



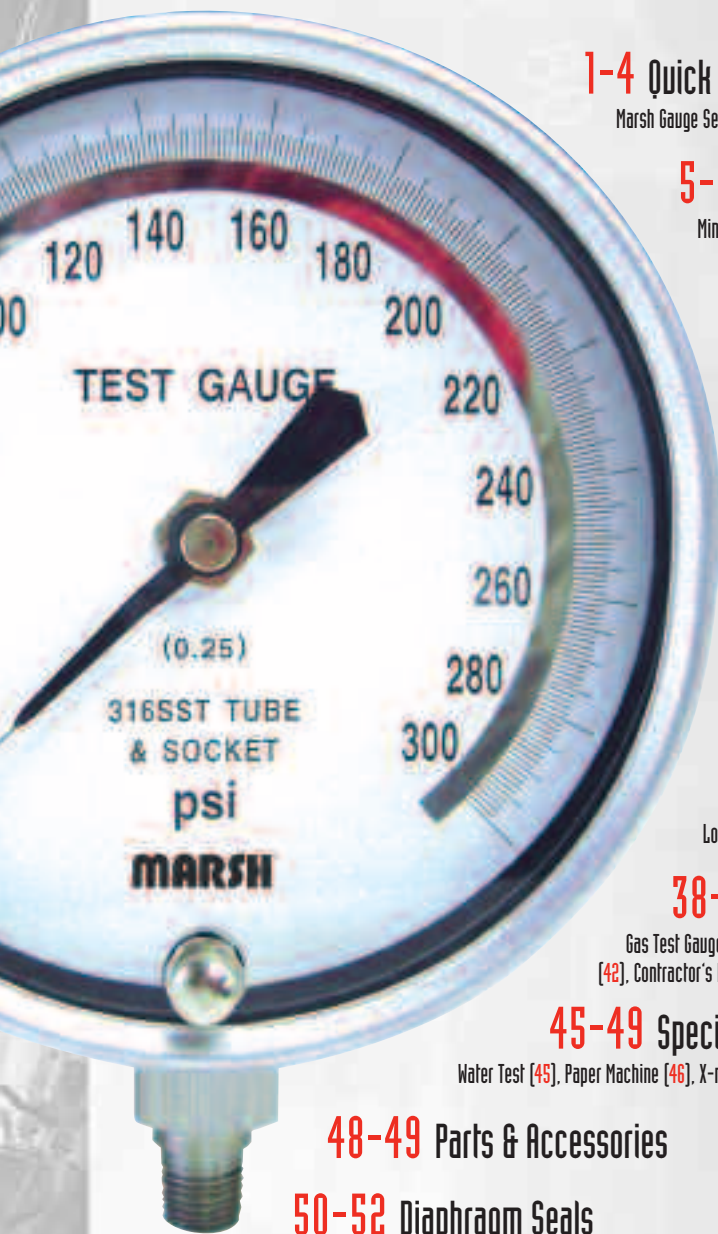
MARSH Instrumentation
Product Catalog

Questions?
Email: Sales@marsh.com
Call: 800-368-3636
Customer Service
800-368-3636

MARSH

2009-10

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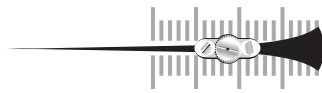
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| <p>ACCURACY ASME: Grade B = $\pm 3/2/3$ ($\pm 2\%$ of range across middle half of scale)</p> | <p>ACCURACY ASME: Grade B = $\pm 3/2/3$ ($\pm 2\%$ of range across middle half of scale)</p> | <p>ACCURACY ASME: $\pm 2.5\%$ of range across full scale</p> | <p>ACCURACY ASME: 63mm: Grade B = $\pm 3/2/3$ ($\pm 2\%$ of range across middle half of scale) 100mm: Grade A $\pm 2/1/2$ ($\pm 1\%$ of range across middle half of scale)</p> | <p>ACCURACY ASME: 63mm: $\pm 1.6\%$ of range across full scale 100mm: Grade 1A $\pm 1\%$ of range across full scale of scale</p> |
| <p>CASE SIZE: 1½" & 2" diameter</p> | <p>CASE SIZE: 1½", 2", 2½", 3½", & 4½" diameter</p> | <p>CASE SIZE: 40mm & 50mm diameter</p> | <p>CASE SIZE: 63mm diameter 100mm diameter</p> | <p>CASE SIZE: 63mm diameter (2.5") 100mm diameter (4.0")</p> |
| <p>CASE MATERIAL: Steel, black painted</p> | <p>CASE MATERIAL: Steel, black painted</p> | <p>CASE MATERIAL: 304 Stainless Steel</p> | <p>CASE MATERIAL: 304 Stainless Steel</p> | <p>CASE MATERIAL: Forged brass</p> |
| <p>CASE STYLES: Lower Mount, Center Back Mount, Right & Left Mounts</p> | <p>CASE STYLES: Lower Mount, Center Back, U-Clamp & Front Flange Mounts</p> | <p>CASE STYLES: Center Back Mount</p> | <p>CASE STYLES: Rolled ring, hermetically sealed case; Lower Mount, Center Back, U-Clamp & Front Flange Mount</p> | <p>CASE STYLES: Lower mount</p> |
| <p>TUBE & SOCKET: Copper Alloy</p> | <p>TUBE & SOCKET: Copper Alloy</p> | <p>TUBE & SOCKET: Copper Alloy tube with nickel plated brass socket</p> | <p>TUBE & SOCKET: Copper Alloy or 316 Stainless steel</p> | <p>TUBE & SOCKET: Copper Alloy</p> |
| <p>MOVEMENT: Brass</p> | <p>MOVEMENT: Brass</p> | <p>MOVEMENT: Brass</p> | <p>MOVEMENT: Brass</p> | <p>MOVEMENT: Brass</p> |
| <p>CONNECTIONS: ½ or ¾ NPT</p> | <p>CONNECTIONS: ½ or ¾ NPT</p> | <p>CONNECTIONS: 40mm: ½ NPT 50mm: ¾ NPT</p> | <p>CONNECTIONS: ¾ NPT</p> | <p>CONNECTIONS: 63mm: ¾ NPT 100mm: ¾ NPT</p> |
| <p>RANGES: 15 to 160 psi</p> | <p>RANGES: 0-30" Hg vacuum; compound ranges 30" Hg vacuum to 400 psi; and 15 to 5,000 psi</p> | <p>RANGES: 15 to 160 psi</p> | <p>RANGES: 0-30" Hg vacuum; compound ranges 30" Hg vacuum to 400 psi; and 15-10,000 psi</p> | <p>RANGES: 0 to 30" Hg vacuum; compound ranges 30" Hg vacuum to 200 psi; 15-10,000 psi</p> |
| <p>STANDARD DIAL: Dual Scale psi and kPa</p> | <p>STANDARD DIAL: Dual scale psi and kPa</p> | <p>STANDARD DIAL: Triple scale psi/BAR/kPa</p> | <p>STANDARD DIAL: Dual scale psi and kPa</p> | <p>STANDARD DIAL: Single scale psi</p> |
| <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> |
| <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> |
| <p>WINDOW: Flat plastic with steel friction ring</p> | <p>WINDOW: 1½", 2", 2½", 3½" Acrylic, twist-in Clearlok; 4½" flat glass window with steel friction ring</p> | <p>WINDOW: Acrylic</p> | <p>WINDOW: Polycarbonate</p> | <p>WINDOW: Acrylic</p> |
| <p>FILL MEDIUM: N/A</p> | <p>FILL MEDIUM: N/A</p> | <p>FILL MEDIUM: Glycerine</p> | <p>FILL MEDIUM: Dry, glycerine, or silicone</p> | <p>FILL MEDIUM: Glycerine</p> |
| <p>VENT: N/A</p> | <p>VENT: N/A</p> | <p>VENT: Filler/Pressure relief plug</p> | <p>VENT: Rubber plug with snip-off feature</p> | <p>VENT: Rubber plug with snip-off feature</p> |






Quick Selector



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|  <p>PAGE 20</p> |  <p>PAGE 21</p> |  <p>PAGE 23</p> |  <p>PAGE 24</p> |  <p>PAGE 25</p> |
| <p>GAUGE SERIES: 100MM STAINLESS STEEL</p> | <p>GAUGE SERIES: 100MM STAINLESS STEEL NACE</p> | <p>GAUGE SERIES: 'HW' 160MM STAINLESS STEEL</p> | <p>GAUGE SERIES: 100MM ELITE</p> | <p>GAUGE SERIES: QUALITY GAUGE</p> |
| <p>ACCURACY ASME: Grade 1A = ± 1% full scale</p> | <p>ACCURACY ASME: Grade 1A = ± 1% full scale</p> | <p>ACCURACY ASME: Grade 1A = ± 1% full scale</p> | <p>ACCURACY ASME: Grade 1A = ± 1% full scale</p> | <p>ACCURACY ASME: Grade A = ± 2/1/2 (± 1% of range across middle half of scale)</p> |
| <p>CASE SIZE: 100mm diameter</p> | <p>CASE SIZE: 100mm diameter</p> | <p>CASE SIZE: 160mm diameter</p> | <p>CASE SIZE: 100mm diameter</p> | <p>CASE SIZE: 3/2" and 4/4" diameter</p> |
| <p>CASE MATERIAL: 304 Stainless steel</p> | <p>CASE MATERIAL: 304 Stainless steel</p> | <p>CASE MATERIAL: 304 Stainless steel</p> | <p>CASE MATERIAL: 304 Stainless steel</p> | <p>CASE MATERIAL: Steel, black painted</p> |
| <p>CASE STYLES: Lower Mount, Panel Mount with U-Clamp and three hole Front Flange Mount</p> | <p>CASE STYLES: Lower Mount</p> | <p>CASE STYLES: Lower Mount</p> | <p>CASE STYLES: Safecase with blow-out back construction; Lower Mount</p> | <p>CASE STYLES: Lower Mount, Flush case (Front Flange w/U-Clamp), Back Flange with Lower or Lower Back Mounts</p> |
| <p>TUBE & SOCKET: 316 Stainless steel</p> | <p>TUBE & SOCKET: 316 Stainless steel</p> | <p>TUBE & SOCKET: 316 Stainless steel with socket welded to the case</p> | <p>TUBE & SOCKET: 316 Stainless steel</p> | <p>TUBE & SOCKET: Copper Alloy up to 1,000 psi. Stainless steel tube, above 1,000 psi</p> |
| <p>MOVEMENT: Stainless steel</p> | <p>MOVEMENT: Stainless steel</p> | <p>MOVEMENT: Stainless steel</p> | <p>MOVEMENT: Stainless steel rotary movement</p> | <p>MOVEMENT: Stainless steel</p> |
| <p>CONNECTIONS: ¼ NPT</p> | <p>CONNECTIONS: ½ NPT</p> | <p>CONNECTIONS: ½ NPT</p> | <p>CONNECTIONS: ½ NPT</p> | <p>CONNECTIONS: ¼ or ½ NPT</p> |
| <p>RANGES: 30-10,000 PSI</p> | <p>RANGES: 15-20,000 PSI</p> | <p>RANGES: 15-20,000 PSI</p> | <p>RANGES: 0-30" Hg vacuum 30-10,000 PSI</p> | <p>RANGES: 0-30" Hg vacuum; compound ranges 30" Hg vacuum to 300 PSI; 15-20,000 PSI</p> |
| <p>STANDARD DIAL: Dual scale PSI and kPa</p> | <p>STANDARD DIAL: Dual scale PSI and kPa</p> | <p>STANDARD DIAL: Dual scale PSI and kPa</p> | <p>STANDARD DIAL: Dual scale psi and kPa</p> | <p>STANDARD DIAL: Single scale PSI</p> |
| <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> |
| <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, Adjustable Micrometer, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: 3½": Aluminum, black painted with recalibrator. 4½": Aluminum, black painted, micro-adjustable</p> |
| <p>WINDOW: Acrylic</p> | <p>WINDOW: Safety glass</p> | <p>WINDOW: Safety glass</p> | <p>WINDOW: Safety glass</p> | <p>WINDOW: Glass</p> |
| <p>FILL MEDIUM: Dry, glycerine or silicone</p> | <p>FILL MEDIUM: Dry, glycerine, or silicone</p> | <p>FILL MEDIUM: Dry, glycerine, or silicone</p> | <p>FILL MEDIUM: Dry, glycerine or silicone</p> | <p>FILL MEDIUM: N/A</p> |
| <p>VENT: Rubber plug with snip-off feature</p> | <p>VENT: Rubber plug with snip-off feature</p> | <p>VENT: Rubber plug with snip-off feature</p> | <p>VENT: Internal compensating diaphragm</p> | <p>VENT: N/A</p> |









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| GAUGE SERIES: TEST GAUGE | GAUGE SERIES: MASTER TEST GAUGE | GAUGE SERIES: INSPECTOR'S TEST GAUGE | GAUGE SERIES: PROCESS GAUGE | GAUGE SERIES: DIAPHRAGM GAUGE |
| ACCURACY ASME: Grade 2A = ±0.50% full scale | ACCURACY ASME: Grade 3A = ±0.25% full scale | ACCURACY ASME: Grade 2A = ±0.50% full scale | ACCURACY ASME: Grade 2A = ±0.50% full scale | ACCURACY ASME: Grade A = ±2/1/2 (±1% of range across middle half of scale) and Grade B = ±3/1/3 (±2% of range for ranges below 30" H ₂ O) |
| CASE SIZE: 4½" diameter | CASE SIZE: 6" diameter | CASE SIZE: 3" diameter | CASE SIZE: 4½" and 6" diameter | CASE SIZE: 2½", 3½", & 4½" diameter |
| CASE MATERIAL: Steel, black painted | CASE MATERIAL: 304 Stainless steel | CASE MATERIAL: Brass, nickel plated | CASE MATERIAL: Safecase polypropylene (turret style only) & aluminum | CASE MATERIAL: Steel, black painted |
| CASE STYLES: Lower Mount, Flush Mount (Front Flange with U-clamp & hinged ring) | CASE STYLES: Lower Mount | CASE STYLES: Lower Mount | CASE STYLES: Turret, Back Flange case, Front Flange Mount, Lower or Lower Back Mount | CASE STYLES: Lower Mount, Center Back, U-Clamp & Front Flange Mount |
| TUBE & SOCKET: Copper Alloy or 316 Stainless steel | TUBE & SOCKET: Copper Alloy | TUBE & SOCKET: Copper Alloy | TUBE & SOCKET: Copper Alloy or 316 Stainless steel | TUBE & SOCKET: Phosphor bronze diaphragm soft-soldered to brass socket |
| MOVEMENT: Stainless steel | MOVEMENT: Stainless steel | MOVEMENT: Brass | MOVEMENT: Stainless steel | MOVEMENT: Brass sector and pinion |
| CONNECTIONS: ¼ or ½ NPT | CONNECTIONS: ¼ or ½ NPT | CONNECTIONS: ¼ NPT | CONNECTIONS: ¼ or ½ NPT | CONNECTIONS: ¼ or ½ NPT and special connections |
| RANGES: 0 to 30" Hg vacuum; compound ranges 30" Hg vacuum to 300 psi; 15-10,000 psi | RANGES: 0 to 30" Hg vacuum; compound ranges 30" Hg vacuum to 300 psi; 15-10,000 psi | RANGES: 0 to 30" Hg vacuum; 15 to 1,000 psi | RANGES: 0 to 30" Hg vacuum; compound 30" Hg vacuum to 300 psi; 15 to 20,000 psi | RANGES: Dual scale with kPa; 0 to 200" H ₂ O vacuum; 0 to 300" H ₂ O, 0 to 10 psi, 0 to 160 oz/in ² . Triple scale 0-58 oz/in ² , inches H ₂ O & kPa |
| STANDARD DIAL: Single scale psi | STANDARD DIAL: Single scale psi | STANDARD DIAL: Dual scale psi and kPa | STANDARD DIAL: Single scale psi | STANDARD DIAL: Dual scale in. H ₂ O & kPa, psi & kPa, or Triple scale oz/in ² in. H ₂ O, & kPa |
| DIAL COLOR: Black markings on white with mirrored dial to avoid parallax | DIAL COLOR: Black markings on white with mirrored dial to avoid parallax | DIAL COLOR: Black markings on white | DIAL COLOR: Black markings on white | DIAL COLOR: Black markings on white |
| POINTER: Aluminum, black painted, micro-adjustable, knife-edge | POINTER: Aluminum, black painted, knife-edge | POINTER: Aluminum, black painted, knife-edge | POINTER: Aluminum, black painted, micro-adjustable | POINTER: Aluminum, black painted |
| WINDOW: Glass | WINDOW: Glass | WINDOW: Beveled glass | WINDOW: Acrylic | WINDOW: 2½" & 3½": Acrylic twist-in Clearlok 4½": Flat acrylic with steel friction ring |
| FILL MEDIUM: N/A | FILL MEDIUM: N/A | FILL MEDIUM: N/A | FILL MEDIUM: Dry, glycerine, or silicone | FILL MEDIUM: N/A |
| VENT: Blowout disc | VENT: Blowout disc | VENT: N/A | VENT: Internal compensating diaphragm | VENT: N/A |





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| <p>ACCURACY ASME: Grade A = $\pm 2/1/2$ ($\pm 1\%$ of range across middle half of scale) and Grade B = $\pm 3/1/3\%$ for ranges (below 30" H₂O)</p> | <p>ACCURACY ASME: Grade B $\pm 3/2/3\%$ ($\pm 2\%$ of range across middle half of scale)</p> | <p>ACCURACY ASME: Grade A = $\pm 2/1/2$ ($\pm 1\%$ of range across middle half of scale)</p> | <p>ACCURACY ASME: $\pm 1\%$ of span</p> |
| <p>CASE SIZE: 2½"</p> | <p>CASE SIZE: 2" Diameter</p> | <p>CASE SIZE: 3½" diameter</p> | <p>CASE SIZE: 2", 3" & 5", standard stem lengths of 2½" to 24"</p> |
| <p>CASE MATERIAL: Provided in grey polyethylene case with 3 ft. of rubber tubing</p> | <p>CASE MATERIAL: Steel, black painted</p> | <p>CASE MATERIAL: Steel, chrome plated</p> | <p>CASE MATERIAL: 304 Stainless steel</p> |
| | <p>CASE STYLES: Mounting-Reducing Bell or Hex Style Housing Material-Reducing Bell: Iron, Black Painted Hex Body: Steel, Zinc Dichromate Plated</p> | <p>CASE STYLES: Lower Back Mount; Hinged ring case & moisture-proof with weep hole</p> | <p>CASE STYLES: Hermetically sealed; Center Back or Adjustable</p> |
| <p>TUBE & SOCKET: Phosphor bronze diaphragm soft-soldered to brass socket</p> | <p>TUBE & SOCKET: Copper Alloy</p> | <p>TUBE & SOCKET: Copper Alloy</p> | <p>TUBE & SOCKET: 304 Stainless steel stems</p> |
| <p>MOVEMENT: Brass sector and pinion</p> | <p>MOVEMENT: Brass</p> | <p>MOVEMENT: Stainless steel</p> | <p>MOVEMENT: Bimetal sensing element with external reset feature</p> |
| | <p>CONNECTIONS: ¾ NPTF</p> | <p>CONNECTIONS: ¾ NPT</p> | <p>CONNECTIONS: ¾ NPT (2" case only); ½ NPT (3" & 5" cases)</p> |
| <p>RANGES: 0 to 8.75 oz/in² 0 to 20 oz/in² 0 to 58 oz/in²</p> | <p>RANGES: <u>Bell Type</u> <u>Hex Type</u> 0-15 psi 0-15 psi 0-30 psi 0-30 psi 0-60 psi 0-60 psi 0-100 psi 0-100 psi</p> | <p>RANGES: 30 to 1,000 psi</p> | <p>RANGES: 11 dual scale ranges from -50° F through 1000° F (-50° C through 550° C)</p> |
| <p>STANDARD DIAL: Triple scale oz/in² in. H₂O, & kPa</p> | <p>STANDARD DIAL: Single Scale psi</p> | <p>STANDARD DIAL: Single scale psi</p> | <p>STANDARD DIAL: Dual scale in degrees Celsius & Fahrenheit</p> |
| <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> | <p>DIAL COLOR: Black markings on white</p> |
| <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted</p> | <p>POINTER: Aluminum, black painted with recalibrator</p> | <p>POINTER: Aluminum, black painted</p> |
| <p>WINDOW: Acrylic, twist-in Clearlok</p> | <p>WINDOW: Polycarbonate</p> | <p>WINDOW: Glass lens, chrome plated brass ring with weather-tight seal</p> | <p>WINDOW: Glass</p> |





| | TYPE M1-MINI | TYPE M2-STANDARD |
|---|-----------------------------|-----------------------------|
| FILTERS | | |
| Port Size | 1/8, 1/4 NPT | 1/4, 3/8, 1/2 NPT |
| Filtration (micron) | 5μ, 25μ, 50μ | 5μ, 25μ, 50μ |
| Maximum Supply Pressure | 1.0 MPa | 1.0 MPa |
| | 10 BAR | 10 BAR |
| | 145 psi | 145 psi |
| Temperature Range | 41°-140° F / 5°-60° C | 41°-140° F / 5°-60° C |
| Drain | Manual / Semi-Auto | Manual / Semi-Auto / Auto |
| Bowl Capacity | 0.75 inch ³ | 2.75 inch ³ |
| Flow (based on 100 psi inlet pressure with 50 micron filter) | 55, 85 SCFM | 120, 120, 120 SCFM |
| REGULATORS | | |
| Effect of Supply Pressure variation (25 psig) on Outlet Pressure | < 0.2 psig (13.8 mBAR) | < 0.2 psig (13.8 mBAR) |
| | < 0.25 SCFM (< 7 LPM) | < 0.25 SCFM (< 7 LPM) |
| Exhaust Capacity (5 psig above 20 psig set point) | < 0.25 SCFM (< 7 LPM) | < 0.25 SCFM (< 7 LPM) |
| Max. Supply Pressure | 145 psig (10 BAR) | 145 psig (10 BAR) |
| Flow Capacity at 100 psig (6.9 BAR) supply and 70 psig (4.8 BAR) outlet | 40, 60 SCFM | 90, 120, 120 SCFM |
| Output Pressure Ranges | 0-10 psig (0-0.69 BAR) | 0-10 psig (0-0.69 BAR) |
| | 0-30 psig (0-2.1 BAR) | 0-30 psig (0-2.1 BAR) |
| | 0-60 psig (0-4.1 BAR) | 0-60 psig (0-4.1 BAR) |
| | 0-120 psig (0-8.3 BAR) | 0-120 psig (0-8.3 BAR) |
| Total Air Consumption @ Maximum Output | 0.3 SCFH (0.14 LPM) | 0.3 SCFH (0.14 LPM) |
| Port Size | 1/8, 1/4 NPT | 1/4, 3/8, 1/2 NPT |
| Mounting Options | Pipe, Panel or Bracket | Pipe, Panel or Bracket |
| FILTER-REGULATORS | | |
| Port Size | 1/8, 1/4 NPT | 1/4, 3/8, 1/2 NPT |
| Filtration (micron) | 5μ, 25μ, 50μ | 5μ, 25μ, 50μ |
| Maximum Supply Pressure | 1.0 MPa | 1.0 MPa |
| | 10 BAR | 10 BAR |
| | 145 psi | 145 psi |
| Temperature Range | 41°-140° F / 5°-60° C | 41°-140° F / 5°-60° C |
| Drain | Manual / Semi-Auto | Manual / Semi-Auto / Auto |
| Bowl Capacity | 0.75 inch ³ | 2.75 inch ³ |
| Regulator Output Range | 0-10, 0-30, 0-60, 0-120 psi | 0-10, 0-30, 0-60, 0-120 psi |
| Flow (based on 100 psi supply/70 psi out) | 40, 60 SCFM | 90, 120, 120 SCFM |
| LUBRICATORS | | |
| Port Size | 1/8, 1/4 NPT | 1/4, 3/8, 1/2 NPT |
| Lubrication | Mist | Mist |
| Maximum Supply Pressure | 1.0 MPa | 1.0 MPa |
| | 10 BAR | 10 BAR |
| | 145 psi | 145 psi |
| Temperature Range | 41°-140° F / 5°-60° C | 41°-140° F / 5°-60° C |
| Bowl Capacity | 1.22 inch ³ | 5.18 inch ³ |
| Flow (based on 100 psi inlet pressure) | 55, 115 SCFM | 125, 125, 125 SCFM |



FRL FEATURES

Modular design for service & interchangeability

Miniature (M1), Standard (M2)

Small package size and light weight construction

Competitively priced

FILTERS

M1 has polycarbonate bowl, M2 have polycarbonate bowl with metal guard

STOCK ELEMENTS - 5, 25 or 50 micron

Manual, semi-auto or auto drain available

REGULATORS

Bellofram® Rolling Diaphragm for superior regulator performance

Panel, pipe, or bracket (included) mounting

Metal body, polycarbonate bonnet and knob

Non-rising adjustment knob with push-pull lock ring feature

FILTER REGULATORS

Aluminum and polycarbonate construction

Manual, semi-auto or autodrain available

M1 has polycarbonate bowl; M2 has polycarbonate bowl with metal guard

Non-rising adjustment knob with push-pull lock ring feature

For panel or bracket mounting

Bellofram® Rolling Diaphragm for superior regulator performance

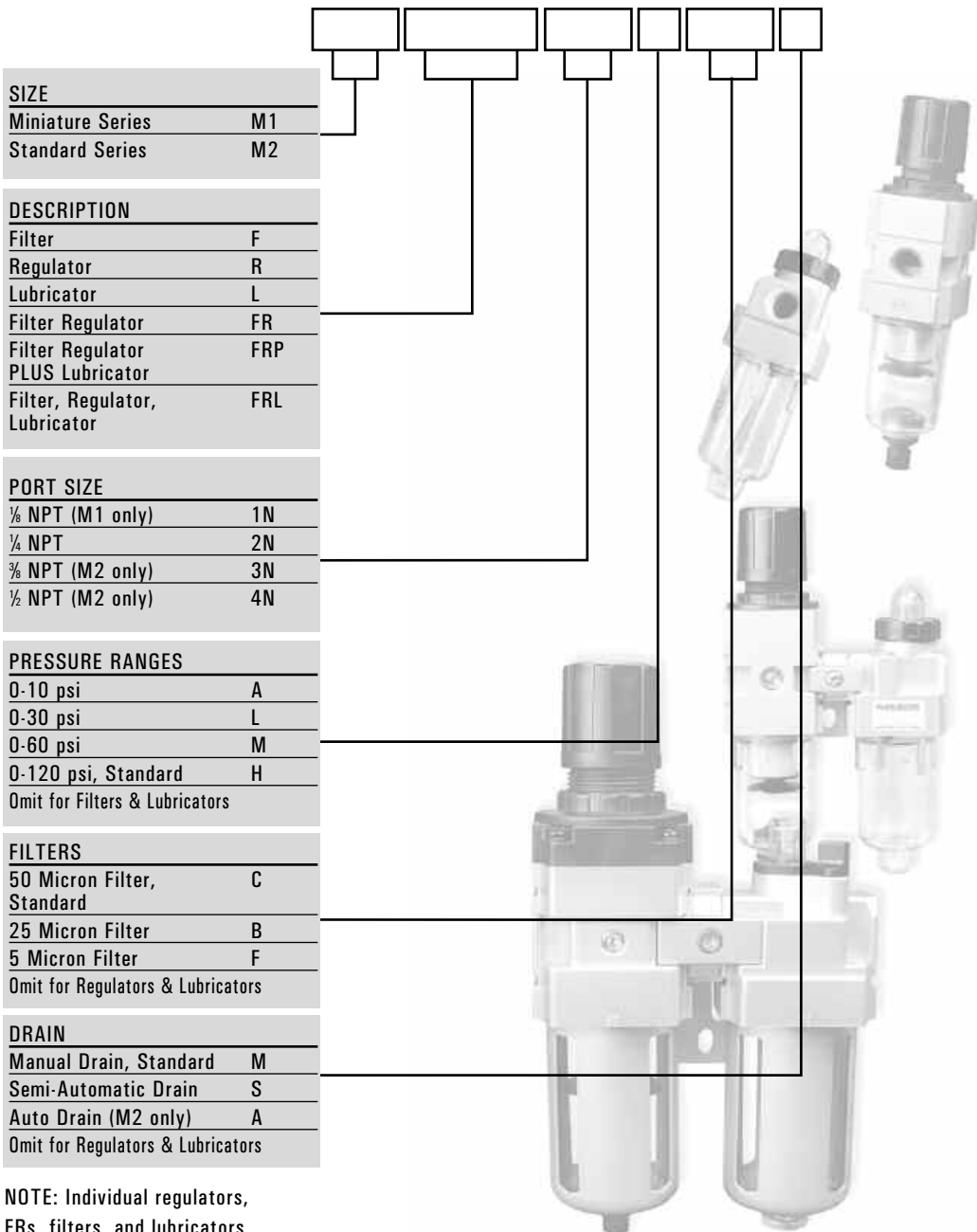
LUBRICATORS

M1 has polycarbonate bowl; remove bowl for filling.

M2 has polycarbonate bowl with metal guard; top plug permits filling without removing bowl or shutting off air

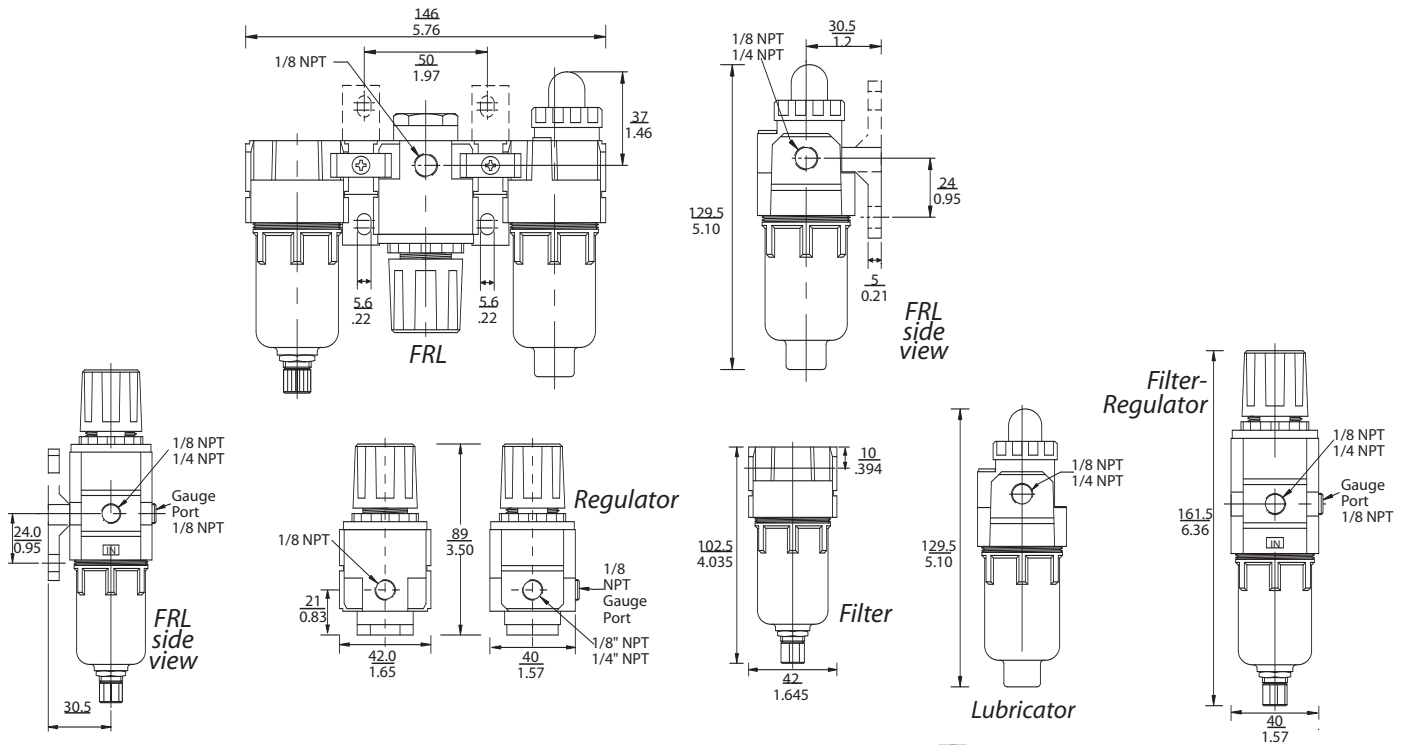
Adjust drip rate by hand, using graduated ring on M1, with screw-driver on M2

FRL ORDERING INFORMATION



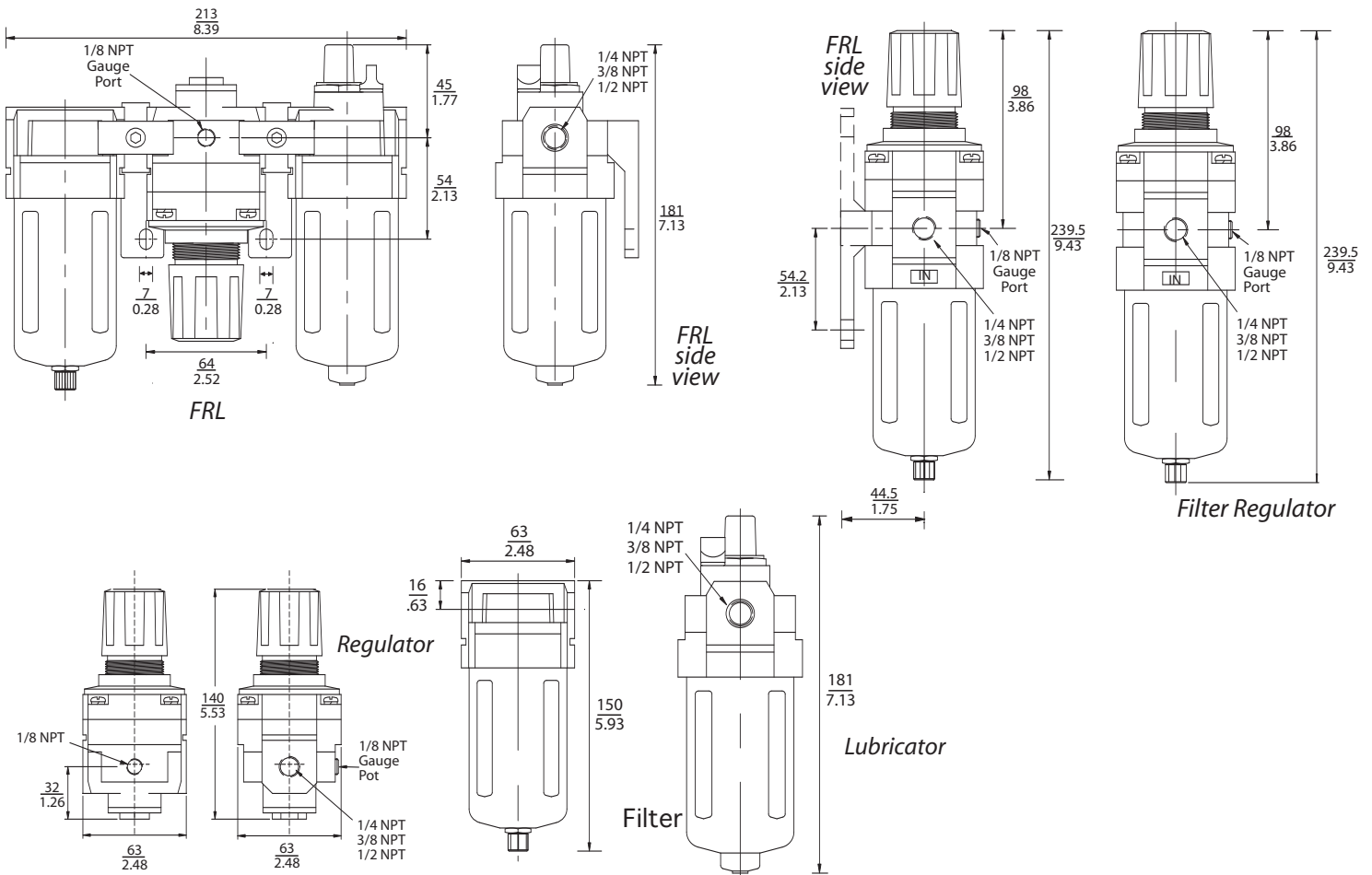
NOTE: Individual regulators, FRs, filters, and lubricators come complete with bracket .
FRL assemblies come complete with all bracket/connectors.

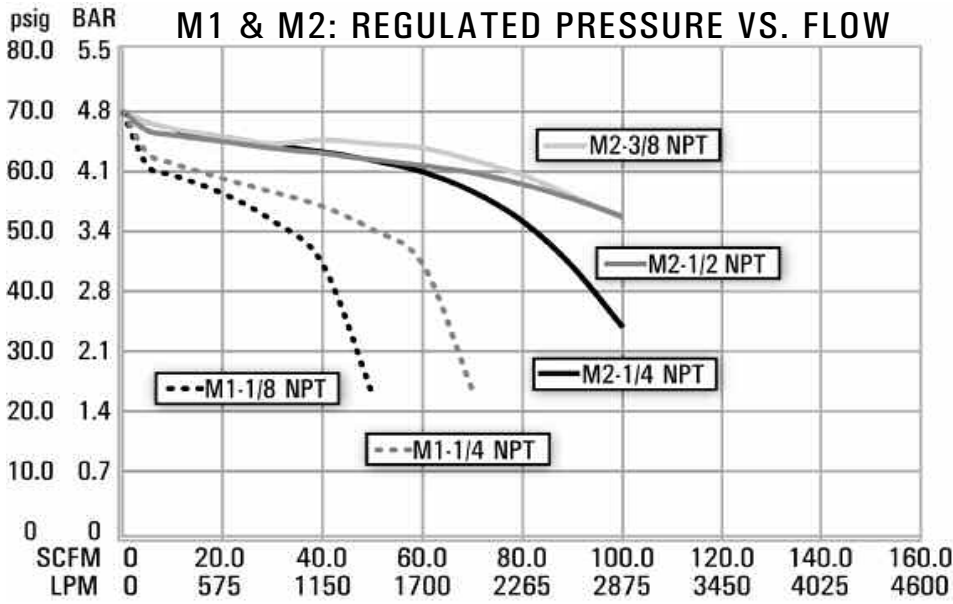
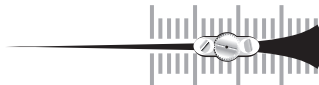




TYPE M1

TYPE M2





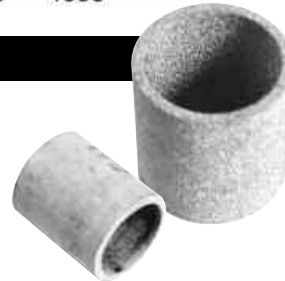
REPLACEMENT PARTS



| Description | Model # |
|-----------------------------------|---------|
| Miniature Size Connector Kit | M1K |
| Miniature Size Connector Kit FR+L | M1K2 |
| Standard Size Connector Kit | M2K |
| Standard Size Connector Kit FR+L | M2K2 |



| | |
|--|------|
| Miniature Size Filter or Lubricator Bracket | M1FB |
| Standard Size Filter or Lubricator Bracket | M2FB |
| Miniature Size Regulator or Filter Regulator Bracket | M1RB |
| Standard Size Regulator or Filter Regulator Bracket | M2RB |



| Description | Model # |
|------------------------------------|---------|
| Miniature 5 micron Filter Element | M1FK05 |
| Miniature 25 micron Filter Element | M1FK25 |
| Miniature 50 micron Filter Element | M1FK50 |
| Standard 5 micron Filter Element | M2FK05 |
| Standard 25 micron Filter Element | M2FK25 |
| Standard 50 micron Filter Element | M2FK50 |



| | |
|--|-------|
| Miniature Bowl / Manual Drain Assembly | M1DM |
| Miniature Bowl / Semi-Automatic Drain Assembly | M1DSA |
| Standard Bowl / Manual Drain Assembly | M2DM |
| Standard Bowl / Semi-Automatic Drain Assembly | M2DSA |
| Standard Bowl / Automatic Drain Assembly | M2DA |

Pressure Gauges - "GG" Series Gauges pg. 9

MARSHALLTOWN VALUE SERIES GAUGE

- ASME Grade B Accuracy
- Extra Savings with Quantity Pricing
- 4 Standard Mounting Options: LM, CB, Right & Left

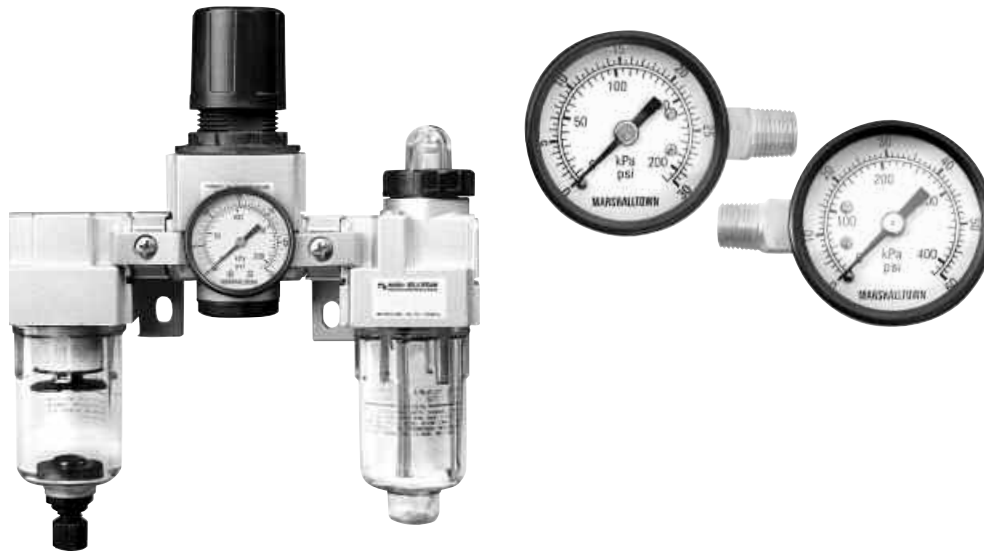
Marshalltown Value Series are the most economical, general purpose gauges in the Marsh gauge line. Suited for use with water, oil, air, gas, or other non-corrosive media.

Typical applications include FRL's, compressors, pumps, boilers, regulators, dryers as well as commercial and industrial equipment.

STANDARD RANGES & PART NUMBERS

| TYPE | MARSHALLTOWN VALUE SERIES GAUGES | | | | | | | |
|--------------|----------------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|
| | 1 1/2" | | | | 2" | | | |
| Mounting | LM | CB | Right | Left | LM | CB | LM | CB |
| Connection | 1/2 NPT | 1/2 NPT | 1/2 NPT | 1/2 NPT | 1/2 NPT | 1/2 NPT | 1/2 NPT | 1/2 NPT |
| 0 to 15 psi | | GG1515C8 | | | | | | |
| 0 to 30 psi | GG1530L8 | GG1530C8 | GG1530G8 | GG1530F8 | GG2030L4 | GG2030C4 | GG2030L8 | GG2030C8 |
| 0 to 60 psi | GG1560L8 | GG1560C8 | GG1560G8 | GG1560F8 | GG2060L4 | GG2060C4 | | |
| 0 to 100 psi | GG15100L8 | GG15100C8 | | | GG20100L4 | GG20100C4 | GG20100L8 | GG20100C8 |
| 0 to 160 psi | GG15160L8 | GG15160C8 | | | GG20160L4 | GG20160C4 | GG20160L8 | GG20160C8 |
| 0 to 200 psi | | GG15200C8 | | | | GG20200C4 | | GG20200C8 |
| 0 to 300 psi | | | | | | GG20300C4 | | |

Consult Factory for additional ranges.



SPECIFICATIONS

ACCURACY
ASME Grade B = $\pm 3/2/3\%$ ($\pm 2\%$ of range across middle half of scale)

CASE SIZES
1 1/2" and 2" diameter

CASE MATERIAL
Steel, black painted

CASE STYLE
CB – Center Back Mount
LM – Lower Mount
Right Mount
Left Mount

TUBE & SOCKET
Copper alloy

MOVEMENT
Brass

CONNECTION
1/2 & 1/4 NPT

RANGES
15 to 200 psi

DIAL STANDARD
Dual scale psi and kPa

DIAL COLOR
Black markings on white

POINTER
Aluminum, Black painted

WINDOW
Flat plastic with steel friction ring



GENERAL SERVICE GAUGE

- Dial Sizes: 1½", 2", 2½", 3½" & 4½"
- Superb quality, economical price
- Pressure ranges to 5000 psi

Marsh Instruments General Service Steel Case Gauges are an economical, general purpose gauge for pressure measurement from vacuum/compound through 5,000 psi. Suited for use with water, oil, air, gas, or other non-corrosive media.

Typical applications include FRLs, compressors, pumps, boilers, regulators, dryers as well as commercial and industrial equipment.



SPECIFICATIONS

ACCURACY

ASME Grade B-±3/2/3% (±2% of range across middle half of scale)

CASE SIZES

1½", 2", 2½", 3½", 4½" diameter

CASE MATERIAL

Steel, black painted

CASE STYLE

CB – Center Back Mount

LM – Lower Mount

UC – U-Clamp Mount

See option tables for Front Flange

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass

CONNECTION

½ & ¼ NPT

RANGES

0 to 30" Hg VAC; Compound 30" Hg vac to 400 psi; 15 to 5,000 psi

DIAL STANDARD

Dual scale psi and kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

1½", 2", 2½", 3½": acrylic, twist-in Clearlok

4½": flat glass window with steel friction ring

RESTRICTOR

Standard for ranges 1,000 psi and above

STANDARD RANGES & PART NUMBERS

| TYPE | GENERAL SERVICE GAUGES | | | | | | |
|-----------------------|------------------------|-------|-------|--------------|-------|-------|-------|
| Size | 1½" | | | 2" | | | |
| Case Material | Steel | | | Steel | | | |
| Internals | Copper Alloy | | | Copper Alloy | | | |
| Mounting / Case Style | LM | UC | CB | LM | LM | CB | CB |
| Connection | ½ NPT | ½ NPT | ½ NPT | ½ NPT | ¼ NPT | ½ NPT | ¼ NPT |
| Scale Standard | psi/kPa | | | psi/kPa | | | |
| 0 to 30" Hg VAC | J0405 | J0505 | J0605 | J1105 | J1405 | J1805 | J2005 |
| 30" Hg VAC to 15 psi | | | | | | | |
| 30" Hg VAC to 30 psi | | | | | J1412 | | |
| 30" Hg VAC to 60 psi | | | | | J1414 | | |
| 30" Hg VAC to 100 psi | | | | | | | |
| 30" Hg VAC to 150 psi | J0418 | J0518 | J0618 | J1118 | J1418 | J1818 | J2018 |
| 30" Hg VAC to 200 psi | J0420 | J0520 | J0620 | J1120 | J1420 | J1820 | J2020 |
| 30" Hg VAC to 300 psi | J0424 | J0524 | J0624 | J1124 | J1424 | J1824 | J2024 |
| 30" Hg VAC to 400 psi | | | | J1126 | J1426 | J1826 | J2026 |
| 0 to 15 psi | J0440 | J0540 | J0640 | J1140 | J1440 | J1840 | J2040 |
| 0 to 30 psi | J0442 | J0542 | J0642 | J1142 | J1442 | J1842 | J2042 |
| 0 to 60 psi | J0446 | J0546 | J0646 | J1146 | J1446 | J1846 | J2046 |
| 0 to 100 psi | J0448 | J0548 | J0648 | J1148 | J1448 | J1848 | J2048 |
| 0 to 160 psi | J0452 | J0552 | J0652 | J1152 | J1452 | J1852 | J2052 |
| 0 to 200 psi | J0454 | J0554 | J0654 | J1154 | J1454 | J1854 | J2054 |
| 0 to 300 psi | J0458 | J0558 | J0658 | J1158 | J1458 | J1858 | J2058 |
| 0 to 400 psi | | | | J1160 | J1460 | J1860 | J2060 |
| 0 to 600 psi | | | | | J1464 | J1864 | |
| 0 to 1,000 psi | | | | | | | |
| 0 to 1,500 psi | | | | | | | |
| 0 to 2,000 psi | | | | | | | |
| 0 to 3,000 psi | | | | | J1478 | J1878 | J2078 |
| 0 to 5,000 psi | | | | | J1482 | | |





STANDARD RANGES & PART NUMBERS

| TYPE | GENERAL SERVICE GAUGES | | | | | | | | | | | |
|-----------------------|------------------------|-------|--------------|-------|-------|-------|-------|-------|--------------|-------|---------|-------|
| | 2" | | 2½" | | | | | | 3½" | | 4½" | |
| Case Material | Steel | | Steel | | | | | | Steel | | Steel | |
| Internals | Copper Alloy | | Copper Alloy | | | | | | Copper Alloy | | | |
| Mounting / Case Style | UC | UC | LM | LM | CB | CB | UC | UC | LM | CB | UC | LM |
| Connection | ½ NPT | ¼ NPT | ½ NPT | ¼ NPT | ½ NPT | ¼ NPT | ½ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT |
| Scale Standard | psi/kPa | | psi/kPa | | | | | | psi/kPa | | psi/kPa | |
| 0 to 30" Hg VAC | J2405 | J2605 | J4005 | J4605 | J5005 | J5405 | J6005 | J6205 | J8005 | J8605 | J8805 | J9005 |
| 30" Hg VAC to 15 psi | | | | | | | | | | | | |
| 30" Hg VAC to 30 psi | | | | J4612 | | | | | J8012 | | | |
| 30" Hg VAC to 60 psi | | | | J4614 | | | | | J8014 | | | J9014 |
| 30" Hg VAC to 100 psi | | | | | | | | | | | | |
| 30" Hg VAC to 150 psi | J2418 | J2618 | J4018 | J4618 | J5018 | J5418 | J6018 | J6218 | J8018 | J8618 | J8818 | J9018 |
| 30" Hg VAC to 200 psi | J2420 | J2620 | J4020 | J4620 | J5020 | J5420 | J6020 | J6220 | J8020 | J8620 | J8820 | J9020 |
| 30" Hg VAC to 300 psi | J2424 | J2624 | J4024 | J4624 | J5024 | J5424 | J6024 | J6224 | J8024 | J8624 | J8824 | J9024 |
| 30" Hg VAC to 400 psi | J2426 | J2626 | J4026 | J4626 | J5026 | J5426 | J6026 | J6226 | J8026 | J8626 | J8826 | J9026 |
| 0 to 15 psi | J2440 | J2640 | J4040 | J4640 | | J5440 | | J6240 | J8040 | J8640 | J8840 | J9040 |
| 0 to 30 psi | J2442 | J2642 | J4042 | J4642 | J5042 | J5442 | J6042 | J6242 | J8042 | J8642 | J8842 | J9042 |
| 0 to 60 psi | J2446 | J2646 | J4046 | J4646 | J5046 | J5446 | J6046 | J6246 | J8046 | J8646 | J8846 | J9046 |
| 0 to 100 psi | J2448 | J2648 | J4048 | J4648 | J5048 | J5448 | J6048 | J6248 | J8048 | J8648 | J8848 | J9048 |
| 0 to 160 psi | J2452 | J2652 | J4052 | J4652 | J5052 | J5452 | J6052 | J6252 | J8052 | J8652 | J8852 | J9052 |
| 0 to 200 psi | J2454 | J2654 | J4054 | J4654 | J5054 | J5454 | J6054 | J6254 | J8054 | J8654 | J8854 | J9054 |
| 0 to 300 psi | J2458 | J2658 | J4058 | J4658 | J5058 | J5458 | J6058 | J6258 | J8058 | J8658 | J8858 | J9058 |
| 0 to 400 psi | J2460 | J2660 | J4060 | J4660 | J5060 | J5460 | J6060 | J6260 | J8060 | J8660 | J8860 | J9060 |
| 0 to 600 psi | | | | J4664 | | | | | J8064 | J8664 | J8864 | J9064 |
| 0 to 1,000 psi | | | J4072 | J4672 | | J5472 | | J6272 | | J8672 | J8872 | J9072 |
| 0 to 1,500 psi | | | | J4674 | | | | | J8074 | | | |
| 0 to 2,000 psi | | | | J4676 | | J5476 | | J6276 | | | | J9076 |
| 0 to 3,000 psi | J2478 | J2678 | | J4678 | J5078 | J5478 | J6078 | J6278 | | | | |
| 0 to 5,000 psi | | | | J4682 | | | | | | J8682 | J8882 | J9082 |

General Service



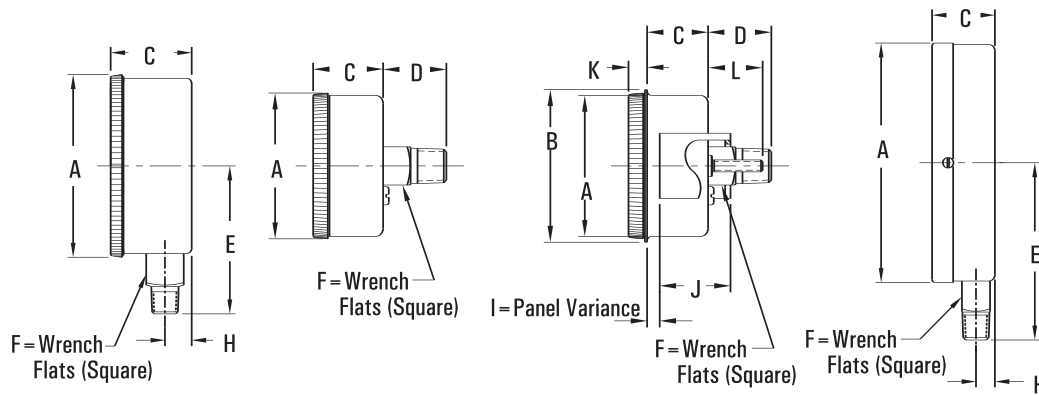
| Dial Divisions | General Service 3/2/3% of Span | | |
|-----------------------|-----------------------------------|-------------------|------|
| Ranges | Figure Intervals | Minor Graduations | |
| Vacuum | 5 | 1 | |
| COMPOUND | | | |
| 30" Hg VAC to 15 psi | 10 | 5 | 2 1 |
| 30" Hg VAC to 30 psi | 10 | 10 | 2 1 |
| 30" Hg VAC to 60 psi | 10 | 10 | 2 2 |
| 30" Hg VAC to 150 psi | 30 | 30 | 5 5 |
| 30" Hg VAC to 300 psi | 30 | 50 | - 10 |
| PRESSURE | | | |
| 0 to 15 psi | 3 | 0.2 | |
| 0 to 30 psi | 5 | 1 | |
| 0 to 60 psi | 10 | 1 | |
| 0 to 100 psi | 10 | 2 | |
| 0 to 160 psi | 20 | 2 | |
| 0 to 200 psi | 50 | 4 | |
| 0 to 300 psi | 50 | 5 | |
| 0 to 400 psi | 50 | 5 | |
| 0 to 600 psi | 50 | 10 | |
| HIGH PRESSURE | | | |
| 0 to 1,000 psi | 200 | 20 | |
| 0 to 1,500 psi | 300 | 20 | |
| 0 to 2,000 psi | 400 | 40 | |
| 0 to 3,000 psi | 500 | 100 | |
| 0 to 4,000 psi | 1,000 | 100 | |
| 0 to 5,000 psi | 1,000 | 100 | |

GENERAL SERVICE GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------------|---|--------|--|
| Restrictors | Add restrictor | H | All models – Consult factory for other sizes |
| | | | |
| Catalog Dials | psi only | E | See Marsh Price List for minimums |
| | bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & MPa | W4 | |
| Custom Dials | Custom face | M | See Marsh Price List for minimums |
| Window | Instrument glass w/ring (GS) | F1 | 1½" - 3½" Consult factory for availability |
| | Acrylic | F2 | 4½" Consult factory for availability |
| Pointer | Adjustable (slotted) pointer (AD) | Z1 | 2" - 4½" Consult factory for availability |
| | Max. Hand Assembly (MX) | Z2 | 2" - 3½" CB or LM only, Consult factory for availability |
| Increased Accuracy | Grade A: (2/1/2%) | B | All models - 10 piece minimum order |
| Cases | 3 hole front flange (FF) | | 1½" - 3½" See below for part number |
| | Part Numbers: 1½"x ⅝" (J07XX), 2"x ⅝" (J25XX), 2"x ¼" (J29XX), 2½" x ⅝" (J61XX), 2½"x ¼" (J63XX), 3½"x ⅝" (J85XX), 3½"x ¼" (J89XX). Consult factory for availability. | | |
| | Stainless steel (SS) | J1 | Consult factory for availability |
| | Brass (BR) | J2 | |
| Rings | Friction ring (external), Polished stainless steel (FC) | A1 | 1½" to 3½" CB or LM only |
| | Friction ring (external), black (FB) | A2 | 1½" to 3½" CB or LM only |
| | Press ring, black (PB) | A3 | 2" to 3½" [Panel mount] |
| | Press ring, chrome (PC) | A4 | 2" to 3½" [Panel mount] |
| Special Connections | | | Consult Factory for availability |



(J90XX Only)



GENERAL SERVICE CASE DIMENSIONS

| Part# | Dial Size | Mount | A | B | C | D | E | F | H | I | J | K | L |
|-------|-----------|-------|------|------|------|-----|------|----|-----|---------|------|-----|-----|
| J04xx | 1½ | ⅝" LM | 1.67 | | .90 | | 1.50 | ⅞" | .26 | | | | |
| J05xx | 1½ | ⅝" UC | 1.60 | 1.75 | .71 | .72 | | ⅞" | | .06-.37 | .81 | .19 | .63 |
| J06xx | 1½ | ⅝" CB | 1.67 | | .90 | .72 | | ⅞" | | | | | |
| J11xx | 2.0 | ⅝" LM | 2.20 | | 1.22 | | 1.82 | ⅞" | .40 | | | | |
| J14xx | 2.0 | ¼" LM | 2.20 | | 1.22 | | 1.82 | ⅞" | .40 | | | | |
| J18xx | 2.0 | ⅝" CB | 2.20 | | 1.22 | .82 | | ⅞" | | | | | |
| J20xx | 2.0 | ¼" CB | 2.20 | | 1.22 | .82 | | ⅞" | | | | | |
| J24xx | 2.0 | ⅝" UC | 2.06 | 2.25 | .94 | .88 | | ⅞" | | 0-0.43 | 1.22 | .20 | .92 |
| J26xx | 2.0 | ¼" UC | 2.06 | 2.25 | .94 | .88 | | ⅞" | | 0-0.43 | 1.22 | .20 | .92 |
| J40xx | 2½ | ⅝" LM | 2.73 | | 1.22 | | 2.10 | ⅞" | .40 | | | | |
| J46xx | 2½ | ¼" LM | 2.73 | | 1.22 | | 2.10 | ⅞" | .40 | | | | |
| J50xx | 2½ | ⅝" CB | 2.73 | | 1.23 | .82 | | ⅞" | | | | | |
| J54xx | 2½ | ¼" CB | 2.73 | | 1.23 | .82 | | ⅞" | | | | | |
| J60xx | 2½ | ⅝" UC | 2.58 | 2.81 | .94 | .88 | | ⅞" | | 0-0.43 | 1.22 | .20 | .92 |
| J62xx | 2½ | ¼" UC | 2.58 | 2.81 | .94 | .88 | | ⅞" | | 0-0.43 | 1.22 | .20 | .92 |
| J80xx | 3½ | ¼" LM | 3.71 | | 1.22 | | 2.77 | ⅞" | .40 | | | | |
| J86xx | 3½ | ¼" CB | 3.71 | | 1.15 | .80 | | ⅞" | | | | | |
| J88xx | 3½ | ¼" UC | 3.65 | 3.98 | .91 | .87 | | ⅞" | | 0-0.49 | 1.10 | .24 | .92 |
| J90xx | 4½ | ¼" LM | 4.53 | | 1.22 | | 3.16 | ⅞" | .40 | | | | |



40MM & 50MM SEVERE SERVICE GAUGE

- Copper Alloy Internals
- Glycerine Filled
- Center Back Mount Only

Marsh Instruments Liquid-Filled Gauges are designed to perform in rugged and harsh environmental conditions - especially where pulsation and vibration is a problem. Liquid Filled Gauges offer a significant cushioning and dampening effect, reducing pointer flutter and internal gauge damage. Liquid Filled Gauges feature a ventable top fill plug and can be mounted on a horizontal or vertical plane. The hermetically sealed construction reduces the chance of leaks and makes field filling an easy option.

Typical applications include refineries, chemical, oil & gas, marine and OEM processes.

SPECIFICATIONS

ACCURACY

±2.5% of range across full scale

CASE SIZES

40 or 50 mm diameter

CASE MATERIAL

304 Stainless Steel

CASE STYLE

CB – Center Back mount

TUBE & SOCKET

Copper Alloy tube
with nickel plated brass socket

MOVEMENT

Brass

CONNECTION

½ NPT & ¼ NPT

RANGES

15 to 160 psi

DIAL STANDARD

Triple scale psi/BAR/kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Acrylic

FILL MEDIUM

Glycerine Standard

RESTRICTOR

Standard, all ranges

VENT PLUG

Filler/pressure relief plug

TEMPERATURE LIMITS

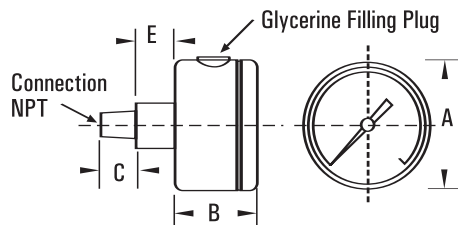
0 – 140° F (filled)

STANDARD RANGES & PART NUMBERS

| TYPE | 40MM & 50MM GAUGES | |
|-----------------------|---------------------|---------------------|
| | 40mm | 50mm |
| Size | 40mm | 50mm |
| Case Material | 304 Stainless Steel | 304 Stainless Steel |
| Internals | Copper Alloy | Copper Alloy |
| Mounting / Case Style | CB | CB |
| Connection | ½ NPT | ½ NPT |
| Scale Standard | psi/BAR/kPa | psi/BAR/kPa |
| 0 to 15 psi | M4040P | M5040P |
| 0 to 30 psi | M4042P | M5042P |
| 0 to 60 psi | M4046P | M5046P |
| 0 to 100 psi | M4048P | M5048P |
| 0 to 160 psi | M4052P | M5052P |

40MM AND 50MM GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|--------------|---------------|--------|-----------------------------------|
| Custom Dials | Custom face | M | See Marsh Price List for minimums |
| Other Ranges | | | Consult factory for availability |
| Fill Medium | Silicone (SL) | I | Consult factory |



| A-Size | B | C | E |
|----------|------------------|-----------------|------------------|
| 40mm Dia | 27.00mm 1.06" | 11.5mm 0.45" | 13.00mm 0.51" |
| 50mm Dia | 30.00mm 1.18" | 11.5mm 0.45" | 10.00mm 0.39" |



63MM SEVERE SERVICE GAUGE

- 3 Standard Mounting Options: LM, CB and U-Clamp
- Glycerine Filled
- Ranges to 10,000 psi

Marsh Instruments Liquid-Filled Gauges are designed to perform in rugged applications and harsh environmental conditions - especially where pulsation and vibration are a problem. Liquid Filled Gauges offer a significant cushioning and dampening effect, reducing pointer flutter and internal gauge damage; also lubricating the internals, and reducing corrosion.

All stainless steel Liquid Filled Gauges feature a ventable top fill plug for pressure relief and ease of venting after installation. Pressure ranges are available through 10,000 psi, with high pressure ranges offering a Helical Bourdon Tube for longer gauge life and increased durability. The hermetically sealed construction reduces the chance of leaks, and makes field filling an easy option.

Typical applications include refineries, chemical plants, offshore platforms, oil rigs, marine applications, general industrial application and OEM processes.



STANDARD RANGES & PART NUMBERS

| TYPE | 63MM SEVERE SERVICE GAUGES | | | | | |
|-----------------------|----------------------------|--------|--------|---------------------|--------|--------|
| | 63mm | | | 63mm | | |
| Size | 63mm | | | 63mm | | |
| Case Material | 304 Stainless Steel | | | 304 Stainless Steel | | |
| Internals | Copper Alloy | | | Stainless Steel | | |
| Mounting / Case Style | LM | UC | CB | LM | UC | CB |
| Connection | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT |
| Scale Standard | psi/kPa | | | psi/kPa | | |
| 0 to 30" Hg VAC | J7605P | J7205P | J6405P | J7805P | J7405P | J6605P |
| 30" Hg VAC to 15 psi | | | | | | |
| 30" Hg VAC to 30 psi | J7612P | | | | | |
| 30" Hg VAC to 60 psi | J7614P | | | | | |
| 30" Hg VAC to 100 psi | | | | | | |
| 30" Hg VAC to 150 psi | J7618P | J7218P | J6418P | J7818P | J7418P | J6618P |
| 30" Hg VAC to 200 psi | J7620P | J7220P | J6420P | J7820P | J7420P | J6620P |
| 30" Hg VAC to 300 psi | J7624P | J7224P | J6424P | J7824P | J7424P | J6624P |
| 30" Hg VAC to 400 psi | J7626P | J7226P | J6426P | J7826P | J7426P | J6626P |
| 0 to 15 psi | J7640P | J7240P | J6440P | J7840P | J7440P | J6640P |
| 0 to 30 psi | J7642P | J7242P | J6442P | J7842P | J7442P | J6642P |
| 0 to 60 psi | J7646P | J7246P | J6446P | J7846P | J7446P | J6646P |
| 0 to 100 psi | J7648P | J7248P | J6448P | J7848P | J7448P | J6648P |
| 0 to 160 psi | J7652P | J7252P | J6452P | J7852P | J7452P | J6652P |
| 0 to 200 psi | J7654P | J7254P | J6454P | J7854P | J7454P | J6654P |
| 0 to 300 psi | J7658P | J7258P | J6458P | J7858P | J7458P | J6658P |
| 0 to 400 psi | J7660P | J7260P | J6460P | J7860P | J7460P | J6660P |
| 0 to 600 psi | J7664P | J7264P | J6464P | J7864P | J7464P | J6664P |
| 0 to 1,000 psi | J7672P | J7272P | J6472P | J7872P | J7472P | J6672P |
| 0 to 1,500 psi | J7674P | J7274P | J6474P | J7874P | J7474P | J6674P |
| 0 to 2,000 psi | J7676P | J7276P | J6476P | J7876P | J7476P | J6676P |
| 0 to 3,000 psi | J7678P | J7278P | J6478P | J7878P | J7478P | J6678P |
| 0 to 5,000 psi | J7682P | J7282P | J6482P | J7882P | J7482P | J6682P |
| 0 to 6,000 psi | J7684P | J7284P | J6484P | J7884P | J7484P | J6684P |
| 0 to 10,000 psi | | | | J7890P | J7490P | J6690P |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

SPECIFICATIONS

ACCURACY
ASME Grade B - ±3/2/3% (±2% of range across middle half of scale)

CASE SIZES
63mm (2.47") diameter

CASE MATERIAL
304 Stainless Steel

CASE STYLE
Rolled ring, hermetically sealed case
CB - Center Back Mount
LM - Lower Mount
UC - U-Clamp Mount

TUBE & SOCKET
Copper alloy or 316 stainless steel

MOVEMENT
Brass

CONNECTION
¼ NPT

RANGES
0 to 30" Hg VAC; Compound 30"
Hg to 400 psi; 15 to 10,000 psi

DIAL STANDARD
Dual scale psi and kPa

DIAL COLOR
Black markings on white

POINTER
Aluminum, black painted

WINDOW
Polycarbonate

FILL MEDIUM
Glycerine Standard

RESTRICTOR
Standard for all ranges

VENT PLUG
Rubber plug with snip-off feature

Severe Service



front flange mount

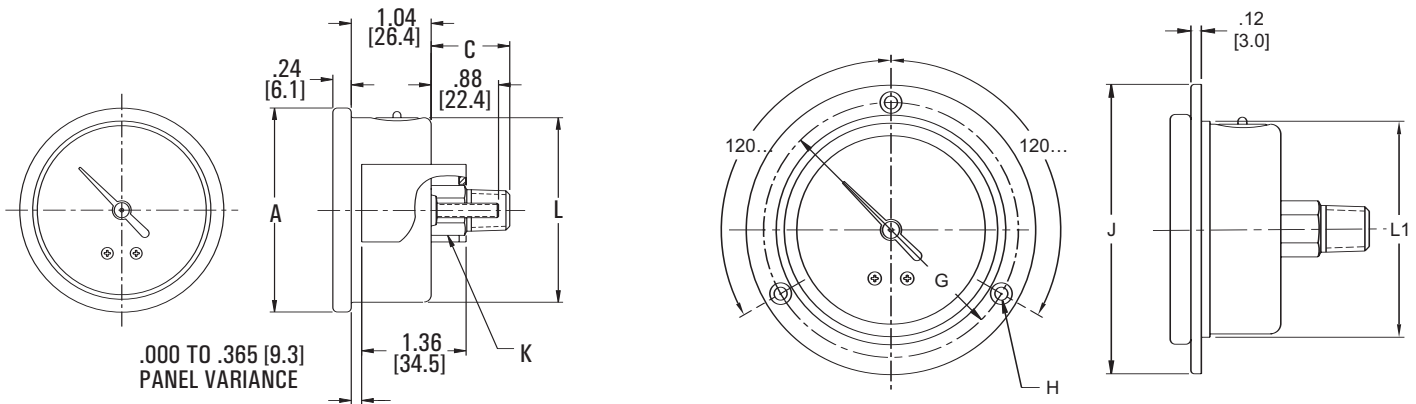


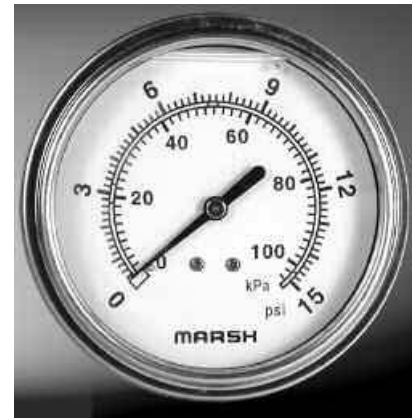
63MM SEVERE SERVICE GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|------------------------------------|--------------------------|-----------------|--|
| Fill Medium | Dry (no fill) | Delete suffix P | All models |
| | Silicone (SL) | I | All models |
| Front Flange | Adapter ring (3 hole) | R1 | Center Back & U-Clamp only (factory Installed) |
| | Adapter ring (no holes) | R2 | U-Clamp only (factory Installed) |
| Bayonet Case & Ring w/Safety Glass | | J | Center Back or Lower Mount (consult factory) |
| Catalog Dials | psi only | E | See Marsh Price List for minimum |
| | bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| psi & MPa | W4 | | |
| Custom Dials | Logo or Custom face | M | Consult factory for colors and minimums |
| Restrictor | Special restrictor | H | All models - See Marsh Price List for minimum |
| | Restrictor removed | H1 | |
| Increased Accuracy | Grade A (2/1/2%) | B | All models - See Marsh Price List for minimum |
| Special Connections | | | Consult Factory |

Dimension Table

| Gauge Size | Connection | A | C | G | H | K | J | L | L1 |
|------------|------------|-------|-------|-------|-------|-------|------|-------|------|
| 63mm | 1/4" | 2.66" | 1.03" | 2.95" | 0.15" | 0.56" | 3.35 | 2.43" | 2.5" |
| | | 68mm | 26mm | 75mm | 4mm | 14mm | 85mm | 62mm | 64mm |





100MM SEVERE SERVICE GAUGE

- Brass or Stainless Steel Internals
- Ranges to 10,000 psi
- Glycerine Filled

Marsh Instruments Liquid Filled Gauges are designed to perform in rugged applications and harsh environmental conditions - especially where pulsation and vibration are a problem. Liquid Filled Gauges offer a significant cushioning and dampening effect, reducing pointer flutter and internal gauge damage; also lubricating the internals, and reducing corrosion. All stainless steel Liquid Filled Gauges feature a ventable top fill plug for pressure relief and ease of venting after installation. The hermetically sealed construction reduces the chance of leaks, and makes field filling an easy option.

Typical applications include refineries, chemical plants, offshore platforms, oil rigs, marine applications, general industrial application and OEM processes.

STANDARD RANGES & PART NUMBERS

| TYPE | 100MM SEVERE SERVICE GAUGES | | | | | |
|-----------------------|-----------------------------|---------|---------|-----------------|---------|---------|
| | 100mm | | | 100mm | | |
| Size | 100mm | | | 100mm | | |
| Case Material | Stainless Steel | | | Stainless Steel | | |
| Internals | Copper Alloy | | | Stainless Steel | | |
| Mounting / Case Style | LM | CB | UC | LM | CB | UC |
| Connections (NPT) | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT |
| Scale Standard | psi/kPa | | | psi/kPa | | |
| 0 to 30" Hg VAC | X32965P | | | X32967P | | |
| 30" Hg VAC to 30 psi | X32501P | | | | | |
| 30" Hg VAC to 60 psi | X32502P | | | | | |
| 30" Hg VAC to 100 psi | | | | | | |
| 30" Hg VAC to 150 psi | X32887P | X32901P | X32894P | X32929P | X32941P | X32935P |
| 30" Hg VAC to 200 psi | X32888P | X32902P | X32895P | X32930P | X32942P | X32936P |
| 30" Hg VAC to 300 psi | X32889P | X32903P | X32896P | X32931P | X32943P | X32937P |
| 0 to 15 psi | X32504P | X32546P | X32525P | X32630P | X32678P | X32654P |
| 0 to 30 psi | X32505P | X32547P | X32526P | X32631P | X32679P | X32655P |
| 0 to 60 psi | X32506P | X32548P | X32527P | X32632P | X32680P | X32656P |
| 0 to 100 psi | X32507P | X32549P | X32528P | X32633P | X32681P | X32657P |
| 0 to 160 psi | X32508P | X32550P | X32529P | X32634P | X32682P | X32658P |
| 0 to 200 psi | X32509P | X32551P | X32530P | X32635P | X32683P | X32659P |
| 0 to 300 psi | X32510P | X32552P | X32531P | X32636P | X32684P | X32660P |
| 0 to 400 psi | X32511P | X32553P | X32532P | X32637P | X32685P | X32661P |
| 0 to 600 psi | X32512P | X32554P | X32533P | X32638P | X32686P | X32662P |
| 0 to 1,000 psi | X32513P | X32555P | X32534P | X32639P | X32687P | X32663P |
| 0 to 1,500 psi | X32514P | X32556P | X32535P | | | |
| 0 to 2,000 psi | X32515P | X32557P | X32536P | X32641P | X32689P | X32665P |
| 0 to 3,000 psi | X32516P | X32558P | X32537P | X32642P | X32690P | X32666P |
| 0 to 5,000 psi | X32518P | X32560P | X32539P | X32644P | X32692P | X32668P |
| 0 to 6,000 psi | X32519P | X32561P | X32540P | X32645P | X32693P | X32669P |
| 0 to 10,000 psi | | | | X32647P | X32695P | X32671P |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

SPECIFICATIONS

ACCURACY

ASME Grade A - ±2/1/2% (±1% of range across middle half of scale)

CASE SIZES

100mm (3.89") diameter

CASE MATERIAL

304 Stainless Steel

CASE STYLE

Rolled ring, hermetically sealed case
 CB - Center Back Mount
 LM - Lower Mount
 UC - U-Clamp Mount

TUBE & SOCKET

Copper alloy or 316 stainless steel

MOVEMENT

Brass

CONNECTION

¼ NPT

RANGES

0 to 30" Hg VAC
 Compound 30" Hg VAC to 300 psi
 15 to 10,000 psi

DIAL STANDARD

Dual scale psi & kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Polycarbonate

FILL MEDIUM

Glycerine Standard

RESTRICTOR

Standard for all ranges

VENT PLUG

Rubber plug with snip-off feature

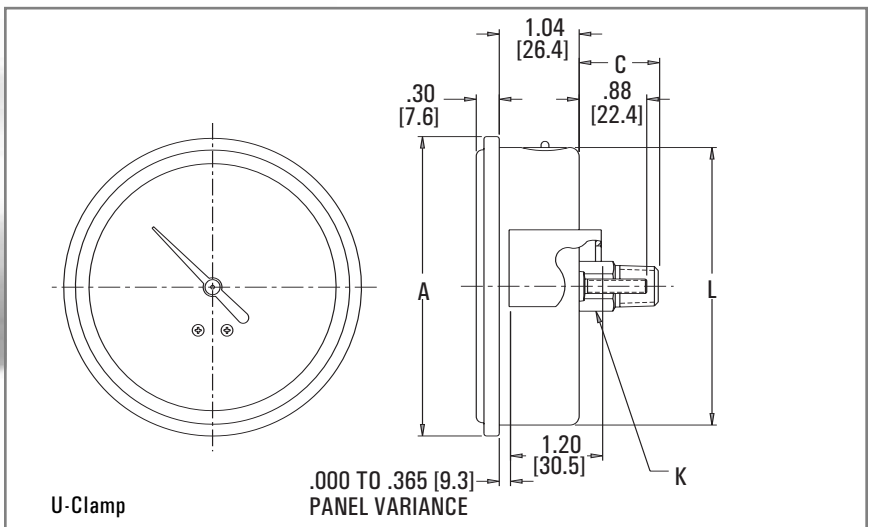
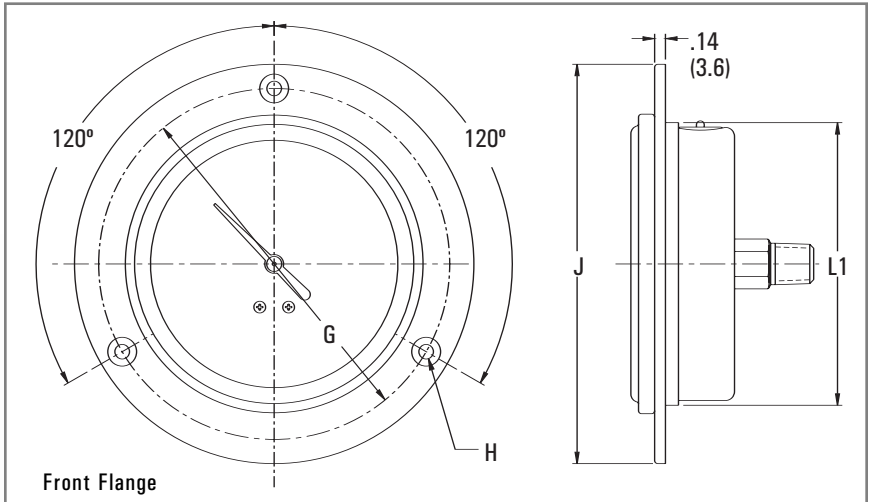


Severe Service



100MM SEVERE SERVICE GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------------|--------------------------|-----------------|--|
| Fill Medium | Dry (no fill) | Delete suffix P | All models |
| | Silicone (SL) | I | All models |
| Front Flange | Adapter Ring (3 hole) | R | U-Clamp & Center Back only (factory installed) |
| Catalog Dials | psi only | E | See Marsh Price List for minimum |
| | bar only | L1 | |
| | kg/cm ² | L2 | |
| | kPa only | L3 | |
| | MPa | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| psi & MPa | W4 | | |
| Custom Dials | Logo or custom face | M | Consult factory for colors and minimums. |
| Restrictor | Special restrictor | H | All models - See Marsh Price List for minimum |
| | Restrictor removed | H1 | All models - See Marsh Price List for minimum |
| Increased Accuracy | Grade 1A ±1% full scale | B | All models - See Marsh Price List for minimum |
| Special Connections | | | Consult factory for Availability |



| Gauge Size | Conn- ection | A | C | G | H | K | J | L | L1 |
|------------|-----------------|---------------|---------------|----------------|--------------|---------------|----------------|---------------|---------------|
| 100mm | 1/4" | 3.90" 99mm | 1.03" 26mm | 4.57" 116mm | 0.19" 5mm | 9/16" 14mm | 5.20" 132mm | 3.62" 92mm | 3.68" 94mm |





63MM & 100MM BRASS GAUGE

- Forged Brass case (one piece construction)
- Ranges to 10,000PSI
- Heavy Duty Performance

Marsh forged brass gauges are designed for top performance in rugged applications and harsh environments, where corrosive gas or media is not an issue. Applications include Oil patch, Hydraulics, Natural gas, OEM and General Industrial applications where superior quality is required. Liquid Filling protects against pulsation and vibration offering a cushioning and dampening effect. The hermetically sealed one piece design reduces the chance of leaks and allows field filling as an easy option.

STANDARD RANGES & PART NUMBERS

| TYPE | 63MM BRASS | 100MM BRASS |
|-----------------------|--------------|--------------|
| Size | 63mm | 100mm |
| Case Material | Forged Brass | Forged Brass |
| Internals | Copper Alloy | Copper Alloy |
| Mounting / Case Style | LM | LM |
| Connection | ¼ NPT | ½ NPT |
| Scale Standard | psi | psi |
| 0 to 30" Hg VAC | W9005PE | W9405PE |
| 30" Hg VAC to 30 psi | W9012PE | W9412PE |
| 30" Hg VAC to 60 psi | W9014PE | W9414PE |
| 30" Hg VAC to 100 psi | W9016PE | W9416PE |
| 30" Hg VAC to 200 psi | W9020PE | W9420PE |
| 0 to 15 psi | W9040PE | W9440PE |
| 0 to 30 psi | W9042PE | W9442PE |
| 0 to 60 psi | W9046PE | W9446PE |
| 0 to 100 psi | W9048PE | W9448PE |
| 0 to 160 psi | W9052PE | W9452PE |
| 0 to 200 psi | W9054PE | W9454PE |
| 0 to 300 psi | W9058PE | W9458PE |
| 0 to 400 psi | W9060PE | W9460PE |
| 0 to 600 psi | W9064PE | W9464PE |
| 0 to 1,000 psi | W9072PE | W9472PE |
| 0 to 1,500 psi | W9074PE | W9474PE |
| 0 to 2,000 psi | W9076PE | W9476PE |
| 0 to 3,000 psi | W9078PE | W9478PE |
| 0 to 5,000 psi | W9082PE | W9482PE |
| 0 to 10,000 psi | W9090PE | W9490PE |

SPECIFICATIONS

ACCURACY

63mm: ±1.6% of range across full scale
100mm: ASME Grade 1A - ±1% of range across full scale

CASE SIZES

63mm: diameter (2.5")
100mm: diameter (4.0")

CASE MATERIAL

Forged Brass

CASE STYLES

LM – Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass

CONNECTION

63mm: ¼ NPT
100mm: ½ NPT

RANGES

0-30" Hg vacuum;
compound ranges 30" Hg vacuum to 200 psi; and 15-10,000 psi

DIAL STANDARD

Single Scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Acrylic

RING

63mm: Gold Plated ABS
100mm: Chrome Plated

FILL MEDIUM

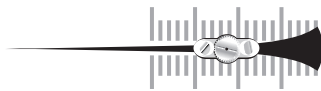
Glycerine Standard

VENT

Rubber plug with snip-off feature

63MM & 100MM BRASS GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|-----------------|-------------------------------|
| Fill Medium | Dry (no fill) | Delete Suffix P | Consult factory for minimums |
| | Glycerine | Standard | |
| | Silicone (SL) | I | |
| Catalog Dials | Bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & BAR | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| psi & MPa | W4 | | |
| Custom Dials | Logo or Custom Face | M | Consult factory for minimums. |



100MM STAINLESS STEEL GAUGE

- Liquid Filled or Dry
- Field Fillable
- Ranges to 10,000 psi
- Heavy Duty Stainless Steel

Marsh Instruments Stainless Steel Gauges are built for extended life, and designed for harsh and corrosive environments. These stainless steel gauges feature top fill plugs and are field fillable. Pressure ranges are available to 10,000 psi. Marsh Liquid Filled Gauges offer significant cushioning and dampening which reduces pointer flutter and internal gauge damage.

Typical applications include refineries, chemical plants, offshore platforms, oil rigs, marine applications, general industrial application and OEM processes.



SPECIFICATIONS

ACCURACY

ASME Grade 1A - $\pm 1.0\%$ of range across full scale

CASE SIZES

100mm diameter (4")

CASE MATERIAL

304 Stainless Steel

CASE STYLES

LM - Lower Mount
UC - U-Clamp Mount
FF - Front Flange Mount

TUBE & SOCKET

316 Stainless Steel

MOVEMENT

Stainless Steel

CONNECTION

$\frac{1}{4}$ " NPT lower or lowerback connection

RANGES

30 to 10,000 psi

DIAL STANDARD

Dual scale psi and kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Acrylic

FILL MEDIUM

See options

VENT

Rubber plug with snip-off feature

STANDARD RANGES & PART NUMBERS

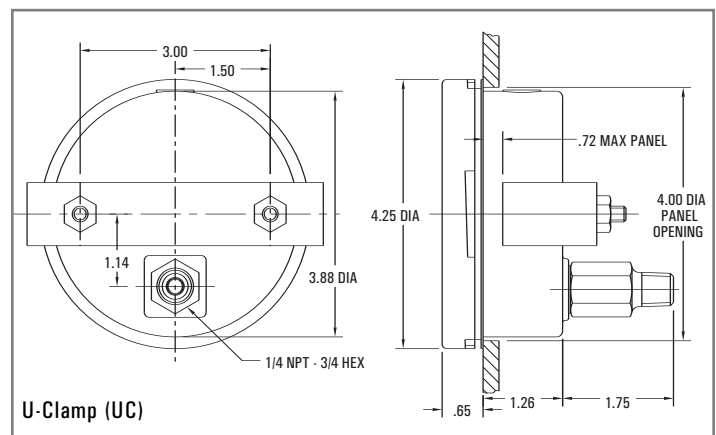
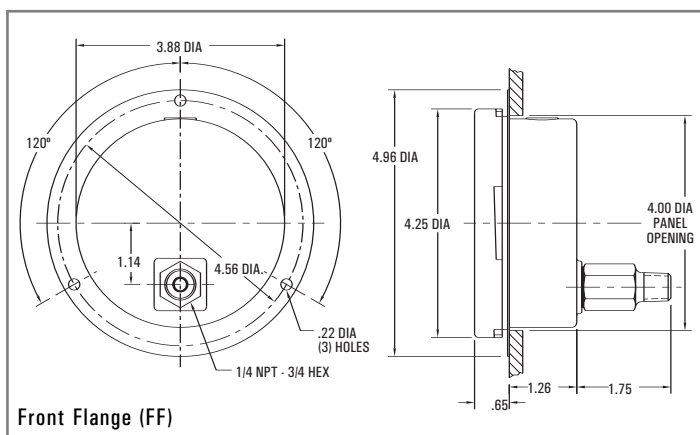
| TYPE | 100MM STAINLESS STEEL GAUGES | | |
|-----------------------|------------------------------|---------------------|---------------------|
| Size | 100mm | 100mm | 100mm |
| Case Material | Stainless Steel | Stainless Steel | Stainless Steel |
| Internals | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Mounting / Case Style | LM | UC | FF |
| Connection | $\frac{1}{4}$ NPT | $\frac{1}{4}$ NPT | $\frac{1}{4}$ NPT |
| Scale Standard | psi/kPa | psi/kPa | psi/kPa |
| 0 to 30 psi | H10742 | H10842 | H10842R |
| 0 to 60 psi | H10746 | H10846 | H10846R |
| 0 to 100 psi | H10748 | H10848 | H10848R |
| 0 to 160 psi | H10752 | H10852 | H10852R |
| 0 to 200 psi | H10754 | H10854 | H10854R |
| 0 to 300 psi | H10758 | H10858 | H10858R |
| 0 to 400 psi | H10760 | H10860 | H10860R |
| 0 to 600 psi | H10764 | H10864 | H10864R |
| 0 to 1,000 psi | H10772 | H10872 | H10872R |
| 0 to 1,500 psi | H10774 | H10874 | H10874R |
| 0 to 2,000 psi | H10776 | H10876 | H10876R |
| 0 to 3,000 psi | H10778 | H10878 | H10878R |
| 0 to 5,000 psi | H10782 | H10882 | H10882R |
| 0 to 10,000 psi | H10790 | H10890 | H10890R |

To order filled, see filling chart below.

100MM STAINLESS STEEL GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|-------------|----------------|---------------|---------------------|
| Fill Medium | Dry (no fill) | Standard | All ranges |
| | Glycerine (GL) | Add suffix P | |
| | Silicone (SL) | Add suffix PI | |

DIMENSIONS



QUALITY SERIES 100MM STAINLESS STEEL INTERNAL GAUGE

- Liquid Filled or Dry - Field Fillable
- Adjustable Micrometer Pointer
- Ranges to 15,000 psi
- Safety Glass Window

Marsh Stainless Steel gauges are built for extended life and are designed for harsh and corrosive environments. They feature a top fill plug, polished bayonet ring and are field fillable. Liquid filled gauges offer significant cushioning and dampening plus extend the life of a gauge.

Typical applications include Oil patch, Refineries, Oil Rigs, Control Panels, Offshore Platforms, Marine and General Industrial.



STANDARD RANGES & PART NUMBERS

| TYPE | QUALITY SERIES 100MM STAINLESS STEEL INTERNAL GAUGES | |
|-----------------------|--|---------------------|
| Size | 100mm | NACE 100mm |
| Case Material | Stainless Steel | Stainless Steel |
| Internals | 316 Stainless Steel | 316 Stainless Steel |
| Mounting / Case Style | LM | LM |
| Connection | ½ NPT | ½ NPT |
| Scale Standard | psi/kPa | psi/kPa |
| 0 to 30" Hg Vacuum | H20905 | |
| 0 to 15 psi | H20940 | HN20940 |
| 0 to 30 psi | H20942 | HN20942 |
| 0 to 60 psi | H20946 | HN20946 |
| 0 to 100 psi | H20948 | HN20948 |
| 0 to 160 psi | H20952 | HN20952 |
| 0 to 200 psi | H20954 | HN20954 |
| 0 to 300 psi | H20958 | HN20958 |
| 0 to 400 psi | H20960 | HN20960 |
| 0 to 600 psi | H20964 | HN20964 |
| 0 to 1,000 psi | H20972 | HN20972 |
| 0 to 1,500 psi | H20974 | HN20974 |
| 0 to 2,000 psi | H20976 | HN20976 |
| 0 to 3,000 psi | H20978 | HN20978 |
| 0 to 5,000 psi | H20982 | HN20982 |
| 0 to 10,000 psi | H20990 | HN20990 |
| 0 to 15,000 psi | H20992 | HN20992 |
| 0 to 20,000 psi | H20994 | HN20994 |

To order filled, see filling chart below.

QUALITY SERIES 100MM STAINLESS STEEL INTERNAL GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|---------------|---------------------|
| Fill Medium | Dry (no fill) | Standard | All ranges |
| | Glycerine (GL) | Add suffix P | |
| | Silicone (SL) | Add suffix PI | |
| Catalog Dials | psi only | E | |
| | Bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & BAR | W1 | |
| | psi & kg/cm ² | W2 | |
| psi & MPa | W4 | | |

SPECIFICATIONS

- ACCURACY**
ASME Grade 1A – ± 1.0% of range across full scale
- CASE SIZES**
100mm diameter (4")
- CASE MATERIAL**
304 Stainless Steel
- CASE STYLES**
LM – Lower Mount
- TUBE & SOCKET**
316 Stainless Steel Welded to Case
- MOVEMENT**
Stainless Steel
- CONNECTION**
½ NPT
- RANGES**
Vacuum to 15,000 psi
- DIAL STANDARD**
Dual scale psi and kPa
- DIAL COLOR**
Black markings on white
- POINTER**
Aluminum, black painted, micro-adjustable
- WINDOW**
Safety Glass
- FILL MEDIUM**
See options
- VENT**
Rubber plug with snip-off feature





QUALITY SERIES 100MM COPPER ALLOY INTERNAL GAUGE

- Liquid Filled or Dry
- Removable polished bayonet ring
- Ranges to 10,000 psi
- Safety Glass Window

Stainless steel case with copper alloy internals. Ideal for heavy duty service in industrial and commercial environments. Features robust design with removable polished bayonet ring and adjustable pointer. Field fillable.

Typical applications include industrial machinery, oil field equipment and controls, wellheads, pipeline and general industrial.

SPECIFICATIONS

ACCURACY

ASME Grade 1A - $\pm 1.0\%$ of range across full scale

CASE SIZES

100mm diameter (4")

CASE MATERIAL

304 Stainless Steel

CASE STYLES

LM - Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Stainless Steel

CONNECTION

$\frac{1}{2}$ NPT lower mount

RANGES

Vacuum to 10,000 psi

DIAL STANDARD

Single scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted, micro-adjustable

WINDOW

Safety Glass

FILL MEDIUM

See options

VENT

Rubber plug with snip-off feature

STANDARD RANGES & PART NUMBERS

| TYPE | QUALITY SERIES 100MM COPPER ALLOY INTERNAL GAUGES |
|-----------------------|---|
| Size | 100mm |
| Case Material | Stainless Steel |
| Internals | Copper Alloy |
| Mounting / Case Style | LM |
| Connection | $\frac{1}{2}$ NPT |
| Scale Standard | psi |
| 0 to 30" Hg Vacuum | H20505 |
| 0 to 15 psi | H20540 |
| 0 to 30 psi | H20542 |
| 0 to 60 psi | H20546 |
| 0 to 100 psi | H20548 |
| 0 to 160 psi | H20552 |
| 0 to 200 psi | H20554 |
| 0 to 300 psi | H20558 |
| 0 to 400 psi | H20560 |
| 0 to 600 psi | H20564 |
| 0 to 1,000 psi | H20572 |
| 0 to 1,500 psi | H20574 |
| 0 to 2,000 psi | H20576 |
| 0 to 3,000 psi | H20578 |
| 0 to 5,000 psi | H20582 |
| 0 to 10,000 psi | H20590 |

To order filled, see filling chart below.

| QUALITY SERIES 100MM COPPER ALLOY INTERNAL GAUGE OPTIONS | | | |
|--|--------------------------|---------------|---------------------|
| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
| Fill Medium | Dry (no fill) | Standard | All ranges |
| | Glycerine (GL) | Add suffix P | |
| | Silicone (SL) | Add suffix PI | |
| Catalog Dials | bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & BAR | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| psi & MPa | W4 | | |



'HW' 160MM STAINLESS STEEL GAUGE

- Liquid Filled or Dry - Field Fillable
- Socket Welded to the Case
- Ranges to 20,000 psi
- Heavy Duty All Stainless Steel

Marsh Instruments Stainless Steel Gauges are built for extended life, and designed for harsh and corrosive environments. These stainless steel gauges feature top fill plugs and are field fillable. Pressure ranges are available to 20,000psi. Marsh Liquid Filled Gauges offer significant cushioning and dampening which reduces pointer flutter and internal gauge damage.

Typical applications include refineries, chemical plants, offshore platforms, oil rigs, marine applications, general industrial application and OEM processes.



SPECIFICATIONS

ACCURACY

ASME Grade 1A – ± 1.0% of range across full scale

CASE SIZES

160mm diameter (6")

CASE MATERIAL

304 Stainless Steel

CASE STYLES

LM – Lower Mount

TUBE & SOCKET

316 Stainless steel welded to the case

MOVEMENT

Stainless Steel

CONNECTION

½ NPT

RANGES

15 to 20,000 psi

DIAL STANDARD

Dual scale psi and kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Safety glass

FILL MEDIUM

See options

VENT

Rubber plug with snip-off feature

STANDARD RANGES & PART NUMBERS

| TYPE | 'HW' 160MM STAINLESS STEEL GAUGES |
|-----------------------|-----------------------------------|
| Size | 160mm |
| Case Material | 304 Stainless Steel |
| Internals | 316 Stainless Steel |
| Mounting / Case Style | LM |
| Connection | ½ NPT |
| Scale Standard | psi/kPa |
| 0 to 15 psi | |
| 0 to 30 psi | HW30942 |
| 0 to 60 psi | HW30946 |
| 0 to 100 psi | HW30948 |
| 0 to 160 psi | HW30952 |
| 0 to 200 psi | HW30954 |
| 0 to 300 psi | HW30958 |
| 0 to 400 psi | HW30960 |
| 0 to 600 psi | HW30964 |
| 0 to 1,000 psi | HW30972 |
| 0 to 1,500 psi | HW30974 |
| 0 to 2,000 psi | HW30976 |
| 0 to 3,000 psi | HW30978 |
| 0 to 5,000 psi | HW30982 |
| 0 to 10,000 psi | HW30990 |
| 0 to 20,000 psi | HW30994 |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

NOTE: To order filled, consult filling chart below.

'HW' 160MM STAINLESS STEEL GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|---------------|---------------------|
| Fill Medium | Dry (no fill) | Standard | All ranges |
| | Glycerine (GL) | Add suffix P | |
| | Silicone (SL) | Add suffix PI | |
| Catalog Dials | psi only | E | |
| | BAR only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & BAR | W1 | |
| | psi & kg/cm ² | W2 | |
| psi & MPa | W4 | | |



100MM ELITE STAINLESS STEEL GAUGE

- All Stainless Steel
- Field Fillable
- Ranges to 10,000 psi
- Liquid Filled or Dry
- Solid Front Design – Safecase

Marsh Instruments all stainless steel gauges are built for extended life, and designed for harsh and corrosive environments. These stainless steel gauges feature top fill plugs and are field fillable. Marsh Liquid Filled Gauges offer significant cushioning and dampening which reduces pointer flutter and internal gauge damage.

Typical applications include refineries, chemical plants, offshore platforms, oil rigs, marine applications, general industrial application and OEM processes.

SPECIFICATIONS

ACCURACY

ASME Grade 1A – ± 1.0% of range across full scale

CASE SIZES

100mm diameter (4")

CASE MATERIAL

304 Stainless Steel

CASE STYLE

Solid front & blow-out back
Safecase construction
LM – Lower Mount

TUBE & SOCKET

316 Stainless Steel

MOVEMENT

Stainless Steel

CONNECTION

½ NPT

RANGES

30 to 10,000 psi
and 0 to 30" VAC Hg

DIAL STANDARD

Dual scale psi and kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Safety glass

FILL MEDIUM

See Options

VENT

Internal compensating diaphragm

STANDARD RANGES & PART NUMBERS

| TYPE | 100MM ELITE STAINLESS STEEL GAUGES |
|---------------------|------------------------------------|
| Size | 100mm |
| Case Material | 304 Stainless Steel |
| Internals | 316 Stainless Steel |
| Mounting/Case Style | LM |
| Connection | ½ NPT |
| Scale Standard | psi/kPa |
| 0 to 30" Hg VAC | W9605 |
| 0 to 30 psi | W9642 |
| 0 to 60 psi | W9646 |
| 0 to 100 psi | W9648 |
| 0 to 200 psi | W9654 |
| 0 to 300 psi | W9658 |
| 0 to 600 psi | W9664 |
| 0 to 1,000 psi | W9672 |
| 0 to 1,500 psi | W9674 |
| 0 to 2,000 psi | W9676 |
| 0 to 3,000 psi | W9678 |
| 0 to 5,000 psi | W9682 |
| 0 to 10,000 psi | W9690 |

NOTE: To order filled, consult filling chart below.

100MM ELITE STAINLESS STEEL GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|-------------|----------------|---------------|---------------------|
| Fill Medium | Dry (no fill) | Standard | All ranges |
| | Glycerine (GL) | Add suffix P | All ranges |
| | Silicone (SL) | Add suffix PI | All ranges |



QUALITY GAUGE

- Dial Sizes: 3½" and 4½"
- Stainless Steel Movement
- 3 Case Styles
- Recalibrator Standard on 3½"; Adjustable pointer standard on 4½"
- Ranges to 20,000 psi

Marsh Quality Gauges feature the exclusive recalibrator and the accuracy is within ±1% in the middle half of span. These gauges provide continuous service at an economical price.

Typical applications include air compressors, reciprocating pumps, boilers, engines, hydraulic presses and countless other industrial and OEM applications.



STANDARD RANGES & PART NUMBERS

| TYPE | QUALITY GAUGES | | | | | | |
|-----------------------|-------------------|-------|-------|-------|-------------------------|-------|-------|
| | With Recalibrator | | | | With Adjustable Pointer | | |
| Size | 3½" | | | | 4½" | | |
| Internals | Copper Alloy | | | | Copper Alloy | | |
| Case Material | Steel | | | | Steel | | |
| Mounting | LM | LM | LBM | LBM | LM | LM | LBM |
| Connection | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT |
| Case Style | P | G | G | F | P | P | F |
| Scale Standard | psi | psi | psi | psi | psi | psi | psi |
| 0 to 30" Hg VAC | H0205 | H1205 | H1805 | H2005 | H4205 | H4805 | H6005 |
| 30" Hg VAC to 30 psi | H0212 | H1212 | H1812 | H2012 | H4212 | H4812 | H6012 |
| 30" Hg VAC to 60 psi | H0214 | H1214 | H1814 | H2014 | H4214 | H4814 | H6014 |
| 30" Hg VAC to 150 psi | H0218 | H1218 | H1818 | H2018 | H4218 | H4818 | H6018 |
| 30" Hg VAC to 300 psi | H0224 | H1224 | H1824 | H2024 | H4224 | H4824 | H6024 |
| 0 to 15 psi | H0240 | | | | | | |
| 0 to 30 psi | H0242 | H1242 | H1842 | H2042 | H4242 | H4842 | H6042 |
| 0 to 60 psi | H0246 | H1246 | H1846 | H2046 | H4246 | H4846 | H6046 |
| 0 to 100 psi | H0248 | H1248 | H1848 | H2048 | H4248 | H4848 | H6048 |
| 0 to 160 psi | H0252 | H1252 | H1852 | H2052 | H4252 | H4852 | H6052 |
| 0 to 200 psi | H0254 | H1254 | H1854 | H2054 | H4254 | H4854 | H6054 |
| 0 to 300 psi | H0258 | H1258 | H1858 | H2058 | H4258 | H4858 | H6058 |
| 0 to 400 psi | H0260 | H1260 | H1860 | H2060 | H4260 | H4860 | H6060 |
| 0 to 600 psi | H0264 | H1264 | H1864 | H2064 | H4264 | H4864 | H6064 |
| 0 to 1,000 psi | H0272 | H1272 | H1872 | H2072 | H4272 | H4872 | H6072 |
| 0 to 1,500 psi | H0274 | H1274 | H1874 | H2074 | | H4874 | |
| 0 to 2,000 psi | H0276 | H1276 | H1876 | H2076 | | H4876 | |
| 0 to 3,000 psi | H0278 | H1278 | H1878 | H2078 | | H4878 | |
| 0 to 4,000 psi | H0280 | H1280 | H1880 | H2080 | | | |
| 0 to 5,000 psi | H0282 | H1282 | H1882 | H2082 | | H4882 | |
| 0 to 6,000 psi | H0284 | H1284 | H1884 | H2084 | | | |
| 0 to 10,000 psi | H0290 | H1290 | H1890 | H2090 | | H4890 | |
| 0 to 15,000 psi | H0292 | H1292 | H1892 | H2092 | | | |
| 0 to 20,000 psi | H0294 | H1294 | H1894 | H2094 | | | |

SPECIFICATIONS

ACCURACY

ASME Grade A – ±2/1/2% (±1% of range in middle half of scale)

CASE SIZES

3½" and 4½" diameter
6" diameter (see options)

CASE MATERIAL

Steel, black painted

CASE STYLE

F – Front Flanged, Lower Back Mount with U-Clamp; 4½" has Hinged Ring (LBM)
G – Back Flanged case
P – Plain Case, Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Stainless Steel

RECALIBRATOR

Standard 3½" only, 4½" has adjustable pointer

CONNECTION

¼ or ½ NPT

RANGES

0 to 30" Hg VAC; Compound 30" Hg VAC to 300 psi; 15 to 20,000 psi

DIAL STANDARD

Single scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Instrument Glass

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.





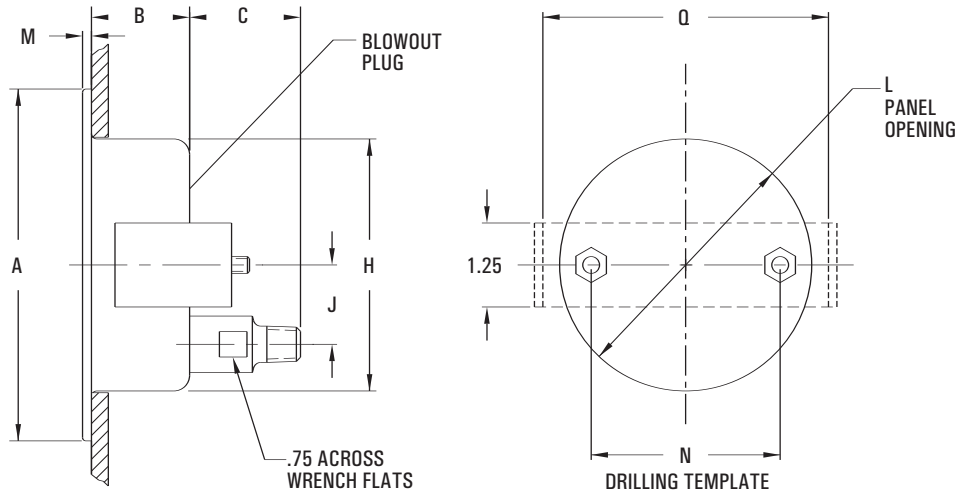
QUALITY GAUGES

| Dial Divisions | Quality Gauge 2/1 1/2% of Span | | | |
|-----------------------|-----------------------------------|-------------------|-----|-----|
| Ranges | Figure Intervals | Minor Graduations | | |
| Vacuum | 3 | 0.2 | | |
| COMPOUND | | | | |
| 30" Hg VAC to 15 psi | 5 | 3 | 0.5 | 0.2 |
| 30" Hg VAC to 30 psi | 10 | 5 | 1 | 0.5 |
| 30" Hg VAC to 60 psi | 10 | 10 | 1 | 0.5 |
| 30" Hg VAC to 150 psi | 30 | 30 | 2 | 1 |
| 30" Hg VAC to 300 psi | 30 | 30 | 5 | 2 |
| PRESSURE | | | | |
| 0 to 15 psi | 1 | 0.1 | | |
| 0 to 30 psi | 5 | 0.2 | | |
| 0 to 60 psi | 5 | 0.5 | | |
| 0 to 100 psi | 10 | 1 | | |
| 0 to 160 psi | 20 | 2 | | |
| 0 to 200 psi | 20 | 2 | | |
| 0 to 300 psi | 50 | 2 | | |
| 0 to 400 psi | 50 | 2 | | |
| 0 to 600 psi | 50 | 5 | | |
| HIGH PRESSURE | | | | |
| 0 to 1,000 psi | 100 | 10 | | |
| 0 to 1,500 psi | 300 | 20 | | |
| 0 to 2,000 psi | 200 | 20 | | |
| 0 to 3,000 psi | 500 | 20 | | |
| 0 to 4,000 psi | 500 | 50 | | |
| 0 to 5,000 psi | 500 | 50 | | |
| 0 to 6,000 psi | 1,000 | 50 | | |
| 0 to 10,000 psi | 1,000 | 100 | | |
| 0 to 15,000 psi | 3,000 | 200 | | |
| 0 to 20,000 psi | 2,000 | 200 | | |

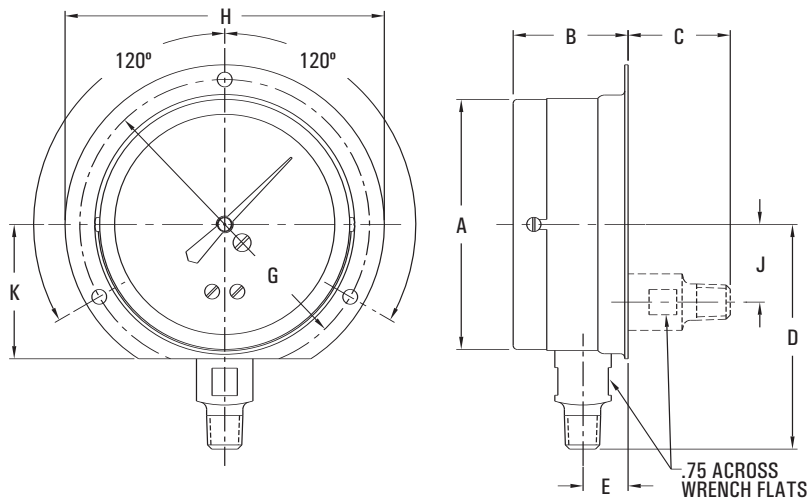
QUALITY GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|--------------------|---------------------------|--------|----------------------------------|
| Restrictors | Add restrictor | H | All ranges |
| | bar only | L1 | See Marsh Price List for minimum |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| psi & MPa | W4 | | |
| Catalog Dials | Logo or Custom Face | M | All models - consult factory |
| | Acrylic (AY) | F2 | 3 1/2" - 4 1/2" |
| Window | Safety Glass (SG) | F3 | 3 1/2" - 4 1/2" |
| | Grade 1A: ± 1% full scale | B | All models |
| Increased Accuracy | Aluminum Back Flange | J | 4 1/2" - 6" consult factory |
| | Steel Hinged Ring Case | J | 6" consult factory |

CASE PATTERNS & DIMENSIONS



| Size | A | B | C | H | J | L | M | N | Q |
|--------|------|------|------|------|------|------|-----|------|------|
| 3 1/2" | 4.86 | 1.66 | 1.55 | 3.75 | 1.16 | 3.75 | .11 | 2.81 | 4.25 |
| 4 1/2" | 6.31 | 1.39 | 2.15 | 4.81 | 1.27 | 4.88 | .11 | 3.88 | 5.31 |



| Size | A | B | C | D | E | G | J | K | Panel Mounting |
|--------|------|------|------|------|-----|------|------|------|----------------|
| 3 1/2" | 3.72 | 1.69 | 1.55 | 3.34 | .67 | 4.31 | 1.16 | 2.00 | .22 |





TEST GAUGE +/- 0.5%

- Adjustable Micrometer Knife-Edge Pointer with Mirror Dial
- Stainless Steel Movement
- Dial Size: 4½"
- Ranges to 10,000 psi

The Marsh Test Gauge is designed with a black painted steel housing and the choice of copper alloy or 316 stainless steel tube and socket to meet the demanding service needs of various test gauge applications. Accuracy is $\pm 0.5\%$ of full span. A highly polished integral mirror is positioned between the two graduation arcs on the dial face. The knife-edge pointer is reflective so that, when the pointer and its reflection are in alignment, parallax is virtually eliminated and a true dial reading is assured.

Typical applications include test stands, aviation ground support, petroleum, chemical, utilities, industrial vessels and panel builders.

STANDARD RANGES & PART NUMBERS

| TYPE | TEST GAUGES | | | | | | | |
|----------------------|--------------|-------|-------|-------|-----------------|-------|-------|--|
| | 4½" | | | | 4½" | | | |
| Size | 4½" | | | | 4½" | | | |
| Internals | Copper Alloy | | | | Stainless Steel | | | |
| Case Material | Steel | Steel | Steel | Steel | Steel | Steel | Steel | |
| Mounting | LM | LM | LBM | LM | LM | LBM | LBM | |
| Case Style | P | P | F | P | P | F | F | |
| Connection | ¼ NPT | ½ NPT | ¾ NPT | ¼ NPT | ½ NPT | ¾ NPT | ¾ NPT | |
| Scale Standard | psi | | | | psi | | | |
| 0 to 30" Hg VAC | D0205 | D0605 | D1205 | D5205 | D5605 | D6105 | D6405 | |
| 30" Hg VAC to 15 psi | D0210 | D0610 | D1210 | D5210 | D5610 | D6110 | D6410 | |
| 30" Hg VAC to 30 psi | D0212 | D0612 | D1212 | D5212 | D5612 | D6112 | D6412 | |
| 30" Hg VAC to 60 psi | D0214 | D0614 | D1214 | D5214 | D5614 | D6114 | D6414 | |
| 0 to 15 psi | D0240 | D0640 | D1240 | D5240 | D5640 | D6140 | D6440 | |
| 0 to 30 psi | D0242 | D0642 | D1242 | D5242 | D5642 | D6142 | D6442 | |
| 0 to 60 psi | D0246 | D0646 | D1246 | D5246 | D5646 | D6146 | D6446 | |
| 0 to 100 psi | D0248 | D0648 | D1248 | D5248 | D5648 | D6148 | D6448 | |
| 0 to 160 psi | D0252 | D0652 | D1252 | D5252 | D5652 | D6152 | D6452 | |
| 0 to 200 psi | D0254 | D0654 | D1254 | D5254 | D5654 | D6154 | D6454 | |
| 0 to 300 psi | D0258 | D0658 | D1258 | D5258 | D5658 | D6158 | D6458 | |
| 0 to 400 psi | D0260 | D0660 | D1260 | D5260 | D5660 | D6160 | D6460 | |
| 0 to 600 psi | D0264 | D0664 | D1264 | D5264 | D5664 | D6164 | D6464 | |
| 0 to 1,000 psi | | | | D5272 | D5672 | D6172 | D6472 | |
| 0 to 1,500 psi | | | | D5274 | D5674 | D6174 | D6474 | |
| 0 to 2,000 psi | | | | D5276 | D5676 | D6176 | D6476 | |
| 0 to 3,000 psi | | | | D5278 | D5678 | D6178 | D6478 | |
| 0 to 5,000 psi | | | | D5282 | D5682 | D6182 | D6482 | |
| 0 to 10,000 psi | | | | D5290 | D5690 | D6190 | D6490 | |

SPECIFICATIONS

- ACCURACY**
ASME Grade 2A - $\pm 0.5\%$ of range across full scale
- CASE SIZE**
4½" diameter
- CASE MATERIAL**
Steel, Black Painted
- CASE STYLE**
F - Front Flanged with U-clamp and hinged ring (LBM)
P - Plain Case Lower Mount (LM)
- TUBE & SOCKET**
Copper alloy or 316 Stainless Steel
- MOVEMENT**
Stainless Steel
- CONNECTION**
¼ or ½ NPT
- RANGES**
0 to 30" Hg VAC; Compound 30" Hg to 60 psi; 15 to 10,000 psi
- DIAL STANDARD**
single scale psi
- DIAL COLOR**
Black markings on white with mirror dial to avoid parallax
- POINTER**
Aluminum, black painted, micro-adjustable, knife-edge
- WINDOW**
Instrument Glass
- PRESSURE RELIEF**
Blowout plug

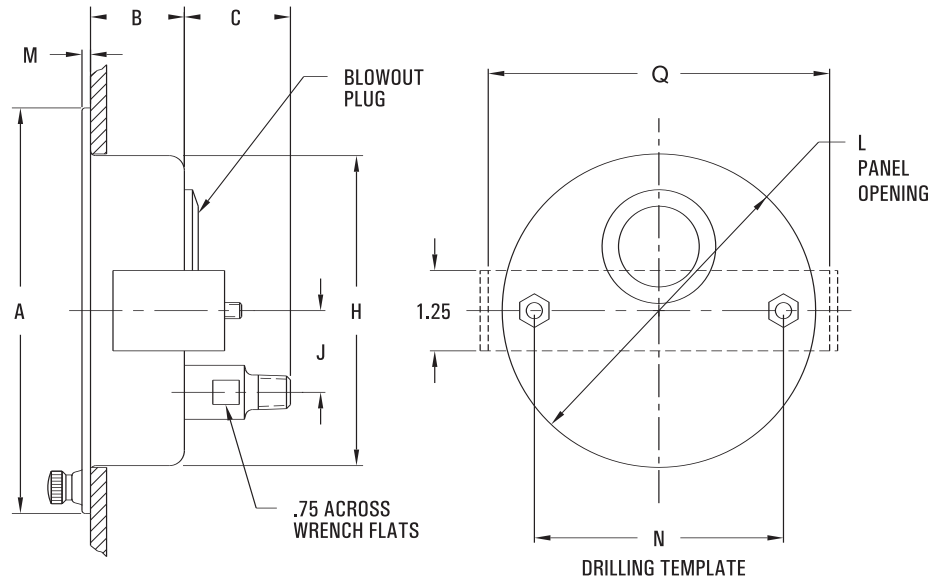




| TEST GAUGE OPTIONS | | | |
|--------------------|---------------------------|--------|----------------------------------|
| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
| Restrictors | Add restrictor | H | All ranges |
| Catalog Dials | bar only | L1 | See Marsh Price List for minimum |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| | psi & MPa | W4 | |
| Custom Dials | Logo or Custom Face | M | All models - consult factory |
| Window | Acrylic (AY) | F2 | 4½" |
| | Safety Glass (SG) | F3 | 4½" |
| Cases | 4½" Polypropylene (TR) | J1 | Consult Factory |
| | 4½" Aluminum Back Flange | J2 | |
| | 4½" Aluminum Front Flange | J3 | |

| Dial Divisions | Test Gauge 0.50% of Span | | |
|--------------------------|-----------------------------|---------------------------|-----|
| Ranges | Figure Intervals | Minor Gradua- tions | |
| Vacuum | 2 | 0.1 | |
| COMPOUND | | | |
| 30" Hg VAC to 15 psi | 5 | 3 | 0.2 |
| 30" Hg VAC to 30 psi | 10 | 5 | 0.5 |
| 30" Hg VAC to 60 psi | 10 | 5 | 1 |
| 30" Hg VAC to 150 psi | 30 | 10 | 2 |
| 30" Hg VAC to 300 psi | 30 | 30 | 5 |
| PRESSURE | | | |
| 0 to 15 psi | 1 | 0.5 | |
| 0 to 30 psi | 2 | 0.1 | |
| 0 to 60 psi | 5 | 0.2 | |
| 0 to 100 psi | 10 | 0.5 | |
| 0 to 160 psi | 10 | 0.5 | |
| 0 to 200 psi | 20 | 1 | |
| 0 to 300 psi | 50 | 1 | |
| 0 to 400 psi | 50 | 2 | |
| 0 to 600 psi | 50 | 2 | |
| HIGH PRESSURE | | | |
| 0 to 1,000 psi | 100 | 5 | |
| 0 to 1,500 psi | 100 | 5 | |
| 0 to 2,000 psi | 200 | 10 | |
| 0 to 3,000 psi | 500 | 10 | |
| 0 to 4,000 psi | 500 | 20 | |
| 0 to 5,000 psi | 500 | 20 | |
| 0 to 6,000 psi | 500 | 20 | |
| 0 to 10,000 psi | 1,000 | 50 | |

CASE PATTERNS & DIMENSIONS



| Size | A | B | C | H | J | L | M | N | Q |
|------|------|------|------|------|------|------|-----|------|------|
| 4½" | 6.31 | 1.39 | 2.31 | 4.81 | 1.27 | 4.88 | .11 | 3.88 | 5.31 |





MASTER TEST GAUGE (SERIES 'D')

- Knife-Edge Pointer with Mirror Dial
- External Dial Adjustment
- Dial Size: 6"
- Ranges to 10,000 psi

Marsh Master Test Gauges are used in precision laboratory applications and industrial environments where precise accuracy is demanded. For pressure readings to 10,000 psi, Marsh Master Test Gauges offer dependable, consistent accuracy within $\pm 0.25\%$ of span, meeting all requirements of ASME Grade 3A specifications. The pressure relieving blowout plug provides the increased safety required for potentially dangerous applications.

Typical applications include lab's, universities, automotive testing, government test facilities and pharmaceutical.

STANDARD RANGES & PART NUMBERS

| TYPE | MASTER TEST GAUGES | |
|-----------------------|--------------------|--------|
| Size | 6" (160mm) | |
| Case Material | Stainless Steel | |
| Internals | Copper Alloy | |
| Mounting / Case Style | LM | LM |
| Connection | ¼ NPT | ½ NPT |
| Scale Standard | psi | psi |
| 0 to 30" Hg VAC | D31405 | |
| 30" Hg VAC to 15 psi | D31410 | |
| 30" Hg VAC to 30 psi | D31412 | |
| 30" Hg VAC to 60 psi | D31414 | |
| 0 to 15 psi | D31440 | |
| 0 to 30 psi | D31442 | |
| 0 to 60 psi | D31446 | |
| 0 to 100 psi | D31448 | |
| 0 to 160 psi | D31452 | |
| 0 to 200 psi | D31454 | |
| 0 to 300 psi | D31458 | |
| 0 to 400 psi | D31460 | |
| 0 to 600 psi | D31464 | |
| 0 to 1,000 psi | | D31472 |
| 0 to 1,500 psi | | D31474 |
| 0 to 2,000 psi | | D31476 |
| 0 to 3,000 psi | | D31478 |
| 0 to 5,000 psi | | D31482 |
| 0 to 10,000 psi | | D31490 |

SPECIFICATIONS

ACCURACY

ASME Grade 3A – $\pm 0.25\%$ of range across full scale

CASE SIZE

6" (160mm) diameter

CASE MATERIAL

304 Stainless Steel

CASE STYLE

LM—Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Stainless Steel

CONNECTION

¼" NPT through 600 psi

½" NPT 1000 psi & above

RANGES

0 to 30" Hg VAC; Compound 30" Hg to 60 psi; 15 to 10,000 psi

DIAL STANDARD

Single scale psi

DIAL COLOR

Black markings on white with mirror dial to avoid parallax

POINTER

Aluminum, black painted, knife-edge

WINDOW

Instrument Glass

PRESSURE RELIEF

Blowout plug

MASTER TEST GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|--------|---------------------|
| Catalog Dials | bar only | L1 | Consult Factory |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| psi & MPa | W4 | | |
| Custom Dials | Logo or Custom Face | M | |
| Window | Acrylic (AY) | F2 | |
| | Safety Glass (SG) | F3 | |
| Tube & Socket | Stainless Steel | | |





INSPECTOR'S TEST GAUGE

- 3" Dial
- Vacuum to 1,000 psi Range
- Recalibrator on Dial Face
- ASME Grade 2A Accuracy

Marsh Inspector's Test Gauges are specifically designed for use by steam boiler, air brake and pressure system inspectors. The rugged 3" Inspector's Test Gauge features a nickel-plated case and an accuracy of $\pm 0.5\%$ of span. The bushed Mastergauge movement with Recalibrator is standard for these gauges. Mating parts are of dissimilar metals to prevent seizing. Bearing sleeves are of bronze, and the sector is brass.

Typical applications include steam boiler, air brakes, pressure system inspectors, and for use on other testing applications.

STANDARD RANGES & PART NUMBERS

| TYPE | INSPECTOR'S TEST GAUGES |
|-----------------------|-------------------------|
| Size | 3" |
| Case Material | Nickel Plated Brass |
| Internals | Copper Alloy |
| Mounting / Case Style | LM |
| Connection | 1/4 NPT |
| Scale Standard | psi/kPa |
| 0 to 30" Hg VAC | D1505 |
| 0 to 15 psi | D1540 |
| 0 to 30 psi | D1542 |
| 0 to 60 psi | D1546 |
| 0 to 100 psi | D1548 |
| 0 to 160 psi | D1552 |
| 0 to 200 psi | D1554 |
| 0 to 300 psi | D1558 |
| 0 to 600 psi | D1564 |
| 0 to 1,000 psi | D1572 |

SPECIFICATIONS

ACCURACY

ASME Grade 2A - $\pm 0.5\%$ of span across full scale

CASE SIZES

3" diameter

CASE MATERIAL

Brass, Nickel Plated

CASE STYLE

Lower Mount with threaded ring

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass

RECALIBRATOR

Standard

CONNECTION

1/4 NPT

RANGES

0 to 30" Hg VAC; 15 to 1,000 psi

DIAL STANDARD

Dual Scale psi/kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted, knife-edge

WINDOW

Beveled glass

PROTECTIVE COVER

Opaque plastic lens cover

INSPECTOR'S TEST GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|--------|----------------------------------|
| Restrictors | Add restrictor | H | All ranges |
| Catalog Dials | psi only | E | See Marsh Price List for minimum |
| | bar only | L1 | |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| psi & MPa | W4 | | |
| Custom Dials | Logo or Custom Face | M | All models - consult factory |





PROCESS GAUGE

- 4½" and 6" Dials
- 4 Safecase Designs
- Pressure Ranges Vacuum to 20,000 psi
- Dry or Liquid Filled
- Micrometer Pointer

Marsh Process Gauges are the industry standard in performance. With over 125 years of proven experience, Marsh offers the most complete line of process instrumentation in the industry. An extensive list of designs and options makes the Marsh line of Process Gauges the intelligent and practical choice in process instrumentation. All case styles feature safecase solid-front construction.

Typical applications include chemical and petroleum chemical processes, compressors, power plants and oil platforms.

STANDARD RANGES & PART NUMBERS

| TYPE | PROCESS GAUGES | | | | | |
|-----------------------|----------------|-------|-------|-----------------|-------|-------|
| | 4½" | | | 4½" | | |
| Size | 4½" | | | 4½" | | |
| Case Material | Polypropylene | | | Polypropylene | | |
| Internals | Copper Alloy | | | Stainless Steel | | |
| Mounting | LM | LBM | LM | LBM | LM | LBM |
| Case Style | T | T | T | T | T | T |
| Connection | ¼ NPT | ¼ NPT | ½ NPT | ½ NPT | ¼ NPT | ¼ NPT |
| Scale Standard | psi | psi | psi | psi | psi | psi |
| 0 to 30" Hg VAC | P0105 | P0205 | P0505 | P0605 | P5105 | P5205 |
| 30" Hg VAC to 15 psi | P0110 | P0210 | P0510 | P0610 | P5110 | P5210 |
| 30" Hg VAC to 30 psi | P0112 | P0212 | P0512 | P0612 | P5112 | P5212 |
| 30" Hg VAC to 60 psi | P0114 | P0214 | | P0614 | P5114 | P5214 |
| 30" Hg VAC to 100 psi | P0116 | P0216 | P0516 | P0616 | P5116 | P5216 |
| 30" Hg VAC to 200 psi | P0120 | P0220 | P0520 | P0620 | P5120 | P5220 |
| 30" Hg VAC to 300 psi | P0124 | P0224 | P0524 | P0624 | P5124 | P5224 |
| 0 to 15 psi | P0140 | P0240 | P0540 | P0640 | P5140 | P5240 |
| 0 to 30 psi | P0142 | P0242 | P0542 | P0642 | P5142 | P5242 |
| 0 to 60 psi | P0146 | P0246 | P0546 | P0646 | P5146 | P5246 |
| 0 to 100 psi | P0148 | P0248 | P0548 | P0648 | P5148 | P5248 |
| 0 to 160 psi | P0152 | P0252 | P0552 | P0652 | P5152 | P5252 |
| 0 to 200 psi | P0154 | P0254 | P0554 | P0654 | P5154 | P5254 |
| 0 to 300 psi | P0158 | P0258 | P0558 | P0658 | P5158 | P5258 |
| 0 to 400 psi | P0160 | P0260 | P0560 | P0660 | P5160 | P5260 |
| 0 to 600 psi | P0164 | P0264 | P0564 | P0664 | P5164 | P5264 |
| 0 to 1,000 psi | P0168 | P0268 | P0568 | P0668 | P5168 | P5268 |
| 0 to 1,500 psi | | | P0574 | | P5174 | P5274 |
| 0 to 2,000 psi | | | P0576 | | P5176 | P5276 |
| 0 to 3,000 psi | | | P0578 | | P5178 | P5278 |
| 0 to 5,000 psi | | | P0582 | | P5182 | P5282 |
| 0 to 10,000 psi | | | P0590 | | P5190 | P5290 |
| 0 to 15,000 psi | | | | | P5192 | P5292 |
| 0 to 20,000 psi | | | | | P5194 | P5294 |

Add "P" Suffix to P/N for Liquid Filling with Glycerine, add "PI" for Silicone.

NOTE: Lower back mount gauges are not fillable

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

SPECIFICATIONS

ACCURACY

ASME Grade 2A – ±0.5% of full scale

CASE SIZES

4½" and 6" diameter

CASE MATERIAL

Safecase polypropylene (turret style only) & safecase aluminum

CASE STYLE

4½": G – Back flanged case (aluminum)

H – Front flange hinged ring (aluminum)

T – Turret (polypropylene)

6": G – Back flanged case

TUBE & SOCKET

Copper alloy or 316 stainless steel

MOVEMENT

Stainless Steel

CONNECTION

¼ or ½ NPT

LM – Lower Mount

LBM – Lower Back Mount

RANGES

0 to 30" Hg VAC; Compound 30" Hg VAC to 300 psi; 15 to 20,000 psi

DIAL STANDARD

Single Scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted, micro-adjustable

WINDOW

Acrylic

FILL MEDIUM

Dry or filled. Note: ALL 4½" lower mount Process Gauges are field-fillable. Optional factory filled glycerin or silicone

SAFECASE

Safecase construction standard on all Process Gauges

VENT

Internal compensating diaphragm



Process Gauges

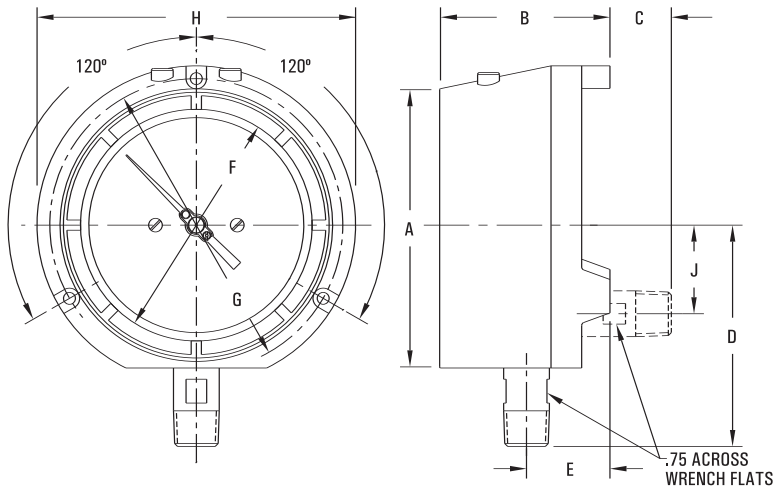


| PROCESS GAUGES - STANDARD RANGES & PART NUMBERS | | | | | | | | | | |
|---|-----------------|---------|---------|---------|--------------|---------|---------|---------|-----------------|---------|
| TYPE | 4 1/2" | | | | 4 1/2" | | | | 4 1/2" | |
| Size | 4 1/2" | | | | 4 1/2" | | | | 4 1/2" | |
| Case Material | Polypropylene | | | | Aluminum | | | | Aluminum | |
| Internals | Stainless Steel | | | | Copper Alloy | | | | Stainless Steel | |
| Mounting | LM | LBM | LM | LM | LBM | LBM | LBM | LBM | LM | LM |
| Case Style | T | T | G | G | G | G | H | H | G | G |
| Connection | 1/2 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT |
| Scale Standard | psi | psi | psi | psi | psi | psi | psi | psi | psi | psi |
| 0 to 30" Hg VAC | P5605 | P5705 | P10005 | P10505 | P11005 | P11505 | P16005 | P16505 | P14005 | P14505 |
| 30" Hg VAC to 15 psi | P5610 | P5710 | P10010 | P10510 | P11010 | P11510 | P16010 | P16510 | P14010 | P14510 |
| 30" Hg VAC to 30 psi | P5612 | P5712 | P10012 | P10512 | P11012 | P11512 | P16012 | P16512 | P14012 | P14512 |
| 30" Hg VAC to 60 psi | P5614 | P5714 | P10014 | P10514 | P11014 | P11514 | P16014 | P16514 | P14014 | P14514 |
| 30" Hg VAC to 100 psi | P5616 | P5716 | P10016 | P10516 | P11016 | P11516 | P16016 | P16516 | P14016 | P14516 |
| 30" Hg VAC to 200 psi | P5620 | P5720 | P10020 | P10520 | P11020 | P11520 | P16020 | P16520 | | |
| 30" Hg VAC to 300 psi | P5624 | P5724 | P10024 | P10524 | P11024 | P11524 | P16024 | P16524 | | |
| 0 to 15 psi | P5640 | P5740 | P10040 | P10540 | P11040 | P11540 | P16040 | P16540 | P14040 | P14540 |
| 0 to 30 psi | P5642 | P5742 | P10042 | P10542 | P11042 | P11542 | P16042 | P16542 | P14042 | P14542 |
| 0 to 60 psi | P5646 | P5746 | P10046 | P10546 | P11046 | P11546 | P16046 | P16546 | P14046 | P14546 |
| 0 to 100 psi | P5648 | P5748 | P10048 | P10548 | P11048 | P11548 | P16048 | P16548 | P14048 | P14548 |
| 0 to 160 psi | P5652 | P5752 | P10052 | P10552 | P11052 | P11552 | P16052 | P16552 | P14052 | P14552 |
| 0 to 200 psi | P5654 | P5754 | P10054 | P10554 | P11054 | P11554 | P16054 | P16554 | P14054 | P14554 |
| 0 to 300 psi | P5658 | P5758 | P10058 | P10558 | P11058 | P11558 | P16058 | P16558 | P14058 | P14558 |
| 0 to 400 psi | P5660 | P5760 | P10060 | P10560 | P11060 | P11560 | P16060 | P16560 | P14060 | P14560 |
| 0 to 600 psi | P5664 | P5764 | P10064 | P10564 | P11064 | P11564 | P16064 | P16564 | P14064 | P14564 |
| 0 to 1,000 psi | P5668 | P5768 | P10068 | P10568 | P11068 | P11568 | P16068 | P16568 | P14068 | P14568 |
| 0 to 1,500 psi | P5674 | P5774 | | | | | | | | P14574 |
| 0 to 2,000 psi | P5676 | P5776 | | | | | | | | P14576 |
| 0 to 3,000 psi | P5678 | P5778 | | | | | | | | P14578 |
| 0 to 5,000 psi | P5682 | P5782 | | | | | | | | P14582 |
| 0 to 10,000 psi | P5690 | P5790 | | | | | | | | P14590 |
| 0 to 15,000 psi | P5692 | P5792 | | | | | | | | P14592 |
| 0 to 20,000 psi | P5694 | P5794 | | | | | | | | P14594 |

| Size | 4 1/2" | | | | 6" | | | | 6" | | | |
|-----------------------|-----------------|---------|---------|---------|--------------|---------|---------|---------|-----------------|---------|---------|---------|
| Case Material | Aluminum | | | | Aluminum | | | | Aluminum | | | |
| Internals | Stainless Steel | | | | Copper Alloy | | | | Stainless Steel | | | |
| Mounting | LBM | LBM | LBM | LBM | LM | LM | LBM | LBM | LM | LM | LBM | LBM |
| Case Style | G | G | H | H | G | G | G | G | G | G | G | G |
| Connection | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT | 1/4 NPT | 1/2 NPT |
| Scale Standard | psi | psi | psi | psi | psi | psi | psi | psi | psi | psi | psi | psi |
| 0 to 30" Hg VAC | P15005 | P15505 | P18005 | P18505 | P20005 | P20505 | P21005 | P21505 | P24005 | P24505 | P25005 | P25505 |
| 30" Hg VAC to 15 psi | P15010 | P15510 | P18010 | P18510 | P20010 | P20510 | P21010 | P21510 | P24010 | | P25010 | P25510 |
| 30" Hg VAC to 30 psi | P15012 | P15512 | P18012 | P18512 | P20012 | P20512 | P21012 | P21512 | P24012 | P24512 | P25012 | P25512 |
| 30" Hg VAC to 60 psi | P15014 | P15514 | P18014 | P18514 | P20014 | P20514 | P21014 | P21514 | P24014 | P24514 | P25014 | P25514 |
| 30" Hg VAC to 100 psi | P15016 | P15516 | P18016 | P18516 | P20016 | P20516 | P21016 | P21516 | P24016 | P24516 | P25016 | P25516 |
| 30" Hg VAC to 200 psi | P15020 | P15520 | P18020 | P18520 | | | | | | | | |
| 30" Hg VAC to 300 psi | P15024 | P15524 | P18024 | P18524 | | | | | | | | |
| 0 to 15 psi | P15040 | P15540 | P18040 | P18540 | P20040 | P20540 | P21040 | P21540 | P24040 | P24540 | P25040 | P25540 |
| 0 to 30 psi | P15042 | P15542 | P18042 | P18542 | P20042 | P20542 | P21042 | P21542 | P24042 | P24542 | P25042 | P25542 |
| 0 to 60 psi | P15046 | P15546 | P18046 | P18546 | P20046 | P20546 | P21046 | P21546 | P24046 | P24546 | P25046 | P25546 |
| 0 to 100 psi | P15048 | P15548 | P18048 | P18548 | P20048 | P20548 | P21048 | P21548 | P24048 | P24548 | P25048 | P25548 |
| 0 to 160 psi | P15052 | P15552 | P18052 | P18552 | P20052 | P20552 | P21052 | P21552 | P24052 | P24552 | P25052 | P25552 |
| 0 to 200 psi | P15054 | P15554 | P18054 | P18554 | P20054 | P20554 | P21054 | P21554 | P24054 | P24554 | P25054 | P25554 |
| 0 to 300 psi | P15058 | P15558 | P18058 | P18558 | P20058 | P20558 | P21058 | P21558 | P24058 | P24558 | P25058 | P25558 |
| 0 to 400 psi | P15060 | P15560 | P18060 | P18560 | P20060 | P20560 | P21060 | P21560 | P24060 | P24560 | P25060 | P25560 |
| 0 to 600 psi | P15064 | P15564 | P18064 | P18564 | P20064 | P20564 | P21064 | P21564 | P24064 | P24564 | P25064 | P25564 |
| 0 to 1,000 psi | P15068 | P15568 | P18068 | P18568 | P20068 | P20568 | P21068 | P21568 | P24068 | P24568 | P25068 | P25568 |
| 0 to 1,500 psi | P15074 | P15574 | P18074 | P18574 | | | | | P24074 | P24574 | P25074 | P25574 |
| 0 to 2,000 psi | P15076 | P15576 | P18076 | P18576 | | | | | P24076 | P24576 | P25076 | P25576 |
| 0 to 3,000 psi | P15078 | P15578 | P18078 | P18578 | | | | | P24078 | P24578 | P25078 | P25578 |
| 0 to 5,000 psi | P15082 | P15582 | P18082 | P18582 | | | | | P24082 | P24582 | P25082 | P25582 |
| 0 to 10,000 psi | P15090 | P15590 | P18090 | P18590 | | | | | P24090 | P24590 | P25090 | P25590 |
| 0 to 15,000 psi | P15092 | P15592 | P18092 | P18592 | | | | | P24092 | P24592 | P25092 | P25592 |
| 0 to 20,000 psi | P15094 | P15594 | P18094 | P18594 | | | | | P24094 | P24594 | P25094 | P25594 |

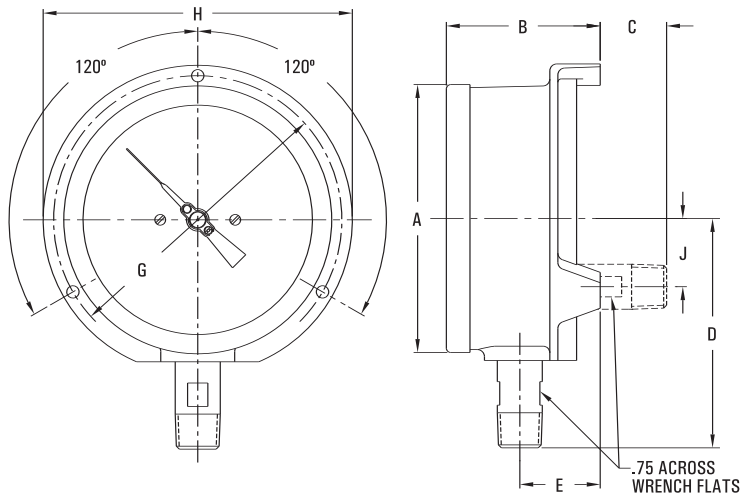


Process Gauges



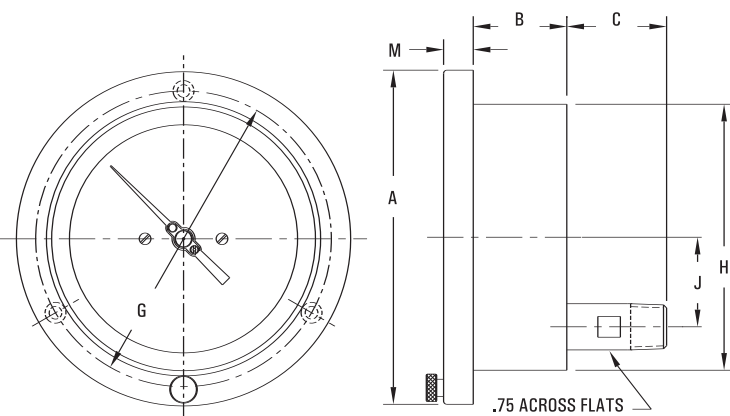
TURRET CASE

| Turret Panel Mounting Holes 0.22 | Size | A | B | C | D | E | F | G | H | J |
|----------------------------------|--------|------|------|------|------|------|------|------|------|------|
| | 4 1/2" | 5.00 | 3.13 | 1.13 | 4.28 | 1.53 | 4.13 | 5.38 | 5.85 | 1.27 |



BACK FLANGE CASE

| Back Flanged | Size | A | B | C | D | E | G | H | J | 23 |
|--------------|--------|------|------|------|------|------|------|------|------|-----|
| | 4 1/2" | 4.94 | 2.88 | 1.19 | 4.28 | 1.50 | 5.38 | 5.78 | 1.27 | .23 |
| | 6" | 6.63 | 2.88 | 1.19 | 4.97 | 1.50 | 7.00 | 7.50 | 1.27 | .28 |



FRONT FLANGE CASE

| Front Flanged Panel Mounting Holes 0.23 | Size | A | B | C | G | H | J | M |
|---|--------|------|------|------|------|------|------|------|
| | 4 1/2" | 6.08 | 1.70 | 1.88 | 5.38 | 4.88 | 1.27 | 0.54 |



Process Gauges



| PROCESS GAUGE OPTIONS | | | |
|-----------------------|--|--------|--|
| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
| Restrictors | Add restrictor | H | All ranges |
| Fill Medium | Glycerine (GL) | P | 4½" Lower Mount only (all ranges) |
| | Silicone (SL) | PI | 4½" Lower Mount only (all ranges) |
| Catalog Dials | bar only | L1 | See Marsh Price List for minimum |
| | kg/cm² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm² | W2 | |
| | psi & kPa | W3 | |
| Window | Instrument Glass (GS) | F1 | 4½" & 6" |
| | Safety Glass (SG) | F3 | 4½" & 6" |
| Cases | Phenolic Turret (PH) | J1 | 4½" |
| | 4½" Steel Case (LM or LBM) | J | 4½" (Adjustable pointer only) |
| | 6" Hinged Ring Steel Case with U-Clamp | J | 6" (Adjustable pointer only) |
| Custom Dials | Logo or Custom Face | M | Consult factory for colors and minimums. |

| Dial Divisions | Process Gauge Series "P" 0.5% of Span | | |
|-----------------------|--|-------------------|---------|
| Ranges | Figure Intervals | Minor Graduations | |
| Vacuum | 3 | 0.2 | |
| COMPOUND | | | |
| 30" Hg VAC to 15 psi | 5 | 3 | 0.5 0.2 |
| 30" Hg VAC to 30 psi | 10 | 5 | 1 0.5 |
| 30" Hg VAC to 60 psi | 10 | 10 | 1 0.5 |
| 30" Hg VAC to 150 psi | 30 | 30 | 2 1 |
| 30" Hg VAC to 300 psi | 30 | 30 | 5 2 |
| PRESSURE | | | |
| 0 to 15 psi | 1 | 0.1 | |
| 0 to 30 psi | 5 | 0.2 | |
| 0 to 60 psi | 5 | 0.5 | |
| 0 to 100 psi | 10 | 1 | |
| 0 to 160 psi | 20 | 1 | |
| 0 to 200 psi | 20 | 2 | |
| 0 to 300 psi | 50 | 2 | |
| 0 to 400 psi | 50 | 2 | |
| 0 to 600 psi | 50 | 5 | |
| HIGH PRESSURE | | | |
| 0 to 1,000 psi | 100 | 10 | |
| 0 to 1,500 psi | 300 | 10 | |
| 0 to 2,000 psi | 200 | 20 | |
| 0 to 3,000 psi | 500 | 20 | |
| 0 to 4,000 psi | 500 | 20 | |
| 0 to 5,000 psi | 500 | 50 | |
| 0 to 6,000 psi | 1,000 | 50 | |
| 0 to 10,000 psi | 1,000 | 100 | |
| 0 to 15,000 psi | 3,000 | 100 | |
| 0 to 20,000 psi | 2,000 | 200 | |

NOTE: 4½" Lower back mount, 6" Lower mount and 6" Lower back are not fillable (only available dry).

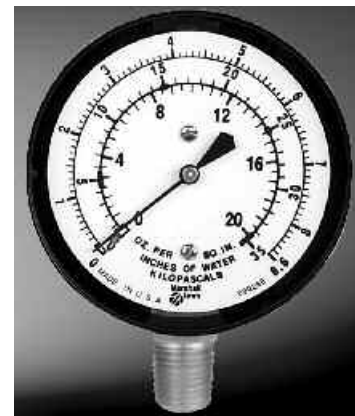


DIAPHRAGM GAUGES

- Dial Sizes: 2½", 3½", 4½"
- Four Case Styles
- Accuracy: ASME B40.1 - 2/1/2%

Marsh Instruments Low Pressure Diaphragm Gauges are universally known for their dependable performance and accuracy. Incorporating a unique design feature, the diaphragm element in this gauge allows accurate low pressure readings in a variety of applications. Featuring a bronze diaphragm element, the gauge is capable of ASME Grade A-1% accuracy for ranges above 30" of water. Ranges are available in vacuum and pressure in inches of water, ounces per square inch and millimeters of mercury.

Typical applications include HVAC systems and low pressure gas burner systems.



STANDARD RANGES & PART NUMBERS

| TYPE | DIAPHRAGM GAUGES | | | | | | | | | |
|--|------------------|--------|--------|--------|--------|--------|--------|--------------|--------|--|
| | 2½" | | | | | 3½" | | 4½" | | |
| Case Material | Steel | | | | | | | Steel | | |
| Internal | Copper Alloy | | | | | | | Copper Alloy | | |
| Mounting/Case | LM | LM | U | U | CB | CB | FF | LM | LM | |
| Connection | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | ¼ NPT | |
| 0 to 10" H ₂ O | G22675 | G22711 | G11181 | G11248 | G22747 | G27110 | G11578 | G24608 | G25756 | |
| 0 to 15" H ₂ O | G24500 | G24503 | G11246 | G11313 | G26504 | G30237 | G11642 | G24631 | G25981 | |
| 0 to 30" H ₂ O | G22704 | G22740 | G11189 | G11256 | G22776 | G11652 | G11586 | G24625 | G25749 | |
| 0 to 60" H ₂ O | G22705 | G22741 | G11208 | G11314 | G22777 | G11671 | G11605 | G24626 | G25844 | |
| 0 to 100" H ₂ O | G22687 | G22723 | G11217 | G11284 | G22759 | G11675 | G11609 | G24613 | G25982 | |
| 0 to 160" H ₂ O | G22695 | G22731 | G11232 | G11299 | G22767 | G11695 | G11628 | G24617 | G25980 | |
| 0 to 200" H ₂ O | G22696 | G22732 | G11233 | G11300 | G22768 | G11696 | G33412 | G24618 | G26021 | |
| 0 to 300" H ₂ O | G22697 | G22733 | G11236 | G11303 | G22769 | G11699 | G33413 | G24619 | G25755 | |
| 0 to 3 psi | G22685 | G22721 | G11215 | G11282 | G22757 | G11678 | G11612 | G24612 | G33414 | |
| 0 to 5 psi | G22702 | G22738 | G10623 | G11310 | G22774 | G22810 | G10619 | G24624 | G26018 | |
| 0 to 10 psi | G22699 | G22735 | G11239 | G11306 | G22771 | G11702 | G11635 | G24621 | G25754 | |
| 0 to 10 oz/in ² | G22677 | G22713 | G11186 | G11253 | G22749 | G11649 | G11583 | G24609 | G33415 | |
| 0 to 15 oz/in ² | G22680 | G22716 | G11194 | G11261 | G22752 | G11657 | G11591 | G24610 | G25753 | |
| 0 to 30 oz/in ² | G24501 | G33404 | G11206 | G11273 | G24504 | G11669 | G11603 | G24632 | G25750 | |
| 0 to 60 oz/in ² | G22684 | G22720 | G11213 | G11280 | G22756 | G11676 | G11610 | G24611 | G25757 | |
| 0 to 100 oz/in ² | G22691 | G22727 | G11226 | G11293 | G22763 | G33411 | G11622 | G24615 | G26025 | |
| 0 to 160 oz/in ² | G26062 | G33405 | G11237 | G11304 | G33410 | G11700 | G11633 | G26894 | G33416 | |
| 8.75 oz/in ² and 15" H ₂ O | G22706 | G22742 | G11185 | G11252 | G22778 | G11648 | G11582 | G24627 | G33417 | |
| 20 oz/in ² and 35" H ₂ O | G22709 | G22745 | G11200 | G11267 | G22781 | G11663 | G11597 | G24629 | G25748 | |
| 32 oz/in ² and 55" H ₂ O | G22707 | G22743 | G11195 | G11262 | G22779 | G11658 | G11592 | G24628 | G25984 | |
| 58 oz/in ² and 100" H ₂ O | G22710 | G22746 | G11214 | G11281 | G22782 | G22947 | G11611 | G24630 | G33418 | |
| 0 to 15" H ₂ O VAC | G22912 | G33406 | G11873 | G11906 | G22942 | G12104 | G12071 | G24708 | G26023 | |
| 0 to 30" H ₂ O VAC | G22914 | G29804 | G11876 | G11909 | G22944 | G12107 | G12074 | G24709 | G26020 | |
| 0 to 60" H ₂ O VAC | G22918 | G33407 | G11884 | G11917 | G22948 | G12115 | G12082 | G24710 | G26016 | |
| 0 to 100" H ₂ O VAC | G24502 | G26962 | G11885 | G11918 | G22949 | G12116 | G12083 | G24716 | G26019 | |
| 0 to 200" H ₂ O VAC | G22921 | G33409 | G11892 | G11925 | G22951 | G12123 | G12090 | G24711 | G33420 | |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

SPECIFICATIONS

ACCURACY

For ranges 30" H₂O & above:
ASME Grade A = ±2/1/2% (±1% of range across middle half of scale). For ranges below 30" H₂O:
±3/1/3% (±1% of range across middle half of scale)

CASE SIZES

2½", 3½", 4½" diameter

CASE MATERIAL

Steel, black painted

CASE STYLE

CB – Center Back Mount
FF – Three-holed Front Flanged Mount
LM – Lower Mount
UC – U-Clamp Mount

DIAPHRAGM & SOCKET

Phosphor bronze diaphragm soft-soldered to brass socket

MOVEMENT

Brass sector and pinion

CONNECTION

¼ & ½ NPT

DIAL STANDARD

Dual Scale with kPa
Triple Scale: oz/in², in H₂O, & kPa

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

2½" & 3½": Acrylic twist-in Clearlok
4½": flat acrylic with steel friction ring

RESTRICTOR

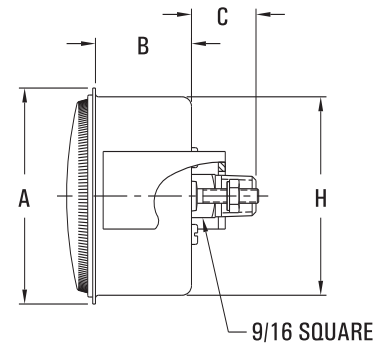
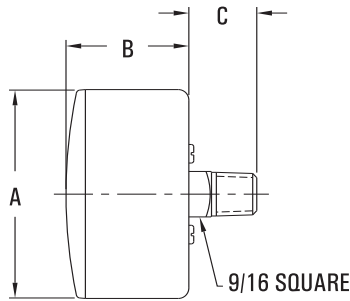
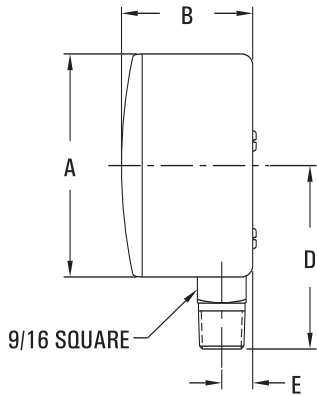
0.013" standard. No restrictor on 0 to 10" H₂O range

Diaphragm



DIAPHRAGM GAUGE OPTIONS

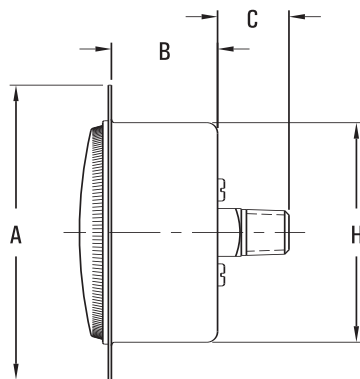
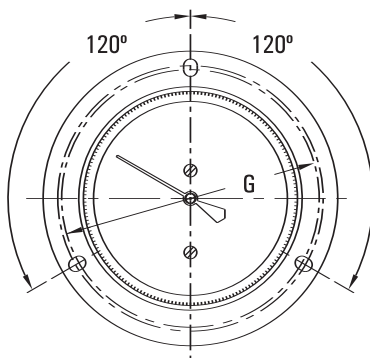
| OPTION | TYPE | AVAILABLE ON MODELS |
|-----------------|--|--|
| Window | Acrylic (knurled edge) | all models |
| Restrictors | 0.008 Restrictor | all models |
| | 0.016 Restrictor | |
| | 0.018 Restrictor | |
| | 0.025 Restrictor | |
| Ring | Press ring, chrome | 2½" to 3½" Panel Mount |
| Ring / Window | Glass & Black Steel Ring | 2½" to 3½" all models |
| Cases | Stainless Steel | 2½" - Lower Mount or Panel Mount |
| | Brass | 2½" - Lower Mount or Centerback |
| | Chrome plated | Lower Mount or Centerback |
| 3½" Case | Center Back (CB) | 3½" |
| | U-Clamp (UC) | 3½" |
| Connections | Hose Barb (⅝" OD & ¼" OD) | All models (10 pc. minimum) |
| Compound Ranges | Vacuum & Pressure with front zero adjustment | All models (10 pc. minimum) |
| Custom Dials | Logo or custom face | Consult factory for colors and minimums. |



| Back Flanged | SIZE | A | B | D | E |
|--------------|------|------|------|------|-----|
| | 2½" | 2.63 | 1.50 | 2.19 | .38 |
| | 3½" | 3.69 | 1.59 | 2.72 | .38 |
| 4½" | 4.78 | 1.47 | 3.38 | .81 | |

| Center Back | Size | A | B | C |
|-------------|------|------|------|-----|
| | 2½" | 2.63 | 1.50 | .84 |
| | 3½" | 3.69 | 1.59 | .84 |

| U-Clamp | Size | A | B | C | H |
|---------|------|------|------|-----|------|
| | 2½" | 2.81 | 1.25 | .84 | 2.59 |
| | 3½" | 3.98 | 1.69 | .84 | 3.66 |



VACUUM CLEANER TEST GAUGE

- Includes 2½" dial size gauge
- Dual Scale: in. H₂O & kPa vacuum
- Complete with rubber plug to fit vacuum cleaner intake opening

| TYPE | 82K |
|----------------------------|----------|
| Range | Part No. |
| 0 to 60" H ₂ O | G32426 |
| 0 to 100" H ₂ O | G24505 |
| 0 to 160" H ₂ O | G25759 |
| 0 to 200" H ₂ O | G26098 |



GAS PRESSURE TEST SET

- Includes 2½" dial size gauge
- Provided in grey polyethylene case with 3 ft. of rubber tubing

| TYPE | | | 84K |
|------------------------------|----------------------------|--------------|----------|
| Range | | | Part No. |
| 0 to 15" H ₂ O | | 0 to 4.0 kPa | G28145 |
| 0 to 8.75 oz/in ² | 0 to 15" H ₂ O | 0 to 4.0 kPa | G33421 |
| 0 to 20 oz/in ² | 0 to 30" H ₂ O | 0 to 8.6 kPa | G24507 |
| 0 to 58 oz/in ² | 0 to 100" H ₂ O | 0 to 25 kPa | G27038 |



| Ranges | Figure Intervals | Minor Graduations |
|--|------------------|-------------------|
| 0 to 10" H ₂ O | 1 | 0.1 |
| 0 to 15" H ₂ O | 3 | 0.2 |
| 0 to 30" H ₂ O | 5 | 0.5 |
| 0 to 60" H ₂ O | 10 | 1 |
| 0 to 100" H ₂ O | 10 | 1 |
| 0 to 160" H ₂ O | 20 | 2 |
| 0 to 200" H ₂ O | 20 | 2 |
| 0 to 300" H ₂ O | 50 | 5 |
| 0 to 3 psi | 0.5 | 0.05 |
| 0 to 5 psi | 1 | 0.1 |
| 0 to 10 psi | 1 | 0.1 |
| 0 to 10 psi oz/in ² | 1 | 0.1 |
| 0 to 15 psi oz/in ² | 3 | 0.2 |
| 0 to 30 psi oz/in ² | 5 | 0.5 |
| 0 to 60 psi oz/in ² | 10 | 1 |
| 0 to 100 psi oz/in ² | 10 | 1 |
| 0 to 160 psi oz/in ² | 20 | 2 |
| 8.75 oz/in ² and 15" H ₂ O | 1/3 | 0.2/0.2 |
| 20 oz/in ² and 35" H ₂ O | 4/5 | 0.5/1 |
| 32 oz/in ² and 55" H ₂ O | 4/10 | 1/1 |
| 58 oz/in ² and 100" H ₂ O | 10/20 | 1/2 |
| 0 to 15" H ₂ O VAC | 3 | 0.2 |
| 0 to 30" H ₂ O VAC | 5 | 0.5 |
| 0 to 60" H ₂ O VAC | 10 | 1 |
| 0 to 100" H ₂ O VAC | 10 | 1 |
| 0 to 160" H ₂ O VAC | 20 | 2 |
| 0 to 200" H ₂ O VAC | 20 | 2 |

SPECIAL MEDICAL GAUGES

Consult Factory
800-727-5646





GAS TEST GAUGE

- Hex or Bell Type mounting
- 15 to 100 Psi pressure ranges
- Steel case and brass internals

Use to pressure test all new gas installations for leaks and passing inspection codes. After installing Gas Test Gauge, the system is pressurized with air. Any leakage will be indicated by a pressure drop on the gauge. Typical applications include testing of gas and other pressure media.

SPECIFICATIONS

ACCURACY

ASME Grade $\pm 3/2/3\%$ ($\pm 2\%$ of range across middle half of scale)

CASE SIZES

2" diameter

CASE MATERIAL

Steel, black painted

MOUNTING STYLE

Reducing Bell or Hex Style

HOUSING MATERIAL

Reducing Bell: Iron, black painted
Hex Body: Steel, Zinc Dichromate Plated

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass

CONNECTION

$\frac{1}{4}$ " FPT

RANGES

15 to 100 psi

DIAL STANDARD

Single Scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Polycarbonate

STANDARD RANGES & PART NUMBERS

| TYPE | GAS TEST GAUGES | |
|----------------|---------------------|----------|
| Size | 2" | |
| Case Material | Steel | |
| Internals | Copper Alloy | |
| Connection | $\frac{1}{4}$ " FPT | |
| Scale Standard | psi | |
| Mounting style | Bell Type | Hex Type |
| 0 to 15 psi | G33522 | G33526 |
| 0 to 30 psi | G33523 | G33527 |
| 0 to 60 psi | G33524 | G33528 |
| 0 to 100 psi | G33525 | G33529 |



SERVICEMAN'S TEST GAUGE

- Recalibrator and Restrictor Standard
- Heavy Duty Brass Case
- Clam Shell Packaging Optional

Marsh Instruments Deluxe Serviceman's Test Gauge is designed to assure the modern serviceman the best possible gauge for testing refrigeration equipment. Corresponding, easy-to-read temperature scales are printed in red on the inner arcs of the dial face.

Typical applications include testing, servicing and recharging AC and R systems.



STANDARD RANGES & PART NUMBERS

| TYPE | SERVICEMAN'S TEST GAUGES | | |
|--------------------------|--------------------------|-------------------|-------------|
| Size | 2½" | | |
| Case Material | Brass | | |
| Internals | Copper Alloy | | |
| Mounting/Case Style | LM | | |
| Connection | ½ NPT | | |
| Scale Standard | psi & temperature (°F) | | |
| 30" X 350 psi | W0070 | R-12, 22, 502 | Carton |
| 30" X 350 psi | W0070Q | R-12, 22, 502 | Clam Shell |
| 0 to 500 psi | W0072 | R-12, 22, 502 | Carton |
| 0 to 500 psi | W0072Q | R-12, 22, 502 | Clam Shell |
| Set of (2) W0070 & W0072 | W0074 | R-12, 22, 502 | Carton Only |
| 30" X 350 psi | W8070 | R-134a, 404A, 507 | Carton |
| 30" X 350 psi | W8070Q | R-134a, 404A, 507 | Clam Shell |
| 0 to 500 psi | W8072 | R-134a, 404A, 507 | Carton |
| 0 to 500 psi | W8072Q | R-134a, 404A, 507 | Clam Shell |
| 30" x 500 psi | W8115 | R-22, 407C, 410A | Carton |
| 30" x 500 psi | W8115Q | R-22, 407C, 410A | Clam Shell |
| 0 to 800 psi | W8127 | R-22, 407C, 410A | Carton |
| 0 to 800 psi | W8127Q | R-22, 407C, 410A | Clam Shell |

SPECIFICATIONS

ACCURACY
ASME Grade B - ±3/2/3% (±2% of range across middle half of scale)

CASE SIZE
2½" diameter

CASE MATERIAL
Polished brass

CASE STYLE
LM – Lower Mount

TUBE & SOCKET
Copper Alloy

MOVEMENT
Brass with recalibrator

CONNECTION
½ NPT

RANGES
0-500 psi, 30" Hg VAC to 120 psi retarded to 350 psi

DIAL STANDARD
psi with corresponding temperature scales

DIAL COLOR
Black markings on white with red or blue temperature scales

POINTER
Aluminum, black painted

WINDOW
Beveled glass



HVAC/R Gauges



MANIFOLD GAUGE

- Recalibrator and Restrictor Standard
- Color Coded Cases, "Reds" & "Blues"
- Overpressure Protection to 350 psi

These gauges are designed for the pressure measurement of refrigeration systems. All dials are furnished with corresponding temperature scales for the various refrigerants. Dials feature R-12, R-22, and R-502. Standard connections are 1/8" NPT lower mount with your choice of red or blue case.

Marsh Manifold Gauges are used in refrigeration applications for testing, servicing, and recharging AC and R Systems.



SPECIFICATIONS

ACCURACY

ASME Grade B - $\pm 3/2/3\%$ (2% of range across middle half of scale)

CASE SIZE

2 1/2" diameter

CASE MATERIAL

Steel, red or blue painted

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass with recalibrator

CONNECTION

1/8" NPT

RANGES

0-500 psi, 30" Hg VAC to 120 psi retarded to 350 psi

DIAL STANDARD

psi with corresponding temperature scales

DIAL COLOR

Black markings on white with red or blue temperature scales

POINTER

Aluminum, black painted

WINDOW

Impact resistant plastic

STANDARD RANGES & PART NUMBERS

| TYPE | | MANIFOLD GAUGES | | | |
|---------------------|------------------------|--------------------|-----------|------------|---------------|
| Size | 2 1/2" | | | | |
| Case Material | Steel | | | | |
| Internals | Copper Alloy | | | | |
| Mounting/Case Style | LM | | | | |
| Connection | 1/8" NPT | | | | |
| Scale Standard | psi & temperature (°F) | | | | |
| 30" X 350 psi | W0011 | R-12, 22, 502 | Blue Case | Carton | |
| 30" X 350 psi | W0011Q | R-12, 22, 502 | Blue Case | Clam Shell | |
| 0 to 500 psi | W0023 | R-12, 22, 502 | Red Case | Carton | |
| 0 to 500 psi | W0023Q | R-12, 22, 502 | Red Case | Clam Shell | |
| 30" X 350 psi | W8011 | R-134a, 404A & 507 | Blue Case | Carton | |
| 30" X 350 psi | W8011Q | R-134a, 404A & 507 | Blue Case | Clam Shell | |
| 0 to 500 psi | W8023 | R-134a, 404A & 507 | Red Case | Carton | |
| 0 to 500 psi | W8023Q | R-134a, 404A & 507 | Red Case | Clam Shell | |
| 30" X 500 psi | W8015 | R-22, 407C & 410A | Blue Case | Carton | |
| 30" X 500 psi | W8015Q | R-22, 407C & 410A | Blue Case | Clam Shell | |
| 0 to 800 psi | W8027 | R-22, 407C & 410A | Red Case | Carton | |
| 0 to 800 psi | W8027Q | R-22, 407C & 410A | Red Case | Clam Shell | |
| 30" X 350 psi | J7622PQ-001 | R-12, 22, 502 | S/S Case | Clam Shell | Liquid Filled |
| 0 to 500 psi | J7662PQ-001 | R-12, 22, 502 | S/S Case | Clam Shell | Liquid Filled |
| 30" X 350 psi | J7622PQ-002 | R-134a, 404A & 507 | S/S Case | Clam Shell | Liquid Filled |
| 0 to 500 psi | J7662PQ-002 | R-134a, 404A & 507 | S/S Case | Clam Shell | Liquid Filled |



REFRIGERATION AMMONIA GAUGE

- Range 30" Hg to 150 psi or 300 psi
- Case Sizes: 63mm and 3 1/2"
- ASME Grade B

Marsh Ammonia Gauges include a restrictor that protects the gauge against sudden shock or pulsating pressure. The inner dial arc shows pressure, outer arc shows the corresponding temperature scale. Marsh Refrigeration Ammonia Gauges are available in a stainless steel case.

Marsh Instruments Refrigeration Ammonia Gauges are designed for use on ammonia compressors and other ammonia refrigeration equipment.



STANDARD RANGES & PART NUMBERS

| TYPE | REFRIGERATION AMMONIA GAUGES | |
|-----------------------|------------------------------|--------------------|
| Size | 63mm | 3 1/2" |
| Case Material | Stainless Steel | Stainless Steel |
| Internals | Stainless Steel | Stainless Steel |
| Mounting / Case Style | LM | LM |
| Scale Standard | psi & Ammonia (°F) | psi & Ammonia (°F) |
| Connection | 1/4 NPT | 1/4 NPT |
| 30" Hg VAC to 150 psi | W0104 | W0112 |
| 30" Hg VAC to 150 psi | W0104Q | |
| 30" Hg VAC to 300 psi | W0108 | W0116 |
| 30" Hg VAC to 300 psi | W0108Q | |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

REFRIGERATION AMMONIA GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | |
|--------------|---------------------|--------|---|
| Fill Medium | Glycerine (GL) | P | All Models |
| | Silicone (SL) | PI | All Models |
| Custom Dials | Logo or Custom face | M | Consult factory for colors and minimums |

SPECIFICATIONS

ACCURACY

ASME Grade B – ± 3/2/3% (± 2% of range across middle half of scale)

CASE SIZES

63mm and 3 1/2" diameter

CASE MATERIAL

304 Stainless steel

CASE STYLE

LM – Lower Mount

TUBE & SOCKET

Stainless steel

MOVEMENT

Brass

CONNECTION

1/4 NPT

RANGES

Compound 30" Hg Vac to 150 psi or 30" Hg Vac to 300 psi

DIAL STANDARD

Single scale psi with corresponding Ammonia temperature scales

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Polycarbonate

RESTRICTORS

Standard

PACKAGING

Optional clam shell packed gauges are on 4 1/2" X 6 1/2" cards, pre-punched for pegboard hanging



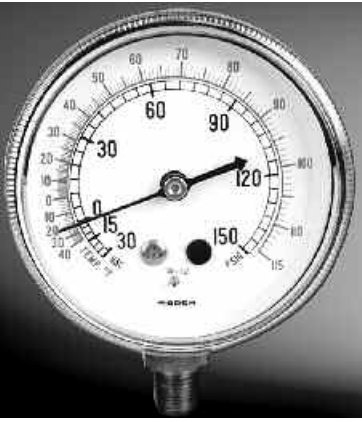


REFRIGERATION GAUGE

- Color Coded Dial
- Adjustable Pointer Standard

Marsh Refrigeration Gauges are sturdily constructed and tested to give long, continuous, accurate service. In addition to the standard pressure or compound scale, dials also show the corresponding temperature scales for R-12, R-22, and R-502, in the various combinations shown in the chart below. Dial markings are sharp, clear and easy to read.

Marsh Instruments Refrigeration Gauges are designed specifically for use on refrigeration systems.



SPECIFICATIONS

ACCURACY

ASME Grade B - $\pm 3/2/3\%$ (2% of range across middle half of scale)

CASE SIZES

2 1/2" and 3 1/2" diameter

CASE MATERIAL

Steel, black painted

CASE STYLE

LM - Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Brass

CONNECTION

1/8 or 1/4 NPT

RANGES

Compound 30" Hg Vac to 150 psi,
30" Hg Vac to 300 psi, 0 to 300 psi

DIAL STANDARD

psi with corresponding temperature scales

DIAL COLOR

Black markings on white with red temperature scales

POINTER

Aluminum, black painted, adjustable

WINDOW

Acrylic Clearlok

RESTRICTORS

Standard

OPTIONS

Consult factory

STANDARD RANGES & PART NUMBERS

| TYPE | REFRIGERATION GAUGES | |
|-----------------------|--------------------------|---------|
| Size | 2 1/2" | 3 1/2" |
| Case Material | Steel | |
| Internals | Copper Alloy | |
| Mounting/Case Style | LM | LM |
| Connection | 1/8 NPT | 1/4 NPT |
| Scale Standard | psi and temperature (°F) | |
| R-12 | | |
| 30" Hg VAC 150 psi | W0002 | W0030 |
| 0 to 300 psi | W0016 | W0034 |
| R-22 | | |
| 30" Hg VAC to 150 psi | | W0032 |
| R-12 & R-22 | | |
| 30" Hg VAC 150 psi | W0004 | |
| 30" Hg VAC 300 psi | W0012 | |
| 0 to 300 psi | W0018 | |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

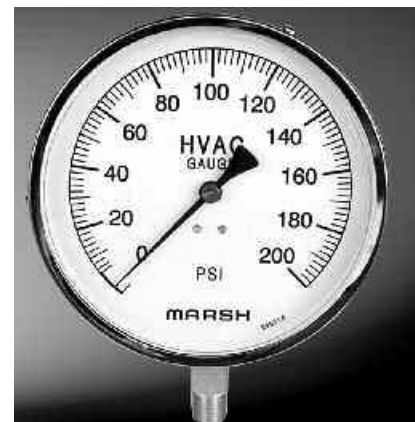


CONTRACTOR'S GAUGE

- 4½" Dial
- Polished Stainless Steel Case
- Adjustable Pointer
- 1% Accuracy

Marsh Instruments Contractor's HVAC Service Gauge is a newly redesigned gauge with a long-life movement to meet the needs of contractors in air conditioning, heating, plumbing and refrigeration. This rugged and reliable gauge is economically priced and offers many features normally found on more expensive gauges such as adjustable pointer, acrylic lens and polished stainless steel case.

Marsh Instruments Contractor's Gauges are designed for use on plumbing and HVAC equipment.



STANDARD RANGES & PART NUMBERS

| TYPE | CONTRACTOR'S GAUGES |
|-----------------------|--------------------------|
| Size | 4½" |
| Case Material | Polished Stainless Steel |
| Internals | Copper Alloy |
| Mounting / Case Style | LM |
| Connection | ¼ NPT |
| Scale Standard | psi |
| 30" Hg VAC to 30 psi | W0480 |
| 30" Hg VAC to 160 psi | W0487 |
| 0 to 30 psi | W0481 |
| 0 to 60 psi | W0483 |
| 0 to 100 psi | W0484 |
| 0 to 160 psi | W0486 |
| 0 to 200 psi | W0488 |
| 0 to 300 psi | W0490 |
| 0 to 600 psi | W0492 |

SPECIFICATIONS

| | |
|--------------------------|--|
| ACCURACY | ASME Grade A – ±2/1/2% (1% of range across middle half of scale) |
| CASE SIZE | 4½" diameter |
| CASE MATERIAL | Polished stainless steel |
| CASE STYLE | LM – Lower Mount |
| TUBE & SOCKET | Copper alloy |
| MOVEMENT | Brass sector and pinion |
| CONNECTION | ¼ NPT |
| RANGES | Compound 30" Hg Vac to 160 psi; 30 to 600 psi |
| DIAL STANDARD | Single scale psi |
| DIAL COLOR | Black markings on white |
| POINTER | Aluminum, black painted, adjustable |
| WINDOW | Acrylic |

CONTRACTOR'S GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---|-----------------------|--------|---------------------|
| Restrictors | Push Fit .008 or .018 | H | all models |
| Catalog dials | psi and kPa | W3 | all models |
| All other dials - consult factory for lead time | | | 25 Piece minimum |





HEATING SYSTEM GAUGE

- Adjustable Set Hand
- Ranges to 300 psi and 690 Feet of Water
- 3½" and 4½" Dials

Marsh Instruments Heating System Gauges are available in 3½" and 4½" dial sizes in the most popular ranges. An adjustable red altitude pointer is standard on feet-of-water gauges. This feature allows the user to indicate the head of water to be maintained in the system.

Marsh Instruments Heating System Gauges provide accurate psi and feet-of-water measurements in elevated tanks, reservoirs, standpipes, and similar applications where reliability and dependability are crucial in heating system equipment.

STANDARD RANGES & PART NUMBERS

| TYPE | HEATING SYSTEM HVAC/R GAUGES | |
|---|--------------------------------------|--------------------------------------|
| Size | 3½" | 4½" |
| Case Material | Steel | Aluminum |
| Internals | Copper Alloy | Copper Alloy |
| Mounting / Case Style | LM | LM |
| Connection | ¼ NPT | ¼ NPT |
| Scale Standards | psi, ft. H ₂ O and metric | psi, ft. H ₂ O and metric |
| 0 to 15 psi and 0 to 30 ft H ₂ O | | W0456 |
| 0 to 30 psi and 0 to 70 ft H ₂ O | W0450 | W0457 |
| 0 to 100 psi and 0 to 230 ft H ₂ O | W0451 | W0458 |
| 0 to 150 psi and 0 to 345 ft H ₂ O | | W0459 |
| 0 to 160 psi and 0 to 370 ft H ₂ O | W0452 | |
| 0 to 200 psi and 0 to 460 ft H ₂ O | W0453 | W0460 |
| 0 to 300 psi and 0 to 690 ft H ₂ O | W0454 | W0461 |

NOTE: Items are available on special order. However, minimums and lead times apply. Consult factory.

HEATING SYSTEM GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|--------------|---------------------|--------|---|
| Restrictors | Special Restrictor | H | All models |
| Custom Dials | Logo or Custom face | M | Consult factory for colors and minimums |



SPECIFICATIONS

ACCURACY

3½" ASME Grade B – ±3/2/3%
(2% of range across middle half of scale)

4½" ASME Grade A – ±2/1/2%
(1% of range across middle half of scale)

CASE SIZE

3½" and 4½" diameter

CASE MATERIAL

3½": Steel, black painted

4½": Aluminum back flange case, black painted

CASE STYLE

LM – Lower Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

3½": Brass

4½": Stainless steel

CONNECTION

¼ NPT

RANGES

Dual Scale 15 to 300 psi and 300 to 690 ft. H₂O

DIAL STANDARD

psi, ft. H₂O and metric

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted with red set hand

WINDOW

3½": Acrylic Clearlok

4½": Instrument Glass



WATER TEST GAUGE

- Connects Directly to Standard Water Faucet or Hose
- Measures Commercial & Residential Water Pressure
- Dual Scale Dial

Marsh Water Test Gauge is designed to connect directly to a standard 3/4" water faucet or hose. The maxi pointer included on the Water Test Gauge allows you to monitor a peak operating or surge pressure point.

Typical applications include measuring residential and commercial water pressure, also selection and adjustment of valves, regulators, and other controls.



STANDARD RANGES & PART NUMBERS

| TYPE | WATER TEST GAUGES | |
|---------------------|---------------------------------|-------------------|
| Size | 2 1/2" | |
| Internals | Copper Alloy | |
| Case Materials | Steel | |
| Mounting/Case Style | Top mount | |
| Connection | 3/4" - 1 1/2" NH female hosebib | |
| Scale Standard | psi/kPa | |
| Window | Acrylic | Acrylic w/maxhand |
| Part Number | G24545 | G24545-001 |

SPECIFICATIONS

ACCURACY ASME
Grade B - ±3/2/3% (±2% of range across middle half of scale)

CASE SIZES
2 1/2" diameter

CASE MATERIAL
Steel, black painted

CASE STYLE
Top mount

TUBE & SOCKET
Copper alloy

MOVEMENT
Brass

CONNECTION
3/4" - 1 1/2" NH Female hosebib

RANGES
0 to 300 psi

DIAL STANDARD
Dual scale psi and kPa

DIAL COLOR
Black markings on white

POINTER
Aluminum, black painted

WINDOW
Acrylic with or without red maximum indicating pointer

OPTIONS
Other ranges are available
Consult factory





PAPER MACHINE GAUGE

- Hinged Ring Chrome Plated Steel Case
- Protective Weather Tight Seal
- Restrictor is Standard

Marsh Instruments Chrome Plated Paper Machine Gauges are available in nine ranges and fit existing panel cutouts. The heavy-duty case features a front flanged/ hinged ring design which allows easy access to the recalibrator and a weephole that prevents condensation buildup. A restrictor is standard. The Marsh Paper Machine Gauge is available in 3½" size only. Each gauge has a weather-tight seal to protect against dust and atmospheric contaminants. Marsh Instruments Paper Machine gauges are specifically designed to meet the demands of the pulp and paper industry.

SPECIFICATIONS

ACCURACY

ASME Grade A - ±2/1/2% (±1% of range across middle half of scale)

CASE SIZES

3½" diameter

CASE MATERIAL

Steel, chrome plated

CASE STYLE

LBM - Lower Back Mount

TUBE & SOCKET

Copper alloy

MOVEMENT

Stainless Steel with recalibrator

CONNECTION

¼ NPT

RANGES

30 to 1,000 psi

DIAL STANDARD

Single scale psi

DIAL COLOR

Black markings on white

POINTER

Aluminum, black painted

WINDOW

Glass lens, chrome plated brass ring with weather-tight seal

RESTRICTOR

Standard

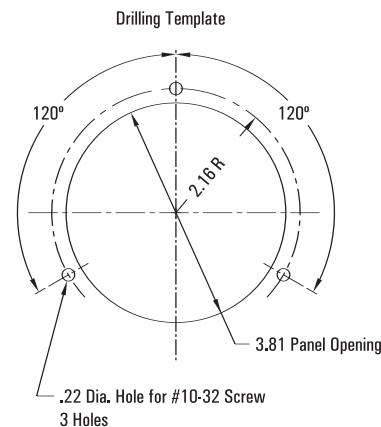
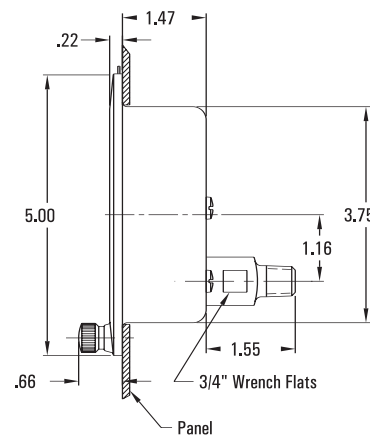
STANDARD RANGES & PART NUMBERS

| TYPE | PAPER MACHINE GAUGES |
|-----------------------|----------------------|
| Size | 3½" |
| Case Material | Steel, Chrome Plated |
| Internals | Copper Alloy |
| Mounting / Case Style | LBM |
| Connection | ¼ NPT |
| Scale Standard | psi |
| 0 to 30 psi | W6042 |
| 0 to 60 psi | W6046 |
| 0 to 100 psi | W6048 |
| 0 to 160 psi | W6052 |
| 0 to 200 psi | W6054 |
| 0 to 300 psi | W6058 |
| 0 to 400 psi | W6060 |
| 0 to 600 psi | W6064 |
| 0 to 1,000 psi | W6072 |

PAPER MACHINE GAUGE OPTIONS

| OPTION | TYPE | SUFFIX | AVAILABLE ON MODELS |
|---------------|--------------------------|--------|---|
| Restrictor | Special Restrictor | H | |
| | No restrictor | H1 | |
| Catalog Dials | bar only | L1 | See Marsh Price List for minimum |
| | kg/cm ² only | L2 | |
| | kPa only | L3 | |
| | MPa only | L4 | |
| | psi & bar | W1 | |
| | psi & kg/cm ² | W2 | |
| | psi & kPa | W3 | |
| | psi & MPa | W4 | |
| Custom Dials | Logo or custom face | M | Consult factory for colors and minimums |

PAPER MACHINE GAUGE DIMENSIONS



X-MAS TREE GAUGE

- Accuracy $\pm 1\%$
- Polished Stainless Steel Case
- Ranges to 10,000 psi
- Adjustable Micrometer Pointer

Marsh Instruments has been on top of X-mas Trees and well-heads longer than any other name. Marsh offers the same high-performance gauge for replacement. Other gauge manufacturers can state X-mas Tree Gauge on their products but only Marsh Instruments can offer you all the special features, and dependability, that you expect! Features include a polished stainless steel case with stainless steel tube, tip, and socket, and an easy to adjust micrometer pointer.

Marsh Instruments X-mas Tree gauges are designed for the oil patch, well heads and offshore oil platforms.



STANDARD RANGES & PART NUMBERS

| TYPE | X-MAS TREE GAUGE |
|-----------------------|---------------------|
| Size | 4½" |
| Case Material | 304 Stainless Steel |
| Internals | Stainless Steel |
| Mounting / Case Style | LM |
| Connection | ½ NPT |
| Scale Standard | psi |
| 0 to 1,000 psi | W0574 |
| 0 to 1,500 psi | W0578 |
| 0 to 2,000 psi | W0582 |
| 0 to 3,000 psi | W0586 |
| 0 to 5,000 psi | W0590 |
| 0 to 10,000 psi | W0594 |

SPECIFICATIONS

ACCURACY
ASME Grade A – $\pm 1\%$
($\pm 1\%$ of range across full scale)

CASE SIZES
4½" diameter

CASE MATERIAL
304 Stainless Steel

CASE STYLE
LBM – Lower Mount
with blowout plug

TUBE & SOCKET
Stainless Steel

MOVEMENT
316 Stainless Steel

CONNECTION
½ NPT

RANGES
1,000 to 10,000 psi

DIAL STANDARD
Single scale psi

DIAL COLOR
Black markings on white

POINTER
Aluminum, black painted,
micro-adjustable.

WINDOW & RING
Acrylic window with bayonet ring





| PART# | DESCRIPTION |
|---|--|
| <p style="text-align: center;">GAUGE COCK AND SIPHONS</p> | |
| 111025 | 1/4" F x 1/4" F Brass Gauge Cock (T-Handle #123) |
| 111028 | 1/4" M union x 1/4" F Brass Gauge Cock (Lever Handle #125) |
| 111029 | 1/4" M x 1/4" M Steel Straight Siphon (600psi @ 400°F) |
| 111030 | 1/4" M x 1/4" M Brass Straight Siphon (250psi @ 400°F) |
| 111031 | 1/4" M x 1/4" M Steel Angle Type Siphon (600psi @ 400°F) |
| 111032 | 1/4" M x 1/4" M Brass Angle Type Siphon (250psi @ 400°F) |
| <p>CLEARLOK (ACRYLIC) CONVEX WINDOW INTERNAL THREAD "G" Series Fig. 83 Diaphragm Gauges</p> | |
| 124602 | 2 1/2" for 83K & 83KC |
| 127985 | 2 1/2" for 83KB & 83KD |
| 125448-001 | 3 1/2" for all models (knurled edge) |
| <p>CLEARLOK (ACRYLIC) WINDOWS (INTERNAL THREAD) "J" SERIES</p> | |
| W15CL | 1 1/2" for LM or CB |
| W20CL | 2" for LM or CB |
| W20CLUC | 2" for U-Clamp or Front Flange |
| W25CL | 2 1/2" for LM or CB |
| W25CLUC | 2 1/2" for U-Clamp or Front Flange |
| W35CL | 3 1/2" for LM or CB |
| W35CLUC | 3 1/2" for U-Clamp or Front Flange |
| <p>RESTRICTOR SCREWS 1/8" & 1/4" NPT Threaded Brass 8-40</p> | |
| 100116-008 | AIR (.008) |
| 100116-013 | WATER (.013) |
| 100116-016 | OIL (.016) |
| <p>RESTRICTOR SCREWS LARGE DIAL (D, E, H, & P) 1/4" & 1/2" NPT Threaded Brass M5 X 0.8</p> | |
| RES008BRLD | AIR (.008) |
| RES013BRLD | WATER (.013) |
| RES016BRLD | OIL (.016) |
| <p>RESTRICTOR SCREWS LARGE DIAL (D, E, H, & P) 1/4" & 1/2" NPT Threaded 316 SST M5 X 0.8</p> | |
| RES018SSLD | All Apps. (.018) |
| <p>RESTRICTOR SCREWS GENERAL SERVICE (J)</p> | |
| 150139-013 | Air (.013) |
| 150139-018 | "Standard" (.018) |
| 150139-025 | Water (.025) |
| 150139-040 | Oil (.040) |
| <p>RESTRICTOR SCREWS SEVERE SERVICE SERIES (J & X) 1/8", 1/4" & 1/2" NPT Push-In Brass</p> | |
| RES018PB | "Standard" (.018) |
| RES013PB | AIR (.013) |
| RES025PB | WATER (.025) |
| RES040PB | OIL (.040) |

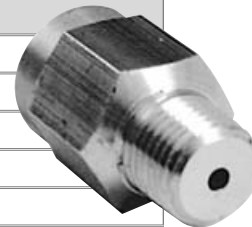
| PART# | DESCRIPTION |
|---|---------------------------------------|
| <p>RESTRICTOR SCREWS SEVERE SERVICE SERIES J & X 1/8", 1/4" & 1/2" Push-In 316 SST</p> | |
| RES018PBSS | "Standard" (.018) |
| <p>FRONT FLANGE (3-HOLE) CASE & WINDOW ASS'Y FOR BACK CONNECT (CB) "J" Series Gauge</p> | |
| CS25FF | 2 1/2" Front Flange Case |
| W25CLUC | 2 1/2" Window Assembly |
| CS35FF | 3 1/2" Front Flange Case |
| W35CLUC | 3 1/2" Window Assembly |
| <p>LIQUID FILL CONVERSION KIT</p> | |
| 9-79999-93 | Liquid Fill Kit |
| 127656 | Silicone, 1000 cc, 1 quart |
| 133426 | Glycerine, 1 quart |
| | |
| <p>MAX. HAND ASSEMBLY WITH THUMB SCREW</p> | |
| W20CLMAX | 2" Steel Case (J) LM & CBM only |
| W25CLMAX | 2 1/2" Steel Case (J) LM & CBM only |
| W35CLMAX | 3 1/2" Steel Case (J&W) LM & CBM only |
| 128311-001 | 3 1/2" Large Dial (H) |
| 128311-002 | 4 1/2" Large Dial (D, H, & P) |
| | |
| <p>HAND JACK & DUPLEX HAND JACK</p> | |
| 110983 | Duplex Hand Jack/Driver Set |
| 110985 | Hand Jack (Pointer Remover) |
| <p>ADJUSTABLE (SLOTTED) POINTER</p> | |
| PTR20ADJ-B | Adjustable Pointer - 2" |
| PTR25ADJ-B | Adjustable Pointer - 2 1/2" |
| PTR35ADJ-B | Adjustable Pointer - 3 1/2" |
| PTR45ADJ-B | Adjustable Pointer - 4 1/2" |
| <p>MICROMETER POINTER, LARGE DIAL SERIES</p> | |
| PTRP45 | 4 1/2" Dial (D, H & P) |
| PTRP60 | 6" Dial (D, H & P) |



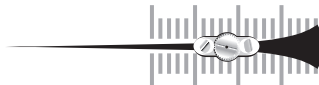
| PART# | DESCRIPTION |
|---|---|
| SEVERE SERVICE GAUGE ACCESSORIES | |
| 127794 | Adapter ring, 63mm to 2½" |
| Flange63 | Front Flange for 63mm: C Case |
| 133279 | Front Flange for 63mm: CB or UC case (no holes) |
| Flange100 | Front Flange for 100mm: C Case |
| CERTIFICATION FORMS | |
| 134476 | Material Certification |
| 134477 | Certificate of Conformance |
| 134478 | Certificate of Compliance |
| 134479 | Certificate of Origin |
| 134480 | Certificate of Calibration |
| 134481 | Certificate of Accuracy |



| PART# | DESCRIPTION | MEDIA | MAXIMUM PRESSURES |
|-------------------------------------|--------------|-------------------|-------------------|
| INDUSTRIAL PRESSURE SNUBBERS | | | |
| S20BD | ¼ NPT, Brass | Heavy Oil | 5,000 psi |
| S20BE | ¼ NPT, Brass | Water & Light Oil | 5,000 psi |
| S20BG | ¼ NPT, Brass | Air & Gases | 5,000 psi |
| S20SD | ¼ NPT, 303SS | Heavy Oil | 15,000 psi |
| S20SE | ¼ NPT, 303SS | Water & Light Oil | 15,000 psi |
| S20SG | ¼ NPT, 303SS | Air & Gases | 15,000 psi |
| S40BD | ½ NPT, Brass | Heavy Oil | 5,000 psi |
| S40BE | ½ NPT, Brass | Water & Light Oil | 5,000 psi |
| S40BG | ½ NPT, Brass | Air & Gases | 5,000 psi |
| S40SD | ½ NPT, 303SS | Heavy Oil | 15,000 psi |
| S40SE | ½ NPT, 303SS | Water & Light Oil | 15,000 psi |
| S40SG | ½ NPT, 303SS | Air & Gases | 15,000 psi |



Diaphragm Seals



MODEL 12000 MINI SERVICEABLE RUBBER DIAPHRAGM SEAL

The Model 12000 Serviceable Mini Diaphragm Seal is designed for gauges and instruments with operating pressures of 2500 psi with stainless and 500 psi with PVC models. Ideally suited for small applications and corrosive installations. The optional 'Easy Clean Out' feature allows the removal of the process side housing without losing the instrument side fill fluid. Fill / bleed screw port in the instrument side housing, and stainless steel build screws are standard.

FILLED & CALIBRATED TO GAUGES ONLY.



MODEL B8498 GAUGE PROTECTOR WITH RUBBER DIAPHRAGM SEAL

The Model B8498 Gauge Protector is designed for extremely high volume displacement. Ideally suited for gauges and instruments with operating pressures up to 200 psi and vacuum applications. Available in 1/4" threaded connections and chrome plated zinc construction. A 3/8" flush plug is standard in the process side housing.

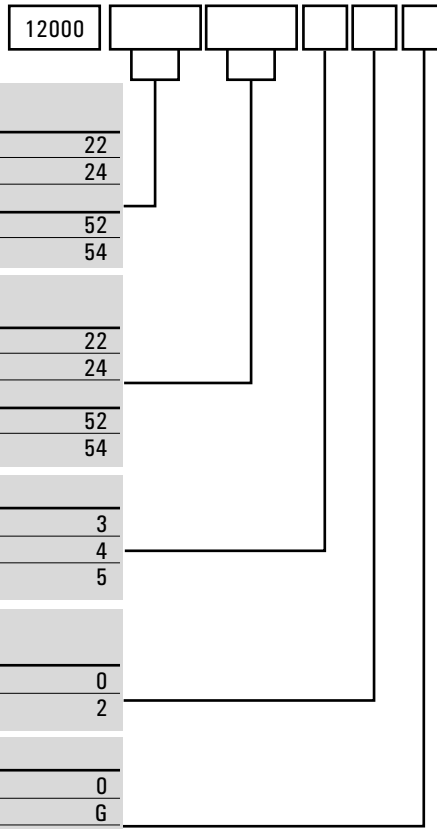
FILLED & CALIBRATED TO GAUGES ONLY.

Diaphragm seals are isolation devices which separate pressure gauges and other instruments from the process media while allowing the instrument to measure the process pressure. The service life of the instrument is greatly extended, because it is protected from corrosion, clogging, freezing, or pulsation.

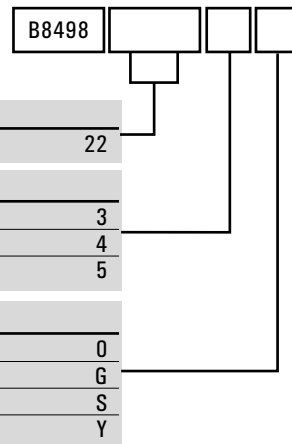
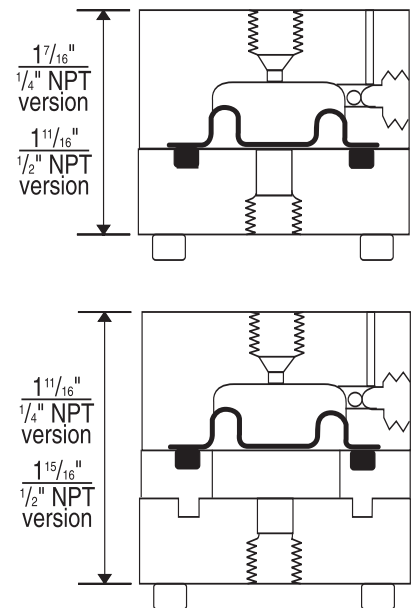
LIQUID FILLINGS

The selection of the fill depends on the temperature expected in any given application. Temperature ratings for available fillings are listed below.

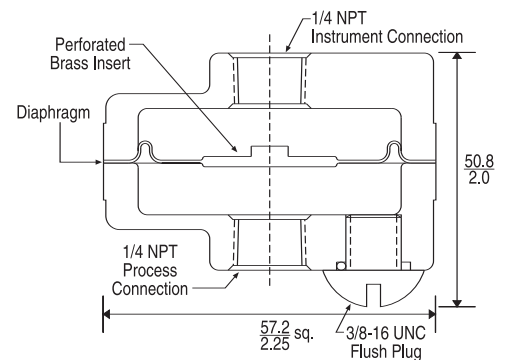
| | |
|-----------|--------------|
| Glycerine | 0 to 400°F |
| Silicone | -40 to 600°F |
| Syltherm | -40 to 750°F |



| | |
|-----------------------|----|
| UPPER 316SS | |
| 1/4" | 22 |
| 1/2" | 24 |
| PVC | |
| 1/4" | 52 |
| 1/2" | 54 |
| LOWER 316SS | |
| 1/4" | 22 |
| 1/2" | 24 |
| PVC | |
| 1/4" | 52 |
| 1/2" | 54 |
| DIAPHRAGM | |
| Nitrile | 3 |
| Fluorocarbon | 4 |
| Neoprene | 5 |
| EASY CLEAN OUT | |
| None | 0 |
| Clean Out | 2 |
| FILL | |
| No Fill | 0 |
| Glycerine | G |
| Silicone | S |
| Syltherm | Y |



| | |
|------------------|----|
| ASSEMBLY | |
| 1/4" | 22 |
| DIAPHRAGM | |
| Nitrile | 3 |
| Fluorocarbon | 4 |
| Neoprene | 5 |
| FILL | |
| No Fill | 0 |
| Glycerine | G |
| Silicone | S |
| Syltherm | Y |



Diaphragm Seals



MODEL 13000 MINI / ALL WELDED DIAPHRAGM SEAL

The Model 13000 Mini Welded Seal is designed for 2" to 3½" bourdon tube gauges with a minimum pressure of 100 psi. The maximum operating pressure is 2000 psi at 100° F. Available in all 316 SS or Hastelloy C process housing and diaphragm.

FILLED & CALIBRATED TO GAUGES ONLY.



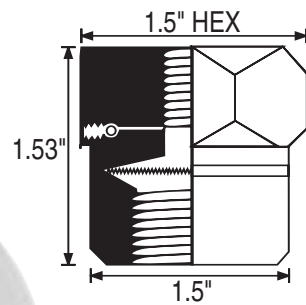
MODEL 13040 ALL WELDED DIAPHRAGM SEAL

The Model 13040 All Welded Seal is designed for 2" to 4½" bourdon tube gauges with pressure ranges from vacuum to 1000 psi. Available in all 316SS or Hastelloy C process housing and diaphragm, with threaded connections. Optional flushing connections also available.

FILLED & CALIBRATED TO GAUGES ONLY.

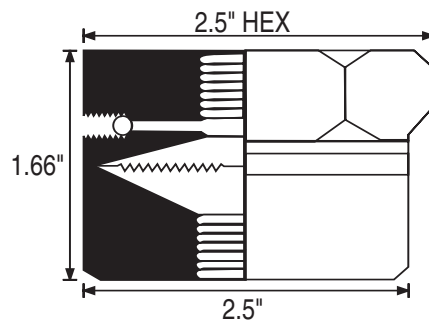
13000

| | |
|-----------------|----|
| UPPER 316SS | |
| ¼" | 22 |
| ½" | 24 |
| LOWER 316SS | |
| ¼" | 22 |
| ½" | 24 |
| Hastelloy | |
| ¼" | 42 |
| ½" | 44 |
| DIAPHRAGM 316SS | 1 |
| Hastelloy C | 2 |
| FILL | |
| No Fill | 0 |
| Glycerine | G |
| Silicone | S |
| Syltherm | Y |



13040

| | |
|------------------|----|
| UPPER 316SS | |
| ¼" | 22 |
| ½" | 24 |
| LOWER 316SS | |
| ¼" | 22 |
| ½" | 24 |
| ¾" | 26 |
| 1" | 28 |
| Hastelloy | |
| ¼" | 42 |
| ½" | 44 |
| ¾" | 46 |
| 1" | 48 |
| DIAPHRAGM 316SS | 1 |
| Hastelloy C | 2 |
| FLUSH CONNECTION | |
| None | 0 |
| ¼" | 2 |
| FILL | |
| No Fill | 0 |
| Glycerine | G |
| Silicone | S |
| Syltherm | Y |



Diaphragm Seals



MODEL 14000 REMOVABLE DIAPHRAGM SEAL

The Model 14000 Diaphragm Seal is a clamped metal design featuring interlocking construction inside the bolt circle for perfect alignment. The upper and lower housings clamp the diaphragm in place and allow for field servicing. The 14000 is available in threaded connections for pressures from vacuum to 2500 psi. Fill/bleed port screw in the upper is standard and an optional flush connection is available.

FILLED & CALIBRATED TO GAUGES ONLY.

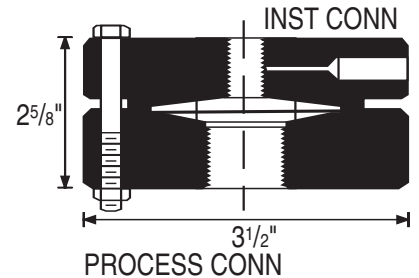


MODEL 14040 WELDED DIAPHRAGM SEAL

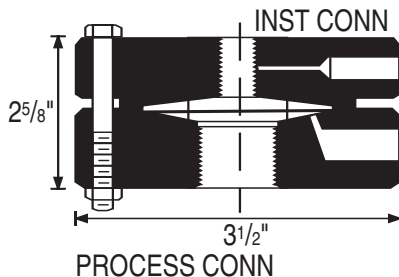
The Model 14040 Welded Diaphragm Seal is a welded diaphragm-to-upper design allowing the upper housing to be removed with the instrument in place without losing fill. The same interlocking feature as the 14000 is used to assure alignment of the upper to the lower. Available in threaded connections for pressures from vacuum to 2500 psi. Fill/bleed port screw in the upper is standard and an optional flush connection is available.

FILLED & CALIBRATED TO GAUGES ONLY

| | | | | | | |
|-------------------------|----|--|--|--|--|--|
| 14000 | | | | | | |
| UPPER Steel | | | | | | |
| 1/4" | 12 | | | | | |
| 1/2" | 14 | | | | | |
| 316SS | | | | | | |
| 1/4" | 22 | | | | | |
| 1/2" | 24 | | | | | |
| LOWER Steel | | | | | | |
| 1/4" | 12 | | | | | |
| 1/2" | 14 | | | | | |
| 3/4" | 16 | | | | | |
| 1" | 18 | | | | | |
| 316SS | | | | | | |
| 1/4" | 22 | | | | | |
| 1/2" | 24 | | | | | |
| 3/4" | 26 | | | | | |
| 1" | 28 | | | | | |
| DIAPHRAGM | | | | | | |
| 316SS | 1 | | | | | |
| Hastelloy C | 2 | | | | | |
| Tantalum | 3 | | | | | |
| FLUSH CONNECTION | | | | | | |
| None | 0 | | | | | |
| 1/4" | 2 | | | | | |
| BOLTS & NUTS | | | | | | |
| Steel | 0 | | | | | |
| Stainless | 1 | | | | | |
| FILL | | | | | | |
| No Fill | 0 | | | | | |
| Glycerine | G | | | | | |
| Silicone | S | | | | | |
| Syltherm | Y | | | | | |



| | | | | | | |
|-------------------------|----|--|--|--|--|--|
| 14040 | | | | | | |
| UPPER Steel | | | | | | |
| 1/4" | 12 | | | | | |
| 1/2" | 14 | | | | | |
| 316SS | | | | | | |
| 1/4" | 22 | | | | | |
| 1/2" | 24 | | | | | |
| LOWER Steel | | | | | | |
| 1/4" | 12 | | | | | |
| 1/2" | 14 | | | | | |
| 3/4" | 16 | | | | | |
| 1" | 18 | | | | | |
| 316SS | | | | | | |
| 1/4" | 22 | | | | | |
| 1/2" | 24 | | | | | |
| 3/4" | 26 | | | | | |
| 1" | 28 | | | | | |
| DIAPHRAGM | | | | | | |
| 316SS | 1 | | | | | |
| Hastelloy C | 2 | | | | | |
| Tantalum | 3 | | | | | |
| FLUSH CONNECTION | | | | | | |
| None | 0 | | | | | |
| 1/4" | 2 | | | | | |
| BOLTS & NUTS | | | | | | |
| Steel | 0 | | | | | |
| Stainless | 1 | | | | | |
| FILL | | | | | | |
| No Fill | 0 | | | | | |
| Glycerine | G | | | | | |
| Silicone | S | | | | | |
| Syltherm | Y | | | | | |



HOT WATER THERMOMETER

- ± 1% of span throughout entire range
- Aluminum stem and case material
- Bi-metallic element

Thermometer is available with standard 1/2" or 3/4" NPT male separable socket or 1/2" or 3/4" sweatwell connection that allows easy thermometer removal while maintaining a "sealed" system.

Marsh Instruments Hot Water Thermometers are designed for accurate temperature readings in hot water lines, boilers and hydronic systems.



| DESCRIPTION | P/N |
|----------------|---------|
| 1/2" NPT | L8004-1 |
| 3/4" NPT | L8004-2 |
| 1/2" sweatwell | L8004-3 |
| 3/4" sweatwell | L8004-4 |

SPECIFICATIONS

ACCURACY
± 1% of span throughout entire range

CASE SIZE
2 1/2" Diameter

CASE MATERIAL
Aluminum

STEM
Aluminum

MOVEMENT
Bi-metallic element

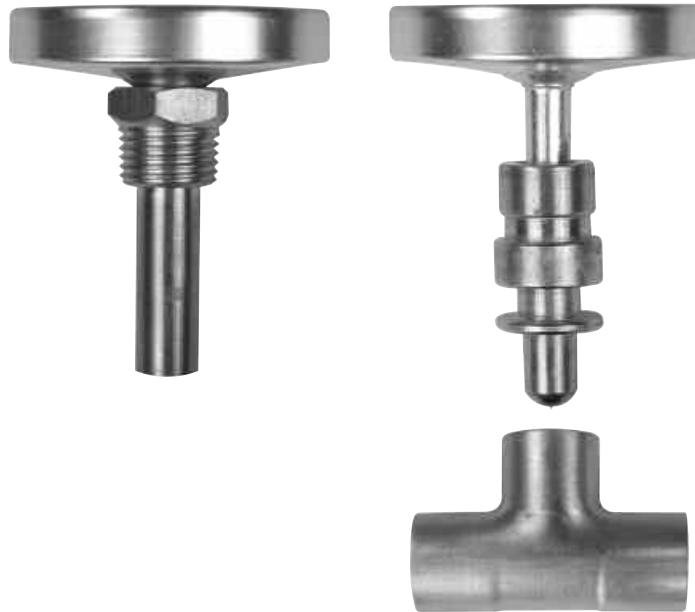
CONNECTION
1/2" or 3/4" NPT Center Back,
1/2" or 3/4" Sweatwell Center Back

RANGE
30-250° F & 0-120° C

DIAL COLOR
White with Black & Red Markings

POINTER
Aluminum, Black Painted

RECALIBRATOR
Standard





BIMETAL THERMOMETERS

- External Reset Feature for Field Recalibration (3" & 5")
- 9 Dual Scale Ranges to 1,000°F (525°C)
- Hermetically Sealed Case Design
- 2", 3" and 5" Dials
- Stem Lengths to 24"
- 1% Full Scale Accuracy

Marsh Instruments Bimetal Thermometers combine the benefits of economy and reliability for local mounted temperature indication in the dual scale ranges from -50° to 1,000°F (-40° to 525°C). Additional advantages offered by the Series "L" Bimetal Thermometers include an easy-to-read dual scale, fast speed of response, and accurate temperature indication. The hermetically sealed and ruggedly built case is resistant to shock, vibration, dust and moisture. Corrosion resistance to most chemicals is provided by the all welded type 304 Stainless Steel construction. The extremely responsive bimetal sensing element provides an accuracy to within ± 1% of scale. An external adjustment screw on the back of the 3" and 5" case provides convenient reset and field recalibration. Built-in over range protection is a standard feature.

Typical applications include process, offshore, power, chemical industries, HVAC and OEM applications.

STANDARD RANGES & PART NUMBERS

| TYPE | BIMETAL THERMOMETERS | | | | | | |
|--------------------------------|----------------------|--------|--------|--------|--------|--------|--------|
| Size | 2" | | | | | | |
| Connection | ½ NPT | | | | | | |
| Mounting | CB | CB | CB | CB | CB | CB | CB |
| Stem Length | 2½" | 4" | 6" | 9" | 12" | 15" | 18" |
| -50° to 120°F / -40° to 50°C | L11101 | L11201 | L11301 | L11401 | L11501 | L11601 | L11701 |
| -40° to 160°F / -40° to 70°C | L11102 | L11202 | L11302 | L11402 | L11502 | L11602 | L11702 |
| 0° to 200°F / -20° to 90°C | L11104 | L11204 | L11304 | L11404 | L11504 | L11604 | L11704 |
| 0° to 250°F / -20° to 120°C | L11105 | L11205 | L11305 | L11405 | L11505 | L11605 | L11705 |
| 50° to 300°F / 10° to 150°C | L11106 | L11206 | L11306 | L11406 | L11506 | L11606 | L11706 |
| 50° to 400°F / 10° to 200°C | L11107 | L11207 | L11307 | L11407 | L11507 | L11607 | L11707 |
| 50° to 550°F / 10° to 300°C | L11108 | L11208 | L11308 | L11408 | L11508 | L11608 | L11708 |
| 150° to 750°F / 70° to 400°C | L11110 | L11210 | L11310 | L11410 | L11510 | L11610 | L11710 |
| 200° to 1000°F / 100° to 525°C | L11111 | L11211 | L11311 | L11411 | L11511 | L11611 | L11711 |
| Size | 3" | | | | | | |
| Connection | ½ NPT | | | | | | |
| Mounting | CB | CB | CB | CB | CB | CB | CB |
| Stem Length | 2½" | 4" | 6" | 9" | 12" | 15" | 18" |
| -50° to 120°F / -40° to 50°C | L31101 | L31201 | L31301 | L31401 | L31501 | L31601 | L31701 |
| -40° to 160°F / -40° to 70°C | L31102 | L31202 | L31302 | L31402 | L31502 | L31602 | L31702 |
| 0° to 200°F / -20° to 90°C | L31104 | L31204 | L31304 | L31404 | L31504 | L31604 | L31704 |
| 0° to 250°F / -20° to 120°C | L31105 | L31205 | L31305 | L31405 | L31505 | L31605 | L31705 |
| 50° to 300°F / 10° to 150°C | L31106 | L31206 | L31306 | L31406 | L31506 | L31606 | L31706 |
| 50° to 400°F / 10° to 200°C | L31107 | L31207 | L31307 | L31407 | L31507 | L31607 | L31707 |
| 50° to 550°F / 10° to 300°C | L31108 | L31208 | L31308 | L31408 | L31508 | L31608 | L31708 |
| 150° to 750°F / 70° to 400°C | L31110 | L31210 | L31310 | L31410 | L31510 | L31610 | L31710 |
| 200° to 1000°F / 100° to 525°C | L31111 | L31211 | L31311 | L31411 | L31511 | L31611 | L31711 |

SPECIFICATIONS

ACCURACY

± 1% of span throughout entire range for 2" immersion in liquids, 4" in gases

CASE SIZES

2", 3", and 5" sizes

CASE MATERIAL

304 Stainless steel

STEM

2½", 4", 6", 9", 12", 15", 18" & 24" Stainless Steel; ¼" diameter

CONNECTIONS

½" NPT: CB—Center Back connection (2" case only)

½" NPT: CB—Center Back connection or AJ—Adjustable connection (3" & 5")

DIALS

Dual scale in degrees Celsius and Fahrenheit

WINDOW

Glass, hermetically sealed



STANDARD RANGES & PART NUMBERS

| TYPE | | BIMETAL THERMOMETERS | | | | | | | |
|-------------------------------|---------------------|----------------------|--------|--------|--------|--------|--------|--------|--|
| Size | 3" Adjustable Angle | | | | | | | | |
| Connection | ½ NPT | | | | | | | | |
| Mounting | AJ | AJ | AJ | AJ | AJ | AJ | AJ | | |
| Stem Length | 2½" | 4" | 6" | 9" | 12" | 15" | | | |
| -50° to 120°F/-40° to 50°C | L33101 | L33201 | L33301 | L33401 | L33501 | L33601 | | | |
| -40° to 160°F/-40° to 70°C | L33102 | L33202 | L33302 | L33402 | L33502 | L33602 | | | |
| 0° to 200°F/-20° to 90°C | L33104 | L33204 | L33304 | L33404 | L33504 | L33604 | | | |
| 0° to 250°F/-20° to 120°C | L33105 | L33205 | L33305 | L33405 | L33505 | L33605 | | | |
| 50° to 300°F/ 10° to 150°C | L33106 | L33206 | L33306 | L33406 | L33506 | L33606 | | | |
| 50° to 400°F/ 10° to 200°C | L33107 | L33207 | L33307 | L33407 | L33507 | L33607 | | | |
| 50° to 550°F/ 10° to 300°C | L33108 | L33208 | L33308 | L33408 | L33508 | L33608 | | | |
| 150° to 750°F/ 70° to 400°C | L33110 | L33210 | L33310 | L33410 | L33510 | L33610 | | | |
| 200° to 1000°F/ 100° to 525°C | L33111 | L33211 | L33311 | L33411 | L33511 | L33611 | | | |
| Size | 5" | | | | | | | | |
| Connection | ½ NPT | | | | | | | | |
| Mounting | CB | CB | CB | CB | CB | CB | CB | CB | |
| Stem Length | 2½" | 4" | 6" | 9" | 12" | 15" | 18" | 24" | |
| -50° to 120°F/-40° to 50°C | L51101 | L51201 | L51301 | L51401 | L51501 | L51601 | L51701 | L51801 | |
| -40° to 160°F/-40° to 70°C | L51102 | L51202 | L51302 | L51402 | L51502 | L51602 | L51702 | L51802 | |
| 0° to 200°F/-20° to 90°C | L51104 | L51204 | L51304 | L51404 | L51504 | L51604 | L51704 | L51804 | |
| 0° to 250°F/-20° to 120°C | L51105 | L51205 | L51305 | L51405 | L51505 | L51605 | L51705 | L51805 | |
| 50° to 300°F/ 10° to 150°C | L51106 | L51206 | L51306 | L51406 | L51506 | L51606 | L51706 | L51806 | |
| 50° to 400°F/ 10° to 200°C | L51107 | L51207 | L51307 | L51407 | L51507 | L51607 | L51707 | L51807 | |
| 50° to 550°F/ 10° to 300°C | L51108 | L51208 | L51308 | L51408 | L51508 | L51608 | L51708 | L51808 | |
| 150° to 750°F/ 70° to 400°C | L51110 | L51210 | L51310 | L51410 | L51510 | L51610 | L51710 | L51810 | |
| 200° to 1000°F/ 100° to 525°C | L51111 | L51211 | L51311 | L51411 | L51511 | L51611 | L51711 | L51811 | |
| Size | 5" Adjustable Angle | | | | | | | | |
| Connection | ½ NPT | | | | | | | | |
| Mounting | AJ | AJ | AJ | AJ | AJ | AJ | AJ | AJ | |
| Stem Length | 2½" | 4" | 6" | 9" | 12" | 15" | 18" | 24" | |
| -50° to 120°F/-40° to 50°C | L53101 | L53201 | L53301 | L53401 | L53501 | L53601 | L53701 | L53801 | |
| -40° to 160°F/-40° to 70°C | L53102 | L53202 | L53302 | L53402 | L53502 | L53602 | L53702 | L53802 | |
| 0° to 200°F/-20° to 90°C | L53104 | L53204 | L53304 | L53404 | L53504 | L53604 | L53704 | L53804 | |
| 0° to 250°F/-20° to 120°C | L53105 | L53205 | L53305 | L53405 | L53505 | L53605 | L53705 | L53805 | |
| 50° to 300°F/ 10° to 150°C | L53106 | L53206 | L53306 | L53406 | L53506 | L53606 | L53706 | L53806 | |
| 50° to 400°F/ 10° to 200°C | L53107 | L53207 | L53307 | L53407 | L53507 | L53607 | L53707 | L53807 | |
| 50° to 550°F/ 10° to 300°C | L53108 | L53208 | L53308 | L53408 | L53508 | L53608 | L53708 | L53808 | |
| 150° to 750°F/ 70° to 400°C | L53110 | L53210 | L53310 | L53410 | L53510 | L53610 | L53710 | L53810 | |
| 200° to 1000°F/ 100° to 525°C | L53111 | L53211 | L53311 | L53411 | L53511 | L53611 | L53711 | L53811 | |



Temperature



POCKET THERMOMETER

- 1" Dial
- 304 Stainless Steel Hermetically Sealed Case
- 5" long stem
- Protective Case with Stainless Steel Clip

Marsh pocket thermometers have a 1" dial, 304SS hermetically sealed case, 304SS 0.4mm diameter 5" long stem, and plastic lens. The accuracy is $\pm 1.5\%$ of scale range. Each unit comes with a protective case with SS clip, that allows it to be safely carried in your pocket and also can be used to hold the thermometer in the medium to be tested.

Typical applications include the food industries, HVAC/R industries, and any applications requiring fast and accurate temperature.

SPECIFICATIONS

ACCURACY

$\pm 1.5\%$ of span throughout entire range

CASE MATERIAL

304 Stainless Steel

RANGES

-40/160°F, 0/220°F, 50/550°F

STANDARD RANGES & PART NUMBERS

| PART NUMBER | DESCRIPTION & RANGE |
|-------------|-----------------------------|
| L020E | 1" dial, 5" stem, -40/160°F |
| L041E | 1" dial, 5" stem, 0/220°F |
| L080E | 1" dial, 5" stem, 50/550°F |



DIGITAL POCKET THERMOMETER

- 3.5 Digit LCD display
- ABS Plastic Case
- 5" long stem
- Protective Case with Stainless Steel Clip

Marsh Digital Pocket Thermometers have a 3.5 digit LCD display, ABS case and a 304SS 5" long stem. The accuracy is $\pm 2^\circ\text{F}$ with an update time of 10 seconds. Each unit has an on-off switch for longer battery life and comes with the protective carrying case.

Typical applications include the food industries, HVAC/R industries, and any applications requiring fast and accurate temperature.

SPECIFICATIONS

ACCURACY

$\pm 2^\circ\text{F}$

CASE MATERIAL

ABS Plastic

RANGE

-58 to 302 °F / -50 to 150 °C

STANDARD RANGES & PART NUMBERS

| PART NUMBER | DESCRIPTION & RANGE |
|-------------|---|
| L021DG | 3.5 digit display, 5" stem, -58 to 302 °F / -50 to 150 °C |



INDUSTRIAL THERMOMETER

- Standard Well & Lagging Well Option
- Mounting Options: Adjustable Angle
- Easy to Read Dual Scale
- 5 Temperature Ranges
- Aluminum or Molded Glass Fiber Case

Marsh Industrial Thermometers are designed for demanding applications. The large 9" scale permits easy reading at longer distances. The glass-reinforced nylon case is lightweight yet rugged enough for demanding installations. The adjustable stem can be locked into any position through a 180° arc. These thermometers are commonly used on hot or chilled water lines in commercial/industrial buildings.

The Marsh Industrial Thermometers have a compact design that is well suited for limited space applications such as diesel engines, steam turbines, reduction gears, pumps, condensers and pipelines.

STANDARD RANGES & PART NUMBERS

| TYPE | INDUSTRIAL THERMOMETERS 9" ADJUSTABLE | | |
|------------------------------|---------------------------------------|---------|---------|
| | With 3½" Stem | | |
| Stem & Well | 3½" (NO) | 3½" SW | 3½" LW |
| Dual Scale | °F & °C | °F & °C | °F & °C |
| Range | | | |
| -40° to 110°F / -40° to 40°C | Y1210 | Y1202 | Y1242 |
| 0° to 120°F / -15° to 45°C | Y1211 | Y1203 | Y1243 |
| 0° to 160°F / -15° to 65°C | Y1212 | Y1204 | Y1244 |
| 30° to 240°F / 0° to 115°C | Y1214 | Y1206 | Y1246 |
| 30° to 300°F / 0° to 150°C | Y1216 | Y1208 | Y1248 |
| | | | |
| | With 6" Stem | | |
| Stem & Well | 6" (NO) | 6" SW | 6" LW |
| Dual Scale | °F & °C | °F & °C | °F & °C |
| Range | | | |
| -40° to 110°F / -40° to 40°C | Y1218 | Y1226 | Y1234 |
| 0° to 120°F / -15° to 45°C | Y1219 | Y1227 | Y1235 |
| 0° to 160°F / -15° to 65°C | Y1220 | Y1228 | Y1236 |
| 30° to 240°F / 0° to 115°C | Y1222 | Y1230 | Y1238 |
| 30° to 300°F / 0° to 150°C | Y1224 | Y1232 | Y1240 |

| TYPE | SEPARABLE SOCKETS (THERMOWELLS) | |
|--------------------------|---------------------------------|---------|
| Process Connection | ¾ NPT | ¾ NPT |
| Material | Brass | 304 SST |
| Stem Length & Well Style | | |
| 3½" Standard | 223499-001 | 223502 |
| 6" Standard | 223371 | 223512 |
| 6" with 2" Lagging | 223389 | 223538 |

INDUSTRIAL THERMOMETER OPTIONS

| Option | Type | Suffix | Available on Models |
|--------|----------|--------|---------------------|
| Case | Aluminum | A | All Models |



SPECIFICATIONS

ACCURACY

± 1% of scale range

INDICATING COLUMN

Blue liquid fill

SCALE

Dual scale °F & °C.

White coated aluminum

SCALE LENGTH

9 inches

CASE MATERIAL

Molded black nylon, glass fiber reinforced

WINDOW

Glass

CONNECTION & STEM

1¼"-18 swivel nut, for use with separable socket. Adjustable aluminum 3½" or 6" stem with 360° rotation

SEPARABLE SOCKET (THERMOWELL)

Choice of (NO) well, (SW) Standard Brass Well, or (LW) 2" Lagging Brass Extension Well.

SUBMARINE THERMOMETER

- 5" Scale Size
- V-Shaped aluminum scale with black markings
- Lens front, red reading organic filled tube
- Gray ABS Case
- 2" nominal stem length for 3/4" OA socket

Each thermometer is manufactured to a standard accuracy of 1% of span. Gray case with red reading spirit filled tube with magnifying lens for easy readability. White aluminum scale with bold black graduations and figures. Typical applications include diesel engines, steam turbines, pumps, condensers, pipelines, boilers and chillers.



SPECIFICATIONS

ACCURACY

± 1% of scale range

INDICATING COLUMN

Red liquid fill

SCALE

Dual scale °F & °C.

White coated aluminum

SCALE LENGTH

5 inches

CASE MATERIAL

Gray ABS

WINDOW

Glass

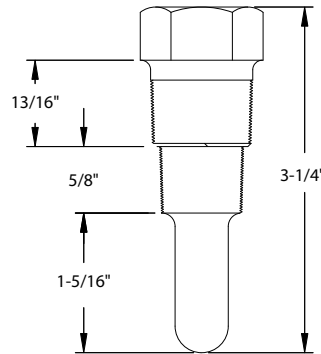
CONNECTION & STEM

3/4"-28" swivel nut, for use with separable socket (thermowell).

STANDARD RANGES & PART NUMBERS

| TYPE | SUBMARINE THERMOMETERS | |
|------------------------------|------------------------|----------------|
| Stem Length | 2" | |
| Dual Scale | °F & °C | |
| | STRAIGHT | 90° BACK ANGLE |
| Range | | |
| -40° to 110°F / -40° to 40°C | Y1402 | Y1412 |
| 20° to 180°F / -6° to 82°C | Y1404 | Y1414 |
| 30° to 240°F / 0° to 114°C | Y1406 | Y1416 |
| 50° to 400°F / 10° to 200°C | Y1408 | Y1418 |

| TYPE | THERMOWELL |
|------------------|-------------------|
| Connection | 1/2" and 3/4" NPT |
| Material | Brass |
| Stem/Well Length | |
| 2" / 3/4" OA | 223666 |



THERMOWELL DIMENSIONS—3/4"-28" Female Thread (internal)



TRIDICATORS

- Back and Bottom Mounting Options
- Rotatable Set Pointer
- Rugged Construction
- Three-Color Dial
- Three Pressure Ranges
- 2½" & 3½" Sizes

Marsh Instruments Tridicators (Boiler Gauges) are designed and suitable for hot water heating systems. These instruments indicate pressure in psi and altitude for pools and spa's in feet of H₂O; in °F and °C. All models feature a set hand for setting the desired pressure and altitude of the installation.

Typical applications include hot water boilers, heated pools, spa's and hot tubs.

STANDARD RANGES & PART NUMBERS

| TYPE | TRIDICATORS | | |
|---|-------------------|-------------------|-------------------|
| | 2½" | 3½" | 3½" |
| Size | 2½" | 3½" | 3½" |
| Case Material | Steel | Steel | Steel |
| Internals | Copper Alloy | Copper Alloy | Copper Alloy |
| Mounting/Case Style | CB | LBM | LM |
| Connection | ¼ NPT | ½ NPT | ½ NPT |
| Scale Standard | psi/Feet of Water | psi/Feet of Water | psi/Feet of Water |
| 0 to 60 psi / 0 to 130 ft H ₂ O | Y22026 | Y22006 | Y22002 |
| 0 to 100 psi / 0 to 230 ft H ₂ O | | Y22008 | Y22004 |
| 0 to 200 psi / 0 to 460 ft H ₂ O | | Y22016 | Y22012 |
| 0 to 300 psi / 0 to 680 ft H ₂ O | | Y22018 | Y22014 |



SPECIFICATIONS

ACCURACY
ASME Grade B = ±3/2/3% (±2% of range across middle half of scale)

CASE SIZE
2½" Round & 3½" Square

CASE MATERIAL
Steel, black painted

CONNECTION
2½" case: ¼ NPT Center Back Mount, 3½" case: ½ NPT Lower Mount or Lower Back Mount

PRESSURE RANGES
Dual scale in 4 ranges:
0 to 60 psi & 0 to 130 ft. of water
0 to 100 psi & 0 to 230 ft. of water
0 to 200 psi & 0 to 480 ft. of water
0 to 300 psi & 0 to 680 ft. of water

TEMPERATURE RANGE
60° to 260°F & 20° to 120°C

DIALS
Black markings on white

TUBE & SOCKET
Copper Alloy

POINTERS
Aluminum, red painted with black painted set pointer

WINDOW
3½" Glass
2½" Acrylic





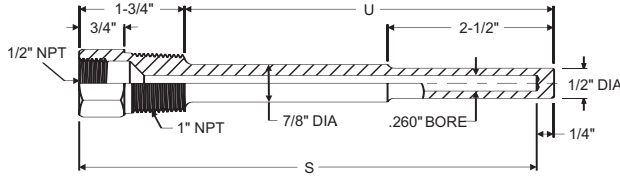
THERMOWELLS

- In-Stock Thermowells for fast delivery
- Brass, 304 Stainless Steel or 316 Stainless Steel
- Tapered or Straight Shank
- 0.260/0.385 Standard Bore Sizes
- Threaded for easy connection

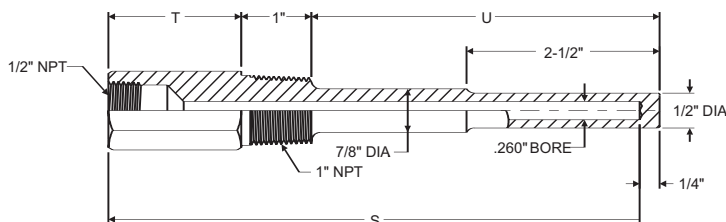
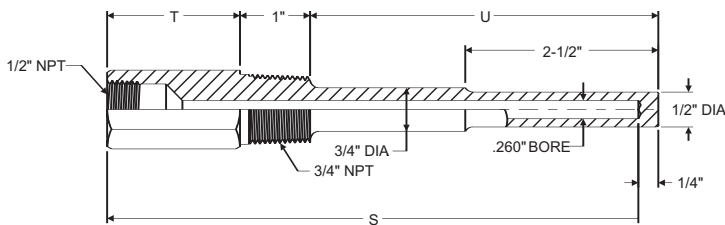
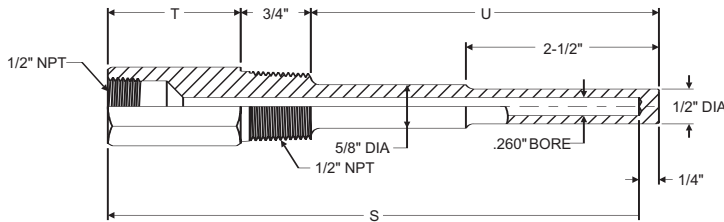
| THERMOWELLS | PART # | "S" STEM | "U" INSERTION | WELL MATERIAL |
|-------------|----------|----------|---------------|---------------|
| | M3957K67 | 2½ | 1½ | Brass |
| | M3957K68 | 2½ | 1½ | 304SS |
| | M3957K69 | 2½ | 1½ | 316SS |
| | M3957K64 | 4 | 2½ | Brass |
| | M3957K65 | 4 | 2½ | 304SS |
| | M3957K66 | 4 | 2½ | 316SS |
| | M3957K37 | 6 | 4½ | Brass |
| | M3957K38 | 6 | 4½ | 304SS |
| | M3957K51 | 6 | 4½ | 316SS |
| | M3957K39 | 9 | 7½ | Brass |
| | M3957K41 | 9 | 7½ | 304SS |
| | M3957K52 | 9 | 7½ | 316SS |
| | M3957K42 | 12 | 10½ | Brass |
| | M3957K43 | 12 | 10½ | 304SS |
| | M3957K53 | 12 | 10½ | 316SS |
| | M3957K71 | 18 | 16½ | Brass |
| | M3957K72 | 18 | 16½ | 304SS |
| | M3957K73 | 18 | 16½ | 316SS |
| M3957K75 | 24 | 22½ | 304SS | |
| M3957K76 | 24 | 22½ | 316SS | |
| | M3957K77 | 2½ | 1½ | Brass |
| | M3957K78 | 2½ | 1½ | 304SS |
| | M3957K79 | 2½ | 1½ | 316SS |
| | M3957K11 | 4 | 2½ | Brass |
| | M3957K21 | 4 | 2½ | 304SS |
| | M3957K54 | 4 | 2½ | 316SS |
| | M3957K12 | 6 | 4½ | Brass |
| | M3957K22 | 6 | 4½ | 304SS |
| | M3957K55 | 6 | 4½ | 316SS |
| | M3957K13 | 9 | 7½ | Brass |
| | M3957K23 | 9 | 7½ | 304SS |
| | M3957K56 | 9 | 7½ | 316SS |
| | M3957K44 | 12 | 10½ | Brass |
| | M3957K45 | 12 | 10½ | 304SS |
| | M3957K57 | 12 | 10½ | 316SS |
| | M3957K84 | 18 | 16½ | Brass |
| | M3957K85 | 18 | 16½ | 304SS |
| | M3957K86 | 18 | 16½ | 316SS |
| M3957K87 | 24 | 22½ | Brass | |
| M3957K88 | 24 | 22½ | 304SS | |
| M3957K89 | 24 | 22½ | 316SS | |



| THERMOWELLS | PART # | "S" STEM | "U" INSERTION | WELL MATERIAL |
|-------------|----------|----------|---------------|---------------|
| | M3957K46 | 4 | 2½ | Brass |
| | M3957K47 | 4 | 2½ | 304SS |
| | M3957K58 | 4 | 2½ | 316SS |
| | M3957K48 | 6 | 4½ | Brass |
| | M3957K49 | 6 | 4½ | 304SS |
| | M3957K59 | 6 | 4½ | 316SS |
| | M3957K91 | 9 | 7½ | Brass |
| | M3957K92 | 9 | 7½ | 304SS |
| | M3957K93 | 9 | 7½ | 316SS |
| | M3957K94 | 12 | 10½ | Brass |
| | M3957K95 | 12 | 10½ | 304SS |
| | M3957K96 | 12 | 10½ | 316SS |
| | M3957K14 | 18 | 16½ | Brass |
| | M3957K15 | 18 | 16½ | 304SS |
| | M3957K16 | 18 | 16½ | 316SS |
| | M3957K18 | 24 | 22½ | 304SS |
| | M3957K19 | 24 | 22½ | 316SS |



| THERMOWELLS | PART # | "S" STEM | "U" INSERTION | "T" LAG | WELL MATERIAL |
|-------------|-----------|----------|---------------|---------|---------------|
| | M3957K24 | 9 | 4½ | 4 | Brass |
| | M3957K25 | 9 | 4½ | 4 | 304SS |
| | M3957K26 | 9 | 4½ | 4 | 316SS |
| | M3957K27 | 12 | 7½ | 4 | Brass |
| | M3957K28 | 12 | 7½ | 4 | 304SS |
| | M3957K29 | 12 | 7½ | 4 | 316SS |
| | M3957K4 | 18 | 13½ | 4 | Brass |
| | M3957K5 | 18 | 13½ | 4 | 304SS |
| | M3957K6 | 18 | 13½ | 4 | 316SS |
| | M3957K8 | 24 | 19½ | 4 | 304SS |
| | M3957K9 | 24 | 19½ | 4 | 316SS |
| | M3957K31 | 6 | 2½ | 2¾ | Brass |
| | M3957K32 | 6 | 2½ | 2¾ | 304SS |
| | M3957K61 | 6 | 2½ | 2¾ | 316SS |
| | M3957K33 | 9 | 4½ | 3¾ | Brass |
| | M3957K34 | 9 | 4½ | 3¾ | 304SS |
| | M3957K62 | 9 | 4½ | 3¾ | 316SS |
| | M3957K35 | 12 | 7½ | 3¾ | Brass |
| | M3957K36 | 12 | 7½ | 3¾ | 304SS |
| | M3957K63 | 12 | 7½ | 3¾ | 316SS |
| | M3957K115 | 18 | 13½ | 3¾ | 304SS |
| | M3957K116 | 18 | 13½ | 3¾ | 316SS |
| | M3957K117 | 24 | 19½ | 3¾ | Brass |
| | M3957K118 | 24 | 19½ | 3¾ | 304SS |
| | M3957K119 | 24 | 19½ | 3¾ | 316SS |
| | M3957K121 | 9 | 4½ | 3¾ | Brass |
| | M3957K122 | 9 | 4½ | 3¾ | 304SS |
| | M3957K123 | 9 | 4½ | 3¾ | 316SS |
| | M3957K124 | 12 | 7½ | 3¾ | Brass |
| | M3957K125 | 12 | 7½ | 3¾ | 304SS |
| | M3957K126 | 12 | 7½ | 3¾ | 316SS |
| | M3957K131 | 18 | 13½ | 3¾ | Brass |
| | M3957K132 | 18 | 13½ | 3¾ | 304SS |
| | M3957K133 | 18 | 13½ | 3¾ | 316SS |
| | M3957K134 | 24 | 19½ | 3¾ | Brass |
| | M3957K135 | 24 | 19½ | 3¾ | 304SS |
| | M3957K136 | 24 | 19½ | 3¾ | 316SS |





| THERMOWELLS | PART # | "S" STEM | "U" INSERTION | WELL MATERIAL |
|-------------|-----------|-------------|------------------|------------------|
| | M3957K137 | 4 | 2½ | Brass |
| | M3957K138 | 4 | 2½ | 304SS |
| | M3957K139 | 4 | 2½ | 316SS |
| | M3957K141 | 6 | 4½ | Brass |
| | M3957K142 | 6 | 4½ | 304SS |
| | M3957K143 | 6 | 4½ | 316SS |
| | M3957K144 | 9 | 7½ | Brass |
| | M3957K145 | 9 | 7½ | 304SS |
| | M3957K146 | 9 | 7½ | 316SS |
| | M3957K147 | 12 | 10½ | Brass |
| | M3957K148 | 12 | 10½ | 304SS |
| | M3957K149 | 12 | 10½ | 316SS |
| | M3957K162 | 4 | 2½ | Brass |
| | M3957K163 | 4 | 2½ | 304SS |
| | M3957K164 | 4 | 2½ | 316SS |
| | M3957K165 | 6 | 4½ | Brass |
| | M3957K166 | 6 | 4½ | 304SS |
| | M3957K167 | 6 | 4½ | 316SS |
| | M3957K168 | 9 | 7½ | Brass |
| | M3957K169 | 9 | 7½ | 304SS |
| | M3957K171 | 9 | 7½ | 316SS |
| | M3957K172 | 12 | 10½ | Brass |
| | M3957K173 | 12 | 10½ | 304SS |
| | M3957K174 | 12 | 10½ | 316SS |
| | M3957K221 | 4 | 2½ | Brass |
| | M3957K222 | 4 | 2½ | 304SS |
| | M3957K223 | 4 | 2½ | 316SS |
| | M3957K231 | 6 | 4½ | Brass |
| | M3957K232 | 6 | 4½ | 304SS |
| | M3957K233 | 6 | 4½ | 316SS |
| | M3957K241 | 9 | 7½ | Brass |
| | M3957K242 | 9 | 7½ | 304SS |
| | M3957K243 | 9 | 7½ | 316SS |
| | M3957K261 | 4 | 2½ | Brass |
| | M3957K262 | 4 | 2½ | 304SS |
| | M3957K263 | 4 | 2½ | 316SS |
| | M3957K271 | 6 | 4½ | Brass |
| | M3957K272 | 6 | 4½ | 304SS |
| | M3957K273 | 6 | 4½ | 316SS |
| | M3957K281 | 9 | 7½ | Brass |
| | M3957K282 | 9 | 7½ | 304SS |
| | M3957K283 | 9 | 7½ | 316SS |



DIGITAL PRESSURE INDICATOR

- Converts Pressure Input to LCD Digital Readout
- High Accuracy in Lightweight, Portable Package
- State of the Art Semi-Conductor

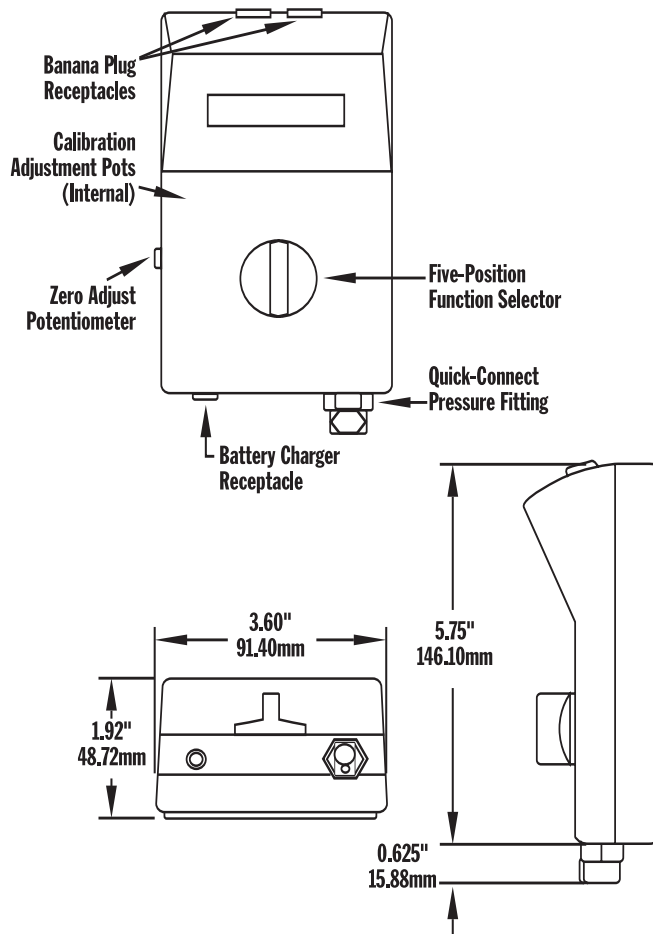
The Marsh Instruments Digital Pressure Indicator is portable, lightweight, hand-held testing and calibrating instrument indicates pressure to 50 psig at accuracy levels of $\pm 0.50\%$ of reading ± 1 count. A state-of-the-art semiconductor-type pressure transducer converts pressure input to analog voltage, which is displayed on a $3\frac{1}{2}$ digit LCD readout. Internal 9-volt rechargeable battery powers the indicator, and a zero adjust potentiometer standardizes the transducer bridge at zero pressure for higher accuracy.

Marsh Instruments Handheld Digital Pressure Indicator and Calibrator is ideal for calibrating DP cells, I/P's and P/I's. The indicator tests installed instruments and transmitters, verifies operation and settings of valves and switches, detects system leaks, and is used for other testing or maintenance applications.



| DIGITAL PRESSURE INDICATOR | |
|----------------------------|-----------------|
| RANGE | PART NUMBER |
| -14.7 to 50p | 4-DPP-20050-BBC |
| -14.7 to 60p | 4-DPP-20060-B3 |
| -14.7 to 200p | 4-DPP-20200-BBC |

NOTE: Connection: $\frac{5}{16}$ " quick connect tube fitting
Elec. Range: 0-200 MA



SPECIFICATIONS

PNEUMATIC RANGE

Range: -14.7 to 200 psig; with corresponding inches of water column and inches of mercury

WETTED MATERIAL

Brass fitting, silicone wafer diaphragm, suitable for instrument air (clean & dry) or any clean, non-conductive fluid

PRESSURE FITTING

$\frac{5}{16}$ " quick-connect tube fitting standard, with mating nickel-plated brass locking quick-connector. 8" plastic hose with ferruleless $\frac{1}{4}$ " OD has to coupling insert with shutoff valve

DISPLAY

$3\frac{1}{2}$ " digit LCD, $\frac{1}{2}$ " high black numerals on light background, with polarity and low battery indicators

ACCURACY

$\pm 0.5\%$ of reading ± 1 count, must be zeroed at barometric pressure

TEMPERATURE

Calibration range: 50°-90°F. Operating range: 30°-130°F. Effect of temperature outside calibration range is $\pm 0.01\%$ per degree F

POWER

Internal: 9-volt transistor battery, Ni-Cad chargeable. External: 12-volt adapter will power unit or charge battery in approx. 14 hours. Approximate operation is 8-10 hours per charge

CASE SIZE

3.60" wide x $5\frac{1}{4}$ " long x 1.92" high, ABS plastic

INCLUDES

Carrying case, battery charger, 8" plastic hose, quick-connect fitting, and technical manual



SELECTION AND USE OF A PRESSURE GAUGE

When selecting a pressure gauge, it is important to consider the following factors to insure safety and accuracy:

1. Pressure range
2. Temperature range
3. Conditions affecting wear of the system
4. Case venting
5. Pressure fluid composition
6. Pressure fluid temperature
7. Ambient conditions
8. Method of mounting
9. Required accuracy

PRESSURE RANGE: A range of 2 times the operating pressure is recommended for safety and extended gauge life. The operating pressure should be limited to the middle 75% of range.

TEMPERATURE RANGE: Ambient temperature for General Service ("J") is -40° to 160°F. Ambient temperature for Severe Service ("J" & "X"), for Dry Gauges is -40° to 160°F and for Liquid Filled is 0° to 140°F.

SHOCK, VIBRATION, PULSATION, OR CORROSIVE ATMOSPHERE CONDITIONS: Liquid Filled Gauges have a fill material to lubricate the movement and reduce friction and wear. When used with a restrictor these gauges absorb vibration and dampen pressure shock and spikes. Liquid filling also prevents moisture or a corrosive atmosphere from affecting the gauge internals.

CASE VENTING: Process (Series "P") and Elite (Series "W") have a internal diaphragm which compensates for atmospheric changes that could affect the calibration of the filled gauge. Severe Service (Series "J" & "X") and 100mm (Series "HW") liquid filled gauges have an elastomeric vent fill plug tip which can be easily cut to permit case venting.

PRESSURE FLUID COMPOSITION: Since the sensing element of a pressure gauge may be exposed directly to the measured medium, consider the characteristics of this medium. It may be corrosive, it may solidify at various temperatures, or it may contain solids that will leave deposits inside the sensing element. For pressure fluids that will not solidify under normal conditions or leave deposits, a Bourdon Tube Gauge is acceptable Diaphragm Chemical Seals should be considered when gauge wetted parts are not compatible with the measured media. A chemical compatibility chart follows this section to aid in the selection of the proper sensing element or diaphragm seal material.

PRESSURE FLUID TEMPERATURE: Steam and other hot media may raise the temperature of the gauge components above safe working limits of the sealed joints. In these cases it is recommended that a syphon, cooling tower or chemical seal be used in conjunction with the pressure gauge Diaphragm Seals and remote capillary can also be considered for use with gauges or transducers which are subjected to very low or high ambient temperature.

AMBIENT CONDITIONS: The normal ambient temperature range for Marsh Instruments gauges is -40° to 160°F (-40° to +71°C) for Dry Gauges, -4° to 140°F (-20° to 60°C) for Glycerine filled gauges, and -40° to 140 °F (-40° to 60° C) for Silicone filled gauges. The error caused by temperature changes is ±0.3% per 18°F rise or fall, respectively. The reference temperature is 70°F (20°C). The correction is for the temperature of the gauge, and not the temperature of the measured medium. Remote gauge mounting using a diaphragm seal and capillary line is one alternative for applications involving extreme ambient temperature.

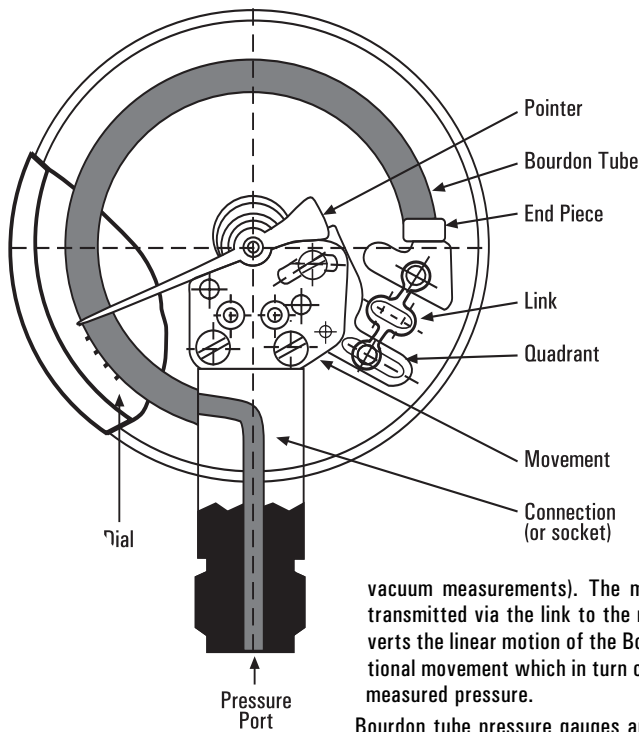
Moisture and weather effects must also be considered. Liquid Filled Gauges prevent condensation build up. For outdoor use, stainless steel, brass, or plastic cased gauges are recommended.

1-800-727-5646 SALES

1-304-387-4417 SALES FAX



PRESSURE GAUGE OPERATING PRINCIPLE



The Bourdon tube measuring element is made of a thin walled tube that is either bent into a semi-circle (C-Shape tube) or spirally wound (coiled safety tube). When pressure is applied to the measuring system through the pressure port, the pressure causes the Bourdon tube to straighten itself, thus causing the end piece to move upward (or downward for vacuum measurements). The movement of the end piece is transmitted via the link to the movement. The movement converts the linear motion of the Bourdon tube end piece to a rotational movement which in turn causes the pointer to indicate the measured pressure.

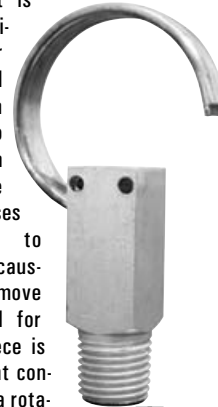
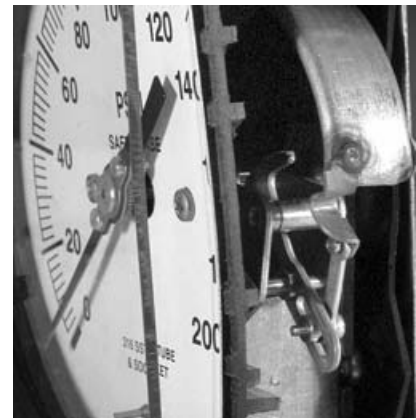
Bourdon tube pressure gauges are designed for the measurement of pressure and vacuum and are generally suitable for all clean and non-clogging liquid and gaseous media.

Various types of Bourdon tubes are used. C-shape Bourdon tubes are typically used for ranges to 1,000 psi. Higher ranges use coiled Bourdon tubes for safety.

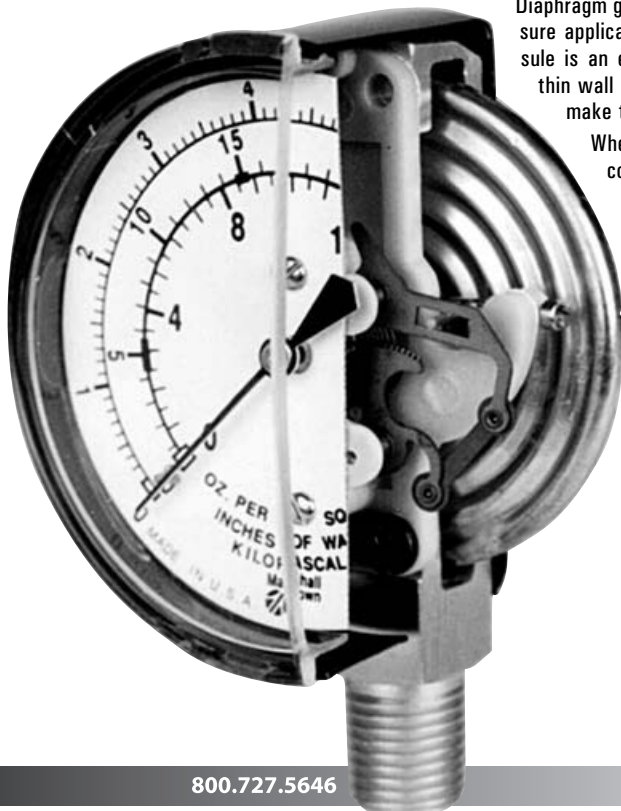
Bourdon tube pressure gauges are available to measure full vacuums, compound and pressure ranges from 0-10 psi to 0-20,000 psi with an accuracy from $\pm 0.25\%$ to $\pm 3/2/3\%$ of span (ASME Grade 3A to Grade B).

Bourdon tube pressure gauges are widely used in all branches of industry. The construction is simple yet rugged, and operation does not require any additional power source. The Bourdon tube element is directly exposed to the medium being measured and is normal made of copper alloy (brass) or stainless steel as the application demands.

The Bourdon tube measuring element is made of a thin walled tube that is either bent into a semi-circle (C-Shape tube) or spirally wound (coiled safety tube). When pressure is applied to the measuring system through the pressure port, the pressure causes the Bourdon tube to straighten itself, thus causing the end piece to move upward (or downward for vacuum measurements). The movement of the end piece is transmitted via the link to the movement. The movement converts the linear motion of the Bourdon tube end piece to a rotational movement which in turn causes the pointer to indicate the measured pressure.



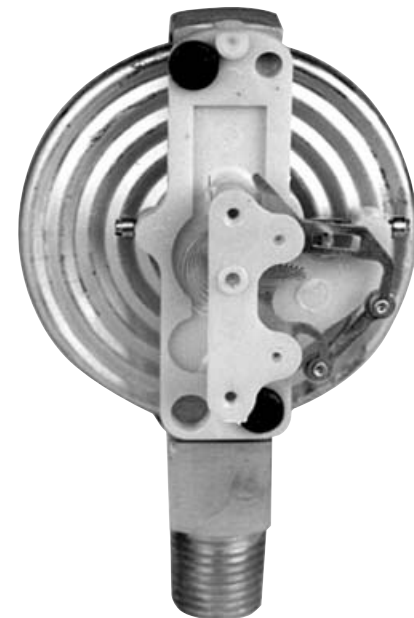
HOW THE DIAPHRAGM GAUGE WORKS

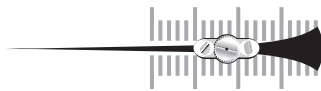


Diaphragm gauges are sensitive instruments used in low pressure applications not exceeding 10 psi. The diaphragm capsule is an elastic metal sensing element comprised of two thin wall diaphragms whose sides are soldered together to make the capsule.

Whenever air or gas enters the intake port (gauge connection), it travels into the diaphragm capsule.

As vacuum or pressure is applied to the diaphragm capsule, the walls of the capsule expand and contract in response to the change in pressure. This change is then transferred to a rotating rod and arm that rest on the outside of the capsule. The rotating rod is connected to a geared movement through a linkage system. Connected to a shaft, this system then drives the pointer over a dial marked in appropriate pressure or vacuum units.





CHEMICAL COMPATIBILITY TABLE

The media being measured must be compatible with the wetted parts of the pressure instrument. To use the chart below, locate the media whose pressure is to be measured and select a suitable material from those available. This is a simplified chart and assumes the media temperature is 200°F except for media with a "*" which must be below 100°F, Throttling devices and/or a liquid-filled instrument are recommended in applications with pulsation or vibration. These recommendations are only a guide, as service life is dependent on temperature, concentrations, catalysts that may be added, or other conditions beyond our control. Consult factory for specific applications and for any services not listed.

| Media Application | Pressure Instrument Material | | | | Media Application | Pressure Instrument Material | | | | Media Application | Pressure Instrument Material | | | |
|-----------------------------|------------------------------|--------|-------|-------------------|--------------------------|------------------------------|--------|-------|-------------------|-----------------------------|------------------------------|--------|-------|-------------------|
| | Brass or Bronze | 316 SS | Monel | Diaphragm Seals** | | Brass or Bronze | 316 SS | Monel | Diaphragm Seals** | | Brass or Bronze | 316 SS | Monel | Diaphragm Seals** |
| Acetone*2 | • | • | • | | Ethyl Oxide > 99% | • | • | • | | Palmitic Acid > 99%*2 | | | | |
| Acetic Acid < 40% | | • | | | Ferric Chloride < 40% | | | | • | Paraffin | • | | | |
| Acetic Anhydride | | | | • | Ferric Sulfate < 10% | | • | | | Phosphoric Acid < 80%*2 | | • | | |
| Acetylene (Dry) | | • | | | Ferrous Chloride < 30% | | | | • | Photographic Solutions | | • | | |
| Acrolein 100% | | | | • | Ferrous Sulfate < 50% | | | | • | Pickling Solutions | | • | | |
| Air | • | • | • | | Flurine Gas (Dry) | | • | • | | Picric Acid 10% | | • | | |
| Alcohol, Ethyl | • | • | • | | Formaldehyde < 95% | | • | • | | Propane (Dry) | | • | • | |
| Aluminum Chloride.10% | | | | • | Formic Acid*2 | | | | • | Potassium Chloride | | | | Consult Factory |
| Aluminum Sulfate 10-50% | | • | | | Freons | | • | | | Potassium Cyanide | | • | | |
| Ammonia Gas | | • | | | Furfural < 10% | | | | • | Potassium Permanganate | | • | | |
| Ammonium Chloride < 40% | | | | • | Gallic Acid | | • | | | Sea Water (Flowing) | | | • | |
| Ammonium Nitrate < 50% | | • | | | Gas (for lighting) | • | | | | Silver Nitrate < 70% | | | | • |
| Ammonium Sulfate < 60% | | | | • | Gasoline | | • | | | Sodium Bicarbonate < 20% | | • | • | |
| Aniline > 99% | | • | | | Glucose | | | • | | Sodium Bisulfate < 30% | | | | • |
| Argon | • | • | • | | Glycerine > 99% | • | • | • | | Sodium Carbonate < 40% | | | | Consult Factory |
| Beer | | • | | | Hydrobromic Acid | | | | • | Sodium Chromate < 60% | • | • | • | |
| Benzidine > 99% | | | | • | Hydrochloric Acid | | | | • | Sodium Cyanide | | | | Consult Factory |
| Benzene < 50% | | • | • | | Hydrofluoric Acid | | | | • | Sodium Hydroxide | | • | • | |
| Benzoic Acid < 70% | | • | | | Hydroflusilic Acid | | | | • | Sodium Hypochlorite < 25% | | | | • |
| Benzol | • | | | | Hydrogen 2 | • | • | | | Sodium Phosphate, Tri < 60% | | • | • | |
| Bordeaus Mixture | • | | | | Hydrogen Peroxide < 50% | | • | | | Sodium Silicate < 50% | | • | • | |
| Boric Acid < 25% | | • | | | Kerosene | • | • | • | | Sodium Sulfide < 50% | | | | Consult Factory |
| Bromine (Dry) | | | | • | Lacquers | • | | | | Stannous Chloride < 10% | | • | | |
| Butane | • | • | • | | Lactic Acid < 70%*2 | | • | | | Steam (Use siphon) | • | • | • | |
| Butanol | • | | | | Lysol | | • | | | Stearic Acid | | • | • | |
| Butyric Acid < 25% | | • | | | Magnesium Chloride < 40% | | | | • | Sulfur Dioxide (Dry) > 99% | | | | • |
| Calcium Chloride < 80% | | | | • | Magnesium Sulfate | | • | | | Sulfur Trioxide (Dry) > 99% | | | | • |
| Calcium Hydroxide < 50% | | | | • | Mercuric Chloride < 60% | | • | | | Sulfurous Acid | | | | • |
| Carbon Dioxide | • | • | • | | Mercury > 99% | | | | • | Tannic Acid < 80% | • | • | • | |
| Carbon Monoxide > 99% | • | • | • | | Methyl Chloride | | | | Consult Factory | Tanning Liquors | | | | Consult Factory |
| Chlorine (Dry) | | | | • | Methyl Salicylate | | | | Consult Factory | Tartaric Acid < 50% | | • | • | |
| Chlorine (Moist)*2 | | | | • | Milk | | • | | | Tin Chloride (ous) < 10% | | • | | |
| Chloroform (Dry) | | • | • | | Naphtha > 99% | • | • | • | | Toluene > 99% | • | • | • | |
| Chromic Acid | | | | • | Naphthalene > 99% | | • | | | Turpentine > 98% | • | • | • | |
| Citric Acid 10-50% | | • | | | Nickel Chloride > 99% | | | | • | Vegetable Oils | | • | | |
| Corn Oil | | • | | | Nitric Acid < 95%*2 | | • | | | Vinegar | | • | | |
| Cottonseed Oil | | • | | | Nitrogen | • | • | • | | Water | • | • | • | |
| Creosote (Crude) | | • | | | Nitrous Oxide | | | | Consult Factory | Whiskey | | • | | |
| Crude Oil (Sour) (Use NACE) | | • | • | | Oleic Acid | • | • | | | Zinc Chloride < 35%*2 | | | | • |
| Crude Oil (Sweet) | | • | • | | Oxalic Acid*2 | | | | • | Zinc Sulphate < 40% | | | | • |
| Ethyl Acetate | • | • | • | | Oxygen (Gas)1 | • | • | • | | | | | | |

1. Bronze and 316 Stainless Steel are acceptable for oxygen service, provided the instrument has been cleaned for service and is free from oil.

2. Over 1000 psi – entire system must be 316 Stainless Steel.

*Media temperature must be below 100°F

**Any standard bourdon tube or material may be used in conjunction with a diaphragm seal the gauge selection should be taken into consideration the corrosive environment in which it is to operate.



| ACCURACY TABLE | | | | | | | | | | | |
|--------------------------------|--------|----------|-----------|----------|-----|------|-----|-------|-----|------------|--|
| GAUGE PRODUCT | PAGE # | ACCURACY | 1½"(40MM) | 2 (50MM) | 2½" | 63MM | 3½" | 100MM | 4½" | 6" (160MM) | |
| GENERAL SERVICE | | | | | | | | | | | |
| GG Gauges | 9 | B | • | • | | | | | | | |
| General Service Gauges | 10 | B | • | • | • | | • | | • | | |
| SEVERE SERVICE | | | | | | | | | | | |
| 40/50mm Severe Service | 14 | B | • | • | | | | | | | |
| 63mm Severe Service | 15 | B | | | | • | | | | | |
| 100mm Severe Service | 17 | A | | | | | | • | | | |
| 63mm Brass | 19 | A | | | | • | | | | | |
| 100mm Brass | 19 | 1A | | | | | | • | | | |
| PRECISION SERVICE | | | | | | | | | | | |
| Elite Stainless Steel | 24 | 1A | | | | | | • | | | |
| 100mm Stainless Steel | 20 | 1A | | | | | | • | | | |
| Quality Series 100mm | 21 | 1A | | | | | | • | | | |
| "HW" Stainless Steel | 23 | 1A | | | | | | • | | • | |
| Quality | 25 | A | | | | | • | | • | • | |
| Test | 27 | 2A | | | | | | | • | • | |
| Master Test | 29 | 3A | | | | | | | | • | |
| Inspector's Test | 30 | 2A | | | | | 3.0 | | | | |
| PROCESS | | | | | | | | | | | |
| Process | 31 | 2A | | | | | | | • | • | |
| DIAPHRAGM GAUGE | | | | | | | | | | | |
| Low Pressure | 35 | A | | | • | | • | | • | | |
| HVAC/R | | | | | | | | | | | |
| Contractor's HVAC | 43 | A | | | | | | | • | | |
| Heating (Ft. H ₂ O) | 44 | A & B | | | | | • | | • | | |
| Refrigeration Ammonia | 41 | B | | | | • | • | | | | |
| Refrigeration | 42 | B | | | • | | • | | | | |
| Serviceman | 39 | B | | | • | | | | | | |
| Manifold | 40 | B | | | • | | | | | | |
| SPECIAL APPLICATION | | | | | | | | | | | |
| Water Test | 45 | B | | | • | | | | | | |
| Paper Machine | 46 | A | | | | | • | | | | |
| X-mas Tree Gauge | 47 | 1A | | | | | | | • | | |

| ASME B40.1 GRADE | | ACCURACY |
|------------------|----------|--------------------------------|
| 3A | ± 0.25% | Full Scale |
| 2A | ± 0.50% | Full Scale |
| 1A | ± 1.0% | Full Scale |
| A | ± 2/1/2% | ± 1% over middle half of scale |
| B | ± 3/2/3% | ± 2% over middle half of scale |



PRESSURE UNITS CROSS REFERENCE CHART

| psi | atms. | "H ₂ O | mmH ₂ O | cmH ₂ O | oz./in ² | Kg/cm ² | "Hg | mmHg (Torr) | cm Hg | mbar | bar | Pa (N/m ²) | kPa | MPa |
|----------|----------|-------------------|--------------------|--------------------|---------------------|--------------------|----------|-------------|---------|--------|----------|------------------------|--------|----------|
| 1 | 0.0681 | 27.71 | 703.8 | 70.38 | 16 | 0.0704 | 2.036 | 51.715 | 5.17 | 68.95 | 0.0689 | 6895 | 6.895 | 0.0069 |
| 14.7 | 1 | 407.2 | 10,343 | 1,034.3 | 235.1 | 1.033 | 29.92 | 760 | 76 | 1013 | 1.013 | 101,325 | 101.3 | 0.1013 |
| 0.0361 | 0.00246 | 1 | 25.4 | 2.54 | 0.5775 | 0.00254 | 0.0795 | 1.866 | 0.187 | 2.488 | 0.00249 | 248.8 | 0.249 | 0.00025 |
| 0.001421 | 0.000097 | 0.0394 | 1 | 0.1 | 0.0227 | 0.001 | 0.00289 | 0.0735 | 0.00735 | 0.098 | 0.000098 | 9.8 | 0.0098 | 0.00001 |
| 0.01421 | 0.000967 | 0.3937 | 10 | 1 | 0.227 | 0.001 | 0.0289 | 0.735 | 0.0735 | 0.98 | 0.00098 | 98 | 0.098 | 0.0001 |
| 0.0625 | 0.00425 | 1.732 | 43.986 | 4.40 | 1 | 0.0044 | 0.1273 | 3.232 | 0.323 | 4.31 | 0.00431 | 431 | 0.431 | 0.00043 |
| 14.22 | 0.968 | 394.1 | 100,010 | 1,001 | 227.6 | 1 | 28.96 | 735.6 | 73.56 | 980.7 | 0.981 | 98,067 | 98.07 | 0.0981 |
| 0.4912 | 0.03342 | 13.61 | 345.7 | 34.57 | 7.858 | 0.0345 | 1 | 25.4 | 2.54 | 33.86 | 0.0339 | 3386 | 3.386 | 0.00339 |
| 0.01934 | 0.001316 | 0.536 | 13.61 | 1.361 | 0.310 | 0.00136 | 0.0394 | 1 | 0.1 | 1.333 | 0.001333 | 133.3 | 0.1333 | 0.000133 |
| 0.1934 | 0.01316 | 5.358 | 136.1 | 13.61 | 3.10 | 0.0136 | 0.394 | 10 | 1 | 13.33 | 0.01333 | 1333 | 1.333 | 0.00133 |
| 0.0145 | 0.000987 | 0.4012 | 10.21 | 1.021 | 0.2321 | 0.00102 | 0.0295 | 0.75 | 0.075 | 1 | 0.001 | 100 | 0.1 | 0.0001 |
| 14.504 | 0.987 | 401.9 | 10,210 | 1021 | 232.1 | 1.02 | 29.53 | 750 | 75 | 1000 | 1 | 100,000 | 100 | 0.1 |
| 0.000145 | 0.00001 | 0.00402 | 0.102 | 0.0102 | 0.00232 | 0.00001 | 0.000295 | 0.0075 | 0.00075 | 0.01 | 0.00001 | 1 | 0.001 | 0.000001 |
| 0.14504 | 0.00987 | 401.9 | 102.07 | 10.207 | 2.321 | 0.0102 | 0.295 | 7.05 | 0.75 | 10 | 0.01 | 1,000 | 1 | 0.001 |
| 145.04 | 9.869 | 4019 | 102,074 | 10,207 | 2321 | 10.22,036 | 295.3 | 7500 | 750 | 10,000 | 10 | 1,000,000 | 1,000 | 1 |

To use this chart:

1. Find the column with the units you want to convert from
2. Move down that column until you find the "1"
3. Staying in the same row, move horizontally to the column with the units you are converting to
4. Multiply the number in that box by the amount you are changing from to get the converted value

Reference



PART NUMBER PREFIX GUIDE

Marsh Instrument part numbers begin with a letter prefix which helps identify the product

| PREFIX | PRODUCT TYPE | SEE PAGES |
|--------|--|------------|
| D | Test Gauges | 30 |
| D | Inspector's Test Gauges | 33 |
| G | Diaphragm Gauges | 38 |
| G | Water Test Gauges | 49 |
| H | Quality Gauges | 28 |
| H | 100mm Stainless Steel (L.F.) | 22 |
| HW | 100mm Welded Socket | 25 |
| J | General Service Gauges | 12 |
| J | 63mm Severe Service Gauges (L.F.) | 17 |
| L | Bimetal Thermometers | 58 |
| P | Process Gauges | 34 |
| W | 100mm Elite Gauges (L.F.) | 27 |
| W | HVAC/R (Heating System, Contractor's, Refrigeration Ammonia, Manifold) | 41-47 |
| W | Paper Machine, X-Tree, Sprinkler | 50, 51, 48 |
| X | 100mm Severe Service Gauges (L.F.) | 19 |
| Y | Tridicators, Industrial Thermometers | 63, 61 |
| M | 40mm & 50mm Severe Service | 16 |
| GG | Marshalltown Value Series | 11 |

PART NUMBER SUFFIX GUIDE

Marsh Instruments part numbers end with a letter suffix to denote a special feature or options.

| SUFFIX | OPTION | DESCRIPTION |
|--------|---|-----------------------------------|
| A | Ring Options | Friction-Black (FB) |
| | | Press-Black (PB) |
| | | Press-Chrome (PC) |
| | | Friction Chrome (FC) |
| B | Accuracy | ASME Grade 2A 0.5% (H%F); |
| | | ASME Grade 1A, 1.0% (1%F); |
| | | ASME Grade A 2-1-2% (1%H) |
| D | Oxygen Cleaned | |
| E | Single Scale psi only Dial | |
| F | Window Options | Safety Glass (SG) |
| | | Acrylic (AY) |
| | | Instrument Glass (GS) |
| G | Weatherproof case | |
| H | Restrictors | |
| I | Fill Options | Silicone (SL) |
| | | Glycerine (GL) |
| J | Case Options | Phenolic (PH); Brass (BR) |
| | | Chrome (CR); Stainless Steel (SS) |
| | | Polypropylene Turret (TR) |
| L | Metric Dial | L1 -Bar Only |
| | | L2-kg/cm ² Only |
| | | L3-kPa Only |
| | | L4-MPa only |
| M | Custom Name on Dial or Service Printing | |
| P | Liquid Filled product | |
| R | Front Flange | |
| W | Dual Scale | W1 -psi & Bar |
| | | W2-psi & kg/cm ² |
| | | W3-psi & kPa |
| | | W4-psi & MPa |
| Z | Pointers | Adjustable Pointers (AD) |
| | | Max. Hand Assembly (MX) |

NOTE: Not all options are available on all products, please consult factory

ABBREVIATIONS AND TERMS USED

| | |
|--|---|
| p or psi | Pounds per square inch |
| kPa | kilopascals |
| Case | The case style |
| oz/in ² | Ounces per square inch |
| H ₂ O | Inches of water |
| ft. H ₂ O | Feet of water |
| Hg | Inches of mercury |
| VAC | Range is in vacuum |
| NOTE: Compound Ranges, where the gauge measures both vacuum and pressure are designated as: 30" Hg VAC to 100p = measures from 30 inches of mercury vacuum to 100psi pressure. | |
| P | plain case (no flange or clamps) |
| F | front flange case (with U-clamp) |
| R | 3 holed front flange (no clamp) |
| G | back flange case |
| H | hinged ring case (front flange case with U-clamp and removable cover) |
| UC | U-clamp case |
| CONNECTION : The process connection 1/8", 1/4", 1/2" - NPT diameter of connection (National Pipe Thread Standard) | |
| LM | lower mount |
| LBM | lower back mount |
| CB | center back mount |
| REGISTERED TRADEMARKS: Viton®, Teflon®, & Delrin® are registered trademarks of the E.I. DuPont family of companies. | |

MARSHALLTOWN CROSSOVER GUIDE

| FIGURE # | MARSH SERIES |
|-----------------------------------|-----------------------------------|
| 16 | "G" Water Test |
| 22 & 23K, KB, KC, KD | "J" General Service |
| 22 & 23P, PC | N/A |
| 24 & 25 | "H" Quality |
| 38 | "W" Ammonia |
| 42 (compound) | "H" Quality |
| 44, 44K (ft. of H ₂ O) | "W" Heating System |
| 45K (compound) | "J" General Service |
| 50K, 51 (High Pressure) | "X" Series and "J" Severe Service |
| 52, B, C, & D | "J" 63mm SST Case (L.F.) |
| 54, 58 | "W" Ammonia Refrigeration |
| 60 | "D" Test |
| 63 | "D" Inspector's Test |
| 71 | "W" Heating System |
| 82, 83K, 84 (Diaphragm) | "G" Diaphragm |
| 98, 99, 100 | "L" Bimetal |
| 105,107,117 | "Y" Tridicators |
| 175, 179, 180-184 | "P" Process |
| 185-188 (Severe Service) | "J" & "X" 63 & 100mm Case (L.F.) |
| 224 WF | "W" Contractors HVAC |
| 254 | "L" Bimetal (Adjustable) |
| 286P | N/A |
| 400-413 | "P" Process |



MARSH BELLOFRAM TERMS & CONDITIONS

I. GENERAL

- A. Customer purchase orders are binding only after written acceptance by Marsh Bellofram. Verbal orders shall not be accepted as binding until confirmed in writing by Marsh Bellofram.
- B. Prices are effective from date of publication and are subject to change without notice.
- C. Marsh Bellofram reserves the right, without prior notice to:
 1. Change and/or revoke any price.
 2. Change and/or revoke any provisions contained herein.
 3. Discontinue shipments to any customers.
 4. Resolve any inconsistencies, conflicts or ambiguities.
- D. Special production runs or product orders are subject to Marsh Bellofram requirements such as, but not limited to, minimum quantities and extended delivery times. On special production run products Marsh Bellofram reserves the right to over ship or under ship the purchase order quantity by up to 5% and invoice accordingly. Special orders are subject to cancellation charges.
- E. Minimum billing: \$60 net per order.

II. PAYMENT TERMS

- A. For customer with established credit terms: Net 30 days from shipment date.
- B. If credit is not established, payment plus estimated (By Marsh Bellofram) freight charges shall accompany order or arrangements shall be made for collect on delivery (C.O.D.)
- C. Marsh Bellofram reserves the right to revoke any credit extended to a customer if the customer fails to pay for any shipments when due. If in Marsh Bellofram's opinion there is a material adverse change in customer's financial condition, Marsh Bellofram shall have the right to suspend further shipments until receipt of adequate assurance of customer's ability to pay therefor.
- D. All shipments are F.O.B. Plant of Manufacture.
- E. The shipment is deemed accepted in good condition by the common carrier and title and all risk of loss or damage is transferred to customer upon that acceptance by the carrier. The customer is responsible for inspection the merchandise upon receipt. The customer shall insist that visible damage be noted on its copy of the freight bill. If the product has been lost or damaged in transit, the customer must file the claim with the carrier, as Marsh Bellofram bears no responsibility for any such loss or damage.
- F. All freight, handling and insurance charges shall be invoiced to the customer or shipped freight collect.
- G. All shipments are made by carriers of Marsh Bellofram's choice. Any special arrangements requested by customer shall be at customer's additional expense.
- H. Any quantity shortages, incorrect items, or billing errors shall be reported in writing to Marsh Bellofram within 15 days of delivery. Sales order and invoice numbers are to be furnished on all claims.
- I. Marsh Bellofram reserves the right to make delivery in installments. All such installments shall be separately invoiced and paid for when due, without regard to subsequent deliveries. Delay in delivery of any installment shall not relieve customer of his obligation to accept remaining deliveries.
- J. Marsh Bellofram shall not be liable for failure to deliver or delay in delivery occasioned by causes beyond Marsh Bellofram's control, including without limitation, lock-outs, fires, embargoes, war or other breakouts of hostilities, act of inability to obtain shipping space, machinery breakdowns, delays of suppliers, and domestic or foreign governmental acts or regulations. In the event of any delay in delivery due to such causes, unless otherwise agreed, time of delivery shall be deemed extended for a period of sixty (60) days. Customer shall extend the letter of credit if payment is to be made by letter of credit. If delivery is not made within such extended sixty (60) day period, contract shall be deemed cancelled without liability to either party.

III. CANCELED ORDERS

ORDER CANCELLATIONS CAN ONLY BE ACCEPTED BY WRITTEN REQUEST via FAX or MAIL.

All order cancellations result in a cancellation fee of at least 25% of the appropriate invoice of the finished item. Additional cancellation fees are:

1. Catalog Stock Items
- If cancelled less than 1 week before ship date, 25% cancellation fee.
2. Catalog Non-Stock Items
- If cancelled less than 30 days before ship date, full price.
3. Customer Specials
- If cancelled at any time, full price.

IV. LIMITED WARRANTY

- A. All Marsh Bellofram products are warranted against defects in workmanship materials under normal use for 1 year after date of purchase from Marsh Bellofram unless otherwise stated. (Proof of purchase is required). Any product which is determined by Marsh Bellofram to be defective in material or workmanship and returned to Marsh Bellofram, shipping costs prepaid, shall be, as the sole remedy, repaired or replaced at Marsh Bellofram's option.
- B. This warranty is expressly in lieu of all other warranties expressed or implied, including the warranties of merchantability and fitness for use and all other obligations or liabilities on the part of Marsh Bellofram, and Marsh Bellofram neither assumes nor authorizes any other person to assume for it, and other liability in connection with the sale hereunder. Marsh Bellofram disclaims any liability for product defects that are due to product misuse, improper product selection or misapplication.
- C. Marsh Bellofram shall not be liable for customer's costs, lost profits, good will or other special or consequential damages Marsh Bellofram's liability in all events is limited and shall not exceed, the value of merchandise involved.
- D. Remedies - Any controversy or claim arising out of or relating to the contract, or the breach thereof, shall be settled by arbitration in Hancock County, State of West Virginia in accordance with the commercial arbitration Rule of the American Arbitration Association, and judgement on the award render by the arbitrator(s) may be entered in a court having jurisdiction thereof.

V. MODIFICATION OF TERMS

This contract constitutes the entire agreement between the parties, all private representations and understanding having been merged herein. It may not be modified or terminated except in writing signed by a duly authorized representative of Marsh Bellofram. This contract shall be governed by and construed according to the laws of the State of West Virginia.



DISTRIBUTOR RETURN POLICY FOR PRESSURE GAUGES & ACCESSORIES

I. RETURN GOODS AUTHORIZATION (RGA)

- A. Merchandise returned to Marsh Bellofram for any reason must have a Marsh Bellofram Returned Goods Authorization (RGA) number. Warranty returns also require proof of purchase (invoice number, date, and an RGA number).
- B. An RGA is valid for 45 days from issuance and merchandise must arrive at Marsh Bellofram within that validity period.
- C. All material must be shipped freight prepaid.
- D. The RGA number must be clearly visible on the outside of the package. A packing list must be included which clearly shows the RGA number, quantity, product description and reason for return.
- E. No returns will be accepted without an authorized RGA (Return Goods Authorization)

II. MARSH BELLOFRAM CANNOT BE HELD RESPONSIBLE FOR ANY MERCHANDISE RETURNED WITHOUT AN RGA NUMBER.

- A. An RGA number is issued in good faith based upon customer's representation of the merchandise quantity, condition, age and reason for return. All returned material is subject to inspection by Marsh Bellofram. If the material is found to be other than that originally represented, the shipment will be returned at the customer's expense.
- B. An RGA may be requested by mail, fax or by telephoning Marsh Bellofram at 304-387-1200.
 1. Warranty Returns (see Warranty Policy): Limited in-warranty merchandise must have an RGA number and be returned freight prepaid. The merchandise will be repaired or replaced under Marsh Bellofram's warranty terms, it will be returned freight prepaid to the customer.
 2. Incorrect Shipments: For short shipments or incorrectly supplied merchandise, discrepancies must be reported within 15 days of receipt. For short shipments, a debit memo should be issued to Marsh Bellofram. Marsh Bellofram will then issue a credit memo, ship the missing merchandise freight prepaid and issue an invoice. For incorrectly supplied merchandise, all returns require an RGA number and must be returned freight prepaid. A debit memo should be issued to Marsh Bellofram for the freight. If a replacement is required, Marsh Bellofram will ship freight prepaid and invoice for the new product plus freight.
 3. General Terms for Returns (Exchange or Credit): Material requested to be returned will be considered if the following conditions are met:
 - a. Merchandise is unused, current standard catalog stock of latest design, with both product and packaging in saleable condition.
 - b. Merchandise shall have been purchased directly from Marsh Bellofram in the last 12 months.
 - c. Merchandise shall not have been purchased on a "product promotion" or other special pricing.
 4. Marsh Bellofram reserves the right to reject any return request. If accepted, the return will be under the terms specified herein. The following products are not returnable:

- a. Annual Merchandise Exchange Policy for Marsh Bellofram Distributors: Marsh Bellofram will normally accept one stock exchange in a 12 month period, for the purpose of increasing the flexibility of distributor's stock. This annual exchange is limited to distributors who are in good standing and whose accounts are current. The merchandise is subject to the product restrictions listed previously and limited to no more than 2% of the net invoiced sales from Marsh Bellofram to the distributor location during the previous 12 months. The value of the exchange will be determined by the current list price and current maximum published discount.

An offsetting order equal to the return is required.

1. The distributor shall issue a written request for an RGA number for the annual exchange showing quantity, product catalog number and description.
2. The exchange is subject to Marsh Bellofram approval and may be subject to an on-site inspection by Marsh Bellofram personnel. Please allow minimum 2 weeks for approval. Non-stock product or custom product is not returnable.
3. Upon approval of the exchange, Marsh Bellofram will inform the distributor of the net amount of the exchange for the scheduled date for return. The RGA number will be issued only upon receipt of a purchase order for an equal (net) value, calculated on current list price, current maximum published discount.
4. Upon receipt of RGA number, the distributor shall then package the authorized material and return freight prepaid to Marsh Bellofram, Newell, WV. The distributors bears liability for lost shipments or shipping damage.
5. All merchandise is subject to inspection upon receipt. Merchandise which is found to be damaged, modified, or in any other way ineligible for exchange, will be returned at the customer's expense and the value will be deducted from the exchange. A credit memo will then be issued for the net value of the exchange.
6. The replacement order will be shipped and invoiced against the new purchase order with freight at distributor's expense.
- b. Merchandise Returns for Credit: Merchandise returned for credit requires an RGA number, and is subject to a 25% restocking charge and must be returned freight prepaid. The amount of the credit will be determined as follows:
 1. Items returned within 90 days of purchase and with proof of purchase (copy of invoice) will be at invoiced price less applicable charges.
 2. All other will be calculated at current list price and current maximum published discount less 25% restocking fee.
 3. In addition to the standard restocking fee, gauges with accessories will be subject to a removal charge equal to the difference between the "installed" and "sold separately" prices.
 4. Solid fill thermometry products are non-returnable.
- c. Credit Memos:
 1. Where required, Marsh Bellofram will issue a credit memo for the returned or exchanged merchandise less any applicable restocking or removal charges.
 2. The credit memo will be issued only after receipt and inspection of merchandise.
 3. Deduction from payments shall not be made until the Marsh Bellofram issued credit memo has been received.

PRODUCT CLASSES AND OPTIONS

- A. Stock items: Shipped in 7 days or less, with no minimum quantity. *(Large quantities may require extended lead times.)*
- B. Non-stock items: Consult factory for quantities and lead times.
- C. Custom options on stock items: Dials, rings, windows, restrictors, and cosmetic changes - 4 weeks.
- E. Customer special class: Special connections and materials consult factory for quantities and lead times.



PRODUCT WARNINGS, CLAIMS, RECOMMENDATIONS AND NOTICES

WARNING: A failure resulting in injury or damage may be caused by pressure beyond top of scale, excessive vibration or pressure pulsation, excessive instrument temperature, corrosion of the pressure containing parts, or other misuse. For correct use and application of pressure gauges, refer to ASME standard B40.1 1998, entitled 'Gauges: Pressure Indicating Type: Elastic Element.' This document is available from The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10007.

WARNING: LIQUID FILL: Glycerine or Silicone when combined with strong oxidizing agents, including but not limited to chlorine, nitric acid, and hydrogen peroxide, can result in a spontaneous chemical reaction, ignition, or explosion which can cause property damage and personal injury. If gauges are to be used in such service, do not use glycerine or silicone fill. Consult factory for proper fill medium.

IMPORTANT NOTICE: Our recommendations, if any, for the use of these products are believed to be reliable. The greatest care is exercised in the selection of our raw materials and in our manufacturing operations. However, since the use of this product is beyond the control of the manufacturer, no guarantee or warranty, express or implied, is made to such use or effects incidental to such use, handling or possession or the results to be obtained whether in accordance with the directions claimed so to be. The manufacturer expressly disclaims responsibility therefor. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing laws and/or patents covering any material or use.

LIMITED WARRANTY:

(1) All Marsh Instruments products are warranted against defects in workmanship or materials under normal use for one year after date of purchase from Marsh Instruments unless otherwise stated. (Proof of purchase is required). Any product which is determined by Marsh Instruments to be defective in material or workmanship and is returned to Marsh Instruments with shipping costs prepaid, shall be, as the sole remedy, repaired or replaced at Marsh Instruments' option.

(2) THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF MARSH INSTRUMENTS, AND MARSH INSTRUMENTS NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE HEREUNDER. MARSH INSTRUMENTS DISCLAIMS ANY LIABILITY FOR PRODUCT DEFECTS THAT ARE DUE TO PRODUCT MISUSE, IMPROPER PRODUCT SELECTION OR MISAPPLICATION.

(3) Marsh Instruments shall not be liable for customer's costs, lost profits, good will or other special or consequential damages incurred in any way. Marsh Instruments' liability in all events is limited to, and shall not exceed, the value of merchandise involved.

NOTE: ALL MARSH INSTRUMENT PRODUCTS ARE SUBJECT TO CONTINUOUS IMPROVEMENT. THEREFORE, MATERIAL AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.





MARSH

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