



## Type T Series Diaphragm Seal Elements for Corrosive Applications

- ❑ *Removable Molded TEFLON Diaphragm*  
- *Exceptional Long-Term Value*
- ❑ *Continuous Duty*
- ❑ *Ideal for Corrosive Applications*
- ❑ *Volumetric Displacement of 0.40 cubic inches*
- ❑ *Upper Contoured Housing*  
- *Maximum Allowable Flexing*  
- *Minimum Diaphragm Distortion*
- ❑ *Seal Ratings to 2500 PSIG (172 bar)*
- ❑ *Available with Flushing Connection*
- ❑ *Available in DIN and Metric Sizes*

### PRODUCT DESCRIPTION

Mansfield & Green T Series diaphragm seals have a molded TFE TEFLON diaphragm making them ideally suited for a wide range of process media. They are especially well-suited for applications involving corrosive media.

Type T Series diaphragm seals employ diaphragms retained between two bolted members. In the clean-out design, the diaphragms are situated between the top and middle ring. In the plain design, the diaphragms are located between the top and bottom. The diaphragm is self-retained in the upper housing for easy repair or replacement. This extends the life of the seal element and allows for easy replacement and service.

The interior of the seal's upper housing is contoured to accommodate the movement of the diaphragm at maximum deflection, while minimizing distortion. Type T seal elements have a volumetric displacement of 0.40 cubic inches.

There are three basic seal configurations:

- ❑ Threaded
- ❑ Flanged
- ❑ Inline Flow-Thru

#### Threaded Seal Elements

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

The **TA** seal element has a standard pressure rating of 2500 PSIG @ 100°F (172 bar @ 38°C). The **TH** seal element is similar to the **TA** seal element except that it features a 0.25-inch NPT flushing connection.

**MANSFIELD & GREEN, T SERIES**

### Flanged Seal Elements

There are two basic versions of flanged T Series seal elements. The flange is a standard raised face style. The **TC** seal element can be supplied in 0.5- and 0.75-inches with Class 150 thru 1500 ANSI flange ratings. A 1.0- thru 4.0-inch version can be supplied with a Class 150 thru 600 ANSI rating. The **TD** seal is similar to the **TC** except it is equipped with a flushing connection. Type **TC** and **TD** seal elements are also available in DIN and metric sizes.

### Inline Flow-Thru Seal Elements

Inline flow-thru T Series diaphragm seals include the **TJ** versions for 3.5-inch and larger pipe connections. The **TK** versions are available with 0.25-, 0.375- or 0.5-inch NPT or socket weld

process connections. The **TM** version is for pipe sizes from 0.75-inch to 2.5-inch Schedule 40 pipe (other schedules available) where the diaphragm seal element is to be directly welded to the process pipe.

The **TN** version is for pipe sizes from 0.75- to 3.0-inches requiring ANSI ratings of Class 150 or 300. Class 600 to 2500 available in some sizes. 1.0- to 3.0-inch may be supplied with an optional TEFLON liner.

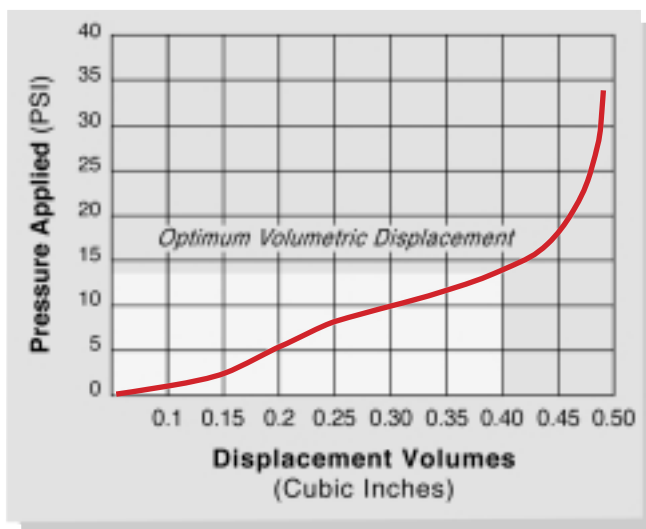
The **TP** versions are for pipe sizes from 4.0- to 10.0-inches and with ANSI ratings of Class 150 or 300.

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## MODEL T SERIES SELECTION GUIDE

Seal Type	Seal Mounting	Operating Temperature	Operating Pressure	Process Application	Flushing Connection
TA	Thread	100°F (38°C)	2500 PSIG (172 bar)	Low Pressure	No Flush
TB	Thread	100°F (38°C)	2500 PSIG (172 bar)	Low Pressure	No Flush
TG	Thread	100°F (38°C)	2500 PSIG (172 bar)	Vacuum	With Flushing Connection
TH	Thread	100°F (38°C)	2500 PSIG (172 bar)	Vacuum	With Flushing Connection
TC	Flange		Flange Dependent	Low Pressure	No Flush
TD	Flange		Flange Dependent	Low Pressure	With Flushing Connection
TR	Flange		Flange Dependent	Severe Service	No Flush
TJ	In-Line Flow Thru <sup>A</sup>	100°F (38°C)	1500 PSIG (103 bar)	Low Pressure	No Flush
TK	In-Line Flow Thru <sup>B</sup>	100°F (38°C)	1500 PSIG (103 bar)	Low Pressure	No Flush
TM	In-Line Flow Thru <sup>C</sup>	100°F (38°C)	1500 PSIG (103 bar)	Low Pressure	No Flush
TN	In-Line Flow Thru <sup>D</sup>		Flange & Schedule Dependent	Low Pressure	No Flush
TP	In-Line Flow Thru <sup>E</sup>		Flange & Schedule Dependent	Low Pressure	No Flush

- Note:**
- <sup>A</sup> In-Line Flow Thru Welded by User
  - <sup>B</sup> In-Line Flow Thru Thread-Attached or Socket Weld Connection
  - <sup>C</sup> In-Line Flow Thru Welded by User, Pipe Supplied, Schedule Dependent
  - <sup>D</sup> In-Line Flow Thru For 0.75 to 3.0-inch Pipe Diameters
  - <sup>E</sup> 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 fill liquid columns which develop a static head pressure that is too high relative to the instrument's span, zero suppression or elevation capability.

# ORDERING INFORMATION

## TYPE TA AND TH SERIES DIAPHRAGM SEALS

**Order Number Description**

	<b>Base Model Number- 1st thru 3rd Characters</b>
TA2	Type TA with TEFLON Gasket
TA3	Type TA with TEFLON Coated 316 Stainless Steel Gasket
TA4	Type TA with TEFLON Coated Hastelloy C Gasket
TA5	Type TA with TEFLON Coated Monel Gasket
TA8	Type TA with GRAPHOIL Gasket ( <b>Special Order</b> )
TA9	Type TA with TEFLON Coated Hastelloy B Gasket
TH2	Type TH with TEFLON Gasket (standard with TEFLON or PVC Lower Housing)
TH3	Type TH with TEFLON Coated 316 Stainless Steel Gasket
TH4	Type TH with TEFLON Coated Hastelloy C Gasket
TH5	Type TH with TEFLON Coated Monel Gasket
TH8	Type TH with GRAPHOIL Gasket ( <b>Special Order</b> )
TH9	Type TH with TEFLON Coated Hastelloy B Gasket

	<b>Instrument Connection- 4th Character</b>
2	0.5-inch NPT Female
4	0.25-inch NPT Female

	<b>Process Connection- Size- 5th Character</b>
1	1.0-inch ( <b>Not Available with TH Seals</b> )
2	0.5-inch
3	0.75-inch ( <b>Not Available with TH Seals</b> )
4	0.25-inch
5	0.375-inch ( <b>Not Available with TH Seals</b> )
B	1.5-inch ( <b>Not Available with TH Seals</b> )

	<b>Process Connection- Type- 6th Character</b>
N	NPT Female Threaded

	<b>Exposed Material- 7th Character</b>
6	316 Stainless Steel
C	Hastelloy C276
M	Monel 400
S	Zinc-Coated Steel

	<b>Diaphragm Material- 8th Character</b>
Q	TEFLON

	<b>Top, Bolting and Flange Options- 9th Character</b>
A	Steel Top/Steel Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Steel Bolting
D	316SST Top/316SST Bolting

	<b>Schedule/Extension Length- 10th Character</b>
-	Not Used

	<b>Coating Options- 11th Character</b>
2	TEFLON Coated Lower Exposed
-	Not Used

	<b>Fill Fluids- 12th Character (MUST specify a 13th and 14th Character)</b>
C	Customer Supplied ( <b>MUST Supply MSDS with Shipment</b> )
F	Fluorolube FS-5
G	Glycol
H	Halocarbon 6.3
I	Instrument Oil
L	Low Temperature Silicone DC 200-10cs
M	Mineral Oil
S	High Temperature Silicone DC 704
V	Vegetable Oil (Food Grade)
-	Not Used ( <b>When selected, cannot select a 13th or 14th Character</b> )

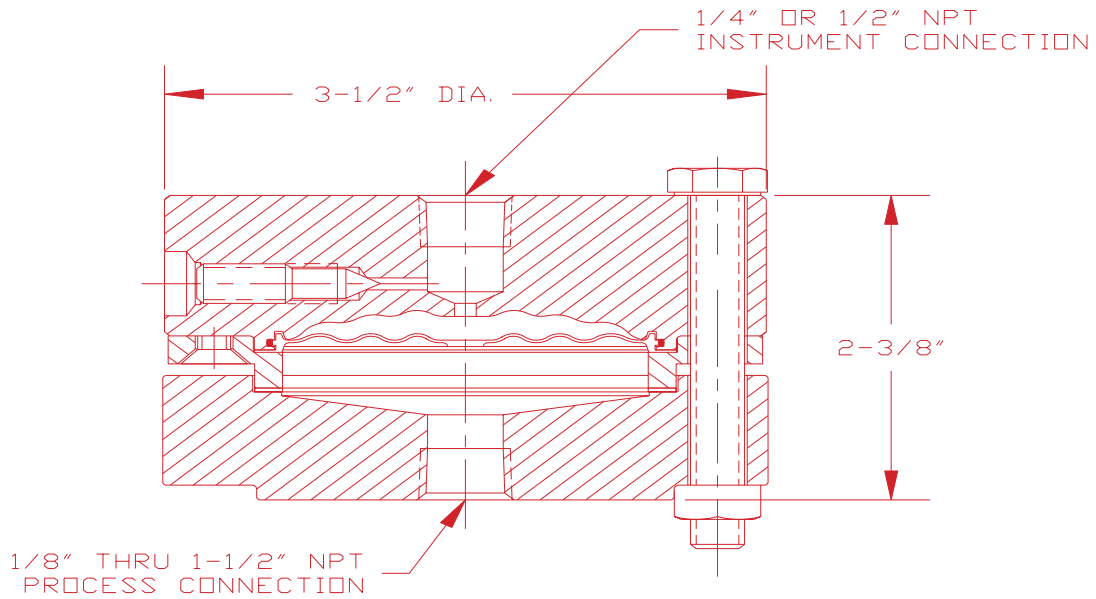
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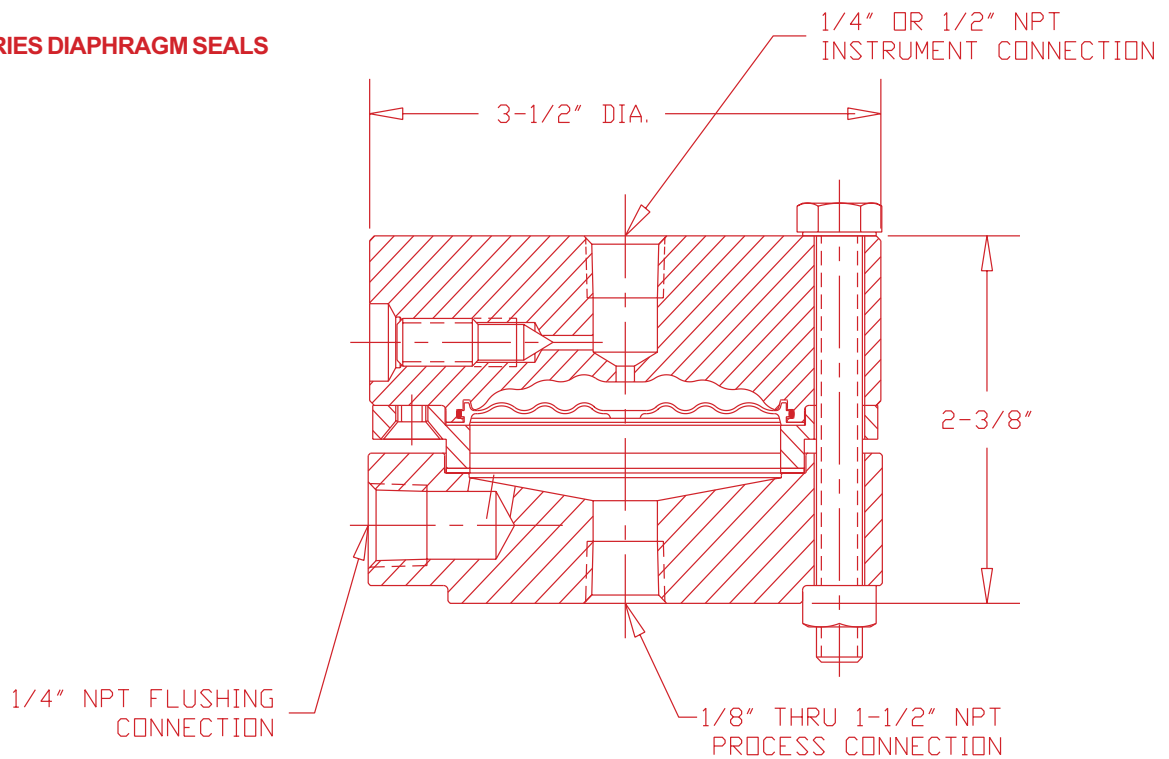
# ORDERING INFORMATION

Specification Sheet SS-DS-5300-0600  
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Issue1

## TYPE TA SERIES DIAPHRAGM SEALS



## TYPE TH SERIES DIAPHRAGM SEALS



# ORDERING INFORMATION

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## TYPE TB AND TG SERIES DIAPHRAGM SEALS

Order Number Description

TBX		<b>Base Model Number- 1st thru 3rd Characters</b>
TGX		Type TB Self Gasketing Type TG Self Gasketing
		<b>Instrument Connection- 4th Character</b>
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
		<b>Process Connection- Size- 5th Character</b>
	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 TG Seals)
	B	1.5-inch (Not Available with TG Seals)
		<b>Process Connection- Type- 6th Character</b>
	4	Socket Welded (Tubing)
	N	NPT Female Threaded
	S	Socket Welded (Pipe)
		<b>Exposed Material- 7th Character</b>
	1	TEFLON (Carbon Filled) (Special Order) (Not Available with TG Seals)
	5	TEFLON (15% Glass Filled) 100 PSIG (6.9 bar) Maximum (Not Available with TG Seals)
	6	316 Stainless Steel
	C	Hastelloy C276
	M	Monel 400
	P	PVC 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on TG Seals)
	R	Polypropylene 100 PSIG (6.9 bar) Maximum (Special Order) (Not Available on TG Seals)
	S	Zinc-Coated Steel
	U	CPVC (Special Order) (Not Available on TG Seals)
	W	KYNAR (Not Available on TG Seals)
		<b>Diaphragm Material- 8th Character</b>
	Q	TEFLON
		<b>Top, Bolting and Flange Options- 9th Character</b>
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
		<b>Schedule/Extension Length- 10th Character</b>
	-	Not Used
		<b>Coating Options- 11th Character</b>
	-	Not Used
		<b>Fill Fluids- 12th Character</b>
	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 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)

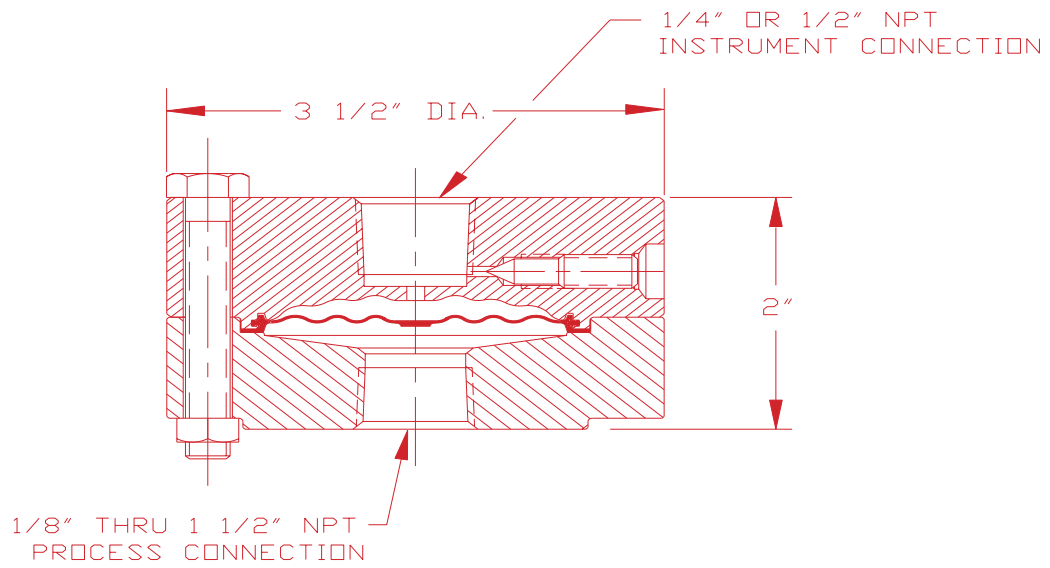
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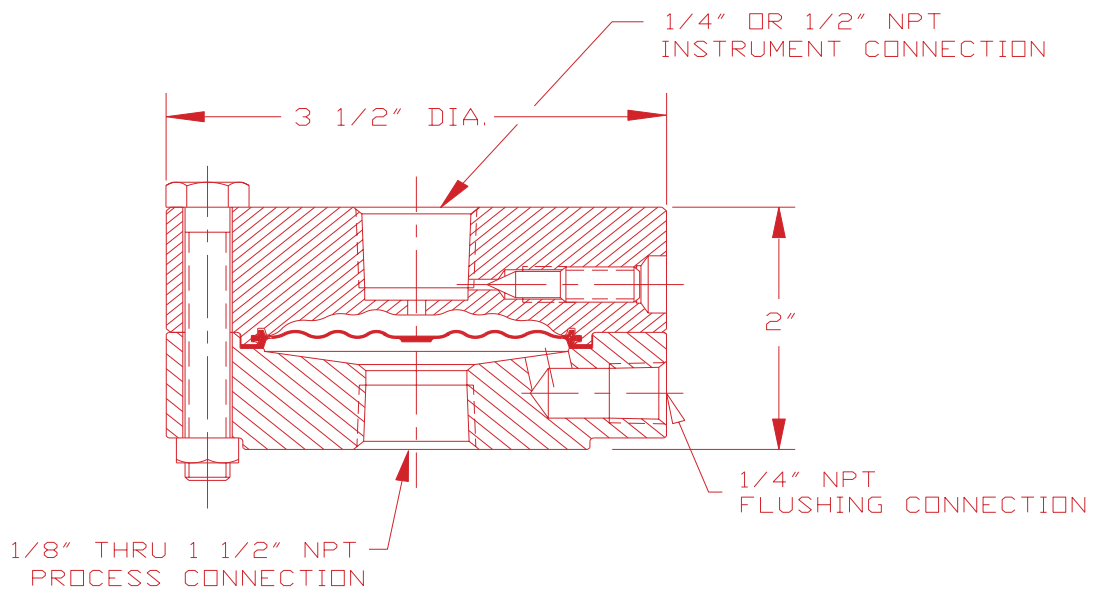
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## TYPE TB SERIES DIAPHRAGM SEALS



## TYPE TG SERIES DIAPHRAGM SEALS





# ORDERING INFORMATION

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## TYPE TC AND TD SERIES DIAPHRAGM SEALS

Order Number Description

TCX		<b>Base Model Number- 1st thru 3rd Characters</b>
TDX		Type TC Self Gasketed Type TD Self Gasketed
		<b>Instrument Connection- 4th Character</b>
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
		<b>Process Connection- Size- 5th Character (Bolts and Studs are NOT Supplied unless otherwise noted)</b>
	1	1.0-inch
	2	0.5-inch (Bolts and Studs Supplied) (Not Available with Non-metal Bottom)
	3	0.75-inch (Bolts and Studs Supplied) (Not Available with Non-metal Bottom)
	B	1.5-inch
	C	2.0-inch
	D	3.0-inch
	E	4.0-inch
		<b>Process Connection- Type- 6th Character (See Dimension Drawings)</b>
	1	150# Raised Face Flange
	3	300# Raised Face Flange
	5	1500# Raised Face Flange (Not Available with Non-metal Bottoms)
	6	600# Raised Face Flange (Not Available with Non-metal Bottoms)
	C	150# Flat Face Flange (Full flat face below 1-inch 150#) (Reduced diameter flat face standard on other sizes)
	E	300# Flat Face Flange (Full flat face below 1-inch 150#) (Reduced diameter flat face standard on other sizes)
	G	600# Flat Face Flange (Full flat face below 1-inch 150#) (Reduced diameter flat face standard on other sizes)
	J	1500# Flat Face Flange (Full flat face below 1-inch 150#) (Reduced diameter flat face standard on other sizes)
		<b>Exposed Material- 7th Character</b>
	1	TEFLON (Carbon Filled) (Not Available on TD Seals) (Special Order)
	5	TEFLON (15% Glass Filled) 100 PSIG (6.9 bar) Maximum (Not Available on TD Seals)
	6	316 Stainless Steel
	C	Hastelloy C276
	M	Monel 400
	O	TEFLON (Graphite Filled) (Not Available on TD Seals) (Special Order)
	P	PVC 100 PSIG (6.9 bar) Maximum (Not Available on TD Seals)
	R	Polypropylene 100 PSIG (6.9 bar) Maximum (Not Available on TD Seals)
	S	Zinc-Coated Steel
		<b>Diaphragm Material- 8th Character</b>
	Q	TEFLON
		<b>Top, Bolting and Flange Options- 9th Character</b>
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
		<b>Schedule/Extension Length- 10th Character</b>
	-	Not Used
		<b>Coating Options- 11th Character</b>
	2	TEFLON Coated Lower Exposed
	-	Not Used

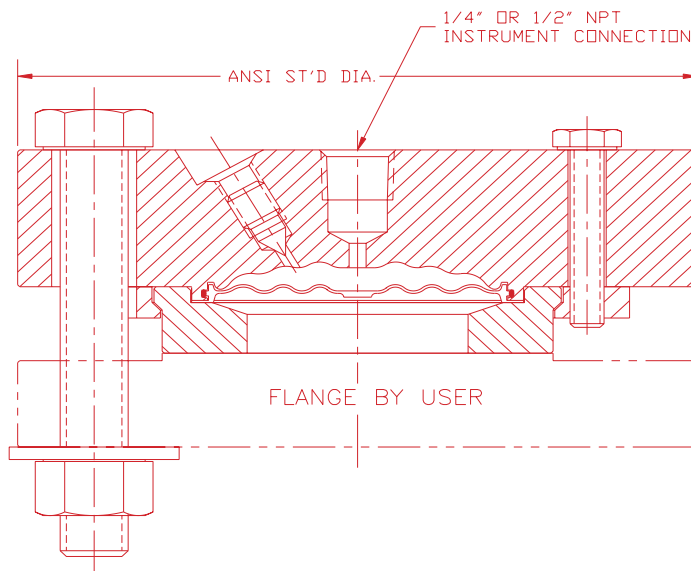
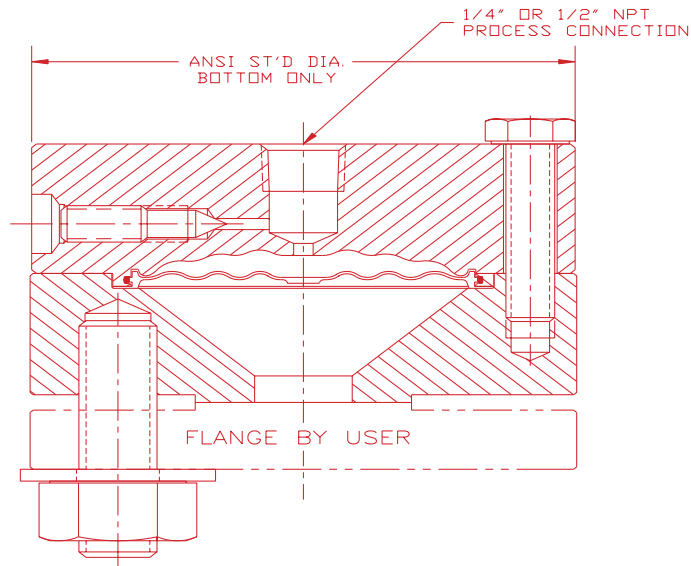
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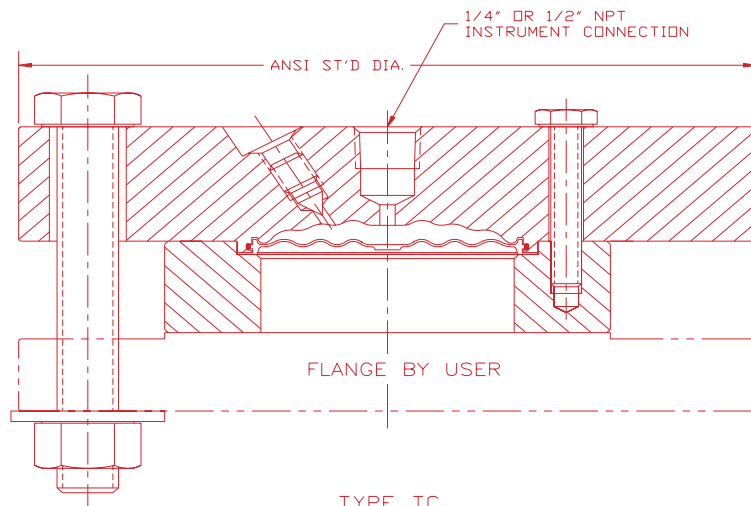
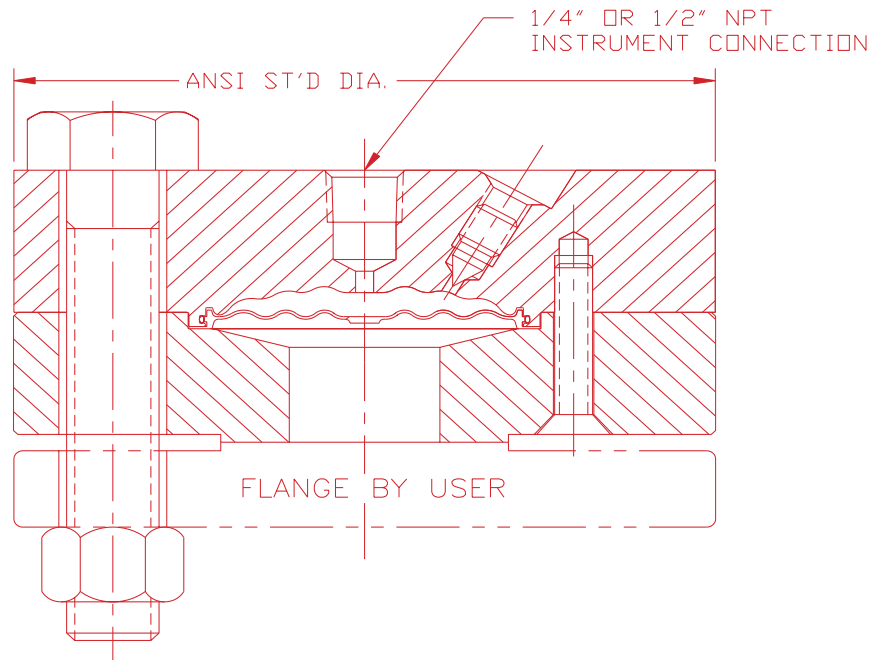
## TYPE TC SERIES DIAPHRAGM SEALS (STYLES VARY DEPENDING ON PROCESS SIZE)



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## TYPE TC SERIES DIAPHRAGM SEALS (STYLES VARY DEPENDING ON PROCESS SIZE)



TYPE TC  
2" TUB. 4" CLASS 150 TUB. 1500 ANSI ST'D

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## TYPE TJ SERIES DIAPHRAGM SEALS

Order Number Description

TJX		<b>Base Model Number- 1st thru 3rd Characters</b> Type TJ Series, Non-Gasketed
		<b>Instrument Connection- 4th Character</b>
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
		<b>Process Connection- Size- 5th Character</b>
	D	3.0-inch
	E	4.0-inch and Larger Pipe Diameter
		<b>Process Connection- Type- 6th Character</b>
	U	Saddle Mount
		<b>Exposed Material- 7th Character</b>
	C	Hastelloy C276
	L	316L (Low Carbon) Stainless Steel
	S	Zinc-Coated Steel
		<b>Diaphragm Material- 8th Character</b>
	Q	TEFLON
		<b>Top, Bolting and Flange Options- 9th Character</b>
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
		<b>Schedule/Extension Length- 10th Character</b>
	-	Standard Schedule 40
	C	Schedule 80 (Special Order)
		<b>Coating Options- 11th Character</b>
	-	Not Used
		<b>Fill Fluids- 12th Character</b>
	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 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)

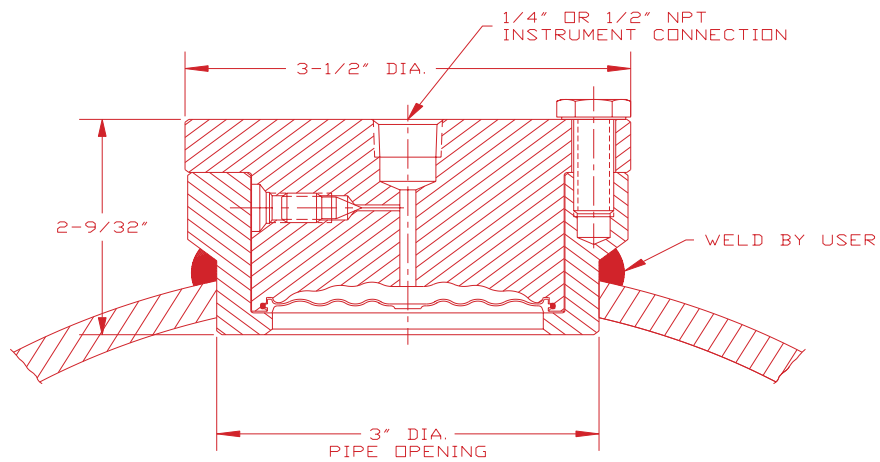
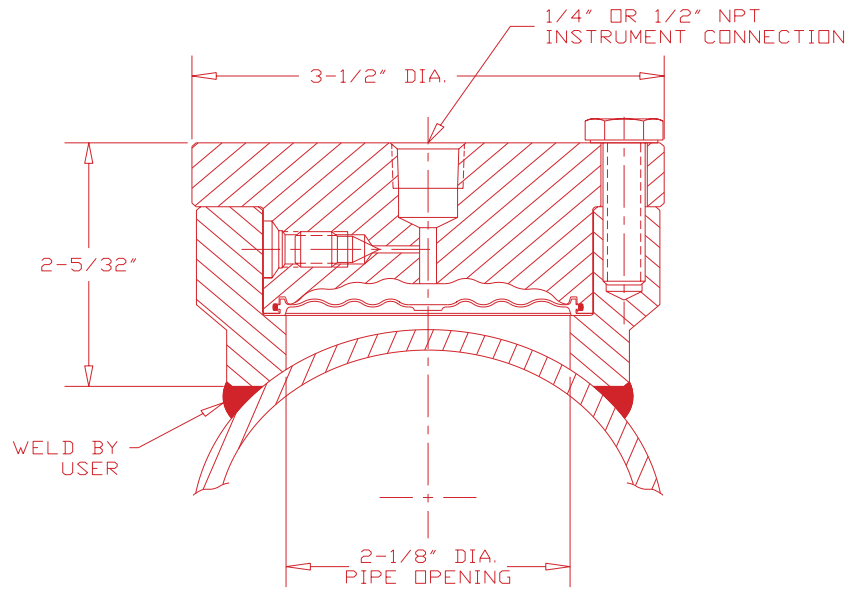
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## TYPE TJ SERIES DIAPHRAGM SEALS



# ORDERING INFORMATION

## TYPE TK SERIES DIAPHRAGM SEALS

Order Number Description

Order Number	Description
TKX	<b>Base Model Number- 1st thru 3rd Characters</b> Type TK Series, Non- Gasketed
	<b>Instrument Connection- 4th Character</b>
2	0.5-inch NPT Female
4	0.25-inch NPT Female
	<b>Process Connection- Size- 5th Character</b>
2	0.5-inch
4	0.25-inch
5	0.375-inch
	<b>Process Connection- Type- 6th Character</b>
4	Socket Weld (Tubing) (When SST is Exposed Material, ELC Alloys are used)
N	NPT Threaded Female
S	Socket Weld (Pipe) (When SST is Exposed Material, ELC Alloys are used)
	<b>Exposed Material- 7th Character</b>
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)
L	316L (Low Carbon) Stainless Steel (Standard material for Socket Weld options) (Special Order)
M	Monel 400 (Special Order)
S	Zinc-Coated Steel
	<b>Diaphragm Material- 8th Character</b>
Q	TEFLON
	<b>Top, Bolting and Flange Options- 9th Character</b>
A	Steel Top/Alloy Bolting
B	Steel Top/316SST Bolting
C	316SST Top/Alloy Bolting
D	316SST Top/316SST Bolting
	<b>Schedule/Extension Length- 10th Character</b>
-	Not Used
	<b>Coating Options- 11th Character</b>
-	Not Used
	<b>Fill Fluids- 12th Character</b>
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 6.2
I	Instrument Oil
J	Halocarbon 4.3 (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)

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# ORDERING INFORMATION

## TYPE TM SERIES DIAPHRAGM SEALS

Order Number Description

TMX		<b>Base Model Number- 1st thru 3rd Characters</b> Type TM Series, Non-Gasketed
		<b>Instrument Connection- 4th Character</b>
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
		<b>Process Connection- Size- 5th Character</b>
	1	1.0-inch
	2	0.5-inch (Special Order)
	3	0.75-inch
	B	1.5-inch
	C	2.0-inch
	D	3.0-inch
	S	2.5-inch
		<b>Process Connection- Type- 6th Character</b> Butt Welded
	W	
		<b>Exposed Material- 7th Character</b>
	3	304L (Low Carbon) Stainless Steel
	C	Hastelloy C276
	L	316L (Low Carbon) Stainless Steel
	S	Zinc-Coated Steel
		<b>Diaphragm Material- 8th Character</b> TEFLON
	Q	
		<b>Top, Bolting and Flange Options- 9th Character</b>
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
		<b>Schedule/Extension Length- 10th Character</b>
	A	Schedule 40
	B	Schedule 10
	C	Schedule 80
	D	Schedule 160
	H	Schedule 5
	J	XXH (Special Order)
		<b>Coating Options- 11th Character</b> Not Used
	-	
		<b>Fill Fluids- 12th Character</b>
	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 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)

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# ORDERING INFORMATION

## TYPE TN AND TP SERIES DIAPHRAGM SEALS

Order Number Description

TNX		<b>Base Model Number- 1st thru 3rd Characters</b>
TPX		Type TN Series, Non-Gasketed Type TP Series, Non-Gasketed
		<b>Instrument Connection- 4th Character</b>
	2	0.5-inch NPT Female
	4	0.25-inch NPT Female
		<b>Process Connection- Size- 5th Character</b>
	1	1.0-inch
	3	0.75-inch
	B	1.5-inch
	C	2.0-inch
	D	3.0-inch
	E	4.0-inch (Not available on Type TN Series)
	F	5.0-inch (Not available on Type TN Series)
	G	6.0-inch (Not available on Type TN Series)
	H	8.0-inch (Not available on Type TN Series)
		<b>Process Connection- Type- 6th Character</b>
	1	150# Raised Face Flange
	3	300# Raised Face Flange
	C	150# Flat Face Flange (Full flat face below 1-inch 150#)
	E	300# Flat Face Flange (Full flat face below 1-inch 150#) (Reduced diameter flat face standard on other sizes)
		<b>Exposed Material- 7th Character</b>
	3	304L (Low Carbon) Stainless Steel
	C	Hastelloy C276 (Special Order)
	L	316L (Low Carbon) Stainless Steel
	S	Zinc-Coated Steel
		<b>Diaphragm Material- 8th Character</b>
	Q	TEFLON
		<b>Top, Bolting and Flange Options- 9th Character</b>
	A	Steel Top/Alloy Bolting
	B	Steel Top/316SST Bolting
	C	316SST Top/Alloy Bolting
	D	316SST Top/316SST Bolting
		<b>Schedule/Extension Length- 10th Character</b>
	A	Schedule 40
	B	Schedule 10
	C	Schedule 80
	D	Schedule 160
	H	Schedule 5
	J	XXH (Special Order)
		<b>Coating Options- 11th Character</b>
	-	Not Used
		<b>Fill Fluids- 12th Character</b>
	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 6.3
	I	Instrument Oil
	J	Halocarbon 4.2 (Special Order)
	L	Low Temperature Silicone DC 200-10
	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 TN AND TP SERIES DIAPHRAGM SEALS

Order Number Description

TNX	2	1	1	S	Q	A	A	-	-	-	-	-	-	-
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---

C  
D  
G  
L  
M  
R  
S  
T  
W  
Y  
Z  
-

1  
C  
-

A  
B  
C  
D  
F  
G  
L  
N  
S  
T  
-

**Fill and Attach to Instrument- 13th Character (Customer Supplied)**  
 Controllers  
 DP Instruments (Special Order)  
 Gauge ( $\geq 30$  PSI/2 bar)  
 Gauge ( $\leq 30$  PSI/2 bar)(Including combination gauges with Lower ranges)  
 Dual Manifold Fitting (Special Order)  
 Recorder  
 Switch  
 Transducer  
 Recording Controller  
 Transmitter  
 Smart Transmitter (Special Order)  
 Not Used

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

**Options- 15th Character**  
 With Material (Mill) Certificate (Special Order)  
 MRO 17.5 Certificate (Special Order) (Cannot use Steel Top)  
 With Certificate of Conformance (Special Order)  
 With 125-250 AARH Finish (Special Order)  
 With Instrument Tag (Special Order)  
 With 60-125 AARH Finish (Special Order)  
 With Full Penetration Weld (Special Order)  
 With Full Flat Faced Flange (Special Order)(1-inch, 150# and above)  
 With Seamless Pipe (Special Order)  
 With Gauge Locking Device (Special Order)(Filled Assemblies Only)  
 Not Used

**Sample Order Number**  
 TN Series with 0.5-inch Instrument Connection, 1-inch  
 150# Process Connection, Steel bottom with TEFLON  
 diaphragm. Steel top with alloy bolting. Schedule 40 pipe.

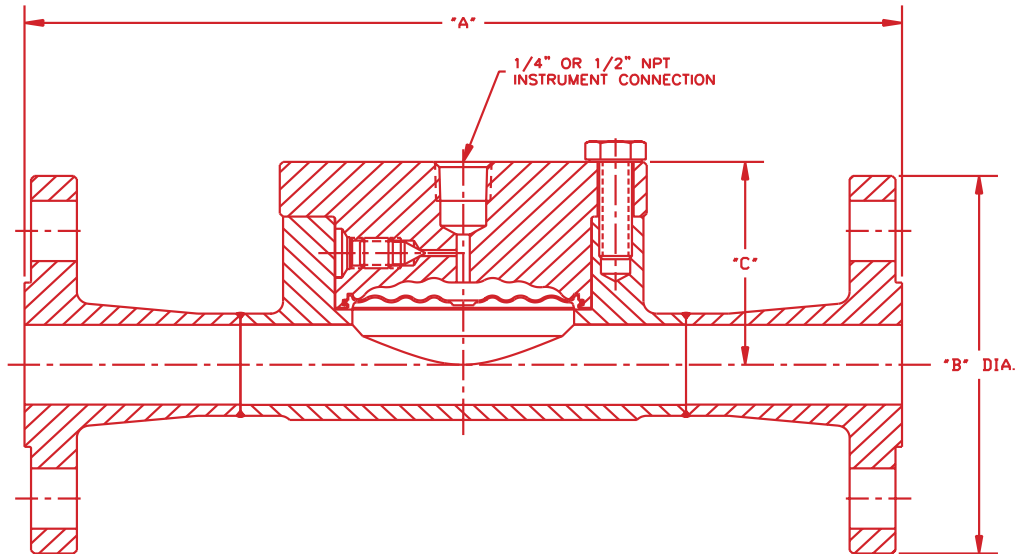
**Note:**  
 This diaphragm seal contains "special order" components. Please  
 contact AMETEK for price and delivery.

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

# ORDERING INFORMATION

Specification Sheet SS-DS-5300-0600  
 June 2000  
 Issue1

## TYPE TN SERIES DIAPHRAGM SEALS



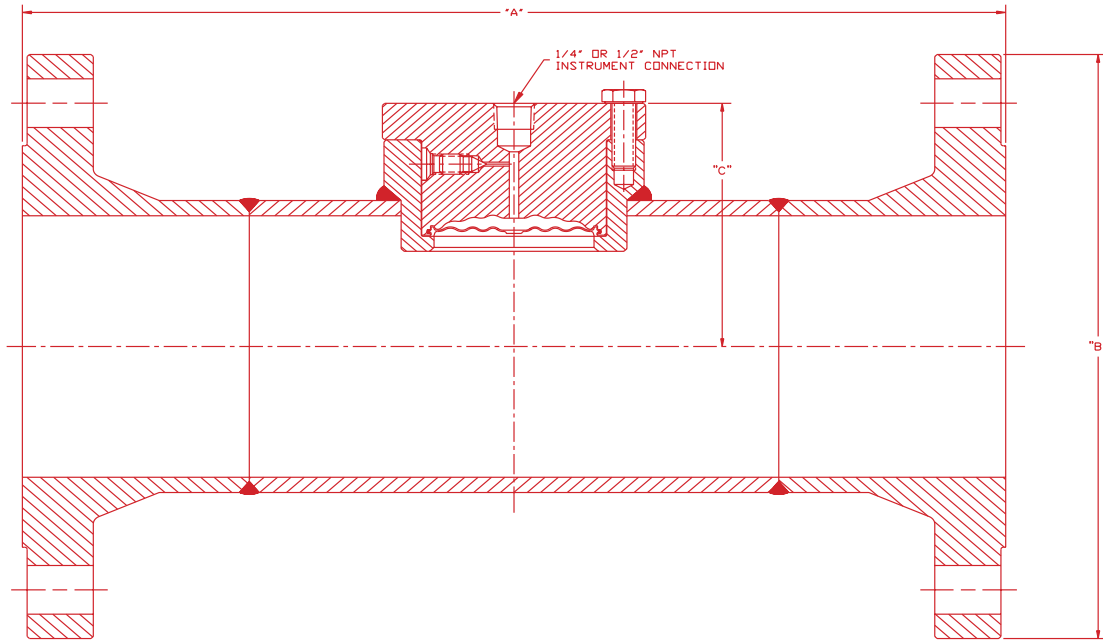
### MODEL TN DIMENSIONS

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	2.03125
1.0	300	9.125	4.875	2.03125
1.5	150	9.125	5.0	2.3125
1.5	300	9.625	6.125	2.3125
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	3.25
3.0	300	10.5	8.25	3.25

# ORDERING INFORMATION

Specification Sheet SS-DS-5300-0600  
 June 2000  
 Issue1

## TYPE TP SERIES DIAPHRAGM SEALS



### MODEL TP 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

# Capillary Systems for Diaphragm Seals

Specification Sheet SS-DS-5300-0600  
June 2000  
Issue1

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

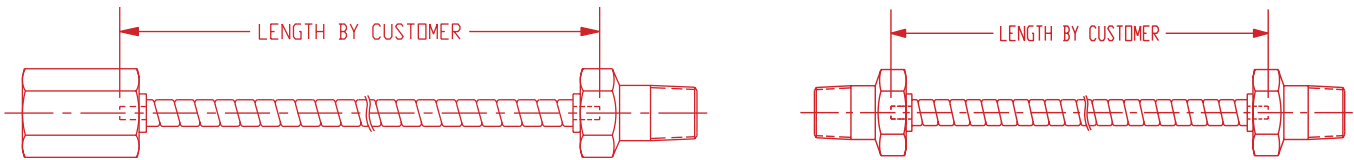
- Gauges
- Controllers
- Transducers
- Transmitters
- Smart Transmitters
- Recorders
- Recording Controllers
- Indicators

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

#### 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

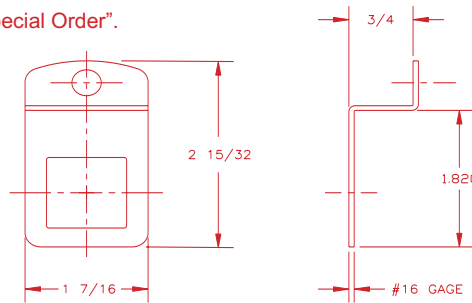
You must specify the complete Capillary System Order Number as a separate line item with your Diaphragm Seal Order Number. If your Diaphragm Seal Order Number has the character "C" in the 14th character space, you must specify the capillary system required using the price sheet. Your purchase order should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



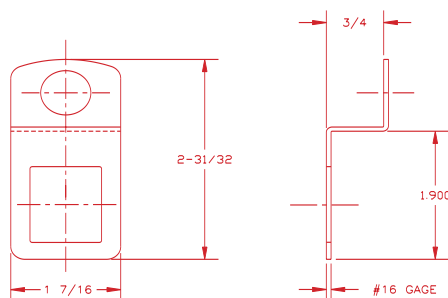
# Diaphragm Seal Accessories

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

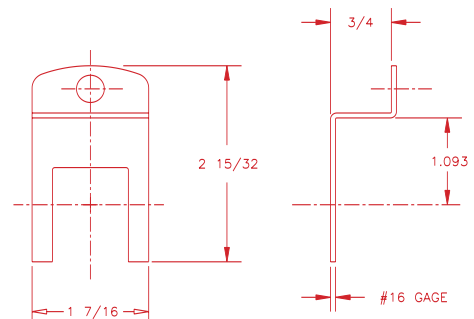
Note:\* Other Sizes and Material Available as "Special Order".



**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 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 Temperature (Designate °F or °C)

(Circle °F or °C)

### 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 \$1 billion. Operations are in North America, Europe and Asia, with about one-third of sales to markets outside the United States.

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