

Data Sheet

100/101, 200/201, 300/301 Threaded Diaphragm Seal

FEATURES

- 316L Stainless steel top housing (standard)
- Available in wide range of wetted materials for process compatibility
- Flushing port (101, 201, 301) provides for easy cleaning of process
- Continuous duty design contains process if instrument is inadvertently removed
- NSF-61 Compliant – 200 316L Stainless steel only

TYPICAL USES

- Oil and gas
- Refineries
- Chemical and petrochemical
- Water and wastewater
- NACE-compliant processes (sour gas separation)
- Biogas and biodiesel



SPECIFICATIONS

Connection Style:	100, 200, 300: Threaded 101, 201, 301: Threaded with flushing port
Process Connection:	¼ to ½ NPT Female, ¼ to 1 NPT Male
Instrument Connection:	¼ to ½ NPT
MAWP:	200 psi to 2500 psi (5000 psi optional) Refer to Seal Pressure & Temperature Guide
Fill Fluid:	See table 3 on page 3
Approvals:	CRN, NSF-61

TEMPERATURE RATINGS

Temperature Rating	Metallic Diaphragms	Non-Metallic Diaphragms
Threaded	450 °F/Refer to fill fluid temperature limit	Refer to diaphragm material and fill fluid temperature limits
Welded (XDU)	480 °F/Refer to fill fluid temperature limit	Refer to diaphragm material and fill fluid temperature limits

WETTED COMPONENTS

Diaphragm	Bottom Housing	Gasket (metallic diaphragm materials only)
See table 1 on page 2	See table 2 on page 2	PTFE (rated for -150 °F to 480 °F)

NON-WETTED COMPONENTS

Top Housing	Bolt/Clamp Rings	Nuts/Bolts
Standard 316L St. steel	Carbon steel	Zinc plated alloy steel
Optional Monel® (XYM), Titanium (XHB)	316L (XSE)	316L (XSE)



KEY BENEFITS

- Protects instrumentation from corrosive media
- Prevents pressure measuring instrument from clogging
- Dissipates elevated process temperature

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ORDERING CODE	Example:	10	2	01	S	S	02T	XCK	NH
Process Connection Size									
25 - ¼ NPT Female									
50 - ½ NPT Female									
75 - ¾ NPT Female									
10 - 1 NPT Female		10							
15 - 1½ NPT Female									
02 - ¼ NPT Male									
04 - ½ NPT Male									
06 - ¾ NPT Male									
08 - 1 NPT Male									
SA - ¼" Socket weld									
SB - ½" Socket weld									
SC - ¾" Socket weld									
SD - 1" Socket weld									
Diaphragm Type									
1 - 100 series capsule diaphragm threaded into top housing									
2 - 200 series diaphragm welded (metallic) or bonded (elastomeric) to top housing			2						
3 - 300 series elastomeric diaphragm clamped between top and lower housing									
Flushing Port									
00 - No flushing port									
01 - Flushing port in lower housing				01					
Diaphragm Materials (See Table 1 on page 2)									
S - 316L Stainless steel					S				
Bottom Housing Materials (See Table 2 on page 2)									
S - 316L Stainless steel						S			
Instrument Connection Size									
02T - ¼ NPT Female instrument connection							02T		
04T - ½ NPT Female instrument connection									
Options (if choosing an option(s) must include an "X")									
Fill Fluid (for seals attached to instruments) (See Table 3 on page 3 for more available fill fluids)									
CK - 50 cSt Silicone								CK	
Optional Features (for more options, see table 4 on page 5)									
NH - Stainless steel instrument tag									NH

When selecting an instrument, refer to the [Seal Pressure & Temperature Guide](#) for compatibility with this diaphragm seal or scan the QR code to the right.



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TABLE 1 - DIAPHRAGM MATERIALS

Material	Letter Code	100 Series	200 Series	300 Series	Notes
316L Stainless steel	S	•	•		NSF-61 Compliant
304L Stainless steel	C	•	•		
904L Stainless steel	F		•		
Monel® 400	P	•	•		200-series must be ordered with XYM Monel® top housing option
Tantalum	U	•	•		
Hastelloy® C-276	H	•	•		
Hastelloy® B	G	•	•		
Hastelloy® C-22	J	•	•		
Carpenter 20®	D	•	•		
PTFE	T		•	•	Temp limits: -40 °F to 400 °F
Viton™	Y		•	•	Temp limits: -40 °F to 350 °F Max. pressure: 500 psi
Kalrez®	K		•	•	Temp limits: 30 °F to 212 °F Max. pressure: 500 psi
Nickel	N	•	•		
Titanium	Ti		•		Includes titanium top housing
Gold Plated 316L SS	W	•			

TABLE 2 - BOTTOM HOUSING MATERIALS

Material	Letter Code	Notes
316L Stainless steel	S	NSF-61 Compliant (200 only)
304L Stainless steel	C	
904L Stainless steel	F	
Carbon Steel	B	
Monel® 400	M	
Hastelloy® C-276	H	
Hastelloy® B	G	
Hastelloy® C-22	J	
Duplex 2205	Z	
Super Duplex 2507	A	Contact Ashcroft for availability
Carpenter 20®	D	
Inconel® 625	W	
Nickel	N	
Titanium	Ti	
PVDF	KY	Only offered in ½ NPT, ¼ NPT, and socket weld process connections. Not available with flushing connection. PVDF Temperature Limits: 200 psi - 74 °F, 125 psi - 125 °F, 80 psi - 150 °F
PVC	V	Only offered in ½ NPT, ¼ NPT, and socket weld process connections. Not available with flushing connection. PVC Temperature Limits: 200 psi - 74 °F, 125 psi - 125 °F, 80 psi - 150 °F

PRESSURE RATINGS

Diaphragm seal and lower housing material	MAWP	
	Standard	XHP
All-metallic construction	2500 psi	5000 psi
Viton™ or Kalrez® diaphragm	500 psi	N/A
PTFE diaphragm	2500 psi	N/A
PVC or PVDF lower housing	200 psi	N/A

All specifications are subject to change without notice. All sales subject to standard terms and conditions.

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TABLE 3 - FILL FLUIDS

Fill Fluid	Temperature	Viscosity (cSt at 70°F (21°C))	Variation Code	Notes
Glycerin (food grade)	0 °F to 400 °F (-18 °C to 204 °C)	1,300	CG	Direct-mounting only. Not for use with vacuum service. Minimum span 15 psi.
50 cSt Silicone	-40 °F to 500 °F (-40 °C to 260 °C)	50	CK	
10 cSt Silicone	-40 °F to 500 °F (-40 °C to 260 °C)	10	DJ	
Halocarbon® 4.2	-70 °F to 300 °F (-57 °C to 199 °C)	4.2	CF	For use with oxygen/oxidizing process media
Slytherm® 800	-40 °F to 750 °F (-40 °C to 400 °C)	10	HA	High temperature applications
Syltherm® XLT	-150 °F to 500 °F (-100 °C to 260 °C)	1.4	CC	Low temperature applications
Calflo® AF	-20 °F to 600 °F (-29 °C to 316 °C)	60	KF	High temperature, silicone-free
Mineral Oil	10 °F to 400 °F (-12 °C to 204 °C)	75	MY	
Neobee® M-20 (food grade)	5 °F to 400° F (-15 °C to 204 °C)	9.5	NM	
Silicone (food grade)	-40 °F to 500 °F (-40 °C to 260 °C)	350	CZ	Minimum span 60 in. H ₂ O.
50/50 Glycerin/Water	15 °F to 200 °F (-9 °C to 93 °C)	30	GH	
Propylene Glycol	-50 °F to 325 °F (-46 °C to 163 °C)	54	CV	
Ethylene Glycol	20 °F to 325 °F (-7 °C to 163 °C)	14	FK	
50/50 Ethylene Glycol/Water	-25 °F to 190 °F (-32 °C to 88 °C)	2.9	CT	
80/20 Glycerin/Water	15 °F to 225 °F (-9 °C to 107 °C)	270	GR	
95/5 Water/Propylene Glycol	40 °F to 185 °F (4 °C to 85 °C)	1.0	PY	

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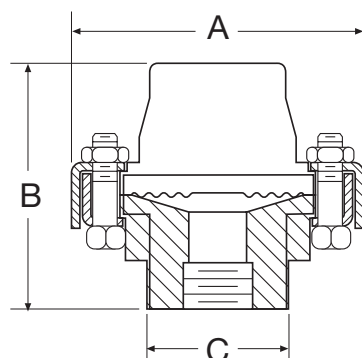
TABLE 4 - OPTIONS

Code	Option	Notes
Flushing Port		
AW	Single 1/2" flushing connection	Process connection must be 3/4 NPT or smaller
DB	Dual 1/2" flushing connections	Process connection must be 3/4 NPT or smaller
DK	Dual 1/4" flushing connections	
PU	Pipe plug for flushing connection	Plug will match bottom housing material. Seals with flushing connections only
Top Housing		
YM	Monel® 400 top housing	Must be ordered with Monel® or tantalum diaphragm
Assembly/Hardware		
SB	Stainless steel clamping bolts	
SE	Stainless steel rings and bolts	
HP	High-pressure clamping rings	Increases MAWP to 5,000 psi unless otherwise limited by material
LD	Stainless steel locking device	
NH	Stainless steel instrument tag	
NX	Teflon™-free diaphragm seal	200 psi maximum working pressure, 200 series only
DU	Instrument welded to top housing	Instrument socket must be like-material to top housing
Other		
MQ	Positive material identification	
NH	Stainless steel instrument tag	
6B	Cleaned for oxygen service	
CD-5	NACE compliance certificate	Stainless, Hastelloy®, or Monel® wetted materials Must be ordered as a separate line item

DIMENSIONS in [] are millimeters

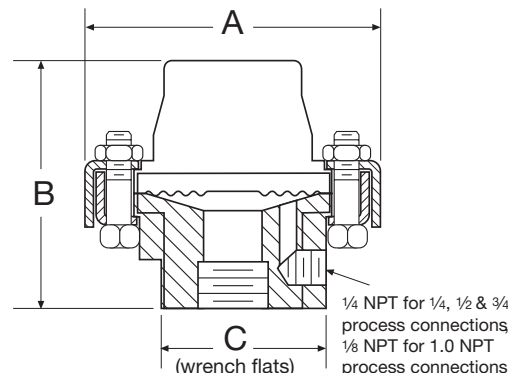
For reference only, consult Ashcroft for specific dimensional drawings

100, 200, 300 THREADED DIAPHRAGM SEAL



A	B	C
3 3/4 [95]	2 7/8 [73]	1 13/16 [46]

101, 201, 301 THREADED DIAPHRAGM SEAL WITH FLUSHING PORT



A	B	C
3 3/4 [95]	2 7/8 [73]	1 13/16 [46]