



# McDANIEL

## Liquid Fillable, All Stainless Steel Utility Gauges

The rugged construction of our Series 9 All Stainless Steel gauges provides resistance to corrosive media and harsh environments.

The McDaniel Series 9 gauges feature 316 Stainless Steel wetted parts and a 304 Stainless Steel case with crimped on bezel ring. The case and socket joint is welded. Liquid fillable, in the field, or factory.

This series is ideally suited for O.E.M. and corrosive applications that require an all stainless steel gauge at an economical price.



## SPECIFICATIONS

### **Accuracy:**

ASME B40.1 standard - Grade A (2-1-2%)

### **Dial:**

White enameled aluminum. Black figures. Sizes:

2 1/2 inches (63mm) - Model **K9**

4 inches (100mm) - Models **E9** and **G9**

### **Case:**

304 Stainless Steel, filled or fillable.

### **Ring:**

304 Stainless Steel crimped on. (Polished on Panel, U-Clamp, and Back connected configurations)

### **Pointer:**

Black enameled aluminum.

### **Lens:**

Polycarbonate.

(Laminated Safety Glass by special order.)

### **Precision Movement**

Stainless Steel

### **Bourdon Tube:**

316 Stainless Steel (C Form 1000 PSI & Below).  
(Spiral 1500 PSI & Above).

### **Pressure Utilization:**

300% full scale pressure w/o rupture of the bourdon tube.  
130% full scale pressure without loss of accuracy.

### **Stem and Socket:**

316 Stainless Steel. **E9** 1/4" NPT and **G9** 1/2" NPT

**K9** 1/4" NPT standard (1/8" NPT by special order)

Removable restrictor screw standard on K9, optional on E9 and G9 models. One piece welded case and stem.

### **Ranges Available**

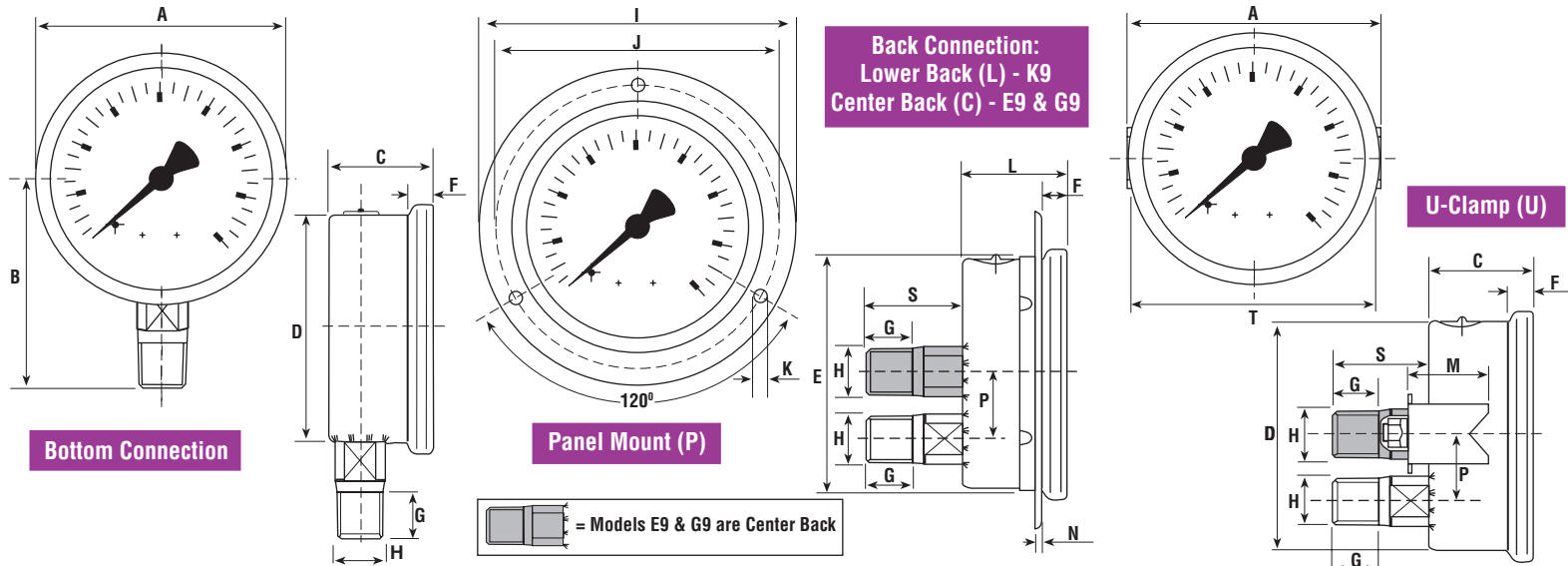
Vacuum, Compound, Rec 3-15, up to 10,000 psi

### **Configurations Available:**

- Bottom connected standard
- (L) = Lower-back connected - K9
- (C) = Center-back connected - E9 and G9
- (U) = U-Clamp mounted, Lower-back connected on K9, Center-back on E9 and G9
- (P) = Front Flange, Lower-back connected on K9, Center-back on E9 and G9
- (R) = Rear flange for Back or Bottom connections

## McDaniel Controls, Inc.

# DIMENSIONAL DATA



| Model | Nominal Size | Case Diameter | A    | B                 | C                   | D                 | E                    | F    | G    | H    | I    | J                  | K                  | L                   | M    | N    | P    | S    | T    |
|-------|--------------|---------------|------|-------------------|---------------------|-------------------|----------------------|------|------|------|------|--------------------|--------------------|---------------------|------|------|------|------|------|
| K9    | 63           | mm            | 68.5 | 57.5              | 31                  | 62                | 64 <sup>(4)</sup>    | 7    | 12   | 14   | 85   | 75                 | 3.5                | 31                  | 34   | 2    | 19   | 25   | 70   |
|       | 2.48         | inches        | 2.68 | 2.24              | 1.20                | 2.44              | 2.51                 | 0.27 | 0.47 | 0.55 | 3.35 | 2.95               | 0.14               | 1.20                | 1.34 | 0.07 | 0.74 | 0.98 | 2.76 |
| E9    | 100          | mm            | 106  | 78                | 33.5 <sup>(1)</sup> | 99 <sup>(6)</sup> | 100.6 <sup>(5)</sup> | 7    | 12   | 14   | ∅132 | 116 <sup>(2)</sup> | 4.8 <sup>(7)</sup> | 33.5 <sup>(3)</sup> | 32   | 3.5  | -    | 27   | 102  |
|       | 3.94         | inches        | 4.17 | 3.07              | 1.32                | 3.89              | 3.96                 | 0.27 | 0.47 | 0.55 | 5.20 | 4.57               | 0.19               | 1.32                | 1.26 | 0.14 | -    | 1.06 | 4.02 |
| G9    | 100          | mm            | 106  | 88 <sup>(8)</sup> | 33.5 <sup>(1)</sup> | 99 <sup>(6)</sup> | 100.6 <sup>(5)</sup> | 7    | 15   | 22   | ∅132 | 116 <sup>(2)</sup> | 4.8 <sup>(7)</sup> | 33.5 <sup>(3)</sup> | 32   | 3.5  | -    | 40   | 102  |
|       | 3.94         | inches        | 4.17 | 3.48              | 1.32                | 3.89              | 3.96                 | 0.27 | 0.59 | 0.87 | 5.20 | 4.57               | 0.19               | 1.32                | 1.26 | 0.14 | -    | 1.57 | 4.02 |

- (1) = 33.5±1 (mm)
- (2) = 116±0,1 (mm)
- (3) = 33.5±1 (mm)
- (4) = 64±0.5 (mm)
- (5) = ∅ 100.6 (mm)
- (6) = 99±0,2 (mm)
- (7) = 3 x 120°
- (8) = 88±1 (mm)

\* See website for dimensional data and downloadable AutoCAD files: [www.mcdanielcontrols.com](http://www.mcdanielcontrols.com)

## HOW TO ORDER

- Select the **Model** number (K9=2½" dial, ¼" NPT. E9=4" dial, ¼" NPT. G9=4" dial, ½" NPT.)
- Specify **Range Code** from list at left.
- Specify **Type of Mounting**:  
(Bottom connection is standard, no code)  
"L" = (Lower-back connection - K9)  
"C" = (Center-back connected - E9 and G9)  
"U" = (U-Clamp, Lower-back connection on K9, Center-back connected on E9 and G9)  
"P" = (Front Flange, Lower-back connected on K9, Center-back on E9 and G9)  
"R" = (Rear Flange for Back or Bottom connection - not shown)
- Specify any other **Special Configuration** or options. (special NPT size, dual-scales, Ammonia-NH3, etc.)
- Add **Type of Filling**, if appropriate. (GF=Glycerin Filled)

### Special Configuration Adder Codes

- B = psi/Bar (dual scale) (nonstock)
- K = psi/kPa (dual scale) (nonstock)
- O = O<sub>2</sub> (oxygen cleaned) (nonstock)
- ½ = ½" NPT (nonstock)
- NH3 = ammonia scale

**Example:**

| Model | Range Code | Type of Mounting | Special Configuration | Type of Filling |
|-------|------------|------------------|-----------------------|-----------------|
| K9    | D          | —                | —                     | GF              |

**Order:** A 2½" all stainless steel utility gauge with ¼" NPT bottom connection standard, range of 100 psi, filled at the factory with glycerin. (K9D-GF)

**Warning** Glycerin filled gauges should not be used in applications involving strong oxidizing agents such as chlorine, nitric acid or hydrogen peroxide. (Refer to ASME B40.1)

\*\* Receiver gauge is dual scale. (0 - 100% primary, 0 - 10 square root secondary)

### Limited Warranty

McDaniel warrants our utility gauges to be free of defects in material and workmanship: Replacement of any defective gauge will be made at no cost to the purchaser. Gauge failures determined to be caused by over-range and incompatibility with environment/product media or abuse will not be considered under this warranty.

| Range code | Range psi     | K9 Minor Increments | E9/G9 Minor Increments |
|------------|---------------|---------------------|------------------------|
| A          | 0 - 15        | .5                  | .25                    |
| B          | 0 - 30        | 1                   | .5                     |
| C          | 0 - 60        | 2                   | 1                      |
| D          | 0 - 100       | 2                   | 1                      |
| E          | 0 - 160       | 5                   | 2                      |
| F          | 0 - 200       | 4                   | 2                      |
| G          | 0 - 300       | 10                  | 5                      |
| H          | 0 - 400       | 10                  | 5                      |
| I          | 0 - 600       | 20                  | 10                     |
| J          | 0 - 800       | 20                  | 10                     |
| K          | 0 - 1000      | 20                  | 10                     |
| L          | 0 - 1500      | 50                  | 25                     |
| M          | 0 - 2000      | 40                  | 20                     |
| N          | 0 - 3000      | 100                 | 50                     |
| 4k         | 0 - 4000      | 100                 |                        |
| O          | 0 - 5000      | 100                 | 50                     |
| 6k         | 0 - 6000      | 200                 | 100                    |
| P          | 0 - 10000     | 200                 | 100                    |
| VACUUM     | VACUUM        | VACUUM              | VACUUM                 |
| S          | VAC 30"Hg - 0 | 1                   | 5                      |
| RECEIVER   | RECEIVER      | RECEIVER            | RECEIVER               |
| T          | REC 3 - 15"   | 2                   | 2                      |
| COMPOUND   | COMPOUND      | COMPOUND            | COMPOUND               |
| U          | 30"Hg + 15    | 2-0-1               | 2-0-1                  |
| V          | 30"Hg + 30    | 2-0-1               | 2-0-1                  |
| W          | 30"Hg + 60    | 5-0-2               | 1-0-1                  |
| X          | 30"Hg + 100   | 5-0-2               | 5-0-2                  |
| Y          | 30"Hg + 160   | 5-0-5               | 5-0-5                  |
| 2k         | 30"Hg + 200   | 10-0-5              | 10-0-5                 |
| Z          | 30"Hg + 300   | 10-0-10             | 10-0-5                 |

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