

## FLANGED FLOW THRU DIAPHRAGM SEAL

Reotemp's Flanged Flow Thru Diaphragm Seals are ideal for installation in applications requiring little interruption to process flow. This style flow thru diaphragm seal can be made to specific face-to-face dimensions in order to fit existing piping structures.



W575

DIAPHRAGM SEALS

### FEATURES / BENEFITS

- Welded Diaphragm for Maximum Durability
- Wide Variety of Diaphragm and Material Options
- Continuous Flow Design Reduces Clogging Potential; Ideal for Slurries or High Viscosity Fluids
- Easy Cleanout of Diaphragm Cavity without Compromising Filled System

### SPECIFICATIONS

<b>Diaphragm</b>	316SS, Hast C-276, Tantalum, Monel, or others
<b>Lower Housing</b>	316SS, Hast C-276, Monel, or others
<b>Gasket</b>	PTFE, Grafoil, or Klinger
<b>Upper Housing</b>	316SS Standard

#### Process Temperature Limits

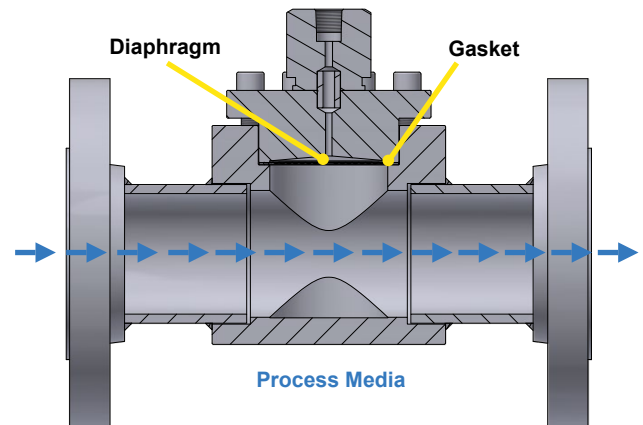
	W575
PTFE Gasket	-110/350°F
Klinger Gasket	-110/450°F
Grafoil Gasket	-40/750°F

<b>Ambient Temperature Limits</b>	Determined by the pressure instrument.
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<b>Max Working Pressure</b>	The Maximum Working Pressure of the Diaphragm Seal is Based on the Flange Rating, Pipe Schedule and Material. Contact Factory for Details
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#### Minimum Recommended Span

	W575
2.5" & 3.5" Gauges	15 psi
4", 4.5", & 6" Gauges	30 psi
Transmitter (Gauge Pressure)	150" H <sub>2</sub> O
Transmitter (Differential Pressure)	300" H <sub>2</sub> O <sub>d</sub>
Differential Pressure Gauge (D40/42 Only)	N/A



Need a replacement upper housing only? See the Saddle Seal Datasheet - Model W545

## FLANGED FLOW THRU DIAPHRAGM SEAL

**HOW TO ORDER:** Choose options to build a part number. For example: **W5752R221S4SSS-SKDTD-AS-PP**

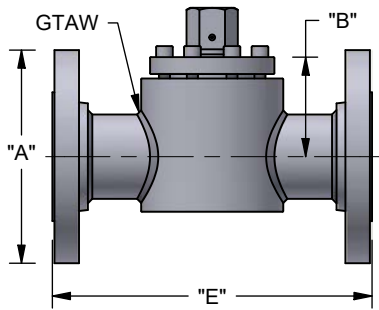
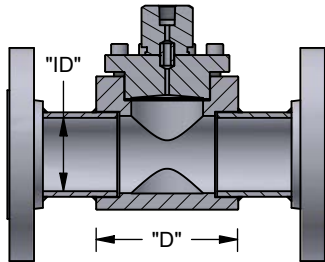
SEAL TYPE	INSTRUMENT CONNECTION	SEALING TYPE	PIPE SIZE	FLANGE CLASS	END-TO-END	PIPE SCHEDULE	DIAPHRAGM MATERIAL	LOWER HOUSING
<b>W575</b> = Flanged Flow Thru; Welded Diaphragm	<b>2</b> = 1/2" FNPT <b>4</b> = 1/4" FNPT Transmitter Connection	<b>R</b> = Raised Face <b>J</b> = Ring Type Joint <b>F</b> = Flat Face	<b>0</b> = 1/2" <b>T</b> = 3/4" <b>1</b> = 1" <b>H</b> = 1.5" <b>2</b> = 2" <b>3</b> = 3" <b>4</b> = 4"	<b>1</b> = 150# <b>3</b> = 300# <b>6</b> = 600# <b>9</b> = 900#/1500 <b>5</b> = 2500# <b>7</b> = 900# <b>8</b> = 1500#*	<b>S</b> = Standard "E" Dimension Per Drawing on Datasheet <b>Q</b> = Custom Length	<b>1</b> = Schedule 10 <b>4</b> = Schedule 40 <b>8</b> = Schedule 80 <b>6</b> = Schedule 160 <b>9</b> = Schedule XXS	<b>S</b> = 316SS <b>U</b> = Tantalum <b>M</b> = Monel (A400) <b>D</b> = Carpenter 20 <b>H</b> = Hast C-276 <b>Y</b> = Inconel (625) <b>N</b> = Nickel (201) <b>2</b> = Duplex (2205) <b>J</b> = Titanium*  *Requires Titanium Upper Housing	<b>S</b> = 316SS <b>M</b> = Monel (A400) <b>H</b> = Hast C-276 <b>Y</b> = Inconel (625) <b>N</b> = Nickel (201) <b>2</b> = Duplex (2205) <b>J</b> = Titanium  Wetted

DIAPHRAGM SEALS

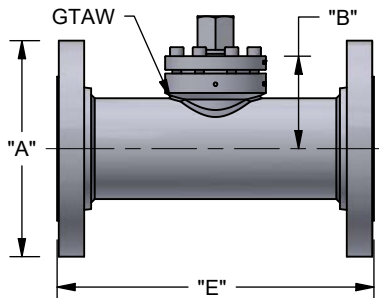
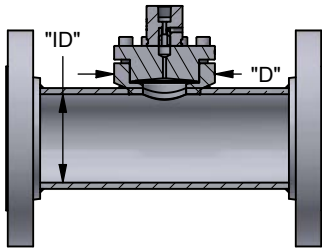
UPPER HOUSING	BOLTING	GASKET	INSTRUMENT MOUNT	FILL FLUID	OPTIONS
<b>S</b> = 316SS <b>F</b> = 304SS <b>J</b> = Titanium*  *Requires Titanium Diaphragm	<b>-8</b> = Carbon Steel (Grade 8) <b>-T</b> = Stainless Steel (18/8) <b>-S</b> = Stainless Steel (316)  *Bolts provided are 5/16"-24 Fine Thread	<b>K</b> = Klingler (C-4401) <b>T</b> = PTFE <b>G</b> = Grafoil  See Page 85 for Complete Gasket Selection Guide	<b>DTD</b> = Direct Mount, Threaded <b>DWD</b> = Direct Mount, Welded <b>RTR</b> = 6" Cooling Tower <b>STW</b> = 3" Cooling Standoff  <i>Remote Mount</i> <b>A??</b> = Armored Capillary, Threaded <b>B??</b> = Armored Capillary, Welded <b>P??</b> = PVC Coated Armor, Threaded <b>W??</b> = PVC Coated Armor, Welded  Note: ?? = Length in feet (e.g. 05 = 5 feet)  <i>Tree Mount</i> <b>LVC</b> = Low Volume Goal Post Assembly; Vertical Mount; Gauge/Switch <b>MVG</b> = Compact Tree Assembly; Vertical Mount; Gauge/Switch <b>YYY</b> = Dry Seal, No Instrument	<i>Common Fills</i> <b>-AS</b> = Silicone DC200 <b>-AG</b> = Glycerin USP <b>-BP</b> = Propylene Glycol <b>-XX</b> = No Fill Fluid	<b>-PP</b> = Pulse Plus™ (Pulsation Protection) <b>-OX</b> = Cleaned for Oxygen Service <b>-AU</b> = Gold-Plated Diaphragm <b>-TC</b> = Teflon-Coated Diaphragm <b>-TS</b> = SS Tag (1-10 Character) <b>-PM</b> = Positive Material Identification Certification <b>-MR</b> = Mill Test Report <b>-HT</b> = Hydrostatic Test per ASME B31.3

## FLANGED FLOW THRU DIAPHRAGM SEAL

DIAPHRAGM SEALS



STYLE A



STYLE B

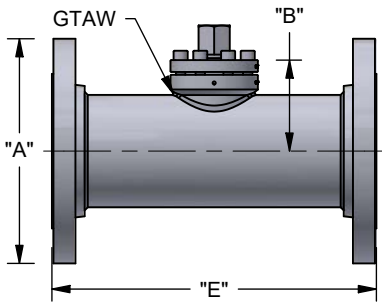
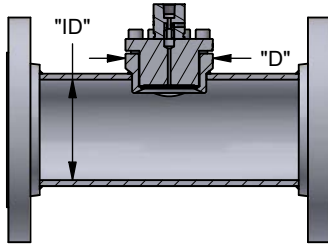
W575 Style A

Size	Flange Rating	A	B	E	D
1/2"	150	3.5"	2.7"	7"	3.5"
1/2"	300	3.75"	2.7"	7"	3.5"
3/4"	150	3.88"	3"	7"	3.5"
3/4"	300	4.63"	3"	7"	3.5"
1"	150	4.25"	3.2"	7"	3.5"
1"	300	4.88"	3.2"	8"	3.5"
1 1/2"	150	5"	3.9"	8"	4.0"
1 1/2"	300	6.13"	3.9"	9"	4.0"
2"	150	6"	4.4"	9"	4.0"
2"	300	6.5"	4.4"	10"	4.0"

W575 Style B

Size	Flange Rating	A	B	E	D
3"	150	7.5"	3.3"	11"	3.5"
3"	300	8.25"	3.3"	12"	3.5"

FLANGED FLOW THRU DIAPHRAGM SEAL

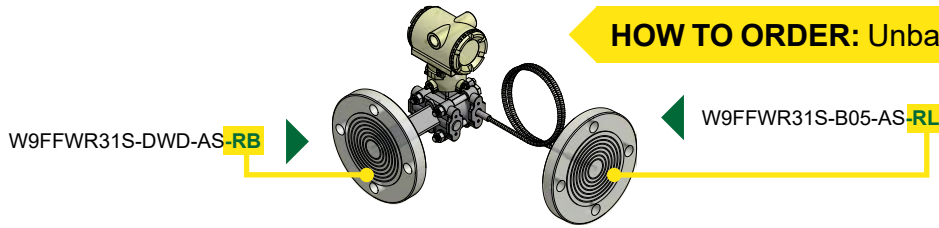


STYLE C

W575 Style C					
Size	Flange Rating	A	B	E	D
4"	150	9"	3.7"	13"	3.5"
4"	300	10"	3.7"	14"	3.5"
6"	150	11"	4.7"	16"	3.5"
6"	300	12.5"	4.7"	17"	3.5"
8"	150	13.5"	5.7"	16"	3.5"
8"	300	15"	5.7"	17"	3.5"

## SMART TRANSMITTER ATTACHMENT

### HOW TO ORDER: Unbalanced System Example

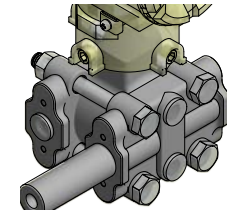
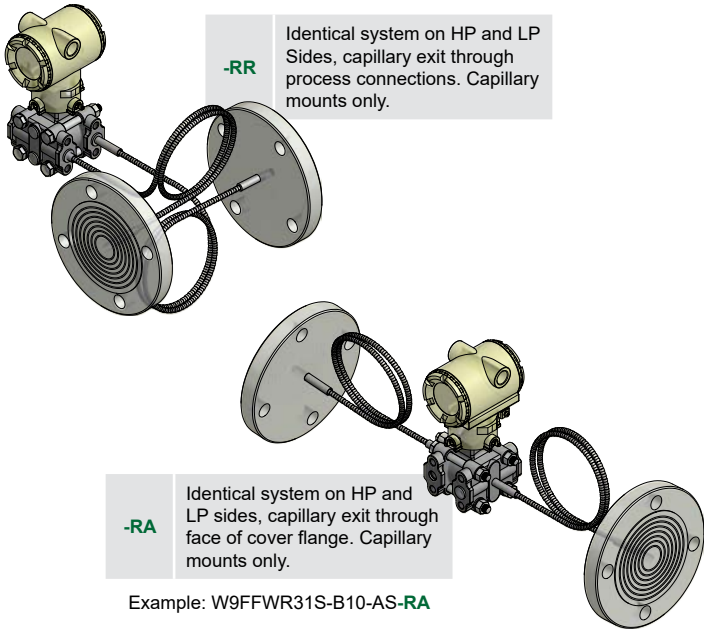


### DIFFERENTIAL PRESSURE ASSEMBLY

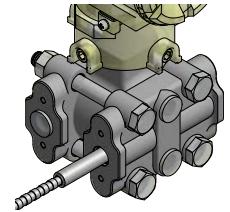
**Balanced System** A complete assembly with one part number that includes two diaphragm seals, two capillaries, two fills, and one complete assembly calibration certificate.

**Unbalanced DP System** Where seal, mount, capillary, or fill is not identical. A complete assembly includes one diaphragm seal on the HP side AND one diaphragm seal on the LP side.

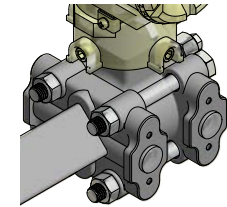
DIAPHRAGM SEALS



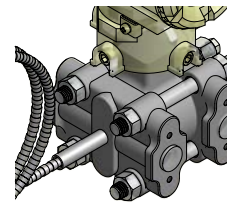
**-RH** Mount via Process Connections  
Side High Pressure



**-RL** Mount via Process Connections  
Side Low Pressure



**-RB** Mount via Face of Cover Flange  
Side High Pressure



**-RC** Mount via Face of Cover Flange  
Side Low Pressure

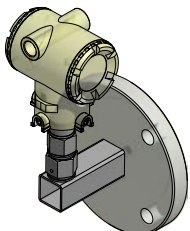
### GAUGE PRESSURE ASSEMBLY

#### In Line Pressure Transmitter

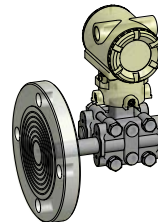
**Traditional Mount for Gauge Pressure** Seal mount on one side only, other side is vented.



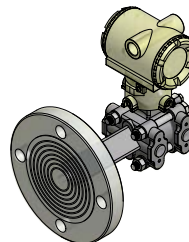
**-R1** Mount to In-Line Gauge Pressure Transmitter. Direct or remote mount.



**-R4** Horizontal Mount (Tank Mount) to In-Line Gauge Pressure Transmitter. Direct mount only.



**-R2** Instrument mount through process connections, HP Side. Use "R3" if mounting to LP side

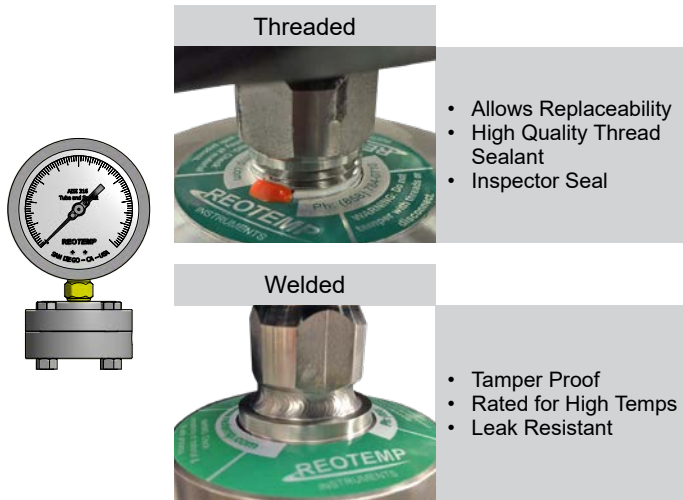


**-R8** Instrument mount through face of cover flange, HP Side. Use "R9" if mounting to LP Side

## INSTRUMENT MOUNTING CONFIGURATIONS

### DIRECT MOUNT

Direct Mounting a pressure gauge, switch, or transmitter is the most common diaphragm seal assembly.

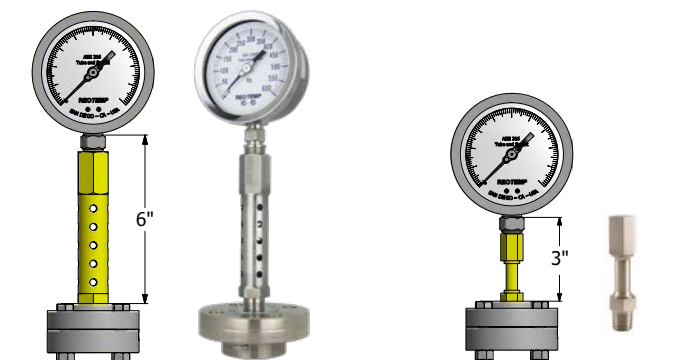


Code	Description	Max. Temp
-DTD	Threaded Instrument Connection	400°F
-DWD	Welded Instrument Connection	600°F

**Assembly Notes:** Welded connection recommended for pressure exceeding 1,500 psi for purposes of leak prevention.

### COOLING ELEMENTS

Used in either high temp or cold temp applications, Cooling Elements mounted above diaphragm seals quickly normalize fluid temperature toward ambient. This protects the pressure instrument while still maintaining the convenience of a direct mount.

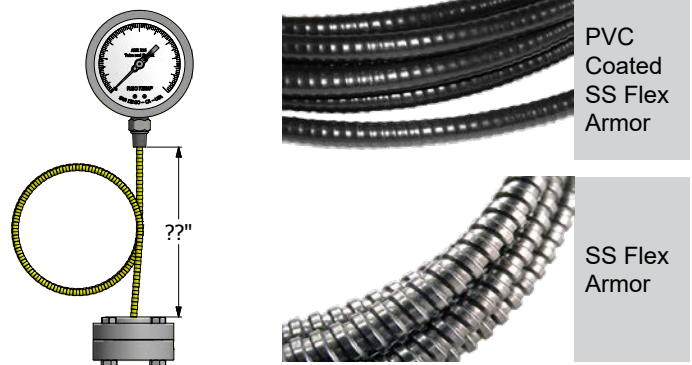


Code	Description	Max. Temp
-RTR	6" Cooling Tower	750°F
-STW	3" Cooling Standoff	600°F

**Assembly Notes:** Cooling elements are welded to diaphragm seal. Instruments are threaded to cooling element unless specified. All lengths are nominal.

### REMOTE MOUNT

Remote Mounting a pressure instrument using flexible capillary is a common mounting method when the point of measurement is in a hazardous or inconvenient location.



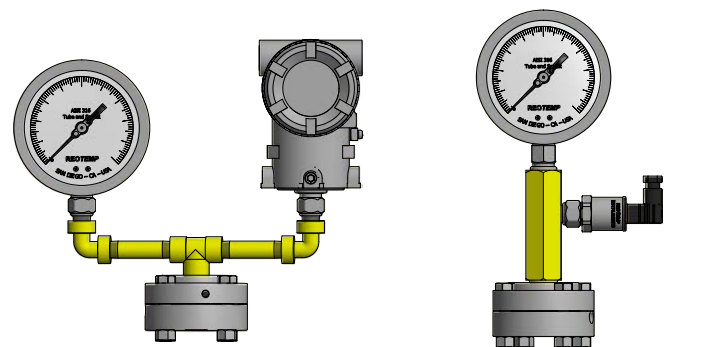
Code	Description	Max. Temp
-P??	PVC Coated SS Armor, Threaded to Seal	400°F
-W??	PVC Coated SS Armor, Welded to Seal	600°F
-A??	SS Flexible Armor, Threaded to Seal	400°F
-B??	SS Flexible Armor, Welded to Seal	750°F

Note: ?? = Length in feet (e.g. 05 = 5 feet)

**Assembly Notes:** Capillary has a 2mm inner diameter unless specified differently by customer. Ambient temp limit of PVC coated armor is 250°F. Standard instrument connection is threaded (Smart Transmitters are welded), unless specified by customer.

### TREE ASSEMBLIES

Tree Assemblies offer the ability to mount two pressure instruments onto one diaphragm seal, allowing the user to gain both a local indication and a remote signal without adding an additional pipe insertion.



Code	Description	Max. Temp
-TRE	Goal Post, Low Pressure Assembly (Max. 150 psi)	400°F
-TRX	Goal Post, Heavy Duty (Max. 3,000 psi)	600°F
-TRM	Compact Tree Assembly (Max. 3,000 psi)	600°F

**Assembly Notes:** Threaded joints are fully welded for consistent instrument orientation. Instrument connections are threaded unless specified by customer. Diaphragm seal must displace enough fluid to drive both instruments.

DIAPHRAGM SEALS

## GASKET SELECTION GUIDE

Gasket selection depends on your process temperature, reactivity and other variables. For most applications Klinger is standard however suitability for process is determined by the customer.

### GASKET SELECTION CHART

Code	Material	Maximum Temperature (°F)	Minimum Temperature (°F)	Description	Common Applications	Cost
K	Klinger C4401	500°F	-110°F	Compressed aramid synthetic fiber reinforced with a nitrile binder. Excellent sealability and general purpose use	Mild inorganic and organic acids, concentrated and diluted alkalis, water, brine, industrial gases, oils, refrigerants, petroleum and derivatives	-
5	Silver Ag 3N5	750°F	-150°F	(Preferred choice for high temp, low temp, and high pressure applications) 99.95% pure silver (Ag) sheet. Exceptional sealability and use in extreme temperature and pressure applications. Only gasket that can be re-used in certain conditions	Extreme Temperatures and Pressures, Cryogenics, Nuclear, Deep Vacuum, Solvents, Alcohols, Steam, Silicone, Vegetable and Petroleum oils, Fuels	\$\$
Y	Gylon 3510	500°F	-150°F	(Preferred choice for most corrosive applications) PTFE filled with barium sulfate. Good Sealability as well as improved relaxation and cold flow resistance versus PTFE	Strong caustics, hydrocarbons, steam, chlorine, moderate acids, cryogenics, aluminum fluoride	\$\$
T	Virgin PTFE	400°F	-150°F	Polytetrafluoroethylene Resin. Exceptional chemical resistance. Poor cold flow and relaxation properties	Inert to nearly all chemicals	\$
Z	Kalrez	620°F	30°F	High temperature resistant perfluoroelastomer with excellent tensile strength, sealability, and elasticity	Oxidizing and Reactive Chemicals, Steam, Alcohols, Aldehydes, Ethers, Esters, Ketones, Acids and Bases	\$\$
C	Top Chem 2000	450°F	-150°F	PTFE filled with silicone carbide (SiC). Excellent Sealability and improved relaxation resistance over PTFE	Strong acids and alkalines, Steam, Motor fuel and oils, Aromates, Esters, Ketones, Alcohols	\$\$
M	EPDM	200°F	-20°F	Ethylene Propylene Diene Monomer Rubber. Good elasticity, Tensile Strength, and Sealability. Exhibits limited elevated temperature resistance.	Silicone and Vegetable oils, Ketones, Esters, Alkalies, Most Acids, Water	\$
V	Viton	400°F	-10°F	Fluorinated synthetic polymer or fluoroelastomer that contains excellent elasticity, tensile strength, and sealability as well as good medium temperature resistance	Variety of acids and bases, animal and vegetable oils, hydrocarbons	\$
G	Grafoil	750°F	-40°F	Made of pure compressed homogenous graphite flake with a corrosion inhibitor. Contains no binders or resins. Very fragile with very low tensile strength and elasticity	Elevated temperature processes, aggressive and corrosive chemicals, Nuclear	\$
B	Buna-N	200°F	-20°F	Also known as NBR, is a black nitrile synthetic rubber compound with excellent elasticity, tensile strength, and abrasion resistance, but exhibits poor elevated temperature characteristics	Petroleum-Based and Synthetic Oils, Alcohols, Hydraulic Fluids, Fuels, Water, Silicone Greases, Solvents	\$

DIAPHRAGM SEALS

**Re-use:** Re-use subject to gasket condition and presence of corrosion or pitting on mating parts. Only recommended for up to three re-use cycles. Re-assembly of the diaphragm seal to be performed per Reotemp standards and procedures to ensure proper seating.

**Max Working Pressure:** Gasket Selection does not impact the MWP of the configured diaphragm seal.

**Process Compatibility:** The listed common applications are to be used as a guide only. Actual chemical compatibility of the process with the chosen gasket material should be approved by qualified personnel.