

Diaphragm Seal Threaded & Flanged Process Connection Type 400/500 Series All-Welded

The comprehensive line of Ashcroft Seals will meet a variety of applications and installation requirements.

Features:

- Recommended for applications where clamped design are not acceptable
- Prevent potential leakage of hazardous chemicals
- Tamper proof design
- All stainless steel construction is standard. Other materials available
- Types 401 and 403 are standard with flushing connection

Types 400, 401, 402 and 403 are all welded design with black epoxy painted clamp rings.

Types 500 and 501 are all welded designs. No clamp rings. Type 501 is standard with flushing connection.



SELECTION TABLES*

Table 1 – Process Connection/Type Number

Type No.	Process Connection	Process Conn. Size Code – Inches							Pressure Rating
		Size	1/4	1/2	3/4	1	1 1/2	2	
400	Threaded	Female 25	50	75	10	15	20	30	4400 psi ⁽¹⁾
401	Threaded (with Flushing Connection)		F	F	F	F			4400 psi ⁽¹⁾
402	Flanged			•	•	•	•	•	Per ASME B16.5 ⁽²⁾
403	Flanged (with Flushing Connection)			•	•	•	•	•	Per ASME B16.5 ⁽²⁾
500	Threaded	F/M	F/M	F/M	F/M				500 psi
501	Threaded (with Flushing Connection)	F/M	F	F	F				500 psi

Table 2 – Diaphragm Material

Material	Temp. Limits	Code
316L SS		S •
Hastelloy B		G •
Hastelloy C 22		J •
Hastelloy C 276		H •
Tantalum ⁽⁴⁾		U •
Monel 400		M •
Titanium		TI •

Table 3 – Bottom Housing Materials

Bottom Material	Code	Top Material
316L SS	S	316L SS
Hastelloy B	G	316L SS
Hastelloy C 22	J	316L SS
Hastelloy C 276	H	316L SS
Monel	M	Monel
Titanium ⁽⁴⁾	TI	Titanium

Table 4 – Instrument Connection

Size	Code
1/4 NPT	02T
1/2 NPT	04T

Table 5 – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Limits Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Remote Line	-40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Remote Line	-80/392	CF
Syltherm	Pressure/Vacuum	Direct or Remote Line	-40/750	HA
Food Grade Silicone	Pressure/Vacuum	Direct or Remote Line	-40/500	CZ
Distilled Water	Pressure/Vacuum	Direct or Remote Line	40/185	FJ
Ethylene Glycol & Water	Pressure/Vacuum	Direct or Remote Line	20/-325	CT
Propylene Glycol	Pressure/Vacuum	Direct or Remote Line	20/325	CV
Mineral Oil	Pressure/Vacuum	Direct or Remote Line	10/400	HY
Silicone 10 CST	Pressure/Vacuum	Direct or Remote Line	-40/500	DJ

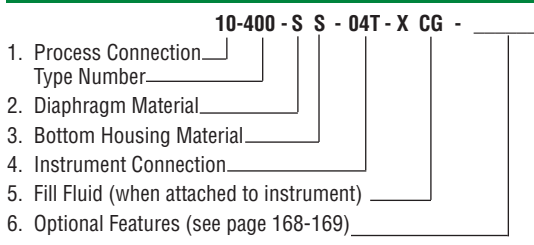
Table 8 – Flange Types for 402 & 403 Only

Type	Code
Raised Face	RF Standard
Ring Joint	RJ Optional
Flat Face	FF Optional

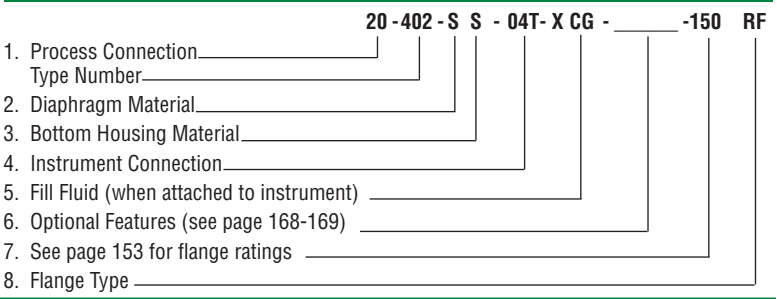
NOTES:

- (1) Type 400 XHP rated to 9000 psi. Type 401 XHP rated to 5000 psi.
 - (2) Flange ratings 150 class through 1500 class.
 - (3) Not available with monel or titanium bottom housing.
 - (4) Supplied with titanium top housing.
- *See Table A on pages 170-171 for instrument compatibility. Minimum pressure is determined by the instrument that will be attached to the diaphragm seal.

TO ORDER THREADED TYPE 400, 401, 500 & 501 SERIES PROCESS CONNECTION:



TO ORDER FLANGED TYPE 402 & 403 SERIES PROCESS CONNECTION:



Diaphragm Seal Threaded Process Connection Types 510/511 Series, All Welded

This compact seal is small enough in design to be used in confined spaces, but provides sufficient displacement to drive a wide variety of instrumentation. Its all-welded tamper proof design prevents possible process media leakage.

FEATURES:

ADDITIONAL SPECIFICATIONS

Pressure Rating

1500 psi @ 100°F

Optional 5000 psi @ 100°F (XHP)

Accuracy (typical)

Seal will add ½% to the stated full scale accuracy of the instrument attached.

- Compact size
- Light weight
- All-welded design
- Continuous duty design
- Minimized fill volume
- Male connections eliminate adapters/fittings
- Type 511 furnished with ⅛ NPT flushing connection
- Dual inch and metric wrench flats



SELECTION TABLES*

**Table 1 –
Process Connection**

Process Connection	Code
Threaded – ½ NPT male	04

**Table 2 –
Diaphragm Materials**

Material	Temp. Limits	Code
316L stainless steel		S
Hastelloy C276 ⁽²⁾		H
Monel ⁽¹⁾		M

**Table 3 –
Bottom Housing Materials**

Material	Code
316L stainless steel	S
Monel	M
Hastelloy C276	H

**Table 4 –
Instrument Connection**

Size-NPT	Code
½	04T

Table 5 – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Limits Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Remote Line	-40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Remote Line	-80/392	CF
Syltherm	Pressure/Vacuum	Direct or Remote Line	-40/750	HA
Food Grade Silicone	Pressure/Vacuum	Direct or Remote Line	-40/500	CZ
Distilled Water	Pressure/Vacuum	Direct or Remote Line	40/185	FJ
Ethylene Glycol & Water	Pressure/Vacuum	Direct or Remote Line	20/-325	CT
Propylene Glycol	Pressure/Vacuum	Direct or Remote Line	20/325	CV
Mineral Oil	Pressure/Vacuum	Direct or Remote Line	10/400	HY
Silicone 10 CST	Pressure/Vacuum	Direct or Remote Line	-40/500	DJ

NOTES:

(1) Available only with monel top and bottom housing.

(2) Available with hastelloy top and bottom housing.

*See Table A on pages 170-171 for instrument compatibility.

TO ORDER THIS TYPE 510 / 511 SERIES THREADED PROCESS CONNECTION:

04-510 - S S - 04T - X CG - _____

1. Process Connection _____
2. Diaphragm Material _____
3. Bottom Housing Material _____
4. Instrument Connection _____
5. Fill Fluid (when attached to instrument) _____
6. Optional Features (see page 168-169) _____

Consult factory for guidance in product selection
Phone (203) 378-8281 or visit our
web site at www.ashcroft.com

**Diaphragm Seal
Threaded Process Connection
Type 311/312 All Welded
Midi-Diaphragm Seal**

This compact isolator is small enough in design to be used in space restricted areas, with sufficient displacement to drive 3 1/2" and 4 1/2" gauges with ranges from 30 psi to 1000 psi.

ADDITIONAL SPECIFICATIONS

Pressure Rating

15 psi to 1000 psi @ 100°F

FEATURES:

- All welded metal construction, prevents leakage of process media
- No gaskets or bolts
- Top housing material 316L stainless steel standard
- Type 312 furnished with 1/8" NPT flushing connection
- Type 312 not available in male process connections



SELECTION TABLES*

Table 1 – Process Connection/Type Number

Type No.	Process Connection	Process Conn. Size Code – Inches						Pressure Rating
		Size	1/4	1/2	3/4	1		
		Female	25	50	75	10		
311	Threaded NPT	Male	02	04	06	08	1000 psi	
312	Threaded NPT (w/Flushing Connection)		F/M	F/M	F	F	1000 psi	

Table 2 – Diaphragm Materials

Materials	Code
316L stainless steel	S
Tantalum	U
Hastelloy C 276	H

Table 3 – Bottom Housing Materials

Materials	Code
316L stainless steel	S
Hastelloy C-276	H

Table 4 – Instrument Connection

Instrument Connection	Size	Code
Threaded – female NPT	1/4 NPT	02T
Threaded – female NPT	1/2 NPT	04T

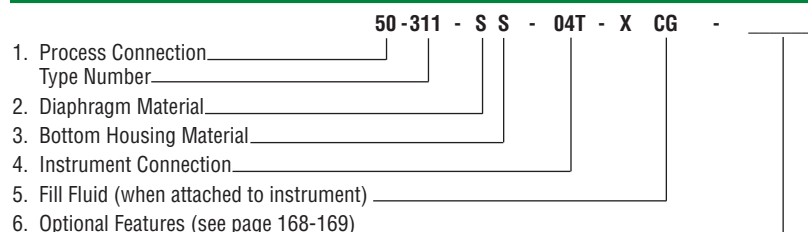
Table 5 – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Limits Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Remote Line	-40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Remote Line	-80/392	CF
Syltherm	Pressure/Vacuum	Direct or Remote Line	-40/750	HA
Food Grade Silicone	Pressure/Vacuum	Direct or Remote Line	-40/500	CZ
Distilled Water	Pressure/Vacuum	Direct or Remote Line	40/185	FJ
Ethylene Glycol & Water	Pressure/Vacuum	Direct or Remote Line	20/-325	CT
Propylene Glycol	Pressure/Vacuum	Direct or Remote Line	20/325	CV
Mineral Oil	Pressure/Vacuum	Direct or Remote Line	10/400	HY
Silicone 10 CST	Pressure/Vacuum	Direct or Remote Line	-40/500	DJ

NOTES:

*See Table A on pages 170-171 for instrument compatibility.

TO ORDER THIS TYPE 311 / 312 SERIES THREADED PROCESS CONNECTION:



Consult factory for guidance in product selection
Phone (203) 378-8281 or visit our
web site at www.ashcroft.com

**Diaphragm Seal
Threaded Process Connection
Type 310 & 315 All Welded
Mini-Diaphragm Seal**

This compact isolator is designed to fit space restricted areas. Specifically designed to protect from transducer mini switches and 3 1/2" or smaller gauges.

ADDITIONAL SPECIFICATIONS

Pressure Rating

Rated for 2500 psi at 100°F

FEATURES:

- All welded metal construction, prevents leakage of process media
- Fill/bleed connection is standard
- No gaskets or bolts
- Type 315 furnished with 1/8 NPT flushing connection



Type 310

SELECTION TABLES*

Table 1 – Process Connection/Type Number

Process Connection	Process Connection Size/Code—Inches			Type Number	Pressure Rating
	Size	1/4	1/2		
	Female	25	50		
	Male	02	04		
Threaded NPT	F/M	F/M		310	2500 psi @ 100°F
Threaded NPT w/flushing connection	F	F		315	2500 psi @ 100°F

**Table 2
Diaphragm Material**

Material	Code	310/315
316L stainless steel	S	•
Hastelloy C 27	H	•
Tantalum	U	•
Monel ⁽¹⁾	P	•

**Table 3 – Bottom
Bottom Housing Materials**

Material	Code	Top Material	310/315
316L SS	S	316L SS	•
Hastelloy C 276	H	316L SS	•
Monel	M	Monel	•
Hastelloy B	G	316 SS	•

**Table 4 –
Instrument Connection**

Connection	Size	Code
Threaded – female NPT	1/4 NPT	02T
Threaded – female NPT	1/8 NPT	01T

Table 5 – Filling Fluid

Filling	Service	Connection to Instrument	Temperature Limits Range °F	Code
Glycerin	Pressure	Direct Only	0/400	CG
Silicone	Pressure/Vacuum	Direct or Remote Line	-40/600	CK
Halocarbon	Pressure/Vacuum in presence of strong oxidizing agent	Direct or Remote Line	-80/392	CF
Syltherm	Pressure/Vacuum	Direct or Remote Line	-40/750	HA
Food Grade Silicone	Pressure/Vacuum	Direct or Remote Line	-40/500	CZ
Distilled Water	Pressure/Vacuum	Direct or Remote Line	40/185	FJ
Ethylene Glycol & Water	Pressure/Vacuum	Direct or Remote Line	20/-325	CT
Propylene Glycol	Pressure/Vacuum	Direct or Remote Line	20/325	CV
Mineral Oil	Pressure/Vacuum	Direct or Remote Line	10/400	HY
Silicone 10 CST	Pressure/Vacuum	Direct or Remote Line	-40/500	DJ

NOTES:

(1) Top housing material is 316L SS (standard). Monel mini-seal standard with monel top housing.

* See Table A on pages 170-171 for instrument compatibility. Minimum pressure is determined by the instrument that will be attached to the diaphragm seal.

TO ORDER THIS TYPE 310 /315 THREADED SERIES PROCESS CONNECTION:

25-310 - S S - 02T - X CG -

- Process Connection _____
- Diaphragm Material _____
- Bottom Housing Material _____
- Instrument Connection _____
- Fill Fluid (when attached to instrument) _____
- Optional Features (see page 168-169) _____

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