

# ENERPAC<sup>®</sup>

A UNIT OF APPLIED POWER INC. 

## Instruction Sheet

### V - 42 / V - 44 PILOT-OPERATED CHECK VALVE

L-1730 3/92

**IMPORTANT RECEIVING INSTRUCTIONS:** Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

# SAFETY FIRST

Carefully plan your system by selecting components designed to perform the intended operation and which will adequately perform with existing equipment. Always check the product limitations regarding pressure ranges, load capacities and set-up requirements. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Read all CAUTIONS, WARNINGS, and INSTRUCTIONS included with, or attached to, each product. Follow all safety precautions to avoid personal injury or property damage during the system operation. ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE OR INCORRECT PRODUCT AND SYSTEM APPLICATION.

Contact ENERPAC when in doubt as to safety precautions, or applications.

Pilot-operated check valves are used with cylinders for temporary load holding.



***Cribbing and blocking should be used for extended periods of load holding. Without cribbing or blocking, no one should attempt to go under load.***

## Installation (see diagrams, page 2)

Install "tee" between retract port of cylinder and cylinder half coupler. Install p.o. check as close to cylinder as possible to eliminate potential leak points. Cylinder, pump and pilot port identification marks are stamped into valve bodies. Install p.o. check valve between advance port on cylinder and cylinder half coupler. Install tubing between "tee" in retract port and pilot port on p.o. check valve. One-quarter inch O.D. steel tubing, with minimum wall thickness of .049" should be used. Tubing should be rated at a minimum 20,000 psi burst pressure.

## Operation

When flow is directed to the advance side of cylinder, oil will flow through p.o. check valve and raise cylinder plunger.

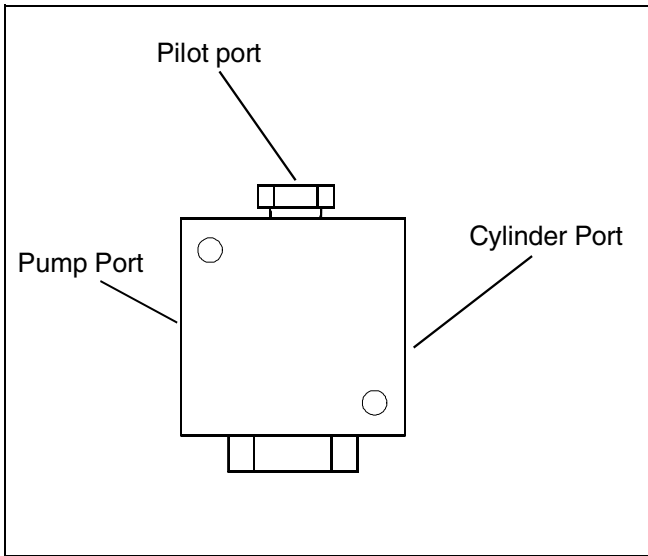
When flow is directed to the retract side of the cylinder, pilot pressure is supplied to the check valve. This causes the ball check to unseat and allows flow from the advance side of the plunger to return to the pump through the advance line. The V42/44 have 6.5:1 ratio system pressure to pilot pressure.

**Example:** With 5,000 psi on the advance side of the cylinder, it will take approximately 800 psi to open the p.o. check and allow the cylinder to retract.

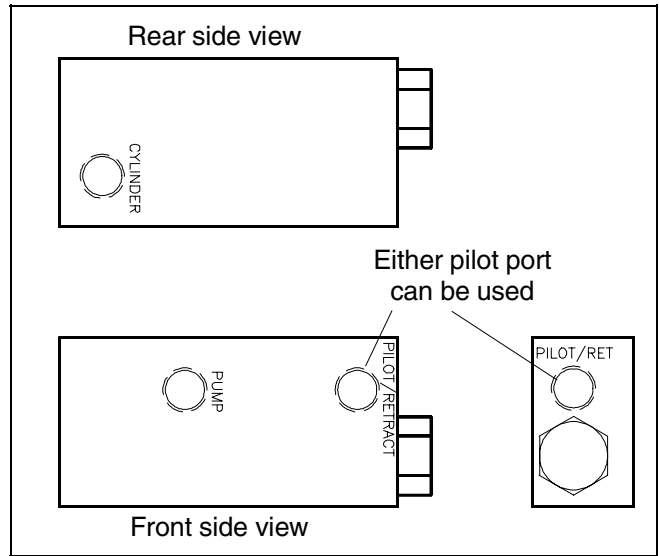
**Note:** On systems with slow cylinder speeds due to pump flow rates, cylinders may not retract smoothly. This is caused by the low flow of the pump not maintaining pilot pressure. In this case a 'meter-out' valve will resolve the problem. A valve, such as a V-66, installed in the advance line and partially closed would restrict flow out of the advance side of the cylinder, and allow pilot pressure to be maintained.



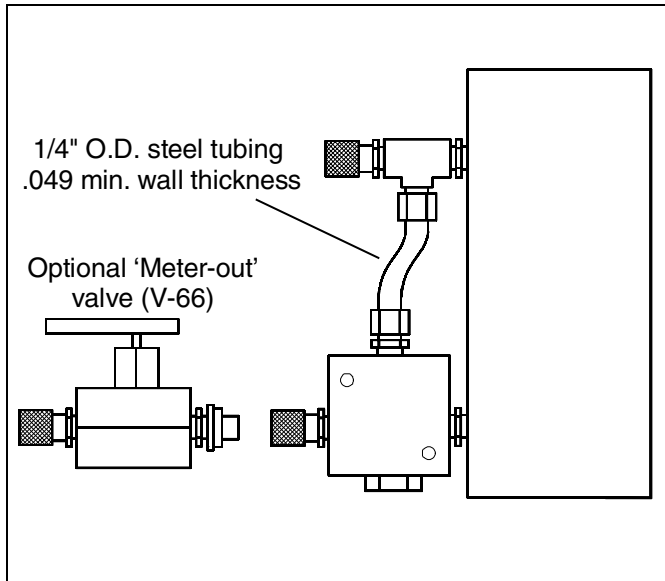
***Cylinder must be on a firm foundation to prevent the p.o. check valve from being damaged.***



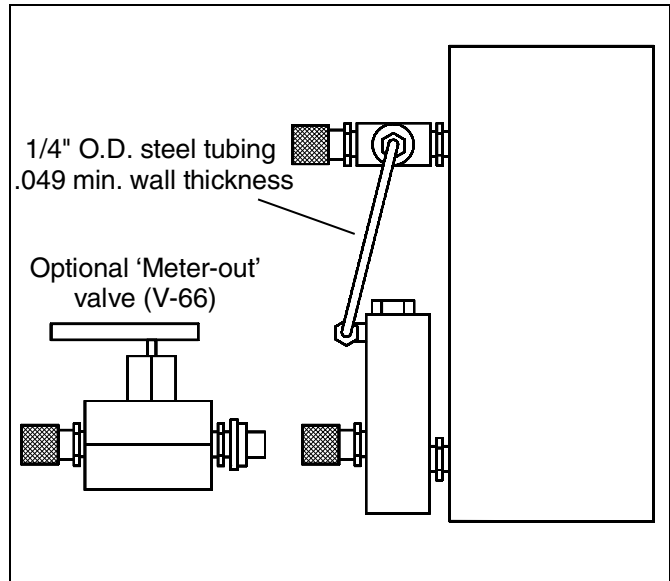
V-42 - Port Identification



V-44 - Port Identification



Typical V-42 Installation



Typical V-44 Installation

**REPAIR AND SERVICE INFORMATION:** For repair service and parts contact your nearest Authorized Enerpac Technical Service Center. The Authorized Enerpac Technical Service Center will provide complete and prompt service on all Enerpac products. For the location of an Enerpac Service Center, call **Toll Free 1-800-558-0530. (In Canada CALL 1-800-426-4129)**

**WARRANTY INFORMATION:** All warranty repairs must be performed by an Authorized Enerpac Technical Service Center. All Enerpac tools are guaranteed from date of delivery to user against defects in workmanship and materials. Free repair or replacement will be made on all items not standing up to this guarantee. Following manufacturers trade custom, however, chains cannot be guaranteed. Warranty does not cover ordinary wear and tear, abuse or misuse, overloading, altered products or use of improper fluids. For prompt handling, send items requiring repairs prepaid, to your nearest Authorized Enerpac Technical Service Center.