

INSTRUCTION MANUAL

FOR

PNEUMATIC HAND PUMP

Model - AI-2200



Manufactured And Supplied By

Ace Instruments

Plot No: 5-5-35/205A, Shaktipuram Prashanthi Nagar,
Industrial Estate, beside Manikanta Weigh Bridge,
Mythri Nagar, Kukatpally, Hyderabad, Telangana 500072

Safety Information

DPI-2200 Pneumatic Hand Pump is capable of generating pressure upto 30 BAR. It is designed with function, reliability, and safety in mind. It is the user's responsibility to use it in conformance with safety norms. For safe operation, please pay attention to the alert boxes throughout the manual.

⊗WARNING

To ensure the safety of the users and to avoid damage to this apparatus please ensure the following:

1. DO NOT operate this to generate pressure above 30 BAR..
2. Use this unit only for Testing work
3. Use this unit in environments specified in the manual
4. Life of spares such as O-rings can be shortened by exposure to atmospheric conditions. For storage use air tight container.
5. Never remove the SS fittings fitted in the pump. These are fitted and tested for leakage. Use of Teflon tape on these parts after removal and refixing will damage the threads in the pump and our guarantee will become null and void

To avoid accidents due to sudden release of pressure :

1. Competent, qualified personnel who are trained in using such pressure generating devices alone use this pump..

2. Release the pressure before removing the test and master gauges.
3. Use safety goggles while using the hand pump .

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Introduction

1.1 The Model DPI-2200 is a Pneumatic Hand Pump capable of generating pressure upto 30 BAR and vacuum upto 0.9 BAR and used for the calibration of gauges and switches.

Technical Specifications:

Model	: DPI-2200
Type	: Caliper Type
Range	: -0.9 ~ + 30 BAR
Material	: Delrin
Pressure Ports	: SS 304
O-Rings	: Nitrile rubber
Fittings	: SS 304
Connection thread size	: ½” BSPF
Weight	: 250 gms approx

1.2 GUIDELINES FOR SAFE USE

- Use the Hand Pump only for calibration.
- Clean the gauge inlet thread and the inlet hole for any dirt or any oil before connecting with the pump. These can choke the pump.
- Always wear protection gear while doing the calibration.

2. UnPacking:

Visually check the exterior for any damage to the shipping carton box. Open the carton box and check the receipt of the following along with the pump.

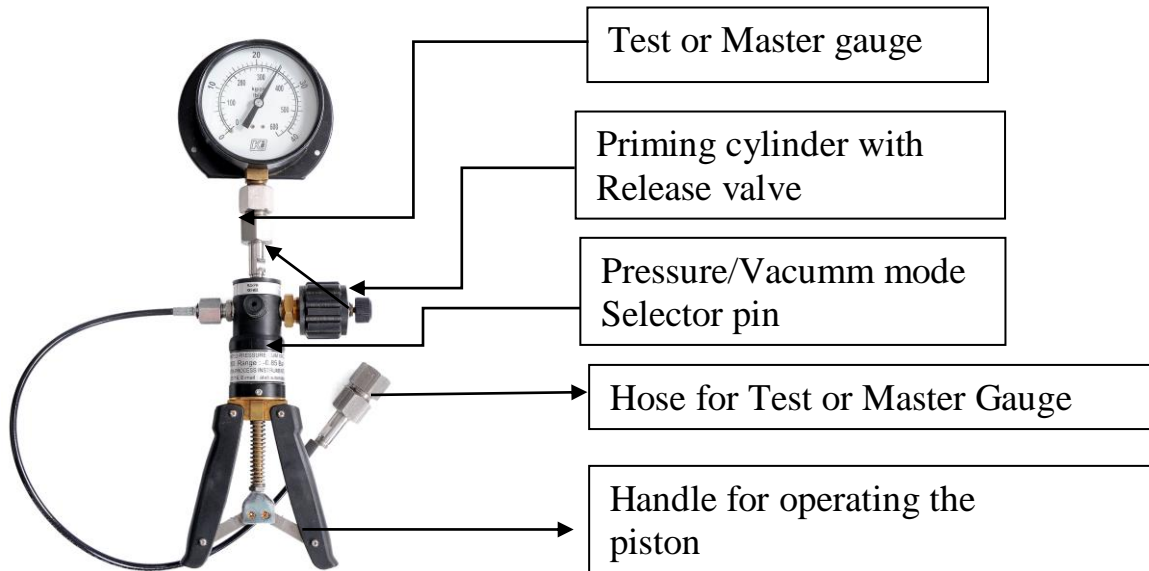
- DPI-2200 Pneumatic Hand Pump
- Spare fittings
- Spare O-rings
- Flexible hose

3. TECHNOLOGY USED IN HAND PUMP:

Principles Of Operation

The principle of operation is similar to a pump we use at home to fill air in the cycle tube. A piston moves back and forth in a cylinder and fills a chamber with air. Two non return valves are fitted inside and both operate in opposite directions, which means at any point of time during operation only one NRV is open. The piston is moved inward and outward movement by operation of the handle. A high tension spring placed over the piston stem ensures the return of the piston to its home position. With each pumping the pressure of the air inside the closed chamber builds up. The user can generate pressure by hand upto 20 BAR and the pressure further increased by the priming cylinder. As both test and master gauges are fitted to the pump , both should show the same value. If the test gauge is showing differently, the gauge is adjusted to show correctly.

Various parts of the hand pump



3.1 CALIBRATION OF PRESSURE /VACUUM GAUGE :

1. Fix the Master Gauge to one of ports. Use of the O-ring ensures hand tight is sufficient.
2. Fix the test gauge at the other port in the same way.
3. Select the mode of calibration. Pressure mode or Vacuum mode by pushing the mode pin. Use a small screw driver for doing this.
4. Tightly close the release valve and place the priming cylinder in the outer most position while using in pressure mode or in the innermost position while using in vacuum mode
5. Generate the pressure/vacuum by operating the handle.
6. When the required value is reached, fine tune the value by using the priming cylinder. Note the value shown by both Test and master gauge.
7. Similarly note the value at another range and if required adjust the test gauge.
8. When the testing is over, release the pressure before removing the gauges.

Preventive Maintenance

Replace O-rings when required. Continuous use of the same O-rings will result in leakage which can not be arrested.

8. Troubleshooting Section:

PROBLEM	CAUSE	REMEDY
Pressure/Vacuum not generated	<ol style="list-style-type: none"> 1. Leakage 2. Piston seal damaged 3. Mode selection wrong 	<ol style="list-style-type: none"> 1. Arrest leakage 2. Replace piston seal 3. Select the mode properly
Of the 2 gauges only one gauge show change in pressure / Vacuum and the other do not show any change	<ol style="list-style-type: none"> 1. Block in the line 	<ol style="list-style-type: none"> 1. Check and clear blockage

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