

Enerpac Heavy Lifting Technology provides customers with tailored solutions, combining hydraulics, steel fabrication and electronic control technology. Global Leader providing best in class solutions for safe and precise positioning of heavy loads.

With more than 50 years supporting industrial markets, Enerpac has gained the unique and in-depth expertise that is respected by industrial professionals around the world. Across every continent, Enerpac's network of application engineers, authorized distributors and technical service centers can reach any location, and deliver innovative solutions, technical assistance and quality products.

Enerpac's complete line of standard and customized products and a unique systems approach offers the benefits of safety and efficiency to applications where high forces are required.

Whether constructing a signature bridge across a deep valley, lifting a national landmark for seismic retrofit or simultaneously testing hundreds of foundation pilings to support a new building, Enerpac will supply the hydraulic solutions to get the job done safely and efficiently.



Precision lift and position of heavy loads



Synchronous superlift and launch



Bridge lifting and launching



Jacking with high capacity precision control



Synchronous hoisting and load positioning



Incremental bridge lifting

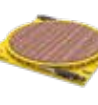


Transportation



Machine moving

# Heavy Lifting Technology - Section Overview

| Capacity<br>tons                                                     | Type and Capabilities                                                                                       | Series                 |                                                                                       | Page                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------|------------------------------|
| <b>Flow: 20 - 154 in<sup>3</sup>/min</b><br><b>Power: 1 - 20 hp</b>  | <b>Split-Flow Hydraulic Pumps</b><br>Multiple outlets with equal flow for lifting and lowering              | <b>SFP</b>             |    | <b>342</b> ▶                 |
| <b>Flow: 46 - 292 in<sup>3</sup>/min</b><br><b>Power: 4 - 10 hp</b>  | <b>Synchronous Lifting Systems, standard pump models</b><br>The multi-functional synchronous lifting system | <b>EVO</b>             |    | <b>346</b> ▶                 |
| <b>Flow: 128 - 488 in<sup>3</sup>/min</b><br><b>Power: 4 - 20 hp</b> | <b>Synchronous Lifting Systems, Pump-per-Point</b><br>Provides industry leading speed and accuracy          | <b>EVOP</b>            |    | <b>348</b> ▶                 |
| <b>56 - 110</b>                                                      | <b>Self-Locking Cube Jacks</b><br>Incremental lifting, automated mechanical locking                         | <b>SCJ</b>             |    | <b>350</b> ▶                 |
| <b>55 - 220</b>                                                      | <b>Climbing Jacks</b><br>A simple solution to incremental lifting                                           | <b>BLS</b>             |    | <b>354</b> ▶                 |
| <b>275 - 550</b>                                                     | <b>Jack-Up Systems</b><br>Synchronously lift, mechanically hold, incremental lifting                        | <b>JS</b>              |    | <b>356</b> ▶                 |
| <b>17 - 935</b>                                                      | <b>Heavy Lifting Strand Jacks</b><br>High capacity precision control                                        | <b>HSL</b>             |  | <b>358</b> ▶                 |
| <b>60 - 120</b>                                                      | <b>Synchronous Hoisting Systems - SyncHoist</b><br>Precision positioning jacks                              | <b>SHC,<br/>SHP</b>    |  | <b>360</b> ▶                 |
| <b>45 - 1178</b>                                                     | <b>Telescopic Hydraulic Gantries</b><br>Precision lift and position of heavy loads                          | <b>ML,<br/>SL, SBL</b> |  | <b>362</b> ▶<br><b>364</b> ▶ |
| <b>400</b>                                                           | <b>Low-Height Skidding System</b><br>The ideal jack and slide solution                                      | <b>LH</b>              |  | <b>366</b> ▶                 |
| <b>50 - 100</b><br><b>Speed: 82 - 164 ft/hr</b>                      | <b>Electric Trolley Systems</b><br>Synchronized travel                                                      | <b>ETR</b>             |  | <b>370</b> ▶                 |
| <b>225 - 450</b>                                                     | <b>Hydraulic Turntables</b><br>Controlled rotation of heavy loads                                           | <b>ETT</b>             |  | <b>372</b> ▶                 |
| <b>—</b>                                                             | <b>Custom Heavy Lifting Solutions</b><br><b>Solution Consultations, On-Demand Support</b>                   | <b>—</b>               |  | <b>373</b> ▶                 |

▼ SFP414SJ and SFP403SJ (Gauges and retract valves not shown)



## Multiple Outlets with Equal Flow for Lifting and Lowering



### Typical Split-Flow Pump Applications

For lifting and lowering applications on multiple points, Split-Flow Pumps are a far better alternative than using independently operated pumps. Where synchronization of maximum 4% is acceptable, Split-Flow Pumps are a safe and economical solution.

The SFP-Series pumps feature both single and synchronized multiple outlet control either through joystick or pendant operation.

### Application examples:

- Bridge deck lifting for bearing maintenance
- Stage lifting in construction and shipbuilding
- Skidding to move structures and buildings
- Levelling of constructions such as wind turbines

- 2, 4, 6 or 8 split-flow outlets
- Individual or simultaneously operation of valves, with advance/hold/retract function
- Joystick (manual) controlled or pendant (solenoid) controlled valves
- Flow per outlet ranging from 20 to 153 in<sup>3</sup>/min at 10,000 psi
- For double- and single-acting cylinders
- Adjustable pressure relief valve per circuit
- Reservoir sizes: 2.5, 10 or 40 gallons
- All models include pressure gauges.

▼ Step-by-step stage lifting an old windmill using double-acting RR506 cylinders powered by a split-flow pump.



### Remote Control Pendant

Split-Flow pumps with solenoid valves include a remote pendant with selector switches for each individual outlet, allowing single or multiple cylinder operation.



### Split-Flow Pump Synchro Kits

Split-Flow Pump Synchro Kits connect and electronically synchronize each lift point of a single Split-Flow Pump or multiple Split-Flow Pumps under one control system.

# Split-Flow Hydraulic Pumps

## SFP Series



Reservoir Capacity:

**2.5, 10 or 40 gallons**

Split-Flow Outlets:

**2, 4, 6 and 8 outlets**

Flow at Rated Pressure:

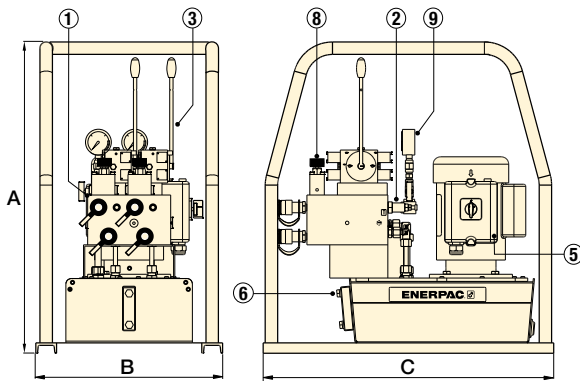
**20 - 153 in<sup>3</sup>/min**

Motor Size:

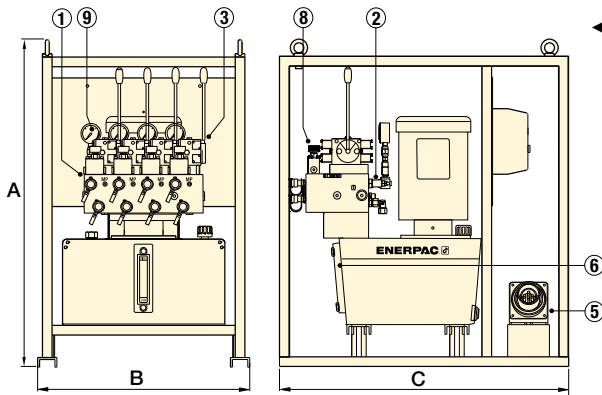
**1 - 20 hp**

Maximum Operating Pressure:

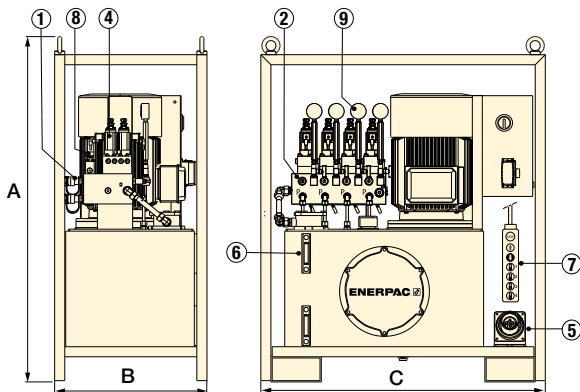
**10,000 psi**



◀ SFP-Series with 2.5 gallons reservoir (shown with 2 split-flow outlets)



◀ SFP-Series with 10 gallons reservoir (shown with 4 split-flow outlets)



◀ SFP-Series with 40 gallons reservoir (shown with 4 split-flow outlets)



### Lifting Cylinders

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

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- ① Manifold with split-flow outlets and CR400 couplers
- ② Adjustable pressure relief valve per circuit
- ③ Manual 4/3 control valves with joysticks
- ④ Solenoid 4/3 control valves (24 VDC)
- ⑤ Power socket
- ⑥ Oil sight gauge(s)
- ⑦ Remote control pendant with 16 feet cord
- ⑧ Return flow control valve in each circuit
- ⑨ Hydraulic pressure gauge in each circuit

| Number of Split-Flow Outlets | Usable Oil Capacity (gal) | Oil Flow per Outlet at 10,000 psi (in <sup>3</sup> /min) | Pump Model Number<br>4/3 Valve Operation<br>Advance/Hold/Retract |                         | Motor Size<br>460 V, 3ph<br>60 Hz<br>(hp) | Dimensions (in) |      |      |  (lbs) |
|------------------------------|---------------------------|----------------------------------------------------------|------------------------------------------------------------------|-------------------------|-------------------------------------------|-----------------|------|------|-------------------------------------------------------------------------------------------|
|                              |                           |                                                          | Manual (Joystick)                                                | 24 V Solenoid (Pendant) |                                           | A               | B    | C    |                                                                                           |
| 2                            | 2.5                       | 20                                                       | SFP202MB                                                         | —                       | 1.0 *                                     | 29.4            | 17.7 | 27.6 | 253                                                                                       |
|                              | 10                        | 22                                                       | SFP403MJ                                                         | SFP403SJ                | 3.0                                       | 40.0            | 25.2 | 38.2 | 565                                                                                       |
| 4                            | 40                        | 66                                                       | —                                                                | SFP409SJ                | 7.5                                       | 53.4            | 23.8 | 45.7 | 1045                                                                                      |
|                              | 40                        | 103                                                      | —                                                                | SFP414SJ                | 10                                        | 53.4            | 23.8 | 45.7 | 1078                                                                                      |
|                              | 40                        | 154                                                      | —                                                                | SFP421SJ                | 15                                        | 53.4            | 23.8 | 45.7 | 1311                                                                                      |
| 6                            | 40                        | 95                                                       | —                                                                | SFP613SJ                | 15                                        | 53.4            | 31.7 | 47.2 | 1236                                                                                      |
| 8                            | 10                        | 22                                                       | —                                                                | SFP803SJ                | 5.4                                       | 45.8            | 32.7 | 43.8 | 990                                                                                       |
|                              | 40                        | 95                                                       | —                                                                | SFP813SJ                | 20                                        | 53.4            | 31.7 | 47.2 | 1364                                                                                      |

\* SFP202MB with 115 V, 1 phase, 60 Hz motor.



### Motor Voltage

Motor voltage is specified by the last letter in the model number.

Other motor voltages are available from Enerpac. Change "J" in the model as follows for other options:

**G** = 208-240V, 3 ph, 50-60 Hz

**W** = 380-415V, 3 ph, 50 Hz

▼ SFP-Series Split-Flow Pump Kit Components



### Junction Box

**SFPKSS4** and **SFPKSS8** junction boxes consolidate the signals from pressure and stroke sensors, allowing the master control box to synchronize the lifting operation.



### SFPKMN, Master Control Box

All SFP-Series Synchro Kits include a master control box to allow the operator to easily monitor and control a multi-point synchronized lift and adjust individual lift points as needed. All master control boxes feature an industrial grade touch screen and a user-friendly interface.



### EVO-SC, Stroke Sensor Cables

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

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-SC-6     | 19.7        | EVO-SC-25    | 82          |



### EVO-WSS, Wire Stroke Sensors

Provides stroke feedback to controls. Includes magnets for mounting. Ordered separately, requires one sensor for each lifting point. Available in measuring range from 19.7 to 39.4 inches.

| Model Number | Range (in) | Model Number | Range (in) |
|--------------|------------|--------------|------------|
| EVO-WSS-500  | 19.7       | EVO-WSS-ADJ  | 0 - 49.2   |
| EVO-WSS-1000 | 39.4       | —            | —          |



### Communication Cables

EVO-COMM-Series communication cables transfer information about the synchronized lift operation from the master control panel to each of the connected split-flow pumps.

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-COMM-25  | 82          | EVO-COMM-75  | 246         |
| EVO-COMM-50  | 164         | EVO-COMM-100 | 328         |

## Connecting Split-Flow Pumps for more lift points and greater accuracy

- Control multiple Split-Flow Pumps with one control unit
- Pumps can be closer to the lifting points, requiring shorter hoses and increasing accuracy
- Synchronize all lift points to within 0.04 inch (1,0 mm)
- Network control boxes expand the number of lifting points by combining up to four split-flow pumps together, simplifying lifting operations by using a single operator station
- Plug and play synchronous lift upgrade kits limit initial investment and provide everyday flexibility to tailor the controls to the applications needs.



### Split-Flow Pumps Kits

SFP-Series kits are customized from standard components to meet the needs of your unique applications. On the next page is the guide to help you choose the right components to upgrade or expand your equipment based on your application needs.

Contact your regional Enerpac representative / territory manager for support with your specific project.

### Split-Flow Pump Network Kits

Split-Flow Pump Network Kits connect multiple Split-Flow Pumps under one control system.

### Split-Flow Pump Synchro Kits

Split-Flow Pump Synchro Kits connect and electronically synchronize each lift point of a single Split-Flow Pump or multiple Split-Flow Pumps under one control system.

# Split-Flow Pump Network Kits



## Upgrading Split-Flow Pumps

To network multiple SFP-pumps together with standard function see drawing and table ①.

To upgrade a single SFP-pump to synchronous lift capability, see drawing and table ②.

To upgrade and network multiple SFP-pumps together with synchronous lift capabilities, see drawing and table ③.

## SFP Series



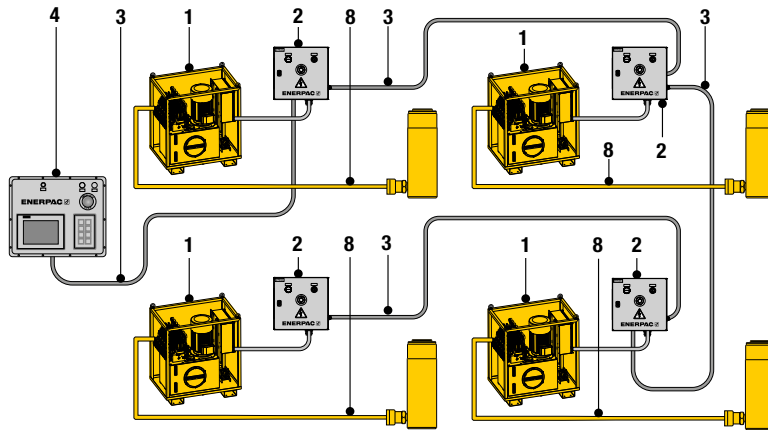
Multiple Pumps in Network System:

**1 - 4 pumps**

Maximum Lifting Points:

**32x cylinders**

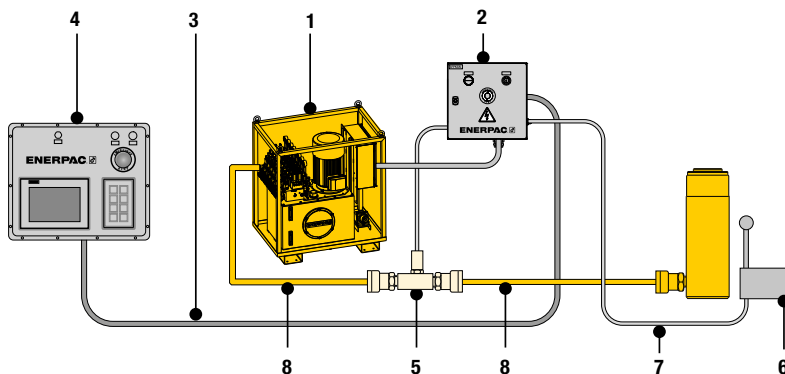
### ① Networked SFP-Pumps in Standard Operation



### ① Networked SFP-Pumps in Standard Operation

| Nr. | Qty | Model No. & Description                     |
|-----|-----|---------------------------------------------|
| 1   | 4x  | SFP...SJ Pumps with solenoid valves         |
| 2   | 4x  | SFPKSN Junction Box, 1x per pump            |
| 3   | 4x  | SFPComm-25 Communication Cable, 1x per pump |
| 4   | 1x  | SFPKMN Master Control Box                   |
| 8   |     | HC700-Series, Hydraulic Hoses               |

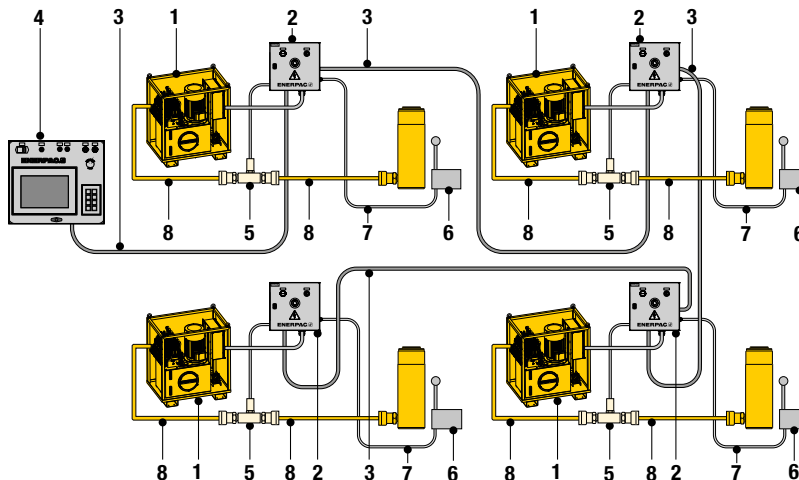
### ② Single SFP-Pump in Multiple-Point Synchronous Lifting Operation



### ② Single SFP-Pump in Multiple-Point Synchronous Lifting Operation

| Nr. | Qty | Model No. & Description                                                       |
|-----|-----|-------------------------------------------------------------------------------|
| 1   | 1x  | SFP...SJ Pump with solenoid valves                                            |
| 2   | 1x  | SFPKSS4 Junction Box for 2-4 lifting points or SFPKSS8 for 6-8 lifting points |
| 3   | 1x  | SFPComm-25 Communication Cables                                               |
| 4   | 1x  | SFPSSC Single Slave Control Box                                               |
| 5   |     | SFPKPT Pressure Transducer Kit (1x per cylinder A-port)                       |
| 6   |     | EVO-WSS-XXX Stroke Sensor, 1x per cylinder                                    |
| 7   |     | EVO-SC-25 Stroke Sensor Cable, 1x per cylinder                                |
| 8   |     | HC700-Series, Hydraulic Hoses                                                 |

### ③ Networked SFP-Pumps in Multiple-Point Synchronous Lifting Operation



### ③ Networked SFP-Pumps in Multiple-Point Synchronous Lifting Operation

| Nr. | Qty | Model No. & Description                                                                                  |
|-----|-----|----------------------------------------------------------------------------------------------------------|
| 1   | 4x  | SFP...SJ Pump with solenoid valves                                                                       |
| 2   | 4x  | SFPKSS4 Junction Box, 1x per pump, for 2-4 lifting points or SFPKSS8 Junction Box for 6-8 lifting points |
| 3   | 4x  | EVO-COMM-XXX Communication Cable, 1x per pump                                                            |
| 4   | 1x  | EVOMASTER Master Control Box                                                                             |
| 5   |     | SFPKPT Pressure Transducer Kit, 1x per cylinder A-port                                                   |
| 6   |     | EVO-WSS-XXX Stroke Sensor, 1x per cylinder                                                               |
| 7   |     | EVO-SC-25 Stroke Sensor Cable, 1x per cylinder                                                           |
| 8   |     | HC700-Series, Hydraulic Hoses                                                                            |

▼ EV0840460



- 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 10,000 psi hydraulic power unit and 66 gallons reservoir
- Network capability to link up to 4 EVO-units (HPUs) to a separate network controller
- 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 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.



## The multi-functional synchronous lifting systems



### CLNC12 Network Controller

Easily monitor and control a multipoint synchronized lift. All network control boxes feature an industrial grade touch screen

and a user-friendly interface.

Same controller can be used to operate either SFP-Series Split-Flow Pumps or multifunctional EVO-Series lifting systems.



### EVO-SC, Stroke Sensor Cables

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

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-SC-6     | 19.7        | EVO-SC-25    | 82          |



### EVO-WSS, Wire Stroke Sensors

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

point. Available in measuring range of 19.7 and 39.4 inches. Other lengths available on request.

| Model Number | Range (in) | Model Number | Range (in) |
|--------------|------------|--------------|------------|
| EVO-WSS-500  | 19.7       | EVO-WSS-1000 | 39.4       |



### Communication Cables

EVO-COMM-Series communication cables transfer information about the synchronized lift operation from the network control panel to each

of the connected hydraulic pumps.

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-COMM-25  | 82          | EVO-COMM-75  | 246         |
| EVO-COMM-50  | 164         | EVO-COMM-100 | 328         |

# Synchronous Lifting Systems



## 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 (VFD) and PLC for precise synchronization and control of oil flow, stroke and speed.
- Depending the cylinder capacities used, an accuracy of 0.040 inch (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".

### EVOLCK-12 Load Cell Connection Kit

- Install electronic load cells when applications require high accuracy of load measurement
- Kit allows connection of up to 12 electronic load cells
- Plug and play connection to standard EVO lifting system
- Weighing accuracy as good as 1% of total load.

### Global standardized system

- Enerpac global coverage ensures local support.

## EVO Series



Number of Lifting Points:

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

Reservoir Capacity:

**66 gallons**

Flow at Rated Pressure:

**46 - 292 in<sup>3</sup>/min**

Motor Size:

**4 - 10 hp**

Maximum Operating Pressure:

**10,000 psi**



### EVOLCK-12, Load Cell Connection Kit

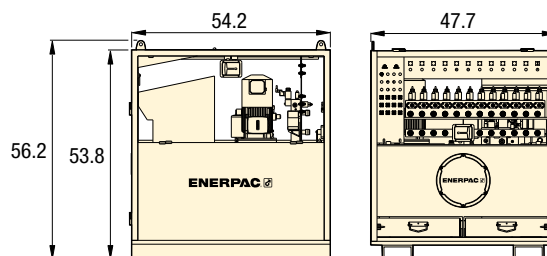
Allows connection up to 12 electronic load cells to standard EVO-system.



### High-Tonnage Cylinders

The Enerpac High-Tonnage Cylinders are particularly suitable for (multipoint) lifting applications. Options include single or double-acting with and without mechanical lock nuts for load holding.

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## EVO-Series (Standard)

| Lifting Points | Variable Oil Flow at 60 Hz (in <sup>3</sup> /min) |              | Model Number <sup>1)</sup><br>460-480 V,<br>3 ph, 50-60 Hz | Usable Oil Capacity<br>(gal) | Motor Size<br>(hp) | Motor Speed <sup>2)</sup><br>(lbs) |      |
|----------------|---------------------------------------------------|--------------|------------------------------------------------------------|------------------------------|--------------------|------------------------------------|------|
|                | (< 1800 psi)                                      | (> 1800 psi) |                                                            |                              |                    |                                    |      |
| 4              | 243 - 812                                         | 46 - 153     | <b>EVO421460</b>                                           | 66                           | 4                  | VFDM                               | 2000 |
| 4              | 285 - 951                                         | 88 - 292     | <b>EVO440460</b>                                           | 66                           | 10                 | VFDM                               | 2210 |
| 8              | 243 - 812                                         | 46 - 153     | <b>EVO821460</b>                                           | 66                           | 4                  | VFDM                               | 2000 |
| 8              | 285 - 951                                         | 88 - 292     | <b>EVO840460</b>                                           | 66                           | 10                 | VFDM                               | 2000 |
| 12             | 243 - 812                                         | 46 - 153     | <b>EVO1221460</b>                                          | 66                           | 4                  | VFDM                               | 2025 |
| 12             | 285 - 951                                         | 88 - 292     | <b>EVO1240460</b>                                          | 66                           | 10                 | VFDM                               | 2250 |

<sup>1)</sup> For 380-415 VAC, 3 phase, 50-60 Hz change 460 in model number into 380. Example **EVO421380**.

<sup>2)</sup> VFDM = Variable Frequency Drive 15-60 Hz.

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



▼ EVOP140150J Hydraulic Power Unit



- Lifting system controls multiple lifting points
- Each EVOP-Series pump (Pump-per-Point) controls only one lifting point, providing the best combination of high flow rate and exceptional accuracy
  - Ideal for high-tonnage cylinders, 300 to 1000-ton capacities
  - Increased lifting speeds for long stroke cylinders and repetitive operations such as with climbing jacks
  - Up to 8x lifting speed compared to similar methods
- Synchronization controlled via a variable frequency drive (VFD) on the motor, enables smoother operation and tight accuracy at high lifting speeds
- Standard control interface provides easy set-up and operation/selection of multiple lifting options
- Accuracy of up to 0.040 inch (1,0 mm) between leading and lagging cylinders
- Built-in warning and stop alarms for optimal safety.

## Raising the speed limit on synchronized lifting operations



### CLNC12 Network Controller

Easily monitor and control a multipoint synchronized lift. All network control boxes feature an industrial grade touch screen

and a user-friendly interface.

Same controller can be used to operate either SFP-Series Split-Flow Pumps or multifunctional EVO-Series lifting systems.



### EVO-SC, Stroke Sensor Cables

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

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-SC-6     | 19.7        | EVO-SC-25    | 82          |



### EVO-WSS, Wire Stroke Sensors

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

Available in measuring range of 19.7 and 39.4 inches. Other lengths available on request.

| Model Number | Range (in) | Model Number | Range (in) |
|--------------|------------|--------------|------------|
| EVO-WSS-500  | 19.7       | EVO-WSS-1000 | 39.4       |



### Communication Cables

EVO-COMM-Series communication cables transfer information about the synchronized lift operation from the network control panel to each

of the connected hydraulic pumps.

| Model Number | Length (ft) | Model Number | Length (ft) |
|--------------|-------------|--------------|-------------|
| EVO-COMM-25  | 82          | EVO-COMM-75  | 246         |
| EVO-COMM-50  | 164         | EVO-COMM-100 | 328         |



◀ A 1200-ton electric mining shovel being separated using custom 500-ton RR-Series cylinders and a pump per point synchronous lift system.

# Synchronous Lift System, Pump-per-Point



## EVOP-Series Pumps

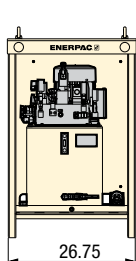
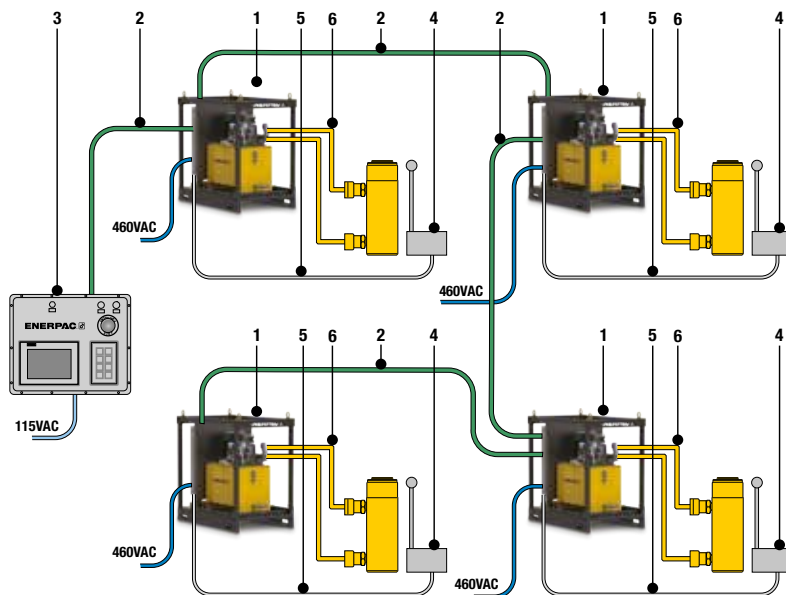
The Enerpac EVOP-Series (Pump-per-Point) synchronous lift system provides industry leading speed and accuracy for 10,000 psi lifting operations.

**Safety:** Stroke synchronization ensures level lift regardless of load distribution.

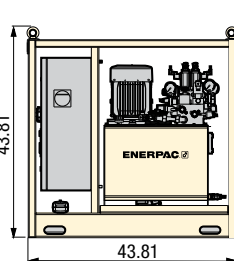
**Lifting Speed:** Improve lifting speed up to 8 times over traditional multi-point lifting systems. Save time on long stroke lifts and repetitive operations

**Accuracy:** Variable speed motor control allows accuracy down to 0.040 inch (1,0 mm) between cylinders and smooth operation without the start and stop associated with opening and closing hydraulic valves.

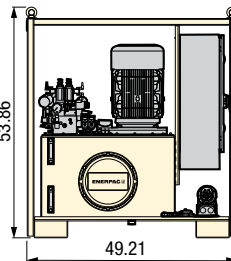
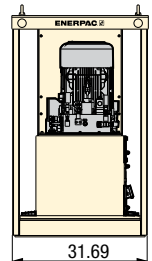
## Networked EVOP-Pumps in Multipoint Synchronous Lifting Set-Up



5 hp



10 - 20 hp



## EVOP-Series (Pump-per-Point)

| Lifting Points per Pump | Reservoir Capacity | Oil Flow <sup>1)</sup> (in <sup>3</sup> /min) |            | Model Number <sup>2)</sup><br>440 - 480 V,<br>3 phase, 60 Hz | Motor Size | Weight (lbs) |
|-------------------------|--------------------|-----------------------------------------------|------------|--------------------------------------------------------------|------------|--------------|
|                         |                    | < 1800 psi                                    | > 1800 psi |                                                              |            |              |
| 1x (cylinder)           | 10 (gal)           | 677                                           | 128        | EVOP12140J                                                   | 4 (hp)     | 685          |
| 1x                      | 40                 | 793                                           | 244        | EVOP140150J                                                  | 10         | 1080         |
| 1x                      | 40                 | 1037                                          | 488        | EVOP180150J                                                  | 20         | 1115         |

<sup>1)</sup> First stage high oil flow only available in manual control mode.

<sup>2)</sup> For 380-415 Volt - 3ph - 50-60 Hz change suffix "J" into "W". Example: EVOP140150W.

## EVOP Series



Lifting Points per Pump:

**1x cylinder/pump**

Reservoir Capacity:

**10 - 40 gallons**

Flow at Rated Pressure:

**128 - 488 in<sup>3</sup>/min**

Motor Size:

**4 - 10 - 20 hp**

Maximum Operating Pressure:

**10,000 psi**

## Networked EVOP-Pumps in Multipoint Synchronous Lifting Set-Up (with double-acting cylinders)

| Nr. | Model No. & Description               | Quantity    |
|-----|---------------------------------------|-------------|
| 1   | EVOP-Series Pump with Solenoid Valves | 1x/cylinder |
| 2   | EVO-COMM-XXX Communication Cable      | 1x/pump     |
| 3   | CLNC12 Network Control Box            | 1x/system   |
| 4   | EVO-WSS-XXX Stroke Sensor             | 1x/cylinder |
| 5   | EVO-SC-25 Stroke Sensor Cable         | 1x/cylinder |
| 6   | HC700-Series Hydraulic Hoses          | 2x/cylinder |



## High-Tonnage Cylinders

The Enerpac High-Tonnage Cylinders are particularly suitable for (multipoint) lifting applications. Double-acting cylinders are recommended to take advantage of speed and time saving with EVOP-Series pumps.

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## BLS-Series Climbing Jacks

Climbing Jacks overcome the usual limitation of lift height imposed by the jack's plunger stroke length. Large objects, such as oil tanks, can be lifted, held and lowered for maintenance without sending for a crane.

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▼ SCJ50, Enerpac Self-Locking Cube Jack



- System is automatically mechanically locked after the lifting or lowering stroke
- Self-aligning steel cribbing blocks save time, improve side load, and eliminate the need for wooden cribbing materials
- Jobs are completed more efficiently due to simplified operation sequence with 50% fewer cycles than climbing jacks
- End block with adjustable swivel saddle allows fine adjustment during set-up: 1.97 inches screw extension
- Can be operated with Enerpac's 10,000 psi hydraulic power units
- Lloyds witness tested to 125% of maximum working load.

## Incremental lifting system with automated mechanical locking



### Why use Self-Locking Cube Jacks?

The Self-Locking Cube Jack is a safer, more efficient alternative to the jack-and-pack method with wooden cribbing. The Self-Locking Cube Jack is derived from the proven Enerpac Jack-up System.

The Cube Jack has a small footprint and is useable in confined spaces, providing heavy lift contractors with a stable lift up to 118.3 inches. The cribbing blocks are lightweight and can be handled manually.



### Markets & Applications

Applications with a minimum starting height of 19 or 22 inch and requirement to lift up to 81 or 118 inch.

- Power Generation - transformer jacking
- Mining - equipment maintenance
- Heavy Transport - vehicle unloading
- Oil & Gas - module jacking
- Construction - bridge jacking
- Industrial Movers - lifting, lowering and levelling of heavy equipment.



◀ Completed in just over one hour, the 160-ton 164 x 23 feet steel racking system was lifted synchronously to a height of 7.2 feet using 16 Enerpac SCJ50 Cube Jacks powered by a single SFP-Series Split-Flow Pump. Lifting large racking systems can be hazardous, complex and difficult involving forklift trucks and chain blocks. Photo by courtesy of PHL Hydraulics Ireland Ltd.

▼ Forklift tabs on Cube Jacks for easy transportation and positioning with a pallet truck. See dimensions D and I to select the right pallet truck size.



# Self-Locking Cube Jacks



## Self-Locking Cube Jacks

Easy-to-use, compact and portable jacking system that utilizes base lifting frames and self-aligning, lightweight steel cribbing blocks, instead of wooden cribbing materials.

### Operation is simple:

1. Connect the Cube Jacks to the Enerpac Split-Flow Pump and select lifting mode on each base lifting frame.
2. Insert a cribbing block and actuate the Cube Jack until the cribbing block engages the lock mechanism.
3. Retract the jack and repeat the process until the desired lifting height is reached. For the lowering operation select lowering mode on each base lifting frame and reverse the process.

The Cube Jack End Block is equipped with an adjustable saddle for initial alignment with the load.

All controls except for the main directional valve, which is on the hydraulic power unit, are included on the Cube Jack.

### Manual cribbing block insertion

Cribbing blocks are easily managed by hand and the Cube Jack includes integrated fork pockets and lifting rings for effortless positioning.

### Synchronous Lifting & Lowering

Enerpac recommends using the SFP-Series Split-Flow Pumps with multiple outlets with equal oil flow. For lifting and lowering applications on multiple points, Split-Flow Pumps are a far better alternative than using separately operated pumps.

If synchronous lifting & lowering is required, the SFP-Series Pumps can be configured to accommodate stroke sensors and provide accurate computer controlled lifting function.

## SCJ Series



Capacity Per Cube Jack:

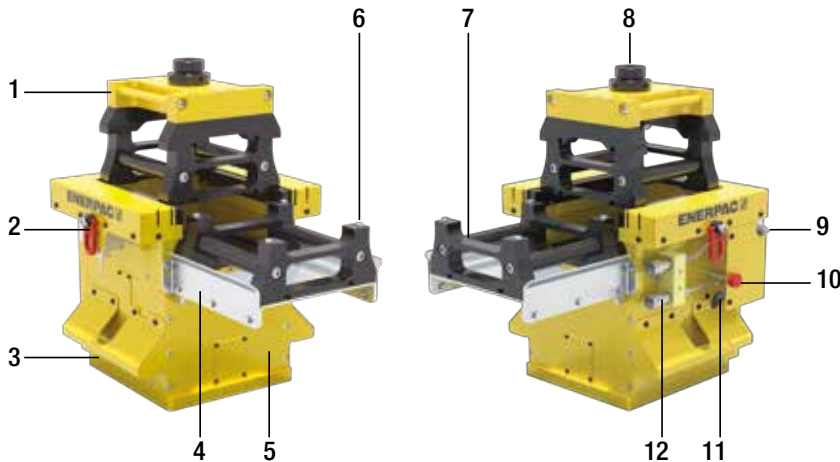
**56 - 110 tons**

Maximum Lifting Height:

**81.4 - 118.3 inches**

Maximum Operating Pressure:

**10,000 psi**



### Self-Locking Cube Jack

- |                                 |                                              |
|---------------------------------|----------------------------------------------|
| 1 End block with tilting saddle | 7 Steel cribbing blocks                      |
| 2 Eye-bolts for hoisting        | 8 Adjustable tilting saddle                  |
| 3 Forklift tabs                 | 9 Flow control                               |
| 4 Removable insert table        | 10 Mode locking pin                          |
| 5 Cube Jack base frame          | 11 Mode selector lever                       |
| 6 Locating pins                 | 12 Hydraulic connections (Advance / Retract) |

▼ Cube Jack close-up of lifting and lowering valving mode and lock handle.



▼ SCJ100, Enerpac Self-Locking Cube Jack



## Incremental lifting system with automated mechanical locking



### Transport Frame

Provided with purchase of each Cube Jack. Provides storage and transport for base unit, end block, and all included cribbing blocks.



### Lightweight Cribbing Blocks

Provided with purchase of each Cube Jack. Cribbing blocks can be manually inserted into the Cube Jack by one person. Spare cribbing blocks can be ordered separately.

- Included with the Cube Jack are:
  - Cube Jack Basic Unit
  - End Block with adjustable swivel saddle
  - Multiple cribbing blocks: 11x on SCJ50  
18x on SCJ100
  - Transportation Frame
- Cribbing blocks can be manually inserted into the Cube Jack by one person.

| Description                     | Model No.     |
|---------------------------------|---------------|
| 1x Cribbing Block, for 56 tons  | <b>SCJ5B</b>  |
| 1x Cribbing Block, for 110 tons | <b>SCJ10B</b> |



### Split-Flow Pumps

Enerpac recommend to use the **SFP-Series Pumps** with multiple outlets with equal oil flow.

For lifting and lowering applications on multiple points, Split-Flow Pumps are a far better alternative than using separately operated pumps.



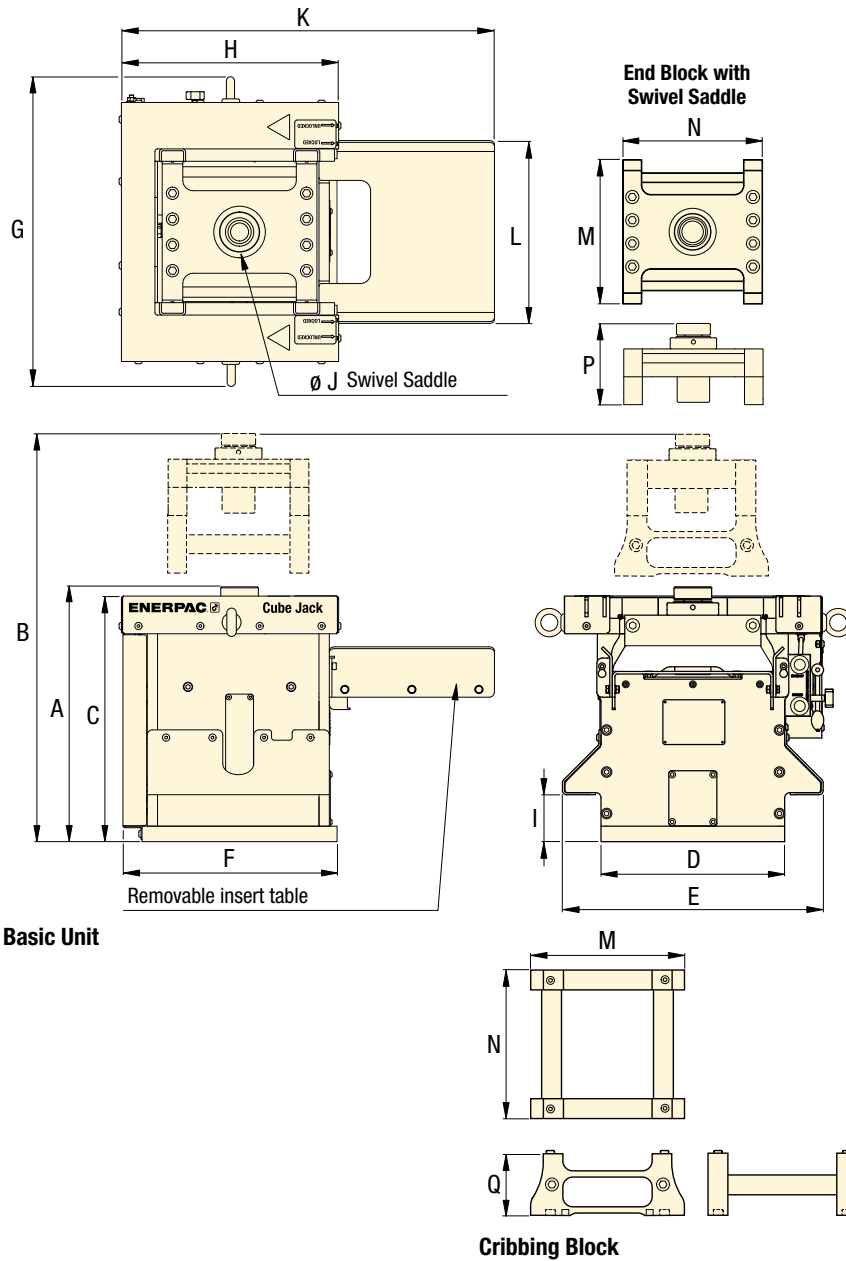
◀ Heat exchanger maintenance job on the piping and condensers at a refinery using a combination of Enerpac Heavy Lifting Technology: SCJ-Series Cube Jacks, the ETT-Series Hydraulic Turntable and LH-Series Low-Height Skidding Systems.

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### Self-Locking Cube Jacks

| Lifting Capacity per Base Unit | Lifting Stroke | Model Number  | Maximum Sideload at full extension | Maximum Pump Oil Flow Rate | Oil Capacity per Base Unit (in <sup>3</sup> ) |         |
|--------------------------------|----------------|---------------|------------------------------------|----------------------------|-----------------------------------------------|---------|
| (tons)                         | (in)           |               |                                    | (in <sup>3</sup> /min)     | Advance                                       | Retract |
| <b>56</b>                      | 6.14           | <b>SCJ50</b>  | 1.5%                               | 65                         | 75                                            | 38      |
| <b>110</b>                     | 6.14           | <b>SCJ100</b> | 1.5%                               | 128                        | 152                                           | 85      |

# Self-Locking Cube Jacks and Accessories



## SCJ Series



Capacity Per Cube Jack:

**56 - 110 tons**

Maximum Lifting Height:

**81.4 - 118.3 inches**

Maximum Operating Pressure:

**10,000 psi**

▼ Typical set-up with 4 Self-Locking Cube Jacks and cribbing blocks in a Factory Acceptance Test (FAT). Enerpac recommends to power the Cube Jack using SFP-Series Split-Flow Pump.



| Base Unit    |                                                                                              | End Block    |                                                                                              | Cribbing Block |                                                                                              | Transport Frame * |                                                                                              |
|--------------|----------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------|
| Model Number | <br>(lbs) | Model Number | <br>(lbs) | Model Number   | <br>(lbs) | Model Number      | <br>(lbs) |
| SCJ50        | 794                                                                                          | SCJ5EB       | 88                                                                                           | SCJ5B          | 35                                                                                           | SCJ5F             | 243                                                                                          |
| SCJ100       | 1804                                                                                         | SCJ10EB      | 220                                                                                          | SCJ10B         | 52                                                                                           | SCJ10F            | 550                                                                                          |

| Dimensions (in) |       |      |      |      |      |      |      |     |      |      |      |      |      |        |        |     | Model Number |
|-----------------|-------|------|------|------|------|------|------|-----|------|------|------|------|------|--------|--------|-----|--------------|
| A               | B     | C    | D    | E    | F    | G    | H    | I   | J    | K    | L    | M    | N    | P Min. | P Max. | Q   |              |
| 19.4            | 81.4  | 18.7 | 14.0 | 19.9 | 17.4 | 21.9 | 16.9 | 3.6 | 4.92 | 28.6 | 13.8 | 11.8 | 12.2 | 6.9    | 8.9    | 4.9 | SCJ50        |
| 22.0            | 118.3 | 20.7 | 19.9 | 25.8 | 25.0 | 30.4 | 23.5 | 4.0 | 6.69 | 41.2 | 19.8 | 17.7 | 18.1 | 7.4    | 9.4    | 4.9 | SCJ100       |

\* Dimensions Transport Frame L x W x H: **SCJ5F:** 36.25 x 33.5 x 34 inches.  
**SCJ10F:** 63 x 47.25 x 59 inches.

▼ BLS1006



- Climbing jacks include integral tilt saddles with maximum tilt angles up to 5 degrees
- Large base plate with anti-rotation rod for stability and safety
- Built-in safety valve prevents accidental over-pressurization
- Ideal in combination with the stage lift work mode of the EVO-Series synchronous lifting system
- Baked enamel finish for increased corrosion resistance
- CR400 couplers and dust caps included on all models.

▼ *Synchronous Stage Lifting: 48 double-acting jacks (25 and 50-ton) are networked into a 16 point synchronous system to lift this 164 feet, 1100-ton building up to a height of 8 feet to construct a new floor level.*



## A Simple Solution to Incremental Lifting



### Lifting Height

Climbing Jacks overcome the usual limitation of lifting height imposed by the cylinder's plunger stroke length. Large objects, such as oil tanks, can be lifted, held and lowered for maintenance without sending for a crane.



### Split-Flow Pumps

SFP-Series Pumps with multiple outlets with equal oil flow. For lifting and lowering applications on multiple points Split-Flow Pumps are a far better alternative than using separately operated pumps.

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### Synchronous Lifting System

The standard EVO-Series System is ideal for stage lifting, powering interlinked hydraulic cylinders.

The EVO-system has 9 work modes including the stage lift work mode.

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### Jack-Up Systems

For incremental lifting with higher lifting capacities and up to 49.2 feet lifting height, see our JS-Series Jack-Up Systems.

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| Cylinder Capacity<br>(tons) | Stroke<br>(in) | Model Number | Max. Cylinder Capacity<br>(tons) |      |
|-----------------------------|----------------|--------------|----------------------------------|------|
|                             |                |              | Push                             | Pull |
| 55                          | 5.91           | BLS506       | 55                               | 12   |
| 105                         | 6.34           | BLS1006      | 105                              | 48   |
| 154                         | 5.94           | BLS1506      | 154                              | 74   |
| 220                         | 5.94           | BLS2006      | 220                              | 113  |

# Double-Acting Climbing Jacks



◀ Typical stage-lift application using a custom built Enerpac system to lift the 360-ton Akkerwinde wooden bridge in the Netherlands.

**BLS Series**



Capacity per Lifting Point:

**55 - 220 tons**

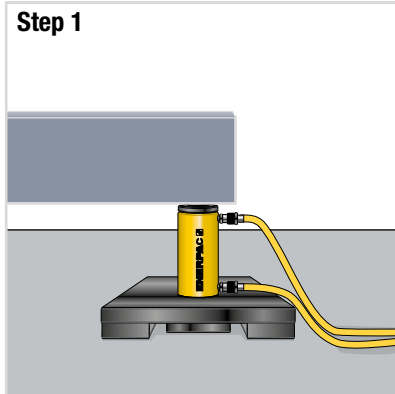
Stroke per Stage:

**5.91 - 6.34 inches**

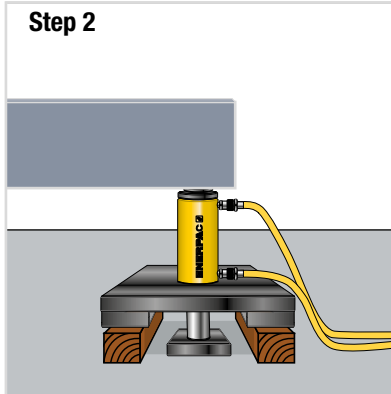
Maximum Operating Pressure:

**10,000 psi**

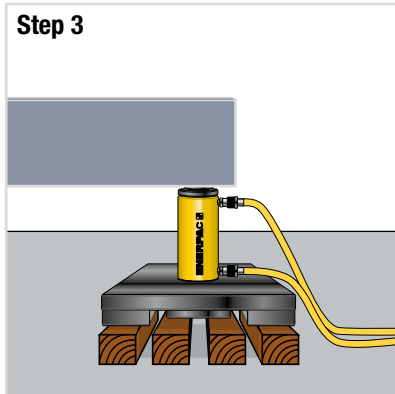
**Step 1**



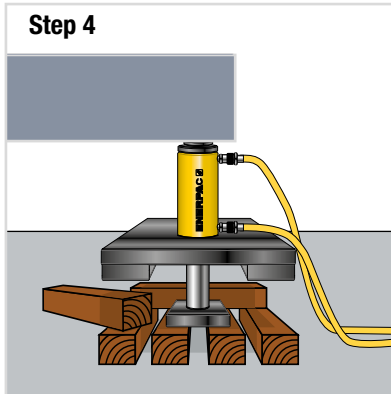
**Step 2**



**Step 3**



**Step 4**



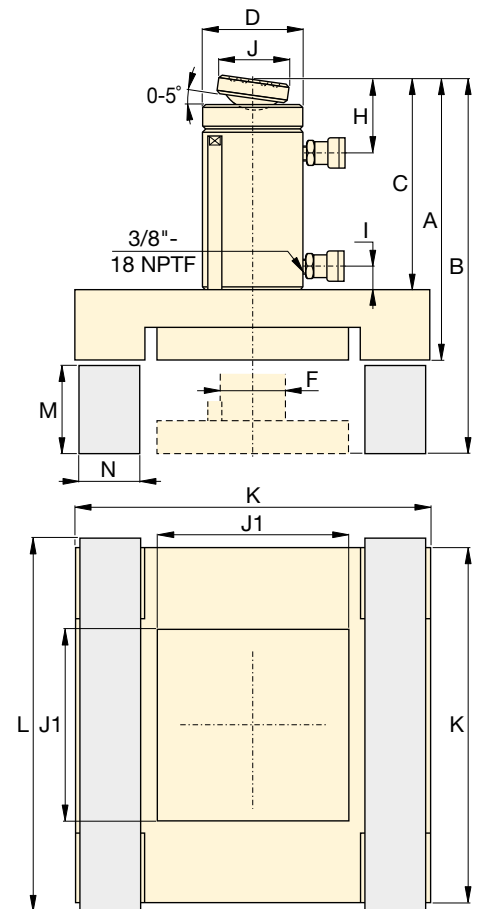
## ▲ Stage Lifting Sequence

**Step 1:** The climbing jack is placed on a solid support under the load (retracted plunger).

**Step 2:** Plunger extends, lifting the load and giving clearance to insert two outer blocks under the spreading plate.

**Step 3:** Plunger retracts, giving clearance to position the central blocks which will support the plunger plate for the next extension.

**Step 4:** Plunger extends, lifting the load, giving clearance to insert two new blocks, placed crosswise under the spreading plate.



| Cylinder Effective Area<br>(in²) |       | Oil Capacity<br>(in³) |       | Dimensions<br>(in) |       |       |      |      |      |      |      |       |       | Cribbing Blocks *<br>and Dimensions (in) |       |      |      |  | Model Number   |
|----------------------------------|-------|-----------------------|-------|--------------------|-------|-------|------|------|------|------|------|-------|-------|------------------------------------------|-------|------|------|---------------------------------------------------------------------------------------|----------------|
| Push                             | Pull  | Push                  | Pull  | A                  | B     | C     | D    | F    | H    | I    | J    | J1    | K     | Material                                 | L     | M    | N    | (lbs)                                                                                 |                |
| 11.04                            | 3.33  | 67.8                  | 20.5  | 15.98              | 21.89 | 12.52 | 5.00 | 3.11 | 2.24 | 1.42 | 1.97 | 9.45  | 20.28 | Azobe Wood                               | 22.24 | 5.51 | 4.72 | 375                                                                                   | <b>BLS506</b>  |
| 20.66                            | 9.64  | 136.6                 | 63.8  | 17.52              | 23.86 | 13.50 | 6.97 | 3.74 | 2.99 | 0.94 | 2.80 | 12.99 | 26.38 |                                          | 28.35 | 5.91 | 6.30 | 695                                                                                   | <b>BLS1006</b> |
| 30.71                            | 14.79 | 188.6                 | 90.8  | 18.58              | 24.57 | 14.57 | 8.00 | 4.49 | 3.70 | 1.54 | 5.12 | 9.06  | 18.70 | Solid Aluminum<br>or Steel               | 19.69 | 5.51 | 4.53 | 710                                                                                   | <b>BLS1506</b> |
| 44.21                            | 22.50 | 264.4                 | 134.8 | 20.08              | 26.02 | 15.24 | 9.76 | 5.24 | 4.02 | 1.46 | 5.12 | 10.63 | 21.65 |                                          | 22.64 | 5.51 | 5.31 | 825                                                                                   | <b>BLS2006</b> |

\* Cribbing blocks are not supplied by Enerpac.

▼ JS250 and JS500 Enerpac Jack-Up System (one lifting tower shown)



- Self-contained hydraulics in each jack-up unit for uncluttered work area
- Synchronously lift loads with multiple jack-up units. The most common system set-up includes 4 jack-up units
- Adjustable top barrel is standard on all models
- Lifting barrels are stacked together to mechanically hold the load
- Up to 4% side load capacity depending on lifting height
- Computer controls for operating the jack-up system with automatic and manual lifting settings.

## Incremental Lifting System – Synchronously Lift and Mechanically Hold



### Typical Applications

- Bridge maintenance
- Lifting and lowering of heavy equipment
- Lifting, lowering and leveling of heavy structures and buildings
- De-propping/load transfer from temporary steel work.



### Computer Controls

- Enerpac Jack-up Systems provide precision control suitable for many demanding lifting/lowering applications. The comprehensive self-contained design features simple to use software.
- Automatic synchronization of multiple networked lift points.
  - Overload and stroke alarms
  - Emergency stop switch at jack-up units and controls.

▼ Enerpac has been awarded a contract by Burkhalter to extend the height of Enerpac's 2200-ton (550-ton per tower) jack-up system from 66 to 118 feet for future projects.



▼ Enerpac Jack-Up System lifts 1500-ton span on Fore River Bridge.



▼ Undecking an 1500-ton Electric Rope Shovel in a Copper Mine with a JS500 Jack-Up System for bearing inspection and maintenance.



# Enerpac Jack-Up Systems



## Enerpac Jack-Up Systems

The jack-up system is a custom developed multi-point lifting system. A typical system setup includes four jack-up units positioned under each corner of a load.

Example: A four unit setup with JS250 has a lifting capacity of 1100 ton (275 ton per unit). The lifting frame of a jack-up unit contains four hydraulic lifting cylinders, one in each corner, which lift the load using the stacked steel barrels.

A load is lifted in increments as barrels are slid into the system, lifted, and stacked; forming 'lifting towers'. A jack-up system is operated and controlled by a computer control unit.

Each unit's lifting and lowering operations occur simultaneously; the computer control unit's synchronous technology maintains the balance of the load.

## JS Series

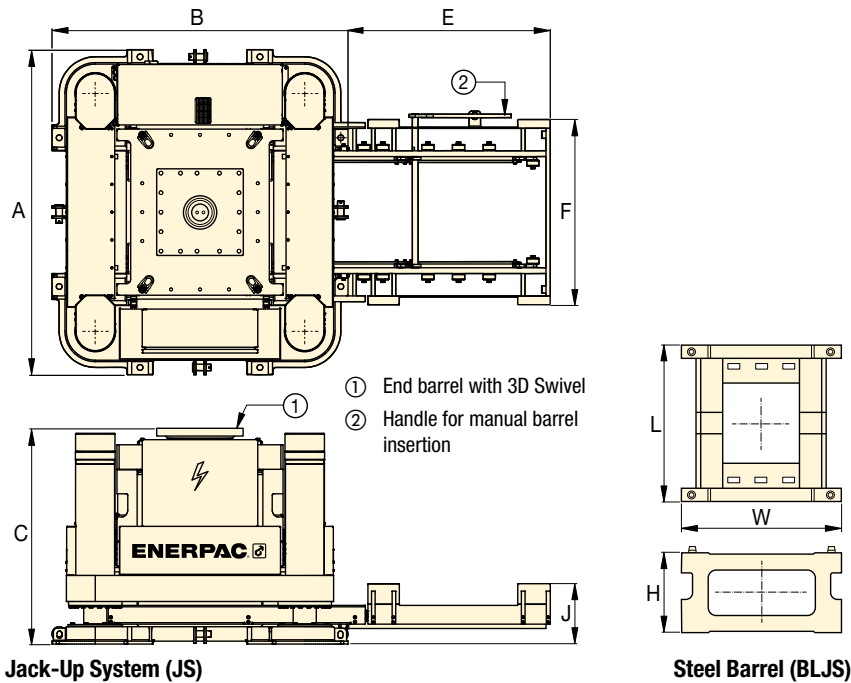


Capacity Per Lifting Tower:

**275 - 550 tons**

Lifting Height:

**Up to 32.9 - 49.2 feet**



Jack-Up System (JS)

Steel Barrel (BLJS)



## Jack-up System Smart Box

The **Smart Box SBSJ-SCCV4** is Enerpac's proprietary control platform. It allows an operator to control up to 8 jack-up towers simultaneously with one **SBLT1** standard laptop.

- Single operator control from a central location provides safe and reliable operation
- Synchronous lift /lower and load control between the lifting positions
- Automatic lifting and lowering cycles
- Displays individual and accumulative stroke/load
- Simple graphical user interface.



## Adjustable Top Barrel

Adjustable top barrel is standard on all models.

Includes double-acting lock nut cylinder with swivel saddle.

Cylinder can be extended to contact the load. Provides ability to adjust starting height of each leg, ensuring safe and stable lifting. Must be operated with separate 10,000 psi pump with 4/3 directional valve.

## Steel Barrels

| For use with Jack-Up System | Barrel Set Model Number | Number of Barrels per Set | Barrel Dimensions (in) |       |       | Weight per Barrel (lbs) |
|-----------------------------|-------------------------|---------------------------|------------------------|-------|-------|-------------------------|
|                             |                         |                           | L                      | W     | H     |                         |
| JS250                       | <b>BLJS250</b>          | 4                         | 45.28                  | 45.28 | 19.69 | 792                     |
| JS500                       | <b>BLJS500</b>          | 4                         | 66.93                  | 66.93 | 27.56 | 2090                    |

## Jack-Up Systems

| Capacity per Tower (tons) | Model Number | Maximum Side load and Max. Height | Maximum Lifting Speed (ft/hr) | Base Frame Dimensions (in) |       |       | Barrel Loading System (in) |       |       | Electric Power Pack (hp) | Weight per Jack-Up Unit * (lbs) | Weight Adjustable Top Barrel (3D Swivel) (lbs) |
|---------------------------|--------------|-----------------------------------|-------------------------------|----------------------------|-------|-------|----------------------------|-------|-------|--------------------------|---------------------------------|------------------------------------------------|
|                           |              |                                   |                               | A                          | B     | C     | E                          | F     | J     |                          |                                 |                                                |
| <b>275</b>                | <b>JS250</b> | 3% @ 32.8 ft                      | 13                            | 88.58                      | 80.71 | 58.07 | 52.81                      | 52.81 | 16.46 | 20                       | 16,500                          | 6,450                                          |
| <b>550</b>                | <b>JS500</b> | 4% @ 49.2 ft                      | 13                            | 110.25                     | 90.55 | 66.93 | 69.75                      | 69.75 | 18.03 | 40                       | 30,250                          | 8,470                                          |

\* Weight per jack-up tower, excluding adjustable top barrel.

▼ HSL150, HSL2000, HSL700 Heavy Lifting Strand Jacks



- Precision control of synchronous lifting and lowering
- Can be controlled by a single operator from a central location for increased safety
- Automated locking - unlocking operation
- Two strand sizes: 0.62 inch (15,7 mm) and 0.71 inch (18 mm)
- Telescopic strand guide pipes prevent bird caging
- Internal components are coated with Lunac, an anti-corrosion coating, making it suitable for marine environments
- Lifting anchor included with all strand jacks
- Lloyd's witness tested to 125% of maximum working load.

▼ HSL85007 Strand Jack System used on Enerpac custom Self-Erecting Tower.



## High Capacity Precision Control



### Heavy Lifting Strand Jacks

Enerpac strand jacks are the strand jacks of choice for customers seeking precise synchronous control with heavy-lifting capacity in an economical, compact, and reliable foot print.

Enerpac strand jacks are powered by electrical or diesel driven hydraulic power packs and controlled by Enerpac's proprietary SCC-Smart Cylinder Control System to ensure full control of lifting and lowering operations.

Enerpac continually improves reliability, durability, and safety of their strand jacks, making them an industry standard for heavy lifting.

▼ Enerpac's SCC-Smart Cylinder Control System simplifies synchronous operation with intuitive controls and a user-friendly graphical interface.



# Heavy Lifting Strand Jacks



## Strand Jacks

A strand jack can be considered a linear winch. In a strand jack, a bundle of steel strands are guided through a main "lifting" jack.

Above and below the cylinder are anchor systems with wedges that grip the strand bundle simultaneously. Lifting and lowering a load is achieved by hydraulically controlling the main jack and both mini jacks alternately.

In the case of system pressure loss, the wedges are mechanically closed automatically, holding the suspended load in place.

Today, strand jacks are widely recognized as the most sophisticated heavy lifting solution. They are used all over the world to erect bridges, load out offshore structures, and lift/lower heavy loads where the use of conventional cranes is neither economical nor practical.

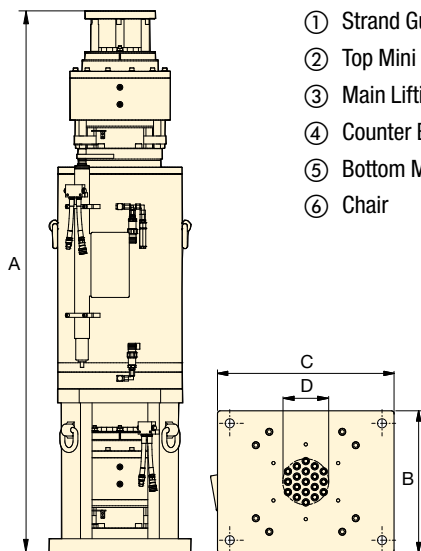
## HSL Series



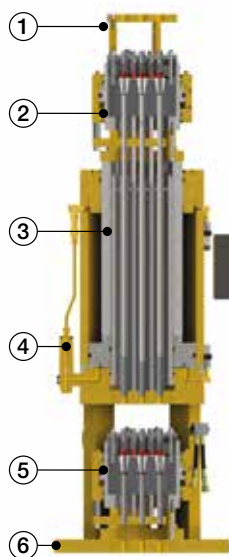
Capacity:  
**17 - 935 tons**

Stroke:  
**10 - 18 inches**

Maximum Operating Pressure:  
**2,000 - 5,000 psi**



- ① Strand Guide
- ② Top Mini Jack
- ③ Main Lifting Jack
- ④ Counter Balance Valve
- ⑤ Bottom Mini Jack
- ⑥ Chair



## ▼ Strand Jack Accessories

Contact Enerpac for assistance at  
[enerpac.com/contact-us](http://enerpac.com/contact-us)



### SLPP-Series Hydraulic Power Packs

Enerpac offers a comprehensive range of hydraulic power packs that are optimized for use with their industry leading heavy lifting strand jacks.



### SG-Series Strand Guides

Provides a guide for the strand as a strand jack lifts the load.



### SR-Series Strand Recoilers

Passively pays in or pays out strands while jacking and lowering.



### SD1 Strand Dispenser

Essential to safely unbundle a new strand coil.



### Lifting Anchor

Each Strand Jack includes a lifting anchor for attaching strand to the load.

| Strand Diameter<br>inch<br>(mm) | Capacity * | Model Number    | Number of Strands | Stroke<br>(in) | Working Pressure<br>(psi) | Dimensions<br>(in) |      |      |      | <br>(lbs) |
|---------------------------------|------------|-----------------|-------------------|----------------|---------------------------|--------------------|------|------|------|----------------------------------------------------------------------------------------------|
|                                 |            |                 |                   |                |                           | A                  | B    | C    | D    |                                                                                              |
| 0.62<br>(15.7)                  | <b>77</b>  | <b>HSL7006</b>  | 7                 | 18             | 3,000                     | 75.4               | 14.2 | 22.6 | 3.7  | 1523                                                                                         |
|                                 | <b>220</b> | <b>HSL20006</b> | 19                | 18             | 3,400                     | 78.4               | 20.6 | 25.6 | 6.7  | 3203                                                                                         |
|                                 | <b>550</b> | <b>HSL50006</b> | 48                | 18             | 5,000                     | 87.3               | 28.9 | 28.9 | 11.1 | 7694                                                                                         |
| 0.71<br>(18)                    | <b>17</b>  | <b>HSL1507</b>  | 1                 | 10             | 3,200                     | 48.9               | 8.7  | 8.7  | 0.8  | 224                                                                                          |
|                                 | <b>50</b>  | <b>HSL4507</b>  | 3                 | 18             | 2,000                     | 75.4               | 14.2 | 22.6 | 3.7  | 1523                                                                                         |
|                                 | <b>110</b> | <b>HSL10007</b> | 7                 | 18             | 3,000                     | 75.8               | 16.1 | 24.6 | 4.5  | 2128                                                                                         |
|                                 | <b>935</b> | <b>HSL85007</b> | 55                | 18             | 5,000                     | 94.6               | 35.4 | 35.4 | 14.3 | 11.648                                                                                       |

\* Capacity is based on 2.5 minimum safety factor over strand breaking load.

▼ SyncHoist System with SHC5540S Cylinders and SHP-Series Pump



- High-precision load maneuvering, vertically and horizontally – using one crane
- Reduces the risk of damage from oscillations of wire rope due to crane jogging and sudden starts/stops
- Vastly improving worker safety, operating speed and control
- Weather conditions play less critical role
- PLC-controlled hydraulics turn lifting into high-accuracy hoisting and load positioning system
- Double-acting push/pull cylinders with load holding valves for added safety in case of hose rupture or coupler damage
- Cost reduction compared to conventional load positioning methods.

#### Options for system management & control:

- Manual control with load and position monitoring for up to four cylinders as standard
- Automatic control available with addition of SFPSSC control panel provides automatic movements as well as stroke and load warning functions.

▼ Bridge segments are hoisted from the ground, being positioned with a 4-point SyncHoist system with fully monitored cylinders.



▼ Rigging engineers used the SyncHoist system to precisely monitor and adjust each lifting point independently, or together in a synchronized manner to position the 1140-ton nuclear plant module.



## Accurate Hoisting and Load Positioning Enhancing a Crane's Capability



#### Synchronous Hoisting

Enerpac SyncHoist is a unique crane product for below-the-hook positioning of heavy loads that require precision placement. The SyncHoist system may reduce the number of cranes needed and reduce the costs of multiple picks.

#### Functions

- High precision horizontal and vertical load positioning
- Load and position monitoring standard on all units to ensure safe and accurate operation.

#### Applications

- Positioning of rotor, stator and propeller blades of wind turbines
- Positioning of roof sections, concrete elements, steel structures
- Positioning of turbines, transformers, fuel rods
- Precise machinery loading, mill rod changes, bearing changes
- Precise positioning of pipe lines, blow out valves
- Positioning and aligning of ship segments prior to assembly.

▼ Enerpac SyncHoist system in use during roof truss picks: precise lift and positioning of stadium retractable roof trusses. 33 trusses weighing between 450 - 750 tons.



# SyncHoist - High-Precision Load Positioning



## What is SyncHoist?

Enerpac SyncHoist is a hydraulically operated auxiliary attachment for high-precision load positioning for cranes.

The automatic version with PLC-controlled hydraulic pump monitors and guides the powerful double-acting push-pull cylinders integrated into the lifting points above the load. The SyncHoist system can be used for positioning, tilting and aligning of loads.

- Patented system
- European lifting directive and safety requirements as well as ASME BTH-1 standard for below the hook lifting devices.

## SyncHoist improves safety, operating speed and control of load movement

Geometric positioning of heavy loads in a horizontal and vertical plane are frequently done using more than one crane.

Synchronising movements between cranes are difficult and risky. The lifting inaccuracy can result in damage to the load and support structures and puts workers at risks. The SyncHoist system can be used for controlled hydraulic horizontal and vertical material handling.

## SHC-Series Cylinders

Standard stroke lengths and capacities shown serve most common applications. Contact Enerpac for custom stroke lengths and additional capacities to suit your specific application.

## SHP-Series Manual Control

- Push button pendant control of up to four cylinders
- Load and position readout from sensors on SHC-series cylinders
- Visual check oil level, filter indicator.

## Automatic Control Available

- Connect control panel **SFPSSC** to SHP-Series pumps to enable automatic control
- PLC-control and touch screen
- Pre-programmable motions and data recording
- System warnings for:
  - maximum cylinder load control setting
  - stroke and position control
  - thermal motor protection.

## SHC, SHP Series



Capacity Per Lifting Point:

**60 - 94 - 120 tons**

Maximum Stroke:

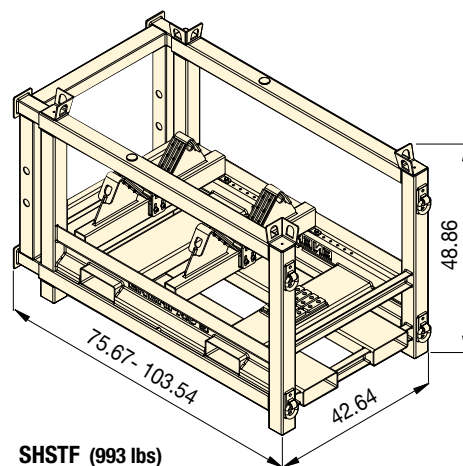
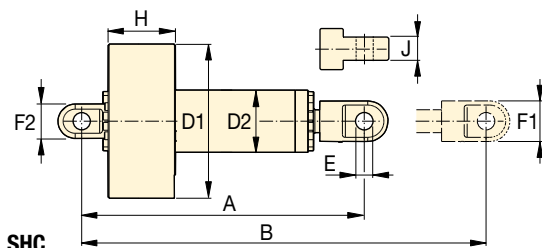
**39.37 - 59.06 inches**

Accuracy Over Full Stroke:

**± 0.040 inch**

Maximum Operating Pressure:

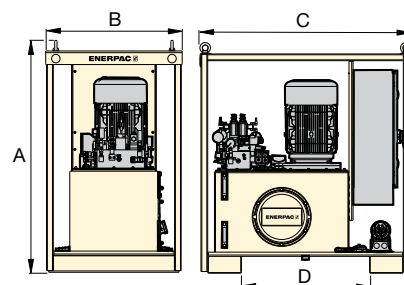
**10,000 psi**



| Cylinder Capacity<br>tons | Cylinder Stroke<br>(in) | Cylinder Model Number * | Dimensions<br>(in) |        |       |       |      |      |      |       |      | <br>(lbs) |
|---------------------------|-------------------------|-------------------------|--------------------|--------|-------|-------|------|------|------|-------|------|-----------|
|                           |                         |                         | A                  | B      | D1    | D2    | E    | F1   | F2   | H     | J    |           |
| <b>60</b>                 | 39.37                   | <b>SHC5540S</b>         | 70.87              | 110.24 | 27.17 | 9.65  | 2.32 | 6.30 | 6.30 | 15.55 | 3.15 | 1398      |
| <b>94</b>                 | 39.37                   | <b>SHC8540S</b>         | 72.05              | 111.42 | 26.77 | 10.43 | 2.83 | 6.46 | 6.46 | 15.16 | 3.94 | 1568      |
| <b>120</b>                | 59.06                   | <b>SHC11060S</b>        | 92.72              | 151.77 | 30.71 | 12.40 | 3.35 | 8.07 | 6.85 | 15.94 | 4.88 | 2766      |

\* Each cylinder requires separate purchase of (1) **EVO-SC-25** sensor cable (82 ft length) and (2) **SHH25** hydraulic hoses (82 ft length) for connection to SHP-Series pumps.  
All SHC-cylinders supplied with adjustable steel transport frame (model nr. **SHSTF**) to protect your investment.

| Maximum Lifting Points | Reservoir Size<br>(gal) | Pump Model Number | Oil Flow per Outlet<br>(in <sup>3</sup> /min) | Motor Size<br>460V, 3 ph,<br>60 Hz<br>(hp) | Dimensions<br>(in) |       |       |       | <br>(lbs) |
|------------------------|-------------------------|-------------------|-----------------------------------------------|--------------------------------------------|--------------------|-------|-------|-------|-----------|
|                        |                         |                   |                                               |                                            | A                  | B     | C     | D     |           |
| <b>4</b>               | 66                      | <b>SHP414SJ</b>   | 101                                           | 10                                         | 53.86              | 31.69 | 49.21 | 29.92 | 1750      |
| <b>4</b>               | 66                      | <b>SHP421SJ</b>   | 153                                           | 15                                         | 53.86              | 31.69 | 49.21 | 29.92 | 1750      |



▼ One leg of ML40 Mini-Lift Hydraulic Gantry; shown with Wireless Pendant



- Compact design for use in areas with limited space
- Self-contained hydraulics with synchronized lifting for enhanced safety
- Powered travel, under load, standard on all models for ultimate utilization
- Three-stage, double-acting cylinder provides extended lifting capacity
- Easy-to-use handheld pendant control can operate four legs simultaneously
- Compatible with standard Enerpac gantry accessories
- Operates on 115 or 230 VAC 1-phase or 380-415 VAC 3-phase power (1 circuit per leg)
- ASME B30.1 compliant and load tested under witness of Lloyd's Register.

▼ Moving and positioning a 25-ton boiler using the ML40 Mini-Lift Gantry.



▼ SL400 gantry used to offload and install new forming press.



## Lift Heavy Machinery Safely

## Portable design with precision control



### Load Beams

Sold in pairs and includes lifting points and fork pockets for easy positioning on gantry towers.

#### Description

19.7 ft length  
26.2 ft length

#### Model Number

**HBH6**  
**HBH8**



### Skid Tracks

Skid tracks used for leveling and load distribution to reduce ground bearing pressure. Available in two standard lengths.

#### Description

9.8 ft length  
19.4 ft length

#### Model Number

**GST100-3**  
**GST100-6**



### Lifting Anchors

Designed to transfer the load to the top of the load beam. Can accommodate a 250-ton shackle or attach directly to the lifted load.



### Higher Capacities SL and SBL-Series Hydraulic Gantries

When the ML-Series Mini Gantry isn't quite enough capacity or height for your application,

Enerpac offers a full range of safe-to-operate full featured telescopic hydraulic gantries, up to 1178-ton capacity and lifting heights up to 39 feet. Contact Enerpac for more details.

# Mini-Lift Hydraulic Gantry



## ML-Series, Mini-Lift Gantry

The cost-effective, compact ML40 Mini-Lift Hydraulic Gantry System, with wireless controls offers several key features:

### Safety:

Stroke synchronization ensures a level lift regardless of load distribution. PLC-controlled lifting using feedback from a stroke encoder maintains even height on all legs and will stop the lift if necessary to prevent issues.

### Capacity with 4 legs:

**ML40B** (115 VAC) capacity is 50 tons at stages 1 and 2, and 45 tons at stage 3.  
**ML40E / W** capacity 50 tons at each stage.

Even with its compact size, the ML40 can lift full capacity to full height of 18 feet, making it the most versatile portable gantry in the market.

### Compact:

Fits through standard doorway and is easily moved and set up. The ML40 gantry can be moved through the tightest spaces imaginable in all industrial settings. Easy to push, pull and maneuver, the ML40 can get into spaces that no other gantry can.

## ML Series



Capacity (with 4 legs):

**45 - 50 tons \***

Maximum Lifting Height:

**18 feet**



### Wireless Pendant

- Stroke measurement and closed loop synchronization ensure level lifting and lowering.
- Integrated 1.8 inch color display provides load and stroke information for all four lift points.



### Mini-Lift Gantry Transport Frame

Galvanized steel transport frames to allow shipment of mini gantry legs via standard truck lines.

Two legs mount on each frame

which includes storage for controls and accessories.

### Description

Set of two frames

### Model Number

**ML40TF**



### Operating Voltages

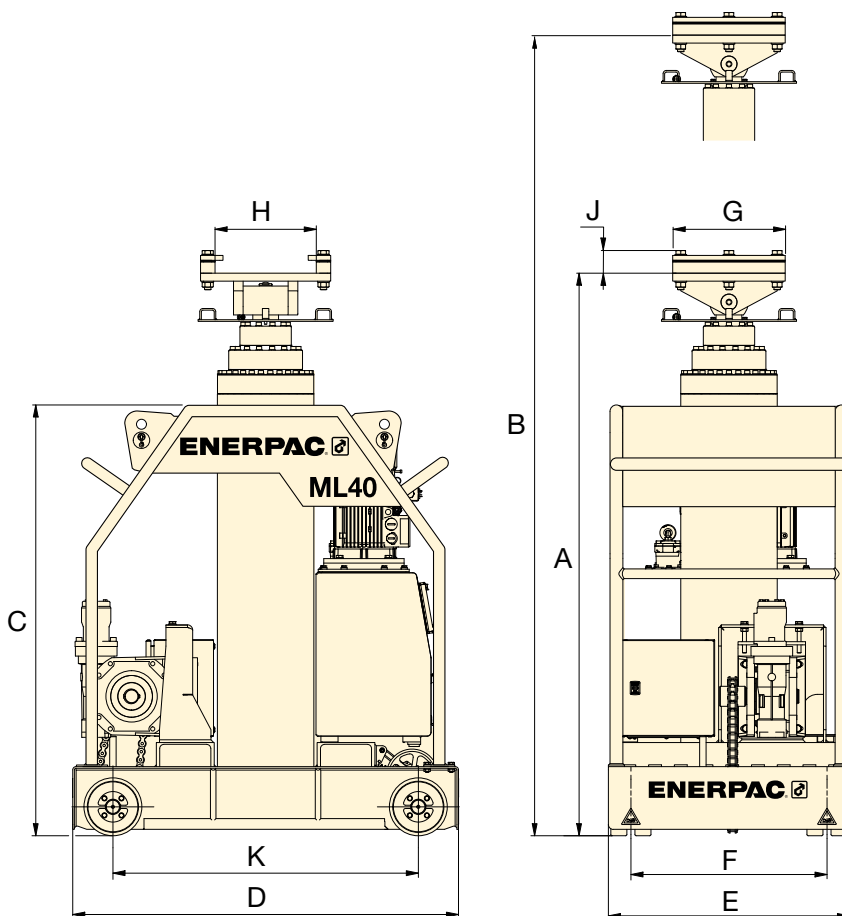
ML40 is available in three voltages. 1 circuit per leg.

### Voltage (VAC), 50-60 Hz

110-120 VAC, 1 phase, 20 A  
208-240 VAC, 1 phase, 10 A  
380-415 VAC, 3 phase, 4 A

### Model Number

**ML40B**  
**ML40E**  
**ML40W**



| Max. Capacity * | Model Number (4 legs) | Retracted Height | Stage 1     |                 | Stage 2     |                 | Stage 3     |                 | Base Height | Base Length | Base Width | Track Gauge | Beam Plate |        |        | Wheel Base | ⚠     |
|-----------------|-----------------------|------------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-------------|------------|-------------|------------|--------|--------|------------|-------|
|                 |                       |                  | Max. Height | Max. Capacity * | Max. Height | Max. Capacity * | Max. Height | Max. Capacity * |             |             |            |             | Length     | Width  | Height |            |       |
| (tons)          |                       | A (ft)           | B (ft)      | (tons)          | B (ft)      | (tons)          | B (ft)      | (tons)          | C (in)      | D (in)      | E (in)     | F (in)      | G (in)     | H (in) | J (in) | K (in)     | (lbs) |
| <b>45</b>       | <b>ML40</b>           | 6.23             | 9.84        | 50              | 13.78       | 50              | 18.09       | 45              | 54.75       | 47.25       | 29.50      | 24.00       | 13.78      | 12.40  | 2.80   | 37.40      | 2756  |

\* Capacity with 4 legs. **ML40B** (115 VAC) capacity 45 tons at stage 3. **ML40E, ML40W** capacity 50 tons at stage 3.

\*\* Weight per leg including oil.

▼ SBL1100 with optional skid tracks, load beams, powered side shifts and lifting anchors



- Self-contained hydraulics and electronics
- Intelli-Lift wireless control system
- Self-propelled wheels or tank rollers
- Foldable boom on SBL600, SBL900 and SBL1100 to enable easy transport and set-up
- Full range of supplementary equipment: load beams, lifting anchors, side shifts and skid tracks
- All gantries comply to ASME B30.1, CE, UKCA and other safety standards
- Lloyds witness tested to 125% of maximum working load.

## Precision Lift and Position of Heavy Loads

The Ultimate in Safety and Control



### Intelli-Lift Wireless Control

The Intelli-Lift wireless control system is included with all Enerpac SL- and SBL-Series hydraulic gantries.

The Intelli-Lift controller offers superior safety and control and includes the following features:

- Encrypted bi-directional communication that eliminates interference from other devices
- Remote operation using multi-channel wireless (2.4 GHz) or wired (RS-485) control
- High and low speed settings
- Automatic synchronization of lifting with an accuracy of 0.95 inch
- Automatic synchronization of travelling with an accuracy of 0.60 inch
- Overload and stroke alarms
- Remote side shift control
- Emergency stop switch.



### ML40, Mini-Lift Hydraulic Gantry

45-ton lifting capacity at full extended lift height. Even with its compact size, the ML40 can lift 45 tons to 18 feet, making it the most versatile portable gantry in the market.

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▼ Enerpac SBL-Series hydraulic gantries are used in a variety of applications to install turbines, transformers and other power generation equipment all over the world.



| Maximum Capacity<br>(with 4 towers) | Model Number<br>(4 towers) | Retracted Height |
|-------------------------------------|----------------------------|------------------|
| (tons)                              |                            | A<br>(ft)        |
| 220                                 | SL200J                     | 8.96             |
| 450                                 | SL400NJ                    | 8.94             |
| 450                                 | SL400J                     | 10.39            |
| 674                                 | SBL600J                    | 14.11            |
| 1009                                | SBL900J                    | 16.42            |
| 1178                                | SBL1100J                   | 14.34            |

\* J = 460 - 480 V, 3 ph, 50-60 Hz.

W = 380 - 415 V, 3 ph, 50 Hz

[www.enerpac.com](http://www.enerpac.com)

# Telescopic Hydraulic Gantries



## Hydraulic Gantries

Telescopic Hydraulic Gantries are a safe, efficient way to lift and position heavy loads in applications where traditional cranes will not fit and permanent overhead structures for job cranes are not an option.

Hydraulic Gantries are placed on skid tracks to provide a means for moving and placing heavy loads, many times with only one pick.

### Enerpac Hydraulic Gantry Systems:

- **ML-Series Mini-Lift**  
Fits through standard doorway and is easily moved and set up.  
The ML40 gantry can be moved through the tightest spaces imaginable in all industrial settings.

- **SL-Series Super Lift**  
The cost-effective SL-Series Super Lift offer control and stability for everyday lifting applications below 450-ton up to 30 feet.
- **SBL-Series Super Boom Lift**  
The heavy-duty SBL-Series Super Boom Lift boom style gantries offer increased lifting capacity of over 450-ton to heights of 39 feet.

All Enerpac gantries are delivered with specific properties and control systems to ensure optimum stability and safety.

## SL, SBL Series



Capacity with 4 towers:

**220 - 1178 tons**

Lift Height:

**14.31 - 39.38 feet**

### ▼ Optional Gantry Accessories

Contact Enerpac for assistance by email at [enerpac.com/contact-us](mailto:enerpac.com/contact-us)



#### Skid Tracks

Allows for easy leveling of the gantry tower and reduce ground bearing pressure, available in two standard lengths, 10 and 20 ft.



#### Load Beams

Sold in pairs and includes lifting points and fork pockets for easy positioning on gantry towers. Available in standard lengths of

26.2, 32.8 and 39.3 ft.



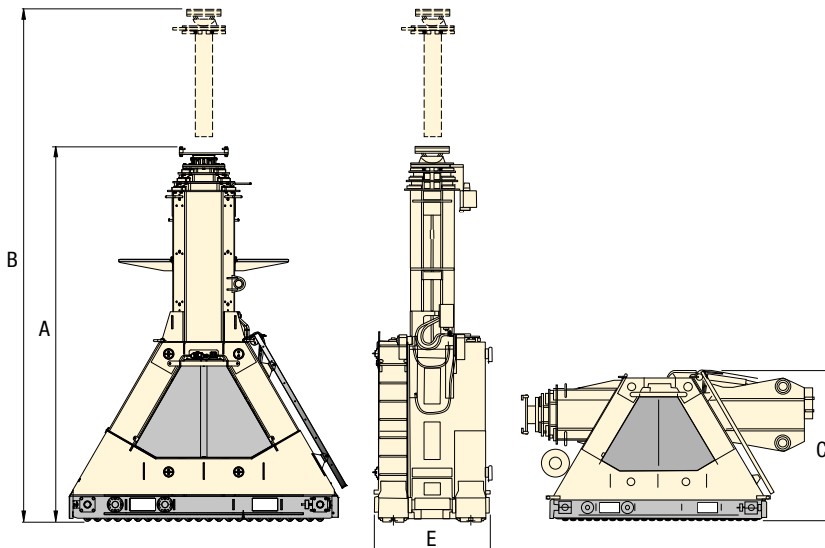
#### Powered Side Shift

Electric propulsion controlled by standard gantry controls. Each set consists of 4 units.



#### Lifting Anchors

Designed to transfer the load to the top of the load beam. Can accommodate a 250-ton shackle or attach directly to the lifted load.



| Stage 1     |                 | Stage 2     |                 | Stage 3     |                 | Transport Height | Skid Track Width |                     | Model Number (4 towers) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|------------------|------------------|---------------------|-------------------------|
| Max. Height | Max. Capacity * | Max. Height | Max. Capacity * | Max. Height | Max. Capacity * |                  |                  |                     |                         |
| B (ft)      | (tons)          | B (ft)      | (tons)          | B (ft)      | (tons)          | C (in)           | E (in)           | (lbs) <sup>1)</sup> |                         |
| 15.47       | 220             | 21.98       | 150             | —           | —               | 102.8            | 31.97            | 4850                | <b>SL200J</b>           |
| 14.31       | 450             | 19.76       | 337             | 25.26       | 220             | 107.3            | 31.97            | 7937                | <b>SL400NJ</b>          |
| 17.14       | 450             | 23.73       | 450             | 29.99       | 208             | 124.8            | 47.95            | 10,141              | <b>SL400J</b>           |
| 21.33       | 674             | 28.22       | 562             | 34.78       | 416             | 88.6             | 47.95            | 19,842              | <b>SBL600J</b>          |
| 27.24       | 1009            | 37.09       | 664             | —           | —               | 88.3             | 47.95            | 29,432              | <b>SBL900J</b>          |
| 22.98       | 1178            | 31.72       | 760             | 39.38       | 424             | 88.4             | 47.95            | 26,345              | <b>SBL1100J</b>         |

\* Maximum capacity with 4 towers.

<sup>1)</sup> Weight per tower

▼ LH-Series, Low-Height Skidding System



- Low starting height saves time and increases versatility
- Portable design allows for easy transport and quick setup
- System can push or pull load without relocating skidding cylinder
- Skid track sections can be connected with fast-coupling system to allow each setup to be customized as needed
- Backwards compatible: new LHS4-2 system can be connected with previous LH400 system using the Conversion Kit LHCK
- Improved handling, transportation and storage with integrated lifting points, starter kit, skid track kits and stackable frames
- Replaceable PTFE skid pads lower the total cost of ownership
- High capacity skidding in a portable design
- Intuitive pump controls (SFP-Series Split-Flow Pump)
- Easily reversible to change skidding direction.

▼ Low-Height Skidding System provides the ability to maneuver and transport large, heavy objects like this press frame.



## Low-Height Skidding System for Heavy Loads

The Ideal Low-Height Jack & Slide Solution



### Skidding Systems

The Skidding System is comprised of a series of skid beams moved by hydraulic push-pull cylinders, travelling over a pre-constructed skid track.

A series of special PTFE-coated Teflon® pads are mounted on the skid tracks to reduce friction. The push-pull cylinders are then connected by hydraulic hoses to a Split-Flow Pump.



### Skid Track Fast-Coupling System

Enerpac's LHS4-2 skid track fast-coupling system reduces assembly time for greater productivity.



▼ The Enerpac Low-Height Skidding System allows the maintenance team to transport transformers with access limitations.



# Low-Height Skidding System



## Starter Kit LHS4ST-2

A complete starter kit is available to fit the needs of many jack and slide applications.

Starter kit has 7,15 metres (2 lines) sliding length. The Skid Track Kit is max. 10 metres (2 lines) length.

This system comes with two skidding units that will support up to 3560 kN in total. Total skidding capacity is only achieved when the friction is less than 5%.

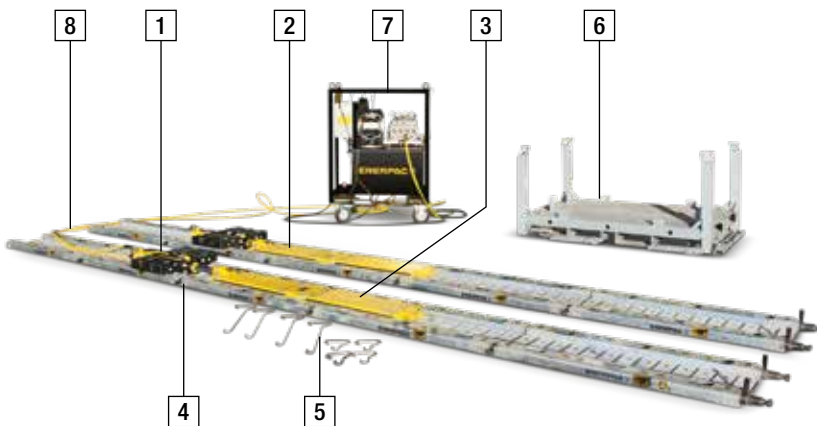
This kit will get the job done. Optional accessories available (see page 368-369).

Easy to handle, stackable transport frame. To operate the system an SFP-Series Split-Flow Pump and hydraulic hoses are required and must be ordered separately.

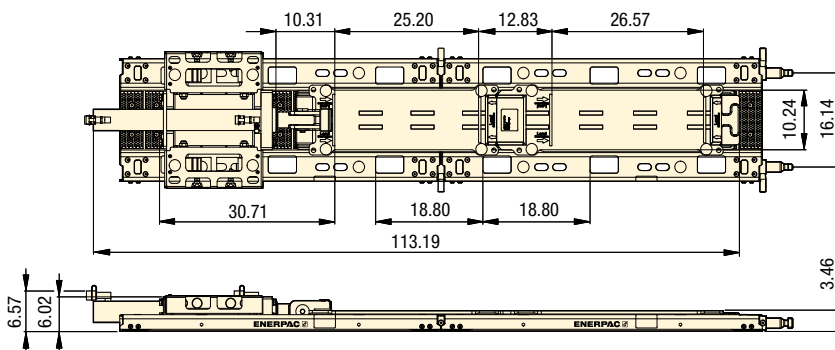


| Starter Kit LHS4ST-2 includes nrs 1-6: | Model Numbers | Qty |
|----------------------------------------|---------------|-----|
| 1. Push-Pull Units (1780 kN)           | LHPP25-2      | 2x  |
| 2. Skid Beams A (1 meter)              | LHSB1A-2      | 2x  |
| 3. Skid Beams B (1 meter)              | LHSB1B-2      | 2x  |
| 4. Skid Tracks (1,43 meter)            | LHS4TK10-2    | 10x |
| 5. Handle Hooks                        | —             | 8x  |
| 6. Transport Frame                     | LHS4TF-2      | 1x  |
| 7. Split-Flow Pump *                   | SFP....       | 1x  |
| 8. Hydraulic Hoses *                   | HC....        | 4x  |

\* Pump and Hoses must be ordered separately.



## LH-Series, Low-Height Skidding System (dimensions in mm)



### ▼ Low-Height Skidding System

| Capacity *<br>Skidding System<br>(2 units)<br>(kN) | Model<br>Number | Capacity<br>Skidding<br>Unit (1x)<br>(kN) | Maximum<br>Cylinder<br>Advance<br>Force<br>(kN) | Maximum<br>Cylinder<br>Retract<br>Force<br>(kN) | Maximum<br>Operating<br>Pressure<br>(bar) |
|----------------------------------------------------|-----------------|-------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------|
| 400                                                | LHS4-2          | 200                                       | 25                                              | 11                                              | 10,000                                    |

\* Total skidding capacity is only achieved when the friction is less than 5%.

## LH Series



Skidding Capacity with two push-pull units:  
**3560 kN**

Push-Pull Stroke:  
**600 mm**

Maximum Operating Pressure:  
**700 bar**



### SFP-Series, Split-Flow Pumps

Split-Flow pumps distribute an equal amount of hydraulic fluid to a maximum of 6 outlets. Smart valve technology allows controlled lifting and lowering of heavy loads.

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### Conversion Kit LHCK

Backwards compatible: the new LHS4-2 skidding system can easily be connected with the previous LH400 low-height skidding system using the LHCK Conversion Kit.

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### Skidding Components

To extend the length of your skidding system additional Skid Beams, Skid Tracks and PTFE-coated Teflon® Pads are available.

Page: 369

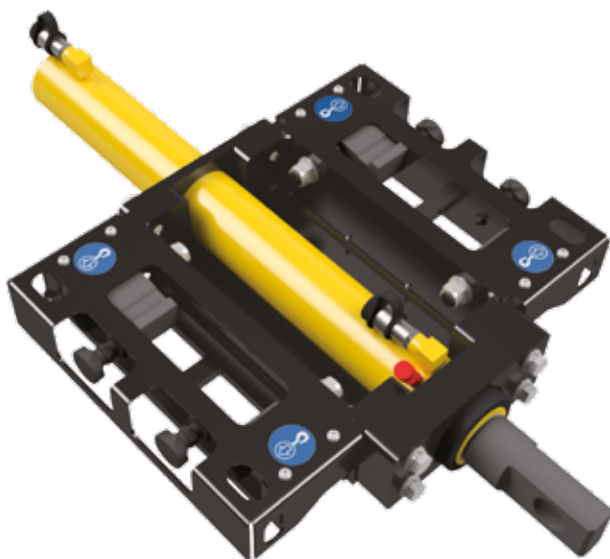


### Hydraulic Turntables

ETT-Series hydraulic turntables, in combination with our low-height skidding system, makes load handling in the most demanding situations easy.

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▼ LHPP25-2 Low-Height Push-Pull Unit



## Push-Pull Unit

- Connects to first skid beam to push or pull load along skid track
- Cover to protect index plunger
- Integrated lifting points for improved handling
- Easily reverse direction by switching reaction tabs.

▼ Low-Height Push-Pull Unit

| Maximum Capacity (kN) |      | Model Number    | Stroke (mm) |  (kg) |
|-----------------------|------|-----------------|-------------|------------------------------------------------------------------------------------------|
| Push                  | Pull |                 |             |                                                                                          |
| 25                    | 11   | <b>LHPP25-2</b> | 23.62       | 224                                                                                      |

▼ LHSB1A-2 and LHSB1B-2 Skid Beams



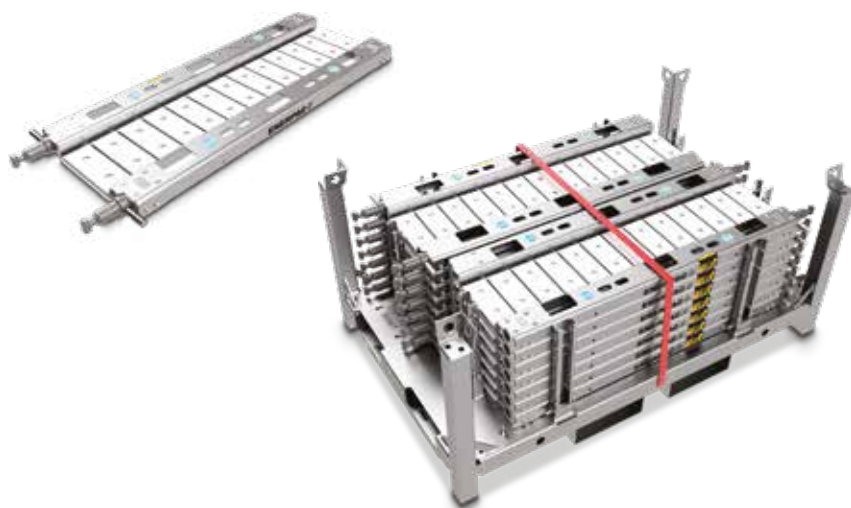
## Skid Beams

- Interlocks without any fasteners to slide load over skid track; skid beam A (LHSB1A-2) attaches to the push-pull unit
- skid beam B (LHSB1B-2) attaches to skid beam A
- Polished stainless steel skid surface
- Lifting points & holes.

▼ Skid Beams

| Capacity (kN) | Model Number    | Length (mm) |  (kg) |
|---------------|-----------------|-------------|--------------------------------------------------------------------------------------------|
| 100           | <b>LHSB1A-2</b> | 38.4        | 148                                                                                        |
| 100           | <b>LHSB1B-2</b> | 42.5        | 154                                                                                        |

▼ LHS4-2 Skid Track and LHS4TK14-2 Skid Track Kit



## Skid Tracks

- Support the load for skidding operations
- Skid track can be connected with Fast-Coupling System
- Includes 13 pieces easily replaceable PTFE skid pads.

▼ Skid Track Kits

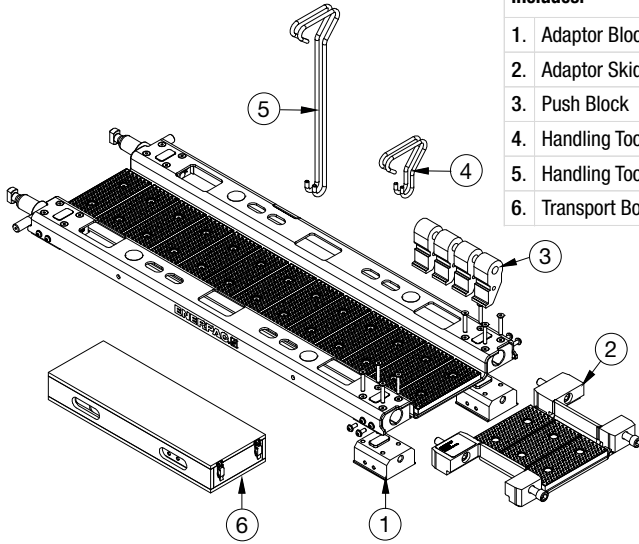
| Model Number Skid Track Kit | Quantity Skid Tracks * | Transport Frame ** |  (kg) |
|-----------------------------|------------------------|--------------------|--------------------------------------------------------------------------------------------|
| <b>LHS4TK4-2</b>            | 4x LHS4-2              | 1x                 | 1576                                                                                       |
| <b>LHS4TK8-2</b>            | 8x LHS4-2              | 1x                 | 2381                                                                                       |
| <b>LHS4TK10-2</b>           | 10x LHS4-2             | 1x                 | 2778                                                                                       |
| <b>LHS4TK14-2</b>           | 14x LHS4-2             | 1x                 | 3583                                                                                       |

\* Skid Track Capacity 1300 kN, Length 1,43 m, 90 kg.

\*\* Frame L x W x H: 1924 x 1220 x 891 mm, 325 kg.

# Low-Height Skidding Components & Split-Flow Pumps

## ▼ Conversion Kit LHCK



| Conversion Kit LHCK includes: |                     | Qty |
|-------------------------------|---------------------|-----|
| 1.                            | Adaptor Block       | 4x  |
| 2.                            | Adaptor Skid Track  | 2x  |
| 3.                            | Push Block          | 8x  |
| 4.                            | Handling Tool Short | 4x  |
| 5.                            | Handling Tool Long  | 4x  |
| 6.                            | Transport Box       | 2x  |

## LH Series



Skidding Capacity with two push-pull units:

**3560 kN**

Push-Pull Stroke:

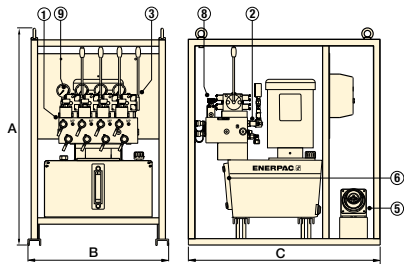
**600 mm**

Maximum Operating Pressure:

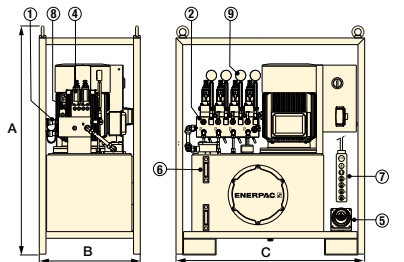
**700 bar**

## Conversion Kit LHCK

- Provides compatibility between old and new skidding system
- Pushing and pulling possible with this transition.



**SFP-Series with 40-litre reservoir**  
(shown with 4 split-flow outlets)



**SFP-Series with 135-litre reservoir**  
(shown with 4 split-flow outlets)

1. Manifold with split-flow outlets and CR400 couplers
2. Adjustable pressure relief valve per circuit
3. Manual 4/3 control valves with joysticks
4. Solenoid 4/3 control valves (24 VDC)
5. Power socket
6. Oil sight gauge(s)
7. Remote control pendant with 5 m cord
8. Return flow control valve in each circuit
9. Hydraulic pressure gauge in each circuit



## SFP-Series, Split-Flow Pumps

For full details and options of these pumps, see

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## Teflon® Skid Pads

A series of special PTFE coated Teflon® skid pads are placed on the skid tracks. The PTFE surface is matched with the skid

beam and designed to achieve minimum friction coefficients.

Replacement Teflon® Skid Pads come in packs of 12 pieces. Order model number **HSKSPS1**.



▲ Low-Height Skidding System Skidding used to remove an old press to make room for new equipment.

## ▼ Recommended Split-Flow Pumps

| Number of Split-Flow Outlets | Usable Oil Capacity (litres) | Oil Flow per Outlet @ 700 bar (l/min) | Pump Model Number *<br>4/3 Valve Operation<br>Advance/Hold/Retract<br>Manual 24 V Solenoid<br>(Joystick) (Pendant) |          | Motor Size<br>400 V, 3ph<br>50 Hz<br>(kW) | Dimensions (mm) |      |      | (kg) | System Skidding Speed (m/hr) |
|------------------------------|------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------|-----------------|------|------|------|------------------------------|
|                              |                              |                                       |                                                                                                                    |          |                                           | A               | B    | C    |      |                              |
| 4                            | 10                           | 22                                    | SFP403MJ                                                                                                           | SFP403SJ | 3.0                                       | 40.0            | 25.2 | 38.2 | 565  | 15                           |
|                              | 40                           | 66                                    | —                                                                                                                  | SFP409SJ | 7.5                                       | 53.4            | 23.8 | 45.7 | 1045 | 40                           |
| 6                            | 40                           | 103                                   | —                                                                                                                  | SFP414SJ | 10.0                                      | 53.4            | 23.8 | 45.7 | 1078 | 65                           |
|                              | 40                           | 95                                    | —                                                                                                                  | SFP613SJ | 15.0                                      | 53.4            | 31.7 | 47.2 | 1236 | 65                           |

\* W = 380-415 V, 3 ph, 50 Hz. Change "W" in the model as follows for other options:

J = 460-480 V, 3 ph, 50-60 Hz, G = 208-240 V, 3 ph, 50-60 Hz.

▼ ETR50H, Enerpac Trolley System (shown with Trolley Track Plates)



- High transport speed:  
82 - 164 ft/hour loaded,  
328 ft/hour unloaded
- Suited for repetitive movements
- Runs on simple flat steel plate
- Ease of maintenance:  
– long maintenance intervals  
– no consumables
- Clean usage – electric driven
- Built-in synchronization – no need for forced external mechanical connection to synchronize movements
- Easy transport - compact design
- Hydraulic lifting cylinder option available
- Kits to accommodate other lifting options also available.

▼ The trolley system speeds up offshore wind transition piece load out: the transition pieces are positioned in the clamping frames and moved along the track.



▼ ETR-Series electric trolley undergoing factory acceptance testing prior to shipment.



## Safe & Synchronized Travel



### Product Overview

The ETR-Series Trolley System is comprised of electrically-driven trolleys which can carry heavy loads along a fixed track system.

The entire system is controlled by a hand held wireless control system.

A typical system is comprised of 4 Trolleys, 2 Tracks and one Controller. Trolley Tracks and Wireless Control must be ordered separately.



### Control Panel and Cables

Operate up to 8 trolleys (same capacity each) using control panel with included wireless controller:

- Automatic synchronization of traveling with an accuracy of 0.39 inch
- Dual-band radio with automatic frequency search
- Wireless remote operation
- High and low speed settings
- Emergency stop switch
- Control cables operate trolley and provide feedback to controller.

### Control Panel

| Model Number<br>460-480 VAC, 32A | Dimensions<br>(in) |       |       | <br>(lbs) |
|----------------------------------|--------------------|-------|-------|------------------------------------------------------------------------------------------------|
|                                  | L                  | W     | H     |                                                                                                |
| <b>ETR-CPJ8</b>                  | 50.81              | 23.62 | 43.25 | 551                                                                                            |

### Control Cables

| Model Number      | Description           |
|-------------------|-----------------------|
| <b>ETR-CBL-15</b> | 50 feet control cable |
| <b>ETR-CBL-25</b> | 82 feet control cable |

# Enerpac Electric Trolley Systems



## ETR-Trolley System

The Enerpac Trolley System provides an alternative method with increased benefits over traditional skidding methods.

Load movements are more stable due to the continuous movement and ability to precisely control travel speed including acceleration and deceleration.

## Key features:

|                        |                 |
|------------------------|-----------------|
| Low speed (loaded):    | 82 ft/hr        |
| High speed (loaded):   | 164 ft/hr       |
| Travel speed unloaded: | 328 ft/hr       |
| Accuracy:              | 0.39 inch       |
| Sideload:              | 1,5% rated load |
| Sound Level:           | < 80 dBA        |

## ETR Series



Capacity Per Trolley:

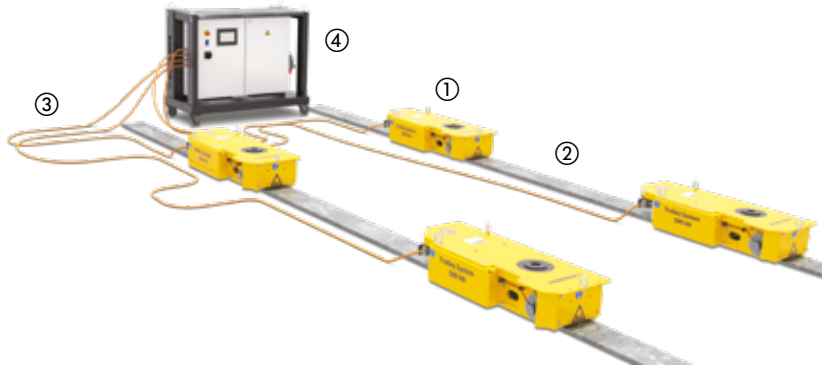
**50 - 100 tons**

Travel Speed (loaded):

**82 - 164 ft/hr**

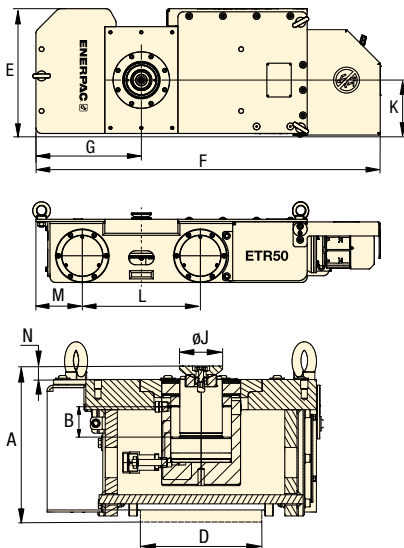
Motor Power:

**0.5 - 1.0 hp**

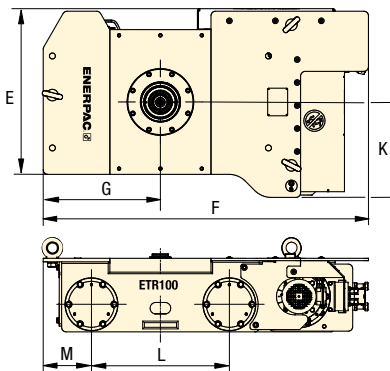


- ① Electric Trolley **ETR-Series**
- ② Track Plate **ETR-TP-015** or **ETR-TP-030**
- ③ Control Cable **ETR-CBL-15** or **ETR-CBL-25**
- ④ Control Panel **ETR-CPJ8** (including wireless remote)
- ⑤ Split-Flow Electric Pump - **SFP-Series**  
Not shown. Optional for units with hydraulic cylinders

### ETR50



### ETR100



## Trolley Track Plates

Track plates provide level guidance and support for the trolley. Two plates placed side-by-side are used for operation of

ETR100-Series Trolleys. Maximum inclination of tracks is 0.2 degree.

| Model Number      | Description                  |
|-------------------|------------------------------|
| <b>ETR-TP-015</b> | 59 inch Trolley track plate  |
| <b>ETR-TP-030</b> | 118 inch Trolley track plate |

## Additional Mounting Options

Mounting kits are available to accommodate other lifting and rigging solutions.

| Model Number      | Description                 |
|-------------------|-----------------------------|
| <b>ETR50-SMK</b>  | Enerpac SCJ50 on ETR50      |
| <b>ETR100-SMK</b> | Enerpac SCJ100 on ETR100    |
| <b>ETR50-BMK</b>  | Swivel beam mount on ETR50  |
| <b>ETR100-BMK</b> | Swivel beam mount on ETR100 |

| Capacity per Trolley Unit<br>(tons) | Model Number<br>(one unit) | Motor Power<br>(hp) | Dimensions (in) |                                |                           |       |       |       |      |       |       |      |      | (lbs) |
|-------------------------------------|----------------------------|---------------------|-----------------|--------------------------------|---------------------------|-------|-------|-------|------|-------|-------|------|------|-------|
|                                     |                            |                     | A               | Hydraulic Stroke <sup>1)</sup> | Track Width <sup>2)</sup> | E     | F     | G     | J    | K     | L     | M    | N    |       |
| <b>50</b>                           | <b>ETR50<br/>ETR50H</b>    | 0.5                 | 9.65            | —                              | 7.87                      | 17.95 | 48.23 | 14.76 | 4.92 | 7.95  | 16.54 | 6.50 | 0.39 | 684   |
|                                     |                            |                     | 10.12           | 1.97                           |                           |       |       |       | 2.80 |       |       |      | 0.87 | 705   |
| <b>100</b>                          | <b>ETR100<br/>ETR100H</b>  | 1.0                 | 13.62           | —                              | 15.75                     | 32.32 | 55.71 | 20.08 | 6.69 | 16.34 | 23.62 | 8.27 | 0.59 | 1874  |
|                                     |                            |                     | 13.74           | 3.94                           |                           |       |       |       | 2.80 |       |       |      | 0.75 | 1896  |

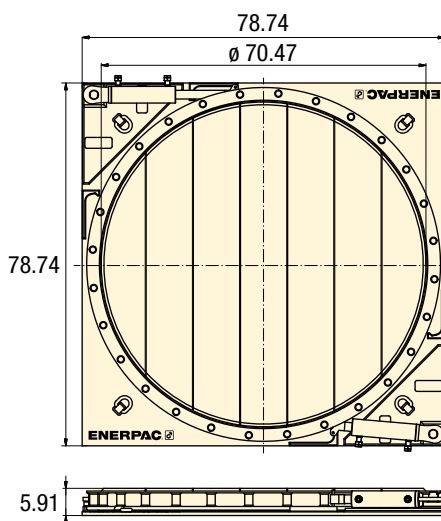
<sup>1)</sup> ETR50H includes HCG502 Cylinder with CATS50 Swivel Saddle. ETR100H includes HCG1004 Cylinder with CATS101 Swivel Saddle.

<sup>2)</sup> ETR100-Series uses two track plates side-by-side.

▼ ETT400 Turntable



- Safe and controlled rotation of heavy loads
- Easily change rotation direction
- Dual capacity: 225 tons with one cylinder, 450 tons with two cylinders
- Compact size for use in applications with limited space
- Compatible with standard Enerpac pumps
- Hardwood surface.



▼ SELECTION CHART

| Maximum Load Capacity | Model Number  | Cylinder Capacity * | Cylinder Oil Capacity * |         | No. of Cylinders * | Rotation per Stroke | Platform Diameter |  |
|-----------------------|---------------|---------------------|-------------------------|---------|--------------------|---------------------|-------------------|-------------------------------------------------------------------------------------|
|                       |               |                     | advance                 | retract |                    |                     |                   |                                                                                     |
| (tons)                |               | (tons)              |                         |         |                    | (degrees)           | (in)              | (lbs)                                                                               |
| 225                   | <b>ETT200</b> | 25                  | 48.3                    | 21.0    | 1                  | 12.5                | 70.47             | 3748                                                                                |
| 450                   | <b>ETT400</b> | 25                  | 48.3                    | 21.0    | 2                  | 12.5                | 70.47             | 3803                                                                                |

\* Per cylinder. Cylinder model number: **BRD259-ETT**

## ETT Series

Maximum Capacity:  
**225 - 450 tons**

Cylinder Capacity:  
**25 tons**

Maximum Operating Pressure:  
**10,000 psi**



### Safe and controlled rotation

The ETT-Series is your solution for rotating heavy loads during, before or after a lifting and skidding operation.



### SFP-Series, Split-Flow Pumps

Split-Flow pumps distribute an equal amount of hydraulic oil to a maximum of 8 outlets. Smart valve technology allows both controlled lifting and lowering of heavy loads.

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### LH-Series, Low-Height Skidding

The ETT-Series are ideal in combination with our skidding systems, particular the LH-Series. Skidding and rotating in confined spaces is simplified.

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### Telescopic Hydraulic Gantries

The ETT-Series in combination with our hydraulic gantry SL-Series makes load handling in the most demanding situations easy.

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## FROM SIMPLE TO COMPLEX – LIFTING SOLUTIONS FOR YOUR APPLICATION

For those who do the heavy lifting today, the stakes are high and the challenges complex. We know our customers put their reputations and physical well-being on the line to get the job done right. We take that very seriously.

Backed by a global legacy of ultra-reliable quality and superior precision, Enerpac Heavy Lifting Technology is pushing the industry forward with a wide range of advanced solutions that first and foremost ensure our customers operate safely and productively every day. It isn't about being compliant, or "as good" as the next guy; we outpace the competition by delivering technically superior solutions that are easy to design, safe to use and built to outlast.

### CONSULTATIVE APPROACH TO HEAVY LIFTING

From the very first discussion to gain an understanding of your application to solution design, training and ongoing field support of your operators, you will find a structured process and a team of application experts who will advise you towards a successful solution.



### SOLUTION CONSULTATION

- Requirements Specifications
- Selecting the Right Solution for Your Application

### DESIGN & MANUFACTURING

- Design & Engineering
- Manufacturing Excellence

### TESTING & TRAINING

- Quality Assurance
- Operation & Safety Training

### ON-DEMAND SUPPORT

- On-the-job Application Engineer Support
- Routine Maintenance & Repair Services

## SOLUTION CONSULTATION

- Requirements Specifications
- Selecting the Right Solution for Your Application

Since the late 1950's, Enerpac has been steadfast in their commitment to work closely with customers to understand their lift needs and work-site environment. Not all lifts are the same. There are several factors that must be taken into consideration before recommending the best solution.

## APPLICATION CONSIDERATIONS

### LOAD CAPACITY

How much weight needs to be lifted, moved and/or positioned?

### LIFT HEIGHT

How high does the load need to be lifted? Are there restrictions above or below the load?

### TYPE OF LIFT

Will you lift from above or below?

### SPACE

How much space is available to complete the task?

### TIME

How the job needs to be completed within a set timeframe due to operational or environmental factors.

### TRANSPORTATION

Does the load need to be transported as well as being lifted? How far and how often?

### TOTAL COST OF OWNERSHIP

What productivity, labor or training costs need to be factored into the solution to make it the best long-term investment.

Because Enerpac engineers have designed solutions for a variety of applications over the years, they are well-equipped to minimize risks and to recommend a simpler solution that others may overlook. Built on a world-class reputation for developing products that meet the most common lifting applications,

once your specifications are in the hands of the Enerpac experts, you are sure to receive a comprehensive recommendation that will save time and money while ensuring safety above all else.



Enerpac has the most complete offering of standard heavy lifting and positioning tools in the market. These products are designed to highest standards of performance and offer great flexibility to meet the demands of even the most challenging applications. Our manufacturing facility adheres to world-class production planning and inventory management to ensure your product arrives at your facility on time as specified.

## DESIGN & MANUFACTURING

- Design & Engineering
- Manufacturing Excellence



### Design & Engineering

Enerpac engineers are experienced in the latest software, rapid prototyping, failure analysis methods and engineering standards. This allows us to continuously improve and expand our product offering to meet ever changing needs of the market.

- CE, Machinery Directive 2006/42/E
- ASME: B30.1



### Assembly & Quality Assurance

- All Enerpac products are assembled by highly trained individuals, working safely and efficiently from start to finish.
- The Hengelo, NL facility that manufactures the Enerpac heavy-lifting equipment holds several quality certifications.
- ISO 9001: 2015
- ISO 3834-2: 2005
- ISO 14001: 2015
- ISO 45001: 2018



### Fabrication & Machining

- A dedicated steel fabrication and certified welding facility manufactures product components and support structures for the most demanding heavy-lifting applications.
- Complete in-house production is delivered using the latest CNC and conventional turning machines plus a full range of milling and boring equipment.



## TESTING & TRAINING

- Quality Assurance
- Operation & Safety Training

The Enerpac facility, that makes and builds your heavy-lifting equipment, holds several quality system certifications giving you extra confidence in the safety and reliability of your heavy lifting equipment. Whether your first lift or move is scheduled upon taking delivery of your new equipment or months later, you will have access to the dedicated Heavy-Lifting team to support your training or troubleshooting needs.



### Factory Acceptance Testing (FAT)

Customers are invited to witness FAT, often combined with operator training. Under witness of Lloyd's Register, all equipment is functionally tested to maximum capacity, and in many cases up to 125% of rated load. Additional testing to meet standards compliance, government regulations or specific customer requirements are performed and documented at the same time.



### Documentation

Upon delivery of your new heavy-lifting equipment, an operator's manual outlines the configuration of your system, detailed operating instructions with safety guidelines, and maintenance recommendations.



### Training

Customers who attend factory acceptance training at Enerpac's facility can also receive a day of training on their heavy lifting equipment. Additional training or on-site custom training can also be arranged.



Once you take possession of your new heavy-lifting equipment, you have on-demand access to our field support team. And support continues with ongoing maintenance or system upgrades throughout the life of your assets.

## ON-DEMAND SUPPORT

- On-the-job Application Engineer Support
- Routine Maintenance & Repair Services



### On-the-Job Field Support

Should you ever require extra support while using your Enerpac Heavy-Lifting system on the job, our dedicated application engineers will work closely to guide your operators on appropriate use of our equipment. And to ensure job safety, they will travel to your job site as needed to ensure your project is completed timely and without incident.



### Product Warranty

All Enerpac Heavy-Lifting equipment is built to stringent specifications and built to last. Should you ever encounter a defect in materials or workmanship under normal use, it will be remedied through our standard one-year warranty program.



### Maintenance & Repair

Downtime is minimized with fast delivery of repair parts and consumables stocked at several locations worldwide. For those that want the added confidence of specialized technicians, the Enerpac Maintenance & Repair team are ready to perform your maintenance or repair services for you.



# A SAFE AND EFFICIENT METHOD FOR MACHINE MAINTENANCE

The Enerpac Cube Jacks are easy to position resulting in a short set up time.



Two Cube Jacks at the rear are positioned under the lifting beam, which is raised as more cribbing blocks are inserted.



Two Cube Jacks are fitted with a custom designed V-shaped saddle to securely support the pin during lifting and lowering.



Cube Jacks used to split the upper body from the undercarriage; a safer, more efficient alternative to the jack-and-pack methods that are currently used.

# **SCJ-SERIES SELF-LOCKING CUBE JACKS**

**INCREMENTAL LIFTING SYSTEM  
WITH AUTOMATED MECHANICAL LOCKING**



**THE RIGHT TOOL MAKES ALL THE DIFFERENCE**