

## TECHNICAL DATA

# Fluke Calibration P3000 Pneumatic Deadweight Testers



## Key features

- 0.015% of reading accuracy standard (0.008% optional)
- 1-30 inHg vacuum (0.03-1 bar vacuum)
- 3-500 psi (0.2-35 bar) pressure
- inH<sub>2</sub>O and mbar ranges available
- Series 3 non-magnetic stainless steel weights
- Units can be trimmed to local gravity FOC

## Product overview: Fluke Calibration P3000 Pneumatic Deadweight Testers

This versatile instrument provides calibrations from 1-30 inHg vacuum (0.03-1 bar) and 3-500 psi (0.2-35 bar) in one extremely accurate yet easy to use primary standard. A selector valve converts the unit from pressure to vacuum mode without the need to exchange pistons. Units are manufactured to the highest standards with certified accuracies traceable to International Standards Laboratories such as the National Institute of Standards and Technology (NIST). These piston/cylinder type pneumatic standards provide excellent stability, repeatability and accuracy. An optional built-in hand pump can be added for both pressure and vacuum generation.

# Specifications: Fluke Calibration P3000 Pneumatic Deadweight Testers

Accuracy		
Accuracy <sup>1</sup>	±0.015% of reading (±0.008% optional)	
1. Accuracy based on % of reading from 10% to 100% of the piston range when used in accordance with the corrections found on the calibration certificate. Below 10% ± (accuracy class) x 10% of the piston range.		
Mass and PCU Materials of Construction		
Standard weight material	Series 3 non-magnetic austenitic stainless steel	
Weight density	7.8 g/cm <sup>3</sup>	
Optional fractional weights	Solution heat treated aluminum	
Weight density	2.7 g/cm <sup>3</sup>	
Models P3011, P3012, P3013, P3022, P3023, P3025 (V)	<b>Piston material</b>	Ceramic
	Cylinder material	Martensitic steel
	Coefficient of expansion	11 ppm/°C
Models P3014, P3015, P3025 (P) P3031, P3032 (P & V)	<b>Piston material</b>	Tungsten carbide
	Cylinder material	Martensitic steel
	Coefficient of expansion	16.5 ppm/°C
Model P3016	<b>Piston material</b>	Tungsten carbide
	Cylinder Material	Tungsten carbide
	Coefficient of Expansion	11 ppm/°C
General		
Test port adaptors	1/8, 1/4, 3/8 and ½ NPT or BSP	
Instrument weight	24 lbs	
Instrument size (W x D x H)	17.5 x 12 x 8.5	
Mass set weight (typical)	65 lbs	
Minimum Standard Weight Increments		
P3012, P3022 Pressure	1 inH <sub>2</sub> O, (5 mbar)	
P3013, P3023 Pressure	2 inH <sub>2</sub> O, (10 mbar)	
P3014, P3015, P3025 Pressure	1 psi, (0.1 bar)	
P3016, P3031, P3032	1 psi, (0.1 bar)	
P3011, P3022, P3023, P3025 Vacuum	0.2 inHg (10 mbar)	
Optional Fractional Weights		
P3014, P3015, P3025 Pressure	0.1 psi (0.01 bar)	
Built-in Hand Pumps		

Pressure mode	Max pressure 300 psi (20 bar)
Vacuum mode	To 90% vacuum
<b>Operating Fluid for Liquid Lubricated Models</b>	
55-655	Mineral oil (standard)
Krytox	For oxygen-safe applications (optional)
<b>Options</b>	
PressCal Software	Windows-based software program that allows users to easily apply all necessary corrections to enhance the deadweight tester performance. Calibration details are then stored and/or used to automatically create a calibration certificate. PressCal is provided as standard with all 0.008% instruments.
Krytox	As operating fluid for liquid lubricated gas operated models.

## Ordering information



### **P3031-BAR**

P3031-BAR Liquid Lubricated Gas Operated Model

Pressure Range 1 to 70 bar

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### **P3031-KGCM2**

P3031-KGCM2 Liquid Lubricated Gas Operated Model

Pressure Range 1 to 70 kgf/cm

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### **P3031-KPA**

P3031-KPA Liquid Lubricated Gas Operated Model

Pressure Range 100 to 7,000 kPa

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### **P3031-MPA**

P3031-MPA Liquid Lubricated Gas Operated Model

Pressure Range 0.1 to 7 Mpa

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### **P3031-PSI**

P3031-PSI Liquid Lubricated Gas Operated Model

Pressure Range 10 to 1,000 psi

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### **P3032-BAR**

P3032-BAR Liquid Lubricated Gas Operated Model

Pressure Range 1 to 140 bar

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**P3032-KGCM2**

P3032-KGCM2 Liquid Lubricated Gas Operated Model

Pressure Range 1 to 140 kgf/cm

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**P3032-KPA**

P3032-KPA Liquid Lubricated Gas Operated Model

Pressure Range 100 to 14,000 kPa

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**P3032-MPA**

P3032-MPA Liquid Lubricated Gas Operated Model

Pressure Range 0.1 to 14 Mpa

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**P3032-PSI**

P3032-PSI Liquid Lubricated Gas Operated Model

Pressure Range 10 to 2,000 psi

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**P3011-INHG-P**

P3011-INHG-P Pneumatic Deadweight Testers

Vacuum range 1 to 30 inHg

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Vacuum operated – single PCU
  - Built-in pump optional
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**P3011-KPA-P**

P3011-KPA-P Pneumatic Deadweight Testers

Vacuum range 3 to 100 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Vacuum operated – single PCU
  - Built-in pump optional
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**P3011-MBAR-P**

P3011-MBAR-P Pneumatic Deadweight Testers

Vacuum range 30 to 1,000 mbar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Vacuum operated – single PCU
  - Built-in pump optional
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### **P3011-MMHG-P**

P3011-MMHG-P Pneumatic Deadweight Testers  
Vacuum range 30 to 760 mmHg

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Vacuum operated – single PCU
  - Built-in pump optional
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### **P3012-INH20-P**

P3012-INH20-P Pneumatic Deadweight Testers  
Pressure range 5 to 400 inH<sub>2</sub>O

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3012-KPA-P**

P3012-KPA-P Pneumatic Deadweight Testers  
Pressure range 1.5 to 1,000 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3012-MBAR-P**

P3012-MBAR-P Pneumatic Deadweight Testers  
Pressure range 15 to 1,000 mbar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3013-INH20-P**

P3013-INH20-P Pneumatic Deadweight Testers  
Pressure range 12 to 800 inH<sub>2</sub>O

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3013-KPA-P**

P3013-KPA-P Pneumatic Deadweight Testers  
Pressure range 3 to 200 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3013-MBAR-P**

P3013-MBAR-P Pneumatic Deadweight Testers  
Pressure range 30 to 2,000 mbar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3014-BAR-P**

P3014-BAR-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 10 bar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3014-KGCM2-P**

P3014-KGCM2-P Pneumatic Deadweight Testers  
Pressure range 0.2 to 10 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3014-KPA-P**

P3014-KPA-P Pneumatic Deadweight Testers  
Pressure range 20 to 1,000 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3014-MPA-P**

P3014-MPA-P Pneumatic Deadweight Testers

Pressure range 0.02 to 1 Mpa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3014-PSI-P**

P3014-PSI-P Pneumatic Deadweight Testers

Pressure range 3 to 150 psi

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
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### **P3015-BAR-P**

P3015-BAR-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 bar

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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### **P3015-KGCM2-P**

P3015-KGCM2-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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### **P3015-KPA-P**



## P3015-KPA-P Pneumatic Deadweight Testers

Pressure range 20 to 3,500 kPa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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## P3015-MPA-P

P3015-MPA-P Pneumatic Deadweight Testers

Pressure range 0.02 to 3.5 Mpa

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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## P3015-PSI-P

P3015-PSI-P Pneumatic Deadweight Testers

Pressure range 3 to 500 psi

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Includes:

- P3000 Series Single Pressure Model
  - Air operated – single PCU
  - Built-in pump optional
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## P3022-INH20-P

P3022-INH20-P Pneumatic Deadweight Testers

Pressure range 5 to 400 inH<sub>2</sub>O

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 1 to 30 inHg
  - Built-in pump optional
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## P3022-KPA-P

P3022-KPA-P Pneumatic Deadweight Testers

Pressure range 1.5 to 100 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
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### **P3022-MBAR-P**

P3022-MBAR-P Pneumatic Deadweight Testers

Pressure range 15 to 1,000 mbar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
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### **P3023-INH20-P**

P3023-INH20-P Pneumatic Deadweight Testers

Pressure range 12 to 800 inH<sub>2</sub>O

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 1 to 30 inHg
  - Built-in pump optional
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### **P3023-KPA-P**

P3023-KPA-P Pneumatic Deadweight Testers

Pressure range 3 to 200 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
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### **P3023-MBAR-P**

P3023-MBAR-P Pneumatic Deadweight Testers

Pressure range 30 to 2,000 mbar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
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### **P3025-BAR-P**

P3025-BAR-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 bar

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 1,000 mbar
  - Built-in pump optional
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### **P3025-KGCM2-P**

P3025-KGCM2-P Pneumatic Deadweight Testers

Pressure range 0.2 to 35 kgf/cm<sup>2</sup>

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 30 to 760 mmHg
  - Built-in pump optional
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### **P3025-KPA-P**

P3025-KPA-P Pneumatic Deadweight Testers

Pressure range 20 to 3,500 kPa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
- 

### **P3025-MPA-P**

P3025-MPA-P Pneumatic Deadweight Testers

Pressure range 0.02 to 3.5 Mpa

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model

- Air operated - dual PCU
  - Vacuum Range 3 to 100 kPa
  - Built-in pump optional
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### **P3025-PSI-P**

P3025-PSI-P Pneumatic Deadweight Testers

Pressure range 3 to 500 psi

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Includes:

- P3000 Series Vacuum and Dual Vacuum/Pressure Model
  - Air operated - dual PCU
  - Vacuum Range 1 to 30 inHg
  - Built-in pump optional
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