Shown: VA-42, VAS-42

Air valves

Enerpac's line of directional air valves and accessories complete your workholding system. Used to control air operated hydraulic units, they increase your productivity and efficiency.

Application

VA-series directional air valves provide either manual or electric control to air operated hydraulic units. Accessories such as rapid exhaust, check valves, silencers and regulators complete the air control system.

- Accessory valves provide greater safety and more efficient clamping cycles
- Recommended for use with all air powered units
- Directional valves to control booster and pump air supply
- Remote air valve permits either hand or foot operation.

To control and regulate air supply

VA-42 Manual operated air valve 5-way, 2-position

- For control of boosters
- Viton seals standard

VAS-42 Solenoid operated air valve 5-way, 2-position

- For control of pump and boosters air supply
- Viton seals standard
- Solenoid: 120 VAC, 50/60Hz
  Amperage: inrush 0,11 Amps, holding 0,07 Amps
- Maximum cycle rate: 600 cycles per minute

VR-3 Rapid exhaust valve

- Enables booster to advance and retract faster
- Instantly exhaust air supply from booster to atmosphere

V-19 Air check valve

- Prevent rapid drop of air pressure to the booster in the event of sudden loss of input air

RFL-102 Regulator-Filter-Lubricator

- Regulates air pressure
- Filter air input
- Lubricates air motors with a fine oil vapor mist
- Maximum air flow 1500 l/min

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 5 l/min
- Works with the VA-42 four-way air valve and a booster

QE-375 Muffler

- Use with VR-3 or VAS/VA-42
- Reduces noise level of exhaust air from pump.

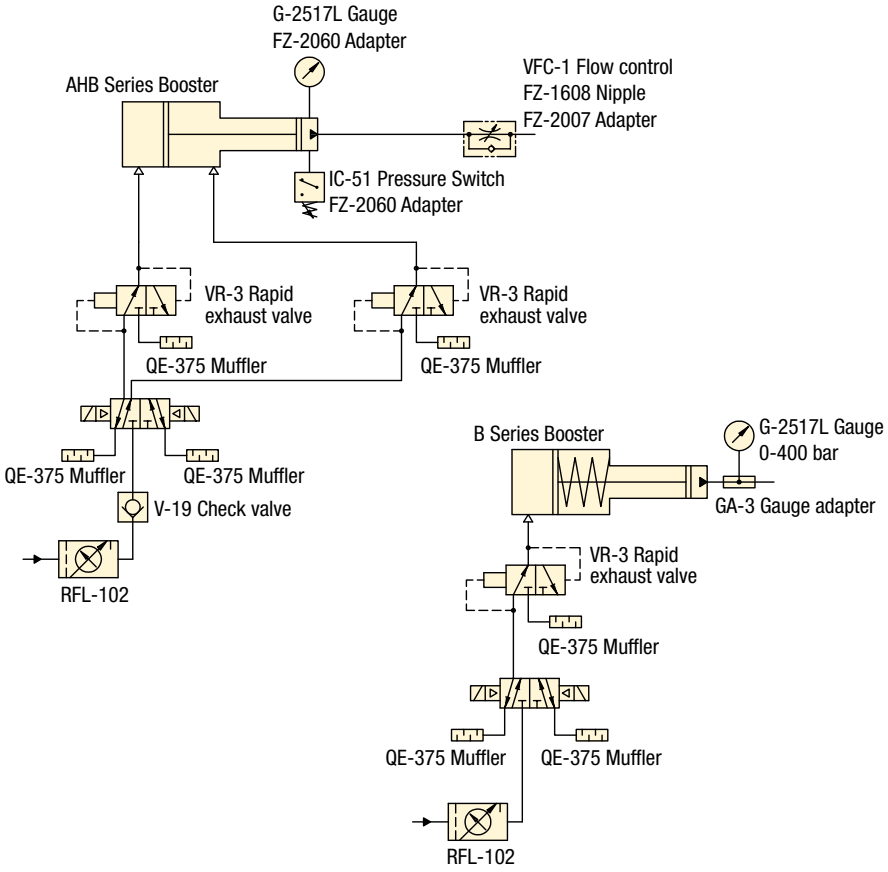
Product selection

Maximum pressure bar	Model number
▼ **Air valves**	
2-10	**VA-42**
2-10	**VAS-42**
0-7	**VR-3**
0-7	**V-19**
▼ **Holding Valve**	
0-7	**HV-1000A***
▼ **Accessories**	
0-8,6	**RFL-102**
0-8,6	**QE-375**

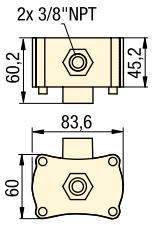
* Maximum hydraulic pressure: 207 bar.

Important

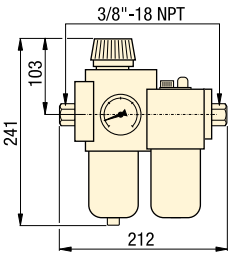
Valving help
See Basic System Set-up and Valve information in our "Yellow Pages".



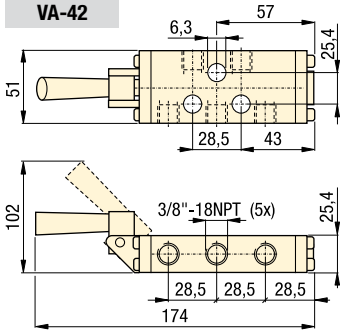
VR-3



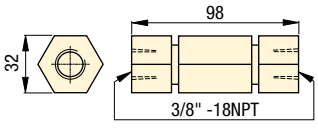
RFL-102



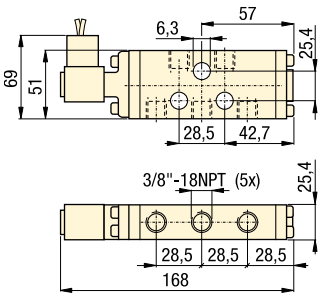
VA-42



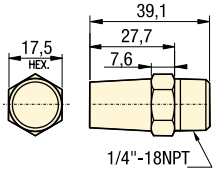
V-19



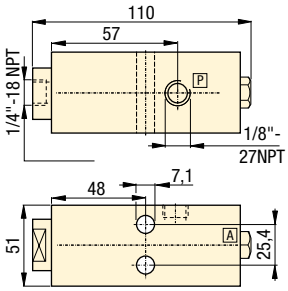
VAS-42



QE-375

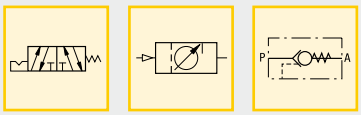


HV-1000A



Air Pressure: 0 - 10 bar

- **E** **Válvulas de aire**
- **F** **Valves à air**
- **D** **Luftventile**



Options

Gauges and adaptors 190

Hoses 192

Fittings 194

Important

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

197

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

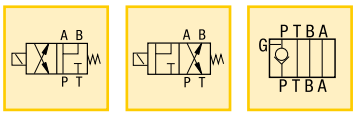
- Poppet valve design for zero leakage
- 4-way, 2-position float offset or normally open
- D03 or CETOP 3 mounting pattern
- DIN-standard rectifier plugs for easy connection to power source
- Air operated models eliminate need for electricity
- Including O-rings and mounting bolts
- SAE manifold ports simplify plumbing
- Inline check valve provides positive load holding

Pressure: 0 - 350 bar

Flow: 11 l/min max.

Voltage: 115 VAC, 24 VDC

(E) Electroválvulas
(F) Electrodistributeurs
(D) Elektromagnetische Ventile



Options

D03 Manifolds MB-series
144

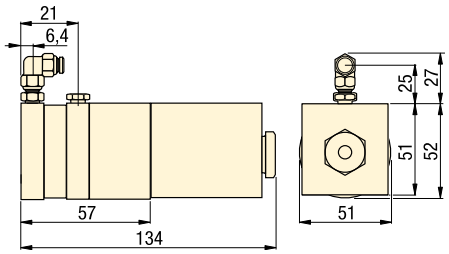
Fittings
194

Important

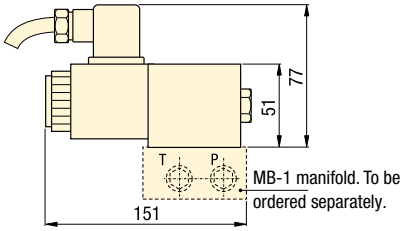
For multiple circuit applications, the VD1P inline check valve is recommended to prevent pressure drop on the holding circuit.

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

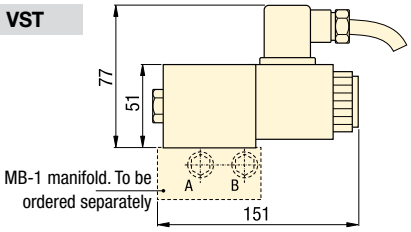
VAS, VAT



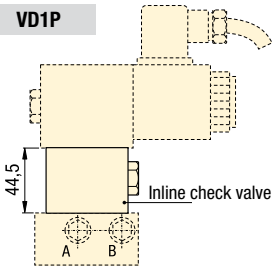
VSS



VST



VD1P



Product selection

Valve flow path	Solenoid voltage @ current at 50/60 Hz	Model number	Hydr. symbol	Pressure range bar	Pressure drop [1] bar	Max. oil flow l/min
▼ **Solenoid poppet valves – Normally open**						
4-way, 2 position	4,1 - 6,8 bar	**VAS-0710D**		0-350	12	11,3
4-way, 2 position	24VDC @ 1,6 A	**VSS-1410D**		0-350	12	11,3
4-way, 2 position	115VAC @ 0,4 A	**VSS-2210D**		0-350	12	11,3
▼ **Solenoid poppet valves – Normally closed**						
4-way, 2 position	42-70 bar max.	**VAT-0710D**		0-350	12	11,3
4-way, 2 position	24VDC @ 1,6 A	**VST-1410D**		0-350	12	11,3
4-way, 2 position	115VAC @ 0,4 A	**VST-2210D**		0-350	12	11,3
▼ **Inline check valve**						
–	–	**VD1P**		0-350	0	11,3

[1] Pressure drop from P-A or P-B at maximum oil flow of 11 l/min.

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

Pressure: 0 - 350 bar

Flow: 6 - 57 l/min

Voltage: 24 VDC, 110 VAC

(E) **Electrovávulas**

(F) **Electrodistributeurs**

(D) **Elektromagnetische Ventile**

Options

D03 Manifolds MB-series

144

Fittings

194

VP03 Directional Valves and accessories

- D03/CETOP 3 mounting pattern
- Directional valves
- Pilot operated check valve
- Dual flow control
- Pressure reducing valve

Shown: VP03

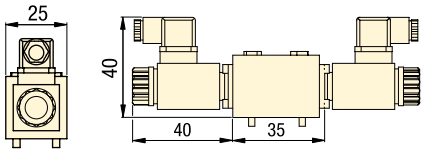
VP03-series

VP03 valves are zero leakage, solenoid operated poppet valves.

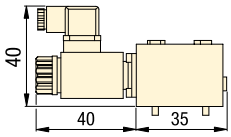
Application

Used to control the advance and retract of single acting and double acting cylinders.

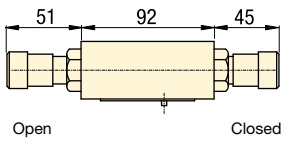
VP03-11, 12, 21, 22



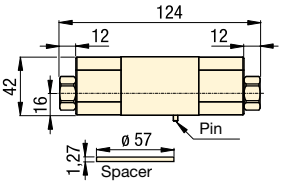
VP03-51, 52



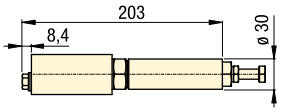
VFC-4



VD2P



PRV-6, PRV-7



Product selection

Valve flow path	Solenoid voltage 50/60 Hz	Model number	Hydraulic symbol	Pressure range bar	Maximum oil flow l/min
4/3 closed center	24 VDC	**VP03-11**		0-350	19
4/3 closed center	110 VAC	**VP03-12**		0-350	19
4/3 float center	24 VDC	**VP03-21**		0-350	19
4/3 float center	110 VAC	**VP03-22**		0-350	19
4-way / 2-position	24 VDC	**VP03-51**		0-250	15
	110 VAC	**VP03-52**		0-250	15
Dual flow control	–	**VFC-4**		0-350	38
Dual pilot operated check valve	–	**VD2P**		0-350	57
Pressure reducing valve	–	**PRV-6**		30-300	12
	–	**PRV-7**		5-138	6

Important

VP03 series valves are zero leakage and can be used with pressure shut down electric pumps and air driven Turbo II pumps.

VP03-11 valve on PASG-3002SB Turbo pump.

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 - 350 bar

Flow: 0,8 - 4,0 l/min

Voltage: 24 VDC

(E) Electrovávulas

(F) Electrodistributeurs

(D) Elektromagnetische Ventile

Options

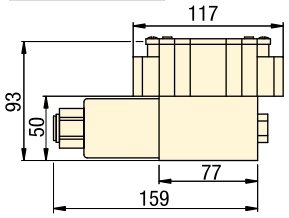
D03 Manifolds MB-series 144 ▶

Fittings 194 ▶

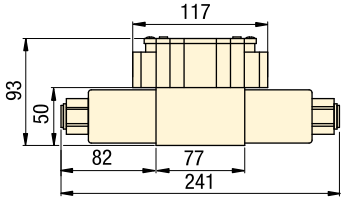
Important

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.

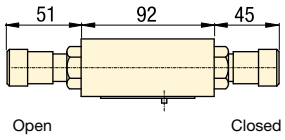
VEW-11



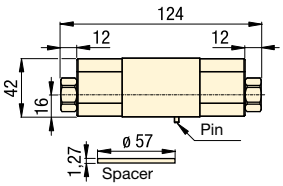
VET-11, VEX-11



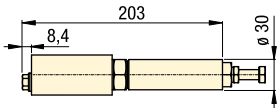
VFC-4



VD2P



PRV-6, PRV-7



Product selection

Valve flow path	Solenoid voltage 50/60 Hz	Model number	Hydraulic symbol	Pressure range bar	Pressure drop bar	Maximum oil flow l/min
4 way, 2 position	24 VDC 1,32 Amps	VEW-11		0-350	9	2,1
4/3 closed center	24 VDC 1,32 Amps	VET-11		0-350	10	2,1
4/3 float center	24 VDC 1,32 Amps	VEX-11		0-350	12	2,1
Dual flow control	–	VFC-4		0-350	–	2,6
Dual pilot operated check valve	–	VD2P		0-350	14	4,0
Pressure reducing valve	–	PRV-6 PRV-7		30-3000 5-138	–	0,8

VEX-11 valve on ZW5020HG-FT21 pump.

Custom build your modular valves

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

VEA	-	1	1	600	-	D
1 Valve Flow Path		2 Flow Capacity	3 Voltage	4 Accessory Valves		5 Manifold

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 = 15 l/min

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*

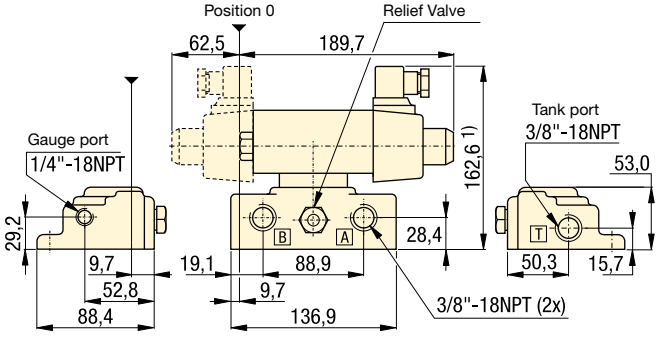
Example

The **VEA-11600-D** is a modular valve with a 4-way, 3-position open center flowpath, 24 VDC, and an integrated pilot-operated check valve, for mounting on an Enerpac pump.

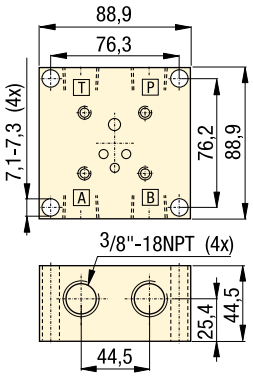
Bolt Kit **BK-2** is included.

VE series

Modular Valve Pump Mounted



Modular Valve Remote Mounted



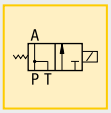
1) add 47 mm for each Accessory Valve.
Note: BK-1 Bolt Kit is included with each modular valve.

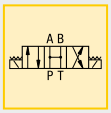
Pressure: 0 - 700 bar

Flow: 15 l/min max.

Voltage: 24, 115, 230 V

(E) Válvulas de control
(F) Electrodistributeurs
(D) Wegesitzventile





Options

Gauges and accessories
190 ▶

Fittings
194 ▶

Accessory Valves and Bolt Kits

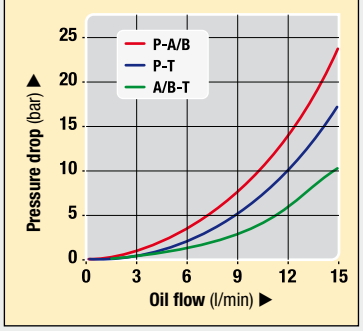
Use **VS-11** relief valve to add system pressure control to VE-series valves.

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.

Pressure drop *vs* oil flow



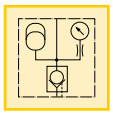
Pilot ratio: 7:1

Flow: 38 l/min max.

E Válvulas antiretorno pilotada

F Clapets antiretour piloté

D Rückschlagventile



To hold cylinder load and ensure remote unlocking

- Fast check-off response
- Hardened seats ensure long life and positive pressure holding
- Built-in accumulator to maintain system pressure
- Mounting holes
- Manifold mount body MVM-72

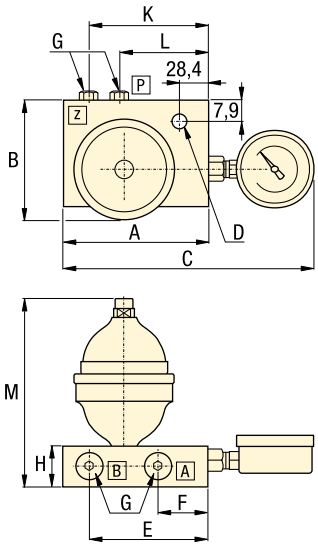
Shown: MV-72

Product selection

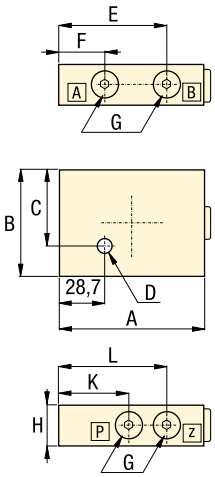
Pilot ratio	Accumulator included	Maximum oil flow l/min	Maximum pressure bar	Model number	Oil ports	Optional charging tool for ACL	kg
7 : 1	–	38	350	**MV-72**	G 1/4”	–	1,8
7 : 1	ACL-22	38	350	**MV-722B**	G 1/4”	**WAT-2**	2,7
7 : 1	ACL-202	38	350	**MV-7202B**	G 1/4”	**WAT-2**	3,4
7 : 1	–	38	350	**MVM-72**	G 1/4”	–	1,4

For more information on ACL-series Accumulators see page 124.

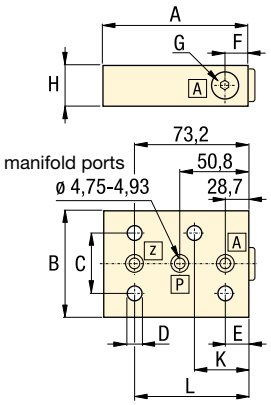
MV-722B, -7202B



MV-72



MVM-72



A = Cylinder advance

B = Cylinder retract

P = Pressure

Z = Pilot

Product dimensions in mm [ ]

Model number	A	B	C	D	E	F	G	H	K	L	M
MV-72	89,0	63,5	55,6	7,1	73,2	28,7	G1/4”	31,8	50,8	73,2	–
MV-722B	89,0	71,1	184,2	7,1	73,2	28,4	G1/4”	31,8	73,2	50,8	145
MV-7202B	89,0	92,4	181,1	7,1	73,2	28,4	G1/4”	31,8	73,2	50,8	185
MVM-72	89,0	63,5	38,1	7,1	28,7	28,4	G1/4”	31,8	44,5	73,2	–

Seal material: Buna-N.
Manifold O-rings included with MVM-72. For manifold mounting installation information consult Enerpac for surface preparation.

www.enerpacwh.com

MV-series

Pilot operated check valves check the oil flow with a built-in pilot circuit providing fast, automatic check-off for your workholding applications.

The pilot operated check valves with built-in accumulator help to maintain system pressure due to minor oil loss.

Application

Added capability to open with pilot pressure to allow cylinders to retract. By using a pilot operated check valve, cylinder retraction can be accomplished automatically without operator activity.

Options

Fittings

194

Accessory valves *Application & selection*

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.

V-17 Safety check valve installed on a fixture.

Your hydraulic control solution

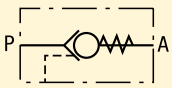
- Regulate oil flow or system pressure
- All valves feature NPT or SAE porting to insure against leakage at rated pressure
- Can easily be installed in any system
- All valves are painted, coated or plated for corrosion resistance.

Product selection

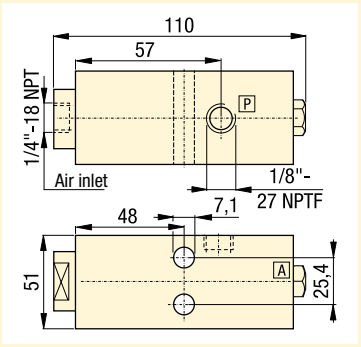
Valve type	Maximum pressure bar	Model number	Oil ports
Holding valve, air pilot	200	**HV-1000A**	1/8" NPTF
Holding valve, modular	200	**MHV-1**	1/8" NPTF
Pressure limiting valve	200	**PLV-40013B**	1/8" NPTF
Manual shut-off valve	350	**V-12**	SAE #4
Auto-damper valve	700	**V-10**	1/2" NPTF
Safety check valve	700	**V-17**	3/8" NPTF
Pressure relief valve	700	**V-152**	3/8" NPTF

Product specification

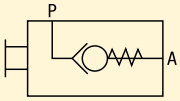
HV-1000A
Air pilot holding valve



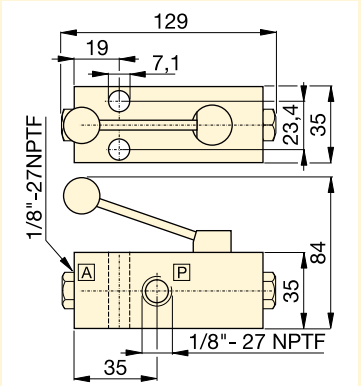
- Holds fluid under pressure offering independent control of different branches of the same fixture
- Valve can control the pilot air and the booster in sequence
- Max. oil flow 5 l/min
- Works with the VA-42 four-way air valve and a booster.



MHV-1
Modular holding valve



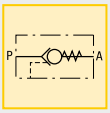
- Allows separate operation of clamping fixtures with a single power source
- Ideal for applications when fluid feed lines are impractical. If system pressure is interrupted, the MHV-1 will hold the pressure beyond the valve.
- Max. oil flow 5 l/min
- To release system pressure, rotate valve handle in either direction 90˚ to release and retract system pressure.

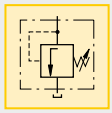


Pressure: 0 - 700 bar

Flow: 5 - 30 l/min max.

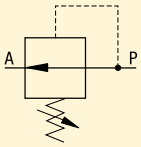
- (E) **Válvulas de control**
- (F) **Valves de contrôle**
- (D) **Regelventile**

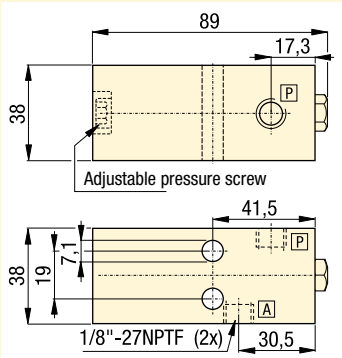




PLV-40013B
Pressure limiting valve

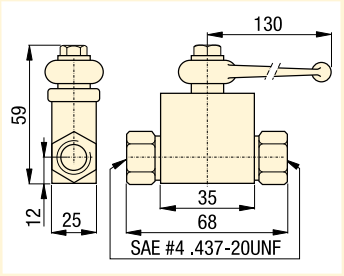
- Allows precise control of pressures reaching specific clamps
- When pressure build-up reaches a preset level, the valve closes, stabilizing pressure to that section of the fixture
- Pressure adjustment between 14-103 bar
- Max. oil flow 5 l/min.





V-12
Manual shut-off valve

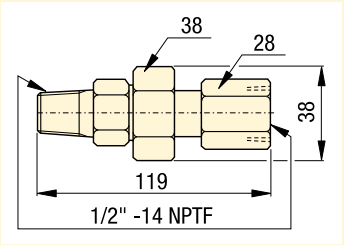
- Ball type valve can be used for the master system shut-off or for isolating separate circuits on a fixture
- Viton seals standard
- Straight through design for easy system plumbing and installation
- Fully open allows high flow return of oil
- Max. oil flow 12 l/min.



V-10 Auto-damper valve

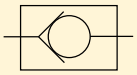
- To protect gauge during high cycle applications
- Creates a flow resistance when load is released suddenly

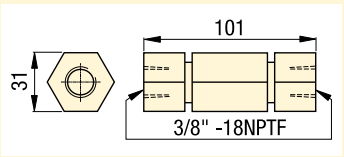
  No adjustments are necessary
- Fits directly into GA-series gauge adaptor.



V-17 Safety check valve

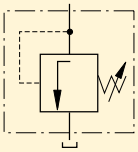
- Ruggedly built to resist shock and operate with low pressure drop
- Closes smoothly without pounding
- Max. oil flow 30 l/min.

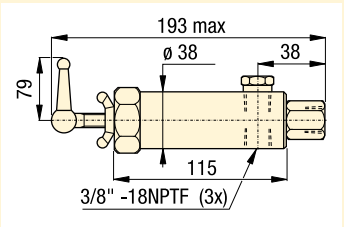




V-152 Pressure relief valve

- Limits pressure developed by the pump in hydraulic circuit, thus limiting the force imposed on other components
- 55-700 bar adjustment range; ± 3% repeatability
- Valve opens whenever preset pressure is reached. To increase pressure setting, turn handle clockwise
- Max. oil flow 30 l/min
- Includes 1 meter return line hose kit.





Options

VA-42 Air valve 158 ▶

Gauges and adaptors 190 ▶

Hoses and couplers 192 ▶

Fittings 194 ▶

Important

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

197 ▶

Shown: VA-42, VAS-42

Air valves

Enerpac's line of directional air valves and accessories complete your workholding system. Used to control air operated hydraulic units, they increase your productivity and efficiency.

Application

VA-series directional air valves provide either manual or electric control to air operated hydraulic units. Accessories such as rapid exhaust, check valves, silencers and regulators complete the air control system.

- Accessory valves provide greater safety and more efficient clamping cycles
- Recommended for use with all air powered units
- Directional valves to control booster and pump air supply
- Remote air valve permits either hand or foot operation

To control and regulate air supply

VA-42 Manual operated air valve 5-way, 2-position

- For control of boosters
- Viton seals standard

VAS-42 Solenoid operated air valve 5-way, 2-position

- For control of pump and boosters air supply
- Viton seals standard
- Solenoid: 120 VAC, 50/60Hz
  Amperage: inrush .11 Amps, holding .07 Amps
- Maximum cycle rate: 600 cycles per minute

VR-3 Rapid exhaust valve

- Enables booster to advance and retract faster
- Instantly exhausts air supply from booster to atmosphere

V-19 Air check valve

- Prevent rapid drop of air pressure to the booster in the event of sudden loss of input air

RFL-102 Regulator-Filter-Lubricator

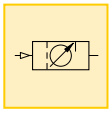
- Regulates air pressure
- Filter air input
- Lubricates air motors with a fine oil vapor mist
- Maximum air flow 1360 l/min

QE-375 Muffler

- Use with VR-3 or VAS/VA-42
- Reduces noise level of exhaust air from pump.

Air Pressure: 0 - 10 bar

(E) Válvulas de aire
(F) Valves à air
(D) Luftventile



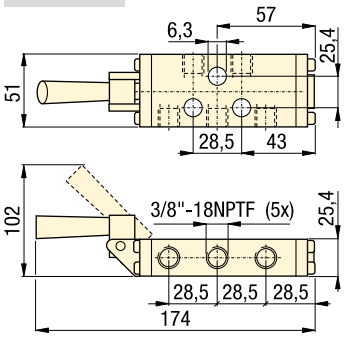
Options

Gauges and adaptors 190 ▶

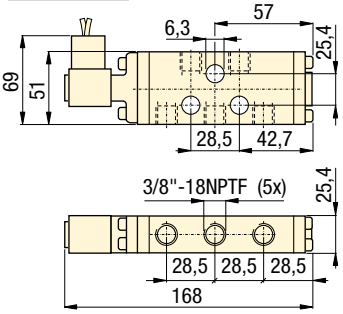
Hoses and couplers 192 ▶

Fittings 194 ▶

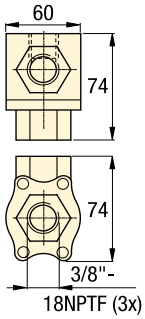
VA-42



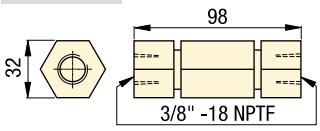
VAS-42



VR-3



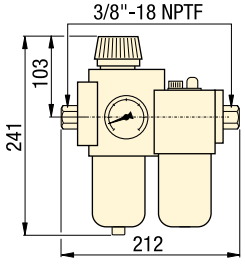
V-19



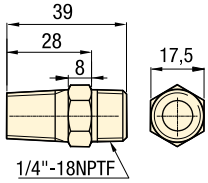
Product selection

Maximum pressure bar	Model number
▼ Air valves	
2-10	VA-42
2-10	VAS-42
0-7	VR-3
0-7	V-19
▼ Accessories	
0-9	RFL-102
0-9	QE-375

RFL-102



QE-375



Important

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

223 ▶

Coupler Packages *Application & selection*

Shown: AP-500, MHV-1,ACBS-22A

Accumulator packages will help maintain system pressure to your fixture when separated from the hydraulic source. The gauge will display system pressure after the circuit is disconnected.

ACBS-202A Accumulator package used to maintain pressure on a machine tool fixture.

Coupler packages

...compact design for easy use of accumulators

- Single design accommodates both single-acting or double-acting circuit
- Relief valve fitted and ball check shut-off
- Glycerin-filled gauge included
- Supplied standard with one male coupler (AH-652)
- Optional manifold mounting. O-ring seals located on bottom of block only for single-acting circuit.

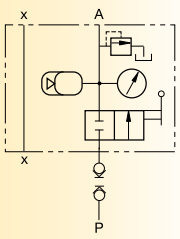
MHV-1 Modular holding valve

- 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 5 l/min
- To release system pressure, rotate valve handle in either direction 90˚ to release and retract system pressure.

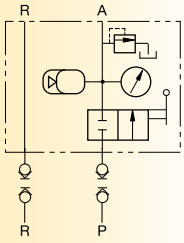
Coupler package circuits

ACBS

Single-acting circuit

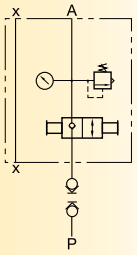


Double-acting circuit

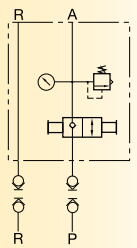


AP-500

Single-acting circuit

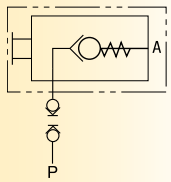


Double-acting circuit



MHV-1

Single-acting circuit



Product selection

Operating pressure	Model number	Max. rated oil volume	Gas volume	Pre-charged nitrogen pressure	Usable oil capacity
bar		cm^3	cm^3	bar	cm^3 at 350 bar
▼ **Accumulator coupler packages**					
100 - 350	**ACBS-22A**	16,4	20,0	100	8,7
100 - 350	**ACBS-202A**	163,9	169,9	100	73,9
0 - 350	**AP-500**	**AP-500 uses WA-502 or WA-5010** [1]			
0 - 207	**MHV-1**	–		–	– –

[1] See pre-charge chart on page 163 for hydraulic operating pressures.

Pressure: 0 - 350 bar

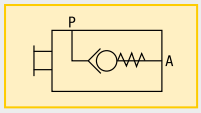
Oil volume: 16,4 - 163,9 cm³

Gas volume: 20 - 169,9 cm³

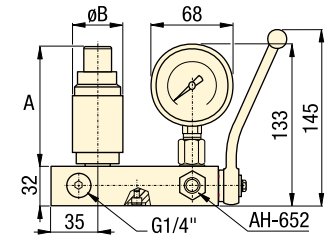
(E) Acopladores manuales

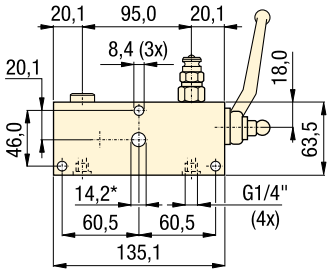
(F) Manuel coupleur

(D) Manuelle kupplung



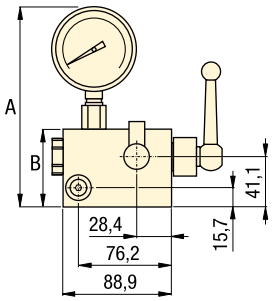
ACBS

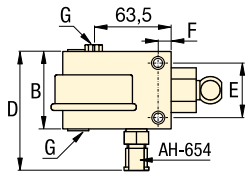




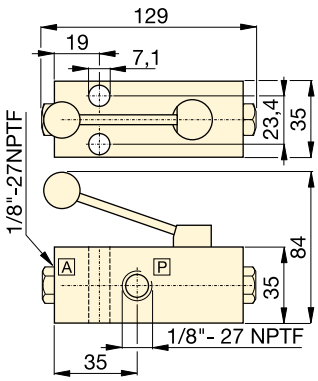
[1] Manifold hole should not exceed ø 7,6 mm when port is utilized.

AP-500





MHV-1



Options

Couplers 192

High pressure filters 193

Hydraulic oil 193

Fittings 194

Important

Enerpac high pressure in-line filters are required for use with these control units to prevent damage that can be caused by contaminants that have penetrated your hydraulic fluid system.

Order an additional male coupler for use in double-acting hydraulic circuits.
ACBS-Series: AH-652
AP-500: AH-654

Product dimensions in mm [ ]

Model number	A	B	C	D	E	F	G	Recommended charging tool	kg
▼ **Pre-charged accumulator coupler packages**									
ACBS-22A	68	42	–	–	–	–	G1/4"	WAT-2	4,6
ACBS-202A	106	85	–	–	–	–	G1/4"	WAT-2	5,4
AP-500	163,6	63,5	89,0	97,5	44,5	9,7	SAE #4	–	3,9
MHV-1	–	–	–	–	–	–	1/8" NPTF	–	–