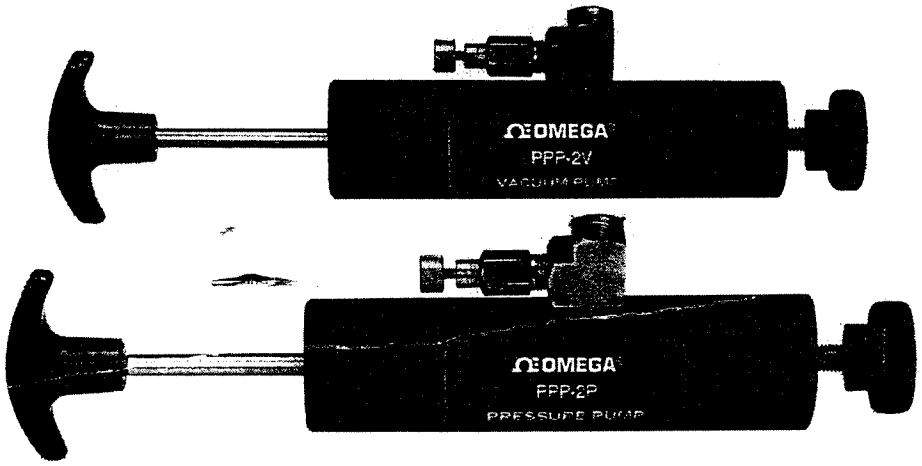
PPP–2P
Precision Pressure Pump

PPP–2V
Precision Vacuum Pump



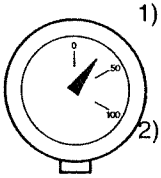
OMEGA®
An OMEGA Technologies Company

Operator's Manual

IMPORTANT: Read all operating instructions and general operating information *before* beginning any test procedures.

OPERARTING INSTRUCTIONS

PRODUCING PRESSURE



1) Connect Model PPP-2's port to the instrument to be calibrated or checked. Use small-diameter tubing as short in length as possible (this will maximize the pressure adjustment range).
2) Set the FINE ADJUST knob (the large black knob on the end of the pump) to the full counterclockwise position.
3) Turn the BLEED VALVE knob (the small metal knob attached to the port) fully counterclockwise to relieve all system pressure and zero any measuring devices.
4) Turn the BLEED VALVE knob fully clockwise to close.
5) Repeatedly move the "T" handle in and out to generate the desired pressure.
6) Use the FINE ADJUST knob to bring up the pressure to the precise level.
7) Use the BLEED VALVE to lower the pressure from he pressure generated. Opening the BLEED VLAVE $^1/_4$ turn will lower the pressure very gradually. Opening it $^1/_2$ turn will release the pressure faster and opening it $^3/_4$ turn will quickly and safely release all the pressure in the system.

WARNING

It is imperative that all system pressure is relieved prior to making any connections or disconnections. Failure to relieve system pressure could result in serious personal injury or equipment damage. Even nominal pressure values can generate extreme force if fitting or tubing failure occurs due to improper installation or usage. Since the Model PPP-2 is capable of generating pressures exceeding 100 psig, it is important that all pressure connections and test procedures be done by qualified service personnel, according to standard engineering practices, to prevent possible personal injury or equipment damage.

GENERAL OPERATING INFORMATION

CONNECTIONS

To install a pressure fitting in the Model PPP-2:
1) Turn the BLEED VALVE counterclockwise to bleed any pressure
2) Use a 5/8" open-end wrench on the input port to prevent it from rotating while tightening the supply fitting with a 5/8" open-end wrench.

LEAK PREVENTION AND DETECTION

In order to obtain maximum pressure indication stability, leaks must be avoided. It is strongly recommended that either Teflon® tape or commercial pipe sealant be used at all tapered fittings and connections. If Teflon® tape is used, care must be taken that the proper amount is applied. Excessive tape may fray and cause plugging of relief valves, orifices, nozzles, etc. Overuse of pipe sealant may cause similar problems.

External equipment should also be checked carefully for leaks. Process connections, flange bolts, and vents must be tightly closed. Defective gaskets, leaking valves, and damaged diaphragms are all potential sources of leaks.

For detection of very small system leaks, the traditional soap bubble method may not be sufficient. Halogen leak detection devices may be required when using highly sensitive pressure calibration equipment.

TEMPERATURE CONSIDERATIONS

Since the pressure change of a contained volume of gas is directly proportional to absolute temperature, temperature control is critical when using the Model PPP-2 with any high-resolution measuring device. Tubing should be kept away from heat sources (i.e., lamps, operating electronic equipment, excessive hand contact, etc.) as well as from heat-dissipating structures (i.e., open windows, air conditioning vents, etc.) to minimize temperature variations that might induce errors.

Air is compressed by the Model PPP-2. This compression causes some heating of the air as it is forced into the system. Consequently, a noticeable decrease in pressure—caused by the cooling of the newly compressed air—may occur immediately after cessation of pumping.

SPECIFICATIONS

OUTPUT RANGE:
Model PPP-2P - Pressure: 145 PSIG/10 BAR
Model PPP-2V - Vacuum: 600 mm/23" Hg

PRESSURE CONNECTIONS:
Single 1/8" NPT Female Fitting

SIZE:
Body Diameter: 1.5"/3.8 cm
Length: 8.5"/21.6 cm (collapsed)
11.5"/29.2 cm (extended)

WEIGHT:
1.5 Lbs./0.68 kg

CONSTRUCTION MATERIALS:
Body and Piston: Acetal
O-Rings: Buna N
Other Wetted Parts: Brass or Nickel Plated Brass

omega.com™

CE OMEGA

OMEGAnet℠ On-Line Service http://www.omega.com	Internet e-mail info@omega.com

Servicing North America:

USA:
ISO 9001 Certified
One Omega Drive, Box 4047
Stamford, CT 06907-0047
Tel: (203) 359-1660 FAX: (203) 359-7700

Canada:
976 Berger
Laval (Quebec) H7L 5A1
Tel: (514) 856-6928 FAX: (514) 856-6886

For immediate technical or application assistance:

USA and Canada: Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA℠
Customer Service: 1-800-622-2378 / 1-800-622-BEST℠
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN℠
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

Mexico: Tel: (95) 800-TC-OMEGA℠ FAX: (95) 203-359-7807

Servicing Europe:

Benelux: Postbus 8034, 1180 LA Amstelveen, The Netherlands
Tel; (31) 20 6418405 FAX: 42 (69) 631114
e-mail: nl@omega.com

Czech Republic: Ostravska 767, 733 01 Karvina
Tel: 42 (69) 6311899 FAX: 42 (69) 631114
e-mail: czech@omega.com

France: 9,Rue Denis Papin, 78190 Trappes
Tel: 33 (1) 30.62.14.00 FAX: 33 (1) 30.69.91.20
Toll Free in France: 05-4-OMEGA
e-mail: france@omega.com

Germany/Austria: Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
Tel: 49 (07056) 3017 FAX: 49 (07056) 8540
Toll Free in Germany: 0130 11 21 66

United Kingdom: 25 Swannington Road, Broughton Astley, Leicestershire,
ISO 9002 Certified LE9 6TU, England
Tel: 44 (1455) 285520 FAX: 44 (1455) 283912
Toll Free in England: 0800-488-488
e-mail: uk@omega.com

It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct but OMEGA ENGINEERING, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, paitent connected applications

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to @OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight,insurence and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the cost of repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

Where Do I find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

TEMPERATURE

- ✔ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ✔ Wire: Thermocouple, RTD & Thermistor
- ✔ Calibrators & Ice Point References
- ✔ Recorders, Controllers & Process Monitors
- ✔ Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- ✔ Transducers & Strain Gauges
- ✔ Load cells & Pressure Gauges
- ✔ Displacement Transducers
- ✔ Instrumentation & Accessories

FLOW/LEVEL

- ✔ Rotameters, Gas Mass Flowmeters & Flow Computers
- ✔ Air Velocity Indicators
- ✔ Turbine/Paddlewheel Systems
- ✔ Totalizers & Batch Controllers

pH/CONDUCTIVITY

- ✔ pH Electrodes, Testers & Accessories
- ✔ Benchtop/Laboratory Meters
- ✔ Controllers, Calibrators, Simulators & Pumps
- ✔ Industrial pH & Conductivity Equipment

DATA ACQUISITION

- ✔ Data Acquisition & Engineering Software
- ✔ Communications-Based Acquisition Systems
- ✔ Plug-in Cards for Apple, IBM & Compatibles
- ✔ Datalogging Systems
- ✔ Recorders, Printers & Plotters

HEATERS

- ✔ Heating Cable
- ✔ Cartridge & Strip Heaters
- ✔ Immersion & Band Heaters
- ✔ Flexible Heaters
- ✔ Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- ✔ Metering & Control Instrumentation
- ✔ Refractometers
- ✔ Pumps & Tubing
- ✔ Air, Soil & Water Monitors
- ✔ Industrial Water & Wastewater Treatment
- ✔ pH, Conductivity & Dissolved Oxygen Instruments