
PN 100			P6							
PN 160			P7							
Diaphragm Material										
316 / 316L stainless			I1							
Alloy 625			I6							
Alloy C276			I8							
Titanium			I2							
Tantalum			I3							
Nickel 200			I4							
Other			P5							
Flanged Material										
316 / 316L stainless				I1						
310 stainless steel				I2						
321 stainless steel				I3						
22 % Cr duplex				I4						
Alloy 400				I5						
Alloy 625				I6						



Ordering Information

Alloy 800		I7				
Alloy C276		I8				
Other		P5				
Extention Material						
316 / 316L stainless		I1				
310 stainless steel		I2				
321 stainless steel		I3				
22 % Cr duplex		I4				
Alloy 400		I5				
Alloy 625		I6				
Alloy 800		I7				
Alloy C276		I8				
Other		P5				
Capillary Length						
Not Applicable				NA		
1 m				N1		
2 m				N2		
3 m				N3		
4 m				N4		
5 m				N5		
6 m				N6		
7 m				N7		
8 m				N8		
10 m				N9		
Other				N0		
Extension Length						
XXX (mm)					XXX	
Bolt & Nut						
Not Applicable						0
C.S A192/A193						CS
C.S A192/A193 Cold Galvanized						CG
C.S A192/A193 ETFE Coated						CE
C.S A192/A193 Zinc Reach						CZ
Stainless Steel 304 A192/A193						S1
Stainless Steel 316 A192/A194						S2
Other						O1
Certification						
Material certificates						C0
Material NACE MR0175						C1
Material NACE MR0103						C2
100% dimensional check						C3
Hardness survey						C4
Impact testing @ -196 °C (-320.8 °F)						C5
Others						C6



Ordering Information

Added requirements		
Extension Diameter in mm (optional)		XX
Manufactured to customer drawing		DW
Gate Valve 1/2" Carbon Steel		GV1
Gate Valve 1/2" Stainless Steel 304		GV2
Gate Valve 1/2" Stainless Steel 316		GV3
Ball Valve 1/2" Stainless Steel 304		BV1
Ball Valve 1/2" Stainless Steel 316		BV2
Nipple Valve 1/2" Stainless Steel 304		NV1
Nipple Valve 1/2" Stainless Steel 316		NV2
Nipple Carbon Steel 1/2*1/2" Male		NP1
Nipple Stainless Steel 304, 1/2*1/2" Male		NP2
Nipple Stainless Steel 316, 1/2*1/2" Male		NP3
Others		OT



Contact us

**Instrumentation
manufacturer
& designer**

Tel : 021-46069694

Aramakco.com

Info@aramakco.com

Sales@aramakco.com