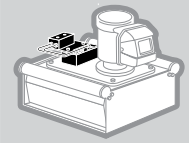
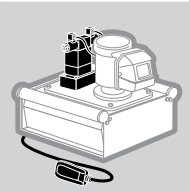
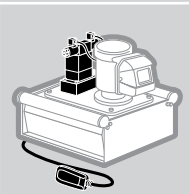
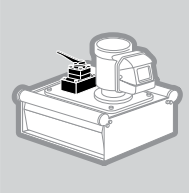
Electric pumps *Application & selection*

Shown: ZW5020HB-FT21

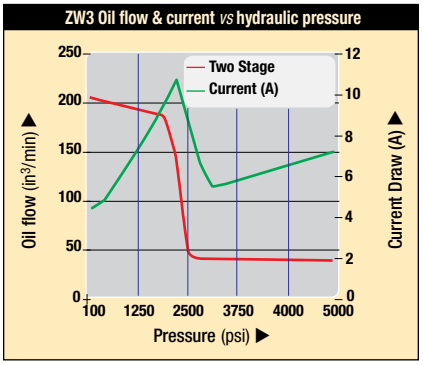
Z-Class electric pumps are designed for use in the harshest manufacturing environments. The pumps provide reliable and durable performance in a wide variety of configurations.

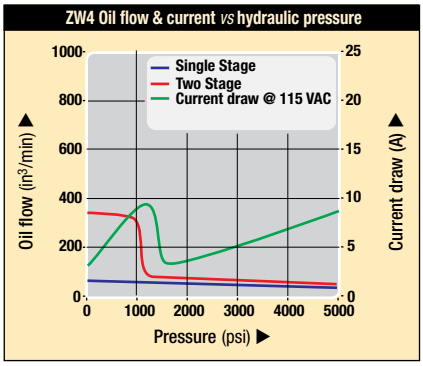
The standard for workholding applications

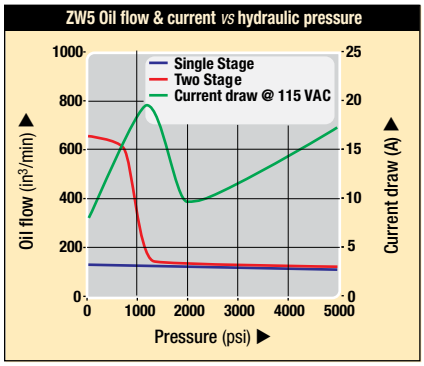
- Features Z-Class high-efficiency pump design; higher oil flow and by-pass pressure, cooler running and requires 18% less current than comparable pumps
- Totally enclosed, fan cooled industrial electric motors supply extended life and stand up to harsh industrial environments
- Multiple valve and reservoir configurations provide application specific models to match the most demanding workholding applications
- High-strength, molded electrical enclosure protects electronics, power supplies and LCD readout from coolant and contamination

Basic configurations All pumps listed in this chart include LCD electrical box, 5 gallon reservoir, return line filter and either 0-6000 psi pressure gauge or pressure transducer (solenoid valve models). For additional options, see the complete pump matrix on page 117.	**Pump type**	**Valve/manifold type**	**Motor voltage** 50/60 Hz
ZW-Series with manifold • Used when supplying pressure to multiple valve circuits • Valves must be supplied separately		Pressure and tank ports	230 VAC, 3 ph
		Single station DO3	230 VAC, 3 ph
		Enerpac VP-series	230 VAC, 3 ph
		Two station DO3	230 VAC, 3 ph
		Four station DO3	230 VAC, 3 ph
ZW-Series with pallet coupling valve • Provides momentary pressure and flow to fixture • Ideal for pallet disconnect systems		4-way, 3-pos. solenoid operated	115 VAC, 1 ph
		4-way, 3-pos. solenoid operated	230 VAC, 3 ph
		4-way, 3-pos. solenoid operated	460 VAC, 3 ph
ZW-Series with continuous connection valve • Provides solenoid control of one single or double-acting circuit • Control valve supplied with integrated pilot operated check to ensure positive pressure holding		4-way, 3-pos. solenoid operated	115 VAC, 1 ph
		4-way, 3-pos. solenoid operated	230 VAC, 3 ph
		4-way, 3-pos. solenoid operated	460 VAC, 3 ph
ZW-Series with manual valve • Provides manual control of one single or double-acting circuit • Control valve supplied with center holding function to ensure positive position holding		4-way, 3-pos. manually operated	115 VAC, 1 ph
		4-way, 3-pos. manually operated	230 VAC, 3 ph
		4-way, 3-pos. manually operated	460 VAC, 3 ph

Output oil flow and current draw







ZW3 Series Output oil flow at 5000 psi 40 in³/min LCD Electric Model Number	ZW4 Series Output oil flow at 5000 psi 60 in³/min LCD Electric Model Number	ZW5 Series Output oil flow at 5000 psi 120 in³/min LCD Electric Model Number
ZW3020HG-FG01	ZW4020HG-FG01	ZW5020HG-FG01
ZW3020HG-FG11	ZW4020HG-FG11	ZW5020HG-FG11
ZW3020HG-FG12	ZW4020HG-FG12	ZW5020HG-FG12
ZW3020HG-FG21	ZW4020HG-FG21	ZW5020HG-FG21
ZW3020HG-FG41	ZW4020HG-FG41	ZW5020HG-FG41
ZW3420DB-FT	ZW4420DB-FT	ZW5420DB-FT
ZW3420DG-FT	ZW4420DG-FT	ZW5420DG-FT
ZW3420DJ-FT	ZW4420DJ-FT	ZW5420DJ-FT
ZW3420FB-FT	ZW4420FB-FT	ZW5420FB-FT
ZW3420FG-FT	ZW4420FG-FT	ZW5420FG-FT
ZW3420FJ-FT	ZW4420FJ-FT	ZW5420FJ-FT
ZW3420LB-FG	ZW4420LB-FG	ZW5420LB-FG
ZW3420LG-FG	ZW4420LG-FG	ZW5420LG-FG
ZW3420LJ-FG	ZW4420LJ-FG	ZW5420LJ-FG

Flow rate: 40-120 in³/min

Pressure: 5000 psi max

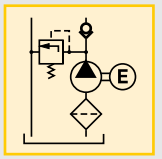
Motor: 1.0 & 1.5 hp

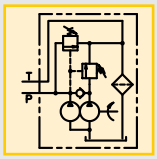
Reservoir: 2-10 gal

(E) Bombas eléctricas

(F) Centrale hydraulique

(D) Tauchpumpe





Important

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

LCD electrical package is required for pumps utilizing electric valves, or optional accessories such as the pressure transducer, level switch, pressure switch or heat exchanger.

Single-stage pumps provide constant flow throughout the entire pressure range via a radial piston pump. Two-stage pumps provide high flow via a gear pump until the bypass pressure is reached. At pressures above the bypass setting, the radial piston pump provides flow to the maximum pressure.

Electric pumps *Dimensions & options*

Shown: ZW5020HB-FT21

- Efficient design reduces heat generation and reduces power consumption
- Balanced pump section reduces vibration improving durability and sound levels
- Optional back-lit LCD readout provides hour and cycle counts, low voltage warnings and pressure read-out when used with pressure transducer
- Low-voltage pendant on solenoid valve models with sealed switches improves operator safety
- ***Z-Class*** electric pumps can be supplied with factory installed accessories such as valve manifold, pressure transducer, and return line filter, creating a complete power unit solution

Flow: 40-120 in³/min

Pressure: 5000 psi

Motor: 1.0 & 1.5 hp

Reservoir: 2-10 gallon

(E) **Bombas eléctricas**

(F) **Centrale hydraulique**

(D) **Tauchpumpe**

ZPF series

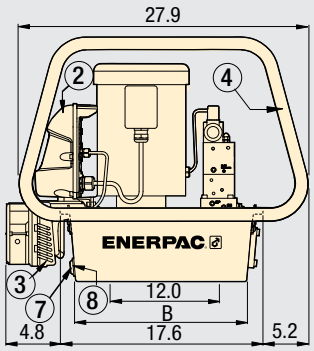
The oil filter kit removes contaminants from the return oil flow before allowing it back into the reservoir, reducing component damage.

Options

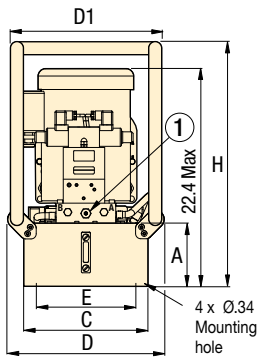
User adjustable relief valve

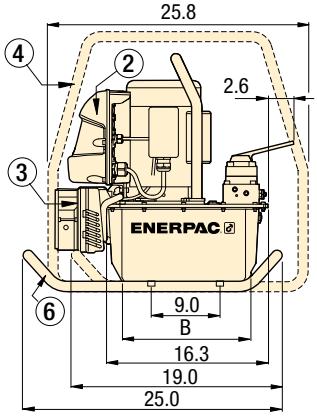
All ZW-Series have a user adjustable relief valve to allow the operator to easily set the optimum working pressure.

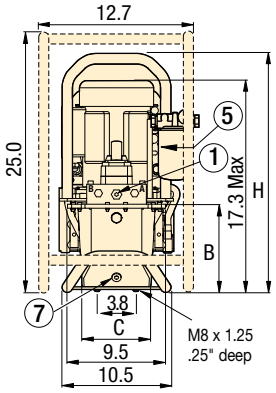
2.5, 5, 10 gallon



2 gallon







① Pump mounted manifold
- User adjustable relief valve
- 3/8" NPTF on A and B ports
- 1/4" NPTF on auxiliary ports

② Electric Box (Optional w/manual valve)
③ Heat Exchanger (Optional)
④ Roll Bar (Optional)
⑤ Return Line Filter (Optional)
⑥ Skid Bar (Optional)
⑦ Oil Drain
⑧ Oil Level/Temperature Switch (Optional)

Product dimensions in inches [ ]

Usable oil capacity	ZW Series pump dimensions (in)						
gal	A	B	C	D	D1	E	H
2.0	8.1	11.3	6.6	-	-	-	22.6
2.5	6.1	16.5	12.0	15.1	14.6	11.0	23.6
5.0	7.1	16.5	16.6	19.7	19.2	15.6	24.6
10.0	10.6	15.7	19.9	22.7	22.5	18.9	28.1

Product selection

Output flow rate in³/min)					Pump series	Motor size	Relief Valve adjustment range	Sound level
100 psi	700 psi	1700 psi	3000 psi	5000 psi		hp	psi	dBA
203	196	170	40	**40**	**ZW3***	1.0	1,000-5,000	75
350	305	-	63	**60**	**ZW4**	1.0	1,000-5,000	75
650	602	-	123	**120**	**ZW5**	1.5	1,000-5,000	75

* Constant flow rate for single-stage models.

Custom build your pump

▼ **This is how a ZW series Model number is built:**

Z	W	4	0	20	H	G	-	FG	01
1 Product Type	2 Motor Type	3 Flow Group	4 Valve Type	5 Usable Oil Capacity	6 Valve Operation	7 Voltage		8 Options	9 Manifold Options

1 Product type
Z = *Z-Class* Pump

2 Motor type
W = Workholding Electric

3 Flow group
3 = 40 in³/min
4 = 60 in³/min
5 = 120 in³/min

4 Valve type
0 = No valve or valve manifold
2 = 3-way, 2-position, manual valve
3 = 3-way, 3-position, manual valve
4 = 4-way, 3-position, manual or solenoid valve
6 = 3-way, 3-position, tandem center w/P.O. check (manual only)
8 = 4-way, 3-position, tandem center w/P.O. check (manual only)

5 Usable oil capacity
8 = 8 Liters (2 gallon)
10 = 10 Liters (2.5 gallon)
20 = 20 Liters (5 gallon)
40 = 40 Liters (10 gallon)

6 Valve operation
D = Solenoid valve (pallet coupling) with pendant and LCD (valve type **4**)
F = Solenoid valve (continuous connection) with pendant and LCD (valve type **4**)
G = Valve manifold without LCD (valve type **0**)
H = Valve manifold with LCD (valve type **0**)
L = Manual valve with LCD (without pendant, valve type **2, 3, 4, 6** or **8**)
M = Manual valve without LCD (valve type **2, 3, 4, 6** or **8**)
N = No valve, without LCD (valve type **0**)
W = No valve with LCD (valve type **0**)

Example

The **ZW5810LG-FT** is a 120 in³/min, 2-stage pump with a manual 4-way, 3 position tandem center valve, integrated P.O. check, LCD electrical box, 2.5 gallon reservoir, 208-240 volt 3-phase motor, return line filter and pressure transducer.

7 Power supply
Single Phase
B = 115V, 1 ph, 50-60 Hz*3
E = 208-240V, 1 ph, 50-60 Hz European plug
I = 208-240V, 1 ph, 50-60 Hz USA plug
Three Phase
M = 190-200V, 3 ph, 50/60 Hz
G = 208-240V, 3 ph, 50/60 Hz
W = 380-415V, 3 ph, 50/60 Hz
K = 440V, 3 ph, 50/60 Hz
J = 460-480V, 3 ph, 50/60 Hz
R = 575V, 3 ph, 50/60 Hz

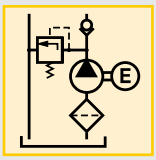
8 Options*2
F = Return line filter, 25 micron
G = 0-6000 psi pressure gauge, 21/2"*5
H = Heat exchanger*4
L = Level/temperature switch*4
N = No handles (lifting eyes only)*2
P = Pressure switch*4
R = Roll bars
S = Single stage
T = Pressure transducer*4
U = Foot switch*4

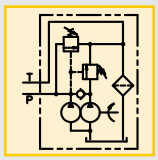
9 Manifold options*5 (Pump types G and H only)
01 = Pressure & tank porting manifold
11 = Single station D03
12 = VP series manifold
13 = Single station CETOP
21 = 2 station D03
22 = 2 station CETOP
41 = 4 station D03
42 = 4 station CETOP

*1 Options should be specified in alphabetical order.
*2 Unless specified, all pumps are supplied with reservoir handles.
*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.
*5 Pressure gauge not available on pump models with pressure transducer. Pressure transducer provides digital pressure readout on LCD display.
*6 Pressure switch option is only used as input to a customer control. It is not used with the LCD electrical package.

Flow: 40-120 in³/min
Pressure: 5000 psi max
Motor: 1.0 & 1.5 hp
Reservoir: 2.0-10 gal.

(E) Bombas eléctricas
(F) Centrale hydraulique
(D) Modulare Spannpumpe





Example

ZW4020GB-FGS21 is a 60 in³/min, single-stage pump with a 2 station D03 manifold, standard electric without LCD, 5 gallon reservoir, 115 volt, 50/60 Hz motor, return line filter and 0-6000 psi pressure gauge.

ZW4410DJ-T is a 60 in³/min, 2-stage pump with a pallet de-coupling valve, LCD electrical box, 2.5 gallon reservoir, 460-480 volt 3-phase motor and pressure transducer.

ZW5040HJ-FGL01 is a 120 in³/min, 2-stage pump with a pressure and tank manifold, LCD electrical box, 10 gallon reservoir, 460-480 volt 3-phase motor, return line filter, 0-6000 psi pressure gauge and level and temperature shutdown switch.

Shown: ZPF

ZPF series

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

Extend life of hydraulic components

...increase system reliability

- 25 micron nominal filter cleans oil to increase system life
- Internal bypass valve to prevent damage if the filter is dirty
- All installation components included
- Kit assembles quickly and easily to Enerpac pump and manifold
- Maintenance indicator included

Filtration: 25 micron

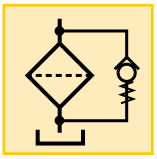
Pressure: max. 200 psi

Max. flow: 12.0 GPM

(E) Filtro

(F) Filtre

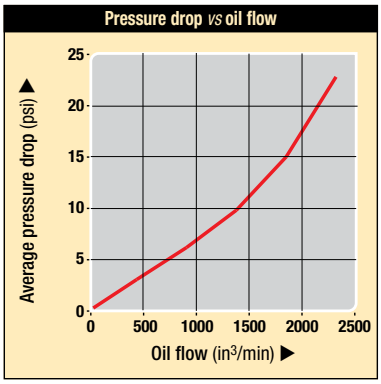
(D) Filter



Options

PF-25 replacement filter element

For best performance, replace filter element on a regular basis. Change filters when changing oil or four times a year, whichever comes first.



Product selection

Nominal filtration	Model number	Maximum pressure	Maximum oil flow	Bypass pressure setting	Filter gauge service indicator	
micron		psi	gpm	psi		lbs
25	**ZPF**	200	12.0	25	✔	3.2

Transfer: 900 Btu/h

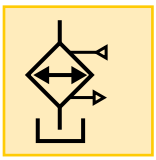
Pressure: max. 300 psi

Voltage: 24V

(E) **Intercambiador de calor**

(F) **Échangeur de chaleur**

(D) **Wärmetauscher**



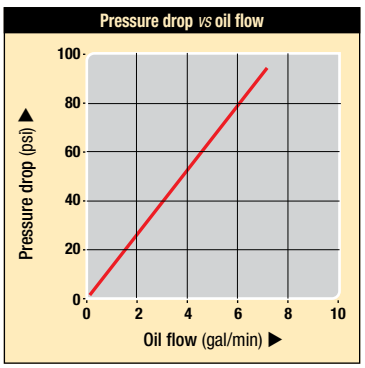
Extends system life

- Electrical connector factory installed
- 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

Shown: ZHE-E10

ZHE series

Heat exchanger removes heat from the return oil to provide cooler operation.



Important

ZHE- Series Heat Exchangers

Heat exchanger stabilizes oil temperature at 130^0 F at 70^0 F ambient temperature. Thermal transfer at 5 GPM and 70^0 F ambient temperature: 900 Btu/hour.

Do not exceed maximum oil flow of 7.0 GPM and maximum pressure of 300 psi. Not suitable for water-glycol or high water based fluids.

Product selection

Voltage	Model number	Thermal transfer*		Amperage draw	Maximum pressure	Maximum oil flow	
		Btu/h	kJoule	A	psi	gpm	lbs
24 VDC	**ZHE-E10**	900	950	.95	300	7.0	9.0

*At 0.5 g/min and ambient temperature of 70° F.

Shown: ZLS-U4

ZLS series

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/temp switch will turn off the pump before internal damage can occur due to cavitations.

Electronic level/temp switch for feedback on pump oil level

- Drop-in design allows for easy installation to pump reservoir
- Electrical connector included
- Built-in thermal sensing provides feedback on oil temperature
- Senses low oil level in pump reservoir

Temp. set point: 175 °F

Voltage: 24 VDC

(E) Indicador del nivel/temp.
(F) Interrupteur de niveau/temp.
(D) Ölstand/Temperaturschalter

Product Selection

Fixed temperature signal	Model number	Voltage	Thermostat rating setting	Maximum pressure	
°F			Amps	psi	lbs
175	**ZLS-U4**	24 VDC	2.6	150	0.11

Shown: ZPT-U4, ZPS-W4

ZPT/ZPS series

ZPT pressure transducer provides constant pressure monitoring for automated pump control. ZPS can be used to provide a pressure signal to an external control.

Control your pump, monitor pressure

Pressure: 50-10,000 psi

Voltage: 115 VAC / 24 VDC

(E) Presión transductor
(F) Pressostats
(D) Druckschalter

ZPT pressure transducer

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

ZPS-E3 pressure switch

- Includes glycerin filled gauge, G2536L
- Can be used to provide pressure input to customer provided controls
- Not to be used with LCD control
- For pressure based input to the LCD control, use the ZPT-U4 transducer

Important

The pressure transducer is factory installed in the "A" port on pumps supplied with valves, and in the "P" port on models with manifolds.

Product Selection

Adustable pressure range	Electrical specification	Model number	Accuracy (full scale)	Deadband	
psi				psi	lbs
▼ **Mechanical adjustment**					
50-10,000	4-20 mA	**ZPT-U4**	0.5%	50	0.3
500-10,000	115 VAC/ 24 VDC N.O.	**ZPS-W4**	2%	115-550	2.7

Note: Electrical harness included with kit. ZPS-W4 includes 0-6000 psi pressure gauge.

Pressure: 5000 psi

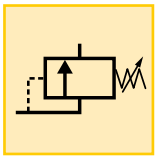
Stations: 1-4 valves horizontal

Stations: 1-8 valves vertical

(E) **Colectores**

(F) **Manifolds**

(D) **Verkettungsblöcke**



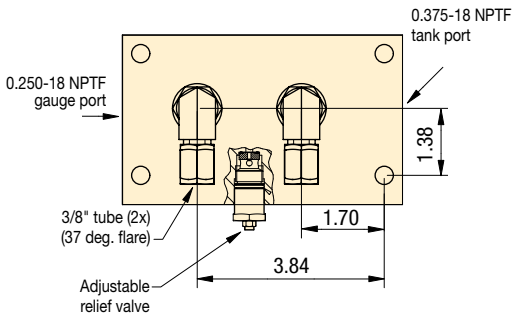
Increased flexibility for complex systems

- Manifolds provide hydraulic connection to remote or pump mounted valves
- Used when multiple valves are required for controlling several independent circuits
- Available for 2 and 4 station D03 as well as Enerpac VP series mounting
- Pressure and tank porting manifold available for use with remote valve sticks
- Manifolds include integrated relief valve for system pressure control

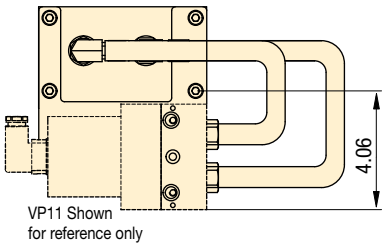
Shown: MB-2, -4

Manifolds allow the use of multiple valves powered by a single hydraulic pump. Manifolds are available factory installed on your Z-Class workholding power unit, or separately for future system upgrades.

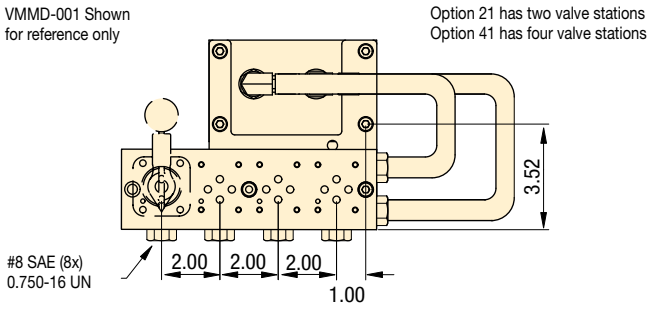
Option 01



Option 12



Option 21, 41



Options

Pressure transducer

120

Level switch

120

Enerpac porting manifold provides pressure and tank line to remote mounted valve stack on a machining center.

Product Selection

Valve mounting pattern	Option code (see page 117)	Number of stations	Coverplate model number
Porting manifold, SAE ports	**01**	–	–
Enerpac VP Series	**12**	1-8	–
2 station DO3	**21**	2	MC-1
4 station DO3	**41**	4	MC-1
2 station CETOP3	**22**	2	MC-3
4 station CETOP3	**42**	4	MC-3

Pallet coupling pumps *Application & selection*

Shown: ZW4420DB-FT

The new Enerpac Pallet Coupling Pump provides three modes of operation:

Manual mode
Pump runs as long as operator holds down pendant button.

AUTO mode *without timer*
Pump runs until user-adjustable pressure setting is reached.

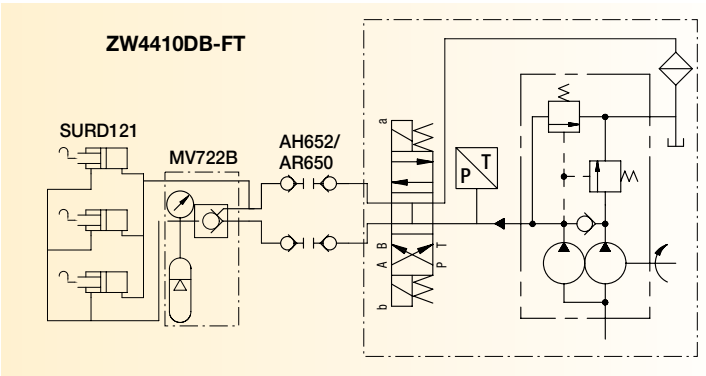
AUTO mode *with timer*
Pump runs until pressure setting is reached, and adjustable timer runs out.

Automatic pressure control for palletized fixtures

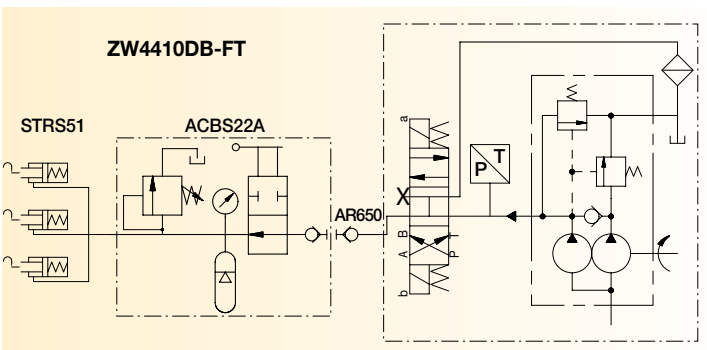
- Programmable clamp and unclamp pressure settings increase automation capability
- Programmable dwell settings ensure desired pressure level is maintained on large circuits or circuits with accumulators
- Low-voltage pendant features sealed switches and operates at 15 VDC for improved operator safety
- Backlit LCD provides pump usage information, hour and cycle counts

Example Circuits

- Double-acting circuit



- Single-acting circuit



▮ **ZW5410DB-FT** *used to connect and disconnect a palletized fixture.*

Product selection

Output flow rate @ max. pressure	Motor size	Motor voltage	Model number	Pressure range	Sound level	Usable oil capacity	
in³/min	hp			psi	dBA	gal	lbs
40	1.0	115-1-60	**ZW3408DB-FT**	1000-5000	75	2	115
		115-1-60	**ZW3410DB-FT**		75	2.5	134
		230-1-60	**ZW3408DI-FT**		75	2	115
		230-1-60	**ZW3410DI-FT**		75	2.5	134
60	1.0	115-1-60	**ZW4410DB-FT**	1000-5000	75	2.5	120
		230-3-60	**ZW4410DG-FT**				
		460-3-60	**ZW4410DJ-FT**				
120	1.5	115-1-60	**ZW5410DB-FT**	1000-5000	75	2.5	130
		230-3-60	**ZW5410DG-FT**				
		460-3-60	**ZW5410DJ-FT**				

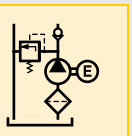
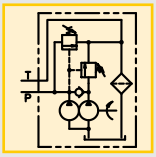
Operation – pallet coupling pump

Manual mode
Motor and pump operate only when operator presses and holds the up (or down) arrow on the pendant. When button is released, pressure in the hoses is relieved.

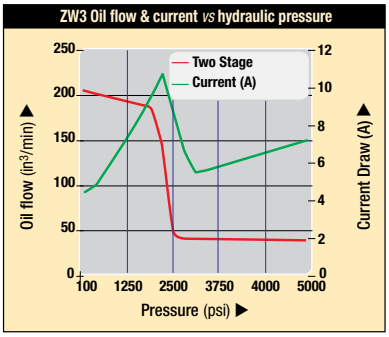
AUTO mode
With DWELL timer set equal to zero, operator starts the motor by pressing and holding the up (or down) arrow on the pendant. Pump builds to pressure on the clamp (or unclamp) circuit until it reaches customer programmed setting. The motor immediately turns off and pressure in the hoses is relieved.

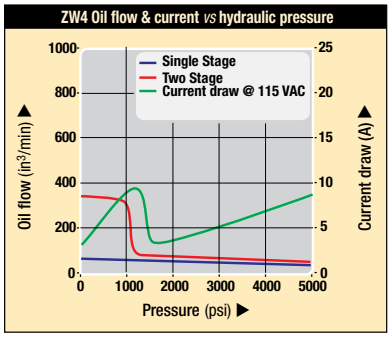
With DWELL timer set greater than zero, operator starts the motor by pressing the up (or down) arrow on the pendant. Once the pump reaches the programmed setting, the DWELL timer starts. When the timer runs out, the motor stops and pressure in the hoses is relieved.

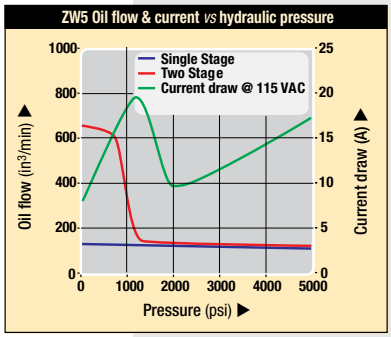
Flow: 40-120 in³/min
Pressure: 5000 psi max
Motor: 1.0 or 1.5 hp
Reservoir: 2.0-10.0 gal

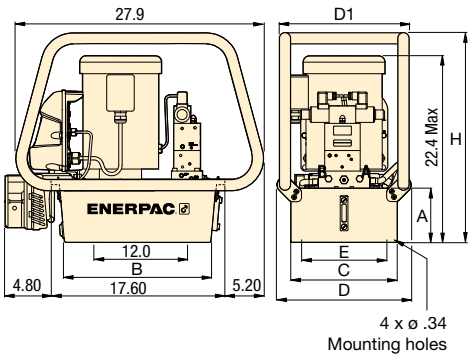
Output oil flow and current draw



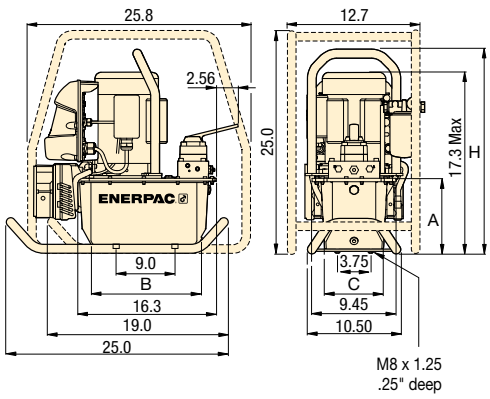




2.5, 5, 10 gallon



2 gallon



Important

Enerpac recommends a pressure differential of no less than 200 psi for most applications. If you believe your application requires a tighter differential, please contact us directly.

For complete ordering matrix of all factory-installed options see page 117.

Options

Heat exchanger ▯119 ▶


Level switch ▯120 ▶


Pressure transducer ▯120 ▶


Return line filter ▯118 ▶


Product dimensions in inches [⊳⊕]

Usable oil capacity gal	Modelo number	A	B	C	D	D1	E	H	lbs ZW3	lbs ZW4	lbs ZW5
2.0	**ZW**xx**08**xx	8.1	11.0	8.1	—	—	—	22.6	93	93	103
2.5	**ZW**xx**10**xx	6.1	16.5	12.0	15.1	14.6	11.0	23.6	107	107	115
5.0	**ZW**xx**20**xx	7.1	16.5	16.6	19.7	19.2	15.6	24.6	134	134	142
10.0	**ZW**xx**40**xx	10.6	15.7	19.9	22.7	22.5	18.9	28.1	184	184	192

Continuous connection pumps *Application & selection*

Shown: ZW4420FB-FT

The new Enerpac Continuous Connection Pump provides two modes of operation:

Manual mode
Pump runs continuously, building pressure as long as operator holds down pendant button.

AUTO mode
Pump runs continuously, maintaining user-set pressure window on clamp circuit as long as necessary.

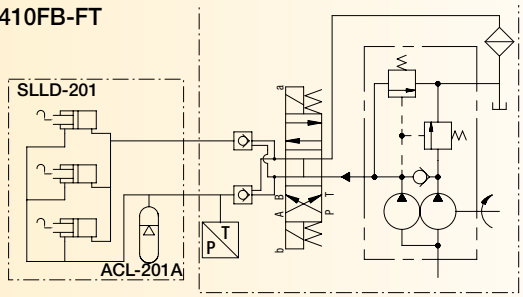
Automatic pressure control for continuous connection fixtures

- Programmable pressure setting allows pump to maintain system pressure continuously
- Includes pilot operated check valve ensuring pressure is maintained in circuit
- *Z-Class* high-efficiency pump design; featuring higher oil flow and by-pass pressure than comparable pumps
- High-strength, molded electrical enclosure protects electronics, power supplies and LCD readout from harsh industrial environments

Example Circuits

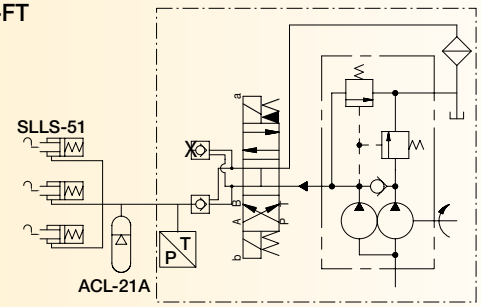
- Double-acting circuit

ZW4410FB-FT



- Single-acting circuit

ZW4410FB-FT



ZW5410FB-FT *used to control clamping cycle on a horizontal machining center.*

Product selection

Output flow rate @ max. pressure	Motor size	Motor voltage	Model number	Pressure range	Sound level	Usable oil capacity	
in³/min	hp			psi	dBA	gal	lbs
40	1.0	115-1-60	**ZW3408FB-FT**	1000-5000	75	2	115
		115-1-60	**ZW3410FB-FT**		75	2.5	134
		230-1-60	**ZW3408FI-FT**		75	2	115
		230-1-60	**ZW3410FI-FT**		75	2.5	134
60	1.0	115-1-60	**ZW4410FB-FT**	1000-5000	75	2.5	120
		230-3-60	**ZW4410FG-FT**				
		460-3-60	**ZW4410FJ-FT**				
120	1.5	115-1-60	**ZW5410FB-FT**	1000-5000	75	2.5	130
		230-3-60	**ZW5410FG-FT**				
		460-3-60	**ZW5410FJ-FT**				

Operation – continuous connection pump

Manual mode
The operator turns the pump motor on, and then presses and holds the up arrow on the pendant. When the button is released, the valve shifts to neutral, but pressure is maintained in the clamp circuit by the pilot-operated check valve. When the operator presses and holds the down arrow on the pendant, pressure in the clamp circuit will release, and the fixture will unclamp.

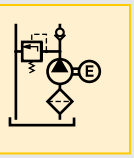
AUTO mode
The operator turns the pump motor on, and then presses and holds the up arrow on the pendant. When the customer-programmed HI PRESS setting is reached, the valve shifts to neutral, but pressure is maintained in the clamp circuit by the pilot-operated check valve. If pressure drops below the LO PRESS setting, the valve will re-activate and build pressure in the clamp circuit again. The pump will maintain this cycle until the operator presses and holds the down arrow on the pendant. When the down arrow is pressed, pressure in the clamp circuit will release, and the fixture will unclamp.

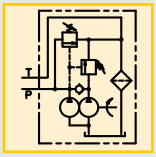
Flow: 40-120 in³/min

Pressure: 5000 psi max

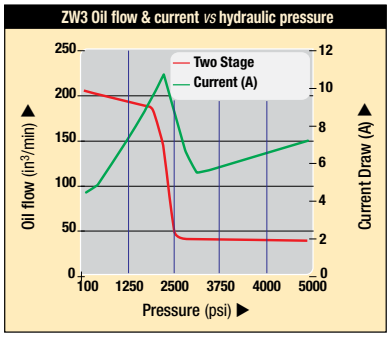
Motor: 1.0 or 1.5 hp

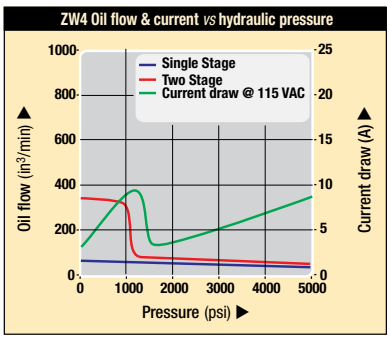
Reservoir: 2.0-10.0 gal

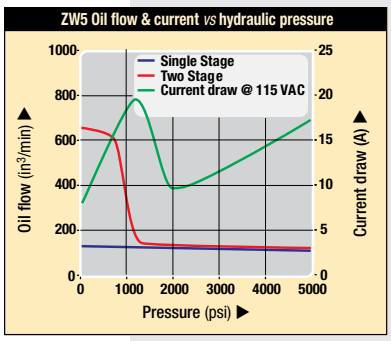


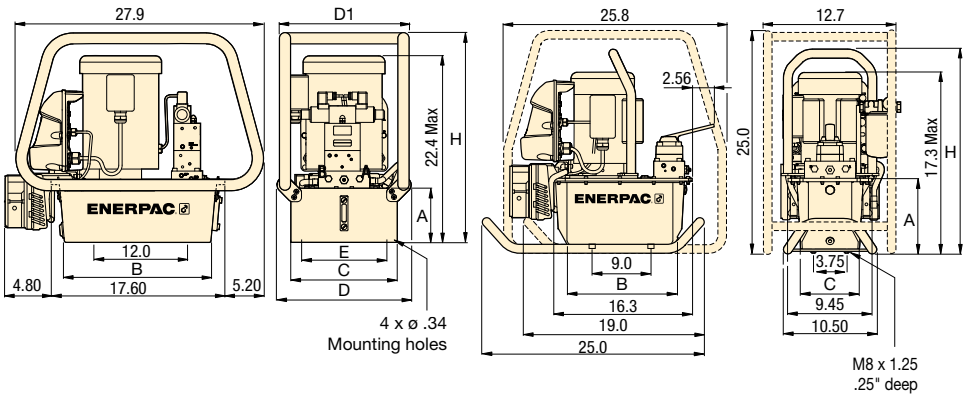


Output oil flow and current draw









Product dimensions in inches [⊳⊙]

Usable oil capacity gal	Modelo number	A	B	C	D	D1	E	H	lbs ZW3	lbs ZW4	lbs ZW5
2.0	**ZW**xx**08**xx	8.1	11.0	8.1	—	—	—	22.6	93	93	103
2.5	**ZW**xx**10**xx	6.1	16.5	12.0	15.1	14.6	11.0	23.6	107	107	115
5.0	**ZW**xx**20**xx	7.1	16.5	16.6	19.7	19.2	15.6	24.6	134	134	142
10.0	**ZW**xx**40**xx	10.6	15.7	19.9	22.7	22.5	18.9	28.1	184	184	192

Important

Enerpac recommends a pressure differential of no less than 200 psi for most applications. If you believe your application requires a tighter differential, please contact us directly.

For complete ordering matrix of all factory-installed options see page 117.

Options

Heat exchanger
119 ▶

Level switch
120 ▶

Pressure transducer
120 ▶

Return line filter
118 ▶

Single station D03 pumps *Application & selection*

Shown: ZW4010GB-11

Pump accepts any industry standard D03 style directional valve. Also available with 2 station and 4 station manifolds.

Industry standard mounting for electric or manual valves

- Highly efficient design provides increased flow rates, reduced heat generation and a decrease in power consumption
- Extensive list of accessories including
  - Heat exchanger
  - Roll-bars
  - Pressure transducer
  - Level and temperature switches
- Replaceable piston check-valves increase service life of major pump components
- Optional backlit LCD provides pump usage information, hour and cycle counts
- Also available with 2 station and 4 station manifolds

Important

Be aware of leakage rates of any valve installed on an Enerpac pump. Many standard spool valves have excessive leakage rates at higher pressures that can limit the performance of the electric pump. Be sure to consult Enerpac if you are unsure of your choice of valve.

ZW5020HB-F11 *with customer installed valve used to provide pressure to a clamping fixture.*

Product selection

Output flow rate @ max. pressure in³/min	Motor size hp	Motor voltage	Model number	Pressure range psi	Sound level dBA	Usable oil capacity gal	lbs
40	1.0	115-1-60	**ZW3008GB-11**	1000-5000	75	2	115
		115-1-60	**ZW3010GB-11**		75	2.5	134
		230-1-60	**ZW3008GI-11**		75	2	115
		230-1-60	**ZW3010GI-11**		75	2.5	134
60	1.0	115-1-60	**ZW4010GB-11**	1000-5000	75	2.5	120
		230-3-60	**ZW4010GG-11**				
		460-3-60	**ZW4010GJ-11**				
120	1.5	115-1-60	**ZW5010GB-11**	1000-5000	75	2.5	130
		230-3-60	**ZW5010GG-11**				
		460-3-60	**ZW5010GJ-11**				

Operation – single station D03 pumps

The Single Station D03 pumps are supplied without the standard LCD electrical control. This configuration is intended to be used with user supplied controls. Control requirements include: Motor Starter or Contactor, and remote control of the pump mounted valve. Typical applications include: Special Machines and CNC Machines where the control of the pump and valve will be done by PLC or machine control.

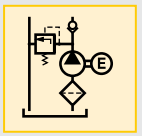
The use of the ZPF Return Line Filter is recommended. If the pump is to be run at pressure at a relief valve setting, the ZHE-E10 Heat Exchanger is also recommended. For monitoring of the oil level and temperature, use the ZLS-U4 Level/Temp Switch. For pump shutdown at pressure, the ZPS-W4 Pressure Switch Kit can provide an input to the customer supplied controls. As these accessories are designed to be used with the standard Enerpac LCD control, the customer assumes responsibility to adapt the standard leads to their controls.

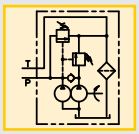
Flow: 40-120 in³/min

Pressure: 5000 psi max

Motor: 1.0 or 1.5 hp

Reservoir: 2.0-10.0 gal



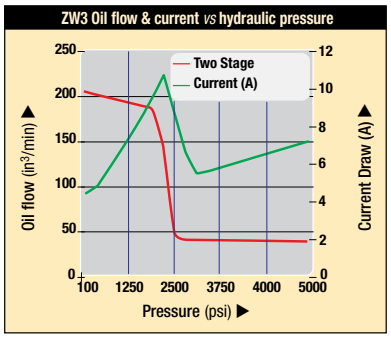


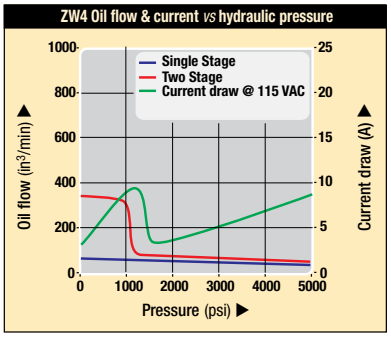
Important

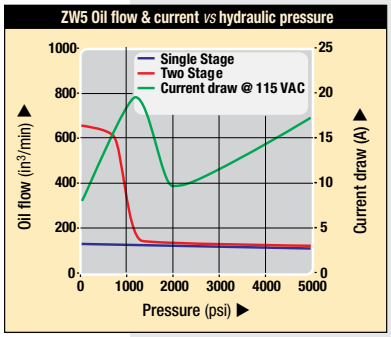
Enerpac recommends a pressure differential of no less than 200 psi for most applications. If you believe your application requires a tighter differential, please contact us directly.

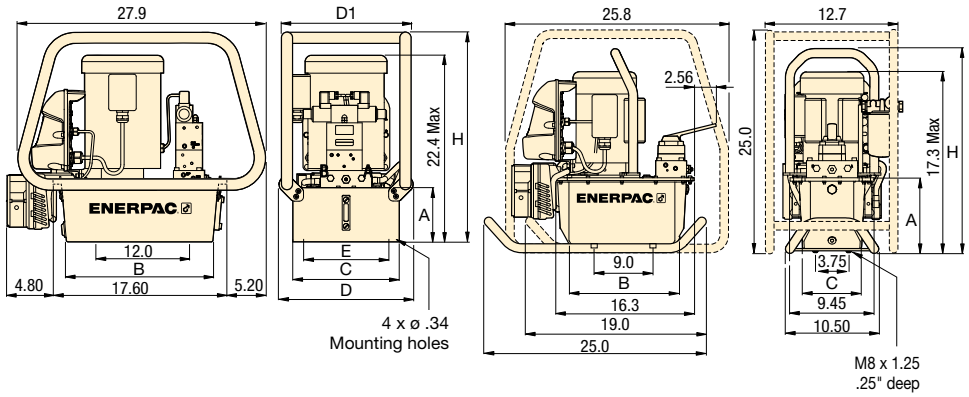
For complete ordering matrix of all factory-installed options see page 117.

Output oil flow and current draw









Options

Heat exchanger ⍰119 ▶

Level switch ⍰120 ▶

Pressure transducer ⍰120 ▶

Return-line filter ⍰118 ▶

VP03 solenoid valves ⍰141 ▶

VMM series manual valves ⍰143 ▶

Product dimensions in inches [⊳◎]

Usable oil capacity gal	Modelo number	A	B	C	D	D1	E	H	lbs ZW3	ZW4	ZW5
2.0	**ZW**xx**08**xx	8.1	11.0	8.1	–	–	–	22.6	93	93	103
2.5	**ZW**xx**10**xx	6.1	16.5	12.0	15.1	14.6	11.0	23.6	107	107	115
5.0	**ZW**xx**20**xx	7.1	16.5	16.6	19.7	19.2	15.6	24.6	134	134	142
10.0	**ZW**xx**40**xx	10.6	15.7	19.9	22.7	22.5	18.9	28.1	184	184	192

Electric Driven Workholding Pumps *Application & selection*

Shown: **ZW5111SWE100**

Enerpac's workholding pump unit features an innovative range of zero leakage, poppet design, directional valves. With the modular valve design, various independent single-acting or double-acting circuits can be realized.

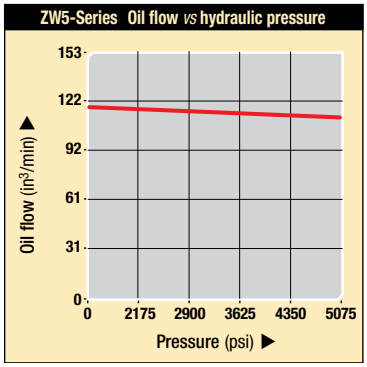
Application

These advanced workholding pumps, operating at maximum 5000 psi hydraulic pressure, are highly suitable for production tooling applications – offering the optimum in terms of compact size for required oil flow and pressure rating and customization to your specific needs.

Enerpac electric pump used in conjunction with swing cylinders, work supports, directional valves, control valves and sequence valves can provide a complete clamping solution. The pressure switch allows the unit to be fully automated.

Customize to your needs

- Various models including electric controls and pressure switch
- Stackable to 8 VP-series valve stations high
- Customer adjustable relief valve
- Glycerine dampened pressure gauge G-2517L on pumps with VP-series valves
- 230/460/3/50/60 Hz 1.5 hp motor

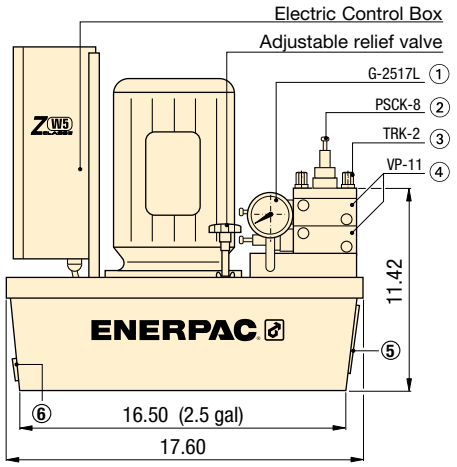


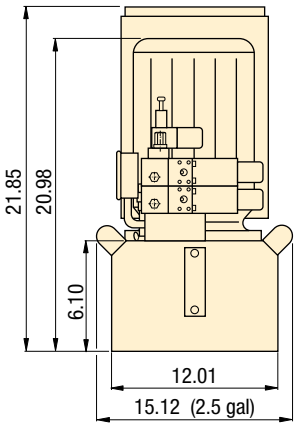
Product selection

Oil flow rate	Pressure range	Voltage and current 60Hz	Usable oil capacity[2]	Valve models included	Model number	
in³/min	psi	V @ A	gal.			lbs
▼ With manifold for VP-series modular valves, no electric controls						
120	1450-5000	230 @ 4.8	2.5	–	**ZW5VPSEE100**	143
120	1450-5000	460 @ 2.4	2.5	–	**ZW5VPSJE100**	143
▼ With manifold for CETOP 03 valves, no electric controls						
120	1450-5000	230 @ 4.8	2.5	–	**ZW5C03SEE100**	143
120	1450-5000	460 @ 2.4	2.5	–	**ZW5C03SJE100**	143
▼ For 2x single-acting circuits						
120	1450-5000	230 @ 4.8	2.5	1x VP-41	**ZW5141SEE100**	170
120	1450-5000	460 @ 2.4	2.5	1x VP-41	**ZW5141SJE100**	170
▼ For 1x double-acting circuits + isolating valve [1] for A-port						
120	1450-5000	230 @ 4.8	2.5	1x VP-11	**ZW5111SEE100**	170
120	1450-5000	460 @ 2.4	2.5	1x VP-11	**ZW5111SJE100**	170
▼ For 2x double-acting circuits + isolating valves [1] for all A-ports						
120	1450-5000	230 @ 4.8	2.5	2x VP-11	**ZW5211SEE100**	176
120	1450-5000	460 @ 2.4	2.5	2x VP-11	**ZW5211SJE100**	176

[1] Isolating valve is pressure switch PSCK-8.
[2] ZW5-series pumps comes standard with 2 gallon reservoir. (1, 2, 5 or 10 gallon reservoir is optional).

ZW5-series Shown: **ZW5211SEE100** with standard 10 litres reservoir



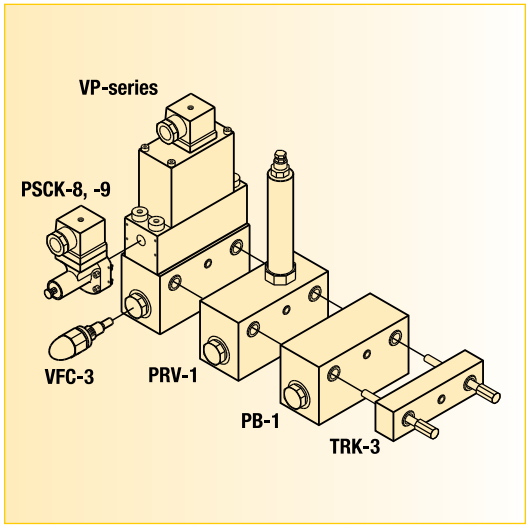


① Pressure gauge
② Pressure switch
③ Tie Rod Kit
④ Directional valve
⑤ Oil level glass
⑥ Oil drain

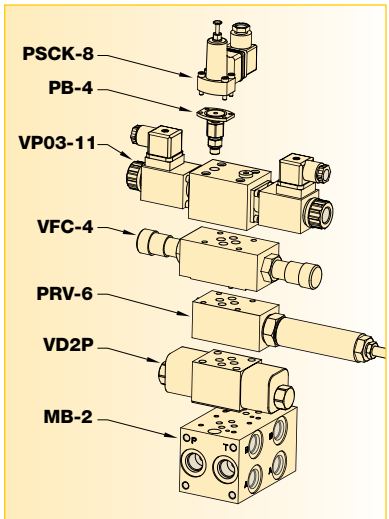
Product selection

Pump series	Voltage	Phase	Continuous operation at 5000 psi	Motor capacity	Motor speed	Motor protection class	Sound Level
	Volt			hp	RPM		dBA
ZW5....	230	1	50%	1.5	1725	IP54	75
ZW5.....	460	3	50%	1.5	1725	IP54	75

Valve options



See page 136 for VP-series valves and available options.



See page 141 for VP03-series valves and available options.

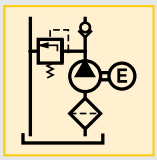
Flow: 120 in³/min

Pressure: 1450-5000 psi

Motor: 1.5 hp

Reservoir: 1-10 gallon

(E) **Bombas eléctricas**
(F) **Centrale hydraulique**
(D) **Modulare Spannpumpe**



Options

VP-series, modular valves 136 ▶

VFC-3 flow control valve (VP series) 137

Pressure switches 188 ▶

Hoses and couplers 192 ▶

High-pressure filters 193 ▶

Fittings 194 ▶

Electric Driven Workholding Pumps *Application & selection*

Shown: **ZW5111SWE100**

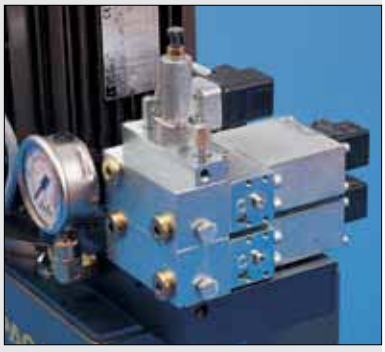
ZW5 series

These advanced workholding pumps, operating at maximum 5000 psi hydraulic pressure, are highly suitable for production tooling applications – offering the optimum in terms of compact size for required oil flow and pressure rating and customization to your specific needs.

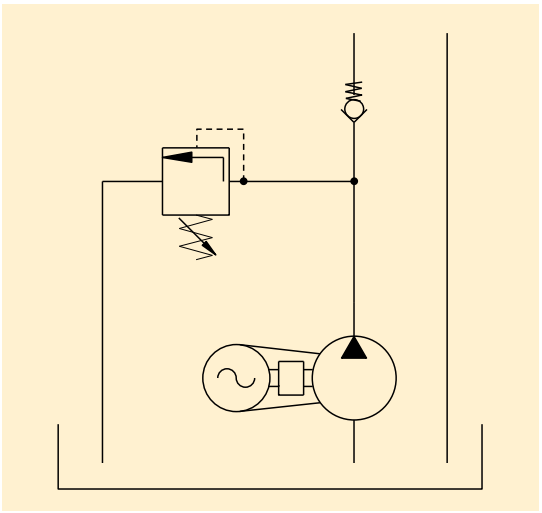
Application

Enerpac electric pump used in conjunction with swing cylinders, work supports, directional valves, control valves and sequence valves can provide a complete clamping solution. The pressure switch allows the unit to be fully automated.

Enerpac VP-series valves stackbuilt on ZW5211SJE100. The pressure switch PSCK-8 is mounted directly onto the endplate of Tie Rod Kit TRK-2.



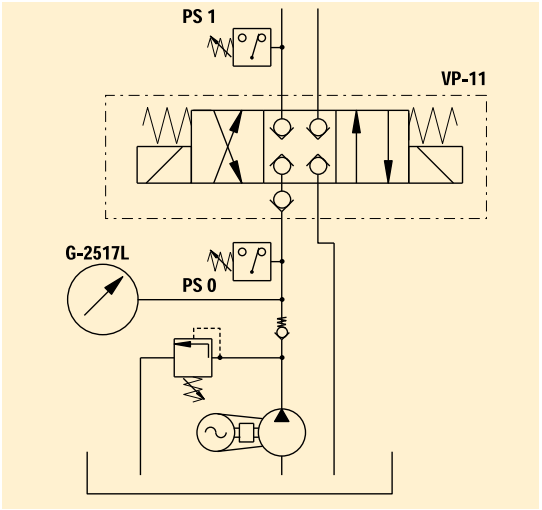
ZW5VPSEE100 with manifold for VP-series or CETOP 03 valves, without electric controls and gauge



Basic pumps

Customize to your needs with the Enerpac VP-series valves and options or choose your own D03 valve.

ZW5111SEE100 For 1x Double-Acting circuit and Isolating Valve for A-port



Isolating valves

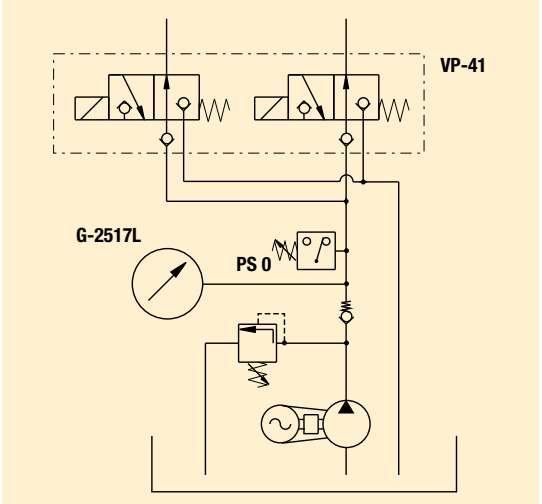
For applications where clamping pressure has to be maintained, isolating valves are an economic and safe solution.

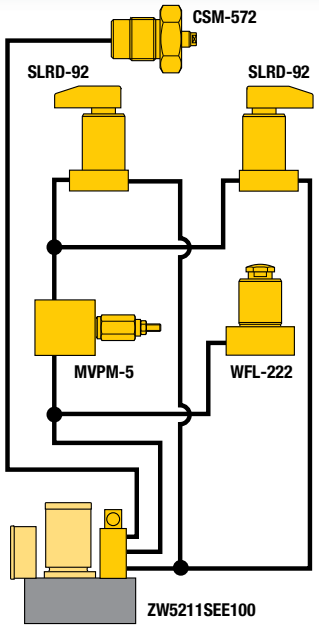
The pressure switch (PS 1) switches in the hydraulic line to the cylinder actuates the valve with a closed center position and isolates the circuit when the preset pressure has been reached. In case of pressure drop the switch opens the valve to compensate.

For some particular applications, i.e., when a workpiece has to be positioned and clamped with different forces, you can set different isolating valve pressures for the independent circuits.

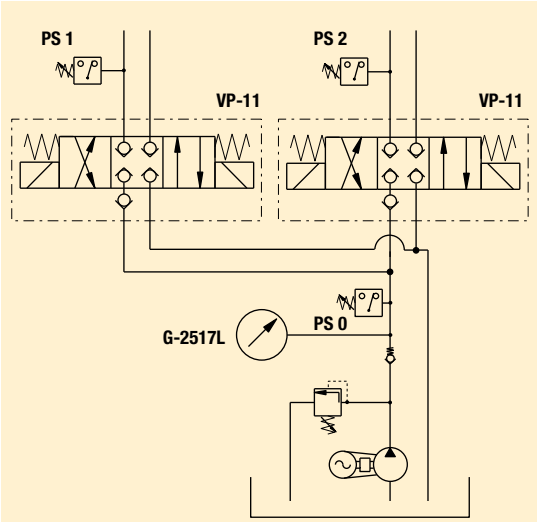
Pressure switch (PS 0) switches the motor off at maximum pressure; in case of pressure drop due to activating circuits, the motor restarts.

ZW5141SEE100 For 2x Single-Acting circuits





ZW5211SEE100 for 2x Double-Acting circuit and Isolating Valve for all A-ports



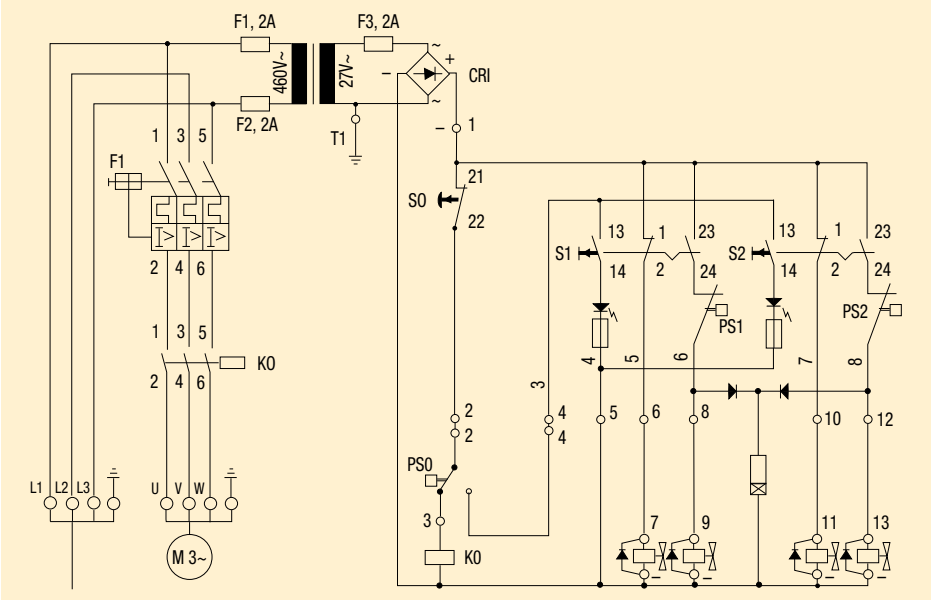
Application example

Building the right workholding system for a specific production tooling requirement is best achieved by observing the Basic System Set-up in our "Yellow Pages" (202).

Electric Scheme

Shown the electric scheme of the ZW5211SJE100 (460 volt) for two double-acting circuits and isolating valves (pressure switches) in both A-lines.

ZW5211SJE100



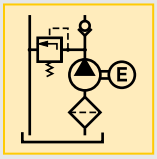
Flow: 120 in³/min

Pressure: 1450-5000 psi

Motor: 1.5 hp

Reservoir: 1-10 gallon

(E) Bombas eléctricas
(F) Centrale hydraulique
(D) Modulare Spannpumpe



Options

Sequence valves 152

Flow control valves 155

Hoses and couplers 192

High pressure filters 193

Hydraulic oil 193

Fittings 194

VP-series valve options 136