

## HIGH ACCURACY ALL-WELDED SEAL GAUGE

DIAPHRAGM SEALS



Dials



Custom Logo

### FEATURES / BENEFITS

- Extra-Large Diaphragm for High Accuracy, High Displacement, or Low Pressure Applications
- Reduce/Eliminate Fugitive Emissions
- Eliminate Potential Leak Points
- Tamper Resistant
- No Internal Gasket, Ideal for High Temperatures and Long Life



### SPECIFICATIONS

<b>Accuracy</b>	With appropriate pressure range, seal gauge accuracy is gauge accuracy plus 0.5%. (May be subject to thermal error. Consult factory with questions.)
<b>Ambient Limits</b>	-40°F/150°F
<b>Process Limits with Diaphragm Seal</b>	-40°F/400°F (Direct Mount)* -110°F/750°F (Remote Mount or Cooling Tower)* *Exact limits depend on diaphragm seal and fill fluids.
<b>Wetted Materials</b>	Diaphragm and Lower Connection: 316LSS, Hast. C-276 and Others Gasket: None
<b>Lens</b>	Tempered Safety Glass, Plastic or Laminated Safety Glass
<b>Other Materials</b>	Upper Housing: 316SS, Monel and Others
<b>Fillable</b>	Yes (Ranges of 10 psi and Higher)
<b>Environmental Protection</b>	NEMA 4X/IP65 (Ranges of 10 psi and Higher)
<b>Weight</b>	5-8 lbs (Seal Only)
<b>Max Working Pressure (Threaded)</b>	500 psi
<b>Max Working Pressure (Flanged)</b>	Flange Rating (Max of 750 psi)

\*Total gauge span is additive of negative and positive pressures.

Example: -15 - 0 - 30 psi = 45 psi span

- Assembly will function correctly with minimal accuracy degradation.
- T Assembly will function correctly given stable temperature.
- S Assembly is highly sensitive to orientation and temperature variance. REOTEMP cannot guarantee a stated accuracy.
- X Not recommended for use with gauges of this range.





#### Total Gauge Span\*

	≤ 25" H <sub>2</sub> O	30" H <sub>2</sub> O	60" H <sub>2</sub> O	100" H <sub>2</sub> O	5 psi	10 psi	15 psi	30 psi +
4" Gauge or Larger	X	S	T	T	T	T		
2.5" Gauge	X	S	T	T				

## HIGH ACCURACY ALL-WELDED FLANGED SEAL GAUGE

**HOW TO ORDER:** Choose options to build a part number. For example: **MS8PTAM3XP23-SDDDASP GT-HV**

DIAPHRAGM SEALS

<b>MS9PT</b>	<b>A</b>	<b>M3</b>	<b>X</b>	<b>P23</b>	<b>-S</b>
<b>PRESSURE INSTRUMENT</b>	<b>GAUGE MOUNT</b>	<b>PROCESS CONNECTION</b>	<b>FLUSH CONNECTION</b>	<b>PRESSURE RANGE</b>	<b>WETTED MATERIAL</b>
<p><i>Solid Front/ Blowout Back Process Gauges</i>  <b>MS9PT</b> = 4.5" Phenolic Process  <b>MS9PS</b> = 4.5" Stainless Safety Gauge*</p> <p><i>Industrial All Stainless Steel Gauges</i>  <b>MS9P6</b> = 6" Dial  <b>MS9P4</b> = 4" Dial  <b>MS9P2</b> = 2.5" Dial</p> <p>Note: capsule gauges (series PC) are used for ranges of 10 psi and lower.</p> <p>*Ranges &lt; 10 psi not available.</p>	<p><b>A</b> = Bottom </p> <p><b>B</b> = Bottom/Rear Flange (Not Available on MS9PT) </p> <p><b>C</b> = Back (4", 4.5", 6") Lower Back (2.5", 3.5") Center Back </p> <p><b>E</b> = Back/ Front Flange (Panel Mount) (4", 4.5", 6") Lower Back (2.5", 3.5") Center Back </p>	<p><i>Threaded</i>  <b>M2</b> = 1/2" male NPT  <b>M4</b> = 1/4" male NPT  <b>M3</b> = 3/4" male NPT  <b>M1</b> = 1" male NPT  <b>F2</b> = 1/2" female NPT  <b>F4</b> = 1/4" female NPT  <b>F3</b> = 3/4" female NPT  <b>F1</b> = 1" female NPT</p> <p><i>Flanged</i>  <b>R01</b> = 1/2"x150# ANSI RF  <b>R03</b> = 1/2"x300# ANSI RF  <b>RT1</b> = 3/4"x150# ANSI RF  <b>RT3</b> = 3/4"x300# ANSI RF  <b>R11</b> = 1"x150# ANSI RF  <b>R13</b> = 1"x300# ANSI RF  <b>RH1</b> = 1.5"x150# ANSI RF  <b>RH3</b> = 1.5"x300# ANSI RF</p> <p>Other flange sizes and sealing faces available, contact factory.</p>	<p><b>X</b> = No Flush  <b>F</b> = Single 1/4" Flush  <b>7</b> = Dual 1/4" Flush  <b>C</b> = Single 1/2" Flush  <b>D</b> = Dual 1/2" Flush</p> <p>Note: ships with 316 SS plug installed in flush port.</p>	<p><i>Common Ranges</i>  <b>P03</b> = -30" inHg/0/30 psi  <b>I55</b> = 0-5 psi  <b>P14</b> = 0-10 psi  <b>P15</b> = 15 psi  <b>P16</b> = 30 psi  <b>P17</b> = 60 psi  <b>P18</b> = 100 psi  <b>P54</b> = 0-100 inH<sub>2</sub>O</p> <p><i>Available Ranges</i>          ■ 30 inH<sub>2</sub>O to 100 psi          ■ Gauge Pressure, Vacuum, or Compound</p> <p><i>Standard Units</i>          ■ psi      ■ psi/bar          ■ inH<sub>2</sub>O</p> <p><i>For Additional Range Codes See Page page 4</i></p>	<p><b>-S</b> = 316L SS  <b>-H</b> = Hast. C-276  <b>-M</b> = Monel 400†  <b>-Z</b> = Hastelloy C-276 Diaphragm, 316SS Lower Body**  <b>-F</b> = 304L SS</p> <p>†Furnished with Monel upper housing.</p>

<b>DDD</b>	<b>AS</b>	<b>P</b>	<b>G</b>	<b>T</b>	<b>-HV</b>
<b>SEAL MOUNTING</b>	<b>SEAL FILL</b>	<b>PULSATION PROTECTION</b>	<b>CASE FILL</b>	<b>LENS</b>	<b>OPTIONS</b>
<p><b>DDD</b> = Direct  <b>RTR</b> = Cooling Tower  <b>B??</b> = Armored 316 SS Capillary (5-40 ft.)  <b>W??</b> = PVC Coated Armored 316 SS Capillary</p> <p>Note: ?? = Length in feet (e.g. 05 = 5 feet)</p> <p>Note: Capillary connection is welded unless otherwise specified.</p>	<p><b>AS</b> = Silicone DC200  <b>AG</b> = Glycerin  <b>C1</b> = Fomblin Y06  <b>BH</b> = Silicone DC704  <b>C2</b> = Halocarbon 6.3</p> <p>See page 7 for Complete Fill Guide</p>	<p><b>X</b> = None  <b>P</b> = Pulse Plus™ (Pulsation Protection)</p>	<p><b>D</b> = Dry  <b>G</b> = Glycerin  <b>W</b> = Glycerin Water (65/35)  <b>S</b> = Silicone  <b>I</b> = Inert</p>	<p><b>T</b> = Tempered Safety Glass  <b>S</b> = Laminated Safety Glass  <b>P</b> = Plastic</p>	<p><b>-HV</b> = Hi-Vis™ Dial  <b>-DX</b> = DampX (Gauge Dampening)†  <b>-C3</b> = 3 Point Calibration Certificate  <b>-TS</b> = Stainless Steel Tag Service  <b>-OX</b> = Cleaned for O<sub>2</sub>  <b>-CN</b> = NACE Certificate  <b>-PM</b> = Positive Material Identification Certification  <b>-MM</b> = Monel Wetted Gauge</p>

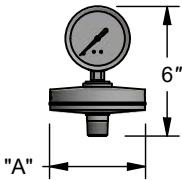
\*Available on MS9PT, 10 psi and higher.

See Page 6 & 8 for Additional Options

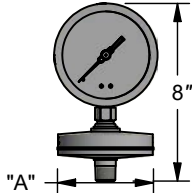
## HIGH ACCURACY ALL-WELDED FLANGED SEAL GAUGE

DIAPHRAGM SEALS

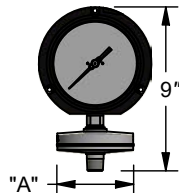
**2.5" Dial  
MS9P2**



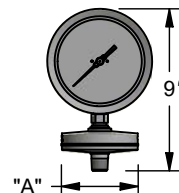
**4" Dial  
MS9P4**



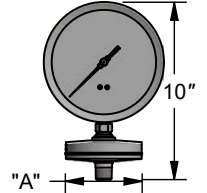
**4.5" Dial Phenolic Case  
MS9PT**



**4.5" Dial SS Case  
MS9PS**

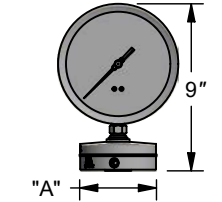
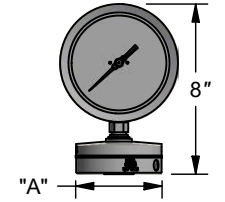
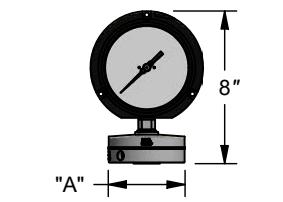
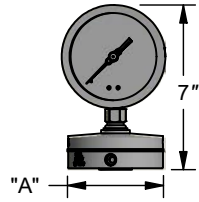
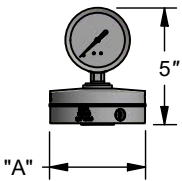


**6" Dial  
MS9P6**



MS9  
Threaded

MS9  
Flanged



Nom. Pipe Size	# Class	Flange Bolt Threading	A
1/2"	150	4x 1/2-13 UNC	4"
	300		
3/4"	150	4x 1/2-13 UNC	4"
	300	4X 5/8-11 UNC	4.7"
1"	150	4x 1/2-13 UNC	4.3"
	300	4X 5/8-11 UNC	4.9"
1.5"	150	4x 1/2-13 UNC	5.2"
	300	4X 5/8-11 UNC	6.2"

Note: Assemblies provided with stainless steel stud bolts.

## PRESSURE GAUGE RANGES AND CODES

PRESSURE GAUGES

### VACUUM/COMPOUND RANGES

psi		Dual Scale & psi & Metric						Single Scale-Metric					
"Hg/0/psi		psi & bar		psi & kg/cm <sup>2</sup>		psi & kPa		bar		kg/cm <sup>2</sup>		kPa	
Code	Range	Code	Range	Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
P01	-30"/Hg/0	D01	"Hg & -1/0 bar	G01	"Hg & -1/0 kg/cm <sup>2</sup>	L01	"Hg & -100/0 kPa	B00	-1/0 bar	K00	-1/0 kg/cm <sup>2</sup>	A00	-100/0 kPa
P02	-30/0/15	D02	psi & -1/0/1	G02	psi & -1/0/1	L02	psi & -100/0/100	B01	-1/0/1	K01	-1/0/1	A01	-100/0/100
P03	-30/0/30	D03	psi & -1/0/2	G03	psi & -1/0/2	L03	psi & -100/0/200	B02	-1/0/2	K02	-1/0/2	A02	-100/0/200
P04	-30/0/60	D04	psi & -1/0/4	G04	psi & -1/0/4	L04	psi & -100/0/400	B04	-1/0/4	K04	-1/0/4	A04	-100/0/400
P05	-30/0/100	D05	psi & -1/0/7	G05	psi & -1/0/7	L05	psi & -100/0/700	B07	-1/0/7	K07	-1/0/7	A07	-100/0/700
P06	-30/0/160	D06	psi & -1/0/11	G06	psi & -1/0/11	L06	psi & -100/0/1,100	B011	-1/0/11	K011	-1/0/11	A011	-100/0/1,100
P07	-30/0/200	D07	psi & -1/0/14	G07	psi & -1/0/14	L07	psi & -100/0/1,400	B014	-1/0/14	K014	-1/0/14	A014	-100/0/1,400
P08	-30/0/300	D08	psi & -1/0/20	G08	psi & -1/0/20	L08	psi & -100/0/2,000	B020	-1/0/20	K020	-1/0/20	A020	-100/0/2,000

### PRESSURE RANGES

psi		Dual Scale & psi & Metric						Single Scale-Metric					
psi		psi & bar		psi & kg/cm <sup>2</sup>		psi & kPa		bar		kg/cm <sup>2</sup>		kPa	
Code	Range	Code	Range	Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
P14	0-10 psi	D14	psi & .7 bar	G14	psi & .7 kg/cm <sup>2</sup>	L14	psi & 70 kPa						
P15	0-15	D15	psi & 0-1	G15	psi & 0-1	L15	psi & 0-100	B1	0-1 bar	K1	0-1 kg/cm <sup>2</sup>	A1	0-100 kPa
P16	0-30	D16	psi & 0-2	G16	psi & 0-2	L16	psi & 0-200	B2	0-2	K2	0-2	A2	0-200
P17	0-60	D17	psi & 0-4	G17	psi & 0-4	L17	psi & 0-400	B4	0-4	K4	0-4	A4	0-400
P18	0-100	D18	psi & 0-7	G18	psi & 0-7	L18	psi & 0-700	B7	0-7	K7	0-7	A7	0-700
P19	0-160	D19	psi & 0-11	G19	psi & 0-11	L19	psi & 0-1,100	B11	0-11	K11	0-11	A11	0-1,100
P20	0-200	D20	psi & 0-14	G20	psi & 0-14	L20	psi & 0-1,400	B14	0-14	K14	0-14	A14	0-1,400
P21	0-300	D21	psi & 0-20	G21	psi & 0-20	L21	psi & 0-2,000	B20	0-20	K20	0-20	A20	0-2,000
P22	0-400	D22	psi & 0-28	G22	psi & 0-28	L22	psi & 0-2,800	B28	0-28	K28	0-28	A28	0-2,800
P23	0-600	D23	psi & 0-40	G23	psi & 0-40	L23	psi & 0-4,000	B40	0-40	K40	0-40	A40	0-4,000
P24	0-800	D24	psi & 0-55	G24	psi & 0-55	L24	psi & 0-5,500	B55	0-55	K55	0-55	A55	0-5,500
P25	0-1,000	D25	psi & 0-70	G25	psi & 0-70	L25	psi & 0-7,000	B70	0-70	K70	0-70	A70	0-7,000
P30	0-1,500	D30	psi & 0-100	G30	psi & 0-100	L30	psi & 0-10,000	B100	0-100	K100	0-100	A100	0-10,000
P31	0-2,000	D31	psi & 0-140	G31	psi & 0-140	L31	psi & 0-14,000	B140	0-140	K140	0-140	A140	0-14,000
P32	0-3,000	D32	psi & 0-200	G32	psi & 0-200	L32	psi & 0-20,000	B200	0-200	K200	0-200	A200	0-20,000
P33	0-4,000	D33	psi & 0-280	G33	psi & 0-280	L33	psi & 0-28,000	B280	0-280	K280	0-280	A280	0-28,000
P34	0-5,000	D34	psi & 0-350	G34	psi & 0-350	L34	psi & 0-35,000	B350	0-350	K350	0-350	A350	0-35,000
P35	0-6,000	D35	psi & 0-400	G35	psi & 0-400	L35	psi & 0-40,000	B400	0-400	K400	0-400	A400	0-40,000
P36	0-8,000	D36	psi & 0-550	G36	psi & 0-550	L36	psi & 0-55,000	B550	0-550	K550	0-550	A550	0-55,000
P37	0-10,000	D37	psi & 0-700	G37	psi & 0-700	L37	psi & 0-70,000	B700	0-700	K700	0-700	A700	0-70,000
P38	0-15,000	D38	psi & 0-1,000	G38	psi & 0-1,000	L38	psi & 0-100,000	B1K	0-1,000	K1K	0-1,000	A1K	0-100,000
P39	0-20,000	D39	psi & 0-1,400	G39	psi & 0-1,400	L39	psi & 0-140,000						
P40	0-30,000	D40	psi & 0-2,000	G40	psi & 0-2,000	L40	psi & 0-200,000						
P41	0-40,000	D41	psi & 0-2,800	G41	psi & 0-2,800	L41	psi & 0-280,000						
P42	0-50,000	D42	psi & 0-3,500	G42	psi & 0-3,500	L42	psi & 0-350,000						



**Don't See The Range You Need?** REOTEMP has thousands of specialty dial ranges available and will work with you to create a custom range, just contact REOTEMP customer service.

# Master Range Code Sheet

## PRESSURE GAUGE RANGES AND CODES

PRESSURE GAUGES

### SPECIAL RANGE TYPES

Receiver Ranges			Refrigerant Ranges			Tank Level Ranges	
Code	Element	Dial Range	Code	Dial Range	Refrigerant	Code	Range
P60	3-15 psi	0-100%	N06	-30inHg to 160 psi	Ammonia	F14	0-24ft H <sub>2</sub> O
P61	3-15 psi	0-10 sq rt	R06	-30inHg to 160 psi	R134A	F15	0-30ft H <sub>2</sub> O
P62	3-15 psi	0-100% & 0-10 sq.rt.	R06A	-30inHg to 160 psi	R22	F15C	0-40ft H <sub>2</sub> O
			R06C	-30inHg to 160 psi	R404A	F16	0-60ft H <sub>2</sub> O
			N07	-30inHg to 200 psi	Ammonia	F165	0-100ft H <sub>2</sub> O
			N08	-30inHg to 300 psi	Ammonia		

### LOW PRESSURE RANGES (PC SERIES ONLY)

Low Pressure Ranges									
inH <sub>2</sub> O		oz/in <sup>2</sup>		inH <sub>2</sub> O & oz/in <sup>2</sup>		mbar		psi	
Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
P50	0-10 inH <sub>2</sub> O	Z50	0-6 oz/in <sup>2</sup>	Q50Z	0-10 inH <sub>2</sub> O & 0-6 oz/in <sup>2</sup>				
P51	0-15	Z51	0-8			M51	0-40 mbar		
P49	0-20	Z49	0-10	Q49C	0-20 & 0-12				
P515	0-25	Z52E	0-15						
P52	0-30			Q52N	0-30 & 0-18	M521	0-70	I52	0-1 psi
P525	0-40	Z52	0-20	Q525W	0-40 & 0-24	M525	0-100		
P53	0-60	Z53	0-30	Q53	0-60 & 0-35	M53F	0-150	I53	0-2
P54	0-100	Z54	0-60	Q54B	0-100 & 0-60	M54	0-250	I54	0-3
P55	0-160					M55	0-400	I55	0-5
P56	0-200	Z56	0-100	Q56C	0-200 & 0-115	M56	0-500	I56	0-7
Vacuum Ranges									
P88	-10-0 inH <sub>2</sub> O	Z88	-6-0 oz/in <sup>2</sup>	Q88	-10/0 inH <sub>2</sub> O & -6/0 oz/in <sup>2</sup>				
P90	-30-0	Z90	-20-0	Q90	-30/0 & -18/0	M905	-100-0 mbar	I90	-1-0 psi
P91	-60-0	Z91	-30-0	Q91	-60/0 & -35/0	M94	-200-0	I91	-2-0
P92	-100-0	Z92	-60-0	Q92	-100/0 & -60/0	M95	-400-0		
Compound Ranges									
P7A	-5/0/5 inH <sub>2</sub> O	Z7A	-3/0/3 oz/in <sup>2</sup>			M71	-20/0/20 mbar		
P70	-10/0/10			Q70C	-10/0/10 inH <sub>2</sub> O & -6/0/6 oz/in <sup>2</sup>	M72E	-30/0/30		
P71	-15/0/15					M72	-40/0/40		
P72	-20/0/20	Z72	-10/0/10	Q72C	-20/0/20 & -12/0/12			I73	-1-0-1 psi
P73	-30/0/30			Q73C	-30/0/30 & -18/0/18	M735	-100/0/100	I74	-2-0-2
P74	-60/0/60	Z745	-30/0/30					I55U	-3/0/3
P75	-100/0/100			Q75B	-100/0/100 & -60/0/60			P14C	-5/0/5

### DIFFERENTIAL PRESSURE RANGES (DP GAUGES ONLY)

psid		inH <sub>2</sub> Od		bard		mbard		kPad	
Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
PD1	0-1 psid	ID10	0-10 inH <sub>2</sub> Od	BD1	0-1 bard	MD40	0-40 mbard	AD2.5	0-2.5 kPad
PD3	0-3	ID20	0-20	BD1.6	0-1.6	MD60	0-60	AD6	0-6
PD5	0-5	ID30	0-30	BD2.5	0-2.5	MD100	0-100	AD10	0-10
PD10	0-10	ID50	0-50	BD4	0-4	MD160	0-160	AD25	0-25
PD20	0-20	ID100	0-100	BD6	0-6	MD250	0-250	AD40	0-40
PD50	0-50	ID150	0-150	BD7	0-7	MD400	0-400	AD100	0-100
PD100	0-100	ID200	0-200	BD11	0-11	MD600	0-600	AD250	0-250
PD200	0-200	ID400	0-400	BD55	0-55	MD1000	0-1000	AD700	0-700
PD6000	0-6000			BD400	0-400				

## PRESSURE GAUGE OPTIONS

PRESSURE GAUGES

Part #	Description	Heavy-Duty Industrial Gauges				Process Gauges			Stainless Steel Case Industrial Gauges			Commercial Gauges		Low Pressure Capsule Gauges			Test Gauges
		PR25	PR35	PR40	PR60	PT45P	PT45T	PI45	PM	PG**C	PG**S	PD15/20/25	PD35/40	PC25N	PC25S	PC40/45/60	PL60/45
<b>CASE FILL OPTIONS</b>																	
-G	Glycerin Filled Case	✓	✓	✓	✓	✓	✓	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
-W	Glycerin Water Filled Case (65/35)	✓	✓	✓	✓	✓	✓	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
-S	Silicone Filled Case	✓	✓	✓	✓	✓	✓	N/A	✓	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
-T	Teflon-coated Movement (No case fill)	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓
-I	Inert Case Fill	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>LENS OPTIONS</b>																	
-P	Plastic Lens	STD	✓	✓	✓	✓	✓	STD	STD	STD	✓	✓	MQ	✓	✓	✓	✓
-T	Tempered Safety Glass Lens	✓	STD	STD	STD	STD	STD	N/A	N/A	N/A	STD	N/A	N/A	N/A	STD	STD	STD
-S	Laminated Safety Glass Lens	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	✓	N/A	N/A	N/A	✓	✓	✓
-G	Plain Glass	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MQ	MQ	N/A	MQ	STD	N/A	N/A	N/A	N/A
<b>POINTER OPTIONS</b>																	
-RP	Red Pointer	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	N/A	N/A	✓	✓	✓	✓
-MP	Min/Max Pointer (Drag Hand)†	✓	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
-MQ	Min/Max Pointer (Tamper-proof)†	✓	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
-RH	Red Set Hand (Manual Adjustment)	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-EC	Electrical Contacts	N/A	N/A	✓	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>DIAL OPTIONS</b>																	
-CL	Custom Logo Dial	✓	✓	✓	✓	✓	✓	✓	MQ	MQ	✓	MQ	MQ	MQ	✓	✓	✓
-HV	Hi-Vis Dial	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	N/A	N/A	✓	✓	N/A
-CB	Color Band	✓	✓	✓	✓	✓	✓	✓	MQ	MQ	✓	MQ	MQ	MQ	✓	✓	N/A
-CP	Color Pie	✓	✓	✓	✓	✓	✓	✓	MQ	MQ	✓	MQ	MQ	MQ	✓	✓	N/A
-DM	Dial Marking	✓	✓	✓	✓	✓	✓	✓	MQ	MQ	✓	MQ	MQ	✓	✓	✓	✓
-LP	Removable Lens Protector	N/A	N/A	N/A	N/A	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>CALIBRATION OPTIONS</b>																	
-R1	Upgrade to 1% FS Accuracy	✓	✓	STD	STD	N/A	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
-R2	Upgrade to 0.5% FS Accuracy	N/A	N/A	✓	✓	STD	STD	STD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-R5	Upgrade to 1.5% FS Accuracy	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A
-C1	1pt. NIST Calibration Cert	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A
-C3	3pt. NIST Calibration Cert	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A
-C5	5pt. NIST Calibration Cert	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A
-CX	10pt. NIST Calibration Cert	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	STD
-CS	Calibration Sticker (No logged pts.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A
<b>TAG OPTION</b>																	
-TS	Stainless Steel Tag (1-10 Characters)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-TM	Stainless Steel Tag (11-80 characters)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-TP	Paper Tag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>CERTIFICATION OPTIONS</b>																	
-CM	General Material Conformance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-NC	Certificate of NACE Compliance	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓
-PM	Positive Material Identification Certificate (PMI)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-HT	Hydrostatic Test per ASME B31.3 (5 min)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-LC	Argon Leak Check Certificate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>CLEANING OPTIONS</b>																	
-DG	Degreased - Wiped Clean of Oils, Shipped in Sealed Bag	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	N/A	✓	✓	✓	✓
-OX	Cleaned for Oxygen Service per ASME B40.1	✓	✓	✓	✓	✓	✓	✓	MQ	MQ	✓	MQ	MQ	✓	✓	✓	✓
-OY	Cleaned for Oxygen Service per MIL-STD-1330D	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	N/A	✓	✓	✓	✓
<b>OTHER OPTIONS</b>																	
-NR	No Restrictor Screw	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	N/A
-FI	Dry Gauge Shipped with Fill Plug Installed	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


✓	Indicates that the option is available with the model.	N/A	Indicates the option is not available with this model.
STD	Indicates standard options with no additional cost.	MQ	Minimum order quantity applies.

†This option is only available with a plastic lens.

## FILL GUIDE

Diaphragm seals are designed to protect pressure instruments from hot process media and corrosive chemicals while minimizing any negative effect on instrument accuracy and durability. A well-made diaphragm seal can achieve this goal only if it is properly assembled, filled, and tested. REOTEMP's highly trained technicians use state-of-the-art equipment so that every diaphragm seal assembly is filled and tested to assure optimal instrument performance:

- ✓ 24-hour Minimum Fluid De-gassing
- ✓ Evacuated Instrument Chamber Up to 10<sup>-9</sup> mbar Absolute
- ✓ Complete Fill Integrity Check
- ✓ Fill-port Leak Test
- ✓ Post-fill Static Test
- ✓ Verification of Instrument Calibration
- ✓ High-temp Pipe Sealant Used on All Threaded Joints (Welded Joints Upon Request)
- ✓ Tamper-proof (Inspection Seal) Lacquer used on All Threaded Joints
- ✓ Sturdy Diaphragm Packaging Protection

Part Number Code	Name	Description	Temperature Range (Vacuum Service <5psia)		Viscosity cst @ ~77°F	Specific Gravity @ ~77°F	Thermal Expansion cc/cc°C
<b>STANDARD FILL FLUID</b>							
AS	Silicone DC200 <sup>1</sup>	This is the standard fill fluid for most diaphragm seal applications.	-40°F to 400°F (-40°F to 250°F)	Yes	20	0.94	.00104
<b>HIGH TEMP SILICONE</b>							
BH	Silicone DC704 <sup>1</sup>	Standard for Smart Transmitters and capillary systems. Performs well in applications with high temperature and a deep vacuum.	0°F to 650°F (0°F to 450°F)	No	44	1.07	.00077
B1	Silicone DC710 <sup>1</sup>	Highest temperature rating; ideal for gauge seal assemblies. Too thick for capillary assemblies. Response time can become very slow in cold conditions.	50°F to 750°F (50°F to 400°F)	Yes	500	1.11	.00043
C8	Syltherm 800 <sup>2</sup>	Low viscosity allows it to perform well in both low and high temperatures. Not recommended for vacuum service or at high temperatures when under low static pressure.	-40°F to 750°F (-40°F to 150°F)	No	9.5	0.93	.00136
B5	Silicone DC705 <sup>1</sup>	Performs very well in high temperatures when under vacuum. The high viscosity and freezing point of this fluid makes it a poor choice for cold or outdoor installations without heat tracing.	50°F to 675°F (50°F to 550°F)	Yes	175	1.09	.00096
B2	Silicone DC550 <sup>1</sup>	Similar high temperature performance as DC705, however it performs better at lower temperatures.	-40°F to 575°F (-40°F to 400°F)	No	125	1.07	.00076
<b>FOOD GRADE</b>							
AG	Glycerin USP	This is the standard fill fluid for most gauge seal assemblies for food, beverage, and pharmaceutical applications. Its high viscosity will cause very slow response at times in low temperature and outdoor installations.	60°F to 450°F (Not Suitable)	Yes	1100	1.26	.00061
BN	NEOBEE M20 <sup>7</sup>	Low viscosity and a wide temperature range makes this the standard sanitary fill fluid for Smart Transmitters and capillary systems.	-10°F to 400°F (-10°F to 200°F)	No	10	0.92	.00101
BS	Food Grade Silicone	Highest temperature limit for food grade fluids. Because of its high viscosity it does not perform well in low temperatures.	20°F to 550°F (20°F to 250°F)	Yes	350	0.97	.00096
BP	Propylene Glycol	This is the fill fluid used when Glycol is called for on the customer specification. It has a very narrow temperature range.	0°F to 200°F (Not Suitable)	No	2.85	1.03	.00073
<b>INERT (TYPICALLY FOR CHLORINE AND OXYGEN APPLICATIONS OR IN SILICONE-FREE ENVIRONMENTS)</b>							
C1	Fomblin Y06 <sup>4</sup>	Ideal inert fluid for transmitter applications. Relatively high vapor pressure above 200°F. Not recommended for use in high temperature situations with low static pressure.	-40°F to 450°F (0°F to 250°F)	No	71	1.88	.00086
C2	Halocarbon 6.3 <sup>3</sup>	Standard inert fluid used in gauge seal assemblies.	-40°F to 400°F (-40°F to 200°F)	Yes	6.3	1.87	.00084
C3	Halocarbon 1.8 <sup>3</sup>	Typically used in low temperature applications because of its low viscosity.	-110°F to 220°F (-100°F to 100°F)	No	1.8	1.82	.00084
C4	Fluorolube FS-5 <sup>5</sup>	Similar performance to Halocarbon 6.3, however not suitable for vacuum service.	-40°F to 450°F (Not Suitable)	No	5	1.86	.00087
<b>SPECIALTY</b>							
CK	Krytox 1506 <sup>6</sup>	Specialty fill fluid, inert.	-40°F to 350°F (-40°F to 300°F)	No	62	1.88	.00095
BE	Ethylene Glycol	Occasionally used in annular (O-ring) seal assemblies.	-25°F to 320°F (Not Suitable)	No	30	1.10	.00062

1 Trademark Dow Corning

3 Trademark Halocarbon Product Corporation

5 Trademark Hooker Chemical Company

7 Trademark Stepan Specialty Products

2 Trademark The Dow Chemical Company

4 Trademark AUSIMONT S.P.A

6 Trademark The Chemours Company FC, LLC

Note: PulsePlus™ fill fluids may have different physical properties than specified. Chemical composition and temperature ranges do not vary.

## DIAPHRAGM SEAL OPTIONS



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DIAPHRAGM SEALS

		MS4 MS6 MS8 MS9	W5 W6 W7	T5 T6 V5	W9FF W9FR	W9XT	W9FP	DSTC75	DSTC15 AND LARGER	DSTF05	DSTF75 AND LARGER	OR	DXFR
<b>PULSATION PROTECTION (ONLY AVAILABLE WITH REOTEMP PRESSURE GAUGE MOUNTED TO SEAL)</b>													
-PP	Pulse Plus™	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	✓	✓	N/A
<b>DIAPHRAGM COATING</b>													
-AU	Gold Plated Diaphragm	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	N/A	N/A
-TC	Teflon Coated Diaphragm PTFE	N/A	✓	N/A	✓	✓	✓	N/A	✓	N/A	✓	N/A	N/A
-EP	Electropolished Diaphragm	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	✓	N/A	N/A
<b>FILL</b>													
-FW	Fill Port Welded Closed	STD <sup>1</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	N/A
-VF	Fill for Vacuum Service	N/A	✓	N/A	✓	✓	✓	N/A	✓	N/A	✓	N/A	N/A
<b>CLEANING AND FINISH</b>													
-DG	Degreased, Shipped in Sealed Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓
-OX	Cleaned for Oxygen Service per ASME B40.1	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	N/A	✓
-OY	Cleaned for Oxygen Service per MIL-STD-1330D	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	N/A	✓
<b>PLUG FOR FLUSH PORT</b>													
-GS	1/4" SS Plug Installed	STD	STD	STD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
-JS	1/2" SS Plug Installed	N/A	STD	STD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
-GH	1/4" Hast C Plug Installed	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
-JH	1/2" Hast C Plug Installed	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
-GM	1/4" Monel Plug Installed	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
-JM	1/2" Monel Plug Installed	N/A	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
<b>TAG OPTION</b>													
-TS	Stainless Steel Tag (1-10 Characters)								✓				
-TM	Stainless Steel Tag (11-80 Characters)								✓				
-TP	Paper Tag								✓				
<b>CERTIFICATION OPTIONS</b>													
-NC	Certificate of NACE Compliance	✓	✓	N/A	✓	✓	✓	N/A	N/A	✓	✓	N/A	✓
-CM	General Material Conformance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-MR	MTR - Mill Test Report Certificate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓
-PM	PMI - Positive Material Identification Certificate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓
-HT	Hydrostatic Test per ASME B31.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	N/A
-HL	Helium Leak Test Certificate	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	N/A	N/A

✓ Indicates that the option is available

N/A Indicates the option is not available

<sup>1</sup> Standard on MS8 & MS9, available on MS4 & MS6.