

# 502/503 All-Welded Flanged Diaphragm Seal

## Features

- 1-piece all welded design with internal diaphragm
- Continuous-duty construction
- Available with a wide range of wetted materials

## Typical Uses

- Oil and Gas
- Refineries
- Chemical and Petrochemical
- NACE-compliant (Sour Gas Separation)
- Biogas and Diesel



**502/503**  
All Welded Flanged Seal

## Specifications

Connection Style:	502: Flanged Connection 503: Flanged with ¼ NPT Flushing Port
Process Connection Size:	½", ¾", 1", 1½"
Instrument Connection Size:	½ NPT
Flange Rating:	150, 300 or 600 class (others on request)
Flushing Port:	¼ NPT (503 only)
Added Tolerance:	±0.5% typical
Approvals and Certifications:	NACE for Oilfields and Refineries

## Key Benefits

- Isolates instruments from hazardous and corrosive chemicals
- All welded design minimizes leak points for critical applications
- Certified with MTR per 10204 3.1 and PMI as standard

## Material Options

Wetted		Non-wetted	
Diaphragm	Flange	Instrument Connection	Studs
Stainless Steel 316L (1.4404)	Stainless Steel 316L (1.4404)	Stainless Steel 316L (1.4404)	Stainless Steel 316 (ASTM A193 Grade B)
Duplex 2205 (1.4462)	Duplex 2205 (1.4462)	Stainless Steel 316L (1.4404)	Stainless Steel 316 (ASTM A193 Grade B)
Hastelloy® C-276 (2.4856)	Hastelloy® C-276 (2.4856)	Stainless Steel 316L (1.4404)	Stainless Steel 316 (ASTM A193 Grade B)
Monel® 400 (2.4360)	Monel® 400 (2.4360)	Stainless Steel 316L (1.4404), Monel® 400 (XYM Option)	Stainless Steel 316 (ASTM A193 Grade B)
Tantalum®	Hastelloy® C-276 (2.4856)	Stainless Steel 316L (1.4404)	Stainless Steel 316 (ASTM A193 Grade B)
Tantalum®	Hastelloy® B	Stainless Steel 316L (1.4404)	Stainless Steel 316 (ASTM A193 Grade B)

## 502/503 All-Welded Flanged Diaphragm Seal

Stud Specifications				Studs Included with S9 Option	Studs Included with LW Option
Flange Specifications	Thread Size	Internal Thread Length	Material	Stainless Steel 316 (ASTM A193 Grade B)	
			Quantity	4	
½-Inch / ASME 150 Class	½ -13 UNC-2A	0.6-inch	Part Number	AL882F	AL882S
			Overall Stud Length	2.2-inch	4.2-inch
			Exposed Length	1.6-inch	3.6-inch
½-Inch / ASME 300 or 600 Class	½ -13 UNC-2A	0.75-inch	Part Number	AL882H	AL882U
			Overall Stud Length	2.75-inch	4.75-inch
			Exposed Length	2.0-inch	4.0-inch
¾ Inch / ASME 150 Class	½ -13 UNC-2A	0.6-inch	Part Number	AL882F	AL882S
			Overall Stud Length	2.2-inch	4.2-inch
			Exposed Length	1.6-inch	3.6-inch
¾ Inch / ASME 300 or 600 Class	5/8 -13 UNC-2A	0.75-inch	Part Number	AL882G	AL882T
			Overall Stud Length	3.0-inch	5.0-inch
			Exposed Length	2.25-inch	4.25-inch
1 Inch / ASME 150 Class	½ -13 UNC-2A	0.6-inch	Part Number	AL882H	AL882U
			Overall Stud Length	2.7-inch	4.7-inch
			Exposed Length	2.1-inch	4.1-inch
1 Inch / ASME 300 or 600 Class	5/8 -13 UNC-2A	0.75-inch	Part Number	AL882G	AL882T
			Overall Stud Length	3.0-inch	5.0-inch
			Exposed Length	2.25-inch	4.25-inch
1.5 Inch / ASME 150 Class	½ -13 UNC-2A	0.6-inch	Part Number	AL882F	AL882S
			Overall Stud Length	2.2-inch	4.2-inch
			Exposed Length	1.6-inch	3.6-inch
1.5 Inch / ASME 300 or 600 Class	¾ -13 UNC-2A	0.75-inch	Part Number	AL882L	AL882X
			Overall Stud Length	3.75-inch	5.75-inch
			Exposed Length	3.0-inch	5.0-inch

## 502/503 All-Welded Flanged Diaphragm Seal

Ordering Code	Example:	75	502	HH	04T	150	RF	XCK	DU
<b>Process Connection Size</b>									
50 - 1/2-inch Flanged Connection									
75 - 3/4-inch Flanged Connection		75							
10 - 1-inch Flanged Connection									
15 - 1.5-inch Flanged Connection									
<b>Diaphragm Type</b>									
502 - All welded flanged seal (internal diaphragm)			502						
503 - All welded flanged seal (internal diaphragm) with 1/4 NPT flush port									
<b>Diaphragm/Flange Materials</b>									
SS - 316L Stainless Steel Diaphragm / 316L Stainless Steel Flange									
PM - Monel® 400 Diaphragm / Monel® 400 Flange									
HH - Hastelloy® C276 Diaphragm / Hastelloy® C 276 Flange				HH					
HS - Hastelloy® C Diaphragm / 316L Stainless Steel Flange									
UH - Tantalum® Diaphragm / Hastelloy® C276 Flange									
UG - Tantalum® Diaphragm / Hastelloy® B Flange									
ZZ - Duplex 2205 / Duplex 2205 Flange									
<b>Instrument Connection Size</b>									
04T - 1/2 NPT Female Instrument Connection					04T				
<b>Flange Rating</b>									
150 - ASME 150 Class Flange						150			
300 - ASME 300 Class Flange									
600 - ASME 600 Class Flange									
900 - ASME 900 Class Flange									
1500 - ASME 1500 Class Flange									
<b>Flange Design</b>									
RF - Raised Face							RF		
FF - Flat Face									
<b>Options (if choosing an option(s) must include an "X")*</b>									X_
<b>Fill Fluid (for seals attached to instruments)</b>									
CF - Halocarbon®									
CG - Glycerin								CK	
CK - 50 cSt Silicone									
DJ - 10 cSt Silicone									
HA - Syltherm 800 (for high temperature applications)									
CC - Syltherm LT (for low temperature applications)									

## 502/503 All-Welded Flanged Diaphragm Seal

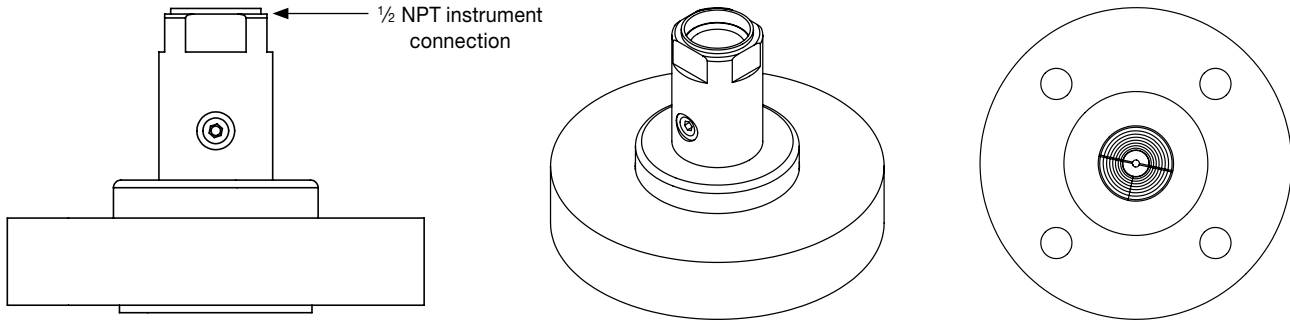
Ordering Code (continued)	Example:	75	502	HH	04T	150	RF	XCK	DU
<b>Option Features</b>									
<b>Flushing Port</b>									
DK - Dual ¼" flushing connections									
PU - Pipe plug for flushing connection <b>NOTE:</b> Plug will match bottom housing material. Seals with flushing connections only.									
<b>Top Housing</b>									
YM - Monel® 400 top housing <b>NOTE:</b> Must be Monel or Tantalum diaphragm when diaphragm is welded to top housing.									
<b>Assembly/Hardware</b>									
DU - Top housing welded to instrument or accessory <b>NOTE:</b> Instrument or accessory socket must be like-material to top housing.									DU
LW - Extended Length Studs per table on page 2									
NH - Stainless steel instrument tag									
S9 - Includes Studs per table on page 2									
<b>Testing/Certificates</b>									
1H - Hydrostatic testing of a seal assembly									
<b>Cleaning</b>									
6B - Cleaned per ASME Level IV for Oxygen Service									
6W - Cleaned per ASME Level IV without Oxygen Service Labeling									
<b>Certification (miscellaneous charges not included within model code)</b>									
CD-1 - Certificate of Conformance to specifications and/or drawings (standard)									
CD-1A - Customized Certificate of Conformance to specifications and/or drawings (non-standard)									
CD-5 - Certificate of Compliance for refineries to NACE MR0103-2010 and for oilfields (production) to NACE MR0175/ISO 15156-2009									

\*All options must be listed after the "X" in alphabetical order starting with letters then numbers (e.g. EE D4 3C 22)

## 502/503 All-Welded Flanged Diaphragm Seal

### 502 Drawings

For reference only, visit [ashcroft.com](http://ashcroft.com) for specific dimensional drawings.



### 503 Drawings

