



Type S Series General Purpose Diaphragm Seal Elements

- Diaphragm Directly Welded to Upper Flange**
 - Eliminates Retaining Ring
 - Minimizes Risk of Leaks
- Continuous Duty**
 - Remove or Replace Instrument While System is in Operation Without Damaging Diaphragm
- Ideal for General Purpose Application**
- Materials Available for Corrosive Applications**
- Seal Ratings to 10000 PSIG (690 bar)**
- Compatible with Most 4.5-inch and Smaller Gauges**

PRODUCT DESCRIPTION

Mansfield & Green S Series diaphragm seals feature a diaphragm which is permanently welded onto the seal element's upper flange. This design eliminates the need for a diaphragm retaining ring and minimizes the risk of fluid leakage during normal operation or seal element maintenance.

Type S Series seal elements feature an upper housing which is contoured. This design permit free movement of the diaphragm with accurate response to pressure changes. It also protects the seal element from distortion due to improper handling during maintenance routines.

Type S Series diaphragm seals have a volumetric displacement of 0.07 cubic inches. Filling screws are standard on all models except the high pressure Type SX Series.

There are three basic seal configurations, plus options for All-Welded construction.

- Threaded
- Flanged
- Inline Flow-Thru

Threaded Seal Elements

There are four basic versions of S Series diaphragm seals with threaded attachments. The **SB** seal element is used for pressure applications only and has a standard pressure rating of 2500 PSIG at 100°F (172 bar @ 38°C) with an optional rating for up to 5000 PSIG (345 bar). The **SG** seal element is similar to the **SB** seal, except that it has a 0.25-inch NPT flushing connection.



MANSFIELD & GREEN, S SERIES

The **SX** seal element has a standard pressure rating of 10,000 PSIG at 100°F (690 bar @ 38°C). This high pressure model can be supplied with 0.125-, 0.25-, 0.375-, 0.5-, 0.75- and 1.0-inch NPT process connections.

Flanged Seal Elements

There are two basic versions of flanged S Series seal elements. The flange is a standard raised type. The **SC** seal element can be supplied in 0.5- and 0.75-inches. Both sizes can be supplied for standard ANSI Class ratings of 150, 300, 600, 1500 and 2500. Type **SC** seals are available in ring joint, flat face and DIN sizes.

The **SR** series features a tantalum exposed diaphragm. 0.5- and 0.75-inch sizes are available for ANSI Class 150 and 300. 1.0-thru 3.0-inch sizes have standard ANSI Class 150, 300, 600 and 1500 ratings.

Inline Flow-Thru Seal Elements

Inline flow-thru S Series diaphragm seals include the **SJ** versions for 3-inch and larger pipe connections. The **SK** versions are available with 0.25-, 0.375- or 0.5-inch NPT process connections with a standard pressure rating of 1500 PSIG with an optional pressure rating of 3000 PSIG. The **SM** version is for pipe sizes from 0.75-inch to 3.0-inch schedule 40 pipe (other schedules available) where the diaphragm seal element is to be directly welded to the process pipe.

The **SN** version is for pipe sizes from 0.75- to 3.0-inches requiring ANSI ratings of 150 or 300. These can be supplied with an optional TEFLON liner.

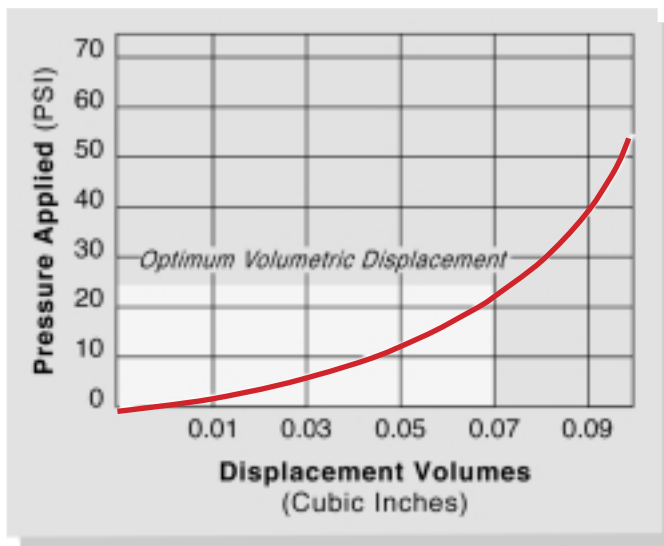
The **SP** versions are for pipe sizes from 4.0- to 10.0-inches and with ANSI ratings of 150 or 300.

MODEL S SERIES SELECTION GUIDE

Seal Type	Seal Mounting	Operating Temperature	Operating Pressure	Process Application	Flushing Connection
SB	Thread	100°F (38°C)	2500 PSIG (172 bar) ¹	General Purpose	No Flush
SG	Thread	100°F (38°C)	2500 PSIG (172 bar) ¹	General Purpose	With Flushing Connection
SX	Thread ³	100°F (38°C)	10000 PSIG (690 bar)	High Pressure	No Flush
SW	Thread ⁴	100°F (38°C)	2500 PSIG (172 bar)	EPA Clean Air Act	No Flush
SC	Flange		Flange Dependent	General Purpose	No Flush
SD	Flange		Flange Dependent	General Purpose	With Flushing Connection
SR	Flange		Flange Dependent	Tantalum Clad Bottom	No Flush
SJ	In-Line Flow Thru ^A	100°F (38°C)	1500 PSIG (103 bar) ²	Saddle Mounted	No Flush
SK	In-Line Flow Thru ^B	100°F (38°C)	1500 PSIG (103 bar) ²	Thread Attached	No Flush
SM	In-Line Flow Thru ^C	100°F (38°C)	1500 PSIG (103 bar) ²	Butt Welded	No Flush
SN	In-Line Flow Thru ^D		Flange & Sched. Dependent	Small Pipe	No Flush
SP	In-Line Flow Thru ^E		Flange & Sched. Dependent	Larger Pipe	No Flush

Note: ¹ Optional 5000 PSIG available @ 100°F (345 bar @ 38°C)
² Optional 3000 PSIG available @ 100°F (207 bar @ 38°C)
³ No Bleed Screw
⁴ Top, Bottom and Diaphragm Must be the same

^A In-Line Flow Thru Welded by User
^B In-Line Flow Thru Thread-Attached Connection
^C In-Line Flow Thru Welded by User, Pipe Supplied, Schedule Dependent
^D In-Line Flow Thru For 0.75 to 3.0-inch Pipe Diameters
^E In-Line Flow Thru For 4.0 to 10.0-inch Pipe Diameters



Pressure vs. Volumetric Displacement

Displacement curves are provided to assist in selecting a diaphragm seal with minimal full span displacement bias effects. This graph is for reference only and may not accurately represent the maximum displacement that may be used. Contact AMETEK for exact specifications.

SPECIAL REQUESTS

The diaphragm seal combinations in this catalog represent AMETEK's more commonly ordered products. If you don't find a seal combination in this specification sheet, or if you are in need of a special application or material, call us. AMETEK can supply you with the safe and reliable solution for most applications.

Application Note

Avoid sizing the diaphragm too small or with a diaphragm that may be too rigid and inflexible, since thermal expansion of the fill fluid may lead to inaccurate pressure readings and zero shifts.

ORDERING INFORMATION

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TYPE SB AND SG SERIES DIAPHRAGM SEALS

Order Number Description

Base Model Number- 1st thru 3rd Characters	
SB1	Type SB with Standard Aramid Gasket
SB2	Type SB with TEFLON Gasket (Standard on Non-Metal Exposed Materials)
SB3	Type SB with TEFLON Coated 316 Stainless Steel Gasket
SB4	Type SB with TEFLON Coated Hastelloy C Gasket
SB5	Type SB with TEFLON Coated Monel Gasket
SB6	Type SB with SPIROTALIC Graphite/316 Stainless Steel Gasket
SB8	Type SB with GRAPHOIL Gasket (Special Order)
SB9	Type SB with TEFLON Coated Hastelloy B Gasket
SBA	Type SB with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SBB	Type SB with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
SG1	Type SG with Standard Aramid Gasket
SG2	Type SG with TEFLON Gasket (standard with TEFLON or PVC Lower Housing)
SG3	Type SG with TEFLON Coated 316 Stainless Steel Gasket
SG4	Type SG with TEFLON Coated Hastelloy C Gasket
SG5	Type SG with TEFLON Coated Monel Gasket
SG6	Type SG with SPIROTALIC Graphite/316 Stainless Steel Gasket
SG8	Type SG with GRAPHOIL Gasket (Special Order)
SG9	Type SG with TEFLON Coated Hastelloy B Gasket
SGA	Type SG with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SGB	Type SG with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
	Instrument Connection- 4th Character
2	0.5-inch NPT Female
4	0.25-inch NPT Female
8	0.125-inch NPT Female (Special Order)
A	0.125-inch NPT Female Elevated Pressure (Special Order)
B	0.25-inch NPT Female Elevated Pressure
C	0.5-inch NPT Female Elevated Pressure
	Process Connection- Size- 5th Character
1	1.0-inch
2	0.5-inch
3	0.75-inch
4	0.25-inch
5	0.375-inch
A	1.25-inch (Not Available with SG Seals)
B	1.5-inch (Not Available with SG Seals)
	Process Connection- Type- 6th Character
4	Socket Welded (Tubing)
N	NPT Female Threaded
S	Socket Welded (Pipe)

(Continued)

ORDERING INFORMATION

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TYPE SB AND SG SERIES DIAPHRAGM SEALS

Order Number Description

Order Number	Description
1	Exposed Material- 7th Character
2	TEFLON (Carbon Filled) (Special Order) (Not Available with SG Seals)
3	Carpenter 20
4	304L (Low Carbon) Stainless Steel (Special Order)
5	304 Stainless Steel
6	TEFLON (15% Glass Filled) 100 PSIG (6.9 bar) Maximum (Not Available with SG Seals)
C	316 Stainless Steel
D	Hastelloy C276
H	Hastelloy C22 (Special Order)
I	Hastelloy B2
L	Inconel 600
M	316L Stainless Steel (Special Order)
N	Monel 400 (Special Order)
O	Nickel 200
P	TEFLON (Graphite Filled) (Special Order) (Not Available on SG Seals)
R	PVC 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on SG Seals)
S	Polypropylene 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on SG Seals)
U	Zinc-Coated Steel
W	CPVC (Special Order) (Not Available on SG Seals)
X	KYNAR (Not Available on SG Seals)
Y	Zirconium (Special Order)
Z	Inconel 625 (Special Order)
	Titanium

Order Number	Description
	Diaphragm Material- 8th Character
2	Carpenter 20
3	304L Stainless Steel
A	Silver (Special Order)
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
G	Gold (Special Order)
H	Hastelloy B2
I	Inconel 600
L	316L Stainless Steel
M	Monel 400 (Cannot be used with Stainless Steel Tops)
N	Nickel 200
T	Tantalum
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium

Order Number	Description
	Top, Bolting and Flange Options- 9th Character
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel 400 Top/316 Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316 Bolting (Special Order)

Order Number	Description
-	Schedule/Extension Length- 10th Character
	Not Used

(Continued)

ORDERING INFORMATION

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TYPE SB AND SG SERIES DIAPHRAGM SEALS

Order Number Description

Order Number	Description
SB2	2
	3
	N
	L
	L
	A
	-
	5
	-
	-
	-
	A

Coating Options- 11th Character
 1 TEFLON Coated Diaphragm
 2 TEFLON Coated Lower Exposed
 3 TEFLON Coated Diaphragm and Lower Exposed
 5 Epoxy-Coated Top *(Special Order)*
 6 Painted Top *(Special Order)*
 - Not Used

Fill Fluids- 12th Character (MUST Specify 13th and 14th Characters)
 A Silicone DC 510 *(Special Order)*
 B Silicone DC 550 *(Special Order)*
 C Customer Supplied Fluid *(MUST Supply MSDS with Shipment)*
 D Silicone DC 710 *(Special Order)*
 F Fluorolube FS-5
 G Glycol
 H Halocarbon Oil 6.3
 I Instrument Oil
 J Halocarbon 4.2 *(Special Order)*
 L Low Temperature Silicone DC 200-10cs
 M Mineral Oil
 S High Temperature Silicone DC 704
 V Vegetable Oil (Food Grade)
 W De-ionized Water (DI Water)
 - Not Used *(When selected, you cannot select a 13th or 14th Character)*

**Fill & Attach to Instrument- 13th Character (Customer Supplied)
 (MUST Specify a 12th and 14th Character)**
 C Controllers
 D DP Instruments *(Special Order)*
 G Gauge (\geq 30 psi/2 bar)
 L Gauge (\leq 30 psi/2 bar)(Including combination gauges with Lower ranges)
 M Dual Manifold Fitting *(Special Order)*
 R Recorder
 S Switch
 T Transducer
 W Recording Controller
 Y Transmitter
 Z Smart Transmitter
 - Not Used *(When selected, you cannot select a 12th or 14th Character)*

Capillary Length- 14th Character
 1 Direct Connected
 C Capillary System (See Capillary System Section)
 - Not Used

Options- 15th Character
 A With Material (Mill) Certification *(Special Order)*
 B With MRO 17.5 Cert. *(Special Order)*(Seal cannot have Steel Top)
 C With Certificate of Conformance
 F With Instrument Tag *(Special Order)*
 J With (2) Flushing Connections *(Special Order)*(Type SG Only)
 T With Gauge Locking Device *(Special Order)*(Filled Assemblies Only)
 - Not Used

Sample Order Number
 SB Series with TEFLON Gasket, 0.5-inch Instrument Connection
 0.75-inch NPTF threaded Process Connection. 316L (Low Carbon)
 bottom with 316L (Low Carbon) diaphragm. Steel top with alloy
 boltings. Top is epoxy coated. No fill required. Supplied with
 Material Certification.

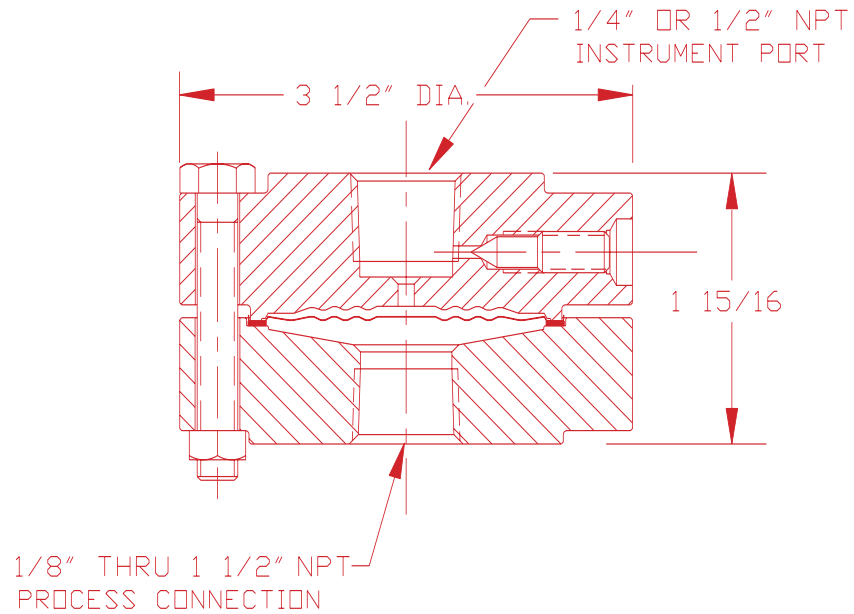
Note:
 This diaphragm seal contains "special order" components. Please
 contact AMETEK for price and delivery.

Diaphragm seals with "special order" components may not be
 returned for credit.

ORDERING INFORMATION

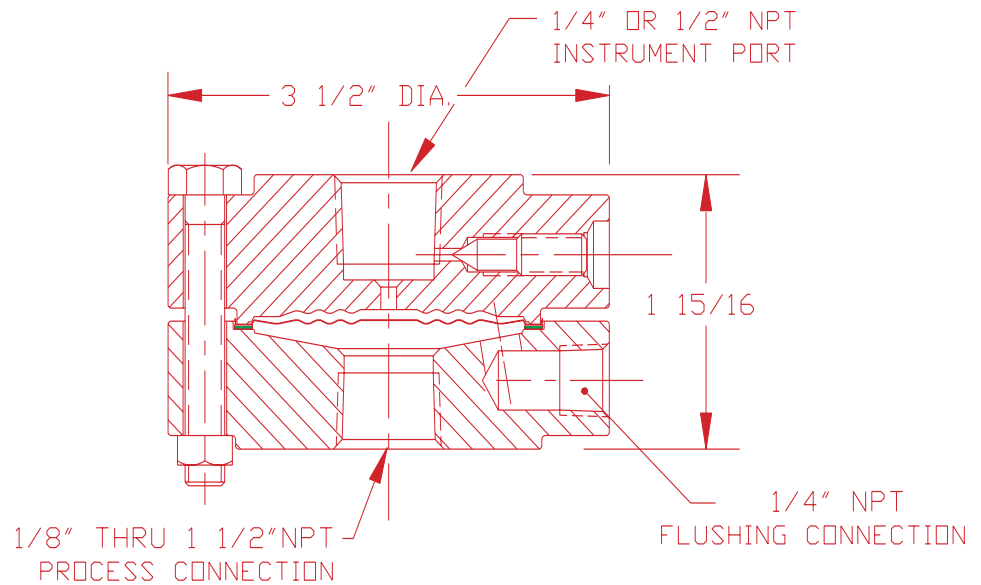
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TYPE SB AND SG SERIES DIAPHRAGM SEALS



TYPE SB

2500 P.S.I. @ 100° F
OPTIONAL: 5000 PSI @ 100°F



TYPE SG

2500 PSI @ 100° F
OPTIONAL 5000 PSI @ 100° F

ORDERING INFORMATION

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TYPE SC AND SD SERIES DIAPHRAGM SEALS

Order Number Description

Base Model Number- 1st thru 3rd Characters	
SC1	Type SC with Standard Aramid Gasket
SC2	Type SC with TEFLON Gasket (standard on Non-Metal Exposed)
SC3	Type SC with TEFLON Coated 316 Stainless Steel Gasket
SC4	Type SC with TEFLON Coated Hastelloy C Gasket
SC5	Type SC with TEFLON Coated Monel Gasket
SC6	Type SC with SPIROTALIC Graphite/316 Stainless Steel Gasket
SC8	Type SC with GRAPHOIL Gasket (Special Order)
SC9	Type SC with TEFLON Coated Hastelloy B Gasket
SCA	Type SC with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SCB	Type SC with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
SCD	Type SC with High Temperature Aramid Gasket (Special Order)
SD1	Type SD with Standard Aramid Gasket
SD2	Type SD with TEFLON Gasket (standard with TEFLON or PVC Lower Housing)
SD3	Type SD with TEFLON Coated 316 Stainless Steel Gasket
SD4	Type SD with TEFLON Coated Hastelloy C Gasket
SD5	Type SD with TEFLON Coated Monel Gasket
SD6	Type SD with SPIROTALIC Graphite/316 Stainless Steel Gasket
SD8	Type SD with GRAPHOIL Gasket (Special Order)
SD9	Type SD with TEFLON Coated Hastelloy B Gasket
SDA	Type SD with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SDB	Type SD with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
SDD	Type SD with High Temperature Aramid Gasket (Special Order)
	Instrument Connection- 4th Character
2	0.5-inch NPT Female
4	0.25-inch NPT Female
8	0.125-inch NPT Female (Special Order)
	Process Connection- Size- 5th Character (Bolts and Studs are NOT Supplied unless otherwise noted)
1	1.0-inch
2	0.5-inch (Bolts and Studs Supplied) (MUST Specify Metal Bottom)
3	0.75-inch (Bolts and Studs Supplied) (MUST Specify Metal Bottom)
B	1.5-inch
C	2.0-inch
D	3.0-inch
E	4.0-inch
	Process Connection- Type- 6th Character (See Dimension Drawings)
1	150# Raised Face (RF) Flange
2	2500# Raised Face (RF) Flange (MUST Specify Metal Bottom and minimum 3-inch Process Size)
3	300# Raised Face (RF) Flange
5	1500# Raised Face (RF) Flange (MUST Specify Metal Bottom and minimum 3-inch Process Size)
6	600# Raised Face (RF) Flange (MUST Specify Metal Bottom and minimum 3-inch Process Size)
C	150# Flat Face (FF) Flange (Full flat face below 1-inch 150#,Reduced diameter flat face standard on other sizes)
D	150# Ring Joint (RJT) Flange (Special Order)
E	300# Flat Face (FF) Flange (Full flat face below 1-inch 150#,Reduced diameter flat face standard on other sizes)
F	300# Ring Joint (RJT) Flange (Special Order)
G	600# Flat Face (FF) Flange (Full flat face below 1-inch 150#,Reduced diameter flat face standard on other sizes)
H	600# Ring Joint (RJT) Flange (Special Order)
J	1500# Flat Face (FF) Flange (Full flat face below 1-inch 150#,Reduced diameter flat face standard on other sizes)
K	1500# Ring Joint (RJT) Flange (Special Order)
L	2500# Flat Face (FF) Flange (Full flat face below 1-inch 150#,Reduced diameter flat face standard on other sizes)
M	2500# Ring Joint (RJT) Flange (Special Order)

(Continued)

ORDERING INFORMATION

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TYPE SC AND SD SERIES DIAPHRAGM SEALS

Order Number Description

1	Exposed Material- 7th Character
2	TEFLON (Carbon Filled) (Special Order) (Not Available on SD Seals)
3	Carpenter 20
4	304L (Low Carbon) Stainless Steel (Special Order)
5	304 Stainless Steel
6	TEFLON (15% Glass Filled) 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on SD Seals)
C	316 Stainless Steel
D	Hastelloy C276
H	Hastelloy C22 (Special Order)
I	Hastelloy B2
L	Inconel 600
M	316L (Low Carbon) Stainless Steel (Special Order)
N	Monel 400 (Special Order)
O	Nickel 200
P	TEFLON (Graphite Filled) (Special Order) (Not Available on SD Seals)
Q	PVC 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on SD Seals)
R	TEFLON (Virgin) (Special Order) (Not Available on SD Seals)
S	Polypropylene 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on SD Seals)
U	Zinc-Coated Steel
X	CPVC (Special Order) (Not Available on SD Seals)
Y	Zirconium (Special Order)
Z	Inconel 625 (Special Order)
	Titanium

	Diaphragm Material- 8th Character
2	Carpenter 20
3	304L (Low Carbon) Stainless Steel
A	Silver (Special Order)
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
G	Gold (Special Order)
H	Hastelloy B2
I	Inconel 600
L	316L (Low Carbon) Stainless Steel
M	Monel 400 (Cannot Be Used with Stainless Steel Top)
N	Nickel 200
T	Tantalum
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium

	Top, Bolting and Flange Options- 9th Character
A	Steel Top/Alloy Bolting (For 0.5- or 0.75-inch Process Connections ONLY)
B	Steel Top/316SST Bolting (For 0.5- or 0.75-inch Process Connections ONLY)
C	316SST Top/Alloy Bolting (For 0.5- or 0.75-inch Process Connections ONLY)
D	316SST Top/316SST Bolting (For 0.5- or 0.75-inch Process Connections ONLY)
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting (Special Order)
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel 400 Top/316SST Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316SST Bolting (Special Order)
M	Steel Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)
N	316 SST Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)
V	Monel 400 Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)
W	304SST Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)
X	Hastelloy C276 Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)
Y	Carpenter 20 Top/No Bolting (For 0.75-inch 300# and larger Process Connections ONLY)

	Schedule/Extension Length- 10th Character
-	Not Used

	Coating Options- 11th Character
1	TEFLON Coated Diaphragm
2	TEFLON Coated Lower Exposed
3	TEFLON Coated Exposed Surfaces
5	Epoxy-Coated Top (Special Order)
6	Painted Top (Special Order)
-	Not Used

(Continued)

ORDERING INFORMATION

TYPE SC AND SD SERIES DIAPHRAGM SEALS

Order Number Description

SC1	2	2	3	3	L	C	-	5	-	-	-	-	C
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Fill Fluids- 12th Character

A	Silicone DC 510 (Special Order)
B	Silicone DC 550 (Special Order)
C	Customer Supplied Fluid (MUST Supply MSDS with Shipment)
D	Silicone DC 710 (Special Order)
F	Fluorolube FS-5
G	Glycol
H	Halocarbon Oil 6.3
I	Instrument Oil
J	Halocarbon 4.2 (Special Order)
L	Low Temperature Silicone DC 200-10cs
M	Mineral Oil
S	High Temperature Silicone DC 704
V	Vegetable Oil (Food Grade)
W	De-ionized Water (DI Water)
-	Not Used (Must use character "-" in 13th and 14th character positions)

Fill and Attach to Instrument- 13th Character (Customer Supplied)

C	Controllers
D	DP Instruments (Special Order)
G	Gauge (≥ 30 psi/2 bar)
L	Gauge (≤ 30 psi/2 bar)(Including combination gauges with Lower ranges)
M	Dual Manifold Fitting (Special Order)
R	Recorder
S	Switch
T	Transducer
W	Recording Controller
Y	Transmitter
Z	Smart Transmitter
-	Not Used

Capillary Length- 14th Character

1	Direct Connected
C	Capillary System (See Capillary System Section)
-	Not Used

Options- 15th Character

A	With Material (Mill) Certification (Special Order)
B	With MRO 17.5 Cert. (Special Order) (Cannot have Steel Top)
C	With Certificate of Conformance
D	With 125-250 AARH Finish (Special Order)
F	With Instrument Tag (Special Order)
J	With (2) Flushing Connections (Type SD Only) (Special Order)
K	With Sheathed Non-Metal Lower Housing (Special Order)
N	With Full Flat Face Flange (Special Order)(1-inch 150# and above)
T	With Gauge Locking Device (Special Order)(Filled Assemblies Only)
-	Not Used

Sample Order Number

SC Series with Aramid Gasket, 0.5-inch Instrument Connection 0.5-inch Process Connection, 300# RF flange, 304L bottom with 316L diaphragm and 316 top and alloy bolting. Epoxy coated top. Supplied with Certificate of Conformance.

Note:

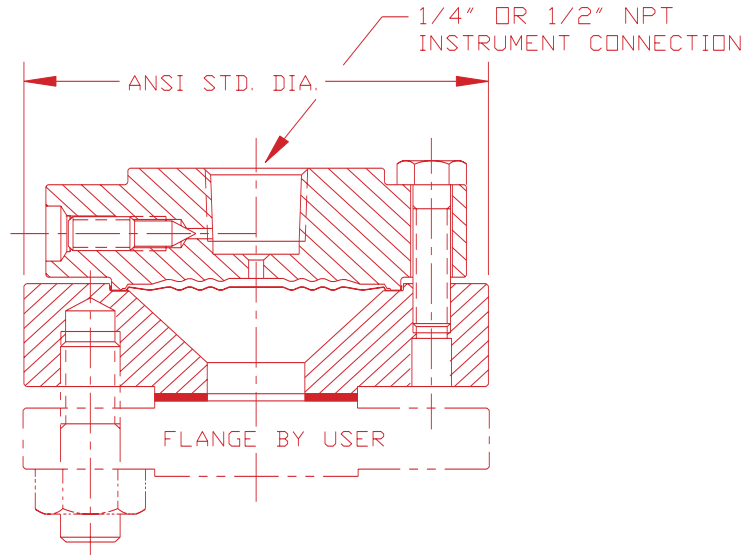
This diaphragm seal contains "special order" components. Please contact AMETEK for price and delivery.

Diaphragm seals with "special order" components may not be returned for credit.

ORDERING INFORMATION

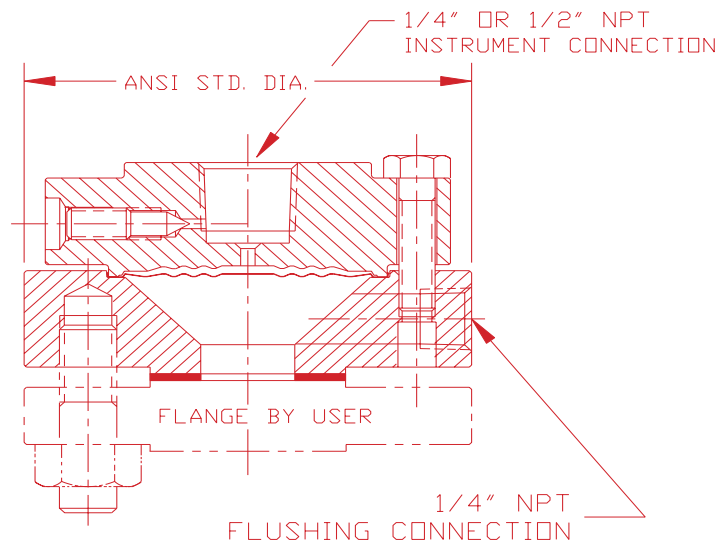
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TYPE SC AND SD SERIES DIAPHRAGM SEALS



TYPE SC

1/2" CLASS 150, 300, 600, 1500 ANSI STD.
3/4" CLASS 150 ANSI STD
ALSO AVAIL. IN RING JOINT, FLAT FACE,
AND DIN METRIC SIZES



TYPE SD

1/2" CLASS 150, 300, 600, 1500 ANSI STD.
3/4" CLASS 150 ANSI STD
ALSO AVAIL. IN RING JOINT, FLAT FACE,
AND DIN METRIC SIZES

ORDERING INFORMATION

TYPE SJ SERIES DIAPHRAGM SEALS

Order Number Description

Base Model Number- 1st thru 3rd Characters	
SJ1	Type SJ with Standard Aramid Gasket
SJ2	Type SJ with TEFLON Gasket
SJ3	Type SJ with TEFLON Coated 316 Stainless Steel Gasket
SJ4	Type SJ with TEFLON Coated Hastelloy C Gasket
SJ5	Type SJ with TEFLON Coated Monel Gasket
SJ6	Type SJ with SPIROTALIC Graphite/316 Stainless Steel Gasket
SJ8	Type SJ with GRAPHOIL Gasket (Special Order)
SJ9	Type SJ with TEFLON Coated Hastelloy B Gasket
SJA	Type SJ with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SJB	Type SJ with SPIROTALIC 316 Stainless Steel/TEFLON Gasket

Instrument Connection- 4th Character	
2	0.5-inch NPT Female
4	0.25-inch NPT Female
8	0.125-inch NPT Female
A	0.125-inch NPT Elevated Pressure (Special Order)
B	0.25-inch NPT Elevated Pressure
C	0.5-inch NPT Elevated Pressure

Process Connection- Size- 5th Character	
D	3.0-inch
E	4.0-inch and Larger Pipe Diameter

Process Connection- Type- 6th Character	
U	Saddle Mount

Exposed Material- 7th Character	
2	Carpenter 20
3	304L (Low Carbon) Stainless Steel
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
H	Hastelloy B2
I	Inconel 600 (Special Order)
L	316L (Low Carbon) Stainless Steel
M	Monel 400 (Special Order)
N	Nickel 200
S	Zinc-Coated Steel
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium (Special Order)

Diaphragm Material- 8th Character	
2	Carpenter 20
3	304L (Low Carbon) Stainless Steel
A	Silver (Special Order)
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
G	Gold (Special Order)
H	Hastelloy B2
I	Inconel 600
L	316L Stainless Steel
M	Monel 400 (Cannot Be Used with Stainless Steel Top)
N	Nickel 200
T	Tantalum
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium

Top, Bolting and Flange Options- 9th Character	
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting (Special Order)
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel 400 Top/316SST Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316SST Bolting (Special Order)

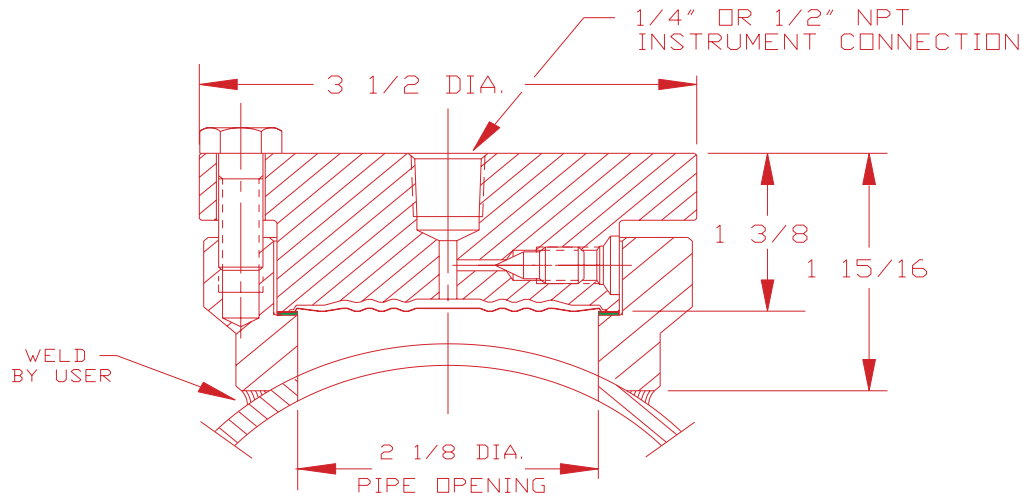
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ORDERING INFORMATION

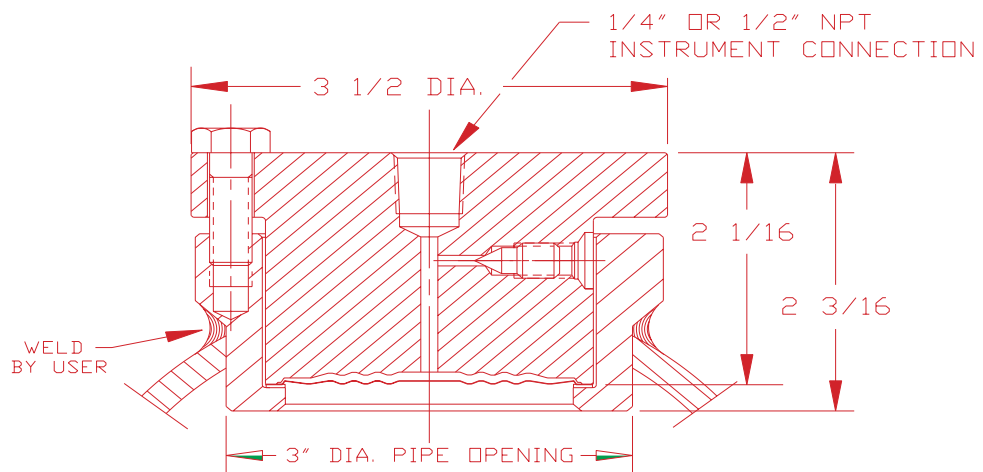
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TYPE SJ SERIES DIAPHRAGM SEALS

Order Number Description



(FOR 3" PIPE ONLY)
TYPE SJ-3
 1500 PSI @ 100° F.
 OPTIONAL 3000 PSI @ 100° F.



FOR 4" PIPE & LARGER
TYPE SJ-4
 1500 PSI @ 100° F.
 OPTIONAL 3000 PSI @ 100° F.

ORDERING INFORMATION

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TYPE SK SERIES DIAPHRAGM SEALS

Order Number Description

		Base Model Number- 1st thru 3rd Characters	
SK1		Type SK with Standard Aramid Gasket	
SK2		Type SK with TEFLON Gasket (standard with TEFLON or PVC Lower Housing)	
SK3		Type SK with TEFLON Coated 316 Stainless Steel Gasket	
SK4		Type SK with TEFLON Coated Hastelloy C Gasket	
SK5		Type SK with TEFLON Coated Monel Gasket	
SK6		Type SK with SPIROTALIC Graphite/316 Stainless Steel Gasket	
SK8		Type SK with GRAPHOIL Gasket (Special Order)	
SK9		Type SK with TEFLON Coated Hastelloy B Gasket	
SKA		Type SK with SPIROTALIC Titanium/TEFLON Gasket (Special Order)	
SKB		Type SK with SPIROTALIC 316 Stainless Steel/TEFLON Gasket	
		Instrument Connection- 4th Character	
2		0.5-inch NPT Female	
4		0.25-inch NPT Female	
8		0.125-inch NPT Female	
A		0.125-inch NPT Elevated Pressure (Special Order)	
B		0.25-inch NPT Elevated Pressure	
C		0.5-inch NPT Elevated Pressure	
		Process Connection- Size- 5th Character	
2		0.5-inch	
4		0.25-inch	
5		0.375-inch	
		Process Connection- Type- 6th Character	
4		Socket Weld (Tubing) (When SST is Exposed Material, ELC Alloys are used)	
7		NPTM Threaded (Special Order)	
N		NPTF Threaded	
S		Socket Weld (Pipe) (When SST is Exposed Material, ELC Alloys are used)	
		Exposed Material- 7th Character	
2		Carpenter 20 (Special Order)	
3		304L (Low Carbon) Stainless Steel (Standard material for Socket Weld options) (Special Order)	
4		304 Stainless Steel	
6		316 Stainless Steel	
C		Hastelloy C276 (Special Order)	
D		Hastelloy C22 (Special Order)	
H		Hastelloy B2 (Special Order)	
I		Inconel 600 (Special Order)	
L		316L (Low Carbon) Stainless Steel (Standard material for Socket Weld options) (Special Order)	
M		Monel 400 (Special Order)	
N		Nickel 200	
S		Zinc-Coated Steel	
X		Zirconium (Special Order)	
Y		Inconel 625 (Special Order)	
Z		Titanium (Special Order)	
		Diaphragm Material- 8th Character	
2		Carpenter 20	
3		304L (Low Carbon) Stainless Steel	
A		Silver (Special Order)	
C		Hastelloy C276	
D		Hastelloy C22 (Special Order)	
G		Gold (Special Order)	
H		Haselloy B2	
I		Inconel 600	
L		316L Stainless Steel	
M		Monel 400 (Cannot Be Used with Stainless Steel Top)	
N		Nickel 200	
T		Tantalum	
X		Zirconium (Special Order)	
Y		Inconel 625 (Special Order)	
Z		Titanium	

(Continued)

ORDERING INFORMATION

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TYPE SK SERIES DIAPHRAGM SEALS

Order Number Description

Order Number	Description
	Top, Bolting and Flange Options- 9th Character
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting (Special Order)
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel 400 Top/316SST Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316SST Bolting (Special Order)
	Schedule/Extension Length- 10th Character
-	Not Used
	Coating Options- 11th Character
1	TEFLON Coated Diaphragm
5	Epoxy-Coated Top (Special Order)
6	Painted Top (Special Order)
-	Not Used
	Fill Fluids- 12th Character
A	Silicone DC 510 (Special Order)
B	Silicone DC 550 (Special Order)
C	Customer Supplied Fluid (MUST Supply MSDS with shipment)
D	Silicone DC 710 (Special Order)
F	Fluorolube FS-5
G	Glycol
H	Halocarbon Oil 6.3
I	Instrument Oil
J	Halocarbon 4.2 (Special Order)
L	Low Temperature Silicone DC 200-10cs
M	Mineral Oil
S	High Temperature Silicone DC 704
V	Vegetable Oil (Food Grade)
W	De-ionized Water (DI Water)
-	Not Used (Must use character "-" in 13th and 14th character positions)
	Fill and Attach to Instrument- 13th Character (Customer Supplied)
C	Controllers
D	DP Instruments (Special Order)
G	Gauge (\geq 30 psi/2 bar)
L	Gauge (\leq 30 psi/2 Bar)(Including combination gauges with Lower ranges)
M	Dual Manifold Fitting (Special Order)
R	Recorder
S	Switch
T	Transducer
W	Recording Controller
Y	Transmitter
Z	Smart Transmitter
-	Not Used

(Continued)

ORDERING INFORMATION

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TYPE SK SERIES DIAPHRAGM SEALS

Order Number	Description
SK2	1
4	C
4	-
4	A
3	B
C	C
C	F
-	T
1	-
-	-
-	-
-	-
-	-

Capillary Length- 14th Character

Direct Connected
 Capillary System (See Capillary System Section)
 Not Used

Options- 15th Character

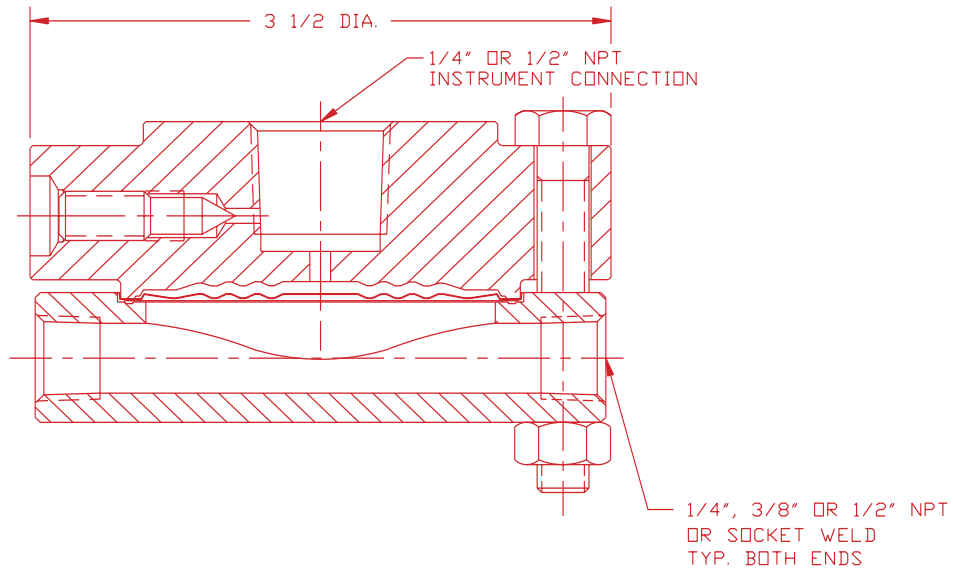
With Material (Mill) Certification (Special Order)
 With MRO 17.5 Cert. (Special Order) (Cannot have Steel Top)
 With Certificate of Conformance
 With Instrument Tag (Special Order)
 With Gauge Locking Device (Special Order)(Filled Assemblies Only)
 Not Used

Sample Order Number

SK Series with TEFLON gasket. 0.25-inch Instrument Connection and 0.25-inch tubing socket welded process connection. 304SST bottom with Hastelloy C276 diaphragm. 316SST top with alloy bolting. TEFLON coated diaphragm.

Note:

This diaphragm seal contains "special order" components. Please contact AMETEK for price and delivery.



TYPE SK

1500 PSI @ 100°F
 OPTIONAL 3000 PSI @ 100°F

ORDERING INFORMATION

TYPE SM SERIES DIAPHRAGM SEALS

Order Number Description

Base Model Number- 1st thru 3rd Characters	
SM1	Type SM with Standard Aramid Gasket
SM2	Type SM with TEFLON Gasket
SM3	Type SM with TEFLON Coated 316 Stainless Steel Gasket
SM4	Type SM with TEFLON Coated Hastelloy C Gasket
SM5	Type SM with TEFLON Coated Monel Gasket
SM6	Type SM with SPIROTALIC Graphite/316 Stainless Steel Gasket
SM8	Type SM with GRAPHOIL Gasket (Special Order)
SM9	Type SM with TEFLON Coated Hastelloy B Gasket
SMA	Type SM with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SMB	Type SM with SPIROTALIC 316 Stainless Steel/TEFLON Gasket

Instrument Connection- 4th Character	
2	0.5-inch NPT Female
4	0.25-inch NPT Female
8	0.125-inch NPT Female
A	0.125-inch NPT Elevated Pressure (Special Order)
B	0.25-inch NPT Elevated Pressure
C	0.5-inch NPT Elevated Pressure

Process Connection- Size- 5th Character	
2	0.5-inch (Special Order)
3	0.75-inch
B	1.5-inch
C	2.0-inch
D	3.0-inch
E	4.0-inch

Process Connection- Type- 6th Character	
W	Butt Welded

Exposed Material- 7th Character	
2	Carpenter 20 (Special Order)
3	304L (Low Carbon) Stainless Steel
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
H	Hastelloy B2
I	Inconel 600 (Special Order)
L	316L (Low Carbon) Stainless Steel
M	Monel 400 (Special Order)
N	Nickel 200
S	Zinc-Coated Steel
Y	Inconel 625 (Special Order)
Z	Titanium (Special Order)

Diaphragm Material- 8th Character	
2	Carpenter 20
3	304L (Low Carbon) Stainless Steel
A	Silver (Special Order)
C	Hastelloy C276
D	Hastelloy C22
G	Gold (Special Order)
H	Hastelloy B2
I	Inconel 600
L	316L (Low Carbon) Stainless Steel
M	Monel 400 (Cannot Be Used with Stainless Steel Top)
N	Nickel 200
T	Tantalum
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium

(Continued)

ORDERING INFORMATION

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TYPE SM SERIES DIAPHRAGM SEALS

Order Number Description

Order Number	Description
	Top, Bolting and Flange Options- 9th Character
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting (Special Order)
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel400 Top/316SST Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316SST Bolting (Special Order)
	Schedule/Extension Length- 10th Character
A	Schedule 40
B	Schedule 10
C	Schedule 80
D	Schedule 160
H	Schedule 5
J	XXH (Special Order)
	Coating Options- 11th Character
1	TEFLON Coated Diaphragm
5	Epoxy-Coated Top (Special Order)
6	Painted Top (Special Order)
-	Not Used
	Fill Fluids- 12th Character
A	Silicone DC 510 (Special Order)
B	Silicone DC 550 (Special Order)
C	Customer Supplied Fluid (MUST Supply MSDS with Shipment)
D	Silicone DC 710 (Special Order)
F	Fluorolube FS-5
G	Glycol
H	Halocarbon Oil 6.3
I	Instrument Oil
J	Halocarbon 4.2 (Special Order)
L	Low Temperature Silicone DC 200-10cs
M	Mineral Oil
S	High Temperature Silicone DC 704
V	Vegetable Oil (Food Grade)
W	De-ionized Water (DI Water)
-	Not Used (Must use character "-" in 13th and 14th character positions)
	Fill and Attach to Instrument- 13th Character (Customer Supplied)
C	Controllers
D	DP Instruments (Special Order)
G	Gauge (≥ 30 psi/2 bar)
L	Gauge (≤ 30 psi/2 bar)(Including combination gauges with Lower ranges)
M	Dual Manifold Fitting (Special Order)
R	Recorder
S	Switch
T	Transducer
W	Recording Controller
Y	Transmitter
Z	Smart Transmitter
-	Not Used

(Continued)

ORDERING INFORMATION

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TYPE SM SERIES DIAPHRAGM SEALS

Order Number Description

SM	5	2	C	2	C	K	C	5	-	-	-	-	-	-	-
----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1
C
-
A
B
C
D
F
G
L
T
-

Capillary Length- 14th Character

Direct Connected
 Capillary System (See Capillary System Section)
 Not Used

Options- 15th Character

With Material (Mill) Certification (Special Order)
 With MRO 17.5 Cert.(Special Order) (Cannot have Steel Top)
 With Certificate of Conformance
 With 125-250 AARH Finish (Special Order)
 With Instrument Tag (Special Order)
 With 60-125 AARH Finish (Special Order)
 For Full Penetration Weld (Special Order)
 With Gauge Locking Device (Special Order)(Filled Assemblies Only)
 Not Used

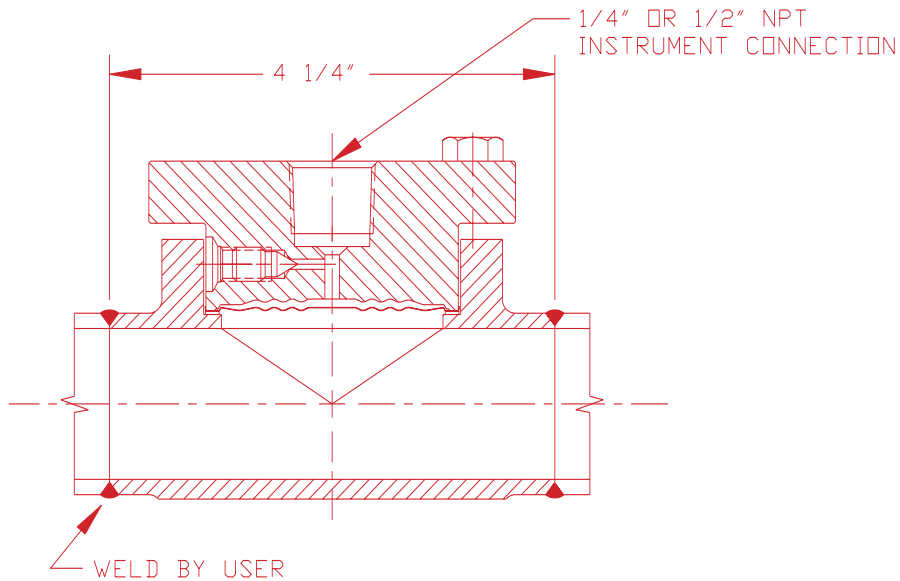
Sample Order Number

SM Series with TEFLON coated Monel gasket. 0.5-inch Instrument Connection with 2-inch Process Connection, Butt Welded. Carpenter 20 bottom with Hastelloy 276C diaphragm. Hastelloy C276 top with alloy bolting. Schedule 80 pipe with epoxy coated top.

Note:

This diaphragm seal contains "special order" components. Please contact AMETEK for price and delivery.

Diaphragm seals with "special order" components may not be returned for credit.



1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", & 4"

TYPE SM

1500 PSI @ 100°F
 OPTIONAL PRESSURE: 3000 PSI @ 100°F

ORDERING INFORMATION

TYPE SN AND SP SERIES DIAPHRAGM SEALS

Order Number Description

Base Model Number- 1st thru 3rd Characters	
SN1	Type SN with Standard Aramid Gasket
SN2	Type SN with TEFLON Gasket (standard with Non-metal bottoms)
SN3	Type SN with TEFLON Coated 316 Stainless Steel Gasket
SN4	Type SN with TEFLON Coated Hastelloy C Gasket
SN5	Type SN with TEFLON Coated Monel Gasket
SN6	Type SN with SPIROTALIC Graphite/316 Stainless Steel Gasket
SN8	Type SN with GRAPHOIL Gasket (Special Order)
SN9	Type SN with TEFLON Coated Hastelloy B Gasket
SNA	Type SN with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SNB	Type SN with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
SP1	Type SP with Standard Aramid Gasket
SP2	Type SP with TEFLON Gasket (standard with TEFLON or PVC Lower Housing)
SP3	Type SP with TEFLON Coated 316 Stainless Steel Gasket
SP4	Type SP with TEFLON Coated Hastelloy C Gasket
SP5	Type SP with TEFLON Coated Monel Gasket
SP6	Type SP with SPIROTALIC Graphite/316 Stainless Steel Gasket
SP8	Type SP with GRAPHOIL Gasket (Special Order)
SP9	Type SP with TEFLON Coated Hastelloy B Gasket
SPA	Type SP with SPIROTALIC Titanium/TEFLON Gasket (Special Order)
SPB	Type SP with SPIROTALIC 316 Stainless Steel/TEFLON Gasket
Instrument Connection- 4th Character	
2	0.5-inch NPT Female
4	0.25-inch NPT Female
8	0.125-inch NPT Female (Special Order)
A	0.125-inch NPT Elevated Pressure (Special Order)
Process Connection- Size- 5th Character	
1	1.0-inch (Available on Type SN Only)
3	0.75-inch (Available on Type SN Only)
C	2.0-inch (Available on Type SN Only)
D	3.0-inch (Available on Type SN Only)
E	4.0-inch (Available on Type SP Only)
F	5.0-inch (Available on Type SP Only)
G	6.0-inch (Available on Type SP Only)
H	8.0-inch (Available on Type SP Only)
Process Connection- Type- 6th Character	
1	150# Raised Face Flange
3	300# Raised Face Flange
C	150# Flat Face (FF) Flange (Full flat face below 1-inch 150#, Reduced diameter flat face standard on other sizes)
D	150# Ring Joint (RJT) Flange (Special Order)
E	300# Flat Face (FF) Flange (Full flat face below 1-inch 150#, Reduced diameter flat face standard on other sizes)
F	300# Ring Joint (RJT) Flange (Special Order)
Exposed Material- 7th Character	
2	Carpenter 20 (Special Order)
3	304L (Low Carbon) Stainless Steel
C	Hastelloy C276 (Special Order)
D	Hastelloy C22 (Special Order)
H	Hastelloy B2 (Special Order)
I	Inconel 600 (Special Order)
L	316L (Low Carbon) Stainless Steel
M	Monel 400 (Special Order)
N	Nickel 200
S	Zinc-Coated Steel
Y	Inconel 625 (Special Order)
Z	Titanium (Special Order)

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ORDERING INFORMATION

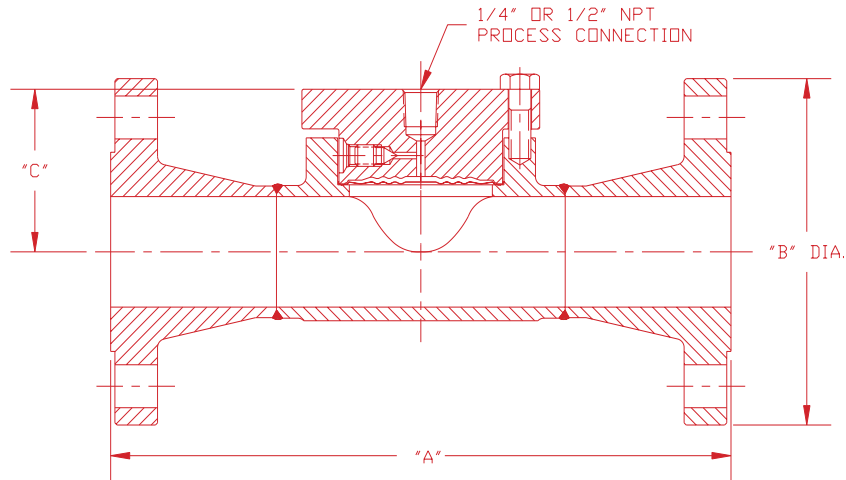
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TYPE SN AND SP SERIES DIAPHRAGM SEALS

Order Number Description

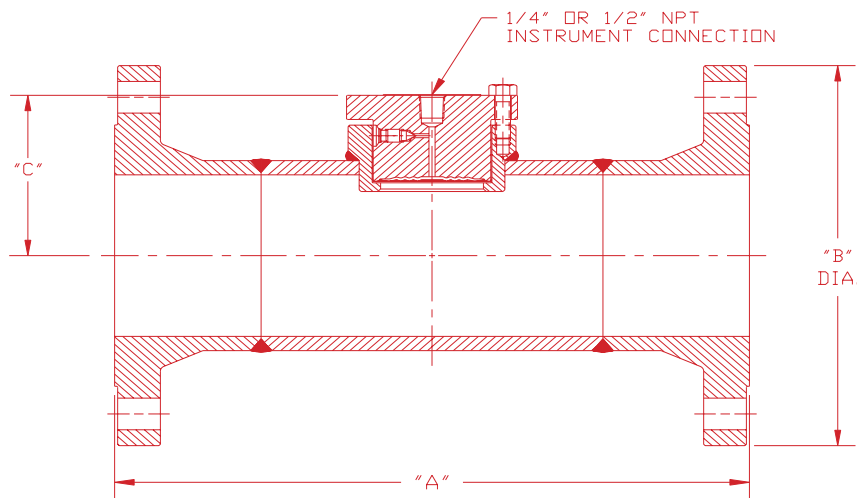
Order Number	Description
	Diaphragm Material- 8th Character
2	Carpenter 20
3	304L (Low Carbon) Stainless Steel
A	Silver (Special Order)
C	Hastelloy C276
D	Hastelloy C22 (Special Order)
G	Gold (Special Order)
H	Hastelloy B2
I	Inconel 600
L	316L Stainless Steel
M	Monel 400 (Cannot Be Used with Stainless Steel Top)
N	Nickel 200 (Cannot Be Used with Stainless Steel Top)
T	Tantalum
X	Zirconium (Special Order)
Y	Inconel 625 (Special Order)
Z	Titanium
	Top, Bolting and Flange Options- 9th Character
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
E	304SST Top/Alloy Bolting (Special Order)
F	304SST Top/316SST Bolting (Special Order)
G	Monel 400 Top/Alloy Bolting (Special Order)
H	Monel 400 Top/316SST Bolting (Special Order)
I	Titanium Top/Alloy Bolting (Special Order)
J	Titanium Top/316SST Bolting (Special Order)
K	Hastelloy C276 Top/Alloy Bolting (Special Order)
L	Hastelloy C276 Top/316SST Bolting (Special Order)
	Schedule/Extension Length- 10th Character
A	Schedule 40
B	Schedule 10
C	Schedule 80
D	Schedule 160
H	Schedule 5
J	XXH (Special Order)
	Coating Options- 11th Character
1	TEFLON Coated Diaphragm
4	TEFZEL Lining (Special Order) (Type SN with 1- or 3-inch Process Connection ONLY)
5	Epoxy-Coated Top (Special Order)
6	Painted Top (Special Order)
8	Ceramic Lining (Special Order)
	Fill Fluids- 12th Character
A	Silicone DC 510 (Special Order)
B	Silicone DC 550 (Special Order)
C	Customer Supplied Fluid (MUST Supply MSDS with Shipment)
D	Silicone DC 710 (Special Order)
F	Fluorolube FS-5
G	Glycol
H	Halocarbon Oil 6.3
I	Instrument Oil
J	Halocarbon 4.2 (Special Order)
L	Low Temperature Silicone DC 200-10cs
M	Mineral Oil
S	High Temperature Silicone DC 704
V	Vegetable Oil (Food Grade)
W	De-ionized Water (DI Water)
-	Not Used (Must use character "-" in 13th and 14th character positions)

(Continued)



TYPE SN

3/4" THRU 3" CLASS 150 & 300 ANSI ST'D
 TEFLON LINED OPTION AVAILABLE IN 1" TO 3" SIZES



TYPE SP

4" THRU 10" CLASS 150, 300, 600, & 1500

MODEL SN DIMENSIONS

SIZE"	CLASS	A"	B"	C"
0.75	150	8.375	3.875	1.875
0.75	300	8.75	4.625	1.875
1.0	150	8.625	4.25	2.03
1.0	300	9.125	4.875	2.03
1.5	150	9.125	5.0	2.31
1.5	300	9.625	6.125	2.31
2.0	150	9.25	6.0	2.625
2.0	300	9.75	6.5	2.625
3.0	150	9.75	7.5	3.0
3.0	300	10.5	8.25	3.0

MODEL SP DIMENSIONS

SIZE"	CLASS	A"	B"	C"
4.0	150	13.0	9.0	3.5
4.0	300	14.0	10.0	3.5
6.0	150	16.0	11.0	4.5
6.0	300	17.0	12.5	4.5
8.0	150	18.0	13.5	5.5
8.0	300	20.0	15.0	5.5
10.0	150	22.0	16.0	6.5
10.0	300	23.0	17.5	6.5

Note: Class 600 to 2500 available in select sizes. Please consult AMETEK for availability.

ORDERING INFORMATION

TYPE SR SERIES DIAPHRAGM SEALS

Order Number Description

SR1		Base Model Number- 1st thru 3rd Characters
SR2		Type SR with Standard Aramid Gasket
		Type SR with TEFLON Gasket
		Instrument Connection- 4th Character
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
	8	0.125-inch NPT Female (Special Order)
		Process Connection- Size- 5th Character
	1	1.0-inch
	2	0.5-inch
	3	0.75-inch
	B	1.5-inch
	C	2.0-inch
	D	3.0-inch
	E	4.0-inch
		Process Connection- Type- 6th Character (See Dimension Drawings)
	1	150# Raised Face (RF) Flange
	3	300# Raised Face (RF) Flange
	5	1500# Raised Face (RF) Flange
	6	600# Raised Face (RF) Flange
		Exposed Material- 7th Character
	T	Tantalum (Clad 304 Stainless Steel)
		Diaphragm Material- 8th Character
	T	Tantalum
		Top, Bolting and Flange Options- 9th Character
	A	Steel Top/Alloy Bolting (0.5-inch 150#/300# and 0.75-inch 150# Only)
	B	Steel Top/316SST Bolting (0.5-inch 150#/300# and 0.75-inch 150# Only)
	C	316SST Top/Alloy Bolting (0.5-inch 150#/300# and 0.75-inch 150# Only)
	D	316SST Top/316SST Bolting (0.5-inch 150#/300# and 0.75-inch 150# Only)
	E	304SST Top/Alloy Bolting (Special Order) (0.5-inch 150#/300# and 0.75-inch 150# Only)
	F	304SST Top/316SST Bolting (Special Order) (0.5-inch 150#/300# and 0.75-inch 150# Only)
	M	Steel Top - Bolting Not Supplied (0.75-inch 300# or larger)
	N	316 Stainless Steel Top (0.75-inch 300# or larger)
	W	304SST Top - Bolting Not Supplied (0.75-inch 300# or larger)
		Schedule/Extension Length- 10th Character
	-	Not Used
		Coating Options- 11th Character
	1	TEFLON Coated Diaphragm
	5	Epoxy-Coated Top (Special Order)
	6	Painted Top (Special Order)
	-	Not Used

(Continued)

ORDERING INFORMATION

TYPE SR SERIES DIAPHRAGM SEALS

Order Number Description

SR	1	2	1	1	T	T	B	-	1	-	-	-	F
----	---	---	---	---	---	---	---	---	---	---	---	---	---

Fill Fluids- 12th Character
 A Silicone DC 510 (Special Order)
 B Silicone DC 550 (Special Order)
 C Customer Supplied Fluid (MUST Supply MSDS with Shipment)
 D Silicone DC 710 (Special Order)
 F Fluorolube FS-5
 G Glycol
 H Halocarbon Oil 6.3
 I Instrument Oil
 J Halocarbon 4.2 (Special Order)
 L Low Temperature Silicone DC 200-10cs
 M Mineral Oil
 S High Temperature Silicone DC 704
 V Vegetable Oil (Food Grade)
 W De-ionized Water (DI Water)
 - Not Used (Must use character "-" in 13th and 14th character positions)

Fill and Attach to Instrument- 13th Character (Customer Supplied)
 C Controllers
 D DP Instruments (Special Order)
 G Gauge (≥ 30 psi/2 bar)
 L Gauge (≤ 30 psi/2 bar)(Including combination gauges with Lower ranges)
 M Dual Manifold Fitting (Special Order)
 R Recorder
 S Switch
 T Transducer
 W Recording Controller
 Y Transmitter
 Z Smart Transmitter (Special Order)
 - Not Used

Capillary Length- 14th Character
 1 Direct Connected
 C Capillary System (See Capillary System Section)
 - Not Used

Options- 15th Character
 A With Material (Mill) Certificate (Special Order)
 C With Certificate of Conformance (Special Order)
 F With Instrument Tag (Special Order)
 N With Full Flat Faced Flange (Special Order)(1-inch, 150# and above)
 T With Gauge Locking Device (Special Order)(Filled Assemblies Only)
 - Not Used

Sample Order Number
 SR Series with aramid gasket. 0.5-inch Instrument Connection with 1-inch 150# Process Connection, Tantalum bottom and diaphragm. Steel top with 316 stainless steel bolting. Epoxy coated top. No fill. Supply with instrument tag.

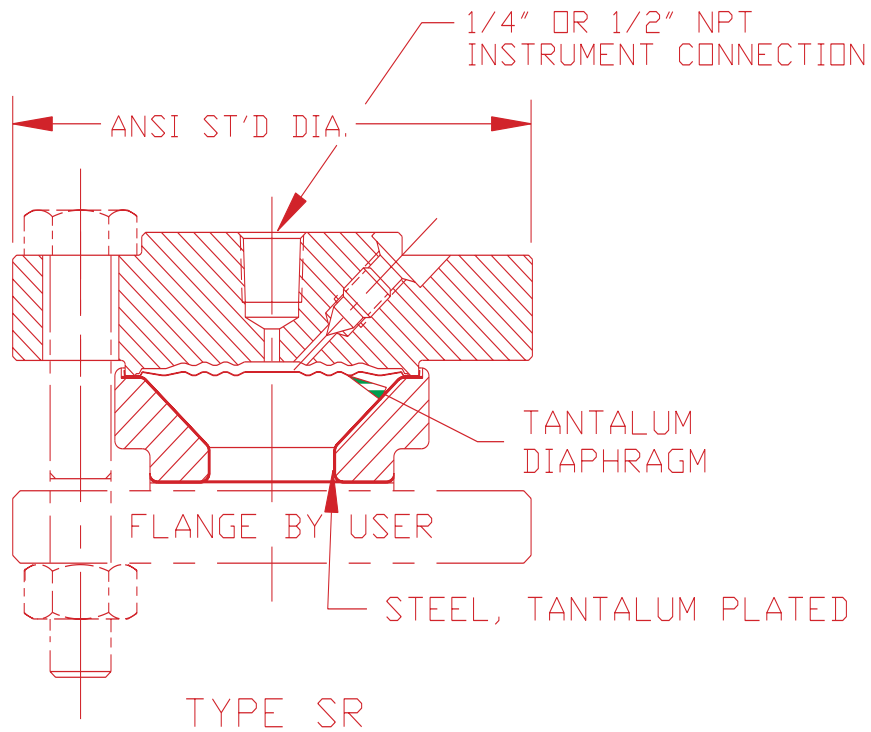
Note:
 This diaphragm seal contains "special order" components. Please contact AMETEK for price and delivery.

Diaphragm seals with "special order" components may not be returned for credit.

ORDERING INFORMATION

Specification Sheet SS-DS-5100-0600
June 2000
Issue1

TYPE SR SERIES DIAPHRAGM SEALS



(TANTALUM EXPOSED SURFACE)
1/2" & 3/4" CLASS 150 & 300 ANSI ST'D
1" THRU 3" CLASS 150, 300, 600, 1500 ANSI ST'D

ORDERING INFORMATION

TYPE SW SERIES DIAPHRAGM SEALS

Order Number Description

SWX	Base Model Number- 1st thru 3rd Characters			Type SW Non-Gasketed Diaphragm Seal
	Instrument Connection- 4th Character			
	2	0.5-inch NPT Female		
	4	0.25-inch NPT Female		
		Process Connection- Size- 5th Character		
	1	1.0-inch		
	2	0.5-inch		
	3	0.75-inch		
	4	0.25-inch		
	W	W125 (Special Order) (Use with Autoclave Design Process Connection)		
		Process Connection- Type- 6th Character		
	4	Socket Welded (Tubing) (Specify 10th Character- Schedule/Extension Length)		
	N	NPT Female Threaded (Specify "-" for 10th Character- Schedule/Extension Length)		
	S	Socket Welded (Pipe) (Specify 10th Character- Schedule/Extension Length)		
	Z	Autoclave Design (Special Order)		
		Exposed, Diaphragm and Top/Bolting and Flange Options (7th thru 9th Characters)		
		(Note: Top, Diaphragm and Bottom MUST be Same Material)		
	3	3	R	304L (Low Carbon) Stainless Steel
	C	C	T	Hastelloy C276 (Special Order)
	L	L	R	316L (Low Carbon) Stainless Steel
	S	L	Q	Zinc-Coated Steel (316L Diaphragm and Top)
				Schedule/Extension Length- 10th Character
			A	Schedule 40 (Specify for Socket Weld Process Connections Only)
			B	Schedule 10 (Specify for Socket Weld Process Connections Only)
			C	Schedule 80 (Specify for Socket Weld Process Connections Only)
			D	Schedule 160 (Specify for Socket Weld Process Connections Only)
			H	Schedule 5 (Specify for Socket Weld Process Connections Only)
			J	XXH (Special Order) (Specify for Socket Weld Process Connections Only)
			-	Not Used
				Coating Options- 11th Character
			-	Not Used
				Fill Fluids- 12th Character
			A	Silicone DC 510 (Special Order)
			B	Silicone DC 550 (Special Order)
			C	Customer Supplied Fluid (MUST Supply MSDS with Shipment)
			D	Silicone DC 710 (Special Order)
			F	Fluorolube FS-5
			G	Glycol
			H	Halocarbon Oil 6.3
			I	Instrument Oil
			J	Halocarbon 4.2 (Special Order)
			L	Low Temperature Silicone DC 200-10cs
			M	Mineral Oil
			S	High Temperature Silicone DC 704
			V	Vegetable Oil (Food Grade)
			W	De-Ionized Water (DI Water)
			-	Not Used (Must use character "-" in 13th and 14th character positions)

(Continued)

ORDERING INFORMATION

TYPE SX SERIES DIAPHRAGM SEALS

Order Number Description

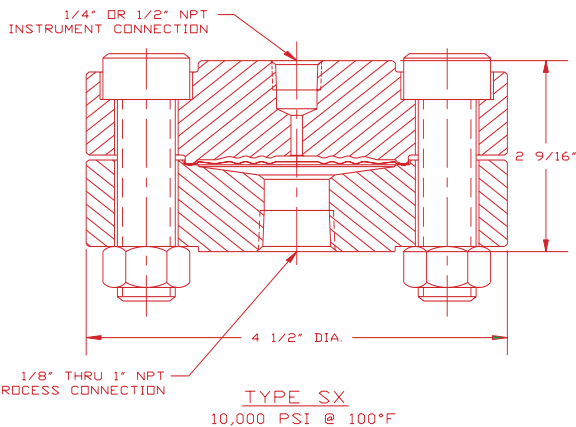
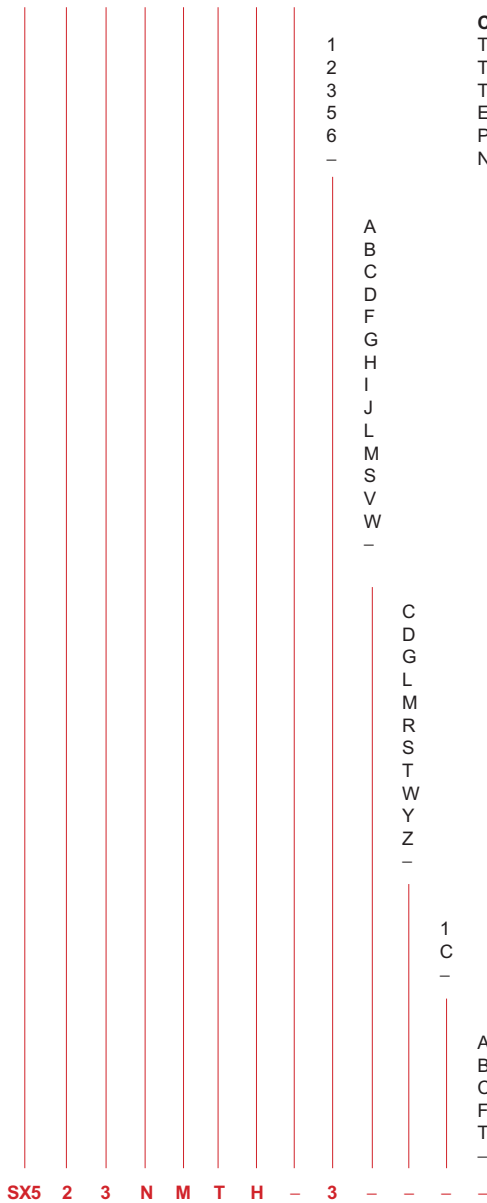
SX3		Base Model Number- 1st thru 3rd Characters
SX4		Type SX with Standard TEFLON Coated 316 Stainless Steel Gasket
SX5		Type SX with TEFLON Coated Hastelloy C
SX9		Type SX with TEFLON Coated Monel
		Type SX with TEFLON Coated Hastelloy B
		Instrument Connection- 4th Character
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
	8	0.125-inch NPT Female
		Process Connection- Size- 5th Character
	1	1.0-inch
	2	0.5-inch
	3	0.75-inch
		Process Connection- Type- 6th Character
	N	NPT Female Threaded
		Exposed Material- 7th Character
	2	Carpenter 20 (Special Order)
	3	304L (Low Carbon) Stainless Steel (Special Order)
	4	304 Stainless Steel
	6	316 Stainless Steel
	C	Hastelloy C276 (Special Order)
	D	Hastelloy C22 (Special Order)
	H	Hastelloy B2 (Special Order)
	I	Inconel 600 (Special Order)
	L	316L (Low Carbon) Stainless Steel
	M	Monel 400 (Special Order)
	N	Nickel 200
	S	Zinc-Coated Steel
	X	Zirconium (Special Order)
	Y	Inconel 600 (Special Order)
	Z	Titanium (Special Order)
		Diaphragm Material- 8th Character
	2	Carpenter 20
	3	304L Low Carbon Stainless Steel
	A	Silver (Special Order)
	C	Hastelloy C276
	D	Hastelloy C22 (Special Order)
	G	Gold (Special Order)
	H	Hastelloy B2
	I	Inconel 600
	L	316L Low Carbon Stainless Steel
	M	Monel 400 (Cannot be used with 316 Stainless Steel Top)
	N	Nickel 200
	T	Tantalum
	X	Zirconium (Special Order)
	Y	Inconel 625 (Special Order)
	Z	Titanium
		Top, Bolting and Flange Options- 9th Character
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
	E	304SST Top/Alloy Bolting
	F	304SST Top/316SST Bolting
	G	Monel 400 Top/Alloy Bolting
	H	Monel 400 Top/316SST Bolting
	I	Titanium Top/Alloy Bolting
	J	Titanium Top/316SST Bolting
	K	Hastelloy C276 Top/Alloy Bolting
	L	Hastelloy C276 Top/316SST Bolting
		Schedule/Extension Length- 10th Character
	-	Not Used

(Continued)

ORDERING INFORMATION

TYPE SX SERIES DIAPHRAGM SEALS

Order Number Description



Sample Order Number

SX Series with TEFLON coated Monel gasket. 0.5-inch Instrument Connection and 0.75-inch Process Connection. Monel 400 bottom with Tantalum diaphragm and Monel top with 316 stainless steel bolting. Exposed surfaces are TEFLON coated. No fill. No special options.

Note:

This diaphragm seal contains "special order" components. Please contact AMETEK for price and delivery.

Diaphragm seals with "special order" components may not be returned for credit.

Capillary Systems for Diaphragm Seals

Specification Sheet SS-DS-5100-0600
June 2000
Issue1

AMETEK offers a number of methods for mounting your diaphragm seal to various forms of instrumentation including:

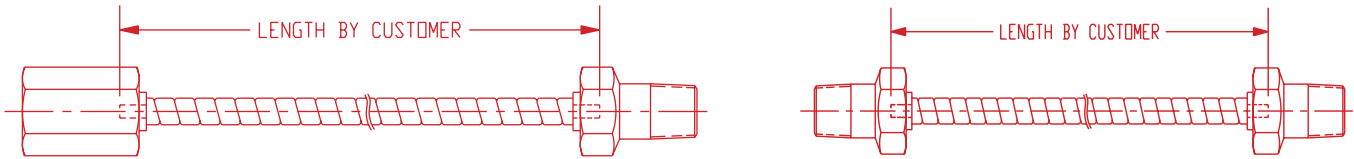
- Gauges
- Controllers
- Transducers
- Transmitters
- Smart Transmitters
- Recorders
- Recording Controllers
- Indicators

Direct Mounting Application

AMETEK supplies low volume connecting nipples for direct mount applications. These nipples are available with 0.25- and 0.5-inch NPT end connections (other types available) and in 2.0- or 4.0-inch lengths (50.8 - 101.6mm). Nipples are manufactured of 300 Stainless Steel.

Remote Mounting Application

AMETEK can supply Capillary Systems for remotely mounting your diaphragm seal. Manufactured of 300 Series Stainless Steel, these systems feature an all TIG welded construction. Maximum pressure ratings up to 10,000 PSIG (690 bar) are available (for higher ratings contact AMETEK).



Armored Tubing Assembly
(Minimum Bend Radius = 1-1/4-inch inside)

ORDERING INFORMATION

CAPILLARY SYSTEMS FOR M&G DIAPHRAGM SEALS

Order Number	Description
C	Instrument Connection- 1st Character Capillary System
304	Tubing Material and Construction- 2nd thru 4th Character 304 Stainless Steel, Armored
316	316 Stainless Steel, Armored
P04	304 Stainless Steel, Armored, PVC Coated
P16	316 Stainless Steel, Armored, PVC Coated
M	Instrument Connection Type- Type- 5th Character Male
F	Female
4	Instrument Connection- Size- 6th Character 0.25-inch, 304 Stainless Steel
2	0.5-inch, 304 Stainless Steel
M	Diaphragm Seal Connection- Type- 7th Character Male
4	Diaphragm Seal Connection- Size 8th Character 0.25-inch, 304 Stainless Steel
2	0.5-inch, 304 Stainless Steel
005	Capillary Length- 9th thru 11th Characters 5 ft. Length
010	10 ft. Length
015	15 ft. Length
00Z	User Specified (Special Order)
C 304 F 4 M 2 015	Sample Order Number 15 Feet of Armored 304 Stainless Steel Capillary System with 0.25-inch NPT Female Instrument Connection and 0.5-inch NPT Male Process Connection

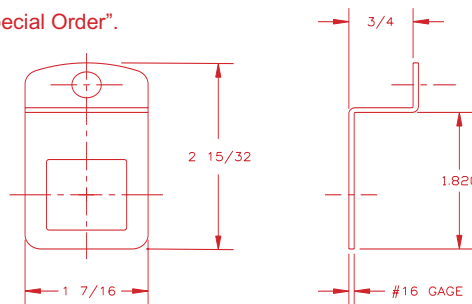
Capillary System Pricing

You must specify the complete Capillary System Order Number as a separate line item with your Diaphragm Seal Order Number. If your Diaphragm Seal Order Number has the character "C" in the 14th character space, you must specify the capillary system required using the price sheet. Your purchase order should contain a line item for the Diaphragm Seal and a line item for your Capillary System.

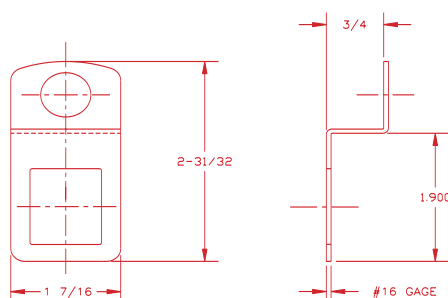
Diaphragm Seal Accessories

Part Number	Description
N1SS/303* S105	Nipple , 0.25-inch NPT at both ends Vacuum Fill Fittings
10-90003	O-Ring , for use with S105 Vacuum Fill Fittings
S238/303	Fill Screw , Long Type
DS170/203	Fill Screw , Short Type
DS495/Steel*	Union Connection for direct mounting on diaphragm seal tops. 0.25-inch male, 0.5-inch female
DS504-1/303*	Dual Manifold for mounting two instruments or gauges, 0.5-inch NPT male x 0.25 x 0.25-inch female
DS491/Steel*	Union Connection for remote mounting of capillary tubing to NPT male, 0.125-inch capillary x 0.25-inch female
DS482/Steel*	Extension , for extending height of gauge or instruments from diaphragm seal top. 0.5-inch NPT male x 0.5-inch female
DS498/Steel*	Union Connection Assembly for mounting directly to diaphragm seal top. 0.25-inch NPT male x 0.125-inch capillary
DS494/Steel*	Union Connection Assembly for mounting directly to diaphragm seal top. 0.25-inch NPT male x 0.25-inch male
DS398-1/Steel*	Fitting, 90° Adapter , 4.0-inch long, for angle mounting of gauges or other instruments to diaphragm seal tops. 0.5-inch male x 0.5-inch female
DS398/Steel*	Fitting, 90° Adapter , 3.0-inch long, for angle mounting of gauges or other instruments to diaphragm seal tops. 0.5-inch male x 0.5-inch female
DS349/Steel*	Fitting, 90° Adapter , 2.0-inch long, for angle mounting of gauges or other instruments to diaphragm seal tops. 0.5-inch male x 0.5-inch female
DS539-2/Steel*	Dual Manifold for mounting two instruments or gauges. 0.25-inch NPT female x 0.25-inch male
N2S/Steel	Reducing Nipple , 0.25-inch NPT male to 0.125-inch NPT male
S-1015	Gauge Locking Device (Use with Type SB, SG, RB, RG)
S-1015-1	Gauge Locking Device (Use with Type SC, SD, RC, RD) (For 1-inch 150#/500#)
S-1015-2	Gauge Locking Device (Use with Type LB, LG)

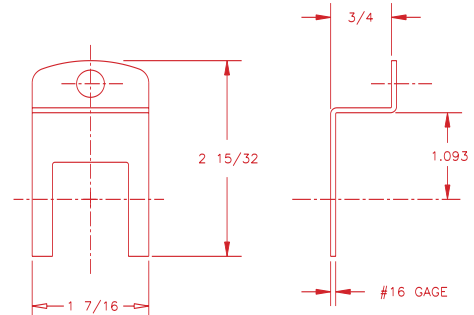
Note:* Other Sizes and Material Available as "Special Order".



S-1015
Gauge Locking Device



S-1015-1
Gauge Locking Device



S-1015-2
Gauge Locking Device

Fill Fluid Properties

FLUID	TEMPERATURE LIMITS		SPECIFIC GRAVITY @ 25°C	VISCOSITY CENTISTOKES
	°F	°C		
DC Silicone 510	-60° to 400°F	-50° to 204°C	0.99	350.0 @ 25°C
DC Silicone 550	-40° to 450°F	-40° to 232°C	1.07	125.0 @ 25°C
DC Silicone 710	41° to 653°F	5° to 345°C	1.11	500.0 @ 25°C
Fluorolube FS-5	-40° to 302°F	-40° to 150°C	1.88	7.8 @ 25°C
Glycol	-60° to 235°F	-50° to 112°C	1.08	7.0 @ 25°C
Halocarbon Oil 6.3	-40° to 455°F	-40° to 235°C	1.88	10.6 @ 25°C
Instrument Oil	-40° to 315°F	-40° to 157°C	0.92	95.0 @ 25°C
DC Silicone 200-10cs	-49° to 401°F	-45° to 205°C	0.93	10.0 @ 25°C
Mineral Oil	30° to 300°F	-1° to 150°C	0.87	40.2 @ 100°F
DC Silicone 704	32° to 599°F	0° to 315°C	1.07	39.0 @ 25°C
Vegetable Oil (Food Grade)	40° to 360°F	5° to 182°C	0.92	75.0 @ 70°F

Note: Always obtain a complete specification from the Fill Fluid manufacturer before specifying a fill fluid.

Special Care

Fill fluids should be carefully selected by considering their physical properties at the extremes of the ambient and process temperature which they will be subjected. Fill fluids must also be chemical compatible with the process fluid to avoid potentially hazardous reaction in the event of a diaphragm failure. Hydrocarbon-based liquids are NOT typically used with strong oxidizers such as Oxygen, Chlorine, Hydrogen Peroxide or Nitric Acid. Instead, these applications are generally specified with an inert liquid such as Fluorolube or Halocarbon.

Silicone 510

This low temperature product resists salts, dilutes, alkalis and acids.

Silicone 550

This high temperature product resists radiation and oxidation and has excellent shear stability and heat transfer characteristics.

Silicone 704

This product contains a phenyl group that may result in an explosion when exposed to high concentrations of nitric, sulfuric and nitric and sulfuric acid mixtures.

Silicone 710

This product is commonly used for high temperature application. Silicone 710 at 20°F has a viscosity of nearly 50,000 centistokes. Use of this product can result in response problems on low pressure applications and on high pressure applications with long capillaries.

Fluorolube & Halocarbon Oils

These products are chlorofluorocarbon oils and may be used when nonflammability and inertness are required. These oils are frequently used when strong oxidizing agents (Oxygen, Chlorine, Nitric acid, Hydrogen Peroxide) preclude the use of more commonly used glyceride or silicone fill fluids. These oils may react with diamine and aluminum compounds. Aluminum housings with threaded instrument connections should not be used with these products.

PRODUCT QUOTATION TEMPLATE

PROCESS APPLICATION SPECIFICATIONS

Specify Application Type (Check ONE)

- Corrosive
- Economy
- Fugitive Emission
- General Purpose
- Jacketed Pipeline
- Low Pressure
- Low Pressure Transmitter
- Sanitary
- Tank
- Other (Please Specify) _____

Specify Operating Temperature (Designate °F or °C)

(Circle °F or °C)

Specify Mounting Type (Check ONE)

- Flange Attached
- Thread Attached
- In-Line Flow Thru (Thread Attached Connection)
- In-Line Flow Thru (Welded by User)
- In-Line Flow Thru (Welded by User, Pipe Supplied, Schedule Dependent)
- In-Line Flow Thru (For Pipe Sizes 0.75 to 3.0-inch Diameters)
- In-Line Flow Thru (For Pipe Sizes 3.0 to 8.0-inch Diameters)
- Sanitary (Please Specify) _____
- Other (Please Specify) _____

Specify Operating Pressure (Designate PSI, Bar)

(Circle PSI or Bar)

Specify Process Application (Check ONE)

- | | |
|--|--|
| <input type="checkbox"/> Low Pressure | <input type="checkbox"/> Saddle Mount |
| <input type="checkbox"/> Vacuum | <input type="checkbox"/> Thread Attached |
| <input type="checkbox"/> General Purpose | <input type="checkbox"/> Butt Welded |
| <input type="checkbox"/> Removable Bottom (without fluid loss) | <input type="checkbox"/> Small Pipe |
| <input type="checkbox"/> Tantalum Clad Bottom | <input type="checkbox"/> Large Pipe |
| <input type="checkbox"/> High Pressure | <input type="checkbox"/> Jacketed Pipeline |
| <input type="checkbox"/> EPC Clean Air Act | <input type="checkbox"/> Severe Service |

Requires Flushing Connection (Check ONE)

- Yes
- No

Specify Special Considerations

PRODUCT QUOTATION TEMPLATE

SEAL OPTIONS AND MODEL DESIGNATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Base Model and Gasket Type		Instrument Connection	Process Connection Size	Process Connection Type	Exposed Material	Diaphragm Material	Top, Bolting & Flange Ring Material	Schedule/Extension Length	Coating Option	Fill Fluids	Fill and Attach to Instrument	Capillary System (Complete bottom if "C")			Options	

NOTES

Any Diaphragm Seal Models that use an option that is denoted in the specification sheet as (Special Order) may not be returned for credit.

CAUTION

All diaphragm seal assemblies and components must be selected with full consideration of process fluids, pressure and temperature compatability to prevent misapplication. An improper selection may result in a system failure and possible property damage or injury to personnel.

Capillary System Pricing

You must specify the complete Capillary System Order Number as a separate line item with your Diaphragm Seal Order Number. If your Diaphragm Seal Order Number has the character "C" in the 14th character space, you must specify the capillary system required using this price sheet. Your purchase order should contain a line item for the Diaphragm Seal and a line item for your Capillary System.

CAPILLARY SYSTEM MODEL DESIGNATION

1	2	3	4	5	6	7	8	9	10	11
C						M				
Instrument Connection		Tubing Material and Construction		Instrument Connection Type	Instrument Connection Size	Diaphragm Seal Connection Type	Diaphragm Seal Connection Size		Capillary Length	



AMETEK is a leading global manufacturer of electrical and electromechanical products for niche markets. Listed on the New York Stock Exchange (AME) since 1930, AMETEK's annual sales are approaching \$1billion. Operations are in North America, Europe and Asia, with about one-third of sales to markets outside the United States.

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