

EIS 57.111-2 Rev. A 10/00

1.0 IMPORTANT RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

SAFETY FIRST

2.0 SAFETY ISSUES



Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free Enerpac Hydraulic safety course.

Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.



WARNING: Wear proper personal protective gear when operating hydraulic equipment.



WARNING: Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.



DANGER: To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.



WARNING: Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The cylinders are designed for a max. pressure of 350 bar [5,000 psi]. Do not connect a jack or cylinder to a pump with a higher pressure rating.



Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.



WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.



CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.



Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.



IMPORTANT: Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.



CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C [150°F] or higher. Protect hoses and cylinders from weld spatter.



DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



WARNING: Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.



IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized ENERPAC Service Center in your area. To protect your warranty, use only ENERPAC oil.



WARNING: Immediately replace worn or damaged parts by genuine ENERPAC parts. Standard grade parts will break causing personal injury and property damage. ENERPAC parts are designed to fit properly and withstand high loads.

3.0 DESCRIPTION

The MVP-5, WVP-5 and MVPM-5 pressure sequence valves will not provide hydraulic pressure to the cylinder until the pre-determined pressure setting is met. When the valve opens, pressure on the secondary side (going out of the valve) will increase to the pressure coming into the valve. The MVPM-5 can be both pipe connected or manifold mounted.

The start of the secondary operations is controlled by an adjustment screw at the top of the valve. Turning the set screw clockwise will increase the setting. Turning the set screw counter-clockwise will decrease the pressure setting. This pressure setting can be adjusted between 35 bar [500 psi] and 350 bar [5000 psi]. An internal bypass check valve is used to provide reverse free oil flow through the valve. The maximum flow rate is 6 l/min [366 in³/min].

4.0 INSTALLATION

Sequence valves should be mounted either vertically with the spindle pointing upwards, or horizontally. Mount the sequence valve on the secondary branch of the circuit with input flow from the primary line plumbed into the "P" port and the output flow to the branch plumbed to the "A" port. Provisions should be made for reading pressure at both the "P" and "A" ports of the valve.

Set the sequencing pressure by connecting the "A" port of the sequence valve to tank. Use a tee fitting in the branch line to accomplish this. Adjust the spindle until the proper pressure is read from a gauge at the "P" port.



ATTENTION: Do not unscrew the spindle body (see illustration 1) when adjusting the valve. Unscrewing the spindle body will influence the performance of the valve.

Disconnect the tank line from the "A" port branch. Cycle the hydraulic circuit and confirm correct operation.

NOTE: Air may need to be bled from the system.

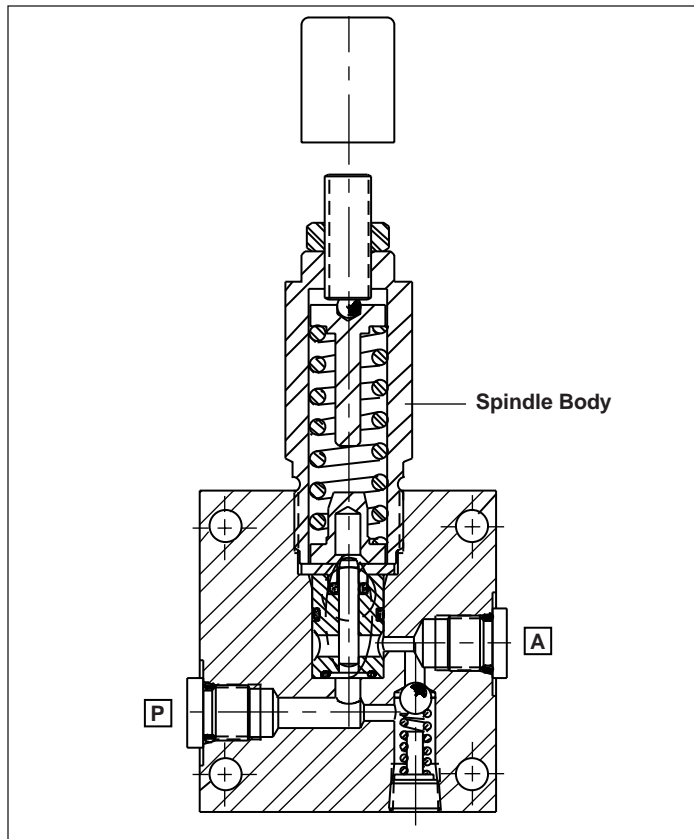


Illustration 1 - MVP-5, WVP-5 and MVPM-5

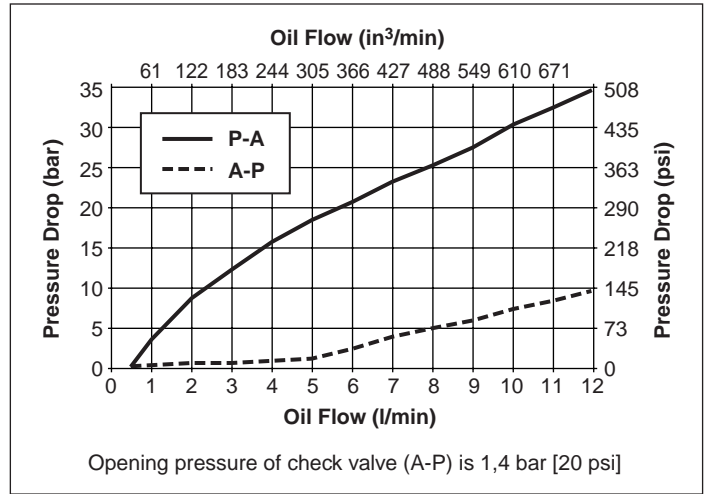


Illustration 2 - Pressure Drop vs Oil Flow

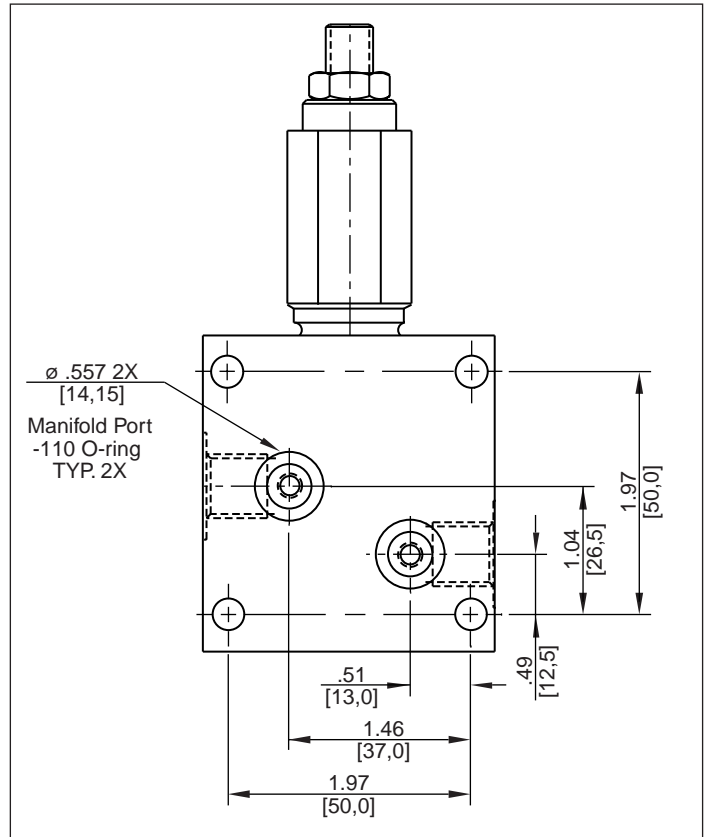


Illustration 3

4.0 TROUBLESHOOTING TABLE

Problem	Possible Causes
Premature valve shifting.	Check that the setting was not inadvertently changed or that the valve is bound with contaminants.
Delayed valve action.	Check that the setting was not inadvertently changed, that the valve is bound with contaminants or that the flow rate has increased.

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