

ROCK CREEK WRRF PRIMARY CLARIFIER No. 4 TREATMENT EXPANSION CLEAN WATER SERVICES

APRIL 2025

SECTION 17404

PRESSURE/VACUUM MEASUREMENT: GAUGES

TABLE OF CONTENTS

EQUIPMENT SUPPLIER'S CERTIFICATE(S) OF PROPER INSTALLATION

FIELD INSTRUMENTATION CALIBRATION SHEET(S)

EQUIPMENT INFORMATION SHEET(S)

PRESSURE GAUGE

BILL OF MATERIALS

CUT SHEETS AND MANUALS

CERTIFICATE OF CALIBRATION

DATA SHEET

INSTALLATION AND OPERATING INSTRUCTIONS

CALIBRATION OF PRESSURE GAUGES

WARRANTY AND EVALUATION POLICY



OPTIMAL CONTROL SYSTEMS, INC.

2324 Three Lakes Road SE

Albany, OR 97322

Phone: (541) 967-9323

Fax: (541) 967-9485

Project No. 0523-23SSE

THIS PAGE LEFT BLANK

EQUIPMENT SUPPLIER'S CERTIFICATE OF PROPER INSTALLATION

OWNER Clean Water Services

PROJECT Rock Creek WWRP Primary Clarifier No. 4 Treatment Expansion

CONTRACT NO. 7012

EQUIPMENT SPECIFICATION SECTION 17401

EQUIPMENT DESCRIPTION Diaphragm Seal

Hoyt Day, Authorized representative of
(Print Name)

Reotemp

(Print Manufacturer's Name)

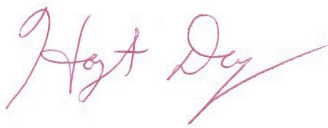
hereby CERTIFY that Reotemp Pressure Gauge, Model No. MS8, Part No.
(print equipment name and model with serial no.)

MS8PTAM2FP18-SDDDASXGT, Serial No. N/A, Tag No. 200PI5205

installed for the subject project has (have) been installed in a satisfactory manner, has (have) been tested and adjusted, and is (are) ready for final acceptance testing and operation on :

Date: 2024.12.5

Time: 11:00

CERTIFIED BY: 
(Signature of Manufacturer's Representative)

Date: 2024.12.5

THIS PAGE LEFT BLANK

CWS INSTRUMENT CALIBRATION SHEET

Project Name: Rock Creek WWRF Primary Clarifier No. 4 Treatment Expansion	Owner Project No.: 7012
Project Owner: Clean Water Services	Regulatory Agency Project No.:
Project No.:0523-23SSE	Date:2024.12.5
Control Loop No.: N/A	
Instrument Tag No.: 200PI5205	Transmitter/gauge span: 0-100 PSI
Manufacturer: Reotemp	
Model No.: MS8	
Serial No.: N/A	

TRANSMITTERS AND INDICATORS

	Increasing Input			Decreasing Input		
% of Span	Input PSI	Output PSI	Error (% of span)	Input	Output	Error
0%						
25%						
50%						
75%						
100%						
Other (if applicable)	25	25	0			
Other (if applicable)						

Maximum allowable error (per Contract Documents) 0.075%

Remarks: Observed PSI on System

CALIBRATION EQUIPMENT UTILIZED

Device Type	MFR/Model No.	Accuracy	Nist Traceability?

Certified by: Hoyt Day

Date Certified:2024.12.5

THIS PAGE LEFT BLANK

EQUIPMENT INFORMATION SHEET						Page 1			
EQUIP. DESCRIPTION - Pressure Gauge				DATE INSTALLED		DATE STARTED			
EQUIP. TAG - 200PI5205				EST. COST \$502		EST. LIFE			
EQUIP. LOCATION - Alum Feed Pump 5				SPECIFICATION # 17404					
MFR - Reotemp						PHONE NUMBERS 800-648-7737			
ADDRESS 10656 Roselle Street, San Diego, CA 92121									
VENDOR Field Instruments & Controls, Inc.						360-896-9910			
7509 S 5th St., Suite 112, Ridgefield, WA 98642									
MAINTENANCE REQUIREMENTS		LUBE CODE		W	M	Q	S	A	HOURS
Compare with a master test gauge for calibration.				Dependent on severity of service.					
COD E	LUBRICANT TYPE	MANUFACTURER	CODE	LUBRICANT TYPE	MANUFACTURER				
1									
2									
3									

EQUIPMENT INFORMATION SHEET						Page 2	
RECOMMENDED SPARE PARTS				ELECTRICAL NAMEPLATE DATA			
PART NO.	PART NAME	QUANTITY	EQUIP. Pressure Gauge				
			Manufacturer: Reotemp				
			SERIAL NO. N/A		ID NO. 200PI5205		
			MODEL NO. MS8		FRAME NO.		
			HP	VOLT.	AMP.	HZ	
			Phase	RPM	Service Factor	DUTY	
			CODE	Insulation	Design	TYPE	
			NEMA 4X	Enclosure	Misc.	RATING IP65	
			MECHANICAL NAMEPLATE DATA				
			EQUIP. Pressure Gauge				
			Manufacturer: Reotemp				
			SERIAL NO. N/A		ID NO. 200PI5205		
			MODEL NO. MS8		MOUNTING POS		
			HP	RPM	CAP	SIZE	
			TDH	IMP.SZ	BELT NO.	Output Tor.	
			PSI 0-100	NEMA 4X	GEAR RATIO		

Bill of Materials



Project: Rock Creek WRRF Primary Clarifier No. 4 Treatment Expansion
Specification Section(s): Section 17404 – Pressure/Vacuum Measurement: Gauges
Date: April 2025

Item No.	Qty.	Tag(s)	Description	Manufacturer	Part Number	Serial Number
001	1	200PI5205	Diaphragm Seal-Pressure Gauge Assembly, 100psi	Reotemp	MS8PTAM2FP18-SDDDASXGT	—
002						
003						
004						
005						
006						
007						
008						
009						
010						
011						
012						
013						
014						
015						
016						
017						
018						
019						
020						
021						
022						
023						
024						
025						
026						
027						
028						
029						
030						
031						
032						
033						
034						
035						
036						
037						
038						
039						
040						

THIS PAGE LEFT BLANK



Service Solutions Savings

Paramount Supply Company
The Gauge Shop
915 Douglas Street
Longview, WA 98632
(360) 423-2131
gaugeshop@paramountsupply.com
www.paramountsupply.com

Certificate of Calibration

Customer PS Albany	Customer P.O. A15127
Paramount Order# 868497	Line Item 1
Gauge Description 4 1/2" Reotemp 0-100 w/mini seal	Serial Number 200PI5205
Range and Units 0-100 PSI	Accuracy +/-0.5% = 0.5 PSI

Applied		Indicated		Error	
%	PSI	PSI	PSI	%	
25%	25	24.5	0.5	0.005	
50%	50	49.5	0.5	0.005	
75%	75	74.5	0.5	0.005	
100%	100	99.5	0.5	0.005	
75%	75	74.5	0.5	0.005	
50%	50	50	0	0.000	
25%	25	25	0	0.000	

THIS CERTIFICATION IS HEREBY ISSUED THAT THIS GAUGE HAS BEEN INSPECTED AND TESTED TO BE WITHIN THE MANUFACTURERS SPECIFIED TOLERANCE FOR THE ENTIRE SCALE.

DATE OF CERTIFICATION: 03/13/24
DUE: 03/13/25

BY: *Paul Lenderman*

INSTRUMENT TECHNICIAN: Paul Lenderman

STANDARD USED FOR CALIBRATION

100# DIGITAL TEST GAUGE:
MODEL: 302089SD02L100#
SERIAL NUMBER: 1303777
ACCURACY: 0.05%
DATE CALIBRATED: 1/26/2024

THIS STANDARD IS TRACEABLE FOR ACCURACY TO NIST

Temperature at time of calibration: 47.7

THIS PAGE LEFT BLANK

ALL-WELDED PROCESS SEAL GAUGE

REOTEMP's All-Welded Pressure Seal Gauge offers superior diaphragm seal safety and performance at an economical price. Combined with a gauge or transmitter, the tamper-resistant all-welded diaphragm seal reduces potential leak points, making it ideal for installations where process integrity and worker safety are paramount. Combined with PulsePlus™ protection, the Series MS8 can potentially triple the life of your gauge or transmitter.



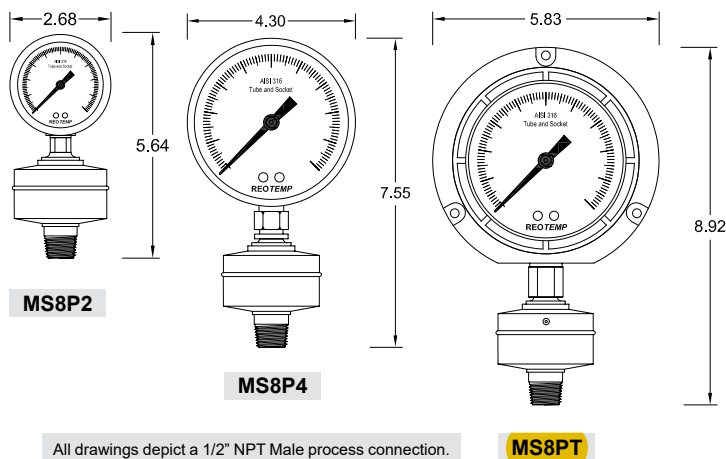
FEATURES / BENEFITS

- Increases the Life of the Gauge by Up to 3x
- Reduce/Eliminate Fugitive Emissions
- Available Up to 5,000 psi
- Eliminate Potential Leak Points
- Tamper Resistant
- Compliant to NACE MR0175, MR0103



SPECIFICATIONS

Accuracy	With appropriate pressure range, seal gauge accuracy is gauge accuracy plus 0.5%. (May be subject to thermal error. Consult factory with questions.)
Ambient Limits	-40°F/150°F
Process Limits with Diaphragm Seal	-40°F/400°F (Direct Mount)* -110°F/750°F (Remote Mount or Cooling Tower)* *Exact limits depend on diaphragm seal and fill fluids.
Wetted Materials	Diaphragm, Lower and Process Connection: 316LSS or Hast. C-276 Gasket: None
Lens	Tempered Safety Glass, Plastic or Laminated Safety Glass
Other Materials	Upper Housing: 316SS
Fillable	Yes
Maximum Working Pressure	See table left.
Environmental Protection	NEMA 4X/IP65
Weight	0.6 lbs (Seal Only)



All drawings depict a 1/2" NPT Male process connection. See online configurator for specific assembly drawings.

DIAPHRAGM SEAL MAX WORKING PRESSURE (AT 100°F)

		316SS	Hast. C-276	Monel
Male	1/4" NPT	5,000 psi	2,000 psi	2,000 psi
	1/2" NPT	5,000 psi	2,000 psi	2,000 psi
	3/4" NPT	2,000 psi	n/a	n/a
	1" NPT	2,000 psi	n/a	n/a
Female	1/4" NPT	2,500 psi	n/a	n/a
	1/2" NPT	2,500 psi	n/a	n/a
Flanged	Based on ANSI flange rating.			

Note: Maximum working pressure is lesser of proof pressure and 130% of gauge range.

ALL-WELDED PROCESS SEAL GAUGE

Visit reotemp.com

- ✓ Check Stock
- ✓ Get Price
- ✓ Configure Part #
- ✓ Download PDF Data Sheets

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

MS8PT	A	M3	X	P23	-S
PRESSURE INSTRUMENT	GAUGE MOUNT	PROCESS CONNECTION	FLUSH CONNECTION	PRESSURE RANGE	WETTED MATERIAL
<p><i>Solid Front/ Blowout Back Process Gauges</i></p> <p>MS8PT = 4.5" Phenolic Process</p> <p>MS8PS = 4.5" Stainless Safety Gauge</p> <p><i>Industrial All Stainless Steel Gauges</i></p> <p>MS8P6 = 6" SS</p> <p>MS8P4 = 4" SS</p> <p>MS8P3 = 3.5" SS</p> <p>MS8P2 = 2.5" SS</p> <p><i>Hinged-Ring Process Gauge</i></p> <p>MS8PI = 4.5" Aluminum Case, SS internals</p>	<p>A = Bottom</p> <p>C = Back (4", 4.5", 6") Lower Back (2.5", 3.5") Center Back</p> <p>E = Back/ Front Flange (Panel Mount) (4", 4.5", 6") Lower Back (2.5", 3.5") Center Back</p>	<p><i>Threaded</i></p> <p>M2 = 1/2" male NPT</p> <p>M4 = 1/4" male NPT</p> <p>M3 = 3/4" male NPT</p> <p>M1 = 1" male NPT</p> <p>F2 = 1/2" female NPT</p> <p>F4 = 1/4" female NPT</p> <p>F3 = 3/4" female NPT</p> <p><i>Flanged</i></p> <p>R01 = 1/2"x150# ANSI RF</p> <p>R03 = 1/2"x300/600# ANSI RF</p> <p>RT1 = 3/4"x150# ANSI RF</p> <p>RT3 = 3/4"x300/600# ANSI RF</p> <p>R11 = 1"x150# ANSI RF</p> <p>R13 = 1"x300# ANSI RF</p> <p>RH1 = 1.5"x150# ANSI RF</p> <p>RH3 = 1.5"x300# ANSI RF</p>	<p>X = No Flush</p> <p>F = Single 1/4" Flush (Ships with Plug Installed)</p>	<p><i>Common Ranges</i></p> <p>P03 = -30" inHg/0/30 psi</p> <p>P15 = 15 psi</p> <p>P16 = 30 psi</p> <p>P17 = 60 psi</p> <p>P18 = 100 psi</p> <p>P20 = 200 psi</p> <p>P21 = 300 psi</p> <p>P22 = 400 psi</p> <p>P23 = 600 psi</p> <p>P25 = 1,000 psi</p> <p>P31 = 2,000 psi</p> <p>P32 = 3,000 psi</p> <p>P34 = 5,000 psi</p> <p><i>Available Ranges</i></p> <p>■ 15 psi to 6,000 psi</p> <p>■ Gauge Pressure, Vacuum, or Compound</p> <p><i>Standard Units</i></p> <p>■ psi ■ psi/bar</p> <p>Note: Minimum Span for 4" Gauges and Greater is 30 psi</p> <p><i>For Additional Range Codes See Page 45</i></p>	<p>-S = 316L SS</p> <p>-H = Hast. C-276</p> <p>-M = Monel 400[†]</p> <p>-Z = Hastelloy C-276 Diaphragm, 316SS Lower Body^{**}</p> <p>-F = 304L SS</p> <p>Note: see maximum working pressure table on previous page for available process connections.</p> <p>[†]Furnished with Monel upper housing.</p> <p>^{**}Max working pressure is the same as all 316SS.</p>

DDD	AS	P	G	T	-HV
SEAL MOUNTING	SEAL FILL	PULSATION PROTECTION	CASE FILL	LENS	OPTIONS
<p>DDD = Direct</p> <p>RTR = Cooling Tower</p> <p>B?? = Armored 316 SS Capillary (5-40 ft.)</p> <p>W?? = 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>AS = Silicone DC200</p> <p>AG = Glycerin</p> <p>C1 = Fomblin Y06</p> <p>BH = Silicone DC704</p> <p>C2 = Halocarbon 6.3</p> <p>See 58 for Complete Fill Guide</p>	<p>X = None</p> <p>P = Pulse Plus™ (Pulsation Protection)</p>	<p>D = Dry</p> <p>G = Glycerin</p> <p>W = Glycerin Water (65/35)</p> <p>S = Silicone</p> <p>I = Inert</p> <p>Note: MS8PI is not fillable.</p>	<p>T = Tempered Safety Glass</p> <p>S = Laminated Safety Glass</p> <p>P = Plastic</p>	<p>-HV = Hi-Vis™ Dial</p> <p>-C3 = 3 Point Calibration Certificate</p> <p>-TS = Stainless Steel Tag</p> <p>-OX = Cleaned for O₂ Service</p> <p>-CN = NACE Certificate</p> <p>-PM = Positive Material Identification Certification</p> <p>-MM = Monel Wetted Gauge</p> <p>See Pages 50 & 83 for Additional Options</p>

PRESSURE GAUGE RANGES AND CODES

VACUUM/COMPOUND RANGES

psi		Dual Scale & psi & Metric						Single Scale-Metric					
"Hg/0/psi		psi & bar		psi & kg/cm ²		psi & kPa		bar		kg/cm ²		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 ²	L01	"Hg & -100/0 kPa	B00	-1/0 bar	K00	-1/0 kg/cm ²	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 ²		psi & kPa		bar		kg/cm ²		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 ²	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 ²	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.

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 10⁻⁸ 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)	Pulse+™	Viscosity cst @ ~77°F	Specific Gravity @ ~77°F	Thermal Expansion cc/cc/°C
STANDARD FILL FLUID							
AS	Silicone DC200¹	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
HIGH TEMP SILICONE							
BH	Silicone DC704 ¹	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 ¹	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 ²	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 ¹	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 ¹	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
FOOD GRADE							
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 ⁷	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
INERT (TYPICALLY FOR CHLORINE AND OXYGEN APPLICATIONS OR IN SILICONE-FREE ENVIRONMENTS)							
C1	Fomblin Y06 ⁴	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 ³	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 ³	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 ⁵	Similar performance to Halocarbon 6.3, however not suitable for vacuum service.	-40°F to 450°F (Not Suitable)	No	5	1.86	.00087
SPECIALTY							
CK	Krytox 1506 ⁶	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

2 Trademark The Dow Chemical Company

3 Trademark Halocarbon Product Corporation

4 Trademark AUSIMONT S.P.A

5 Trademark Hooker Chemical Company

6 Trademark The Chemours Company FC, LLC

7 Trademark Stepan Specialty Products

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

PRESSURE GAUGE OPTIONS

		Heavy-Duty Industrial Gauges				Process Gauges			Stainless Steel Case Industrial Gauges			Commercial Gauges		Low Pressure Capsule Gauges			Test Gauges
Part #	Description	PR25	PR35	PR40	PR60	PT45P	PT45T	PI45	PM	PG**C	PG**S	PD15/20/25	PD35/40	PC25N	PC25S	PC40/45/60	PL60/45
CASE FILL OPTIONS																	
-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
LENS OPTIONS																	
-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
POINTER OPTIONS																	
-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
DIAL OPTIONS																	
-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
CALIBRATION OPTIONS																	
-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
TAG OPTION																	
-TS	Stainless Steel Tag (1-10 Characters)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-TM	Stainless Steel Tag (11-80 characters)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-TP	Paper Tag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CERTIFICATION OPTIONS																	
-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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLEANING OPTIONS																	
-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	✓	✓	✓	✓
OTHER OPTIONS																	
-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.

DIAPHRAGM SEAL OPTIONS



Visit reotemp.com

✓ Check Stock

✓ Get Price

✓ Configure Part #

✓ Download PDF Data Sheets

DIAPHRAGM SEALS

		MS4 MS6 MS8	W5 W6 W7	T5 T6 V5	W9FF W9FR	W9XT	W9FP	DSTC75	DSTC15 AND LARGER	DSTF05	DSTF75 AND LARGER	OR	DXFR	
PULSATION PROTECTION (ONLY AVAILABLE WITH REOTEMP PRESSURE GAUGE MOUNTED TO SEAL)														
-PP	Pulse Plus™	✓	✓	✓	✓	✓	N/A	N/A	✓	N/A	✓	✓	N/A	
DIAPHRAGM COATING														
-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	
FILL														
-FW	Fill Port Welded Closed	STD ¹	✓	✓	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	
-VF	Fill for Vacuum Service	N/A	✓	N/A	✓	✓	✓	N/A	✓	N/A	✓	N/A	N/A	
CLEANING AND FINISH														
-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	✓	
PLUG FOR FLUSH PORT														
-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	✓	
TAG OPTION														
-TS	Stainless Steel Tag (1-10 Characters)							✓						
-TM	Stainless Steel Tag (11-80 Characters)							✓						
-TP	Paper Tag							✓						
CERTIFICATION OPTIONS														
-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

¹ Standard on MS8, available on MS4 & MS6.

INSTALLATION AND OPERATING INSTRUCTIONS FOR REOTEMP PRESSURE GAUGES

I. MANUAL CONTENT

This manual contains installation, operation, maintenance, calibration instructions for REOTEMP pressure gauges. American National Standard ANSI B40.1 Gauges, Pressure and Pressure Indicating Dial Type - Elastic Element, contains valuable information including installation, operation, calibration and safe usage. It is recommended that anyone using, installing or calibrating pressure gauges be familiar with this industry standard.

II. GENERAL

These gauges are available in vacuum, compound and pressure ranges. (Refer to applicable data sheets.) A general outline of construction is listed below:

(A) CASE: Available in Stainless, ABS, or Phenolic, with back, front or no flange design.

(B) RING: Available with threaded or crimped.

(C) WINDOW: Available with glass, clear plastic or shatter-resistant glass. (Refer to applicable data sheet.)

(D) CONNECTION: Bottom male or lower back male 2-14"NPT, 3-18"NPT.

(E) DIAL: Available in 2 1/2", 3 1/2" 4", 4 1/2" or 6" dial sizes.

(F) POINTER: Adjustable or plain pointer. (Refer to applicable data sheet.)

III. INSTALLATION

A. STEM OR PIPE MOUNTING: Gauges mounted directly on piping should be assembled with reasonable care, always using the wrench grip provided on the pressure connection to secure it to the threaded fitting. Do not use the gauge case as a means of tightening the connection.

In order to extend the service life and continued accuracy, the gauge should be protected as far as possible from effects of mechanical vibration. It is desirable to isolate it from severely vibrating machinery. The gauge may be rigidly mounted to a non-vibrating surface and connected to the pressure source using flexible tubing.

B. PANEL OR SURFACE MOUNTING: Gauges should be free of piping strains when mounted. If mounting surface is uneven, insert washers under flange of the gauge case to obtain a three point suspension.

Refer to applicable data sheet for panel openings and mounting dimensions for various types, sizes, and case construction. When surface mounting a gauge, with a blow-out back, a clearance behind the gauge equal to the area of the pressure relieving back must be provided. This can be obtained by cutting a hole in the mounting surface equal to the diameter of the pressure relieving back or by spacing the gauge away from the mounting surface so as to provide an annular area equal to the area of the pressure relieving back.

C. LOCATION: Gauges should be located where they will not be subjected to abnormally high or low temperatures. A slight error in indication will exist when the gauge is exposed to a temperature above or below 70 deg. Fahrenheit, the temperature at which it was calibrated. Error due to temperature is approximately 0.2% of indicated reading for a 10 deg. Fahrenheit change, plus a small zero shift. The gauge will generally read high under elevated temperatures and low at low temperatures.

D. PROTECTORS: If gauges are to be used for steam service, a siphon filled with water must be installed between gauge and line to prevent live steam from entering the Bourdon tube.

A gauge cock should be installed in the pressure line. This might be the standard shut-off valve or a needle valve for throttling pressure pulses. Should severe pulsation exist, the gauge should be protected by adding a throttling orifice screw in the gauge socket or by addition of a pulsation damper, such as a snubber.

A diaphragm seal should be used in applications where process media should not come in contact with gauge.

IV. OPERATION

A. Admit pressure slowly by throttling gauge cock. The maximum, pressure at which a pressure gauge is continuously operated shall not exceed 75% of full scale pressure. The gauge selected should have a full scale pressure of approximately twice the intended operating pressure.

B. If it is desirable to compensate the indication for head effect in the piping leg it can be accomplished by removing bezel ring and window and resetting pointer using the pointer adjusting screw. (This applies only to models with resetting pointers.)

C. Relieving Case Pressure: Filled cases or other sealed cases must be vented to avoid internal pressure, which can affect accuracy. After installation, cut or pierce fill plug at top of case for best accuracy.

V. MAINTENANCE

A. Replace broken gauge window promptly to keep dirt out of the mechanism.

B. For gauges with safety blow-out back, check that pressure relieving back is properly seated, free to operate and that adequate clearance is provided behind the gauge. (See Section 3.B)

C. Do not apply oil to movement or linkage since this may result in sluggish operation.

D. Dependent upon the severity of the service, gauges should be removed at intervals and compared with a suitable master test gauge or dead weight tester. Minor corrections may be accomplished by resetting the pointer if applicable. Should movement appear sluggish or lack sensitivity, it should then be disassembled for cleaning, overhaul or replacement.

THIS PAGE LEFT BLANK



INSTRUMENTS

Installation & Operating Instructions For

MS8



MS8PT, MS8PR, MS8Q
All Welded Seal Gauge

1. INSTRUCTIONS CONTENT

This instructions manual contains installation, operation, and maintenance instructions for the MS8 Series of All-Welded Diaphragm Seals assembled to pressure measurement instruments. American National Standard ANSI B40.100 contains valuable information including installation, operation, calibration, and safe operating usage. It is highly recommended that anyone using, installing or calibrating pressure gauges and other instrumentation with diaphragm seals be familiar with these industry standards.

1. INSTALLATION

MS8 assemblies mounted directly on piping should be assembled with reasonable care. Always use the wrench grip provided above the diaphragm seal to secure it to the thread fitting. Do not use the pressure gauge case as a means of tightening the connection. Consistent with industry standards, the use of pipe thread sealant is highly recommended when installing the gauge into the threaded connection.

MS8 assemblies should be located where they will not be subjected to abnormally high or low temperatures. The following table outlines the temperature limits of the MS8 Series dependent on the seal fill fluid

Seal Fill	Operating		Not to Exceed
	Min	Max	
Sil. DC200	-50F	450F	550F
Glycerine	30F	300F	350F
Hi-Temp	30F	600F	700F
Inert	-40F	400F	400F

If the normal operating temperature of the process is over the stated limit, cooling elements may be applicable. Please consult the factory.

2. OPERATION

Slowly admit pressure into the assembly to avoid a pulsation shock. If the MS8 assembly includes a pressure gauge the maximum pressure at which the assembly should continuously operate should not exceed 75% of the full scale. The pressure gauge selected with the assembly should be twice the intended operating pressure.

The maximum pressure for the MS8 Diaphragm Seal is 5000psi at 100F. Do not exceed this pressure.

Please consult the factory for instruments that can handle process pressure exceeding 5,000psi.

3. MAINTENANCE

Dependent upon the severity of the service, MS8 assemblies should be removed from service at intervals and compared with a master test gauge for calibration. If the assembly includes a repairable pressure gauge, minor corrections can be made by resetting the pointer.

If the chamber between the connection and the diaphragm becomes dirty or clogged, take care when washing out the debris. Be careful not to poke the sensitive diaphragm which can result in a tear or wrinkle in the thin metal. If a damage occurs to the diaphragm the assembly will not operate properly and cannot be repaired.

THIS PAGE LEFT BLANK

Calibration of Pressure Gauges

Note: Reotemp recommends that all gauges be recalibrated at the factory, or by a qualified calibration facility. However, if the user has a calibrated reference pressure capability (see fig. 1), the following procedure will help as a general guide to calibrating a pressure gauge.

It should also be noted that this procedure is general in nature; mechanical properties of pressure gauges and specific results will vary. Some gauges have bendable parts (see fig. 2), while others have sliding parts (see fig. 3). The gauge technician must be flexible in applying these general steps to the specific gauge being calibrated.

Calibration consists of two parts:

- a. Full scale adjustment (steps 1 – 5)
- b. Verification of linearity (step 6 - 7)

This procedure assumes the user has a comparator-type pressure reference, and can generate the required pressures accurately. It also assumes that the user is familiar with pressure gauge safety and testing recommendations in ASME B40.1

“UUT” refers to the Unit Under Test (the gauge being calibrated).

“REF” refers to the reference gauge.

“100%” refers to 100% of gauge scale; “10%” refers to 10% of gauge scale; etc.

1. Mount the pointer.
 - a. If UUT has a stop pin, mount pointer at 10%, with pressure at 10% of scale.
 - b. If UUT has no stop pin, mount pointer a zero, with no pressure on UUT.
2. Apply pressure so UUT reads 100%. Read actual REF pressure. Note if UUT is reading high or low, and degree of variation.
3. Remove pressure, and remove pointer and dial (if necessary).
4. Adjust full scale slide or gooseneck:
 - a. If REF was greater than UUT, reduce distance between pushrod and shaft.
 - b. If REF was less than UUT, increase distance between pushrod and shaft.
5. Mount dial and pointer. Repeat steps 1 – 4 until UUT reads within specified accuracy with respect to REF when at 100%.
6. Apply 25%, 50%, 75%, and 100% to UUT. At each point, compare UUT to REF. If all values are within specified limits, slowly reduce pressure and check descending pressure at 75%, 50%, and 25%. If any intermediate readings are out of limits, perform step 7. If 100% reading was out of limits, go back to step 1. If all readings are within limits, calibration is finished.

7. Remove pressure from UUT, and remove pointer and dial. Adjust pushrod (linearity adjustment) as follows:
 - a. If REF was reading higher than UUT in step 6, lengthen the pushrod (this may require loosening and sliding, or bending).
 - b. If REF was reading lower than UUT in step 6, shorten the pushrod (this may require loosening and sliding, or bending).
8. Repeat steps 1 – 6.
 - a. If UUT and REF agree within accuracy limits, calibration is finished.
 - b. If UUT and REF disagree by more than accuracy limits, go back to step 3.
9. Note: If linearity cannot be achieved with the above procedure, other factors (such as dial centering, mechanical friction in movement) may need to be addressed.

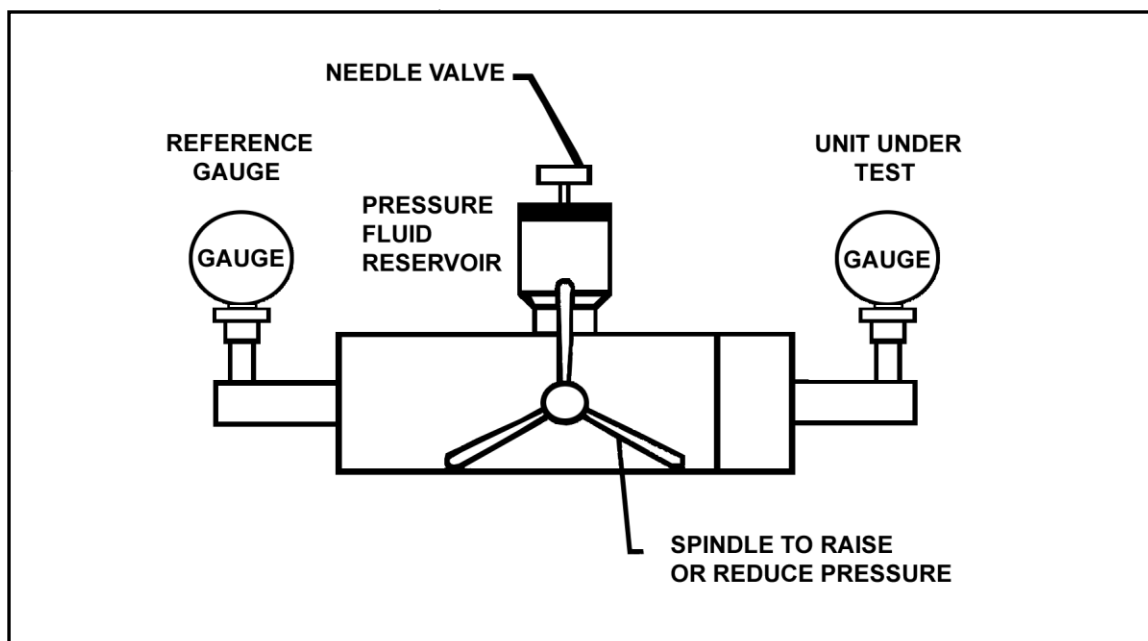


fig. 1 – typical gauge comparator

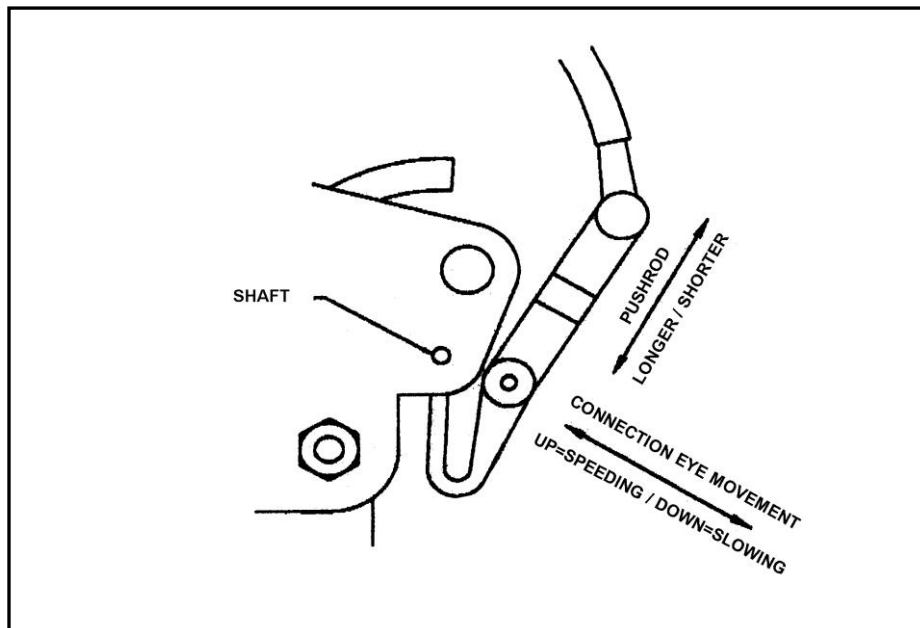


Fig. 2 – typical movement with bendable adjustments

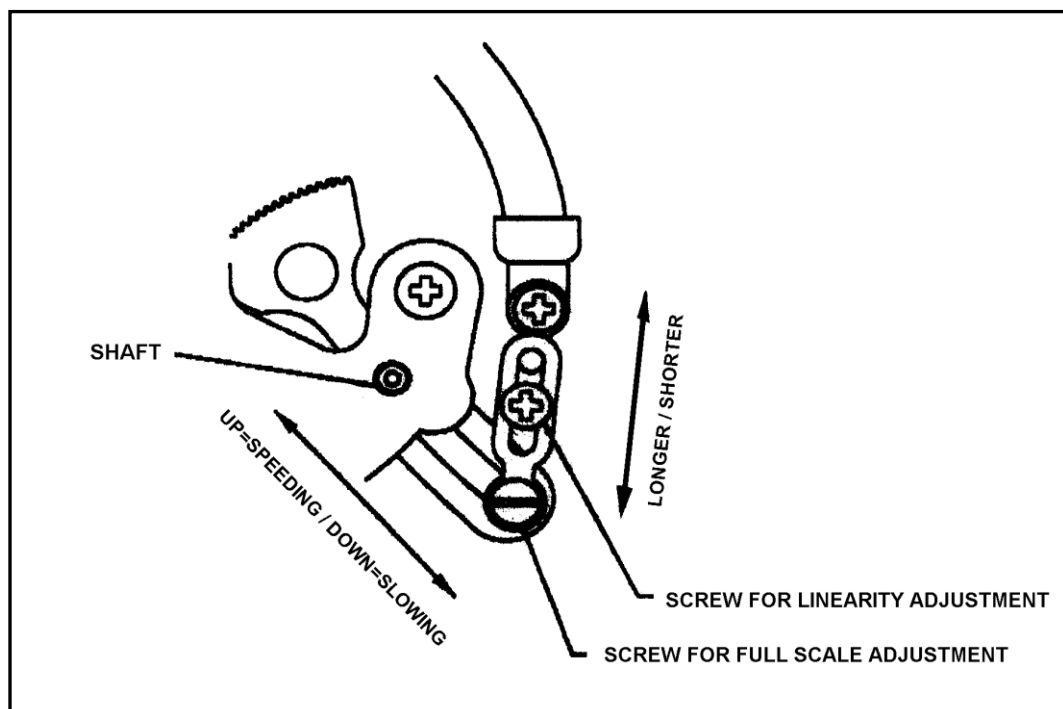


Fig. 3 – typical movement with sliding adjustments

THIS PAGE LEFT BLANK



VISIT OUR WEBSITE

REOTEMP[®].COM

WARRANTY & EVALUATION POLICY

REOTEMP warrants all pressure and temperature measurement products against defective workmanship or materials under normal use and service for the following periods after the date of shipment.

FIVE YEAR WARRANTY

- Process Grade Bimetal Thermometers (3", 4", and 5" dial sizes)

THREE YEAR WARRANTY

- Industrial Pressure and Differential Pressure Gauges
- Valves and Manifolds

ONE YEAR WARRANTY

- Diaphragm Seals
- Pressure Transmitters and Switches
- OEM Bimetal Thermometers
- Digital Thermometers
- Remote Reading Thermometers
- Thermowells
- Accessories and Other Items

REOTEMP's liability is limited to repair or replacement at the factory, shipping charges prepaid. This warranty does not cover deterioration from normal wear and tear, exposure to corrosive materials, exposure to temperatures or pressures in excess of those recommended, excessive vibration, forces, or abrasion which cause deformation of component parts. This warranty is expressly in lieu of any other warranty, expressed or implied. REOTEMP shall not be liable for any defect or consequential damages arising out of any defects or from any cause whatsoever. Suitability of product for the customer's application rests with the customer; REOTEMP does not warrant suitability of its products for the application chosen by the customer.

REOTEMP will only accept shipments with returned product that are accompanied with a return authorization issued by REOTEMP. Please respect the health and safety of our employees by cleaning goods before return, disclosing any chemicals or foreign substance that may be on returned product and enclosing MSDS information. Handling and cleaning fees may apply.

REOTEMP reserves the right to make product improvements and change its specifications stated throughout the catalog at any time without notification. Please contact the factory on all critical dimensions and specifications for verification.

REOTEMP'S GUIDING PRINCIPLES

- > Provide industry leading customer satisfaction with a focus on fast turnaround, friendly service and keeping it easy to do business with REOTEMP. Make it Quick and Easy!
- > Focus on manufacturing quality instruments, continuous improvement and adding value to our product and services.
- > Build long-lasting and rewarding relationships with the people we do business with.
- > Maintain an enjoyable, fulfilling work environment for our employees.
- > Build a strong REOTEMP brand and reputation in the industrial markets where we compete.
- > Achieve planned, sustained growth in our target markets both in the US and internationally.



Visit reotemp.com

- ✓ Check Stock
- ✓ Configure Part #

- ✓ Get Price
- ✓ Download PDF Data Sheets

THIS PAGE LEFT BLANK