



High Precision Absolute Pressure Gauges

Series 1500 8½" Dial



Series 1500 Gauges pressure elements are capsules up to and including the 50 psia range: 100 psia and above use Bourdon tubes. In the former, pressure is applied to the case and is referenced against the evacuated capsule. In the latter, pressure is applied to a Bourdon tube, which is referenced against an evacuated Bourdon.

Available in 14 standard ranges, Series 1500 Gauges combine aneroid convenience with liquid-column accuracy. And they are rugged enough to maintain their high accuracy in all kinds of test and process applications.

STANDARD FEATURES

Sizes: 8½" dial
Scale length: To 500 psia
Accuracy: 0.066% of full scale
Repeatability: 0.03% of full scale
Sensitivity: 0.01% of full scale
Hysteresis: Below 100 psia, 0.15% of full scale;
100 psia and above, 0.1% of full scale
Maximum temperature effect: Below 100 psia, 0.019% of full scale per 10°C/50°F change from 23°C/73.4°F; 100 psia and above, 0.1% of full scale per 10°C/50°F from 23°C/73.4°F.

Case pressure and volume: For gauges with ranges below 100 psia, maximum case pressure is 35 psig, case volume is 3070 cc. For gauges with ranges of 100 psia and above, volume of the pressure Bourdon system is 10 cc and the case is vented to atmosphere.

Maximum case leak rate: Will not exceed 1.03×10^{-3} std cc/sec or 0.018 psi/hr in ranges below 100 psia; 100 psia and above, case is vented to atmosphere.

STANDARD RANGES AND ORDERING NUMBERS

Series 1500- Absolute Pressure Gauge

Range and Calibration	Ordering Number	Graduation
0-15.5 psia	61A-1A-0015	0.02 psia
0-25 psia	61A-1A-0025	0.05 psia
0-35 psia	61A-1A-0035	0.05 psia
0-50 psia	61A-1A-0050	0.05 psia
0-100 psia	61A-1A-0100	0.01 psia
0-150 psia	61A-1A-0150	0.2 psia
0-200 psia	61A-1A-0200	0.2 psia
0-300 psia	61A-1A-0300	0.5 psia
0-500 psia	61A-1A-0500	0.5 psia
0-800 mm Hg	61A-1D-0800	1.0mm
0-31.5" Hg	61A-1B-0031	0.05"
0-50" Hg	61A-1B-0050	0.05"
0-70" Hg	61A-1B-0070	0.1"
0-100" Hg	61A-1B-0100	0.1"

STANDARD FEATURES (cont.)

Case

connections: Below 100 psia, 1/8" female NPT; 100 psia and above, 1/4" female NPT. Both have a built-in stainless steel filter and are located in the bottom of the case.

Liquid

service: Gauges with ranges of 100 psia and above (Bourdon tube pressure elements) can be used for non-corrosive liquid service.

Case

construction: Anodized aluminum. Ranges of 50 psia and below have tempered-glass dial covers; ranges of 100 psia and above, have high strength plastic dial covers. All cases are flush mounted by three screws through the bezel.

Materials exposed to measured

gas: Below 100 psia: Ni-Span C® brass, phosphor bronze, beryllium-cooper, magnesium, aluminum, nylon, 303 stainless steel, Elgiloy, soft solder, silver solder, Hypalon, synthetic sapphire, paper, epoxy cement, TFE, nickel silver, nickel plating, drawing ink, Duco lacquer.

100 psia and above: 302, 303, and 304 stainless steel, Ni-Span C®, Easy-flow #45 brazing alloy, silver solder, nylon.

Options: Calibration in most metric units available at no extra cost. Other calibration units and two sets of graduations on the same dial are available at extra cost. Gauges with a range of 100 psia or higher can be calibrated for liquid service. Also available is a compact (12 ¾" 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: Ranges 0-50 psia and lower: 8 lb. and 10 lb.. Ranges 0-100 psia and higher: 8 ½ lb. and 11 lb..

Ordering

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

Note: Gases must be non-corrosive.

Series 1500 8½" High Precision Absolute Pressure Gauge

Direct Readout, No Barometric Adjustments

Because applied pressure is referenced against an evacuated element, W&T Gauges read out true absolute pressure directly. No corrections or adjustments required.

Wide Spaced Graduations Give Excellent Readability

Because the pointer covers full scale in two revolutions, Series 1500 scales are approximately 45 inches long. This is 2 ½ times as long as single-revolution gauges with the same dial diameter (8 ½ inches)- and even 20% 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 allows 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. This information establishes that the gauge is capable of performing as well as or better than the advertised accuracy.

Performs Better than the Rated Accuracy

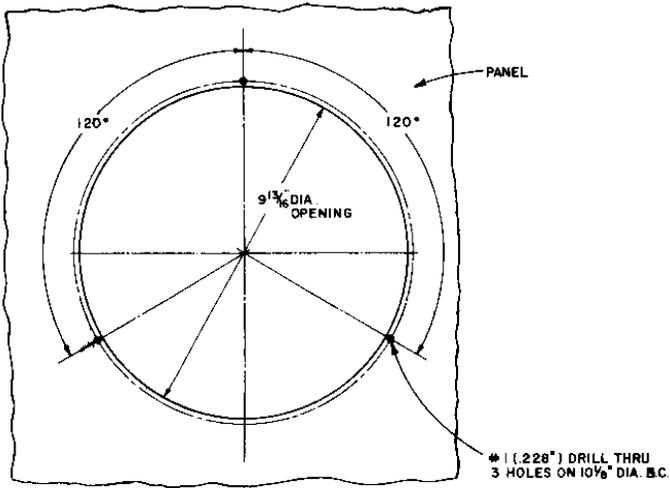
Excellent readability, 0.03% repeatability, custom dial calibration, and individual assembly and adjustment of each mechanism add up to an accuracy of 0.066% and sensitivity of 0.01% of full scale. These figures are the minimum performance, which can be expected. After rigorous testing, any W&T Gauge,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

Rugged Design

The case is heavy cast aluminum. Ranges of 50 psia and below have extra strong tempered-glass dial covers and built-in case-pressure relief valves.* Ranges of 100 psia and above have high strength plastic covers and a blowout plug in the back of the case. Overpressuring these gauges up to 25% above full scale will not damage the mechanism nor affect accuracy.

*These valves are emergency-protective devices only. Systems must be designed to operate at pressure no higher than 25% above full scale range.

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PANEL OPENING DETAIL

