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.

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.

- **Check all Coupler Connections**: Make sure all coupler connections are complete. Loose or incomplete coupler connections will cause complete or partial blockage of oil flow.
- **Check all Hose Connections**: Make sure all hose connections are properly mated and secured.
- **Do Not** use excessive closing torque on valve handle or use any handle extension. This will cause unnecessary wear on valve stem and seat and may damage the spring.
- **Check for Safe System Setups**: Make sure that your valve, connecting hoses, etc. are protected from any external source of damage, such as: excessive heat, flame, moving machine parts, sharp edges, falling objects, corrosive chemicals, dripping, etc.

**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.

**WARNING**: USE ONLY RIGID PIECES TO HOLD LOADS. Carefully select steel or wood blocks that are capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any lifting or pressing application.

**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 700 bar [10,000 psi]. Do not connect a jack or cylinder to a pump with a higher pressure rating.

**WARNING**: 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.

**WARNING**: BE SURE SETUP IS STABLE BEFORE LIFTING LOAD. Cylinders should be placed on a flat surface that can support the load. Where applicable, use a cylinder base for added stability. Do not weld or otherwise modify the cylinder to attach a base or other support.

**Avoid** situations where loads are not directly centered on the cylinder plunger. Off-center loads produce considerable strain on cylinders and plungers. In addition, the load may slip or fall, causing potentially dangerous results.
**SEQIENCING VALVE, V-161**

**a. Connect valve as shown, plumbing “cyl.” port to sequenced cylinder.**

**b. Adjust Sequence Valve to desired sequencing pressure. Turn sequence valve handle clockwise to increase pressure, or counterclockwise to decrease pressure.**

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**VALVE OPERATION (Example)**

With sequence valve set at desired pressure (500 psi), close valve on pump. The main cylinder will extend and the pressure will raise to the desired sequence pressure (500 psi). The sequence valve will then open at which point the pressure to both cylinders will increase until the valve on the pump is returned to neutral, or until system relief pressure is reached. (Note: the secondary cylinder pressure will be 500 psi less than main cylinder.) Open valve on pump and return system pressure to zero. Both cylinders will now retract.

**DO NOT** use excessive closing torque on valve handle or use any handle extension. This will cause unnecessary wear on valve stem and seat and may damage the spring.

Valve handle can be removed (loosen cap screw at end of handle) to reduce tampering with valve settings. When handles are reassembled on valve stem, make sure the cap screw is contacting flat on the stem and the cap screw is tightened securely.

**PROTECT YOUR WARRANTY, USE ONLY ENERPAC HYDRAULIC OIL.**

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**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.