

▼ Shown from left to right: ZE3304MB-K, ZE4110DB-FHR



The New Standard for Industrial Applications, Z-Class



All models in the chart below are the industry's most commonly selected pump configurations. See the **Z-Class** pump ordering matrix for more options.

Page: 15

▼ SELECTION CHART *

BASIC PUMP CONFIGURATIONS Select your ZE pump model here for most applications. For special requirements, see the ZE Pump ordering matrix.	Pump Type	Used with Cylinder		Valve Function			Valve** Model Number	Useable Oil Capacity (gal)
ZE-Series with Dump Valve <ul style="list-style-type: none"> • Ideal for punching, crimping and cutting • For use when load holding is not required • Push-button control pendant with 10 ft. cord controls the valve and motor 		•		•		•	VE32D	1.0
		•		•		•	VE32D	2.0
		•		•		•	VE32D	5.0
ZE-Series with Manual Valve <ul style="list-style-type: none"> • Ideal choice for most applications • Manual valve control, for both single-acting or double-acting applications • Manual motor control 		•		•		•	VM32	2.0
		•		•		•	VM32	5.0
		•		•	•	•	VM33	2.0
		•		•	•	•	VM33	5.0
			•	•	•	•	VM43	2.0
			•	•	•	•	VM43	5.0
ZE-Series with Solenoid Valve <ul style="list-style-type: none"> • Ideal for production and lifting applications • All valves are 3-position for Advance-Hold-Retract • Push-button control pendant with 10 ft. cord controls the valve and motor • Includes LCD electrical package 		•		•	•	•	VE33	1.0
		•		•	•	•	VE33	2.0
		•		•	•	•	VE33	5.0
			•	•	•	•	VE43	2.0
			•	•	•	•	VE43	5.0
			•	•	•	•	VE43	10.0

* All models in this chart are 115 VAC, 1-phase at 50/60 Hz. For other options, please refer to the ZE Pump ordering matrix on page 15.

** See Valve Section for technical information.

ZE3 & ZE4 Electric Pump Series

- Features **Z-Class** high-efficiency pump design; higher oil flow and by-pass pressure, cooler running and requires 18% less current draw than comparable pumps
- Totally enclosed, fan-cooled industrial electric motors supply extended life and stand up to harsh industrial environments
- Low-voltage pendant, on certain models, provides additional safety for the operator
- Multiple valve and reservoir configurations provide application specific models to match the most demanding industrial applications
- High-strength, molded electrical enclosure protects electronics, power supplies and LCD readout from harsh industrial environments
- LCD readout provides a number of diagnostic and readout capabilities never before offered on an industrial pump (included with electric valve models, optional on other models)

ZE3 ZE4 Series



Reservoir Capacity:
1.0 - 10 gal.

Flow at Rated Pressure:
40 - 60 in³/min

Motor Size:
1.0 - 1.5 hp

Maximum Operating Pressure:
10,000 psi



All Z-Class electric pumps are CSA and CE compliant.



Single-Stage or Two-Stage

Choose single-stage pumps for applications that require constant flow regardless of pressure, such as testing or clamping. Two-stage pumps have an increased output flow at low pressure to allow fast movement towards the load, for reduced cycle times and increased productivity.



How to Order Single-Stage Pumps

To specify a single-stage pump, place the letter "S" at the end of the model number.

For example:

ZE5320LG-S

This is a 3.0 hp ZE5 series pump with a VM33 manual valve, 5 gallon reservoir, LCD electrical box, 220 VAC, 50/60 Hz 3-phase motor and single-speed option.

ZE3 Series (1.0 hp) Output Flow Rate at 10,000 psi: 40 in ³ /min				ZE4 Series (1.5 hp) Output Flow Rate at 10,000 psi: 60 in ³ /min			
Standard Electric		LCD Electric		Standard Electric		LCD Electric	
Model Number	Weight (lbs)	Model Number	Weight (lbs)	Model Number	Weight (lbs)	Model Number	Weight (lbs)
N/A		ZE3104DB	95	N/A		ZE4104DB	104
N/A		ZE3108DB	105	N/A		ZE4108DB	114
N/A		ZE3120DB	141	N/A		ZE4120DB	150
ZE3208MB	96	ZE3208LB	101	ZE4208MB	104	ZE4208LB	110
ZE3220MB	132	ZE3220LB	137	ZE4220MB	140	ZE4220LB	146
ZE3308MB	97	ZE3308LB	103	ZE4308MB	105	ZE4308LB	111
ZE3320MB	133	ZE3320LB	138	ZE4320MB	141	ZE4320LB	147
ZE3408MB	97	ZE3408LB	103	ZE4408MB	106	ZE4408LB	111
ZE3420MB	133	ZE3420LB	139	ZE4420MB	141	ZE4420LB	147
N/A		ZE3304SB	107	N/A		ZE4304SB	115
N/A		ZE3308SB	117	N/A		ZE4308SB	125
N/A		ZE3320SB	153	N/A		ZE4320SB	161
N/A		ZE3408SB	117	N/A		ZE4408SB	125
N/A		ZE3420SB	153	N/A		ZE4420SB	161
N/A		ZE3440SB	204	N/A		ZE4440SB	212

* All models in this chart are 115 VAC, 1-phase at 50/60 Hz. For other options please refer to the ZE Pump ordering matrix on page 15.

▼ Shown from left to right: ZE6440SG-HNU, ZE5420LG



The New Standard for Industrial Applications, Z-Class



All models in the chart below are the industry's most commonly selected pump configurations. See the **Z-Class** pump ordering matrix for more options.

Page: 15

▼ SELECTION CHART *

BASIC PUMP CONFIGURATIONS Select your ZE pump model here for most applications. For special requirements see the ZE Pump ordering matrix.	Pump Type	Used with Cylinder		Valve Function			Valve** Model Number	Useable Oil Capacity (gal)	
ZE-Series with Dump Valve <ul style="list-style-type: none"> • Ideal for punching, crimping and cutting • For use when load holding is not required • Push-button control pendant with 10 ft. cord controls the valve and motor 		•		•		•	VE32D	2.5	
		•		•		•	VE32D	5.0	
ZE-Series with Manual Valve <ul style="list-style-type: none"> • Ideal choice for most applications • Manual valve control, for both single-acting or double-acting applications • Manual motor control 		•		•		•	VM32	2.5	
		•		•		•	VM32	5.0	
		•		•	•	•	VM33	5.0	
		•		•	•	•	VM33	10.0	
			•	•	•	•	VM43	5.0	
			•	•	•	•	VM43	10.0	
ZE-Series with Solenoid Valve <ul style="list-style-type: none"> • Ideal for production and lifting applications • All valves are 3-position for Advance-Hold-Retract • Push-button control pendant with 10 ft. cord controls the valve and motor • Includes LCD electrical package 		•		•	•	•	VE33	2.5	
		•		•	•	•	VE33	5.0	
				•	•	•	VE43	2.5	
			•	•	•	•	VE43	5.0	
			•	•	•	•	VE43	10.0	
			•						
			•						

* All models in this chart are 220 VAC, 3-phase at 50/60 Hz. For other options please refer to the ZE Pump ordering matrix on page 15.

** Refer to Valve Section for technical information on page 12.

ZE5 & ZE6 Electric Pump Series

- Features **Z-Class** high-efficiency pump design; higher oil flow and by-pass pressure, cooler running and requires 18% less current draw than comparable pumps
- Totally enclosed, fan-cooled industrial electric motors supply extended life and stand up to harsh industrial environments
- Low-voltage pendant, on certain models, provides additional safety for the operator
- Multiple valve and reservoir configurations provide application specific models to match the most demanding industrial applications
- High-strength, molded electrical enclosure protects electronics, power supplies and LCD readout from harsh industrial environments
- LCD readout provides a number of diagnostic and readout capabilities never before offered on an industrial pump (included with electric valve models, optional on other models)

ZE5 ZE6 Series



Reservoir Capacity:
2.5 - 10 gal.

Flow at Rated Pressure:
120 - 200 in³/min

Motor Size:
3.0 - 7.5 hp

Maximum Operating Pressure:
10,000 psi



All Z-Class electric pumps are CSA and CE compliant.



Single-Stage or Two-Stage

Choose single-stage pumps for applications that require constant flow regardless of pressure, such as testing or clamping. Two-stage pumps have an increased output flow at low pressure to allow fast movement towards the load, for reduced cycle times and increased productivity.



How to Order Single-Stage Pumps

To specify a single-stage pump, place the letter "S" at the end of the model number.

For example:

ZE5320LG-S

This is a 3.0 hp ZE5 series pump with a VM33 manual valve, 5 gallon reservoir, LCD electrical box, 220 VAC, 50/60 Hz 3-phase motor and single-speed option.

ZE5 Series (3.0 hp) Output Flow Rate at 10,000 psi: 120 in ³ /min				ZE6 Series (7.5 hp) Output Flow Rate at 10,000 psi: 200 in ³ /min			
Standard Electric***		LCD Electric		Standard Electric***		LCD Electric	
Model Number	Weight (lbs)	Model Number	Weight (lbs)	Model Number	Weight (lbs)	Model Number	Weight (lbs)
N/A		ZE5110DG	136	N/A		ZE6110DG	176
N/A		ZE5120DG	163	N/A		ZE6120DG	203
ZE5210MG	124	ZE5210LG	132	ZE6210MG	164	ZE6210LG	172
ZE5220MG	151	ZE5220LG	159	ZE6220MG	191	ZE6220LG	199
ZE5320MG	152	ZE5320LG	160	ZE6320MG	192	ZE6320LG	200
ZE5340MG	203	ZE5340LG	210	ZE6340MG	243	ZE6340LG	250
ZE5420MG	152	ZE5420LG	160	ZE6420MG	192	ZE6420LG	200
ZE5440MG	203	ZE5440LG	210	ZE6440MG	243	ZE6440LG	251
N/A		ZE5310SG	147	N/A		ZE6310SG	188
N/A		ZE5320SG	174	N/A		ZE6320SG	214
N/A		ZE5410SG	147	N/A		ZE6410SG	188
N/A		ZE5420SG	174	N/A		ZE6420SG	214
N/A		ZE5440SG	225	N/A		ZE6440SG	265

* All models in this chart are 220 VAC, 3-phase at 50/60 Hz. For other options please refer to the ZE Pump ordering matrix on page 15.

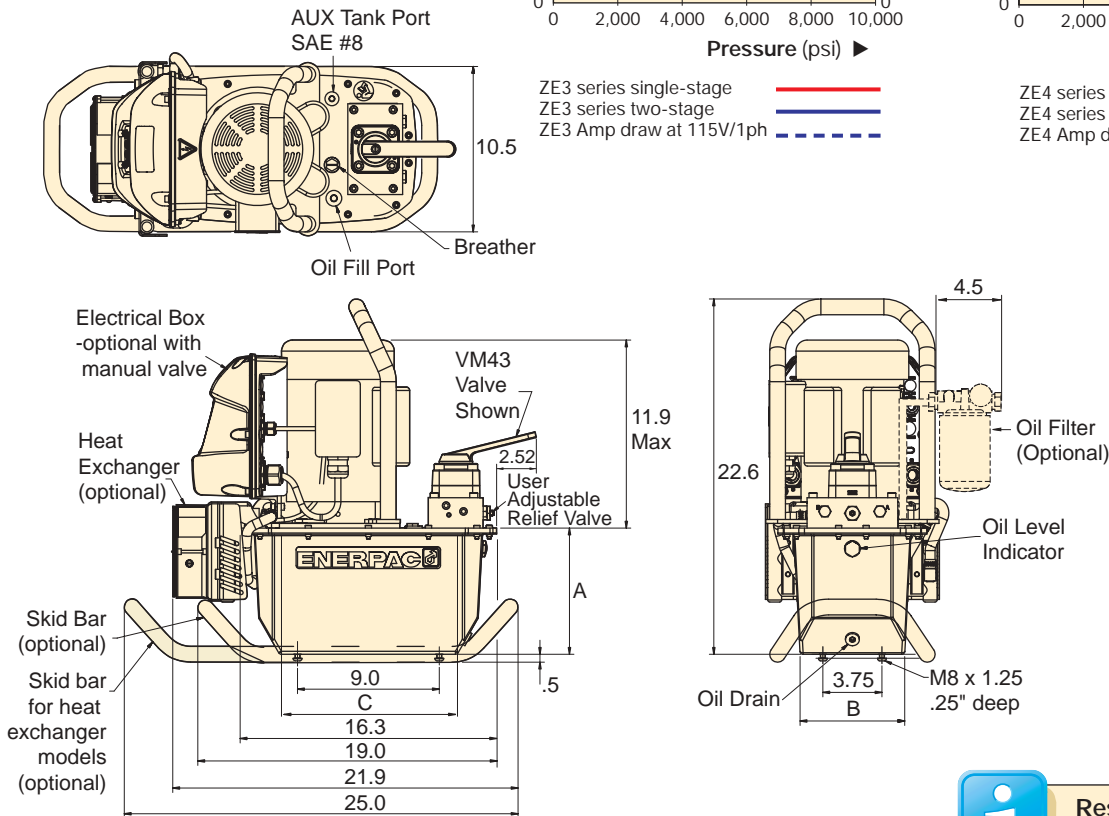
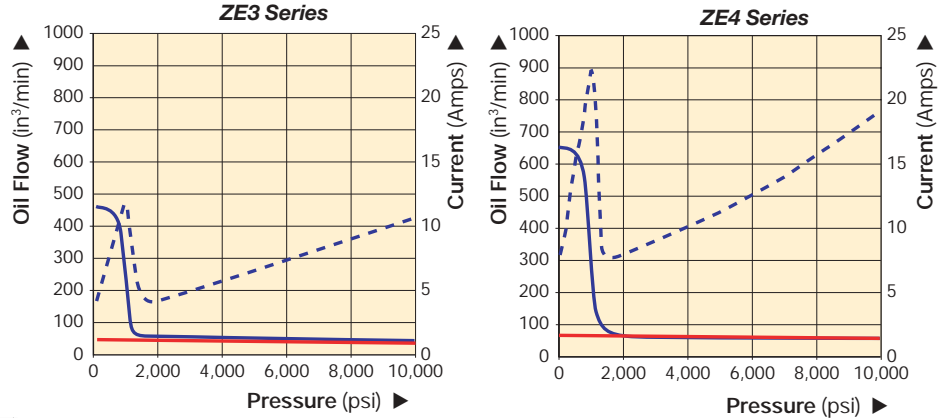
*** Standard Electric models with 3-phase motors are shipped without cord, motor starter or overload protection.

▼ PERFORMANCE CHART

ZE Pump Series	Operation	Output Flow Rate (in ³ /min)				Motor Size		Relief Valve Adjustment Range (psi)	Sound Level (dBA)
		100 psi	700 psi	5,000 psi	10,000 psi	hp	RPM		
3	Single-stage	43	43	42	40	1.0	1750	1000 - 10,000	75
	Two-stage	450	385	42	40				
4	Single-stage	64	64	62	60	1.5	1750	1000 - 10,000	75
	Two-stage	650	600	62	60				

Output flow rate is listed at 60 Hz.
Flow rate will be approximately 5/6 of these values at 50 Hz.

▼ FLOW CHARTS



Useable Oil Capacity (gal)	Dimensions ZE series (in)			Weight (lbs)	
	A	B	C	ZE3	ZE4
1.0	5.6	6.0	11.0	86	94
2.0	8.0	6.6	11.3	96	105



Reservoir information

One and two gallon reservoirs are only available with ZE3 and ZE4 series pumps. 2.5, 5 and 10 gallon reservoirs are available on all sizes of ZE series pumps.

Pump weights are shown with LCD electric, no valves and no accessories

ZE5 & ZE6 Electric Pump Series

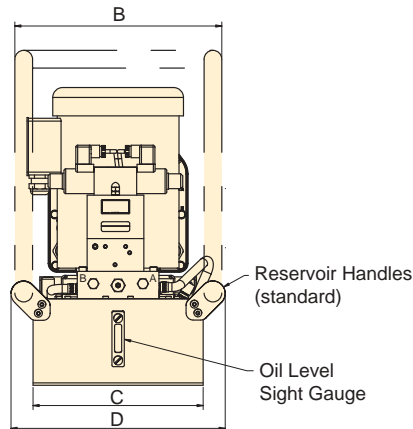
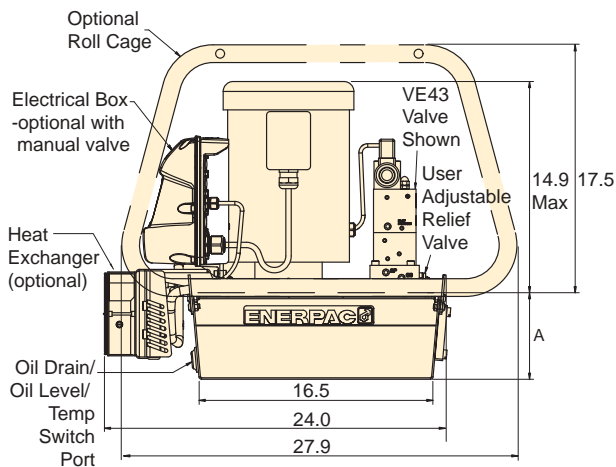
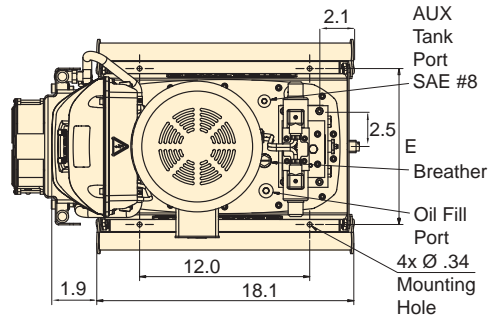
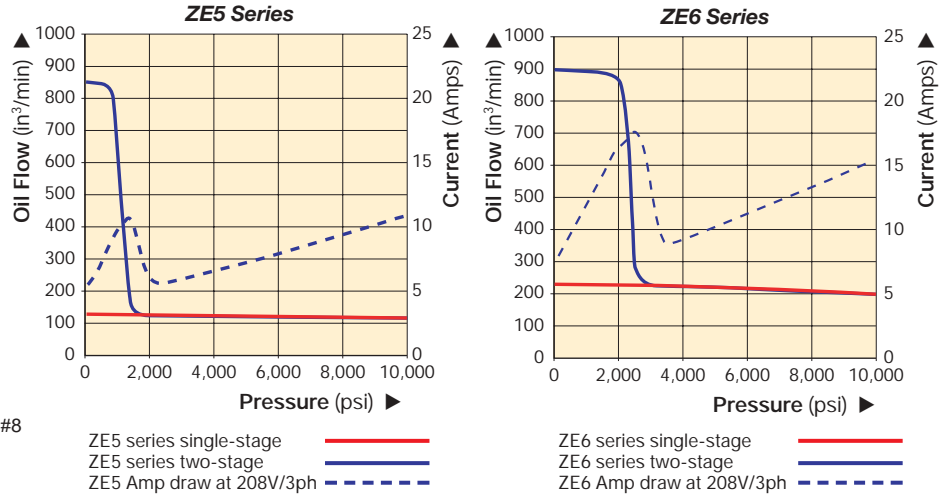
▼ PERFORMANCE CHART

ZE Pump Series	Operation	Output Flow Rate (in ³ /min)				Motor Size		Relief Valve Adjustment Range (psi)	Sound Level (dBA)
		100 psi	700 psi	5,000 psi	10,000 psi	hp	RPM		
5	Single-stage	128	126	123	120	3.0	1750	1000 - 10,000	75
	Two-stage	850	825	123	120				
6	Single-stage	220	215	210	200	7.5	3450	1000 - 10,000	80
	Two-stage	900	890	210	200				

Output flow rate is listed at 60 Hz.

Flow rate will be approximately 5/6 of these values at 50 Hz.

▼ FLOW CHARTS



Useable Oil Capacity (gal)	Dimensions ZE series (in)					Weight (lbs)			
	A	B	C	D	E	ZE3	ZE4	ZE5	ZE6
2.5	6.1	14.6	12.0	15.1	11.0	106	114	127	167
5.0	7.1	19.2	16.6	19.7	15.6	132	141	154	194
10.0	10.6	22.5	19.9	22.7	18.9	183	191	204	244

Pump weights are shown with LCD electric, no valves and no accessories.

▼ Shown: ZPF mounted on ZE4110DB-FHR



ZPF Series



Filtration:
25 micron

Maximum Operating Pressure:
200 psi



ZPF-Series

The oil filter kit removes contaminants from the return oil flow before allowing it back into the reservoir, reducing component damage created by oil borne contaminants.



PF25 Replacement Filter Element

For best performance, replace filter element regularly.

ZPF Series Return Line Filter

- Extends life of hydraulic components and increases system reliability
- 25 micron nominal return line filter cleans oil to increase system life
- Internal by-pass valve to prevent damage if the filter is dirty
- Kit assembles quickly and easily to Enerpac **Z-Class** pumps
- Replaceable filter element
- Maintenance indicator included
- A variety of installation hardware included

Nominal Filtration	Model Number	Maximum Pressure	Maximum Oil Flow	By-pass Setting	Replace-ment Filter Element	Weight
(micron)		(psi)	(GPM)	(psi)		(lbs)
25	ZPF	200	12.0	25	PF25	3.2

▼ Shown: ZHE-E10 mounted on ZE6440SG-HNU



ZHE Series



Transfer:
900 Btu/h

Maximum Operating Pressure:
300 psi



HE-Series

Heat exchanger removes heat from the bypass oil to provide cooler operation. This stabilizes oil viscosity, increases pump life and reduces wear of other hydraulic components.



Do not exceed maximum flow and pressure ratings. Heat exchanger is not suitable for water-glycol or high water-based fluids.

ZHE Series Heat Exchanger

- Extends system life
- All installation components included
- Stabilizes oil temperature at a maximum of 130° F at 70° F ambient temperature
- Stabilizes oil viscosity, increasing oil life and reduces wear of pump and other hydraulic components

Voltage	Model Number	Reservoir Size	Thermal Transfer**	Amperage Draw	Maximum Pressure	Maximum Oil Flow	Weight
		(Gal.)	(Btu/h)	(Amps)	(psi)	(GPM)	(lbs)
24 VDC	ZHE-E04	1, 2	900	.95	300	7.0	9.0
	ZHE-E10	2.5, 5, 10					

** At 0.5 GPM

▼ Shown: ZLS-U4 mounted on ZE3410SG-HL



ZLS Series Oil Level/ Temperature Switch

- Ensures feedback on pump oil level and temperature
- Drop-in design allows for easy installation to pump reservoir
- Plugs directly into pump electrical enclosure
- Built-in thermal sensing shuts off pump when unsafe operating temperature is reached
- Oil level switch shuts down pump before oil reaches an unsafe operating level

▼ Shown: ZPT-U4 mounted on ZE4110DB-FHRT



ZPT Series Electronic Pressure Transducer

- Controls pump and monitors system
- More durable than analog gauges (against mechanical and hydraulic shock)
- More accurate than analog gauges (0.5% full scale of pump)
- Calibration can be fine tuned for certification
- "Auto-mode" provides automatic pressure control
- Display pressure in psi, bar, or MPa

ZLS Series



Temperature/Switchpoint:

175° F

Voltage:

24 VAC / DC



ZLS Series Level/ Temperature Switch

Oil level indicator for pump reservoir. If the pump is mounted in a remote area that does not provide visual access to the external oil level sight glass, the level switch provides a signal to turn off the pump before internal damage can occur due to cavitation.

Fixed Temperature Signal (°F)	Voltage	Model Number	Operating Temperature (°F)	Thermostat Rating (Amps)	Maximum Pressure (psi)	Weight (lbs)
175	24 VAC/DC	ZLS-U4	40-230	2.6	150	0.11

ZPS-ZPT Series



Pressure Range:

50 - 10,000 psi



ZPT Series

The pressure transducer is factory installed in the "A" port on pumps supplied with valves, and in the system port on all other configurations.



ZPT-U4 transducer can control motor or valve solenoid functions. ZPS-E3 pressure switch will only control motor function.

Adjustable Pressure Range (psi)	Model Number	Electrical Specification	Deadband (psi)	Switchpoint Repeatability	Oil Ports	Weight (psi)
50-10,000	ZPT-U4	4-20 mA	50	± 0.5%	1/4" NPTF	.3
500-10,000	ZPS-E3*	24 VAC/DC	115-550	± 2%	3/8" NPTF	2.7

* Includes 15,000 psi gauge

▼ Shown from left to right: VM32, VE33, VM33, VM43L, VE43-115



- Advance/Retract and Advance/Retract/Retract operation of single-acting and double-acting cylinders
- Manual or solenoid operation
- Pump mounting will retrofit on most Enerpac pumps
- Available “locking” option on VM Series valves for load-holding applications
- Standard “locking” feature on VE Series 3-position valves

▼ ZE4420SB-FH Z-Class pump is mounted next to an Enerpac H-frame press, includes VE43 electric valve to control cylinder operation.



For Reliable Control of Single and Double-Acting Cylinders

Valve Operation	Used with Cylinder	Valve Type	
Manual	Single-acting	2 Position	
Manual	Single-acting	3 Position, Tandem Center	
Manual	Double-acting	3 Position, Tandem Center	
Manual	Single-acting	3 Position, Tandem Center, Locking	
Manual	Double-acting	3 Position, Tandem Center, Locking	
Solenoid 24 VDC	Single-acting	2 Position, Dump	
Solenoid 24 VDC	Single-acting	3 Position, Tandem Center	
Solenoid 115 VAC	Single-acting	3 Position, Tandem Center	
Solenoid 24 VDC	Double-acting	3 Position, Tandem Center	
Solenoid 115 VAC	Double-acting	3 Position, Tandem Center	



About the VM/VE Series

Enerpac's new line of VM and VE series valves include several new features and design improvements over competitive models.

All valves feature several gauge ports for "system", A port and B port pressure monitoring. User adjustable relief valves are included on all models to allow the operator to easily set the optimum working pressure for each application. VM33 and VE43 valves include "System Check" feature, for more precise pressure holding and improved system control. The VM33 has improved porting which provides faster cylinder retraction while motor is running.

All of the features make it easy to see that Enerpac is the only choice for high pressure hydraulic pumps and valves.

VM and VE Series



Flow Capacity:
4.5 gal./min.

Maximum Operating Pressure:
10,000 psi



Push-Button Control Station

VE33-115 and VE43-115 electric valves are supplied with IC400 control station. These valves include an 8 ft. power cord, and can be used on any Enerpac pump. They require a separate 115 volt power supply to operate.

Model Number	Hydraulic Symbol	Schematic Flowpath			Weight (lbs)
		Advance	Hold	Retract	
VM32					5.6
VM33					6.7
VM43					6.8
VM33L					10.7
VM43L					10.8
VE32D					8.7
VE33					20.3
VE33-115					20.3
VE43					20.3
VE43-115					20.3

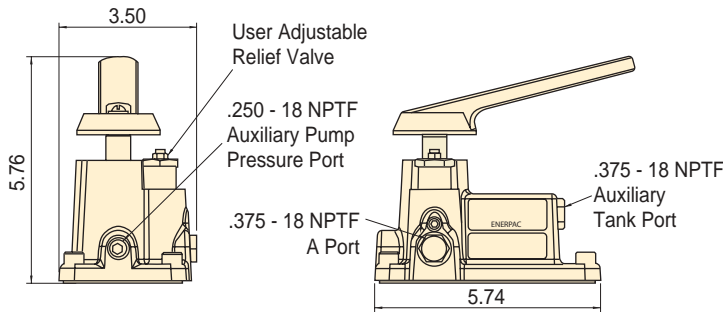


Locking Valves

For applications that require positive load holding, VM Series valves (except the VM32 valve) are available with a pilot-operated check valve. This option provides hydraulic locking of the load until the valve is shifted into the retract position.

To order this feature, place an "L" at the end of the model number.

Valve dimensions in inches



VM32

VM and VE Series

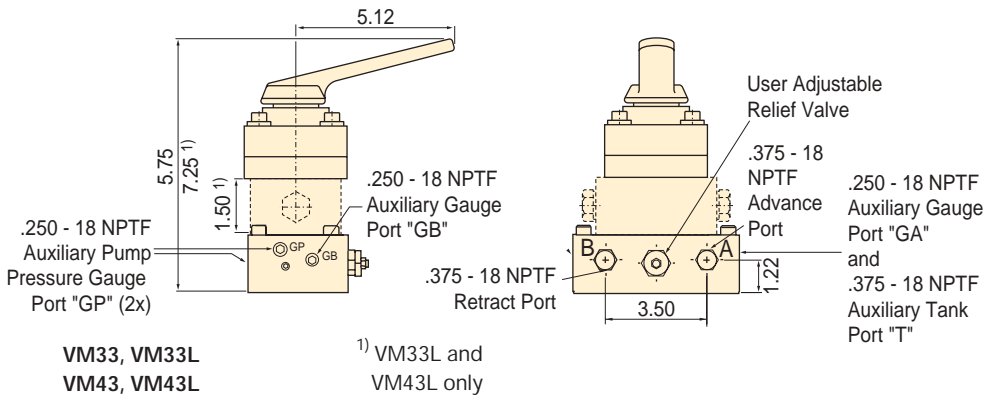


Flow Capacity:

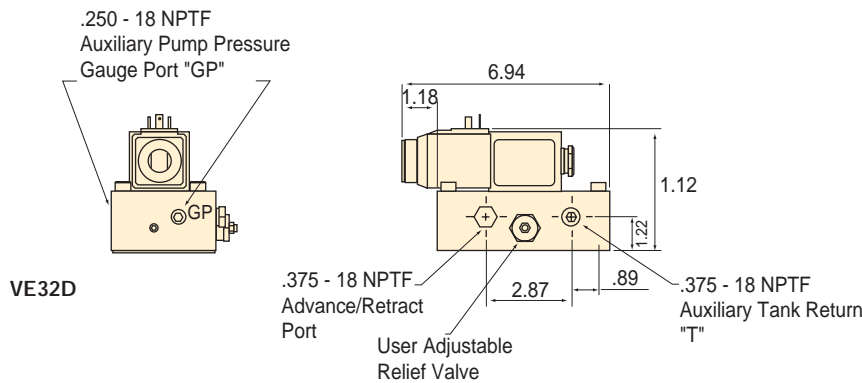
4.5 gal./min.

Maximum Operating Pressure:

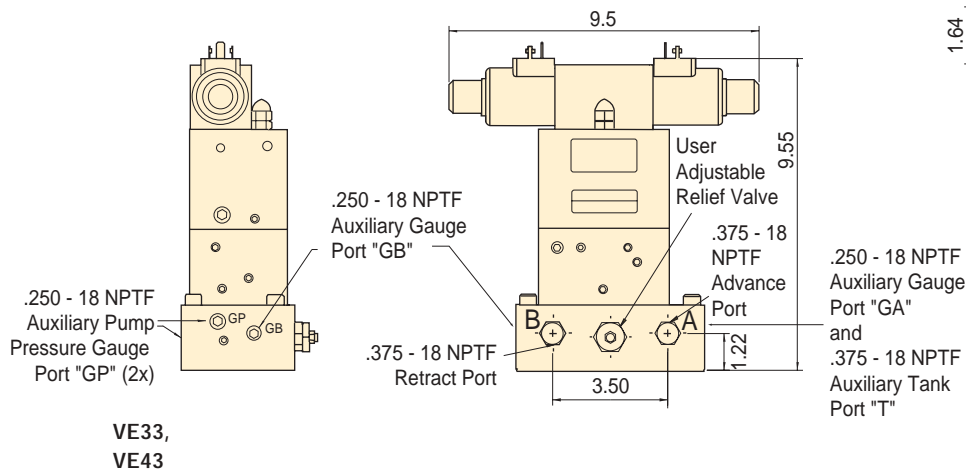
10,000 psi



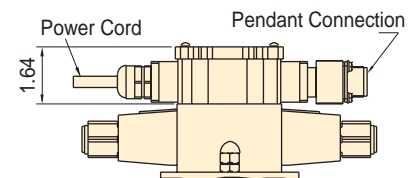
VM33, VM33L
VM43, VM43L



VE32D



VE33,
VE43



VE33-115
VE43-115

ZE Electric Pump Ordering Matrix

CUSTOM BUILD YOUR ZE SERIES PUMP

If the ZE Series pump that would best fit your application cannot be found in the chart on pages 4 through 7, you can easily build your custom ZE Series pump here.

▼ This is how a ZE Series Pump model is built up:

Z	E	4	4	20	L	B	-	F	H	L	T
1	2	3	4	5	6	7		8	8	8	8
Product Type	Motor Type	Flow Group	Valve Type	Useable Oil Capacity	Valve Operation	Voltage		Options	Options	Options	Options

1 Product Type

Z = Pump Class

2 Prime movers

E = Induction Electric Motor

3 Flow Group

- 3** = 40 in³/min @ 10,000 psi
- 4** = 60 in³/min @ 10,000 psi
- 5** = 120 in³/min @ 10,000 psi¹⁾
- 6** = 200 in³/min @ 10,000 psi¹⁾

4 Valve Types

- 0** = No valve w/coverplate
- 1** = Dump (VE32D)
- 2** = 3 way/2 position manual (VM32)
- 3** = 3 way/3 position manual or electric (VM33 or VE33)
- 4** = 4 way/3 position manual or electric (VM43 or VE43)
- 6** = 3 way/3 position locking manual w/po check (VM33L)
- 8** = 4 way/3 position locking manual w/po check (VM43L)

5 Useable Oil Capacity

- 04** = 1.0 gallon²⁾
- 08** = 2.0 gallon²⁾
- 10** = 2.5 gallon
- 20** = 5.0 gallon
- 40** = 10.0 gallon

8 Options (specify in alphabetical order)

- | | |
|---|---|
| F = Filter | P = Pressure switch ⁴⁾ |
| G = 0-15,000 psi Gauge (2 1/2" ⁷⁾ | R = Roll bar |
| H = Heat Exchanger ⁴⁾ | S = Single stage |
| K = Skidbar (1 and 2 gal. reservoirs only) | T = Pressure transducer ^{4) 7)} |
| L = Level/temp switch ^{4) 5)} | U = Foot switch ⁴⁾ |
| N = No reservoir handles (includes lifting eyes) | |

- 1) ZE5 and ZE6 series pumps only available with 3-phase motors.
- 2) 1 and 2 gallon reservoirs only available on ZE3 and ZE4 series pumps.
- 3) 115 volt pumps are supplied with CE and CSA approved 15 amp plug for intermittent use. 20 A circuit recommended for frequent full pressure use.
- 4) These options require LCD electrical package. Pressure switch option only available on manual valves without locking valve. The LCD electrical package can accept either a pressure switch or pressure transducer, but not both.
- 5) Not available with 1 and 2 gallon reservoirs.
- 6) Standard Electric models with 3-phase motors are shipped without cord, motor starter or overload protection.
- 7) Pressure gauge not available on pump models with pressure transducer. Pressure transducer provides digital pressure readout on LCD display.

ZE Series



Reservoir Capacity:

1 - 10 gal.

Flow at Rated Pressure:

40 - 200 in³/min.

Motor Size:

1.0 - 7.5 hp

Maximum Operating Pressure:

10,000 psi



Ordering Example 1

Model Number: ZE4420MB

ZE4420MB is a 60 in³/min, 10,000 psi pump with a 4 way, 3-position manual valve, a 5 gallon reservoir, operates on a 115 VAC 1 ph 50/60 Hz motor and includes standard electrical package.

Ordering Example 2

Model Number: ZE6440SG-HNU

ZE6440SG-HNU is a 200 in³/min, 10,000 psi pump with a 4 way, 3-position electric valve, a 10 gallon reservoir, operates on a 230 VAC 3 ph 50/60 Hz motor. It includes LCD electrical package and foot switch on 10 ft cord, no reservoir handles and the optional heat exchanger.

▼ ZE6440SG-HNU pump as described in ordering example 2.

