

Shown: VP-12



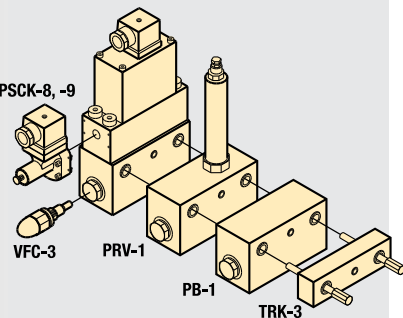
## VP-series

Solenoid directional valves control the direction of the oil flow to each cylinder port.

### Application

With the use of a -12 manifold, these valves allow quick and easy assembly of hydraulic control valves on your Enerpac ZW-series pump. For remote mounting of these valves use a WM-10 manifold.

### VP-series



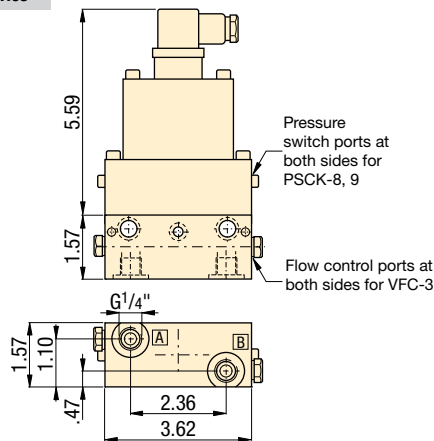
■ Enerpac VP-series valves mounted on -12 manifold, mounted on a ZW-series workholding pump.



## Solenoid directional valves

- Dual poppet valve design for zero internal leakage
- Inlet check-valve standard
- High cycle switching
- Stackable to 8 valve stations high
- 250-5000 psi operational pressure
- Oil flow capacity 427 in<sup>3</sup>/min @ 5000 psi
- Oil flow capacity 915 in<sup>3</sup>/min @ 0 psi
- G1/4" oil connections and integrated filtration
- 24 VDC and 110 VAC available

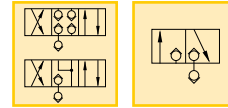
### VP series



Pressure: 5000 psi

Max. Flow: 915 in<sup>3</sup>/min

- Ⓔ Válvulas de control
- Ⓕ Electro distributeurs
- Ⓖ Wegesitzventile



## Options

### WM-10 series manifolds

□ 139 ▶

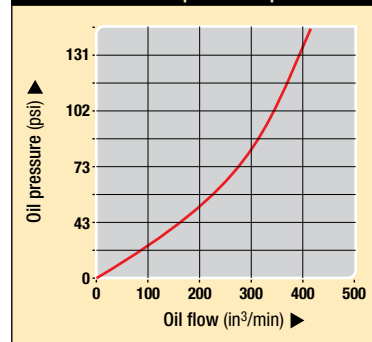


### Tie rod kits

□ 139 ▶



### Oil flow vs pressure drop



## Product selection

Voltage @ current	Model number	Flow path	Used with cylinder(s)
at 50/60 Hz			
<b>▼ 4/3 Closed center</b>			
24 VDC @ 1.13 A	<b>VP-11</b>		1x Dbl-act.
110 VAC @ 500 mA	<b>VP-12</b>		1x Dbl-act.
<b>▼ 4/3 Float center</b>			
24 VDC @ 1.13 A	<b>VP-21</b>		1x Dbl-act.
110 VAC @ 500 mA	<b>VP-22</b>		1x Dbl-act.
<b>▼ 3/2 Normally closed</b>			
24 VDC @ 1.13 A	<b>VP-31</b>		1x Dbl-act. / 2x Sgl-act.
110 VAC @ 500 mA	<b>VP-32</b>		1x Dbl-act. / 2x Sgl-act.
<b>▼ 3/2 Normally open</b>			
24 VDC @ 1.13 A	<b>VP-41</b>		1x Dbl-act. / 2x Sgl-act.
110 VAC @ 500 mA	<b>VP-42</b>		1x Dbl-act. / 2x Sgl-act.
<b>▼ 3/2 1 port normally closed, 1 port normally open</b>			
24 VDC @ 1.13 A	<b>VP-51</b>		1x Dbl-act. / 2x Sgl-act.
110 VAC @ 500 mA	<b>VP-52</b>		1x Dbl-act. / 2x Sgl-act.

Note: DIN 43650 electrical connector included. Valve weight 6.5 lbs (3,0 kg.).

Shown: VST-1401D, VSS-2210D



## VSS, VST-series

Solenoid and air piloted directional control valves. Poppet design for zero leakage promote system efficiency. Increases the life of your workholding pump by decreasing internal valve leakage.

### Application

Advance and retract for single- and double-acting cylinders. The valves require check valves for positive load holding and can be installed for the same independent operation with single-acting cylinders by blocking the B port.

## Zero leakage poppet valves increase efficiency

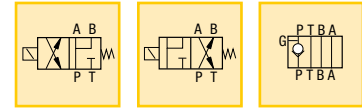
- Poppet valve design for zero leakage
- 4-way, 2-position float offset or normally open
- D03 or CETOP3 mounting pattern
- DIN-standard rectifier plugs for easy connection to power source
- Air operated models eliminate need for electricity
- Including O-rings and mounting bolts
- SAE manifold ports simplify plumbing
- Inline check valve provides positive load holding

Pressure: 0-5000 psi

Flow: 690 in<sup>3</sup>/min max.

Voltage: 115 VAC, 24 VDC

- (E) Electroválvulas
- (F) Electro distributeurs
- (D) Elektromagnetische Ventile



## Options

### D03 Manifolds MB-series

144 ▶



### Fittings

194 ▶

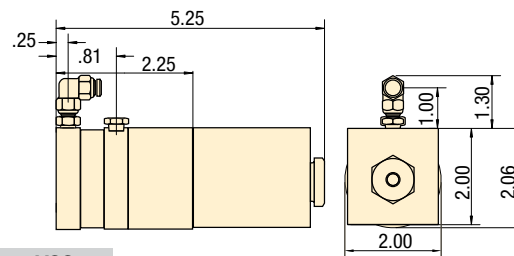


## Important

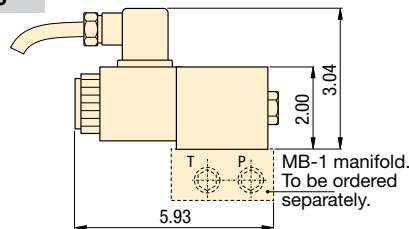
For multiple circuit applications, the VD1P inline check valve is recommended to prevent pressure drop on the holding circuit.

Order bolt kit BKD-71 to mount VD1P with VAS/VSS/VST valves.

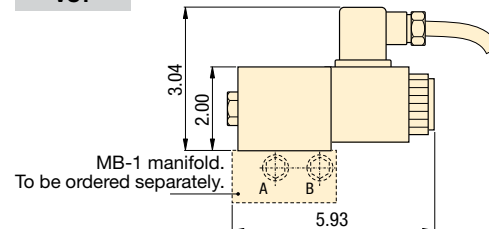
### VAS/VAT



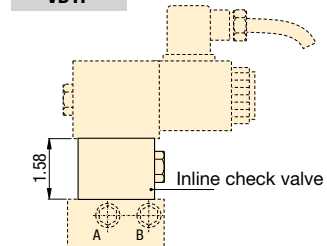
### VSS



### VST



### VD1P



## Product selection

Valve flow path	Solenoid voltage @ current at 50/60 Hz	Model number	Hydr. symbol	Pressure range psi	Pressure drop <sup>1)</sup> psi	Max. oil flow in <sup>3</sup> /min
<b>▼ Solenoid poppet valves – Normally open</b>						
4-way, 2 position	60-100 psi max.	VAS-0710D		0-5000	180	690
4-way, 2 position	24VDC @ 1.60 A	VSS-1410D		0-5000	180	690
4-way, 2 position	115VAC @ .40 A	VSS-2210D		0-5000	180	690
<b>▼ Solenoid poppet valves – Normally closed</b>						
4-way, 2 position	60-100 psi max.	VAT-0710D		0-5000	180	690
4-way, 2 position	24VDC @ 1.60 A	VST-1410D		0-5000	180	690
4-way, 2 position	115VAC @ .40 A	VST-2210D		0-5000	180	690
<b>▼ Inline check valve</b>						
-	-	VD1P		0-5000	0	690

<sup>1)</sup> Pressure drop from P-A or P-B at maximum oil flow of 690 in<sup>3</sup>/min.

■ VSS-2210D mounted directly on a Turbo II air pump for use on positive clamping fixture.



Collet-Lox® product line  
Swing clamps  
Work supports  
Linear clamps  
Power sources  
Valves

Shown: VEX-11 valve



## VE-series

Spool style solenoid valves and control modules are used in circuits that do not require zero leakage.

### Application

Used to control the advance and retract of single acting and double acting cylinders. The dual check valve can be used to lock pressure in a group of cylinders. The dual flow control offers independent control of cylinder advance and retract speeds. The pressure reducing valve sets a circuit pressure lower than the main pump pressure.

## D03 Direction Valve and accessories

- D03 mounting pattern
- Directional valves
- Pilot operated check valve
- Dual flow control
- Pressure reducing valve

Pressure: 0-5000 psi

Flow: 3-15 gpm

Voltage: 24 VDC

- (E) Electroválvulas
- (F) Electro distributeurs
- (D) Elektromagnetische Ventile

### Options

D03 Manifolds MB-series

144 ▶



Fittings

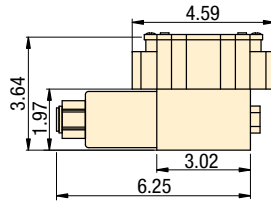
194 ▶



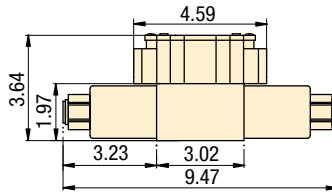
### Important

To hold the pressure in a clamping circuit, use the VEX11 valve with the VD2P check module. Do not use D03 spool valves with pressure shutdown pumps.

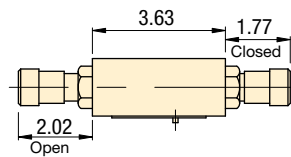
VEW-11



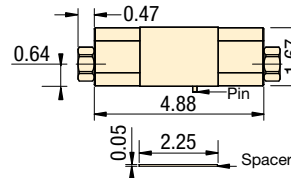
VET-11, VEX-11



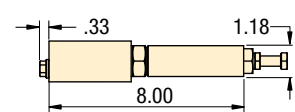
VFC-4



VD2P



PRV-6, PRV-7



## Product selection

Valve flow path	Solenoid voltage 50/60 hz	Model number	Hydraulic symbol	Pressure range	Pressure drop	Maximum oil flow
				psi	psi	gpm
2-position/4 way	24 VDC 1.32 Amps	VEW-11		0-5000	125	8
3-position/4 way, Closed center	24 VDC 1.32 Amps	VET-11		0-5000	150	8
3-position/4 way, Float center	24 VDC 1.32 Amps	VEX-11		0-5000	165	8
Dual flow control	-	VFC-4		0-5000	-	10
Dual pilot operated check valve	-	VD2P		0-5000	200	15
Pressure reducing valve	-	PRV-6 / PRV-7		435-4350 75-2000	-	3

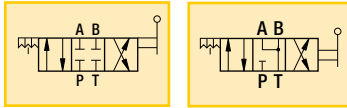
■ VEX-11 valve on ZW5020HG-FT21 pump.



Pressure: 5000 psi

Flow: 1040 in<sup>3</sup>/min

- E** Válvulas de control de 4 vías
- F** Distributeurs à 4 voies
- D** 4-Wege-Ventiler



## Options

**VD1P, Inline check valve**

◀ 140

**D03 Manifolds**

144 ▶



**Hoses and couplers**

192 ▶



**Fittings**

194 ▶



## Important

For multiple circuit applications, the VD1P inline check valve is recommended to prevent pressure drop on the holding circuit.

See page 145 for mounting bolt information.

Pressure on return side (tank) should not exceed 250 psi.

## Product selection

Valve mounting pattern	Mounting bolts included	Oil ports	Model number	Hydraulic symbol	Pressure range	Pressure drop <sup>1)</sup>	Max. oil flow
					psi	psi	in <sup>3</sup> /min
<b>▼ 4-way, 3-position control valves</b>							
Panel mtg.	-	SAE #4	<b>VMTD-001</b>		0-5000	70	1040
D03/CETOP 3	#10-24UN	-	<b>VMMD-001</b>		0-5000	70	1040
Panel mtg.	-	SAE #4	<b>VMTD-003</b>		0-5000	70	1040
D03/CETOP 3	#10-24UN	-	<b>VMMD-003</b>		0-5000	70	1040

<sup>1)</sup> Pressure drop from P-A or P-B at maximum oil flow of 1040 in<sup>3</sup>/min. Seal material: Buna-N, Polyurethane.

## Manual control of single and double-acting cylinders

- Near zero leakage pressure seal design
- 4-way, 3-position
- Detented handle positions
- Low handle effort 12 lbs, even at full pressure
- Handle can be repositioned for side by side valve mounting
- Compact size for directly mounting on fixture for individual circuit control
- D03/CETOP 3 mounting pattern

Shown: VMMD-001, VMTD-001



## VMM and VMT-series

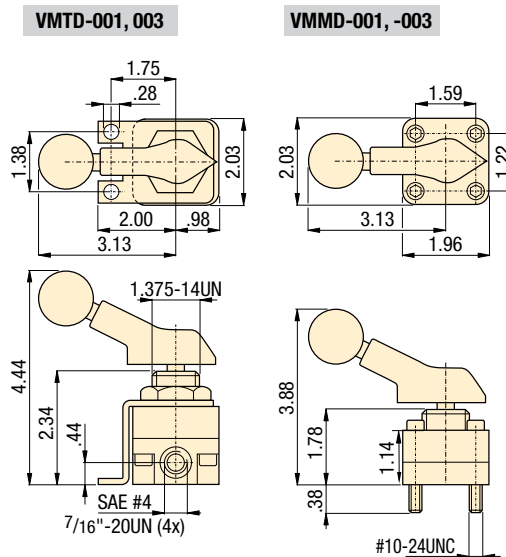
Manual directional control valves for single- and double-acting cylinder control. Lapped pressure seal surface provide near zero leakage.

The VMTD series has threaded port connections and removable holding bracket for panel mounting.

### Application

Panel mounting on fixtures for control of individual circuits. The blocked pressure port in the center position allows demand style pumps to stall out, saving energy.

The valves require check valves for positive load holding.



■ Several VMTD-001 valves mounted on fixture waiting to be transferred to machine.





# Solenoid modular valves *Application & selection*

Shown: VEC-15600D, VEC-15000B, VEK-15000B



## VE-series

Solenoid modular valves are especially well suited for workholding and production applications. With 11 possible flowpaths and 2 manifolds, for either Enerpac's submerged pump or a remote NPT mount, you can "custom build" a valve for almost any application.

### Application

Ideal when mounted on remote manifold for applications where independent control of multiple cylinders is required.

## Unmatched combination of possibilities

- Relief valve and pilot-operated check accessory valves are stackable eliminating external plumbing
- Remote and pump mounting
- Mounting bolts included with each modular valve

## Select the required valve flow path

Valve flow path	For cylinder	Valve code	Hydraulic symbol
<b>▼ 2-way, 2-position (2/2)</b>			
Normally closed	Unloading *	<b>VEH</b>	
Normally open	Unloading *	<b>VEK</b>	
<b>▼ 3-way, 2-position (3/2)</b>			
Normally open	Single-acting	<b>VEP</b>	
<b>▼ 3-way, 3-position (3/3)</b>			
Tandem center	Single-acting	<b>VEF</b>	
Closed center	Single-acting	<b>VEG</b>	
<b>▼ 4-way, 2-position (4/2)</b>			
Crossover offset	Double-acting	<b>VEE</b>	
Float offset	Double-acting	<b>VEM</b>	
<b>▼ 4-way, 3-position (4/3)</b>			
Open center	Double-acting	<b>VEA</b>	
Closed center	Double-acting	<b>VEB</b>	
Tandem center	Double-acting	<b>VEC</b>	
Float center	Double-acting	<b>VED</b>	

\* VEH and VEK valve models require the use of tank port for dump or unloading.

## Product specifications

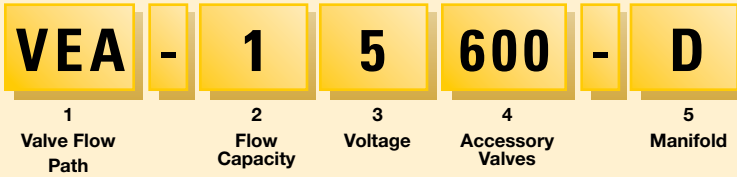
Pressure range	Maximum oil flow	Voltage @ Hz	Amperage draw	
			inrush	holding
psi	in <sup>3</sup> /min			Amps
0-10,000	920	24 VDC @ 50/60 Hz	-	2.5
0-10,000	920	115 VAC @ 60 Hz	3.6	1.0
0-10,000	920	220/240 VAC @ 50 Hz	1.3/1.4	.45/.53
0-10,000	920	230 VAC @ 60 Hz	1.8	.50 A

**Note:** Seal material: Buna-N, Polyurethane.  
DIN43650 Valve plug included on remote mounted valves.

Collet-Lox® product line  
Swing clamps  
Work supports  
98-137  
Linear clamps  
Power sources  
Valves

**Custom build your modular valves**

▼ This is how a Solenoid Modular Valve Model Number is built up:



**1 Modular valve code**

- A = 4/3 Open center
- B = 4/3 Closed center
- C = 4/3 Tandem center
- D = 4/3 Float center
- E = 4/2 Crossover offset
- F = 3/3 Tandem center
- G = 3/3 Closed center
- H = 2/2 Normally closed
- K = 2/2 Normally open
- M = 4/2 Float offset
- P = 3/2 Normally open

**2 Oil flow capacity**

- 1 = 920 in<sup>3</sup> per minute

**3 Solenoid voltage**

- 1 = 24 VDC, 50 / 60 Hz
- 2 = 230 V, 1 ph, 50 Hz
- 5 = 115 V, 1 ph, 60 Hz
- 6 = 230 V, 1 ph, 60 Hz

**4 Accessory valves**

- 000 = No accessory valves
- 100 = VS-11 Relief valve only
- 150 = VS-11 Relief valve and VS-51 3-way pilot operated check valve VEF/VEG only
- 160 = VS-11 Relief valve and VS-61 4-way pilot operated check valve VEA/VEB/VEC/VED only
- 500 = VS-51 3-way pilot operated check valve VEF/VEG only
- 600 = VS-61 4-way pilot operated check valve VEA/VEB/VEC/VED only

**5 Manifold**

- A = No manifold
- B = Remote mounted manifold
- D = Pump mounted manifold VEA/VEC/VEF only

**Example**

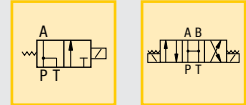
The **VEA-15600-D** is a modular valve with a 4-way, 3-position open center flowpath, 115 VAC, and an integrated pilot-operated check valve, for mounting on an Enerpac pump. Bolt Kit **BK-2** is included.

Pressure: 0-10,000 psi

Flow max.: 920 in<sup>3</sup>/min

Voltage: 24, 115, 230 V

- E** Válvulas de control
- F** Electro distributeurs
- D** Wegesitzventile



**Options**

Gauges and accessories

190 ▶



Fittings

194 ▶



**Accessory Valves and Bolt Kits**

Use **VS-11** relief valve to add system pressure control to VE-series valves.

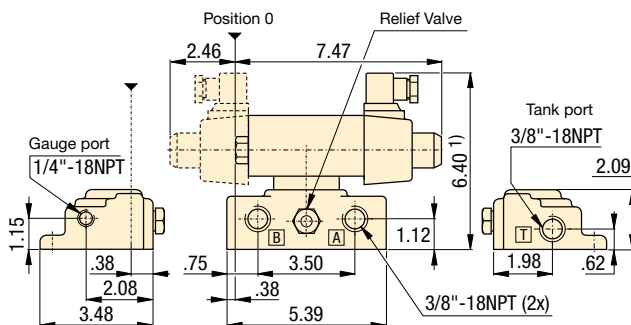
Use **VS-51** 3-way pilot operated check valve to convert 3-way VE-valve into load-holding valve.

Use **VS-61** 4-way pilot operated check valve to convert 4-way VE-valve into load-holding valve.

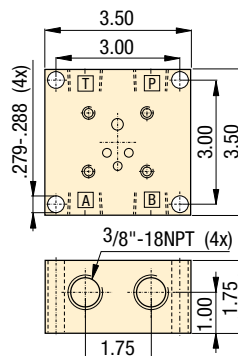
To install accessory valves to stack build modular valves use bolt kits:

- BK-2** for 1 VS valve;
- BK-3** for 2 VS valves.

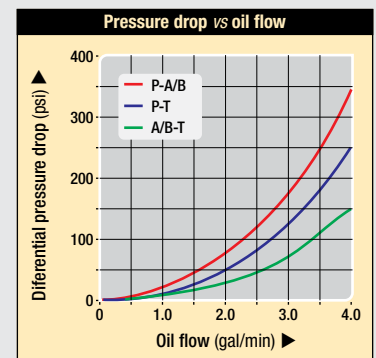
**VE series Modular Valve Pump Mounted**



**Modular Valve Remote Mounted**



<sup>1)</sup> add 1.85 inch for each Accessory Valve.  
Note: BK-1 Bolt Kit is included with each modular valve.



# 3-way directional manual control valves *Application & selection*

Shown: VM-2, VM-3



## V-series

Manual operated 3-way, 2-position and 3-way, 3-position directional control valves for operation of single-acting cylinders. Remote mount valves include return line kit for connecting the valves to pump reservoir.

### Application

Pump mounted valves provide centralized control of pump output for cylinder cycling. Remote mounted at any convenient point along the system where control of cylinders is needed.

## Reliable control of single-acting cylinders

- Directional control valves provide advance/hold/retract operation for use with single-acting cylinders
- Remote or pump mounting on most Enerpac pumps
- Return line kit included with remote valves
- Available “locking” option on VC and VM-series valves for load-holding applications

## Select the required center position

### Non-locking

- Use in simple clamping circuits. Has interflow between ports when shifted.

### Closed center

- For multiple valve and cylinder operation. All ports blocked in the center position.

### Locking center

- For positive load holding without loss of pressure. Cylinder travel can only resume by shifting valve from hold position.

### Tandem center

- For one or multiple cylinder operation. Pump flow is directed back to tank in the center position.

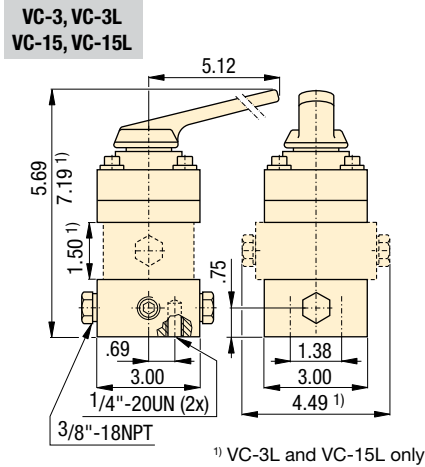
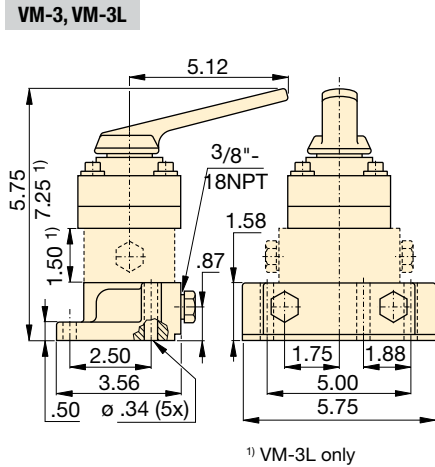
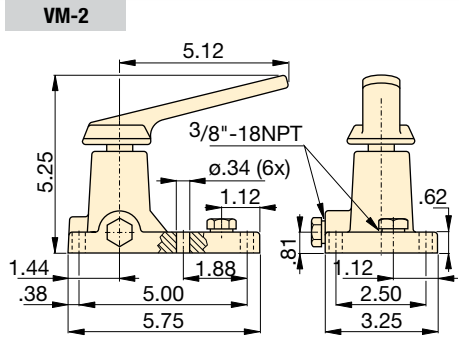
## Product selection

Valve type	Valve mounting location	Model number	Hydraulic symbol
<b>▼ Manual 3-way, 2-position (3/2)</b>			
–	Pump	VM-2	
<b>▼ Manual 3-way, 3-position (3/3)</b>			
Tandem center	Pump	VM-3	
Tandem center	Remote	VC-3	
<b>▼ Manual 3-way, 3-position (3/3)</b>			
Tandem center, locking	Pump	VM-3L	
Tandem center, locking	Remote	VC-3L	
Closed center	Remote	VC-15	
Closed center, locking	Remote	VC-15L	

■ Four VC-15 Enerpac manual valves mounted on fixture to give independent control of several hydraulic circuits.

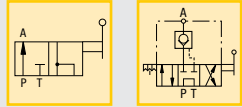


Collet-Lok® product line  
Swing clamps  
Work supports  
Linear clamps  
Power sources  
Valves



Pressure: 0-10,000 psi  
Flow max.: 1040 in<sup>3</sup>/min

- E** Válvulas de control
- F** Distributeurs à 3 voies
- D** 3-Wege-Ventile



**Product specifications**

Model number	Pressure range	Used for cylinder	Schematic flowpath			lbs
			Advance	Hold	Retract	
	psi					
<b>▼ Manual 3-way, 2-position (3/2)</b>						
<b>VM-2</b>	0-10,000	Single-acting		—		4.8
<b>▼ Manual 3-way, 3-position (3/3)</b>						
<b>VM-3</b>	0-10,000	Single-acting				4.6
<b>VC-3</b>	0-10,000	Single-acting				6.4
<b>▼ Manual 3-way, 3-position (3/3)</b>						
<b>VM-3L</b>	0-10,000	Single-acting				8.6
<b>VC-3L</b>	0-10,000	Single-acting				10.3
<b>VC-15</b>	0-10,000	Single-acting				6.4
<b>VC-15L</b>	0-10,000	Single-acting				10.3

**Options**

- Gauges and accessories** 190 ▶
- Hoses and couplers** 192 ▶
- Fittings** 194 ▶

**Important**

**Locking Valves**  
For applications that require positive load holding, most VM and VC valves are available with pilot operated check valve. This option provides hydraulic locking of the load until valve is shifted into retract position. To order this feature, place an "L" at the end of the model number.

**Valving help**  
See Basic System Set-up and Valve information in our "Yellow Pages". 197 ▶

Valves  
Pallet components  
System components  
Yellow pages



# 4-way directional manual control valves *Application & selection*

Shown: VC-20, VM-4



## V-series

Manual operated 4-way, 3-position directional control valves for operation of double-acting or two single-acting cylinders. Remote mount valves include return line kit for connecting the valves to pump reservoir.

### Application

Pump mounted valves provide centralized control of pump output for cylinder cycling. Remote mounted at any convenient point along the system where control of cylinders is needed.

## Reliable control of double-acting cylinders

- Directional control valves provide advance/hold/retract operation for use with double-acting or two single-acting cylinders
- Remote or pump mounting on most Enerpac pumps
- Return line kit included with remote valves
- Available “locking” option on VC and VM-series valves for load-holding applications

## Select the required center position

### Non-locking

- Use in simple clamping circuits. Has interflow between ports when shifted.

### Closed center

- For multiple valve and cylinder operation. All ports blocked in the center position.

### Locking center

- For positive load holding without loss of pressure. Cylinder travel can only resume by shifting valve from hold position.

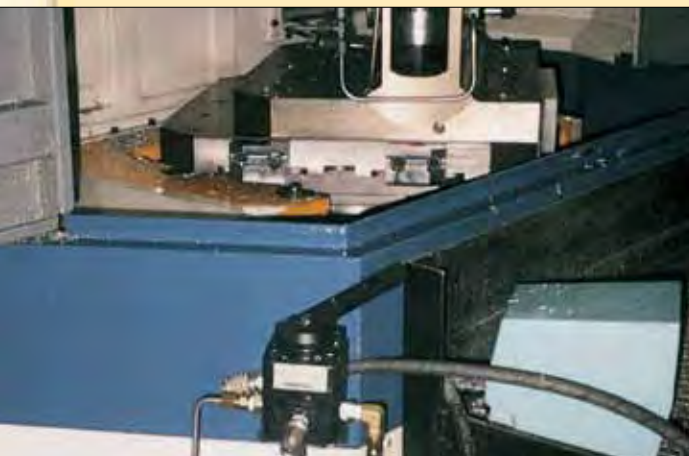
### Tandem center

- For one or multiple cylinder operation. Pump flow is directed back to tank in the center position.

## Product selection

Valve type	Valve mounting location	Model number	Hydraulic symbol
<b>▼ Manual 4-way, 3-position (4/3)</b>			
Tandem center	Pump	<b>VM-4</b>	
Tandem center	Remote	<b>VC-4</b>	
Tandem center, locking	Pump	<b>VM-4L</b>	
Tandem center, locking	Remote	<b>VC-4L</b>	
Closed center	Remote	<b>VC-20</b>	
Closed center, locking	Remote	<b>VC-20L</b>	

■ Enerpac VC-4 manual valves mounted to control hydraulic circuit on pallet fixture



Collet-LoK® product line  
Swing clamps  
Work supports  
Linear clamps  
Power sources  
Valves

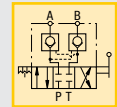
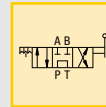
99-139

99-120

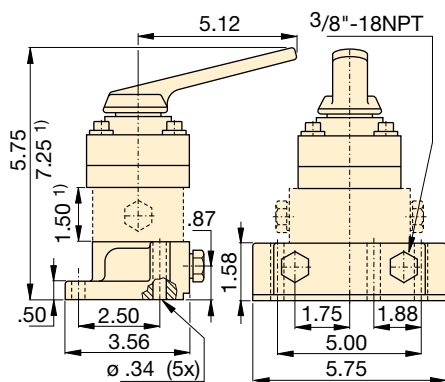
Pressure: 0-10,000 psi

Flow max.: 1040 in<sup>3</sup>/min

- E** Válvulas de control
- F** Distributeurs à 4 voies
- D** 4-Wege-Ventile

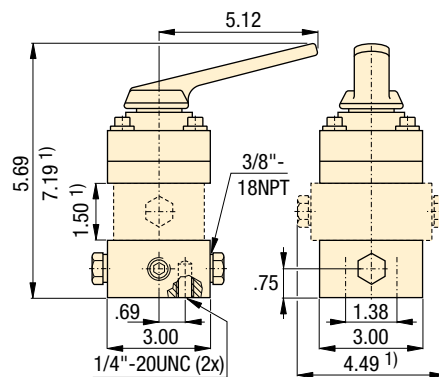


**VM-4, VM-4L**



<sup>1)</sup> VM-4L only

**VC-4, VC-3L  
VC-20, VC-20L**



<sup>1)</sup> VC-4L and VC-20L only

**Product specifications**

Model number	Pressure range	Used for cylinder	Schematic flowpath			lbs
			Advance	Hold	Retract	
<b>▼ Manual 4-way, 3-position (4/3)</b>						
VM-4	0-10,000	Double-acting				4.6
VC-4	0-10,000	Double-acting				6.4
VM-4L	0-10,000	Double-acting				8.6
VC-4L	0-10,000	Double-acting				10.3
VC-20	0-10,000	Double-acting				6.4
VC-20L	0-10,000	Double-acting				10.3


**Options**

**Gauges and accessories** 

☐ 190 ▶

**Hoses and couplers** 

☐ 192 ▶

**Fittings** 

☐ 194 ▶

**Important**

**Locking Valves**  
 For applications that require positive load holding, most VM and VC valves are available with pilot operated check valve. This option provides hydraulic locking of the load until valve is shifted into retract position.  
 To order this feature, place an "L" at the end of the model number.

**Valving help**  
 See Basic System Set-up and Valve information in our "Yellow Pages".

☐ 197 ▶

Shown: HV-1000A, V-17, V-10, V-12, V-152



## Accessory valves

Enerpac accessory valves are available in a wide variety and many configurations to control hydraulic pressure or oil flow. These valves are used in conjunction with other valves and system components to provide full automation and control.

### Application

Accessory valves are used to automate clamp cycles, prevent pressure loss and provide additional operator and component safety.

## Your hydraulic control solution

- Regulate oil flow or system pressure
- All valves feature NPT or SAE porting to insure against leakage at rated pressure
- Can easily be installed in any system
- All valves are painted, coated or plated for corrosion resistance

## Product selection

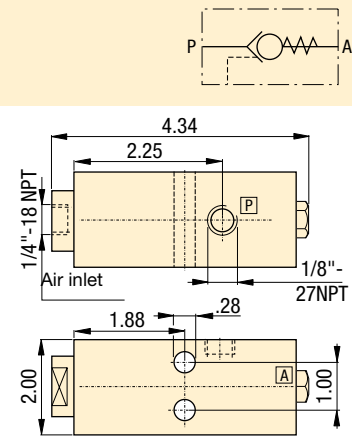
Valve type	Maximum pressure psi	Model number	Oil ports
Holding valve, air pilot	3000	<b>HV-1000A</b>	1/8" NPT
Holding valve, modular	3000	<b>MHV-1</b>	1/8" NPT
Pressure limiting valve	3000	<b>PLV-40013B</b>	1/8" NPT
Manual shut-off valve	5000	<b>V-12</b>	SAE #4
Auto-damper valve	10,000	<b>V-10</b>	1/2" NPT
Safety check valve	10,000	<b>V-17</b>	3/8" NPT
Pressure relief valve	10,000	<b>V-152</b>	3/8" NPT

## Product specification

### HV-1000A

#### Air pilot holding valve

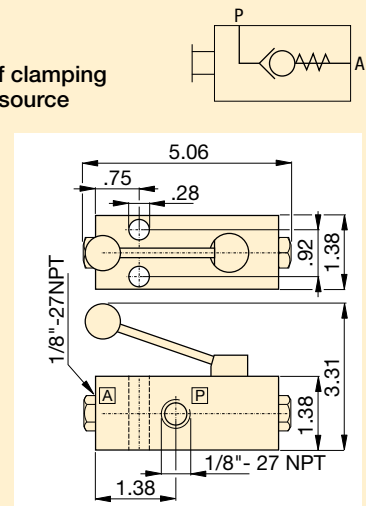
- Holds fluid under pressure offering independent control of different branches of the same fixture
- Valve can control the pilot air and the booster in sequence
- Max. oil flow 305 in<sup>3</sup>/min
- Works with the VA-42 four-way air valve and a booster



### MHV-1

#### Modular holding valve

- Allows separate operation of clamping fixtures with a single power source
- Ideal for applications when fluid feed lines are impractical. If system pressure is interrupted, the MHV-1 will hold the pressure beyond the valve
- Max. oil flow 305 in<sup>3</sup>/min
- To release system pressure, rotate valve handle in either direction 90° to release and retract system pressure



■ V-17 Safety check valve installed on a fixture.



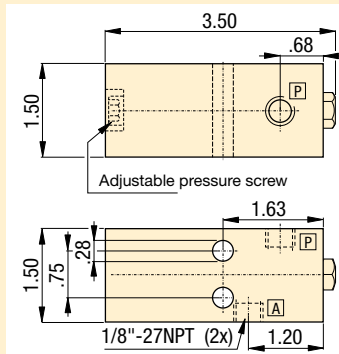
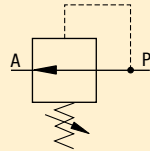
99-122b

Collet-Lox® product line  
Swing clamps  
Work supports  
Linear clamps  
Power sources  
Valves

**PLV-40013B**

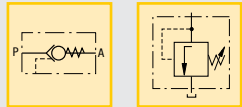
**Pressure limiting valve**

- Allows precise control of pressures reaching specific clamps
- When pressure build-up reaches a preset level, the valve closes, stabilizing pressure to that section of the fixture
- Pressure adjustment between 200 to 1500 psi
- Max. oil flow 305 in<sup>3</sup>/min



Pressure: 0-10,000 psi  
Flow max.: 305-1830 in<sup>3</sup>/min

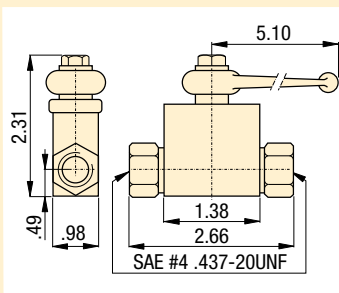
- E** Válvulas de control
- F** Valves de contrôle
- D** Regelventile



**V-12**

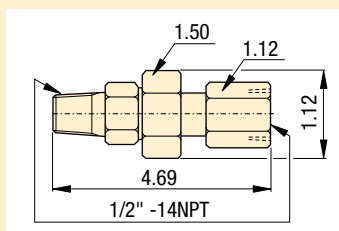
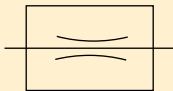
**Manual shut-off valve**

- Ball type valve can be used for the master system shut-off or for isolating separate circuits on a fixture
- Viton seals standard
- Straight through design for easy system plumbing and installation
- Fully open allows high flow return of oil
- Max. oil flow 732 in<sup>3</sup>/min




**V-10 Auto-damper valve**

- To protect gauge during high cycle applications
- Creates a flow resistance when load is released suddenly
- No adjustments are necessary
- Fits directly into GA-series gauge adaptor




**Options**

**VA-42 Air valve**  [158](#)

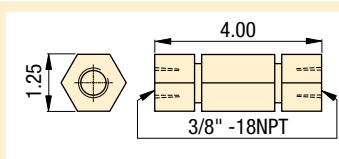
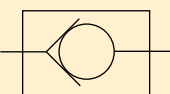
**Gauges and adaptors**  [190](#)

**Hoses and couplers**  [192](#)

**Fittings**  [194](#)

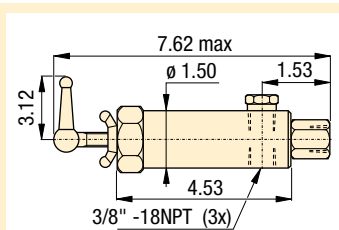
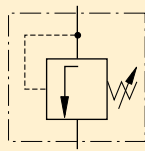
**V-17 Safety check valve**

- Ruggedly built to resist shock and operate with low pressure drop
- Closes smoothly without pounding
- Max. oil flow 1830 in<sup>3</sup>/min



**V-152 Pressure relief valve**

- Limits pressure developed by the pump in hydraulic circuit, thus limiting the force imposed on other components
- 800-10,000 psi adjustment range; ± 3% repeatability
- Valve opens whenever preset pressure is reached. To increase pressure setting, turn handle clockwise
- Max. oil flow 1830 in<sup>3</sup>/min
- Includes 3 ft. return line hose kit



**Important**

**Valving help**  
See Basic System Set-up and Valve information in our "Yellow Pages".

[197](#)