

▼ SHS-Series 4-Point SyncHoist System



- High precision load manoeuvring, 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
- BTH-1-2014 compliant design of below-the-hook lifting devices
- 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:** system warning functions
- **Automatic control:** fully PLC-monitored system with programmable functions using touch screen and system warning functions.

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



▼ An SyncHoist system used to align steel blocks of the ship's control tower sections allowing gradual lift ingand positioning of the load.



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
- Pre-programmed positioning, tilting and aligning.

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.

▼ SyncHoist Powerpack to operate the 4 lifting points.



SyncHoist - High Precision Load Positioning



What is SyncHoist?

Enerpac SHS-Series 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 pre-programmed positioning, tilting and aligning of loads.

- Patented system
- Complete system tested in compliance with European lifting directive and safety requirements
- BTH-1-2014 compliant design of 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.

System management and control

Contact Enerpac for the following options, or other customised stroke, capacity and control configurations.

1. Manual control

- Valves with manual levers
- Warnings for thermal motor protection
- Visual check: oil level, filter indicator.

2. Automatic control

- Load and stroke monitoring, and stroke control
- PLC-control and touch screen
- Solenoid valves with pendant
- Pre-programmable motions and data recording
- System warnings for:
 - maximum cylinder load control setting
 - stroke and position control
 - thermal motor protection
 - oil level and filter indicator.

SyncHoist Power Packs

SyncHoist Power Packs are specifically designed to work with the SyncHoist cylinders to insure proper operation of the system. Contact Enerpac for assistance at enerpac.com/contact-us

SHAS-Series, Wireless SyncHoist

See next page for wireless remote control system with integrated hydraulics.

SHS Series



Capacity Per Lifting Point:

55 - 85 - 110 ton

Maximum Stroke:

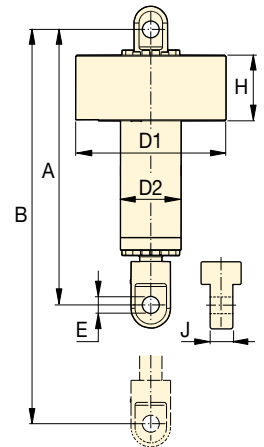
500 - 1000 - 1500 mm

Accuracy Over Full Stroke:

± 1,0 mm

Maximum Operating Pressure:

700 bar



Capacity ton (kN)	Total Load ton (kN)	Cylinder Stroke (mm)	Model Number ¹⁾ 400 VAC, 3 ph - 50 Hz	Control System	Motor Size (kW)	Number of Pump Outlets and Oil Flow ²⁾ (l/min)	Cylinder Dimensions (mm)						(kg) ³⁾	
							A	B	D1	D2	E	H		J
4 x 55 (539)	220 (2156)	500	SHS 45520 MW	Manual	7,5	4 x 1,4	1300	1800	690	245	59	385	80	450
		1000	SHS 45540 MW				1800	2800						625
		1500	SHS 45560 MW				2300	3800						800
		500	SHS 45520 AW	Automatic	15	4 x 2,1	1300	1800	450					
		1000	SHS 45540 AW				1800	2800	625					
		1500	SHS 45560 AW				2300	3800	800					
4 x 85 (833)	340 (3332)	500	SHS 48520 MW	Manual	11	4 x 2,1	1330	1830	690	265	72	385	100	500
		1000	SHS 48540 MW				1830	2830						700
		1500	SHS 48560 MW				2330	3830						900
		500	SHS 48520 AW	Automatic	15	4 x 2,1	1330	1830	500					
		1000	SHS 48540 AW				1830	2830	700					
		1500	SHS 48560 AW				2330	3830	900					
4 x 110 (1078)	440 (4312)	1000	SHS 411040 MW	Manual	11	4 x 2,1	1855	2855	780	315	85	395	124	970
		1500	SHS 411060 MW				2355	3855						1235
		1000	SHS 411040 AW	Automatic	15	4 x 2,1	1855	2855	970					
		1500	SHS 411060 AW				2355	3855	1235					

¹⁾ With 4 cylinders and one 400 VAC-3 phase-50 Hz Powerpack (suffix W). For 460-480 VAC-3 phase-60 Hz Powerpack change suffix W into J. Example: SHS 45560 MJ.

²⁾ Pump and cylinders include 4x 25 meters hydraulic hoses with couplers.

³⁾ Weight per cylinder

▼ SHAS411040WE Autonomous SyncHoist System demonstrated using a load simulation



- High precision load manoeuvring using one crane
- Vastly improving worker safety, operating speed and control
- Integrated PLC-controlled hydraulics in each lifting device – no need for external powerpack and hydraulic hoses
- Wireless control for safe operation
- Quick installation, set-up and operation - one electric connection per lifting point
- BTH-1-2014 compliant design of below-the-hook lifting devices
- Cost reduction compared to conventional load positioning methods.

Accurate Hoisting and Load Positioning Enhancing a Crane's Capability



Autonomous SyncHoist System

Enerpac Autonomous SyncHoist System 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.

Functions

- High precision horizontal and vertical load positioning
- Pre-programmed positioning, tilting and aligning.

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.

▼ A single operator controls and oversees the entire hoisting job - the portable wireless control allows him to be at a safe distance.



▼ SyncHoist lifts and positions Brisbane Riverwalk concrete girders



▼ 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.



SyncHoist - High Precision Load Positioning



What is SyncHoist?

Enerpac SHAS-Series SyncHoist is a hydraulically actuated auxiliary attachment for high precision load positioning for cranes.

The autonomous system (SHAS) with integrated PLC-controlled hydraulics, monitors and guides the powerful double-acting push-pull cylinders which are integrated into the lifting points.

The SyncHoist system can be used for pre-programmed positioning, tilting and aligning of loads.

- Complete system in compliance with European lifting directive and safety requirements
- BTH-1-2014 compliant design of 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 risk. The SyncHoist system can be used for controlled hydraulic horizontal and vertical material handling.

Autonomous system

- Wireless remote control
- Only one electric power connection per lifting point
- Integrated hydraulics, PLC and controls
- No need for hydraulic hoses and cables
- No need for mid-hoist disconnection of hoses and movement of pump.

Modular system

- Standard with four lifting devices.
- Quick installation, set-up and operation.

PLC-controlled system

- Pre-programmable motions
- Data recording
- Load control
- Stroke control
- Alarms for overload
- Real time indication of force and stroke per lifting point
- Controlled adjustment of forces per lifting point during entire operation.

Wireless controls

- Operate from safe distance
- Portable, no cables
- Siemens wireless 7 inch touch screen control panel
- Emergency stop, TÜV certified in PROFISAFE.

SHAS Series



Capacity Per Lifting Point:

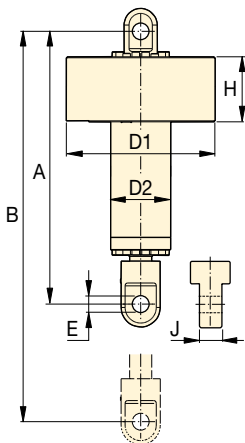
110 - 225 ton

Maximum Stroke:

1000 - 1500 mm

Accuracy Over Full Stroke:

± 1,0 mm



SyncHoist system mounted in an auxiliary frame for levelling and positioning steel structures during construction of an oil & gas installation. ▶



Capacity	Total Load	Cylinder Stroke	Model Number ¹⁾ 400-500 VAC, ²⁾ 3ph - 50-60Hz	Control System	Motor Size	Dimensions (mm)							(kg) ³⁾
						A	B	D1	D2	E	H	J	
4 x 110 (4 x 1078)	440 (4312)	1000	SHAS 411040 WE	Wireless	4 x 4,0	1855	2855	1063	315	85	540	124	1183
		1500	SHAS 411060 WE			2355	3855	1063	315	85	540	124	1448
4 x 225 (4 x 2204)	900 (8820)	1000	SHAS 422540 WE	Wireless	4 x 8,0	2140	3140	1235	420	142	580	190	3219
		1500	SHAS 422560 WE			2640	3640	1235	420	142	580	190	3414

¹⁾ Standard with 4 lifting points. For more or less lifting points contact Enerpac.

²⁾ WE = with European electrical wiring. Change into suffix "WU" for US-market. Example: SHAS 411060WU. ³⁾ Weight per cylinder.