

## Diaphragm Seal In-Line Process Connection Type 104, 204 Threaded Type 106, 206 Flanged

The comprehensive line of Ashcroft Seals will meet a variety of applications and installation requirements. It also includes the In-line threaded and In-line flanged process connections. These connections are recommended for applications where continuous flow will prevent clogging and buildup of process media. Fill port is standard in all designs in-line threaded rated for pressures rated up to 2500 psi, unless noted otherwise.

**Features:**

- A thin Teflon PTFE gasket between the diaphragm and the bottom housing ensures a leak-tight, corrosion resistant seal.

**Types 104/106** are top housing and diaphragm capsule designs. The diaphragm capsule is threaded to the top housing. The diaphragm and top housing are then clamped to the bottom housing. Viton O-ring, compatible with all fill fluid and Teflon backup ring provide a seal between the diaphragm capsule and the top housing.

**Types 204/206** are welded or bonded designs. Metallic diaphragms are welded to the top housing. Elastomeric diaphragms are bonded to the top housing. The diaphragm and top housings are then clamped to the bottom housing.



**SELECTION TABLES\***

**Table 1 – Process Connection/Type Number**

Process Connection	Process Conn. Size Code – Inches											Type Number	
	Size Code	1/4	1/2	3/4	1	1 1/2	2	3	4	6	8	Capsule	Welded & Bonded
In-line – threaded NPT	25	•	•									104	204
In-line – flanged			•	•	•	•	•	•	•	•	•	106	206

**Table 2 – Diaphragm Material**

Material	Temp. Limits	Code	104/106	204/206
316L SS		S	•	•
304 SS		C	•	•
Monel 400		P	•	• <sup>(2)</sup>
Nickel		N	•	•
Carpenter 20		D	•	•
Tantalum		U	•	•
Hastelloy B		G	•	•
Hastelloy C 22		J	•	•
Hastelloy C 276		H	•	•
Titanium		TI	•	•
Teflon	-40/400°F	T	•	•
Viton <sup>(1)</sup>	-40/350°F	Y	•	•
Kalrez <sup>(1)</sup>	30/212°F	K	•	•
Halar Coated Monel	-40/300°F	F	•	•

**Table 3 – Bottom Housing Material**

Material	Code	104/106	204/106
Steel	B	•	•
304 SS	C	•	•
316L SS	S	•	•
Hastelloy B	G	•	•
Hastelloy C 22	J	•	•
Hastelloy C 276	H	•	•
Carpenter 20	D	•	•
Monel 400	M	•	•
Inconel 600	W	•	•
Nickel	N	•	•

**Table 4 – Instrument Connection**

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

**Table 6 – Optional Features**

See page 168-169 for X variations.

**Table 8 – Flange Type**

(for Types 106/206 only)

Type	Code
Raised Face	RF
Ring Joint	RJ
Flat Face	RF

**NOTES**

- (1) Viton and Kalrez diaphragm max. pressure 500 psi.
- (2) Type 202, 203 monel diaphragm *must* be ordered w/monel top housing (XYM).

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

**TO ORDER 104 & 204 SERIES IN-LINE THREADED PROCESS CONNECTION:**

50-104-S S - 04T X CG - \_\_\_\_\_

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

**TO ORDER 106 & 206 SERIES IN-LINE FLANGED PROCESS CONNECTION:**

10-106-S S - 04T X CG - \_\_\_\_\_ - 150 RF

- Process Connection \_\_\_\_\_  
Type Number \_\_\_\_\_
- Diaphragm Material \_\_\_\_\_
- Bottom Housing Material \_\_\_\_\_
- Instrument Connection \_\_\_\_\_
- Fill Fluid (when attached to instrument) \_\_\_\_\_
- Optional Features (see page 168-169) \_\_\_\_\_
- Flange Class (150 only) \_\_\_\_\_
- Flange Type \_\_\_\_\_

**Diaphragm Seal**  
**Types 105 & 205 Saddle**  
**Types 107 & 207 Socket Weld**  
**Types 108 & 208 Butt Weld**

The comprehensive line of Ashcroft Seals will meet a variety of applications and installation requirements. This includes the In-line threaded, In-line Socket Weld, In-line Butt Weld and In-line Saddle Seal. These connections are recommended to prevent clogging and buildup of process media. Rated for pressures up to 2500 psi, unless noted otherwise.

**Features:**

- A thin Teflon PTFE gasket between the diaphragm and the bottom housing ensures a leak-tight, corrosion resistant seal.
- Top Housing and pressure instruments are removable.

**Types 105, 107 & 108.** The diaphragm capsule is threaded to the top housing. The diaphragm and top housing are then clamped to the bottom housing. Viton O-ring, compatible with all fill fluid and Teflon backup ring provide a seal between the diaphragm capsule and the top housing.

**Types 205, 207 & 208** are welded or bonded designs. Metallic diaphragms are welded to the top housing. Elastomeric diaphragms are bonded to the top housing. The diaphragm and top housings are then clamped to the bottom housing.



**SELECTION TABLES\***

**Table 1 – Process Connection/Type Number**

Process Connection	Process Conn. Size Code – Inches										Type Number		
	Size Code	1/4 25	1/2 50	3/4 75	1 10	1 1/2 15	2 20	3 30	4 40	6 60	8 80	Capsule	Welded & Bonded
Saddle							*		AND LARGER			105	205
In-line – Butt Weld			*	*	*	*	*					108	208
In-line – Socket Weld		*	*	*	*	*	*					107	207

**Table 2 – Diaphragm Material**

Material	Temp. Limits	Code	105/107/108	205/207/208
316L SS		S	*	*
304 SS		C	*	*
Monel 400		P	*	*(2)
Nickel		N	*	*
Carpenter 20		D	*	*
Tantalum		U	*	*
Hastelloy B		G	*	*
Hastelloy C 22		J	*	*
Hastelloy C 276		H	*	*
Titanium		TI	*	*
Teflon	-40/400°F	T	*	*
Viton(1)	-40/350°F	Y	*	*
Kalrez(1)	30/212°F	K	*	*
Halar Coated Monel	-40/300°F	R	*	*

**Table 3 – Bottom Housing Material**

Material	Code	105/205	107/207	108/208
Steel	B	*	*	*
304 SS	C	*	*	*
316L SS	S	*	*	*
Hastelloy B	G	*	*	*
Hastelloy C 22	J	*	*	*
Hastelloy C 276	H	*	*	*
Carpenter 20	D	*	*	*
Monel 400	M	*	*	*
Inconel 600	W	*	*	*
Nickel	N	*	*	*

**Table 4 – Instrument Connection**

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**

- (1) Viton and Kalrez diaphragm max. pressure 500 psi.
- (2) Type 205, 208 and 207 monel diaphragm must be ordered w/monel top housing (XYM).

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

**TO ORDER 105/205, 107/207, 108/208 SERIES DIAPHRAGM SEAL:**

**20 - 108 - S S - 04T - X CG - \_\_\_\_\_**

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