LPC 7000

PRESSURE COMPARISON TEST PUMPS

MANUAL

INSTRUMENTS leyro

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1. BEFORE YOU START

Leyro's Pressure comparison test pumps Model LPG 7000 are used for checking pressure measuring instruments against master test gauges, indicators or transducers. It is designed for testing pressure measuring instruments against master test instruments. The cost effective instruments provide precise control for calibration requirements.

1.1 Symbology

This symbol indicates safety instructions.
These safety instructions must be followed carefully. Failure to heed these instructions for personal injury or property damage that could happen.
Therefore Leyro ® is not responsible for.

This symbol indicates a note.These notes should be observed to achieve the optimal performance of the equipment.

1.2 Safety instructions

Read this manual carefully before using the instrument
Please follow the instructions and procedures described in this manual. They are designed to allow you to get the most out of your calibrator and avoid any personal injuries and /or damage to the instrument.

(i) Do not leave the unit in open condition when not in use. Dust may get accumulated in the Unit.
(ii) Use correct matching adapters in the test ports.

1.3 Description

Features:
- Portable / Bench-top.
- Easy to use
- Compact
- Light weight

Certification
Leyro certifies that the instrument is a quality product and meets its intended use and satisfies the published specifications at the time of shipment.

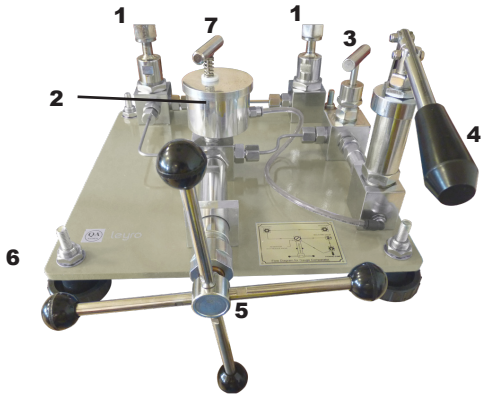
Technical Assistance

Please contact the manufacturer if you require technical assistance.

Warranty

12 months warranty
This warranty only cover manufacturing defects and becomes invalid if the instrument has been subjected to unauthorized intervention and / or use.

1. Test ports
2. Reservoir tank
3. Isolating valve
4. Priming pump
5. RAM
6. Leveling Adjustment legs
7. Reservoir needle valve



2. QUICK START

2.1 Unpacking

Unpack the instrument carefully and inspect it for any damage that may have occurred during dispatch. If there is transit damage, notify LEYRO immediately. Check the parts against the list given below. If any of the parts are missing or damaged, please contact us.

Verify that the following components are present

Standard:

- Basic Instrument
- Medium - Oil
- Set of seals
- Instruction manual
- Conformance certificate

Optionals:

- Analog/Digital Master gauges.
- Set of Adaptors.(BSP/NPT)
- Right Angled & Two gauge Adapters
- Water Operated Model

2.2 Filling the reservoir tank

- Unscrew and remove the reservoir needle valve screw and spring.
- Remove the reservoir cover and fill the reservoir with fluid upto to the full level of the tank.
- Close the cover and fix the needle valve screw & spring.

3. TECHNICAL SPECIFICATIONS

Range	up to 250 / 350/ 700 / 1000 bar
Pump	Screw pump.
Medium	Oil/water
Gauge fitting	½" BSP (F) Swivel
Weight	14 Kg.
Dimension	350 × 350 × 230mm (L×D×H)

4. OPERATING PROCEDURE

1. Open the reservoir needle valve (7) and isolating valve (3) of the the pressure comparator. At this position turn the RAM (5) hand wheel counter-clockwise until the RAM hand wheel till end of the thread.

2. Connect the gauge to be tested into one of the test port (1) using the appropriate gauge adaptor. Tighten the adapter onto the gauge using thread sealant (like nylon washer, bonded seal or Teflon tape)

3. Connect the Master test gauge using the appropriate gauge adaptor into the other port using thread sealant (like nylon washer, bonded seal or Teflon tape).

4. Each time you connect a new gauge, air bubbles may be introduced into the comparator and cause problems with calibration. Check the reservoir is full, the reservoir needle valve is in open position, then turn the RAM hand wheel counter-clockwise until it stops at the full out position. If air bubble is present in the system, the test fluid level in the reservoir will drop as it flows into the comparator. By moving the Ram handle wheel clockwise you can see the air coming out the fluid in the reservoir. If necessary repeat this step until all trapped air has been removed. Ensure that reservoir does not empty.

5. Now operate the priming pump (4), if air bubble is present in the system, the test fluid level in the reservoir will drop as it flows into the comparator. If necessary repeat this step until all trapped air has been removed. Ensure the reservoir does not empty.

6. Calibration: Close the reservoir needle valve and apply the minimum pressure through the priming pump (maximum upto 30 bar) then close the isolating valve of the priming pump. For above 30 bar wind the Ram handle clockwise on the comparator so that the needle of the gauge being tested on the first major graduation mark (or first calibration point).Hold the pressure for 15 – 20 minutes, then compare the pressure on the gauge to be tested to the pressure displayed on the master gauge.

7. Normally, pressure will drop at first, as each ascending pressure point is reached. This is due to the residual, trapped air, first heated by compression, then cooled, so that the compressed air is at the same temperature as the ambient environment. An equal and opposite effect happens when reducing pressure – the pressure will rise as each new lower pressure is achieved. Waiting for these thermal effects to stabilize can add a lot of time to the calibration.

8. After the calibration release the RAM fully out and then open the isolating valve of the priming pump and also open the needle valve of the reservoir, now remove the calibrators under test.

If you cannot generate the desired pressure it is because one of two reasons: Either the system has too much air in it, or the volume being pressurized is too large. Repeat step 4 & 5 to remove the airlock from the system and start again.

5. TROUBLE SHOOTING

PROBLEM	SOLUTION
Unable to do priming	a. Ensure that the reservoir needle valve is closed. b. Ensure that there is sufficient fluid in the reservoir. c. Ensure that the isolating valve is open.
Pressure not developing	a. Ensure for the correct position of reservoir needle valve and the isolating valve during priming. b. Ensure that the instrument under test is not leaking. c. Ensure that the fluid not leak by applying pressure. Wherever fluid appears, replace the seal. Check sealing faces are clean and undamaged before re-assembly. If the fluid appears near the RAM, replace the o-ring present in the RAM spindle by following the below instructions. (i) Unscrew the collar nut and take out the RAM spindle. (ii) Check the o-ring present in the quill which is in the end of the RAM spindle. (iii) If the o-ring is damaged, replace with the new one. (iv) Re-assemble the parts in the reversed order.
Maximum pressure is not attained even though the RAM screw is turned fully in.	Airlock may occur in the priming pump. Release the air lock by following the below instructions. Ensure correct level of oil in the reservoir. (i) Remove the priming pump along with the pulling rod assembly by loosening the lock nut and stud nut which in turn consists of o-rings (2nos) and Teflon bush. (ii) Pour the fluid in the vertical sleeve of the priming pump. (iii) Re-assemble the parts in the reversed order. (iv) Perform the priming operation.

6. MAINTENANCE

1. Comparator is made of low maintenance parts, most of the maintenance requirement will be caused by contamination due to external sources. Routine maintenance entails that the equipment is kept free from dirt and dust.

2. Change the oil if it becomes discolored.

NOTES

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