

▼ EVOB 816W



- Pumps to control 4 to 8 lifting points
- Intuitive user interface provides easy set-up and control
- For use with standard single- or double-acting cylinders
- Built in warning and stop alarms for optimum safety
- Available in two oil flow options.

▼ *Bridge maintenance: A 200 ton bridge was lifted using 8 cylinders to replace the old bearings.*



## The economical solution to basic lifting applications



### The Basic EVOB-System

Leveraging Enerpac's market leading Z-Class pumps and components from the standard EVO, the Basic EVOB offers an economical solution to basic applications requiring stroke only control for a maximum of 8 lifting points.

The Basic EVOB-System has three work modes. The operator can navigate to any of these menus:

1. Manual
2. Automatic
3. Depressurize.



### Typical Synchronous Lifting Applications

- Bridge lifting and repositioning
- Bridge launching
- Bridge maintenance
- Incremental launching and box jacking
- Lifting and lowering of heavy equipment
- Lifting, lowering, levelling and weighing of heavy structures and buildings
- Structural and pile testing
- Lifting and weighing of oil platforms
- Foundation levelling of onshore and offshore wind turbines
- De-propping/load transfer from temporary steel work
- Foundation shoring.

▼ *Foundation repair: Synchronous lift system used to lift a 1000 ton building.*



# Basic Synchronous Lifting Systems



## What is Synchronous Lifting?

To achieve high-precision movement of heavy objects it is necessary to control and synchronize the movements of multiple lifting points.

The PLC-control uses feedback from multiple sensors to control the lifting, lowering and positioning of any large, heavy or complex structure, regardless of weight distribution.

By varying the oil flow to each cylinder, the system maintains very accurate positional control. By eliminating manual intervention, the sync lift helps maintain structural integrity and increases the productivity and safety of the lift.

PLC-controlled synchronous lifting systems reduce the risk of bending, twisting or tilting, due to uneven weight distribution or load-shifts between the lift points.



## Wire Stroke Sensors

- Ordered separately, requires one for each lifting point
- Provides stroke feedback to controls
- Includes magnets for mounting.



## Stroke Sensor Cables

- Ordered separately, requires one for each stroke sensor
- Can be connected together for additional length.

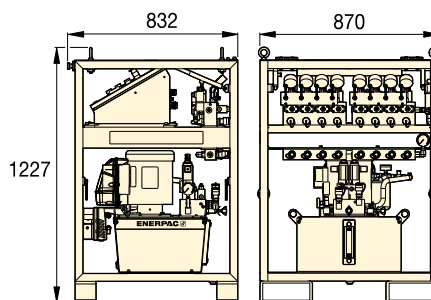
Stroke Sensor Model Number	Measuring Range (mm)
EVO-WSS-500	500
EVO-WSS-1000	1000

Sensor Cable Model Number	Cable Length (metres)
EVO-SC-25	25
-	-

**Voltage Options:** To select voltage, change suffix W into required suffix.

- B** = 115 V, 1 Ph, 50-60 Hz
- E** = 208-240 V, 1 Ph, 50-60 Hz
- G** = 208-240 V, 3 Ph, 50-60 Hz
- W** = 380-415 V, 3 Ph, 50-60 Hz
- J** = 460-480 V, 3 Ph, 50-60 Hz
- R** = 575 V, 3 Ph, 60 Hz.

Example: **EVOB408E**. EVOB Basic Pump for 4 lift points, 0,82 l/min at 700 bar, and 1,12 kW motor 208-240 V, 1 Ph, 50-60 Hz.



## EVOB-Series (Basic)

Lifting Points	Oil Flow at 50 Hz <sup>1)</sup> (l/min)		Model Number <sup>2)</sup>	Usable Oil Capacity (litres)	Motor Size (kW)	Motor Weight (kg)
	(< 80 bar)	(> 80 bar)				
4	8,88	0,82	<b>EVOB408E</b>	40	1,12	278
4	11,61	1,64	<b>EVOB416W</b>	40	2,24	284
8	8,88	0,82	<b>EVOB808E</b>	40	1,12	278
8	11,61	1,64	<b>EVOB816W</b>	40	2,24	284

<sup>1)</sup> Oil flow will be approximately 6/5 of these values at 60 Hz.

<sup>2)</sup> For other voltages options see information above this selection chart.

## EVOB Series



Number of Lifting Points:

**4 - 8**

Reservoir Capacity:

**40 litres**

Flow at Rated Pressure:

**0,82 - 1,64 l/min**

Motor Size:

**1,12 - 2,24 kW**

Maximum Operating Pressure:

**700 bar**



## Lifting Cylinders

For a complete line of Enerpac cylinders, see the Cylinder and Lifting Products in our catalogue.



## Multi-functional Synchronous Lifting Systems

For more than 8 lifting points, to link up to 4 systems together and weighing system see the EVO-Standard Series.

▼ **Box jacking:** Multi-point synchronous system to push hydraulically the tunnel segments under the railway.



▼ EVO 841460W



- Modular lifting pumps to control 4, 8 or 12 lifting points
- Can be connected to single- or double-acting cylinders with the same or different lifting capacities
- PLC-controlled system with integrated 700 bar hydraulic power unit and 250 litres reservoir
- Network capability to link up to 4 HPU's to a separate master control box via wireless control
- Intuitive user interface providing easy set up, control and navigation
- Data storage and recording capabilities
- Variable frequency drive motor (VFDM) and PLC for precise synchronization and oil flow control.



## The multi-functional synchronous lifting systems



### EVO-System Work Modes

The application possibilities are infinite with the standard EVO-System, powering interlinked hydraulic cylinders – single or double-acting, push or pull, stage lift, hollow plunger or lock nut cylinders. The EVO-System has 9 work modes. The operator can navigate to any of these menus:

1. Manual
2. Pre-Load
3. Automatic
4. Retract Fast
5. Depressurize
6. Tilting
7. Stage Lift
8. Weighing \*
9. Center of Gravity determination \*

\* Available in the EVO-W-models.



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◀ *The superlifting and launch of a 43.000-ton floating oil production system in Malaysia for the Gumusut-Kakap offshore field has set high benchmarks for safety through its use of sophisticated EVO-Series synchronous hydraulics to lift, balance, weigh and smoothly launch massive resource structures.*





## Benefits of the EVO-Series System

### Precise control of multiple lift points

- Comprehensive understanding and management of a lifting operation from a central control system improves safety and operational productivity.
- Programmable synchronized lifting.
- Automatic stop at pre-set cylinder stroke or load limit.

### Safe and efficient movement of loads

- System secured with warning and stop features to realize optimal safety.

### High accuracy

- Variable frequency drive (VDFM) and PLC for precise synchronization and control of oil flow, stroke and speed.
- Depending the cylinder capacities used, an accuracy of 1,0 mm between lifting points is achieved.

### Ease of operation

- User friendly interface: visual screens, icons, symbols and color coding.
- A single operator controls the entire operation.

### Monitoring and Data Recording

- Displays data of the operation.
- Data recording at user-defined intervals.
- Data storage and read-out for reporting.

### Network capability

- Ethernet IP protocol for communication between hydraulic power units, allow easy "plug and play".

### EVO-W Weighing System

#### Weighing applications with 1% accuracy

- Includes calibrated sensors and auto-calibration of external load cells.
- Center of gravity determination functionality.
- Parameters for "waiting time for stabilization" and "number of cycles".

### Global standardized system

- Enerpac global coverage ensures local support.

## EVO Series



Number of Lifting Points:

**4 - 8 -12 (up to 48)**

Reservoir Capacity:

**250 litres**

Flow at Rated Pressure:

**0,75 - 4,80 l/min**

Motor Size:

**3,50 - 7,50 kW**

Maximum Operating Pressure:

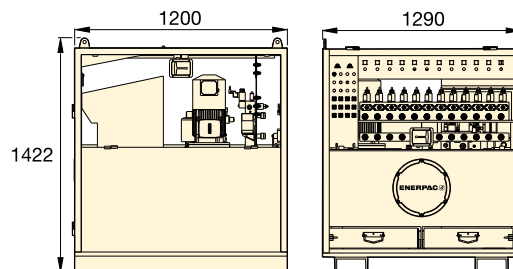
**700 bar**



### Stroke Sensors and Cables

Optional accessories required for each lifting point and stroke sensor.

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### Master Control Box

Required to link up to 4 standard EVO-pumps together to achieve a maximum of 48 lifting points. Contact Enerpac for more information.

### EVO-Series (Standard)

Lifting Points	Variable Oil Flow at 50 Hz <sup>1)</sup> (l/min)		Model Number <sup>2)</sup> 380-415 V, 3ph, 50-60Hz	Usable Oil Capacity (litres)	Motor Size (kW)	Motor Speed <sup>4)</sup>	(kg)
	(< 125 bar)	(> 125 bar)					
4	4,0 - 13,3	0,75 - 2,51	<b>EVO 421380</b>	250	3,5	VFDM	910
4	4,0 - 13,3	0,75 - 2,51	<b>EVO 421380 W<sup>3)</sup></b>	250	3,5	VFDM	910
4	4,7 - 15,6	1,44 - 4,80	<b>EVO 440380</b>	250	7,5	VFDM	1005
4	4,7 - 15,6	1,44 - 4,80	<b>EVO 440380 W<sup>3)</sup></b>	250	7,5	VFDM	1005
8	4,0 - 13,3	0,75 - 2,51	<b>EVO 821380</b>	250	3,5	VFDM	910
8	4,0 - 13,3	0,75 - 2,51	<b>EVO 821380 W<sup>3)</sup></b>	250	3,5	VFDM	910
8	4,7 - 15,6	1,44 - 4,80	<b>EVO 840380</b>	250	7,5	VFDM	910
8	4,7 - 15,6	1,44 - 4,80	<b>EVO 840380 W<sup>3)</sup></b>	250	7,5	VFDM	910
12	4,0 - 13,3	0,75 - 2,51	<b>EVO 1221380</b>	250	3,5	VFDM	920
12	4,0 - 13,3	0,75 - 2,51	<b>EVO 1221380 W<sup>3)</sup></b>	250	3,5	VFDM	920
12	4,7 - 15,6	1,44 - 4,80	<b>EVO 1240380</b>	250	7,5	VFDM	1025
12	4,7 - 15,6	1,44 - 4,80	<b>EVO 1240380 W<sup>3)</sup></b>	250	7,5	VFDM	1025

<sup>1)</sup> Oil flow will be approximately 6/5 of these values at 60 Hz. <sup>2)</sup> For 460-480 VAC, 3 phase, 50-60 Hz change 380 in model number into 460. Example **EVO421460**.

<sup>3)</sup> Model numbers with suffix **W** are pumps for weighing systems. <sup>4)</sup> VFDM = Variable Frequency Drive 15-50 Hz.

▼ Precision levelling caisson pier box: 3 EVO-Systems connected with 32 jacks lowered the 1100 ton bascule pier box.

