

**ENERPAC** 

**ZE-Series, Hydraulic Pumps**



**ENERPAC**   
Hydraulic Technology Worldwide

**Unsurpassed in technology,  
design and features**

**A true innovation in 700 bar hydraulic pumps.**

*Probably the best pump you will ever use!*

***Introducing the Enerpac Z-Class hydraulic pumps – that run cooler, use less electricity and are easy to service compared to conventional pumps.***



Enerpac has used the latest metallurgical, bearing and seal technologies to produce a pump whose features and benefits far surpass the electric pumps that are available today. By reducing the number of moving parts, improving flow dynamics and decreasing friction, Z-Class pumps will stay on the job longer, require less energy to operate and when needed, have lower service costs.

## **Z-Class pump element – heart of your ZE-Series system**

**Highly efficient design** provides increased flow rates, reduced heat generation and a decrease in power consumption. This means improved tool speed and increased service life – which results in higher productivity and lower operating costs.

**Heavy-duty bearings** extend pump life by reducing friction, reducing surface-loading and lowering bearing stresses.

**Pump cavity oil bath** extends pump life by reducing heat, improving lubrication and reducing wear.

**Self-priming, high-flow 1st stage pump** increases pump performance by super-charging the 2nd stage piston pump – improving oil flow in both hot and cold weather operation.

**Balanced rotating components reduce vibration** creating a smoother running pump – reducing wear, friction and sound levels.

**Replaceable piston check-valves** increase service life of major pump components.

## **ZE-Series 700 bar electric pumps**

**Available in 4 flow ranges** in single and two-stage models, and five reservoir sizes to provide the optimum cylinder and tool performance for almost any industrial application.

<b>Pump Series</b>	<b>Oil Flow at 700 bar</b>	<b>Motor Size</b>
<b>ZE3</b>	0,55 l/min	0,75 kW
<b>ZE4</b>	0,82 l/min	1,12 kW
<b>ZE5</b>	1,64 l/min	2,24 kW
<b>ZE6</b>	2,73 l/min	5,60 kW

**Extensive list of accessories** including electric box with back-lit LCD, heat exchanger, roll bars, return line filter, pressure transducer, pressure switch and level/temperature switch, allow complete pump control over a wide range of industrial applications.

**Ergonomic and durable low-voltage pendant** features sealed switches and operates on 15 Volts.

**Totally enclosed, fan-cooled industrial motor** provides safe, trouble-free operation for the life of the pump.

***ZE-Series electric pumps from Enerpac – simply the best pump you will ever use!***

# ZE-Series, Pump Types and Specifications



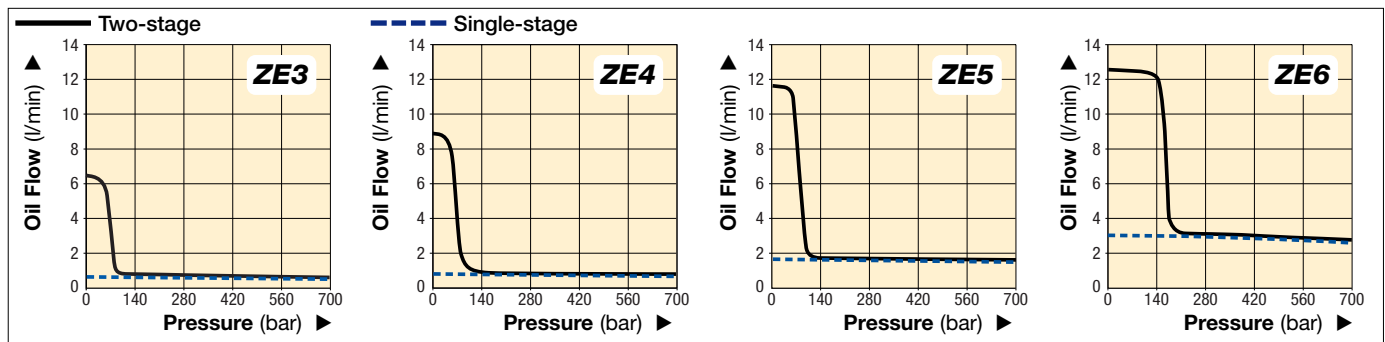
## ZE-Electric Pump

- For manual valve operation
- Oil flows from 0,55 to 2,73 l/min at 700 bar
- All non-electric options available (see page 6-7)
- Oil level sight glass or indicators
- Single phase electric motors include motor on/off switch and overload protection
- Carrying handles on all models.



## ZE-Electric Pump with LCD-Electric Box

- For solenoid or manual valve operation
- Oil flows from 0,55 to 2,73 l/min at 700 bar
- All options available (see page 6-7)
- Back-lit LCD provides essential user information:
  - Pump usage information, hour and cycle counts
  - Low-voltage warning and recording
  - Self-test, diagnostic and read-out capabilities
  - Pressure read-out and auto-mode pressure settings (when used with optional pressure transducer)
- All single and three phase units include motor control and overload protection.



## ▼ ZE-SERIES PERFORMANCE CHART

Pump Series	Output Flow Rate at 50 Hz * (l/min)				Pump Unit	Available Reservoir Sizes (useable oil) (litres)	Motor Size (kW)	Relief Valve Adjustment Range (bar)	Sound Level (dBA)
	low pressure at 7 bar	at 50 bar	high pressure at 350 bar	at 700 bar					
ZE3	0,59	0,59	0,57	<b>0,55</b>	Single-stage	4-8-10-20-40	0,75	70-700	75
	6,15	5,26	0,57	<b>0,55</b>	Two-stage				
ZE4	0,87	0,87	0,84	<b>0,82</b>	Single-stage	4-8-10-20-40	1,12	70-700	75
	8,88	8,20	0,84	<b>0,82</b>	Two-stage				
ZE5	1,75	1,72	1,68	<b>1,64</b>	Single-stage	10-20-40	2,24	70-700	75
	11,61	11,27	1,68	<b>1,64</b>	Two-stage				
ZE6	3,00	2,94	2,86	<b>2,73</b>	Single-stage	10-20-40	5,60	70-700	80
	12,29	12,15	2,86	<b>2,73</b>	Two-stage				

\* Oil flow will be approximately 6/5 of these values at 60 Hz.

**Single 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.

# ZE-Series, 700 Bar Electric Pumps

**ENERPAC**   
Hydraulic Technology Worldwide

▼ Shown from left to right: **ZE3208MW**, **ZE5420SW-FHR**



# Z







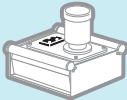
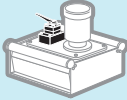
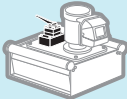
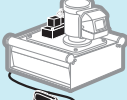
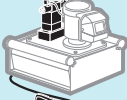
CLASS

## The New Standard for Industrial Applications



### Oil Level Glass

All ZE-Series pumps have an oil sight glass and steel reservoirs. Full sight oil level glass on 10, 20 and 40 litres reservoirs, oil level indicators on 4 and 8 litres reservoirs.

PUMP CONFIGURATIONS		Pump Type	Used with Tool or Cylinder		Valve Function <sup>1)</sup>			Valve <sup>1)</sup> Model Number	Useable Oil Capacity  (litres)		
For options and other model numbers see ordering matrix or contact your Enerpac office.											
Page: 											
<b>No Valve, without Electric Box <sup>2)</sup></b> <ul style="list-style-type: none"><li>For remote valves or pump mounting Enerpac VM-series valves</li><li>For remote valve mounting order BSS1090 high pressure connecting plate.</li></ul>								–	4		
								–	10		
								–	20		
								–	40		
MANUAL VALVE CONTROL	<b>With Manual Valve, without Electric Box</b> <ul style="list-style-type: none"><li>For single-acting or double-acting applications</li><li>On/off switch on 1-phase electric motor.</li></ul>		●	–	●	–	●	VM32	4		
			●	–	●	●	●	VM33	8		
			●	–	●	●	●	VM33L	10		
			–	●	●	●	●	VM43	20		
			–	●	●	●	●	VM43L	40		
		<b>With Manual Valve, with Electric Box</b> <ul style="list-style-type: none"><li>For single-acting or double-acting applications</li><li>On/off switch on 1-phase electric motor</li><li>All options available.</li></ul>		●	–	●	–	●	VM32	4	
				●	–	●	–	●	VM32	8	
				●	–	●	●	●	VM33	10	
				●	–	●	●	●	VM33L	10	
				–	●	●	●	●	VM43	20	
				–	●	●	●	●	VM43L	40	
REMOTE VALVE CONTROL	<b>With Solenoid Dump Valve, with Electric Box</b> <ul style="list-style-type: none"><li>Ideal for punching, crimping and cutting</li><li>For use when load holding is not required</li><li>Push-button pendant <sup>3)</sup> controls valve and motor</li><li>All options available.</li></ul>		●	–	●	–	●	VE32D	4		
			●	–	●	–	●	VE32D	8		
			●	–	●	–	●	VE32D	10		
			●	–	●	–	●	VE32D	20		
			●	–	●	–	●	VE32D	40		
		<b>With Solenoid 3-position Valve, with Electric Box</b> <ul style="list-style-type: none"><li>Ideal for production and lifting applications</li><li>3-position valves (advance/hold/retract)</li><li>Push-button pendant <sup>3)</sup> controls valve and motor</li><li>All options available.</li></ul>		●	–	●	●	●	VE33	4	
				●	–	●	●	●	VE33	8	
				●	–	●	●	●	VE33	10	
				–	●	●	●	●	VE43	10	
				–	●	●	●	●	VE43	20	
				–	●	●	●	●	VE43	40	
				–	●	●	●	●	VE43	40	

<sup>1)</sup> See page 9 for valve hydraulic symbols and details.

<sup>2)</sup> For No Valve, with Electric Box, see ordering matrix on page 8.

<sup>3)</sup> Pendant includes 3 meters cord.



# ZE-Series, 700 Bar Electric Pumps

- High-efficiency two speed pump design – higher oil flow and bypass pressure, cooler running and requires 18% less current draw than comparable pumps
- High-strength, moulded electrical box protects electronics, power supplies and LCD readout and stand up to harsh industrial environments
- IP54 protection and isolation class
- Back-lit LCD provides self test, diagnostic and read-out capabilities never before offered on an industrial pump (included on pump with electric valves, optional on other models)
- Totally enclosed, fan-cooled industrial electric motors supply extended life and stand up to harsh industrial environment
- User adjustable relief valve built-in on manual and solenoid valves. Oil ports on valves are 3/8" NPT
- Steel fan guard on all electric motors
- Full sight oil level glass
- 40 micron filter breather with splash guard
- Durable steel reservoirs.

## ZE Series



Reservoir Capacity:

**4 - 40 litres**

Flow at Rated Pressure:

**0,55 - 2,73 l/min**

Motor Size:

**0,75 - 5,60 kW**

Maximum Operating Pressure:

**700 bar**



### Single 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:

#### ZE4210ME-S





ZE4-Series pump, oil flow 0,82 l/min at 700 bar, VM32 manual valve, 10 litres reservoir, without electrical box, 240 Volt 1-phase electric motor and single-stage pump unit.

#### ZE3120DW-S

ZE3-Series pump, oil flow 0,55 l/min at 700 bar, VE32D solenoid dump valve, 20 litres reservoir, with electrical box, 400 Volt 3-phase electric motor and single-stage pump unit.

See ordering matrix for other model numbers and options.

Page: 8

ZE3-Series 0,55 l/min at 700 bar Two-stage pump		ZE4-Series 0,82 l/min at 700 bar Two-stage pump		ZE5-Series 1,64 l/min at 700 bar Two-stage pump		ZE6-Series 2,73 l/min at 700 bar Two-stage pump	
Model Nr. <sup>4)</sup>	 (kg)	Model Nr. <sup>4)</sup>	 (kg)	Model Nr. <sup>4)</sup>	 (kg)	Model Nr. <sup>4)</sup>	 (kg)
400V / 3 phase		400V / 3 phase		400V / 3 phase		400V / 3 phase	
ZE3004NW	36	ZE4004NW	40	–	–	–	–
ZE3010NW	45	ZE4010NW	49	ZE5010NW	54	ZE6010NW	72
ZE3020NW	57	ZE4020NW	61	ZE5020NW	66	ZE6020NW	84
ZE3040NW	80	ZE4040NW	84	ZE5040NW	89	ZE6040NW	107
ZE3204MW	39	ZE4204MW	43	–	–	–	–
ZE3308MW	44	ZE4308MW	48	–	–	–	–
ZE3610MW	50	ZE4610MW	54	ZE5610MW	59	ZE6610MW	77
ZE3420MW	60	ZE4420MW	64	ZE5420MW	69	ZE6420MW	87
ZE3840MW	85	ZE4840MW	89	ZE5840MW	94	ZE6840MW	112
ZE3204LW	42	ZE4204LW	46	–	–	–	–
ZE3208LW	47	ZE4208LW	51	–	–	–	–
ZE3310LW	51	ZE4310LW	55	ZE5310LW	60	ZE6310LW	78
ZE3610LW	53	ZE4610LW	57	ZE5610LW	62	ZE6610LW	80
ZE3420LW	63	ZE4420LW	67	ZE5420LW	72	ZE6420LW	90
ZE3840LW	88	ZE4840LW	92	ZE5840LW	97	ZE6840LW	115
ZE3104DW	44	ZE4104DW	48	–	–	–	–
ZE3108DW	49	ZE4108DW	53	–	–	–	–
ZE3110DW	53	ZE4110DW	57	ZE5110DW	62	ZE6110DW	79
ZE3120DW	65	ZE4120DW	69	ZE5120DW	74	ZE6120DW	92
ZE3140DW	88	ZE4140DW	92	ZE5140DW	97	ZE6140DW	115
ZE3304SW	49	ZE4304SW	53	–	–	–	–
ZE3308SW	54	ZE4308SW	58	–	–	–	–
ZE3310SW	58	ZE4310SW	62	ZE5310SW	67	ZE6310SW	85
ZE3410SW	58	ZE4410SW	62	ZE5410SW	67	ZE6410SW	85
ZE3420SW	70	ZE4420SW	74	ZE5420SW	79	ZE6420SW	97
ZE3440SW	93	ZE4440SW	97	ZE5440SW	102	ZE6440SW	120

<sup>4)</sup> See custom ordering matrix on page 8 for other voltages.

# Factory Options & Accessory Kits



## Electric Box <sup>1)</sup>

- Back-lit LCD
- Pump usage information, hour and cycle counts
- Low-voltage warning and recording
- Self-test and diagnostic capabilities
- Pressure read-out <sup>2)</sup>
- Auto-mode pressure setting <sup>2)</sup>
- Information can be displayed in six languages <sup>3)</sup>

<sup>1)</sup> Included on pumps with solenoid valves. Can be factory installed on pumps with manual valve.

<sup>2)</sup> When used with optional pressure transducer.

<sup>3)</sup> English, French, German, Italian, Spanish and Portuguese.



## Level/Temperature Switch <sup>4)</sup>

- Shuts down pump before oil level reaches an unsafe level, avoiding damage due to cavitation
- Shuts down pump when unsafe oil temperature is reached.

<sup>4)</sup> 24 V, requires Electric Box. Available for 10, 20 and 40 litres reservoirs.

Access- sory Kit Modelnr.	Fixed Temperature Signal (°C)	Operating Tempe- rature (°C)	Max. Pressure (bar)
<b>ZLS-U4 *</b>	80	5 - 110	10

\* Add suffix **L** for factory installation.



## Return Line Filter

- 25 micron nominal filter removes contaminants from return oil flow before allowing it back into tank
- Internal by-pass valve prevent damage if filter is dirty
- With maintenance indicator
- Replaceable filter element PF25.

Access- sory Kit Modelnr.	Maximum Pressure (bar)	Maximum Oil Flow (l/min)	By-pass Setting (bar)
<b>ZPF *</b>	13,8	45,4	1,7

\* Add suffix **F** for factory installation.



## Roll Bars

- For easy portability and hoisting
- Protects pump and electric box
- Available for all reservoir sizes.



## Skid Bar


- Provides easy two-hand lift
- Provides greater pump stability on soft or uneven surfaces.




## Foot Switch <sup>5)</sup>

- Hands-free remote control on solenoid dump and 3-position valves
- With 3 meters cord.

<sup>5)</sup> 15 V, requires Electric Box.

Accessory Kit Nr.	Fits on reservoir	 (kg)
<b>ZRB-04 *</b>	4 and 8 litres	5,5
<b>ZRB-10 *</b>	10 litres	6,0
<b>ZRB-20 *</b>	20 litres	6,0
<b>ZRB-40 *</b>	40 litres	6,0

\* Add suffix **R** for factory installation.

Access- sory Kit Nr.	For ZE-Series pumps with reservoir	 (kg)
<b>SBZ-4 *</b>	4-8 ltr, without heat exchanger	2,2
<b>SBZ-4L *</b>	4-8 ltr, with heat exchanger	3,2

\* Add suffix **K** for factory installation.

Accessory Kit Nr.	Can be used on ZE-Series pumps with
<b>ZCF-2 *</b>	Solenoid VE-Series valves

\* Add suffix **U** for factory installation.

# Factory Options & Accessory Kits for ZE-Series Pumps



## Pressure Transducer <sup>1)</sup>

- Displays pressure on LCD in bar, MPa or psi
- More accurate than analog gauge
- Calibration can be fine tuned for certification
- Easy-viewing variable rate display
- "Set pressure" feature turns off motor at user defined pressure

<sup>1)</sup> 24 V, requires Electric Box.

Access- sory Kit Modelnr.	Adjustable Pressure Range (bar)	Switch- point repea- tability	Dead- band (bar)
ZPT-U4 *	3,5 - 700	± 0,5%	3,5

\* Add suffix **T** for factory installation.



## Pressure Switch <sup>2)</sup>

- Controls pump, monitors system
- Adjustable pressure 35-700 bar
- Includes glycerine filled 1000 bar pressure gauge G2536L
- Accuracy ± 1,5% of full scale.

<sup>2)</sup> 24 V, requires Electric Box. Not available in combination with pressure transducer.

Access- sory Kit Modelnr.	Switch- point repea- tability	Deadband (bar)	Oil Ports (NPT)
ZPS-E3 *	± 2%	8 - 38	3/8"

\* Add suffix **P** for factory installation.



## Pressure Gauge <sup>3)</sup>

- 1000 bar/15.000 psi gauge
- Glycerine dampened for long life.

<sup>3)</sup> Not available on pump with pressure transducer.  
Add suffix **G** behind pump model number.



## Heat Exchanger <sup>4)</sup>

- Removes heat from bypass oil to provide cooler operation
- Stabilizes oil viscosity, increasing oil life and reduces wear of pump and other hydraulic components.
- Ideal if pump is used in remote area without visual access to oil level.

Accessory Kit Nr.	Fits on reservoir	(kg)
ZHE-E04 *	4 and 8 litres	4,1
ZHE-E10 *	10, 20 and 40 litres	4,1

<sup>4)</sup> 24 VDC, requires electric box.

\* Add suffix **H** for factory installation.



### Options

Accessory Kits can be installed by customer. See chart below for options on Standard Electric (without electric box) or LCD Electric (with electric box). Refer to page 8 for ordering matrix.

ZE-Series Options	Factory Installed		Accessory Kits	
	Std. Electr.	LCD Electr.	Std. Electr.	LCD Electr.
Return Line Filter	F	F	ZPF	ZPF
Skid Bar <sup>1)</sup>	K	K	SBZ	SBZ
Roll Bar	R	R	SRB	SRB
Single-stage	S	S	-	-
Heat Exchanger	-	H	-	ZHE
Pressure Gauge <sup>2)</sup>	G	G	-	-
Pressure Switch <sup>3)</sup>	-	P	-	ZPS-E3
Pressure Transducer <sup>4)</sup>	-	T	-	ZPT-U4
Level/Temp Switch <sup>5)</sup>	-	L	-	ZLS-U4
Foot Switch <sup>6)</sup>	-	U	-	ZCF-2

<sup>1)</sup> Available for 4 and 8 litres reservoirs.

<sup>2)</sup> Not available on pumps with pressure transducer.

<sup>3)</sup> Includes 1000 bar gauge. Only available on manual valves without locking feature.

<sup>4)</sup> Electric box can accept either pressure switch or pressure transducer, but not both.

<sup>5)</sup> Available for 10, 20 and 40 litres reservoirs.

<sup>6)</sup> For control of solenoid dump and 3-position valves.



### ZPT-U4 Pressure Transducer

More durable against mechanical and hydraulic shock than analog gauges.

- Digital pressure read-out provides accuracy of 0,5% of full scale.
- Easy-viewing variable rate display automatically varies increments between 3, 14, 35 and 145 bar as rate of pressure change increases.
- "Set pressure" feature turns off motor at user defined pressure (or shifts valve to neutral on VE33 and VE43 valves).



### ZHE-Serie Heat Exchangers

Heat exchanger stabilizes oil temperature at 54 °C at 21 °C ambient temperature. Thermal transfer at 1,9 l/min and 21 °C ambient temperature: 900 Btu/hour [950 kJ].

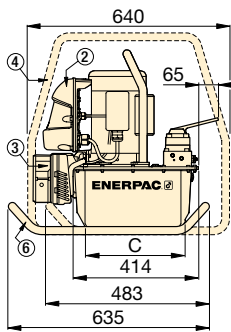
Do not exceed max. oil flow of 26,5 l/min and max. pressure of 20,7 bar.

Not suitable for water-glycol or high water based fluids.

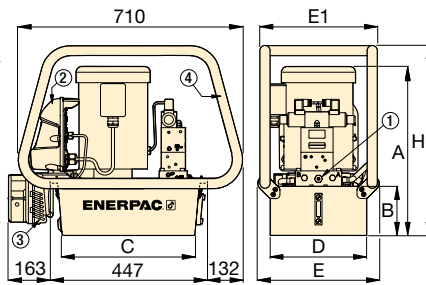


# ZE-Series, Pump Dimensions & Ordering Matrix

with 4 - 8 litres reservoir



with 10 - 20 - 40 litres reservoir



Reser- voir Size (litres)	ZE-Series Dimensions (mm)						
	A	B	C	D	E	E1	H
4	457	143	279	152	–	–	520
8	519	205	287	168	–	–	582
10	533	155	419	305	384	340	600
20	558	180	419	422	501	490	625
40	648	270	399	505	576	572	715

- ① User adjustable relief valve on all manual and solenoid valves. 3/8" NPT on A and B ports; 1/4"NPT on auxiliary ports.
- ② Electric Box
- ③ Heat Exchanger
- ④ Roll Bar
- ⑤ Return Line Filter
- ⑥ Skid Bar

## ZE Series



Reservoir Capacity:

**4 - 40 litres**

Flow at Rated Pressure:

**0,55 - 2,73 l/min**

Motor Size:

**0,75 - 5,60 kW**

Maximum Operating Pressure:

**700 bar**

▼ This is how ZE-Series pump model numbers are built up:

<b>Z</b>	<b>E</b>	<b>4</b>	<b>1</b>	<b>10</b>	<b>D</b>	<b>W</b>	<b>-</b>	<b>F</b>	<b>H</b>	<b>L</b>	<b>T</b>
1	2	3	4	5	6	7		8			
Product Type	Motor Type	Flow Group	Valve Type	Reservoir Size	Valve Operation	Motor Voltage		Factory installed options			

### 1 Product Type

**Z** = Pump Class

### 2 Prime Mover

**E** = Induction electric motor

### 3 Flow Group

- 3** = 0,55 l/min @ 700 bar (0,75 kW)
- 4** = 0,82 l/min @ 700 bar (1,12 kW)
- 5<sup>1)</sup>** = 1,64 l/min @ 700 bar (2,24 kW)
- 6<sup>1)</sup>** = 2,73 l/min @ 700 bar (5,60 kW)

### 4 Valve Type

- 0** = No valve, with coverplate
- 1** = 3/2 Dump valve **VE32D**
- 2** = 3/2 manual **VM32**
- 3** = 3/3 manual **VM33** or electric **VE33**
- 4** = 4/3 manual **VM43** or electric **VE43**
- 6** = 3/3 manual locking valve **VM33L** with pilot operated check.
- 8** = 4/3 manual locking valve **VM43L** with pilot operated check.

### 5 Reservoir Size, useable oil

- 04<sup>2)</sup>** = 4 litres
- 08<sup>2)</sup>** = 8 litres
- 10** = 10 litres
- 20** = 20 litres
- 40** = 40 litres

### 6 Valve Operation

- D** = Dump valve (solenoid), with pendant and Electric Box
- L** = Manual valve, without pendant, with Electric Box
- M<sup>3)</sup>** = Manual valve, without pendant, without Electric Box
- N<sup>3)</sup>** = No valve, without Electric Box
- S** = Solenoid valve, with pendant and Electric Box
- W** = No valve, with pendant and Electric Box

### 7 Motor Voltage

Single phase motor <sup>3)</sup>

- B<sup>3)</sup>** = 115V, 1 ph, 50-60Hz
- E<sup>3)</sup>** = 208-240V, 1 ph, 50-60 Hz <sup>4)</sup>
- I<sup>3)</sup>** = 208-240V, 1 ph, 50-60 Hz (with USA plug).

Three phase motor <sup>5)</sup>

- M<sup>5)</sup>** = 190-200V, 3 ph, 50-60Hz
- G<sup>5)</sup>** = 208-240V, 3 ph, 50-60 Hz
- W<sup>5)</sup>** = 380-415V, 3 ph, 50-60 Hz
- K<sup>5)</sup>** = 440V, 3 ph, 50-60 Hz
- J<sup>5)</sup>** = 460-480V, 3 ph, 50-60 Hz
- R<sup>5)</sup>** = 575V, 3 ph, 60 Hz

### 8 Factory installed options

- F** = Return Line Filter
- G<sup>6)</sup>** = 1000 bar gauge
- H<sup>7)</sup>** = Heat exchanger
- K** = Skid Bar (only on 4-8 litres)
- L<sup>7)</sup>** = Oil Level/Temperature Switch <sup>8)</sup>
- N** = No reservoir handles (includes lifting eyes)
- P<sup>7)</sup>** = Pressure Switch
- R** = Roll Bar
- S** = Single-stage pump unit
- T<sup>7)</sup>** = Pressure transducer <sup>9)</sup>
- U<sup>7)</sup>** = Foot Switch

<sup>1)</sup> ZE5 and ZE6 series only available with 3-phase electric motors.

<sup>2)</sup> 4 and 8 litres only available on ZE3 and ZE4 series.

<sup>3)</sup> 1-phase motors only available on ZE3 and ZE4 series.

<sup>4)</sup> 208-240V, 1 ph with European plug EMV directive compliant.

<sup>5)</sup> Models with 3-ph motors without Electric Box shipped without cord, motor starter or overload protection.

<sup>6)</sup> Not available on pumps with pressure transducer (T).

<sup>7)</sup> Requires Electric Box.

<sup>8)</sup> Not available on 4 and 8 litres reservoir.

<sup>9)</sup> Provides digital pressure read-out on LCD-display of electric box.

See page 5 for ordering examples.

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






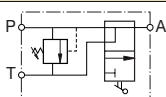

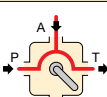
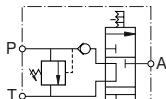


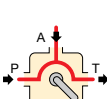
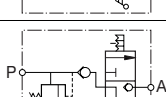


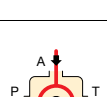
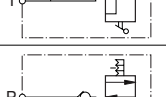


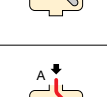
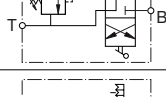


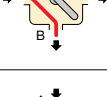
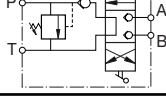

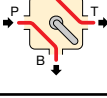
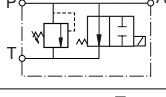


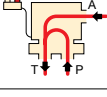
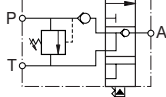


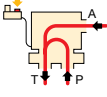
# Directional Control Valves

▼ From left to right: **VM32, VE33, VM33, VM43L**



## For Reliable Control of Single and Double-Acting Cylinders

- User adjustable relief valves allow the operator to easily set the working pressure for each application
- All valves feature several gauge ports for “system”, A and B port pressure monitoring
- 3/8” NPT on A and B ports, 1/4” NPT on auxiliary ports
- All valves (except VM32 and VE32D) include manifold with built-in “System Check” feature, for more precise pressure holding and improved system control
- VM33 has improved porting for faster cylinder retraction while pump motor is running
- Manual or solenoid operation.

Valve Operation	Used with Cylinder	Valve Type	Model Number	Hydraulic Symbol	Schematic Flowpath			 (kg)
					Advance	Hold	Retract	
Manual	Single-acting	3-way, 2 pos.	<b>VM32</b>					2,5
Manual	Single-acting	3-way, 2 pos. Tandem Center	<b>VM33</b>					3,0
Manual	Single-acting	3-way, 2 pos. Tandem Center, Locking	<b>VM33L</b>					4,8
Manual	Double-acting	4-way, 3 pos. Tandem Center	<b>VM43</b>					3,1
Manual	Double-acting	4-way, 3 pos. Tandem Center, Locking	<b>VM43L</b>					4,9
Solenoid 24 VDC	Single-acting	3-way, 2 pos. Dump	<b>VE32D</b>					3,9
Solenoid 24 VDC	Single-acting	3-way, 3 pos. Tandem Center	<b>VE33</b>					9,2
Solenoid 24 VDC	Double-acting	4-way, 3 pos. Tandem Center	<b>VE43</b>					9,3



### User Adjustable Relief Valve

All VM and VE-Series have an

user adjustable relief valve to allow the operator to easily set the optimum working pressure.



### Locking Valves

For applications requiring positive load holding, VM-Series valves (except VM32)

are available with a pilot-operated check valve. This 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.

# ZE-Series, 700 Bar Hydraulic Pumps

## The Industrial Tools Line

### Cylinders

- General Purpose
- Pancake
- Aluminium Lightweight
- Low Height
- Heavy Duty
- Hollow Plunger
- Industrial
- Pull
- Long Stroke
- Jacks
- Spread

### Pumps

- Manual
- Electric Driven
- Compressed Air Driven
- Petrol Driven

### System Components

- Hoses, Couplers, Oil
- Gauges, Adaptors
- Manifolds, Fittings

### Valves

- 3-and 4-Way Directional
- Pressure and Flow Control

### Presses

- Bench and Workshop
- Roll Frame Presses
- Arbor and C-Clamps

### Pullers

- Master Pullers Sets
- Multi Purpose Puller Sets
- Posi Lock® Pullers

### Tools

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- Punches
- Machine Lifts
- Load Skates
- Cutters
- Pipe Benders

### Bolting Tools

- Nut Splitters
- Flange/Wedge Spreaders
- Flange Alignment Tools
- Torque Wrenches
- Torque Wrench Pumps
- Twin Safety Hoses
- Bolt Tensioners

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- Synchronous Hoisting Systems

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