

**TECHNICAL DATA**

# Fluke Calibration P3100 Hydraulic Deadweight Testers



## Key features

- Pressure ranges to 60,000 psi (4000 bar)
- 0.015% of reading accuracy standard (0.008% optional)
- Single or dual piston format
- Built-in hand pumps standard
- Mounted spirit level with adjustable feet
- Units can be trimmed to local gravity FOC

## Product overview: Fluke Calibration P3100 Hydraulic Deadweight Testers

The P3100 models are available in single or dual piston format. Unit can be supplied in psi, bar, kgf/cm<sup>2</sup>, and MPa. This robust instrument is highly accurate, quick and easy to use. Units feature a built-in priming pump for large volume applications, piston flotation indicators and a high quality screw press for fine pressure control.

## Specifications: Fluke Calibration P3100 Hydraulic Deadweight

## Testers

| Pressure Ranges                                                                                                                                                                                                   |                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oil operated                                                                                                                                                                                                      | Ranges to 20,000 psi (1400 bar)                                                                                                                                                    |
| 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. |                                                                                                                                                                                    |
| 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>                                                                                                                                                              |
| Piston material                                                                                                                                                                                                   | Tungsten carbide with nickel binder<br>Density- 15.0 g/cm <sup>3</sup>                                                                                                             |
| Cylinder material                                                                                                                                                                                                 | Hardened martensitic steel<br>Tungsten carbide (water above 500 psi, 35 bar)                                                                                                       |
| Thermal coefficients of expansion                                                                                                                                                                                 | Oil piston/cylinder 16.5 ppm/°C<br>Water (above 500 psi, 35 bar) 11 ppm/°C                                                                                                         |
| General                                                                                                                                                                                                           |                                                                                                                                                                                    |
| Test port adaptors                                                                                                                                                                                                | 1/8, 1/4, 3/8 and ½ NPT or BSP                                                                                                                                                     |
| Instrument weight                                                                                                                                                                                                 | 36 lbs (16 kg)                                                                                                                                                                     |
| Instrument size (W x D x H)                                                                                                                                                                                       | 17.5 x 12 x 8.5                                                                                                                                                                    |
| Mass set weight (typical)                                                                                                                                                                                         | 80 lbs (36 kg)                                                                                                                                                                     |
| Reservoir volume                                                                                                                                                                                                  | 150 cc                                                                                                                                                                             |
| Screw press displacement                                                                                                                                                                                          | 5.5 cc                                                                                                                                                                             |
| Pump displacement                                                                                                                                                                                                 | 4.7 cc per stroke                                                                                                                                                                  |
| O-ring seal materials                                                                                                                                                                                             | Buna N as standard, Viton and EPDM available                                                                                                                                       |
| Weight Increments                                                                                                                                                                                                 |                                                                                                                                                                                    |
| Minimum standard weight increments                                                                                                                                                                                | Up to 500 psi (35 bar): 1 psi (0.1 bar)<br>500 to 5000 psi (35 to 350 bar): 10 psi (1 bar)<br>5000 to 20,000 psi (350 to 1400 bar): 20 psi (2 bar)<br>Model P3112: 1 psi (0.1 bar) |
| Optional fractional weights                                                                                                                                                                                       | Up to 500 psi (35 bar): 0.1 psi (0.01 bar)<br>500 to 5000 psi (35 to 350 bar): 1 psi (0.1 bar)<br>5000 to 20,000 psi (350 to 1400 bar): 2 psi (0.2 bar)                            |
| Operating Fluid                                                                                                                                                                                                   |                                                                                                                                                                                    |
| Mineral oil                                                                                                                                                                                                       | Shell spindle oil 22, our reference 55-655, viscosity 40 cs @ 20°C                                                                                                                 |
| Options                                                                                                                                                                                                           |                                                                                                                                                                                    |

|                   |                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.                                                |
| Fluids            | Instruments can be supplied for use with Skydrol or brake fluids. Due to the aggressive nature of these fluids the standard nitrile seals and the acrylic reservoir tube will be replaced by either Viton or EPDM seals (as applicable) and an aluminum reservoir tube. For these or any other specialty fluid applications, please consult the factory. |

## Ordering information



### Fluke P3111-2

Fluke Calibration P3111-2 Hydraulic Deadweight Testers  
Calibration Hydraulic Deadweight Testers

Includes:

- Hydraulic Deadweight Tester
- Oil operated - single PCU
- Pressure Range 1 to 35 kgf/cm<sup>2</sup>

### Fluke P3111-1

Fluke Calibration P3111-1 Hydraulic Deadweight Testers  
Calibration Hydraulic Deadweight Testers

Includes:

- Hydraulic Deadweight Tester
- Oil operated - single PCU
- Pressure Range 1 to 35 bar

### Fluke P3111-3

Fluke Calibration P3111-3 Hydraulic Deadweight Testers  
Calibration Hydraulic Deadweight Testers

Includes:

- Hydraulic Deadweight Tester
- Oil operated - single PCU
- Pressure Range 10 to 500 psi

### **Fluke P3111-4**

Fluke Calibration P3111-4 Hydraulic Deadweight Testers  
100 to 3,500 kPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3111-5**

Fluke Calibration P3111-5 Hydraulic Deadweight Testers  
0.1 to 3.5 MPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3112-1**

Fluke Calibration P3112-1 Hydraulic Deadweight Testers  
4 to 140 bar

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Includes:

- Hydraulic Deadweight
  - Oil operated - single PCU
- 

### **Fluke P3112-2**

Fluke Calibration P3112-2 Hydraulic Deadweight Testers  
4 to 140 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3112-3**

Fluke Calibration P3112-3 Hydraulic Deadweight Testers  
40 to 2,000 psi

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3112-4**

## Fluke Calibration P3112-4 Hydraulic Deadweight Testers 400 to 14,000 kPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3112-5**

Fluke Calibration P3112-5 Hydraulic Deadweight Testers  
0.4 to 14 MPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3113-1**

Fluke Calibration P3113-1 Hydraulic Deadweight Testers  
10 to 350 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3113-2**

Fluke Calibration P3113-2 Hydraulic Deadweight Testers  
10 to 350 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3113-3**

Fluke Calibration P3113-3 Hydraulic Deadweight Testers  
100 to 5,000 psi

---

Includes:

- Hydraulic Deadweight
  - Oil operated - single PCU
- 

### **Fluke P3113-4**

Fluke Calibration P3113-4 Hydraulic Deadweight Testers  
1,000 to 35,000 kPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3113-5**

Fluke Calibration P3113-5 Hydraulic Deadweight Testers  
1 to 35 MPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3114-1**

Fluke Calibration P3114-1 Hydraulic Deadweight Testers  
20 to 700 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3114-2**

Fluke Calibration P3114-2 Hydraulic Deadweight Testers  
20 to 700 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3114-3**

Fluke Calibration P3114-3 Hydraulic Deadweight Testers  
200 to 10,000 psi

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3114-4**

Fluke Calibration P3114-4 Hydraulic Deadweight Testers  
2,000 to 70,000 kPa

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Includes:

- Hydraulic Deadweight Tester

- Oil operated - single PCU
- 

### **Fluke P3114-5**

Fluke Calibration P3114-5 Hydraulic Deadweight Testers  
2 to 70 MPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3115-1**

Fluke Calibration P3115-1 Hydraulic Deadweight Testers  
20 to 1,100 bar

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3115-2**

Fluke Calibration P3115-2 Hydraulic Deadweight Testers  
20 to 1,100 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3115-3**

Fluke Calibration P3115-3 Hydraulic Deadweight Testers  
200 to 16,000 psi

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3115-4**

Fluke Calibration P3115-4 Hydraulic Deadweight Testers  
2,000 to 110,000 kPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
-

### **Fluke P3115-5**

Fluke Calibration P3115-5 Hydraulic Deadweight Testers  
2 to 110 MPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3116-1**

Fluke Calibration P3116-1 Hydraulic Deadweight Testers  
20 to 1,400 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3116-2**

Fluke Calibration P3116-2 Hydraulic Deadweight Testers  
20 to 1,400 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3116-3**

Fluke Calibration P3116-3 Hydraulic Deadweight Testers  
200 to 20,000 psi

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3116-4**

Fluke Calibration P3116-4 Hydraulic Deadweight Testers  
2,000 to 140,000 kPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3116-5**

Fluke Calibration P3116-5 Hydraulic Deadweight Testers

2 to 140 MPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - single PCU
- 

### **Fluke P3123-1**

Fluke Calibration P3123-1 Hydraulic Deadweight Testers  
1 to 350 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3123-2**

Fluke Calibration P3123-2 Hydraulic Deadweight Testers  
1 to 350 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3123-3**

Fluke Calibration P3123-3 Hydraulic Deadweight Testers  
10 to 5,000 psi

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3123-4**

Fluke Calibration P3123-4 Hydraulic Deadweight Testers  
100 to 35,000 kPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3123-5**

Fluke Calibration P3123-5 Hydraulic Deadweight Testers  
0.1 to 35 MPa

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3124-1**

Fluke Calibration P3124-1 Hydraulic Deadweight Testers  
1 to 700 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3124-2**

Fluke Calibration P3124-2 Hydraulic Deadweight Testers  
1 to 700 kgf/cm<sup>2</sup>

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3124-3**

Fluke Calibration P3124-3 Hydraulic Deadweight Testers  
10 to 10,000 psi

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3124-4**

Fluke Calibration P3124-4 Hydraulic Deadweight Testers  
100 to 70,000 kPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3124-5**

Fluke Calibration P3124-5 Hydraulic Deadweight Testers  
0.1 to 70 MPa

---

Includes:

- Hydraulic Deadweight Tester

- Oil operated - dual PCU
- 

### **Fluke P3125-1**

Fluke Calibration P3125-1 Hydraulic Deadweight Testers  
1 to 1,100 bar

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Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3125-2**

Fluke Calibration P3125-2 Hydraulic Deadweight Testers  
1 to 1,100 kgf/cm<sup>2</sup>

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3125-3**

Fluke Calibration P3125-3 Hydraulic Deadweight Testers  
10 to 16,000 psi

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3125-4**

Fluke Calibration P3125-4 Hydraulic Deadweight Testers  
100 to 110,000 kPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
- 

### **Fluke P3125-5**

Fluke Calibration P3125-5 Hydraulic Deadweight Testers  
0.1 to 110 MPa

---

Includes:

- Hydraulic Deadweight Tester
  - Oil operated - dual PCU
-

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