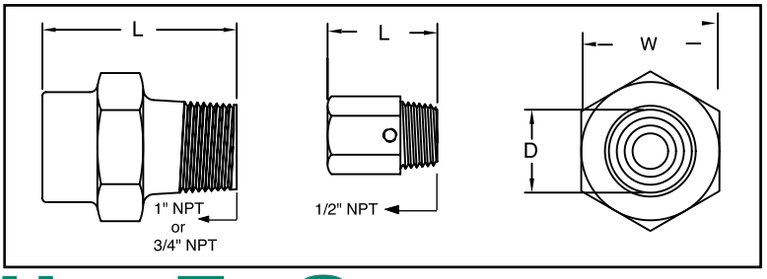
Threaded Flush Face Seals

Dimensional Drawing



REO*TEMP*'s Flush-Face diaphragm seals are useful in applications where a continuous flow of process across the diaphragm is required to prevent solids buildup.

How To Order

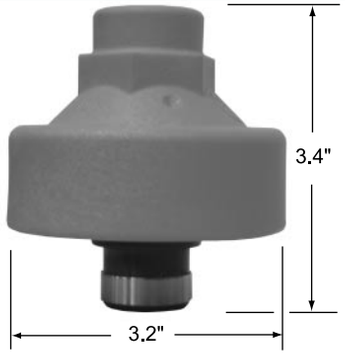
Model	Instrument Conn.	Process Conn.	Max working Pressure (@100F)	Minimum Recommended Pressure Range Gauges (psi) 2 1/2"	4"	Transducers
DSFF21S DSFF41S	1/2" NPT 1/4" NPT	1" NPT	1500 psi	0-15	0-60	30 psi
DSFF23S DSFF43S	1/2" NPT 1/4" NPT	3/4" NPT	2500 psi	0-60	N/A	15 psi
DSFF42S	1/4" NPT	1/2" NPT	5000 psi	0-100	N/A	100 psi
DSF4G1S	1/4" NPT	1" BSPP	8000 psi	0-30	0-60	30 psi

*Note: Use largest diaphragm possible, for smallest temperature effect.

Dimensions (inches)

Process Conn. NPT	Diaphragm Diameter "D"	Overall Length "L"	Width "W"
1"	1.125"	2.65"	1.75"
3/4"	.875"	2.47"	1.75"
1/2"	.675"	1.43"	.875"
1" BSPP	.980"	----	1.62"

Series PLS - Plastic Seals



- **Teflon Diaphragm**
- **Isolate Pressure Instruments from Corrosive Media**
- **High Chemical Resistance**
- **Upper housing is glass filled polypropylene**
- **Heavy Duty Design for Safety**
- **Ideal for waste water treatment**

REO*TEMP*'s Series PLS Plastic Seals allow pressure gauges, switches, or transmitters to be used in corrosive applications compatible with wetted materials.

How To Order

PLS1 — [4] — [4] — [T] — [P]

wetted

Instrument Connection:	Process Connection:	Diaphragm Material:	Lower Housing: Z=PVC, P=Polypropylene, K=Kynar (PVDF)				Options:
			Code	*MWP at 68˚ F	*MWP at 140˚ F	*MWP at 170˚ F	Operating temp. range	
4=1/4 NPT 2=1/2 NPT	4=1/4 NPT 2=1/2NPT	T= Teflon (PTFE) Bonded Hypalon	Z =	150 psi	15 psi	------	14/140˚ F	-Pressure Gauge -Gauge mount & fill (glycerin or silicone)
			P =	150 psi	65 psi	15 psi	46/176˚ F	
			K =	150 psi	105 psi	75 psi	22/248˚ F	

*MWP = Max Working Pressure

DIAPHRAGM SEALS

HOW TO ORDER

TABLE 1 Seal Series	TABLE 2 Seal Size	TABLE 3 Configuration	TABLE 4 Instrument Connection	TABLE 5 Process Connection	TABLE 6 Diaphragm Material	TABLE 7 Lower (process) Housing Material	TABLE 8 Upper (instrument) Housing Material
EXAMPLE:							
W	5	15	4	2	S	S	C

TABLE 1 Seal Series

- **W** - Welded metal diaphragm
- **T** - Teflon diaphragm (high sensitivity, chemical resistance)
- **V** - Viton diaphragm - (most sensitive, for low pressures)

TABLE 2 Seal Size

- **5** - Standard size Seal dia. = 3.25" in threaded models
  Diaphragm dia. = 2.25"
- **6** - Large size - (Preferred for low pressure, hi displacement, or hi sensitivity.) Seal dia. = 4" in threaded models
  Diaphragm dia. = 3"
- **7** - Large size Seal diameter; 5.2"
  Diaphragm dia. = 4.1"

TABLE 4 Instrument Connection

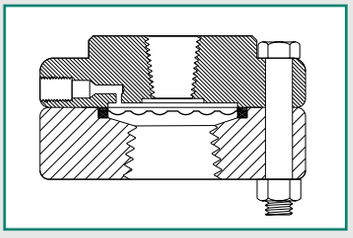
- **4** - 1/4" NPTF
- **2** - 1/2" NPTF

TABLE 5 Process Connection

- **4** - 1/4" NPTF
- **2** - 1/2" NPTF
- **3** - 3/4" NPTF
- **1** - 1" NPTF
- **F** - Flanged - specify flange size and pressure rating (e.g. 1 1/2", 150 lb)
  or insert "V" codes from Table A see p. 24
  (e.g. V41=1 1/2" 150#)

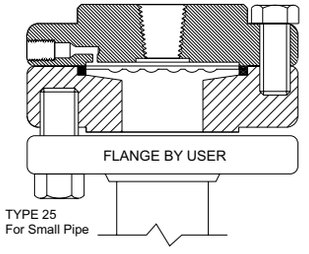
TABLE 3 - Configuration

Threaded, Off-Line



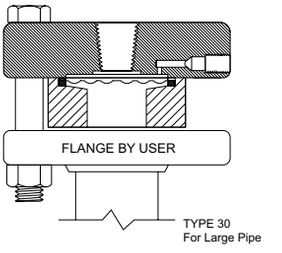
- **10** - Replaceable diaphragm - non cleanout (not available with series "W")
- **11** - Same as 10, with flush port
- **15** - Cleanout style - lower housing can be removed without losing fill. (Available with Series W, T, V)
- **16** - Same as 15, with flush port

Flanged, Off-Line - with cleanout

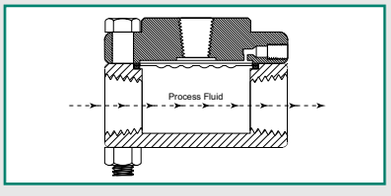


- **25** - for 1/2", 3/4" pipe size
  (1" in size 6)
- **26** - Same as 25, with flush port

- **30** - for 1 1/2" pipe to 3" pipe size
  (1" in size 5)
- **31** - Same as 31, with flush port



In-Line, Flow-Thru - with cleanout



- **35** - Threaded (shown) - for 1/4" to 1" pipe
- **40** - Socket Weld - for 1/4" to 1" pipe
- **45** - Saddle Weld - for 1" to 8" pipe
- **50** - Butt Weld - for 1" to 12" pipe

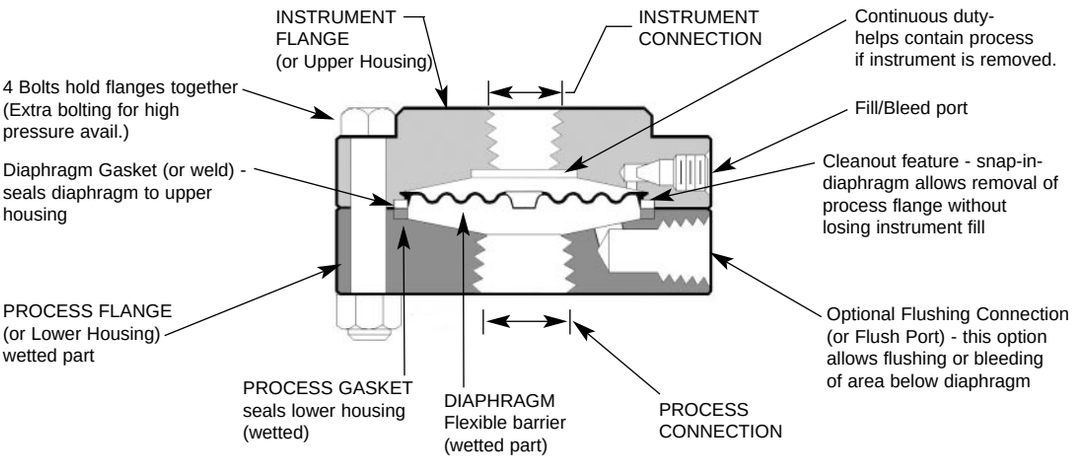


TABLE 6
Diaphragm Material (wetted)

MOST COMMON

- **S** - 316 S.S.
- **T** - Teflon
- * **V** - Viton
- **D** - Carpenter 20
- * **F** - 304 S.S.
- **G** - Hastelloy B
- **H** - Hastelloy C
- **J** - Titanium
- **L** - 316LSS, teflon coated
- **M** - Monel
- **N** - Nickel
- **U** - Tantalum
- **X** - Gold Plated Diaphragm
- * **Y** - Inconel

**Size 5 only.*

TABLE 7
Lower Housing Material (wetted)

MOST COMMON

- **S** - 316 S.S.
- **T** - Teflon
- * **L** - Teflon lined
- **Z** - PVC
- **B** - Brass
- **C** - Steel
- **D** - Carpenter 20
- **F** - 304 S.S.
- **G** - Hastelloy B
- **H** - Hastelloy C-276
- **J** - Titanium
- **K** - Kynar
- **M** - Monel
- **N** - Nickel
- **P** - Polypropylene
- **U** - Tantalum
- **UL** - Tantalum Lined
- **W** - CPVC
- **Y** - Inconel

**Available only on types 25 & 30, 1" and larger.*

TABLE 8
Upper Housing Material (including bolts)

- **C** - Carbon Steel (standard)
- **S** - 316 Stainless
- **F** - 304 Stainless

OPTIONS:

- Hi Pressure bolting
- Non-Stick Teflon coating on metal diaphragm
- Socket weld connections
- High temp. gasketing
- Stainless steel bolting (reduces pressure rating up to 50%)
- Capillary Lines

Fill Fluids

Fill Fluids should be chosen with care. The fluid must be compatible with the process medium in case the diaphragm is ruptured. Compatibility of fill fluid with process is the user's responsibility.

FLUID	TEMPERATURE LIMITS	VISCOSITY, CS, 77° F	NOTES
Silicone, DC 200	-50 to 450° F	20	our standard fill
Silicone, DC 704	+50 to 600° F	44	Hi-temp fill
Silicone, DC 710	+30 to 700° F	500	Hi-temp fill
Neobee M-20	-4 to 320° F	10	food grade
Glycerin	+30 to 300° F	1110	for food; not recomm. for capillary
Halocarbon	-40 to 400° F	6	inert, for use with oxidizers (must not contact Al, Mg)

not to be used with strong oxidizers, such as chlorine, oxygen, etc.

Other fills available: consult factory.

Credits: Viton, Teflon, Kynar, TM DuPont, Inc.; Carpenter 20 - TM Carpenter Steel Co.; Inconel, Monel - TM Huntington Alloys, Inc.; Hastelloy - TM Cabot Corp.; Halocarbon - TM Halocarbon Corp.

Flush Face Flanged Seals

REO*TEMP*'s Flush-Face diaphragm seals are useful in applications where a continuous flow of process across the diaphragm is required to prevent solids buildup, and a one-piece, all-welded construction is desired.

- **Flange type with bolt holes**
- **Seal is bolted to raised-face flange in process**
- **Center instrument exit**
- **Instrument can be mounted directly or connected via capillary**
- **Ideal for gauges, transmitters, or dP transmitters**

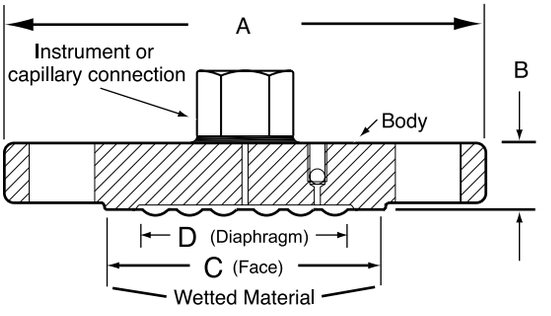


Table Ⓐ
Process/ Instrument Connection Codes

Process Connection		Instrument Connection		
ANSI RFF		1/4" NPT	1/2" NPT	Welded Capillary
1"	150#	V21	V22	W22
1 1/2"		V41	V42	W42
2"		V51	V52	W52
3"		V61	V62	W62
4"		V71	V72	W72
1"	300#	V23	V24	W24
1 1/2"		V43	V44	W44
2"		V53	V54	W54
3"		V63	V64	W64
4"		V73	V74	W74
1 1/2"	600#	V45	V46	W46
2		V55	V56	W56
3		V65	V66	W66

Other configurations available - call factory.

Table Ⓑ Dimensions (inches)

Process Connection (ANSI RFF)		A	B*	C	D (nominal)
1 1/2"	150#	5.00	.69	2.88	1.5
2"		6.00	.75	3.62	2.4
3"		7.50	.94	5.0	3.5
4"		9.0	.94	6.19	3.5
1 1/2"	300#	6.12	.81	2.88	1.5
2"		6.50	.88	3.62	2.4
3"		8.25	1.12	5.0	3.5
4"		10.0	1.25	6.19	3.5
1 1/2"	600#	6.1	1.13	2.88	1.5
2"		6.5	1.25	3.62	2.4
3"		10.0	1.50	5.0	3.5

*Note: For insert body design (for exotic wetted parts), add .03 to "B"

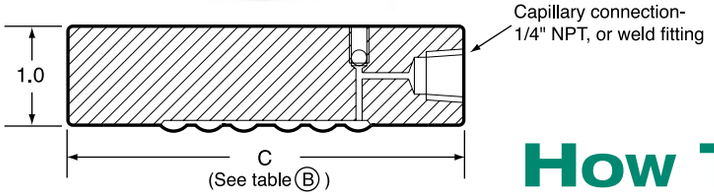
How To Order

M9 — [Seal type: BF] — [Flange Process Connection: V41] — [Welded Diaphragm Material (wetted): S] — [Body Material: S] — [Options]

Seal type	Flange Process Connection	Welded Diaphragm Material (wetted)	Body Material (wetted (BF only))	Options
BF = Std. Seal (body is Wetted) **BRF** = Integral face/Diaphragm (Body material is not wetted)	Choose Flange Connection Code from table Ⓐ example: **V41** = 1/4" NPT x 1 1/2" 150#	**S** = 316SS **G** = Hast B2 **H** = Hast C276 **Y** = Inconel 600 **M** = Monel 400 **N** = Nickel 200 **U** = Tantalum **J** = Titanium (requires titanium body)	**C** = Carbon Steel **S** = 316SS	**H** = Handles (for flanges over 600#)

REOTEMP INSTRUMENTS
Telephone: (800) 648-7737 FAX (858) 784-0720 • sales@reotemp.com • www.reotemp.com

Pancake (Wafer) Seals



- **Flange type - no bolt holes.**
- **Mounts between open process flange and cover flange**
- **Instrument connected via side capillary connection**
- **Ideal for gauges, transmitters, or dP transmitters**

How To Order

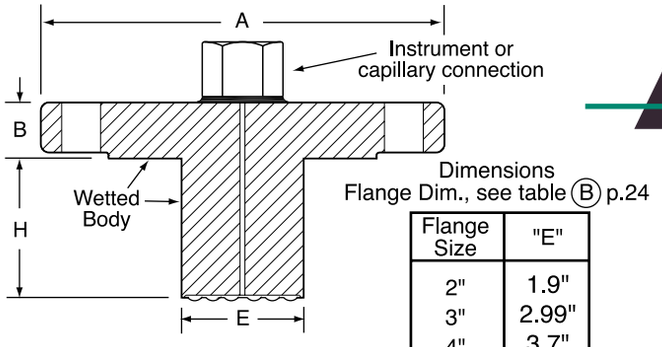
M9 — [Diaphragm Style] — [Flange Size] — [Instrument Connection] — [Diaphragm Material] — [Body Material]

Diaphragm Style	Flange Size	Instrument Connection	Diaphragm Material (wetted)	Body Material (wetted)
BC = Diaph. + Body wetted	**2** = 2" (150# to 2500#)	**4** = 1/4" NPTF Capillary fitting	**S** = 316SS	**S** = 316SS
BRC = Body not wetted	**3** = 3" (150# to 2500#)	**W** = 10 mm Capillary weld fitting	**H** = Hast . C	**C** = Carbon SH.
	4 = 4" (150# to 1500#)		**M** = Monel	**H** = Hast. C
			U = Tantalum	**M** = Monel
			J = Titanium	**J** = Titanium

(Note: Titanium diaph. requires titanium body)

To Order Cover Flange: M9XCF- (2",3", or 4") **-** (150# to 2,500#) **-** (**S** = 316SS, **C** = Carbon Steel) example: **M9XCF- 2" - 150#- S**

Extended Flanged Seals



Dimensions
Flange Dim., see table Ⓑ p.24

Flange Size	"E"
2"	1.9"
3"	2.99"
4"	3.7"

- **Standard & Custom Lengths**
- **Ideal for highly viscous and dry powder applications**
- **Eliminates dead space in piping**
- **Used for flush mounting in thick-walled vessels**

How To Order

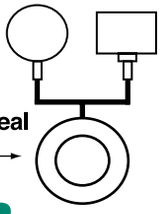
M9 EXT — [RF Flange Size/ Process Conn.] — [Welded Diaph. Material] — [Body/Face Material] — [Flange Material] — [Extension Length (H)]

RF Flange Size/ Process Conn.	Welded Diaph. Material (wetted)	Body/Face Material (wetted)	Flange Material (wetted)	Extension Length (H)
See Table Ⓐ, p. 24 Example V52 = 2", 150#, 1/2" NPT W52 = 2", 150#, welded capillary connection Flange Sizes: 2", 3", 4" Rating: 150#, 300#, 600#	**S** = 316SS **H** = Hast C 276 **F** = 304SS **M** = Monel 400 Other materials available	**S** = 316SS **F** = 304SS **H** = Hast C 276 **M** = Monel	**S** =316SS **C** = Carbon Steel	**2** = 2.0" **4** = 4.0" **6** = 6.0"

Service Inspired, Quality Driven

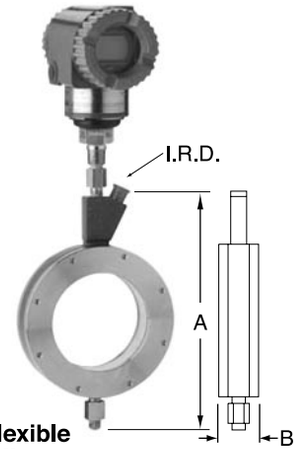
ISO - RING SEAL

- **In-Line Flow-thru design**
- **Mounts between pipe flanges**
- **Ideal for waste water, slurries, abrasives**
- **Tough but sensitive elastomer lining**
- **Can mount multiple instruments on one seal**



Dimensions ISO-Ring

Pipe Size	A	B	Approx. Shipping Wt.
2"	6- 15/16"	2"	3 lbs
3"	8- 3/16"	2"	6 lbs
4"	9"	1- 1/2"	8 lbs
5"	10- 1/4"	1- 1/2"	10 lbs
6"	11- 3/16"	1- 1/2"	12 lbs
8"	13- 3/8"	1- 1/2"	16 lbs
10"	15- 9/16"	1- 1/2"	20 lbs
12"	17- 9/16"	1- 3/4"	25 lbs
14"	19- 15/16"	1- 3/4"	50 lbs
16"	21- 15/16"	2"	60 lbs
18"	24- 3/16"	2"	70 lbs
20"	26- 1/16"	2"	80 lbs



HOW TO ORDER

OR — R — CS — 1 — N — 020 — 1

Wafer or Bolt Thru	Body Material	End Flange Material (wetted)	Type	Pipe Size	Inner Flexible wall (wetted)
R = Wafer (mounts between two existing flanges)	**CS** = Carbon Steel	**1** = Carbon Steel	**N** = Without IRD**	**010** = 1"	**080** = 8"	**1** = Buna-N (up to 225° F)
B = Bolt - thru (with complete flange)	**SS** = 316SS	**2** = 316SS	**D** = With IRD**	**015** =1.5"	**100** = 10"	**2** = Viton (up to 350° F)
		3 = Carbon Steel with Teflon envelope	**IRD: Instrument Removal Device - Permits easy removal of instrumentation for calibration, repair, or replacement without the need to shut down process flow	**020** = 2"	**120** = 12"	**3** = Teflon (up to 350° F)
		4 = 316SS with Teflon envelope		**025** = 2.5"	**140** = 14"	**4** = Silicone (up to 450° F)
		5 = CPVC		**030** = 3"	**160** = 16"	**5** = White Neoprene (up to 225° F)
				040 = 4"	**180** = 18"	**6** = Natural rubber (up to 225° F)
				050 = 5"	**200** = 20"	
				060 = 6'		

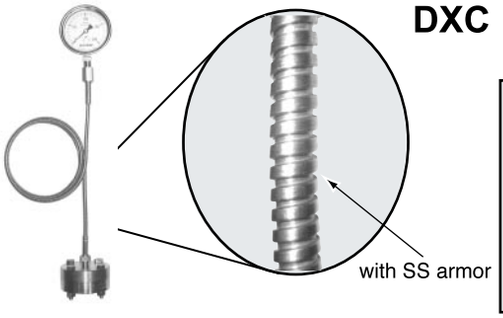
DIAPHRAGM SEAL ACCESSORIES

Flushing Ring

DXFR — 1.5 — 41 — S

1.5	41	S (wetted)
1.5 = 1 1/2"	**41** = 1/4" NPTF (one port)	**S** = 316SS
2 = 2"	**42** = 1/4" NPTF (two ports)	**F** = 304SS
3 = 3"	**21** = 1/2" NPTF (one port)	**H** = Hast C.
4 = 4"	**22** = 1/2" NPTF (two ports)	**M** = Monel

Stainless Capillary (2.0mm i.d.)



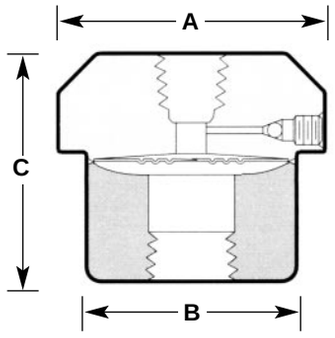
DXC — 4F — 4M — 05 — A

Instrument Fitting	Seal Fitting	Length	Protection
4M = 1/4" NPTM	**4M** = 1/4" NPTM	**05** = 5ft.	**A** = SS Armor
4F= 1/4" NPTF	**4F** = 1/4" NPTF	**06** = 6ft	**B** = bare
2M = 1/2" NPTM	**2M** = 1/2" NPTM	**10** = 10ft	
2F = 1/2" NPTF	**2F** = 1/2" NPTF	etc.	
W = weld fitting (10mm dia.)	**W** = weld fitting (10mm dia.)		

MINI SEALS

MINI-SEALS are all-welded, gasketless, threaded off-line seals. The mini-seal is an economical choice for isolation of smaller gauges, or where high sensitivity is not required.

MINI SEAL



	A	B	C	Min. Range
4G	1.73”	1.5”	1.5”	0-100 psi
6G	2.25”	1.95”	1.6”	0-15 psi
4H	2.0”	1.75”	1.6”	0-100 psi

HOW TO ORDER:

Size:
- **4G** - Low volume, for up to 3 1/2” gauge. Max 2000 psi @ 100° F
- **6G** - Std. volume with larger diaphragm, for up to 4 1/2” gauge. Max 1,000 psi
- **4H** - High Pressure, for up to 3 1/2” gauge. Max 5,000 psi @ 100° F

Instrument Connection (Female NPT):
- **4** = 1/4” NPT
- **2** = 1/2” NPT

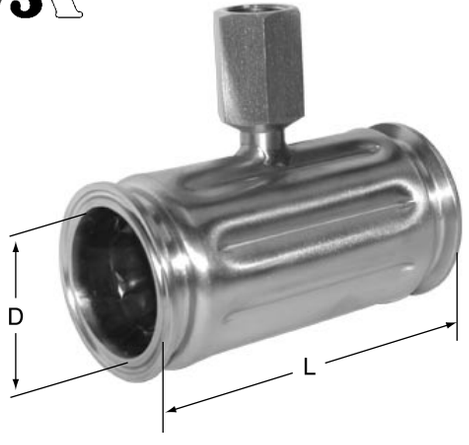
Process Connection (Female NPT):
- **4** - 1/4” NPT 4M = 1/4” NPT Male
- **2** - 1/2” NPT 2M = 1/2” NPT Male

Material:
- **S** = 316 Stainless (Standard)
- **H** = Hastelloy C
- **F** = 304 Stainless

Options:
- **F** = Flushing Connection

MS - 4 G - 4 4 S

SANITARY IN-LINE PRESSURE SEALS



TO ORDER: Tri-Clamp type, 1/4" NPT conn., 316SS

Pipe Size (D)	Tri-Clamp Conn.	Part Number	L (length)
1/2"	1/2"	ILS-TC05	7.87"
3/4"	3/4"	ILS-TC75	4.33"
1"	1"	ILS-TC10	4.33"
1 1/2"	1.5"	ILS-TC15	4.33"
2"	2"	ILS-TC20	4.33"
3"	3"	ILS-TC25	2.36"

REO*TEMP* IN-LINE SEALS are the solution to many difficult pressure measurement applications. These seals are designed to 3-A standards, and allow unobstructed flow-through of process media.

Specifications:

Pipe material:	316LSS
Diaphragm Material:	316LSS standard (other material available on request)
Instrument Connections:	1/4" NPT std., (1/2" NPT, BSP threads cooling element or capillary line available)
Pipe connections:	Tri-clamp, (ANSI Flange (or metric connection types avail. - consult factory)
Pressure Limits:	600 psi (other styles to 6,000 psi)
Pipe sizes:	1/2" to 4"
Filling Fluids:	Glycerin, vegetable oil or any food - compatible fluid
Leak checking:	All seals are helium leak tested

OTHER DIAPHRAGM SEALS

REO*TEMP* provides many special-use or custom diaphragm seals. Consult factory for specific application assistance.

SADDLE

- Welded In-Line Flow-Thru
- 3" and Larger Process Pipe Sizes
- 2.4" Diaphragm

SANITARY SEAL

- 3-A Sanitary Seal
- Tri-Clamp sizes 1 1/2", 2", 3", 4"

CHERRY BURELL "I" Line

- Sanitary Seal
- 1.5", 2.0", 3.0" Sizes

CPM FITTING SEAL

- Eliminates/ Reduces Process "Dead-Leg"
- Available in Triclamp or Auto-Weld Styles
- 316LSS ID-15RA, EP Finish

Tree Seal Assembly

- "Tree" mounting of multiple instruments on one seal

IN-LINE FLOW THRU

- Unobstructed Flow of Process media
- No Recesses or Constrictions
- "ANSI" Flange Connections

BUTTON SEAL

- For High Pressures
- 0.9" Dia. Diaphragm
- Connections: Homogenizer, Flanged, Threaded

SANITARY TANK SPUD

- 2.0" & 6.0" Extensions
- Weld Spud Available

WEDGE TYPE SEAL

- Flow Meter Seal
- Wedge Type Connection

DIAPHRAGM SEAL OPTIONS AVAILABLE

- Calibration Rings for Flanged Seals
- Gold Plated Diaphragms
- Low Volume Nipples
- Capillary

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