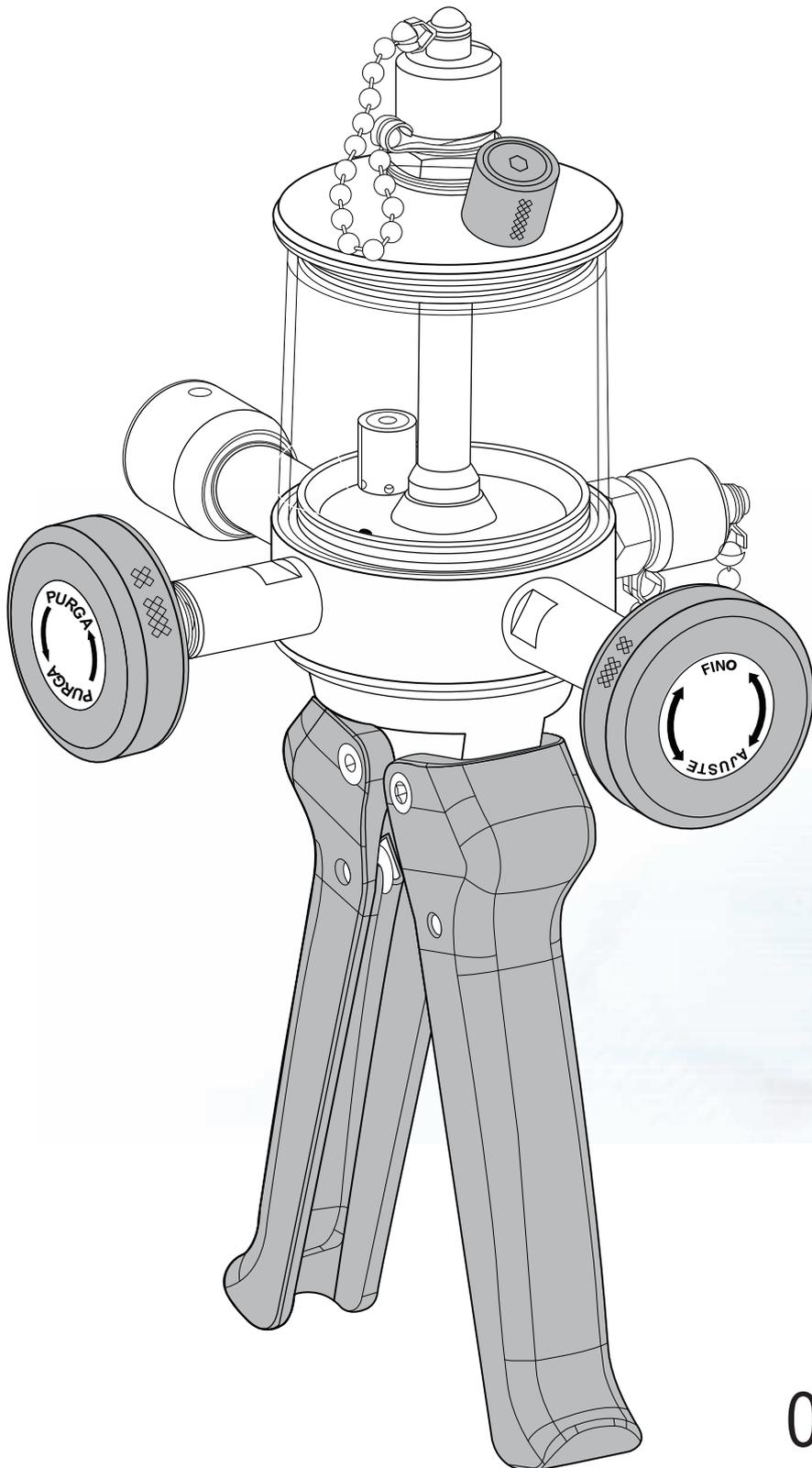


# PRESYS®



## Hydraulic Calibration Hand Pump

Model **BY-8112-5000**

## Operating Instructions

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**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**Specifications**

**Fine Tuning Resolution** 0.1 psi / 0.7 mbar / 70 Pa

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**Maximun Pressure** 5.000 PSI / 345 bar / 35 MPa

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**Materials** Anodised aluminium, brass, stainless steel and polysulfone

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**Sealing Materials** Buna-N, Teflon

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**Fluid compatibility** Alcohol, antifreeze, hydraulic oil and water (remove after use).

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**Weight** 1.47 kg

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**Dimensions** W: 16 cm  
H: 27 cm  
D: 15 cm

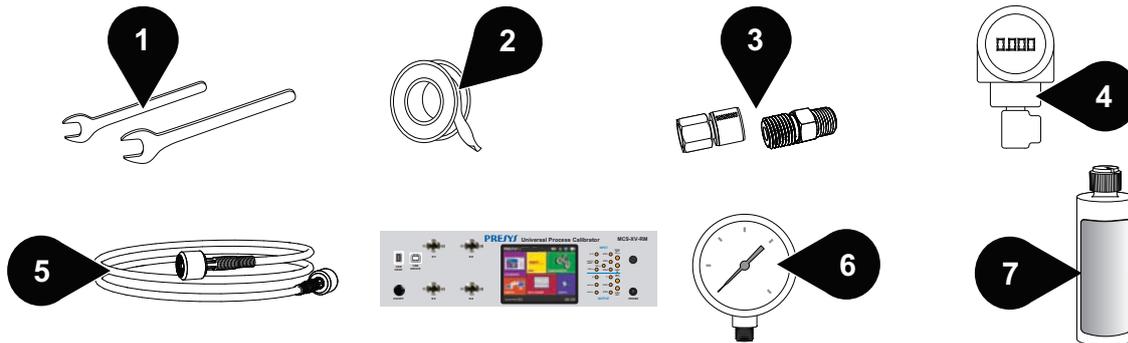
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## HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000

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### Requirements



#### What is required to use the manual hydraulic pump:

- 1.Tools
- 2.Thread tape
- 3.Pump BY - 8112 - 5000 – quick test adapter (included)
- 4.Test device
- 5.Pump BY 8112 - 5000 – quick test hoses (included)
- 6.Pressure reference
- 7.Bottler filled with recommended fluid

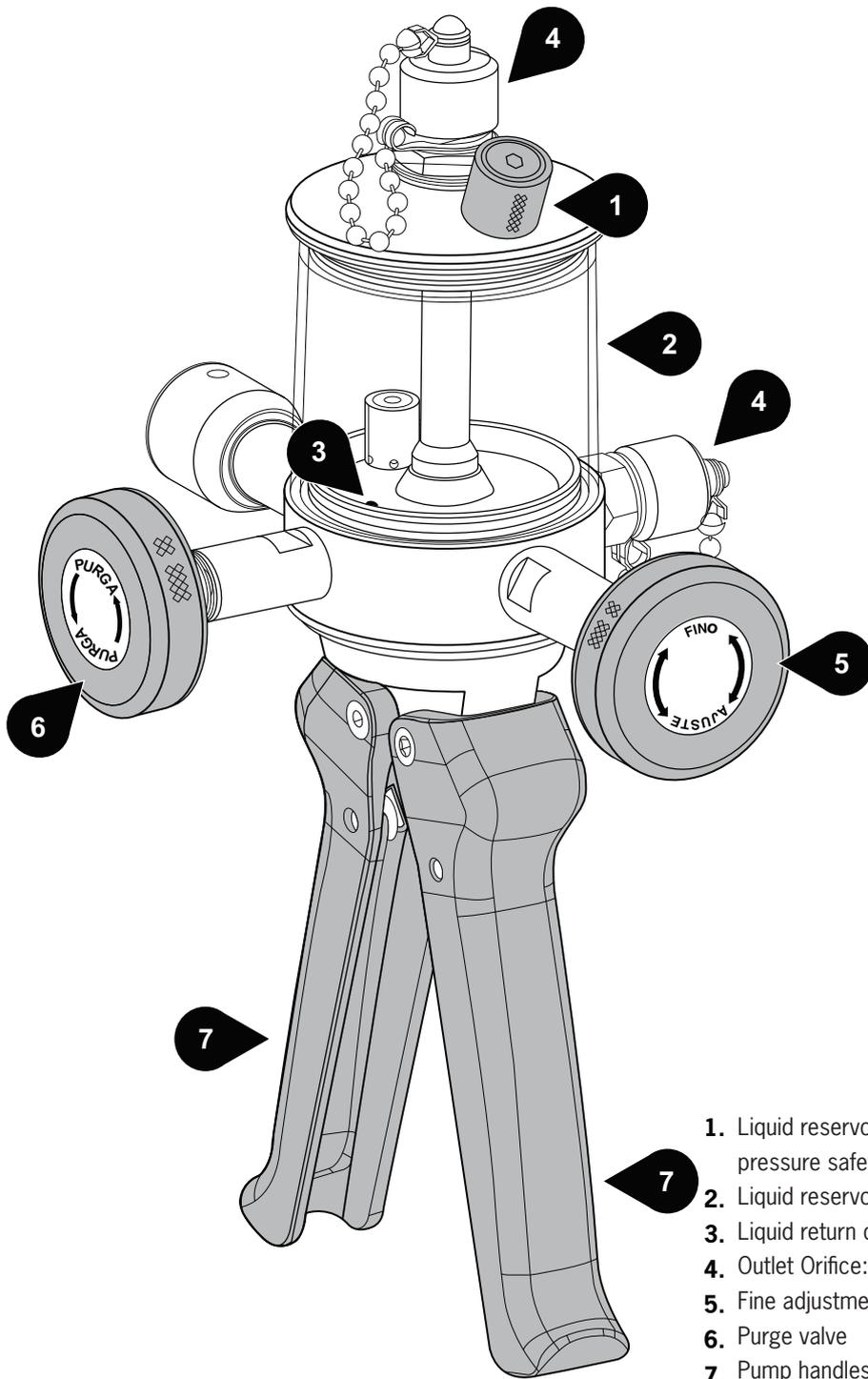
### Important Safety Warnings

- ⚠ ATTENTION:** Don't exceed the maximum operating pressure for this product or damage may result.
- ⚠ AWARNING:** Don't open the vent valve if there is process pressure in the pump, as the liquid reservoir.
- ⚠ WARNING:** The device under test must be isolated from the process, vented and the vent valve closed before use.
- ⚠ WARNING:** Don't attempt to operate this pump until you have read and fully understood the product's instructions and hazards.

- Any modifications to the product with custom parts may result in dangerous operation of the hand pump.
- Wear eye protection while using this product. Liquid, leaking parts or hoses can be ejected at high velocity and cause injury.

**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

**Manual Hydraulic pump overview**



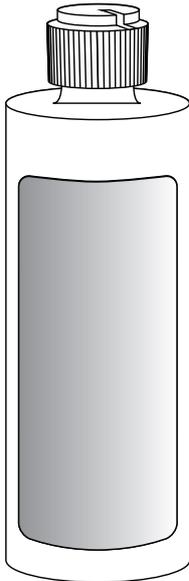
- 1. Liquid reservoir vent plug with integral pressure safety valve.
- 2. Liquid reservoir
- 3. Liquid return orifice
- 4. Outlet Orifice: Pump BY - 8112 - 5000 - Quick Test Male
- 5. Fine adjustment piston
- 6. Purge valve
- 7. Pump handles

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**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**Installation**



**Fill the bottle with one of the recommended liquids:**

- Calibration oil
- Hydraulic oil
- Light motor oil
- Transmission fluid

**Acceptable fluids (Drain and flush the pump when not in use):**

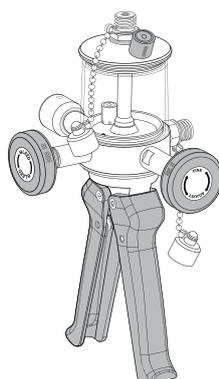
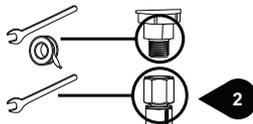
- Water
- Antifreeze
- Alcohol

**Reference Pressure Gauge Connection**

Reference manometer Male NPT



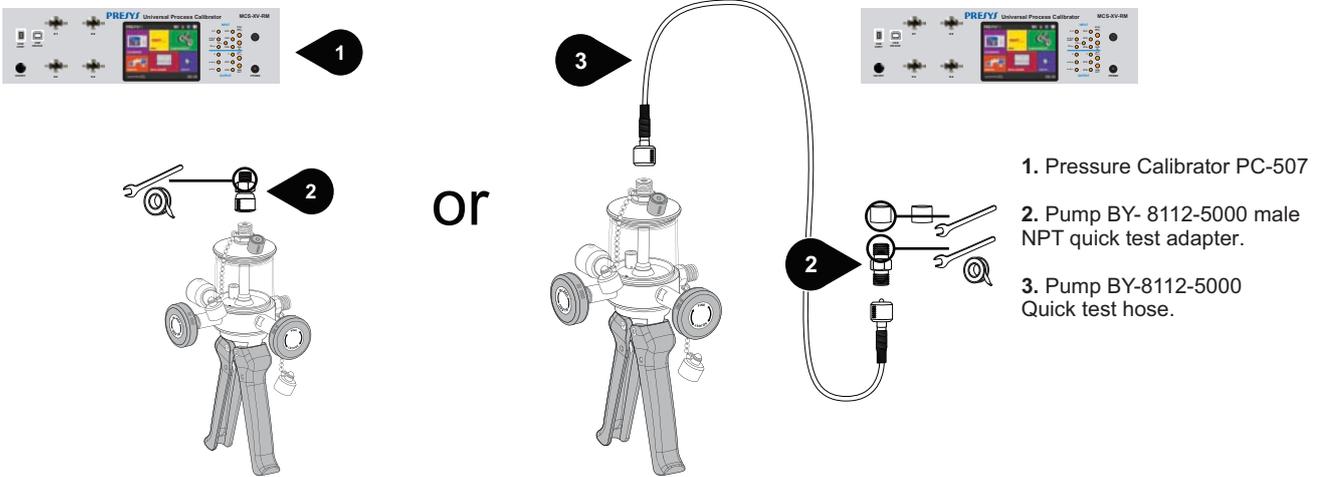
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1. Universal Process Calibrator MCS-XV-RM
2. Pump BY - 8112 - 5000 — female quick test adapter

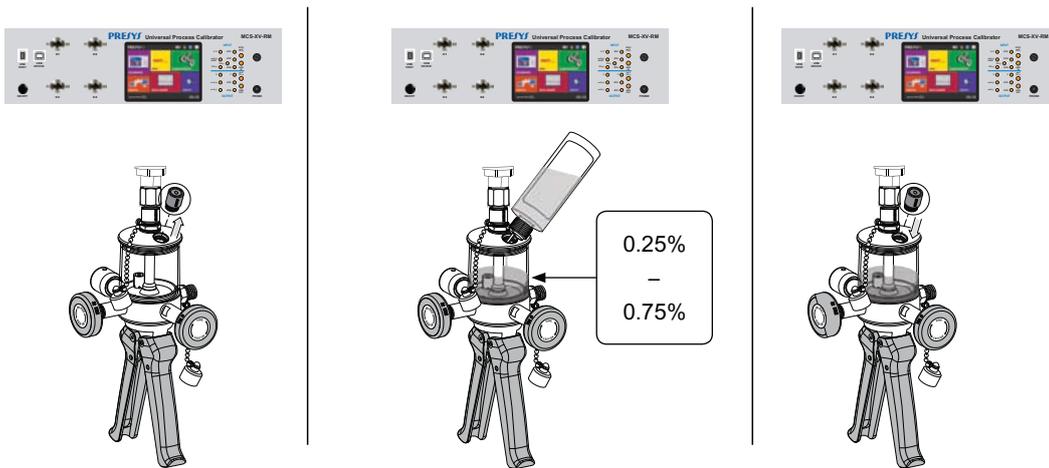
**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

**NPT Female Pressure Reference Manometer**

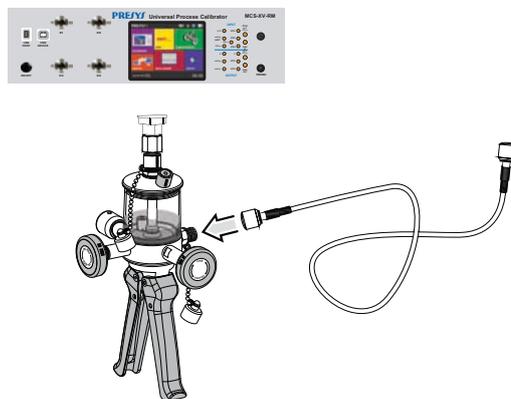


**Device Under Test (DUT) Connection**

**1**



**2**

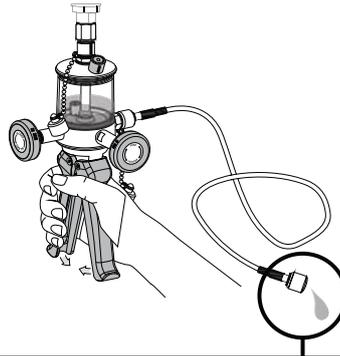
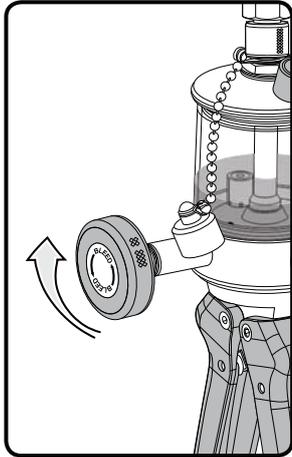


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**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**3**

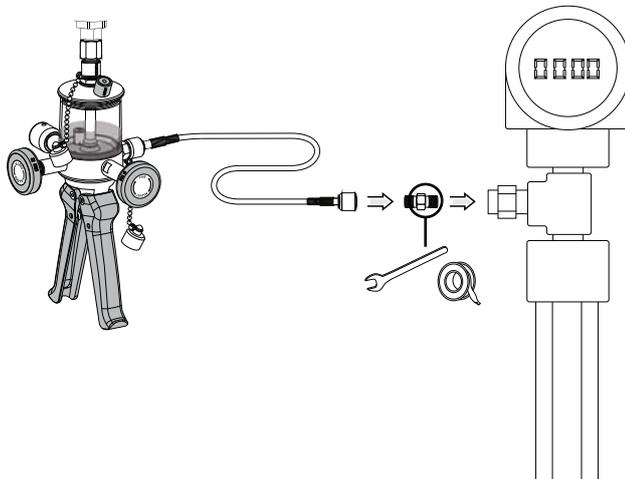


**Pump the hand pump until liquid flows out of the end of the pressure hose.**

**4**

Isolate the device under test (DUT) from the process and ventilate it before connecting to it.

**5**

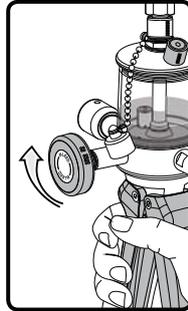
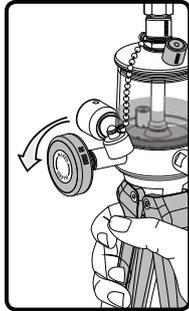


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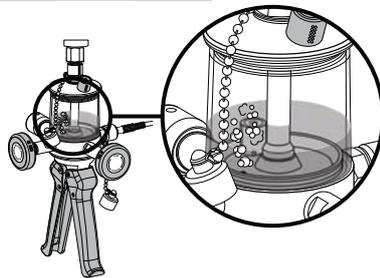
**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**6**



Repeat step 6 while connected to the device under test until no bubbles escape from the liquid return orifice.



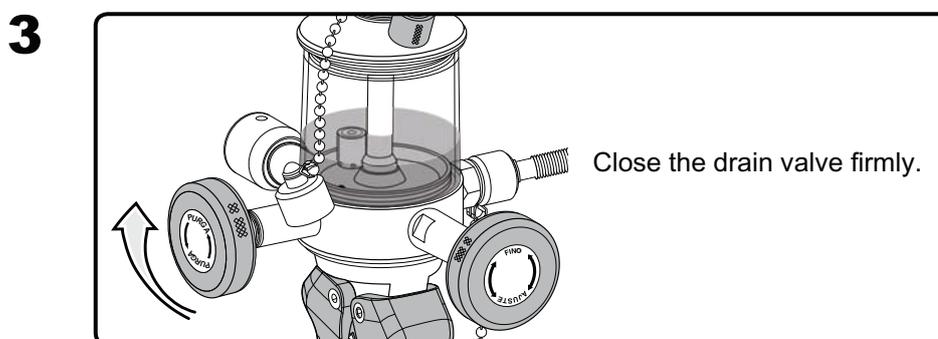
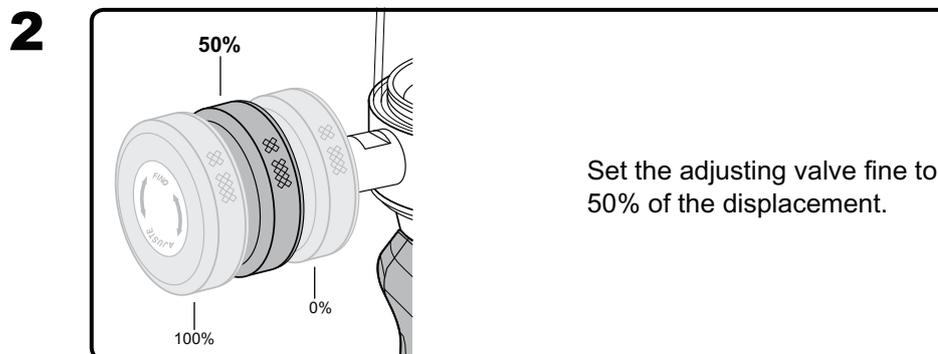
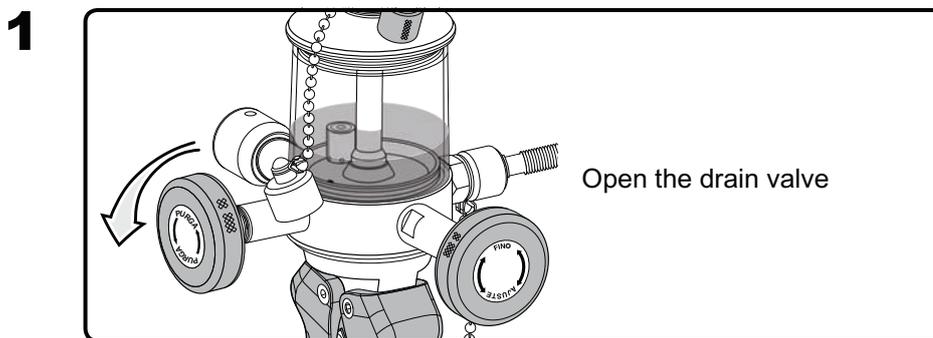
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**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**Calibration**

**Preparing the pump for calibration**

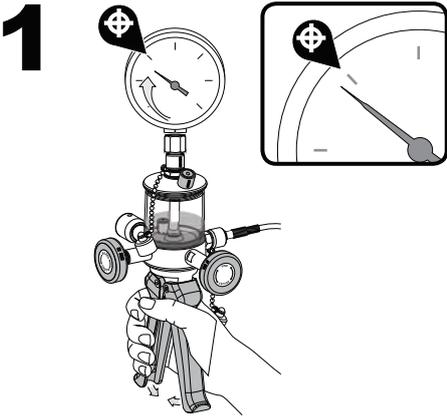
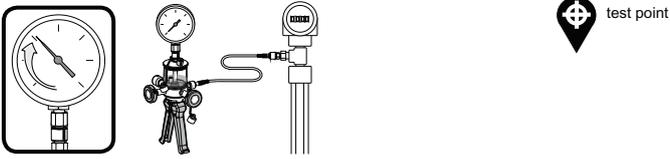


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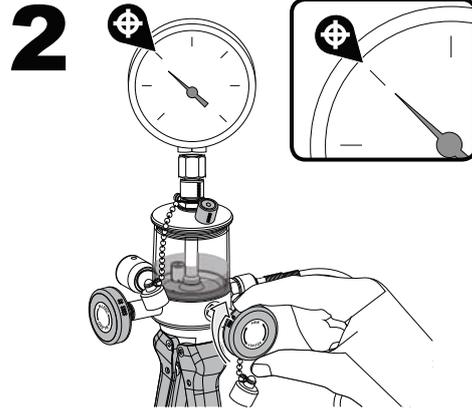
**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**Increasing the pressure**



Pump to just below the test point. Let the pressure eading stabilise. This may take a few minutes.

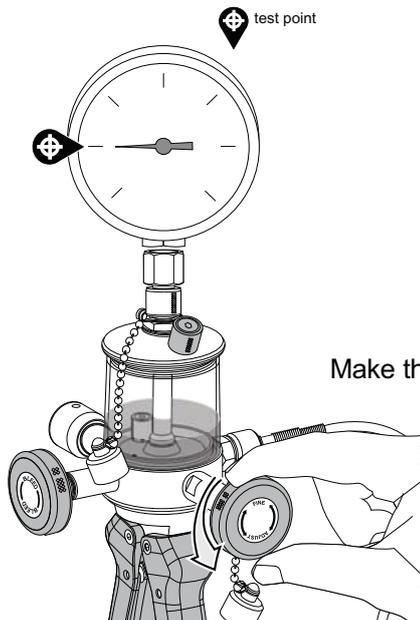
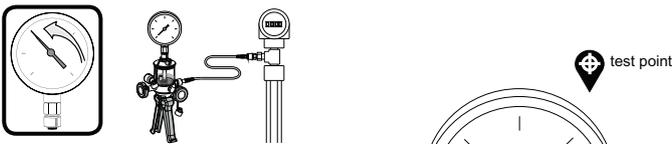


Adjustment to the exact point.

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 Repeat steps 1 to 2 for each test point above the scale

**Reducing pressure**



Make the fine adjustment to the exact test point.

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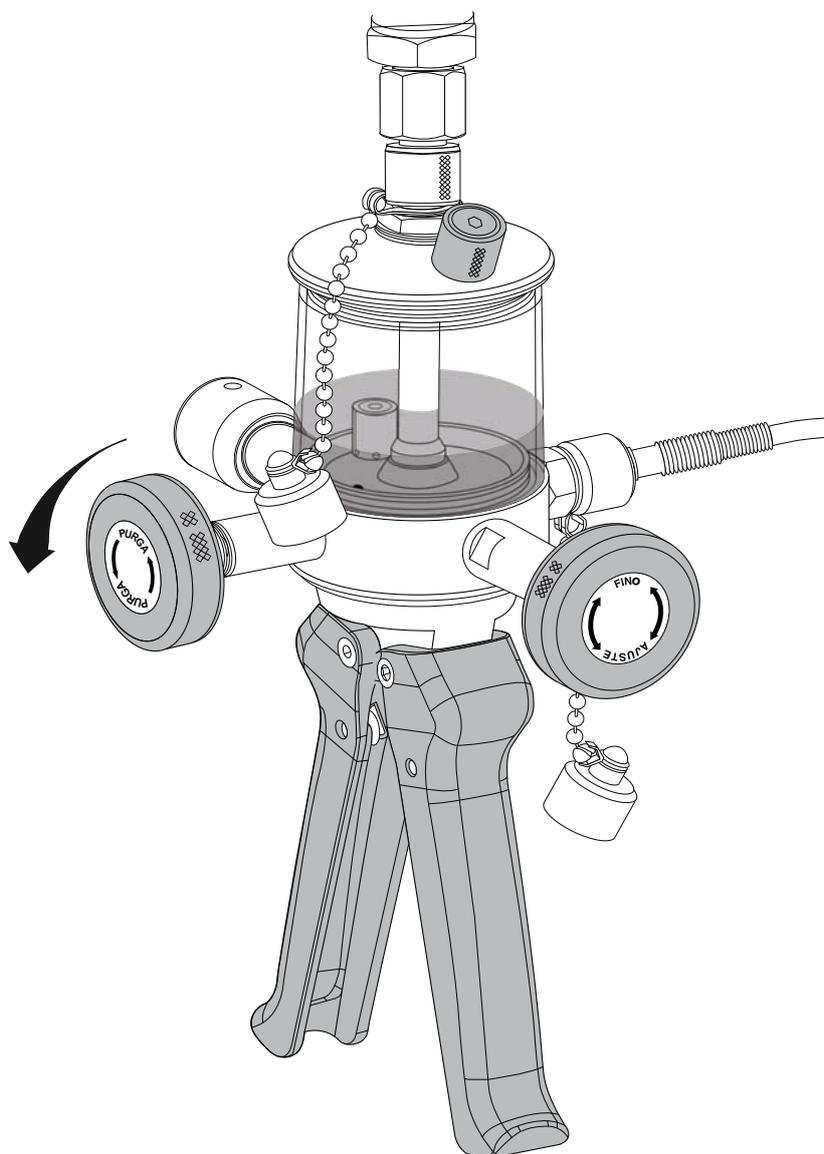
 Repeat each test point through the scale

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**HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000**

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**Ventilation System**

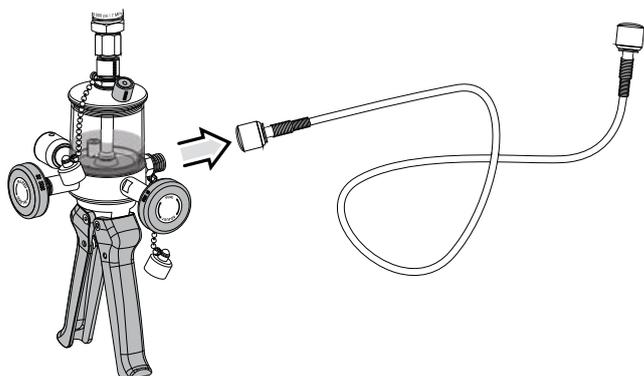


**When you have finished the test, open the bleed valve and vent the remaining pressure from the system**

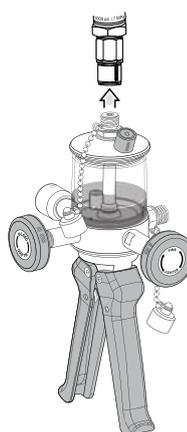
## HYDRAULIC CALIBRATION HAND PUMP - BY-8112-5000

### Storage and Transport

**1**



**2**



**3**



If you are using water, alcohol, ethylene glycol or other non-lubricating liquid in the pump, drain this liquid and fill the pump at least to the check valves with a light weight oil before long term storage.

Hand pump carrying bag, code BGY-800 (06.01.0015.00).  
Sold separately.

### Maintenance

#### Maintenance interval

Every 300 uses or 3 months

#### Maintenance Procedure

- Clean and lubricate the inlet and discharge check valves with a light weight oil.
- Lubricate the pump accessories by splashing 2 ml of oil into the connection.
- Lubricate the threads on the adjustment piston fino with grease based grease such as Dow Corning® G-n metal mounting paste (or equivalent).

# Problem Solving

## **The pump won't generate pressure.**

If the pump doesn't generate pressure, prime the pump. Follow instructions on page 7 to 9.

## **The pump doesn't prime.**

If the pump doesn't prime, follow the instructions below:

1. Remove the inlet check valve plug (BY Pump - 8112 - 5000 psi).
2. Inspect the inlet check valve O-ring and check for debris or damage. Clean/replace/lubricate as necessary.
3. Pour some fluid into the inlet port from which the plug or primer was removed.
4. Reassemble.

## **Pressure drops by up to 10% after pumping.**

If the pressure drops by up to 10% after being pumped, follow the instructions below:

1. Wait 3 to 5 minutes for the pressure to stabilize. The liquid heats up as it is compressed and slowly cools down. As the liquid cools, the pressure drops until the liquid reaches room temperature.
2. Take a pressure reading.
3. If waiting for the pressure to stabilize doesn't solve the problem, close the bleed valve with a tighter squeeze.
4. If leakage continues, check the final adjustment piston, outlet hose adapter, outlet check valve plug or bleed valve for signs of leakage.

- a. Remove the leaking part.
- b. Clean, lubricate and replace the leaking O-ring seal.

## **The pressure rises when the cuff is squeezed and the pressure falls when the cuff is released.**

If the pressure rises when the cuff is squeezed and falls when it is released, follow the instructions below:

1. Tighten the bleed valve further when closing it..
2. If tightening the bleed valve doesn't solve the problem, remove the reservoir.
3. Remove the orifice check valve and outlet valve from the meter..
4. Clean, lubricate and replace the O-rings.
5. Reassemble.

## **The process connection leaks.**

If the process connection is leaking, it may be that too much fita has been used for the thread.

1. Disconnect the device under test.
2. Remove the tape for thread.
3. Use only 2 to 3 turns of tape for the thread.
4. Reconnect the device under test.

**If the problem is not resolved by these troubleshooting instructions, then contact support.**

