

### Model VEW-11, VET-11 and VEX-11 DO3 Solenoid Valves

L2927 Rev. A 06/09

#### 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.



**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.



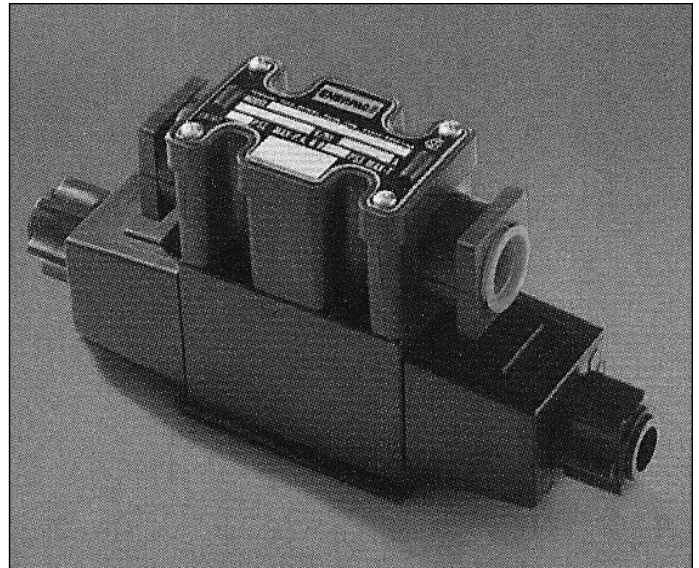
**WARNING:** Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The valve is designed for a max. pressure of 5,000 psi [344 bar]. Do not connect the valve to a pump with a higher 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.



**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.



**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 SPECIFICATIONS

Maximum Operating Pressure	5000 psi [350 bar]
Voltage	24 Volts DC
Current Draw	1.32 Amps
Holding Current	0.44 Amps
Flow Capacity	8 GPM [30 L/min]

### 4.0 DESCRIPTION

Enerpac VE Series spool type solenoid valves (DO3 mounting pattern) are used to control the advance and retract functions of both single acting and double acting hydraulic cylinders. They are intended for circuits that *do not* require zero leakage.

VE Series solenoid valves are available in the following different models and configurations:

- VEW-11 2-Position/4-Way
- VET-11 3-Position/4-Way Closed Center
- VEX-11 3-Position/4-Way Float Center

They are typically mounted on one of the following Enerpac remote mount manifolds:

- MB-1 Single Station Manifold
- MB-2 Dual Station Manifold
- MB-4 Four Station Manifold

VE Series solenoid valves may be used with one or more of the following Enerpac accessory valve modules:

- VFC-4 Dual Flow Control Valve
- VD2P Dual Pilot-Operated Check Valve
- PRV-6 Pressure Reducing Valve

The VFC-4 dual flow control valve offers independent control of cylinder advance and retract speeds. The VD2P dual pilot-operated check valve can be used to lock pressure in a group of cylinders. The PRV-6 pressure reducing valve sets a circuit pressure lower than the main pump pressure.

Remote mount manifolds, cover plates and accessory modules are sold separately.

**Important:** To hold the pressure in a clamping circuit, use the VEX-11 solenoid valve with the VD2P check valve module. Do not use DO3 spool type valves with pressure shutdown pumps.

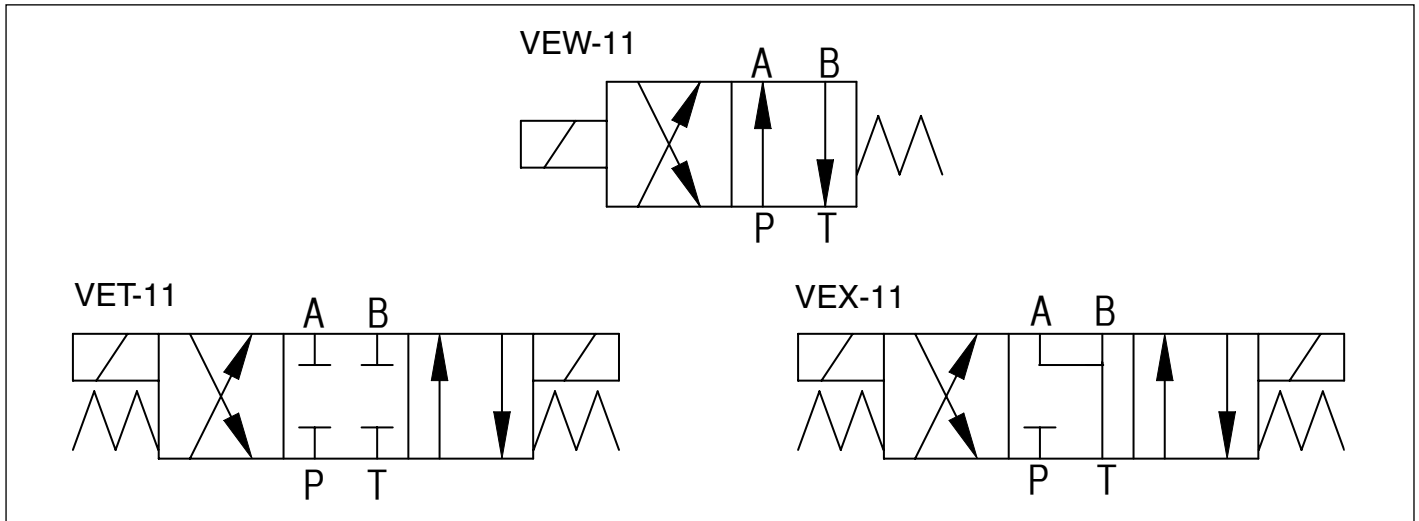


Figure 1, Solenoid Valve Models

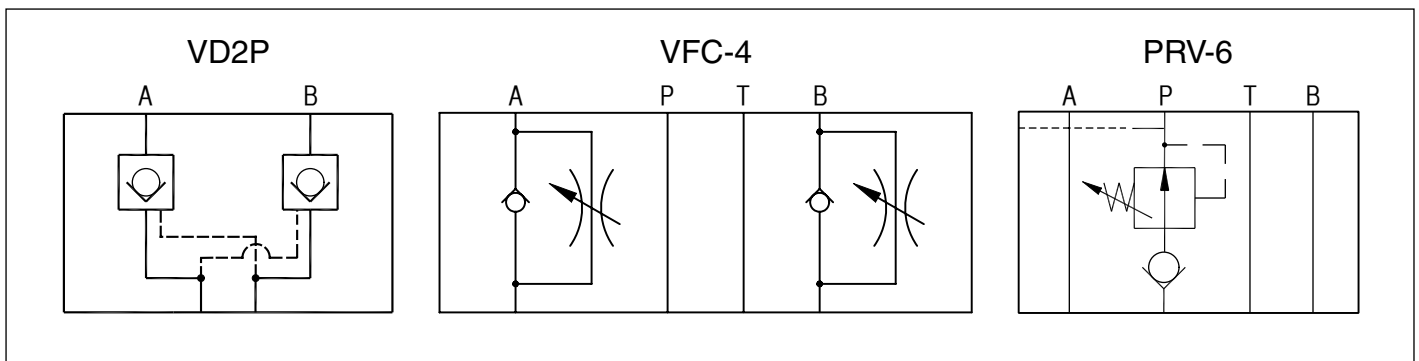


Figure 2, Accessory Valve Modules (sold separately)

## 5.0 INSTALLATION

Refer to the chart below for required bolt lengths. Torque valve mounting bolts to 40-50 in. lbs [4.5-5.6 Nm].

**Important:** If using an Enerpac MB Series manifold, any unused stations must be capped with an Enerpac MC-1 cover plate.

Mounting Bolt Length Chart				
Solenoid Valve Body:	Accessory Valve Module Options:			Required Total Bolt Length:
	Accessory #1	Accessory #2	Accessory #3	
VEW-11, VET-11 or VEX-11 Series, DO3 Mounting Pattern	(none)	(none)	(none)	1.250" [31.8 mm]
	VD2P	(none)	(none)	3.0" [76.2 mm]
	VFC-4	(none)	(none)	3.0" [76.2 mm]
	PRV-6	(none)	(none)	3.0" [76.2 mm]
	VFC-4	VD2P	(none)	4.625" [117.5 mm]
	PRV-6	VD2P	(none)	4.625" [117.5 mm]
	PRV-6	VFC-4	(none)	4.500" [114.3 mm]
	PRV-6	VFC-4	VD2P	6.250" [158.8 mm]

**Note:** #10-24 stud type mounting kits, such as Sun Hydraulics #992001, can also be used. Add 0.50" [12.7 mm] to the above bolt lengths for the stud nut used in these kits.

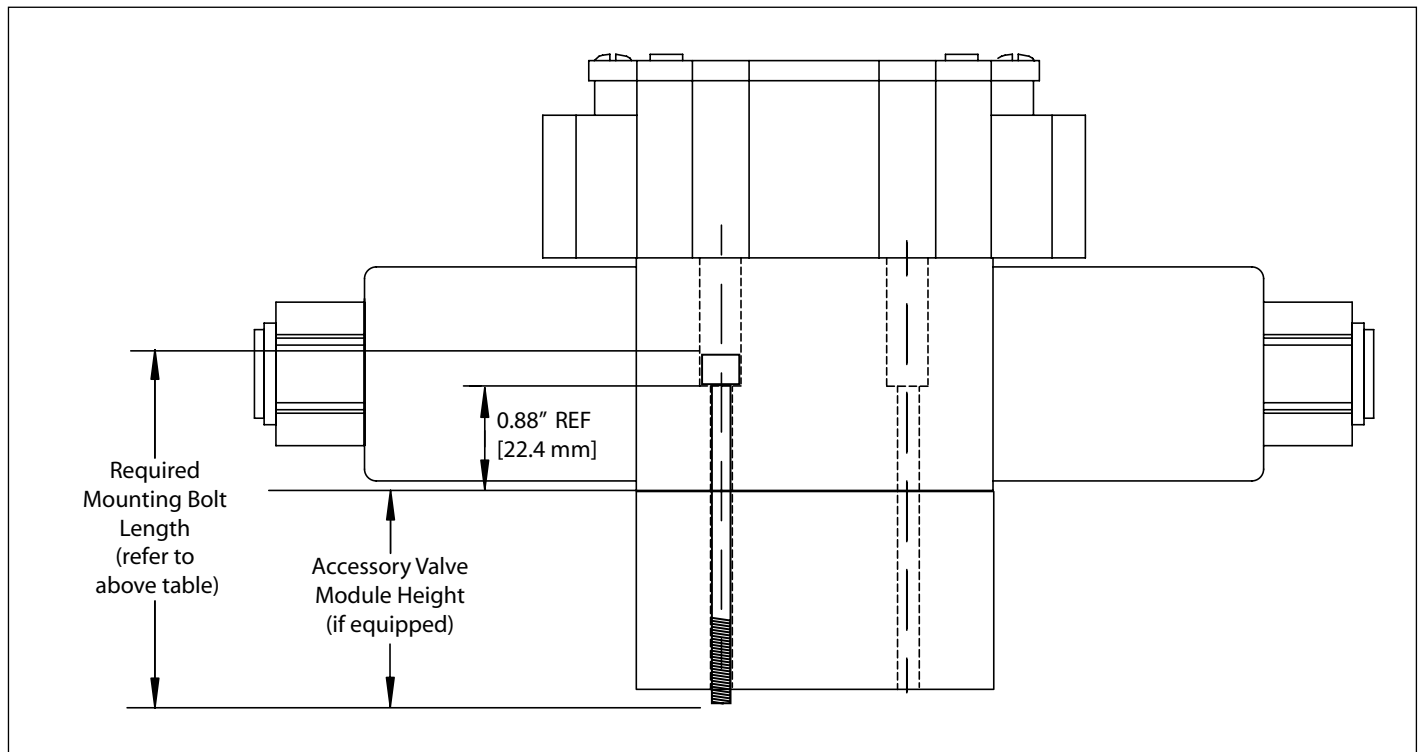


Figure 3, Valve Mounting Bolt Requirements

## 6.0 VALVE WIRING

The VEW-11, VET-11 and VEX-11 solenoid valves are supplied with a valve mounted conduit box. The entry into this box is 1/2" NPTF. A suitable strain relief should be used when wiring through this connection point. Refer to Figures 4 and 5 for wiring diagrams.



**WARNING:** Disconnect electrical power before making wiring connections. Wiring should be done only by a qualified and trained electrician.

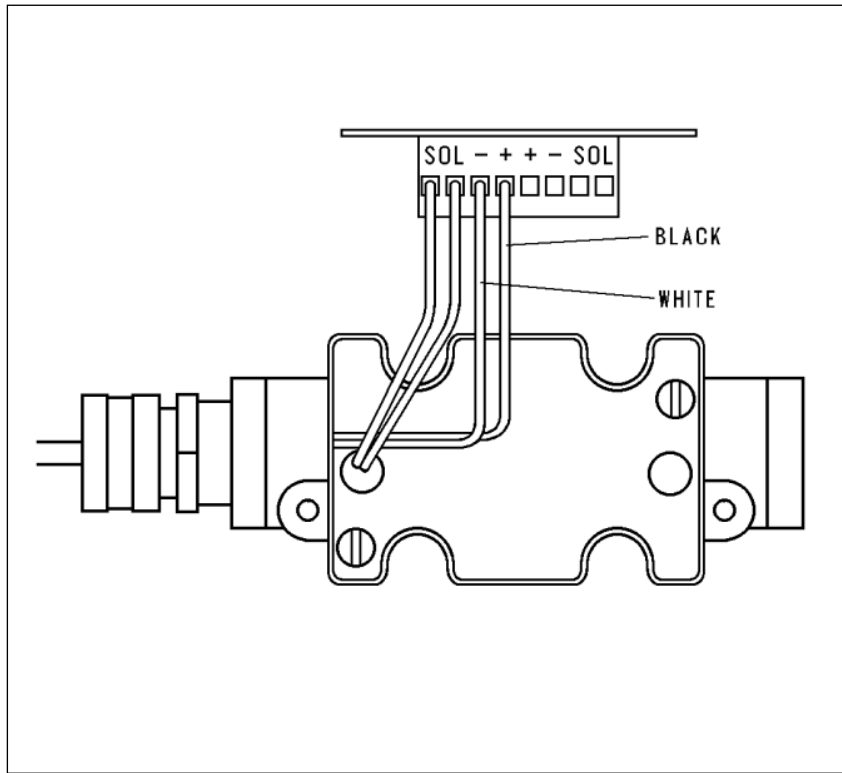


Figure 4, Valve Wiring, Model VEW-11

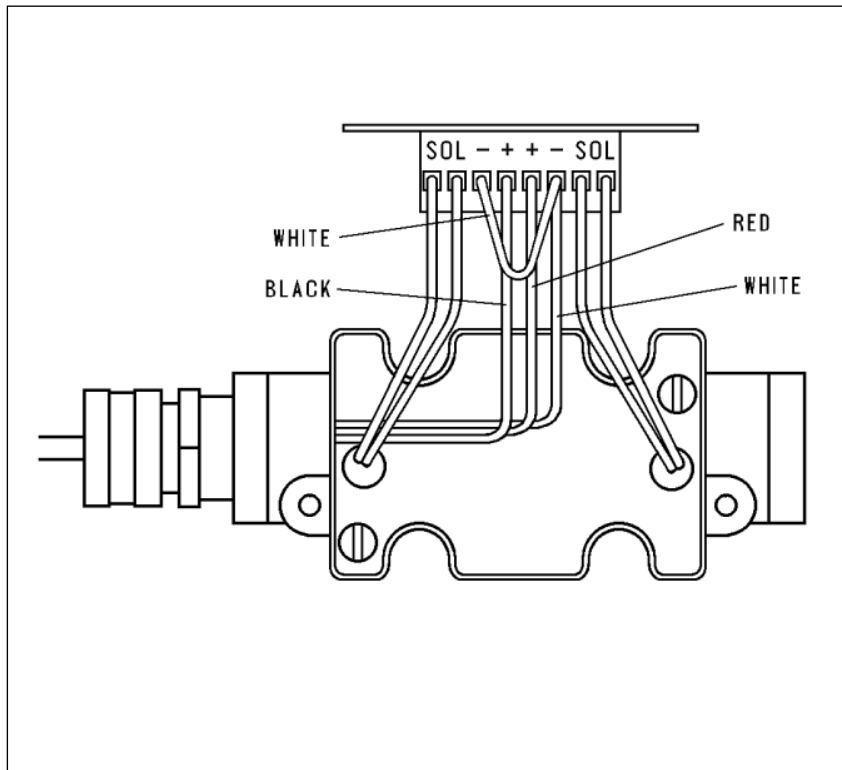


Figure 5, Valve Wiring, Models VET-11 and VEX-11



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