

Data Sheet

510/511 All Welded Diaphragm Seal

FEATURES

- Compact design allows seals to fit in confined areas
- Sufficient displacement to drive a wide variety of instrumentation
- Minimal fill volume
- All stainless steel construction;
- other materials available
- Light weight design

TYPICAL USES

- Oil and gas
- Refineries (Hydrofluoric / Sulfuric Alkylolation)
- Chemical and petrochemical
- Water and wastewater
- Oil and gas fracking
- NACE Compliant processes (sour gas separation)
- Biogas and biodiesel
- Corrosive processes



510/511
Threaded Seals

TECHNICAL SPECIFICATIONS

Connection Style:	510: Threaded 511: Threaded with Flushed Connection
Process Connection:	1/4 NPT or 1/2 NPT male/female (ASME B1.20.1) G 1/4 B or G 1/2 B male/female (EN 837) others available on request
Instrument Connection:	1/4 NPT, 1/2 NPT, G 1/4 or G 1/2 female
Pressure Rating (MAWP):	Standard: 160 bar/2320 psi at 40 °C (100 °F) High pressure option: 689 bar/10000 psi at 40 °C (100 °F)
Accuracy effect:	+ 0,5% typical
Fill Fluid:	Silicone, Halocarbon®, Syltherm® Check ordering table at page 3
Approvals:	CRN NACE for Oilfields and Refineries Suitable for use in potentially explosive atmospheres with operators ignition risk analysis

WETTED COMPONENTS

Diaphragm and bottom housing, top housing with (HP) option

Stainless steel 316L (1.4404)
Hastelloy® C-276 (2.4819)
Inconel® 625 (2.4856)
Monel® 400 (2.4360)
Duplex 2205 (1.4462)

NON-WETTED COMPONENTS

Top housing (for standard configuration MAWP 160 bar)

Stainless steel 316L (1.4404)
Monel® 400 (2.4360)

KEY BENEFITS

- Continuous duty design
- All-welded construction prevents inadvertent disassembly
- Ensures process compatibility
- Male connections eliminate adapters/fittings

		Bottom housing				
Diaphragm		St.st. 316L S	Monel® 400 P	Hastelloy® C-276 H	Inconel® 625 M	Duplex 2205 Z
	St.st. 316L S	✓				
	Monel® 400 P		✓			
	Hastelloy® C-276 H	✓		✓		✓
	Inconel® 625 M	✓			✓	✓
	Duplex 2205 Z	✓				✓

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ORDERING CODE		EXAMPLE:	18	510	S	S	51T	XCK
Process Connection								
02	1/4 NPT male							
04	1/2 NPT male							
06	3/4 NPT male							
08	1 NPT male							
67	1-1/2 NPT male							
25	1/4 NPT female							
50	1/2 NPT female							
75	3/4 NPT female							
10	1 NPT female							
13	G 1/4 B male							
18	G 1/2 B male	18						
23	G 3/4 B male							
16	M20x1,5 male							
Model								
510	All-welded threaded compact seal			510				
511	All-welded threaded compact seal, with flushing port							
Diaphragm Material								
S	Stainless steel 316L (1.4404)				S			
H	Hastelloy® C-276 (2.4819)							
M	Inconel® 625 (2.4856)							
P	Monel® 400 (2.4360)							
Z	Duplex 2205 (1.4462)							
Bottom Housing Material								
S	Stainless steel 316L (1.4404)					S		
H	Hastelloy® C-276 (2.4819)							
W	Inconel® 625 (2.4856)							
P	Monel® 400 (2.4360)							
Z	Duplex 2205 (1.4462)							
Instrument Connection								
00T	Welding port Ø 8 mm							
02T	1/4 NPT female							
04T	1/2 NPT female							
13T	G 1/4 female							
16T	M20x1,5 female							
51T	G 1/2 female						51T	
Options (If choosing an option(s) must include a "X")								
Fill Fluid								CK
CC	Syltherm® XLT	-100 to 260 °C	-150 to 500 °F	Low temperature				
CF	Halocarbon® 4.2	-57 to 200 °C	-70 to 300 °F	Inert/Oxygen				
CG	Glycerine ^{(1) (3)}	-18 to 204 °C	0 to 400 °F	Food				
CK	Silicone 50 cSt ⁽²⁾	-40 to 260 °C	-40 to 500 °F	General purpose				
DJ	Silicone 10 cSt	-40 to 260 °C	-40 to 500 °F	Fast response time				
FJ	Distilled water ⁽¹⁾	4 to 85 °C	40 to 185 °F	Food & Beverage				
GQ	White oil silicone free	-12 to 204 °C	10 to 400 °F	Food, Painting				
HA	Syltherm® 800	-40 to 400 °C	-40 to 750 °F	High temperature				
HO	Halocarbon® 6.3S	-57 to 200 °C	-70 to 300 °F	Inert/Oxygen				
KG	Silicone 704	0 to 300 °C	32 to 572 °F	High temperature & vacuum				
KJ	Silicone 705	20 to 215 °C	68 to 420 °F	High vacuum				
NM	Neobee® M-20	-15 to 204 °C	5 to 400 °F	Food & Pharma				

(1) Not available for compound or vacuum pressure applications

(2) Only suitable for capillary systems ≤ 3 m (10ft)

(3) Only suitable for direct mounted systems

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ORDERING CODE	EXAMPLE:	18	510	S	S	51T	XCK
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Options (If choosing an option(s) must include a "X")

Plugs

PU Pipe plug for flushing connection, same material as wetted parts (1/4 NPT male and for high pressure design 1/8 NPT male)

Rating

HP High pressure design (689 bar / 10000 psi) at 40 °C (100 °F)

Marking/Tagging

NH Stainless steel tag, wired

Cleaning

6B Cleaned for oxygen service

6W Cleaned for oxidizing processes

YF Silicone free product

Testing/Certificates

CD2 Material test report according to EN 10204 / 2.2

C3 Material report according to EN 10204 / 3.1

CD5 Certificate according to NACE
for Oilfields MR0175 / ISO 15156 and Refineries MR0103 / ISO17945

MQ Positive Material Identification (PMI)

ML Mass spectrometer leak test



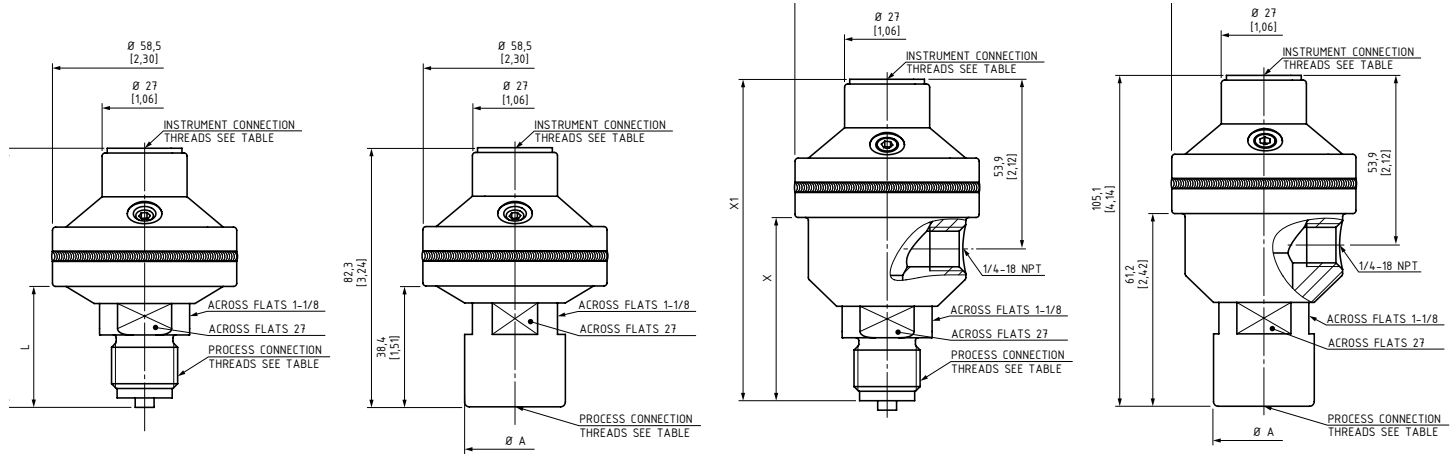
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510/511 All Welded Diaphragm Seal

DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings

SEAL 510



PROCESS CONNECTION	CODE	Ø A	ØA1
1/4 - 18 NPT Female	25	32 [1,26]	29 [1,14]
1/2 - 14 NPT Female	50	32 [1,26]	29 [1,14]
3/4 - 14 NPT Female	75	35 [1,38]	35 [1,38]
G 1/4 Female; EN 837	26	32 [1,26]	29 [1,14]
G 1/2 Female; EN 837	51	32 [1,26]	29 [1,14]
9/16 - 18 UNF for 3/8 OD tubing	RF	32 [1,26]	22 [0,87]

INSTRUMENT CONNECTION	CODE
1/4 - 18 NPT Female	02T
1/2 - 14 NPT Female	04T
G 1/4 Female; EN 837	13T
G 1/2 Female; EN 837	51T
M20x1,5 Female; DIN 3852-1	16T
Welding port	00T

PROCESS CONNECTION THREADS	CODE	L	L1	X	X1
1/4-18 NPT MALE; DIN EN 837	02	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
1/2-14 NPT MALE; DIN EN 837	04	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
3/4-14 NPT MALE	06	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
1-11,5 NPT MALE	08	43,4 [1,71]	87,3 [3,44]	63,2 [2,49]	107,1 [4,22]
1 1/2-11,5 NPT MALE	67	44,4 [1,75]	88,3 [3,48]	64,2 [2,53]	108,1 [4,26]
G 1/4 B MALE; DIN EN 837	13	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
G 1/2 B MALE; DIN EN 837	18	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
G 3/4 A MALE; DIN 3852-1	23	38,4 [1,51]	82,3 [3,24]	58,4 [2,3]	102,3 [4,03]
M20x1,5 MALE; DIN 3852-1	16	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
R 1/2 MALE; ISO 7-1	KQ	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
R 1 MALE; ISO 7-1	WT	38,4 [1,51]	82,3 [3,24]	63,2 [2,49]	107,1 [4,22]



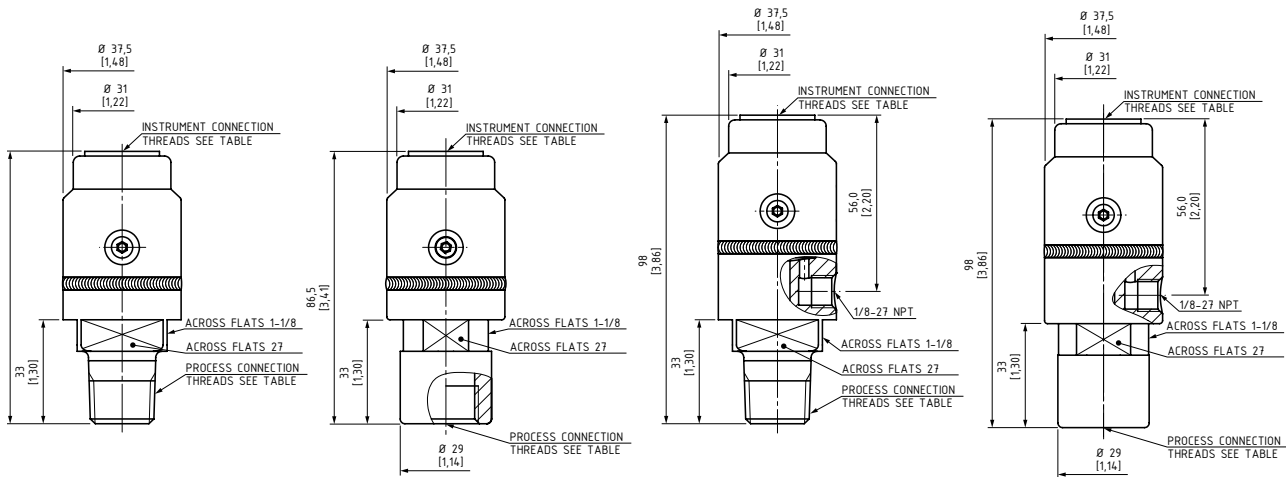
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DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings

SEAL 511 (WITH FLUSHING PORTS)



PROCESS CONNECTION	CODE	Ø A	ØA1
1/4 - 18 NPT Female	25	32 [1,26]	29 [1,14]
1/2 - 14 NPT Female	50	32 [1,26]	29 [1,14]
3/4 - 14 NPT Female	75	35 [1,38]	35 [1,38]
G 1/4 Female; EN 837	26	32 [1,26]	29 [1,14]
G 1/2 Female; EN 837	51	32 [1,26]	29 [1,14]
9/16 - 18 UNF for 3/8 OD tubing	RF	32 [1,26]	22 [0,87]

INSTRUMENT CONNECTION	CODE
1/4 - 18 NPT Female	02T
1/2 - 14 NPT Female	04T
G 1/4 Female; EN 837	13T
G 1/2 Female; EN 837	51T
M20x1,5 Female; DIN 3852-1	16T
Welding port	00T

PROCESS CONNECTION THREADS	CODE	L	L1	X	X1
1/4-18 NPT MALE; DIN EN 837	02	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
1/2-14 NPT MALE; DIN EN 837	04	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
3/4-14 NPT MALE	06	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
1-11,5 NPT MALE	08	43,4 [1,71]	87,3 [3,44]	63,2 [2,49]	107,1 [4,22]
1 1/2-11,5 NPT MALE	67	44,4 [1,75]	88,3 [3,48]	64,2 [2,53]	108,1 [4,26]
G 1/4 B MALE; DIN EN 837	13	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
G 1/2 B MALE; DIN EN 837	18	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
G 3/4 A MALE; DIN 3852-1	23	38,4 [1,51]	82,3 [3,24]	58,4 [2,3]	102,3 [4,03]
M20x1,5 MALE; DIN 3852-1	16	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
R 1/2 MALE; ISO 7-1	KQ	38,4 [1,51]	82,3 [3,24]	61,2 [2,41]	105,1 [4,14]
R 1 MALE; ISO 7-1	WT	38,4 [1,51]	82,3 [3,24]	63,2 [2,49]	107,1 [4,22]

