INSTRUMENTS, LLC
Direct Drive Difference
SIERRA PRECISION

Precision Test Gauge

Features

- ➢ Precise Measurements – Accuracy is 0.1 % of full scale; repeatability is 0.02% of full scale and hysteresis is 0.1% of full scale or less
- ➢ Reliability – Linear dials, span micro-adjust and zero reference adjust allow component replacement and simplify recalibration. Extra high quality corrosion-resistant materials of construction - 5 year warranty on materials of construction!
- ➢ Reliable Operation – 120 % fall scale pressure with no caliration shift and 200% full scale pressure without damage
- ➢ Extreme Stability – Inherent temperature compensation from -25° F (-32° C) to 125° F (+52° C)
- ➢ Ease of Operation – Easy reading high resolution dial in soft green and white with a polished mirror band to eliminate parallax error
- ➢ Various Sizes/Ranges – dial sizes of 7", 8.5", 12" and 16" are available. Pressure ranges from vacuum to 10,000 PSIG
- ➢ Options – mounting flanges, special fittings, custom scales and logos

Product Description

The 3D Precision Test Gauge (PTG) is certified for industrial and laboratory pressure transfer measurement in the U.S. and worldwide. Incorporating 3D Instruments well known expertise in test gauge design and application, the PTG provides unsurpassed long-term accuracy. The dial face design comes directly from 3D experience with the practical use of high resolution pressure calibration in the laboratory and in the field.

Utilizing a highly sensitive Ni-Span C bourdon tube, the PTG is virtually unaffected by temperature variations. This obsoletes the need for an expensive add-on temperature compensation device. The bourdon tube material offers a superior spring rate varying only 0.02% from -25° F (-32° C) to 125° F (+52° C).

With the F'TG, there is no requirement for preliminary pressure cycling. All materials utilized are selected to be corrosion resistant. All gauges are supplied with a bleed port. Bronze bushings are used to ensure low friction and long term precision in extreme applications involving dust, vibration and temperature variation.

The gauge dial uses the 3D Instruments anti-glare soft green color with anti-parallax mirror band and white outer ring for maximum user resolution. This approach has proven practical advantages for technicians and engineers.

All 3D Instruments Precision Test Gauge dials, for pressure ranges from vacuum to 10,000 PSI, are linear and for the same pressure range are interchangeable in the field. The advantage of using the Ni-Span C bourdon tube and the resulting low hysteresis is that the PTGs are not individually matched to a non-linear dial. The compelling benefit here is that this makes field repair and calibration not only a possibility but a relatively easy task performed with exactness and facility by instrument technicians.

The combination of sophisticated pressure measurement technology, robust design and high quality materials makes the Precision Test Gauge from 3D Instruments the ideal choice for your demanding high accuracy pressure measurement applications.

GENERAL SPECIFICATIONS

Accuracies:
0.1% of full scale

Includes all effects of repeatability, linearity and hysteresis. Accuracy obtained by calibration with pressure standards traceable to NIST. Calibration points - 12 points upscale and 12 points downscale

Repeatability:
0.02% of full scale

Sensitivity:
0.1% of full scale or less

Proof Pressure:
120% of maximum rated pressure

Burst Pressure:
200% of maximum rated pressure

Process Connection:
1/4" NPT female - other sizes are avalable including 1/4" NPT male and 1/2" NPT male

Dial Sizes:
7" (178nun)
8.5" (216 mm)
12" (305 mm)
16" (406 nun)

Needle Movement - Full Scale:
310°dial arc

Ambient/Service Temperature:
-25° F (-32° C) to 125° F (+52° C)

Operating Media:
Any media suitable for contact with Ni-Span C, 300 series stainless steel and Buna-N

Materials of Construction:
Case: Aluminum
Bourdon Tube: Ni-Span C
Process Connection: 316 SS
Crystal: Lexan

Resolution Table:

Standard Range	Increments	Sub-Divisions	Gauge Diameter
0-15 psi	750	.02	7, 8.5, 12
	1500	.01	16
30 psi	600	.05	7, 8.5, 12
	1500	.02	16
60 psi	600	10	7, 8.5, 12
	1200	.05	16
100 psi	1000	.1	All
150 psi	750	.2	7, 8.5, 12
	1500	1	16
200 psi	1000	.2	All
300 psi	600	.5	7, 8.5, 12
	1500	2	16
400 psi	800	.5	All
500 psi	1000	.5	All
600 psi	600	1	7, 8.5, 12
	1200	.5	
800 psi	800	1	All
1000 psi	1000	1	All
1500 psi	750	2	7, 8.5, 12
	1500	1	16
2000 psi	1000	2	All
3000 psi	600	5	7, 8.5, 12
	1500	2	16
4000 psi	800	5	All
5000 psi	1000	5	All
6000 psi	600	10	7, 8.5, 12
	1200	5	16
8000 psi	800	10	All
10000 psi	1000	10	All
	VACUUM		
15-0 psi	750	.02	7, 8.5, 12
	1500	.01	16
30-0 in / hg	600	.05	7, 8.5, 12
	1500	.02	16
800-0 mm / hg	800	1	All

ORDERING INFORMATION

PART NUMBER: ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

PART NUMBER: **25 X 1 X XX X X 1 XXX**

Example: **25516-23E21** 8.5" Precision Test Gauge with 0-100 PSI range, black case front flange, back 1/4" NPT female pressure fitting

Product Description: 0.1% accuracy Precision Test Gauge

① **Type of Gauge:**
1: Compound scale: combination vacuum and positive pressure scales - 5 ranges available from: 30" Hg-0-30 PSI to -30" Hg-0-300 PSI
2: Vacuum scale: -30" Hg - 0
5: Positive Pressure Scale: available in ranges from 0-15 PSI to 0-10000 PSI

② **Accuracy of Gauge:**
1: 0.1% of span

③ **Size of Gauge:**
9: 7" dial size **6:** 8.5" dial size **7:** 12" dial size **8:**16" dial size

④ **Pressure Ranges Codes:** **(Codes 48, 23, 24 25 & 26 can be obtained as compound ranges w/vacuum to: 30" Hg - use code: 1 in # 1 above)**
15: 30"Hg - 0 (Note: Vacuum gauge - must be used in conjunction with a 2 in #1 above. Add: AAU option Code as well in #8 for scale: -15 psi - 0)

48: -30" Hg-0-30 PSI	**24:** 0-150 PSI	**28:** 0-600 PSI	**33:** 0-3,000 PSI	**38:** 10,000 PSI
15: 0-15 PSI	**25:** 0-200 PSI	**53:** 0-800 PSI	**34:** 0-4,000 PSI	
21: 0-30 PSI	**26:** 0-300 PSI	**29:** 0-1,000 PSI	**35:** 0-5,000 PSI	
22: 0-60 PSI	**51:** 0-400 PSI	**31:** 0-1,500 PSI	**36:** 0-6,000 PSI	
23: 0-100 PSI	**27:** 0-500 PSI	**32:** 0-2,000 PSI	**37:** 0-8,000 PSI	

⑤ **Process Connection:** **(Note: standard pressure fitting code is E - 1/4" NPT female)**
B: 1/4" NPT male **C:** 1/2" NPT male **D:** 1/8" NPT female **E:** 1/4" NPT female

⑥ **Pressure Fitting Location and Flange Configuration:** **(Note: the standard fitting/flange combination for the 7" dial size is Code: 5; a Code: 2 is the standard fitting/flange configuration for the 8.5", 12", and 16" dial sizes)**

1: Bottom Fitting/Front Flange **2:** Back Fitting/Front Flange **3:** Bottom Fitting/Wall Mount Brackets
5: Bottom Fitting/No Flange* **6:** Back Fitting/No Flange* ***Not available on 8.5", 12" or 16" dial sizes**

⑦ **Case Type:**
1: Black aluminum case

⑧ **Option Codes and Accessories:** **(Leave #8 blank if no options are required)**
ISO: Metric Scale in kPa or MPa **ISOD:** Dual Scale - PSI and kPa or MPa (PSI is on outer ring)
ISK: Metric Scale in Kg/cm^2 **ISKD:** Dual Scale - PSI and Kg/cm^2 (PSI is on outer ring)
ISB: Metric Scale in Bar **ISBD:** Dual Scale - PSI and Bar (PSI is on outer ring)
AAE: Throttle screw **AAV:** "Maximum Pressure" pointer

3D Instruments, LLC
2900 E. White Star Avenue, Anaheim, California 92806 USA
Phone: (714) 399-9200 Fax: (714) 399-9221
Internet: www.3dinstruments.com E-mail: info@3dmstruments.com