

ZE-Series, Electric Pumps

▼ Shown from left to right: ZE3304ME-K, ZE4110DE-FHR



Z Tough.
Dependable.
Innovative.












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 ¹⁾ | | | Valve ¹⁾ Model Number | Useable Oil Capacity (litres) |
|---|---|---|---|--|---|---|---|----------------------------------|-------------------------------|
| For options and other model numbers see ordering matrix or contact your Enerpac office. (For Z-Class pumps with air motor see ZA-series pumps on page 102). Page:  93 | | |  |  |  |  |  | | |
| No valve, without electric box ²⁾ or LCD | |  | | | | | | – | 4,0 |
| • For remote valves or pump mounting Enerpac VM-series valves | | | | | | | | – | 10,0 |
| • For remote valve mounting order BSS1090 high pressure connecting plate. | | | | | | | | – | 20,0 |
| | | | | | | | | – | 40,0 |
| MANUAL VALVE CONTROL | With manual valve, without electric box or LCD |  | ● | – | ● | – | ● | VM32 | 4,0 |
| | • Ideal choice for most application | | ● | – | ● | ● | ● | VM33 | 8,0 |
| | • Manual valve control, for single and double-acting applications | | ● | – | ● | ● | ● | VM33L | 10,0 |
| | • Manual motor control | | – | ● | ● | ● | ● | VM43 | 20,0 |
| | • On/Off switch on 1-phase electric motor. | | – | ● | ● | ● | ● | VM43L | 40,0 |
| MANUAL VALVE CONTROL | With manual valve, with electric box and LCD |  | ● | – | ● | – | ● | VM32 | 4,0 |
| | • For single-acting or double-acting applications | | ● | – | ● | – | ● | VM32 | 8,0 |
| | • On/off switch on 1-phase electric motor | | ● | – | ● | ● | ● | VM33 | 10,0 |
| | • All options available. | | ● | – | ● | ● | ● | VM33L | 10,0 |
| | | | – | ● | ● | ● | ● | VM43 | 20,0 |
| | | | – | ● | ● | ● | ● | VM43L | 40,0 |
| REMOTE VALVE CONTROL | With solenoid dump valve, with electric box and LCD |  | ● | – | ● | – | ● | VE32D | 4,0 |
| | • Ideal for punching, crimping and cutting | | ● | – | ● | – | ● | VE32D | 8,0 |
| | • For use when load holding is not required | | ● | – | ● | – | ● | VE32D | 10,0 |
| | • Push-button pendant ³⁾ controls valve and motor | | ● | – | ● | – | ● | VE32D | 20,0 |
| | • All options available. | | ● | – | ● | – | ● | VE32D | 40,0 |
| | REMOTE VALVE CONTROL | With solenoid 3-position valve, with electric box and LCD |  | ● | – | ● | ● | ● | VE33 |
| • Ideal for production and lifting applications | | ● | | – | ● | ● | ● | VE33 | 8,0 |
| • 3-position valves (advance/hold/retract) | | ● | | – | ● | ● | ● | VE33 | 10,0 |
| • Push-button pendant ³⁾ controls valve and motor | | – | | ● | ● | ● | ● | VE43 | 10,0 |
| • All options available. | | – | | ● | ● | ● | ● | VE43 | 20,0 |
| | | – | | ● | ● | ● | ● | VE43 | 40,0 |

¹⁾ See Valve Section (page 111) for hydraulic symbols and details.

²⁾ For No Valve, with Electric Box, see ordering matrix on page 93.

³⁾ Pendant includes 3 meters cord.

ZE-Series, Electric Pumps

- High-efficiency pump design – higher oil flow and by-pass pressure
- High-strength, moulded electrical box protects electronics, power supplies and LCD readout and stands 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 for extended life
- User adjustable relief valve built-in on manual and solenoid valves. Oil ports on valves are 3/8" NPTF
- 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



Adjustable Relief Valve

All VM and VE-Series have a 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 on your ZE-series pump see the valve type in the order matrix.

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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.

| 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. ⁴⁾ 400V / 3 phase | (kg) | Model Nr. ⁴⁾ 400V / 3 phase | (kg) | Model Nr. ⁴⁾ 400V / 3 phase | (kg) | Model Nr. ⁴⁾ 400V / 3 phase | (kg) |
| 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 |

⁴⁾ See custom ordering matrix on page 93 for other voltages.



Electric Box ¹⁾

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

¹⁾ Included on pumps with solenoid valves. Can be factory installed on pumps with manual valve.

²⁾ When used with optional pressure transducer.

³⁾ English, French, German, Italian, Spanish and Portuguese.



Level/Temperature Switch ⁴⁾

- Shuts down pump before oil level reaches an unsafe level, avoiding damage due to cavitation
- Shuts down pump when unsafe oil temperature is reached
- Ideal if pump is used in remote area without visual access to oil level.

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

| Accessory Kit ModelNr. | Fixed Temperature Signal (°C) | Operating Temperature (°C) | Max. Pressure (bar) |
|------------------------|-------------------------------|----------------------------|---------------------|
| ZLS-U4 * | 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 prevents damage if filter is dirty
- With maintenance indicator
- Replaceable filter element PF25.

| Accessory Kit ModelNr. | Maximum Pressure (bar) | Maximum Oil Flow (l/min) | By-pass Setting (bar) |
|------------------------|------------------------|--------------------------|-----------------------|
| ZPF * | 13,8 | 45,4 | 1,7 |

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



Roll Cage

- 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 ⁵⁾

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


⁵⁾ 15 V, requires Electric Box.

| Accessory Kit Nr. | Fits on reservoir size: |  (kg) |
|-------------------|------------------------------|--|
| ZRC-04 * | 4 and 8 litres ⁵⁾ | 5,5 |
| ZRC-04H * | 4 and 8 litres ⁶⁾ | 6,5 |
| ZRB-10 * | 10 litres | 6,0 |
| ZRB-20 * | 20 litres | 6,0 |
| ZRB-40 * | 40 litres | 6,0 |

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

⁵⁾ For pump without heat exchanger

⁶⁾ For pump with heat exchanger.

| Accessory Kit Nr. | Fits on reservoir size: |  (kg) |
|-------------------|------------------------------|--|
| SBZ-4 * | 4 and 8 litres ⁵⁾ | 2,2 |
| SBZ-4L * | 4 and 8 litres ⁶⁾ | 3,2 |

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

| Accessory Kit Nr. | Can be used on ZE-Series pumps with |
|-------------------|-------------------------------------|
| ZCF-2 * | Solenoid VE-Series valves |

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

ZE-Series, Options & Accessories



Pressure Transducer ¹⁾

- 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 ²⁾.

¹⁾ 24 V, requires Electric Box.

²⁾ Or shifts valve to neutral position on pump models with VE33 and VE43 solenoid valves.

| Accessory Kit Modelnr. | Adjustable Pressure Range (bar) | Switch-point repeatability | Dead-band (bar) |
|------------------------|---------------------------------|----------------------------|-----------------|
| ZPT-U4 * | 3,5 - 700 | ± 0,5% | 3,5 |

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



Pressure Switch ³⁾

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

³⁾ 24 V, requires Electric Box. Not available in combination with pressure transducer.

| Accessory Kit Modelnr. | Switch-point repeatability | Deadband (bar) | Oil Ports (NPTF) |
|------------------------|----------------------------|----------------|------------------|
| ZPS-E3 * | ± 2% | 8 - 38 | 3/8" |

* Add suffix **P** 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 93 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 ¹⁾ | K | K | SBZ | SBZ |
| Roll Cage | R | R | ZRB | ZRB |
| Single-stage | S | S | - | - |
| Heat Exchanger | - | H | - | ZHE |
| Pressure Gauge ²⁾ | G | G | - | - |
| Pressure Switch ³⁾ | - | P | - | ZPS-E3 |
| Pressure Transducer ⁴⁾ | - | T | - | ZPT-U4 |
| Level/Temp Switch ⁵⁾ | - | L | - | ZLS-U4 |
| Foot Switch ⁶⁾ | - | U | - | ZCF-2 |

¹⁾ Available for 4 and 8 litres reservoirs.

²⁾ Not available on pumps with pressure transducer.

³⁾ Includes 1000 bar gauge. Only available on manual valves without locking feature.

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

⁵⁾ Available for 10, 20 and 40 litres reservoirs.

⁶⁾ For control of solenoid dump and 3-position valves.



Pendants ⁴⁾

- For pump types with valve operation “W” (No Valve, with Electric Box, without pendant).

⁴⁾ When ordering Enerpac VE-Series solenoid valve the pendant must be ordered separately. Pendant connection to be plugged into electric box.

| Pendant Model Nr. | To be used with solenoid valve: |
|-------------------|---------------------------------|
| ZCP-1 | VE32D |
| ZCP-3 | VE32, VE33, VE43 |



Heat Exchanger ⁵⁾

- Removes heat from by-pass oil to provide cooler operation
- Stabilizes oil viscosity, increasing oil life and reduces wear of pump and other hydraulic components.

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

⁵⁾ 24 VDC, requires electric box.

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



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).

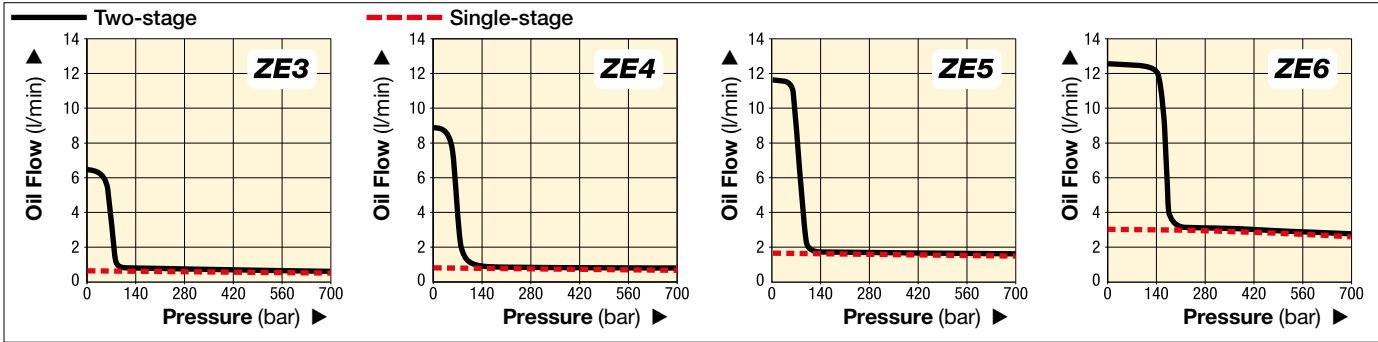


ZHE-Series Heat Exchangers

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, Specifications & Dimensions

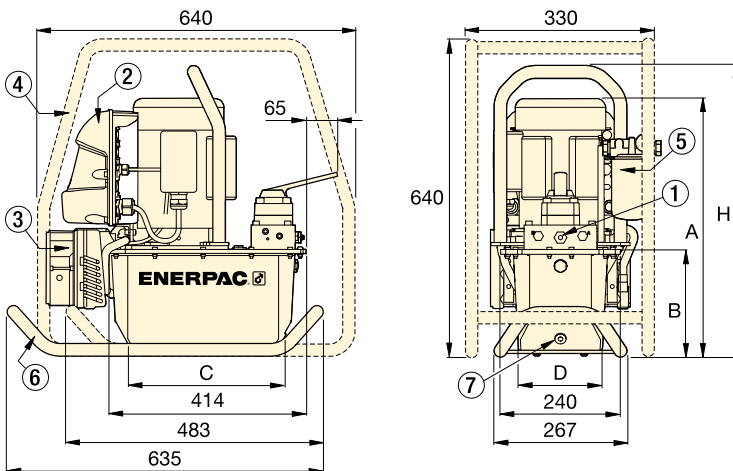


▼ ZE-SERIES PERFORMANCE CHART

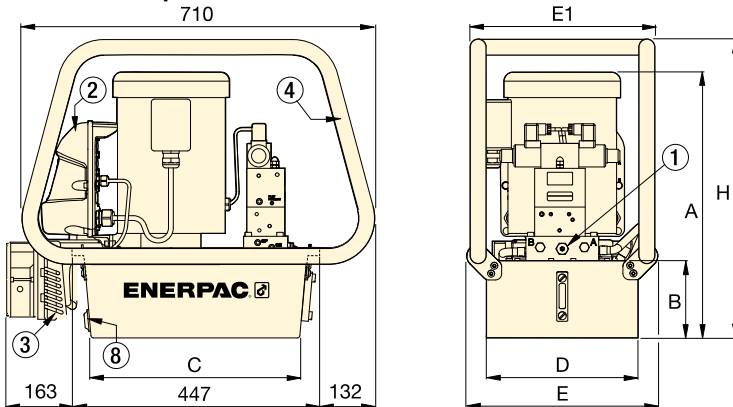
| Pump Series | Output Flow Rate at 50 Hz * (l/min) | | | | Pump Unit | Available Reservoir Sizes (useable oil) (litres) | Motor Size (kW) | Relief Valve Adjustment Range (bar) | Sound Level (dBA) |
|-------------|-------------------------------------|------------------------|--------------------------|--------------------------|--------------|--|---------------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

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

i 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 Pumps with 4 - 8 litres reservoir



ZE-Series Pumps with 10 - 20 - 40 litres reservoir

- ① User adjustable relief valve on all manual and solenoid valves.
3/8" NPTF on A and B ports;
1/4" NPTF on auxiliary ports.
- ② Electric Box
- ③ Heat Exchanger
- ④ Roll Cage
- ⑤ Return Line Filter
- ⑥ Skid Bar
- ⑦ Magnetic Oil Drain
- ⑧ Oil Drain / Oil Level/Temperature Switch

| Reservoir Size (useable oil in litres) | ZE-Series Pump Dimensions (mm) | | | | | | |
|--|--------------------------------|-----|-----|-----|-----|-----|-----|
| | A | B | C | D | E | E1 | H |
| 4,0 | 457 | 143 | 279 | 152 | - | - | 513 |
| 8,0 | 457 | 143 | 279 | 206 | - | - | 513 |
| 10,0 | 533 | 158 | 419 | 305 | 384 | 371 | 600 |
| 20,0 | 558 | 180 | 419 | 422 | 501 | 488 | 625 |
| 40,0 | 648 | 270 | 399 | 505 | 576 | 572 | 715 |

ZE-Series, Pump Ordering Matrix

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

| | | | | | | | | | | | |
|--------------|------------|------------|------------|----------------|-----------------|---------------|----------|-------------------------|----------|----------|----------|
| Z | E | 4 | 1 | 10 | D | W | - | F | H | L | T |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | | | |
| Product Type | Motor Type | Flow Group | Valve Type | Reservoir Size | Valve Operation | Motor Voltage | | Options and Accessories | | | |

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)
- 5¹⁾** = 1,64 l/min @ 700 bar (2,24 kW)
- 6¹⁾** = 2,73 l/min @ 700 bar (5,60 kW)

4 Valve Type

- 0** = No valve, with cover plate
- 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

- 04²⁾** = 4 litres
- 08²⁾** = 8 litres
- 10** = 10 litres
- 20** = 20 litres
- 40** = 40 litres

8 Options and Accessories

- F** = Return Line Filter
- G⁶⁾** = 1000 bar gauge
- H⁷⁾** = Heat exchanger
- K** = Skid Bar (only on 4 and 8 litres)
- L⁷⁾** = Oil Level/Temperature Switch⁸⁾
- N** = No reservoir handles (includes lifting eyes)
- P⁷⁾** = Pressure Switch (only available on manual valves without locking feature)
- R** = Roll Cage
- S** = Single-stage pump unit
- T⁷⁾** = Pressure transducer⁹⁾
- U⁷⁾** = Foot Switch

- ¹⁾ ZE5 and ZE6-Series only available with 3-phase electric motors.
- ²⁾ 4 and 8 litres only available on ZE3 and ZE4-Series.
- ³⁾ 1-phase motors only available on ZE3 and ZE4-Series
- ⁴⁾ 208-240V, 1 ph with European plug EMC directive compliant.
- ⁵⁾ Models with 3-ph motors without Electric Box shipped without cord, motor starter or overload protection.
- ⁶⁾ Not available on pumps with pressure transducer (T).
- ⁷⁾ Requires Electric Box.
- ⁸⁾ Not available on 4 and 8 litres reservoir.
- ⁹⁾ Provides digital pressure read-out on LCD-display of electric box.
- ¹⁰⁾ When using solenoid valve on valve type "W" order optional pendant.

All Z-Class electric pumps comply with TÜV and CE requirements.



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



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, without pendant, 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 (LCD), without pendant, 400 Volt 3-phase electric motor and single-stage pump unit.



Pendants

When ordering Enerpac VE-Series solenoid valve for use on "W" type valve operation (No Valve, with

Electric Box (LCD), without pendant) the pendant must be ordered separately. Pendant connection to be plugged into electric box.