



# High Precision Differential Pressure Gauges

## Series 1500 8½" Dial



Series 1500 Differential Pressure Gauges have capsule-type pressure elements. High differential pressure is applied to the capsule; low pressure to the case. Available in 22 standard ranges, they combine aneroid convenience with liquid-column accuracy. And they are rugged enough to maintain their high accuracy in test and process applications.

### STANDARD FEATURES

**Size:** 8½" dial  
**Scale length:** Approx. 45" through 2 pointer revolutions  
**Range:** To 150 psi  
**Accuracy:** 0.066% of full scale  
**Sensitivity:** 0.01% of full scale  
**Hysteresis:** 0.1% of full scale for all ranges except 150 psi or equivalent, which is 0.2% of full scale  
**Maximum temperature effect:** 0.1% of full scale per 10°C/50°F change from 23°C/73.4°F

**Pressure-element volume:** 6.9 cc with pointer at zero; 8.6 cc at full scale.  
 For the range 0-125" water only: 6.3 cc with pointer at zero; 8.0 cc at full scale

**Case volume:** 3070 cc

**Maximum case pressure:** 35 psig

**Maximum case leak rate:** Will not exceed  $1.03 \times 10^{-3}$  std cc/sec or 0.018 psi/hr

### STANDARD RANGES AND ORDERING NUMBERS

#### Series 1500 8½" Differential Pressure Gauge

Range and Calibration	Ordering Number	Graduation
0-4.5 psi	62A-4A-0005	0.005 psi
0-10 psi	62A-4A-0010	0.01 psi
0-15.5 psi	62A-4A-0015	0.02 psi
0-20 psi	62A-4A-0020	0.02 psi
0-30 psi	62A-4A-0030	0.05 psi
0-45 psi	62A-4A-0045	0.05 psi
0-60 psi	62A-4A-0060	0.1 psi
0-100 psi	62A-4A-0100	0.1 psi
0-150 psi	62A-4A-0150	0.2 psi

Range and Calibration	Ordering Number	Graduation
0-125" water	62A-4C-0125	0.2"
0-280" water	62A-4C-0280	0.5"
0-800 mm Hg	62A-4D-0800	1.0 mm
0-31.5" Hg	62A-4B-0031	0.05"
0-60" Hg	62A-4B-0060	0.1"
1-120" Hg	62A-4B-0120	0.2"
0-200" Hg	62A-4B-0200	0.2"
0-300" Hg	62A-4B-0300	0.5"

#### Vacuum and Compound Ranges

Range and Calibration	Ordering Number	Graduation
-30" Hg to 0	62A-7B-0030*	0.05"
-15" to 0 to 15" Hg	62A-6B-0030*	0.05"
-30" to 0 to 30" Hg	62A-6B-0060*	0.1"
-30" to 0 to 90" Hg	62A-6B-0120*	0.2"
-30" to 0 to 270" Hg	62A-6B-0300*	0.5"

\*Can be calibrated as shown, or in any other standard pressure unit at no extra cost. Specify if other than in Hg.

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## STANDARD FEATURES (cont.)

### Case

**connections:** 1/8" female NPT pressure and static connections. Stainless steel filters are mounted in the orifice of both units and are located in the bottom of the case.

### Case

**construction:** Cast aluminum with tempered-glass dial cover; flush mounted by three screws through the bezel.

### Materials exposed to measured

**gas:** Capsule system: Ni-Span C<sup>®</sup>, soft solder, brass, 303 stainless steel, and silver solder. 303 SS tubing, adapter, and silver solder at pressure connection are optional instead of brass and soft solder.

Case: Ni-Span C<sup>®</sup>, brass, beryllium copper, magnesium, aluminum, ABS, nylon, Elgiloy; soft solder, Buna N, Hypalon, 303 SS, silver solder, synthetic sapphire, white paint, epoxy cement, nickel silver, nickel plating, drawing ink, Duco lacquer.

**Options:** Calibration in most metric units available at no extra cost. Other calibration units with two sets of graduations on the same dial are available at extra cost. Also available is a compact (12 3/4" H, 12" W, 8 1/16" D), suitcase-type carrying case with the gauge in a shock-mounted panel. The cover is easily removed and pressure connections can be made without removing the gauge from the case.

### Weight and shipping weight:

8 lb. and 10 lb.

### Ordering information:

When ordering please specify ordering number, range, and mounting angle (Extra cost if mounting angle is other than vertical.).

**Note:** This gauge should not be used for corrosive gases or for liquids of any kind.

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## Series 1500 8½" High Precision Differential Pressure Gauge

### Wide Spaced Graduations Give Excellent Readability

Because the pointer covers full scale in two revolutions, Series 1500 scales are approximately 45" long. This is more than twice as long as single-revolution gauges with the same dial diameter (8½ inches) – and longer than gauges with twice the dial diameter. The expanded scale allows a minimum of 0.045 inch of white space between graduations. This and a knife-edge pointer allow readings to 0.02% of full scale.

### Accurate Readout at a Glance

Compactness makes readout convenient as well as accurate. The operator takes readings from one position, which is not possible with large-diameter gauges. This cuts fatigue and errors. A revolution indicator is included and a mirror ring eliminates parallax errors. Graduations are easily seen; bold numbers are horizontally placed.

### Calibration is Traceable to National Institute of Standards and Technology

A computer-assisted plotter marks calibration points and the graduations between them on each dial. This produces a scale, which precisely matches the characteristics of its own mechanism and pressure element. Calibration may be with any of several precision mercury manometers or primary standard pneumatic piston gauges. These are certified traceable to NIST. Wallace & Tiernan's calibration system conforms to MIL-STD-45662.

### Calibration Sheet

A computer-generated calibration sheet is supplied with each gauge. It shows that the gauge has performed as well as or better than the advertised accuracy.

### Compact Size Saves Space In Panels

With the two-revolution arrangement, the long scale (approx. 45") requires a dial only 8 ½" in diameter. This saves panel space as well as dollars in panel construction. It makes more compact test units possible, such as consoles for ground support equipment.

### Performs Better than the Rated Accuracy

Excellent readability, 0.03% repeatability, custom dial calibration, individual assembly and adjustment of each mechanism, add up to an accuracy of 0.066% and a sensitivity of 0.01% of full scale. These figures are the minimum performance, which can be expected. After rigorous testing, any W&T Gauge which fails to better the rated accuracy is rejected.

### Rugged Design

The case is heavy cast aluminum with a tempered-glass dial cover. A heavy aluminum dial plate, with only a 1/16-inch opening for the pointer, isolates the capsule. Overpressuring the instrument up to 25% above its full-scale range will not damage the mechanism nor affect accuracy. A built-in relief valve has a dumping capacity, which protects the case from applied pressures up to 60 times the maximum case pressure rating.

*This valve is an emergency-protective device only. System must be designed to operate at pressures no higher than 25% above full-scale range.*

Series 1500 8½" Differential Gauge

