

# > Power Team®

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## MOTION CONTROL SYSTEM



PRECISE POSITIONING & CONTROL  
IN A RESPONSIVE PACKAGE

# SPXFLOW®

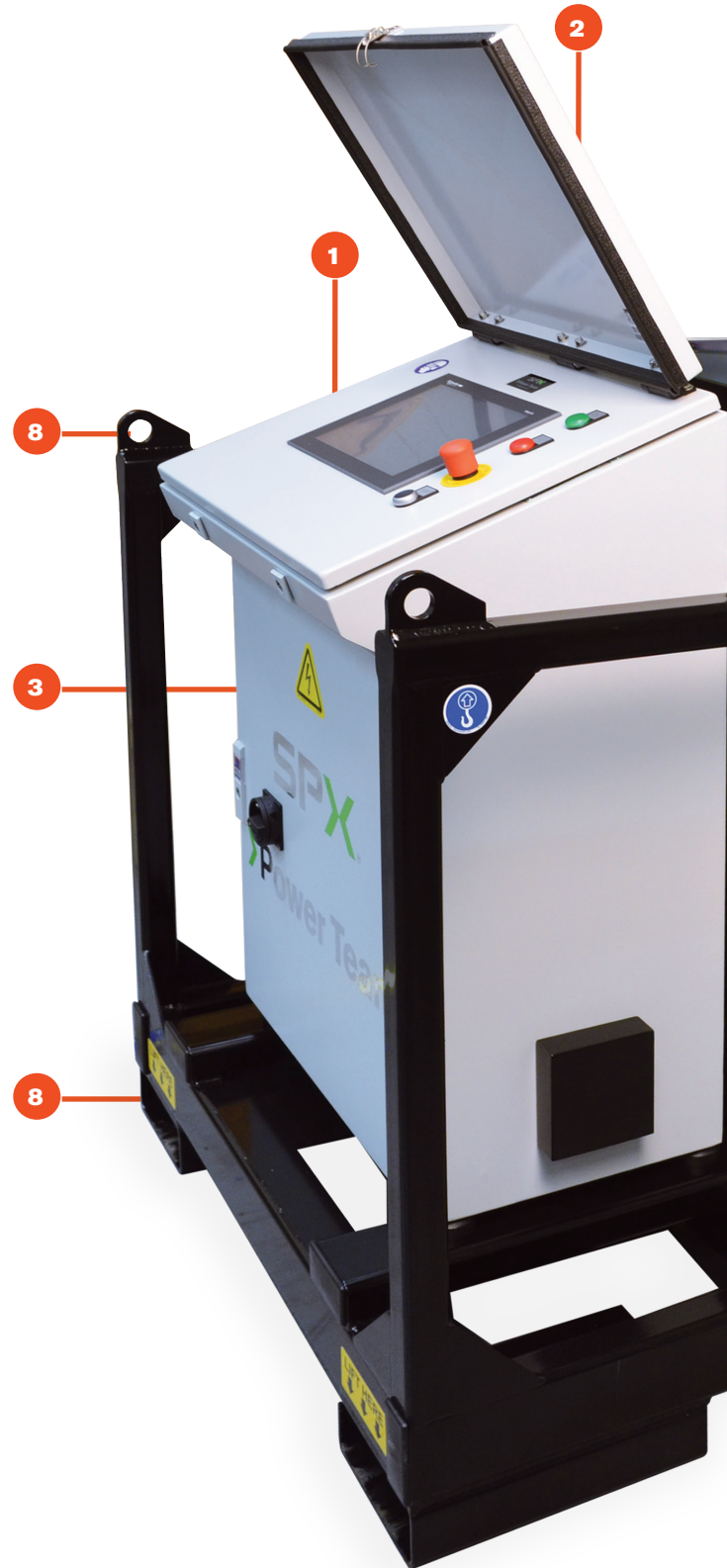
### Motion Control System

The new Power Team Motion Control System (MCS) can be used in many hydraulic applications where load position is critical, requiring cylinder synchronization.

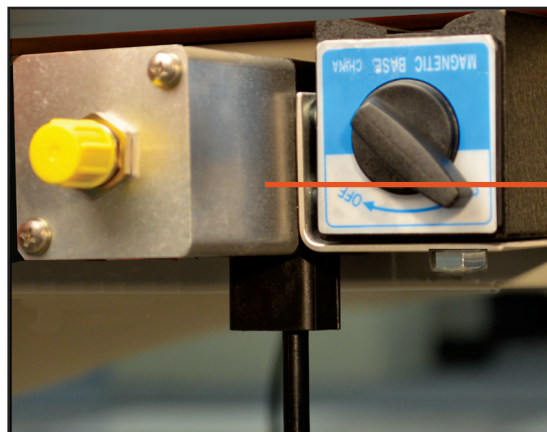
Whether it is a bridge, a building or any kind of heavy load, with the SPX FLOW Power Team Motion Control System, lifting, lowering, pushing, pulling, tilting or positioning loads can be carried out automatically with a high degree of accuracy.

**MCS Value Delivered:**

- PLC controlled system provides significant time saving advantages coupled with precise accuracy
- Extremely low internal stress in the object one is moving reduces the risk of costly damage to the load
- Data is captured & documented for the movement performed



► **Magnetic Mount Sensors**

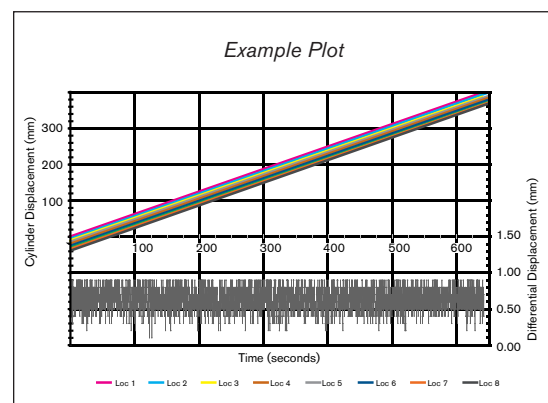




► **Key Features**

- 1 HMI touch screen provides great visibility and easy access to system controls.
- 2 Hinged cover provides protection for HMI and doubles as a sun screen.
- 3 State of the art digital PLC control provides easy access to the system & log data.
- 4 Pressure sensors to monitor lifting pressures in each circuit.
- 5 Electrically controlled valves to control the distribution of oil into the hydraulic circuits in small increments.
- 6 Forty (40) gallon (150 Liters) reservoir with sight gauge to handle a wide range of cylinder combinations.
- 7 Heavy-duty frame designed to handle all industrial applications.
- 8 Integrated lift points for cranes and forks.
- 9 Feedback sensors to monitor the position of the load up to 19.7 in (500 mm). Optional length 40 in (1 m) is available upon request.

► **Data Log/Report Captured**



**► The Main Benefit of a Motion Control System (MCS)**

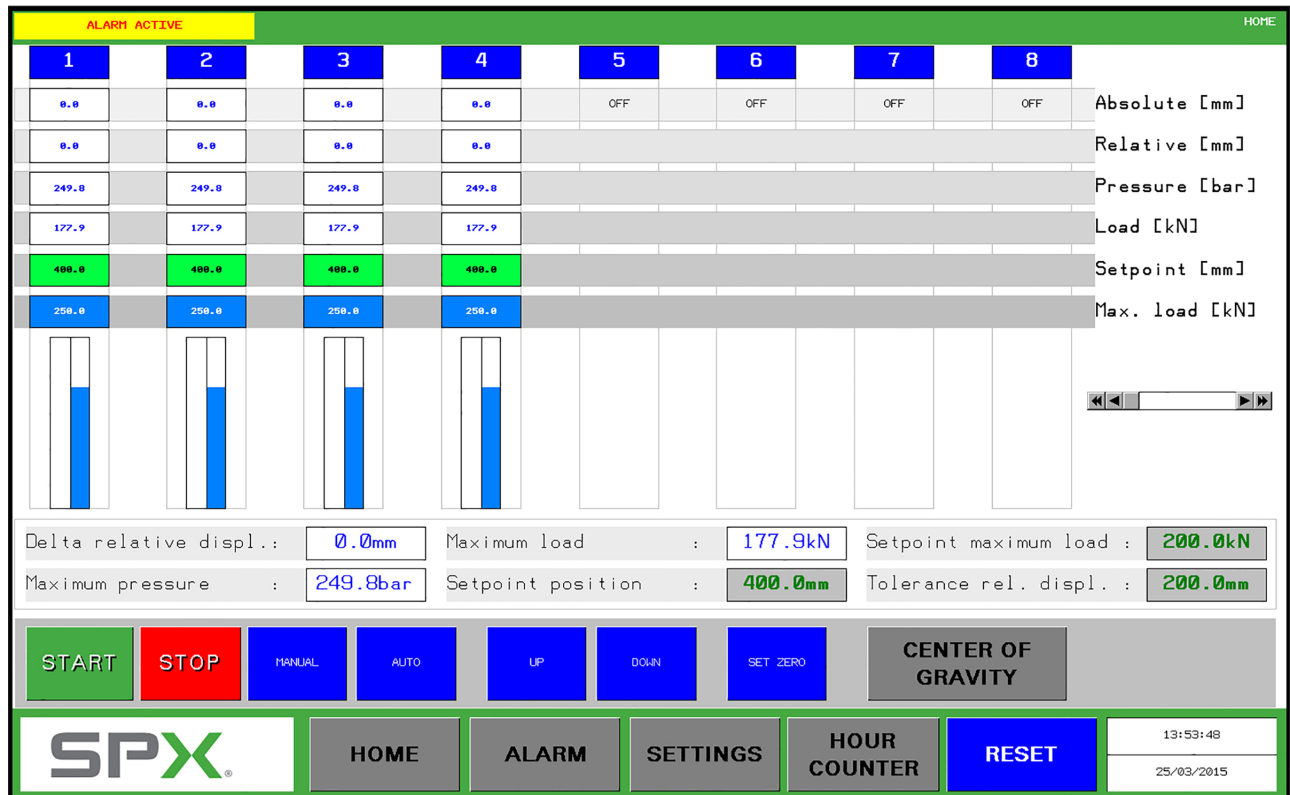
The Power Team MCS digitally controls the movement of an object, keeping it level within the user specified parameters. The primary reason to use a Power Team MCS is Internal Stress Reduction. When a large object is stationary, internal stresses are normalized. When the object is moved, stresses are induced. If the operator is not careful, the object can bend or twist creating a stress riser that can cause costly repairs or damage. The MCS system will assist in controlled positioning to manage the stresses created by synchronously lifting or lowering the object in unison.

**► Easy to Use HMI Touch Screen Interface**

Features	Benefits
Control of lifting, positioning or lowering loads from PLC	Safe and accurate movement of loads
State of the art software in the PLC	Enables accuracies as low as 1 mm (0.040 in)
NEMA 12 electrical box rating	Able to operate in wide range of temperature (32 –131°F, 0 – 55°C) and humidity (30 – 95% non-condensing)
Multiple safety features and auto diagnostics	Full stop due to power failure, sensor failure, pressure overload, tolerance error, uncontrolled load movement.
Data log card	Data recording and reporting capabilities



The home screen on the Motion Control System is easy to use and operate. It highlights all activities during use of the Motion Control System. For each cylinder in operation, the cylinders performance is captured and displayed on the HMI screen as illustrated below.



► Safety Features

The Power Team Motion Control System (MCS) has numerous safety features built into the digital controller which safely stop the movement in the event of an alarm. In addition, there are backup mechanical features which function even in the event of a power loss.

Digitally Controlled Safety Features		Mechanical Backup Safety Features
Max load exceeded	Hydraulic pump overload	Posi-Check® load lowering valve to hold load and provide a mechanical backup to safely control the lowering of the load.
Max pressure exceeded	E-Stop button activation	
Max displacement exceeded	Pressure sensor wire break	
Datalog error	Displacement sensor wire break	Manual lowering override to safely lower load in event of power loss.
System communication error	Two button start procedure prevents accidental starting	

► Common applications include:

- Bridge lifting, repositioning, maintenance & launching.
- Controlled movement and positioning of heavy equipment, buildings, concrete segments and other construction components.
- Structural testing in civil engineering.
- Lifting, weighing and/or determining center of gravity.
- Structure raising, leveling & shoring.



*Pictured above: rudder installation for routine maintenance in a dry dock application.  
Below: Positioning of HVAC equipment during installation.*

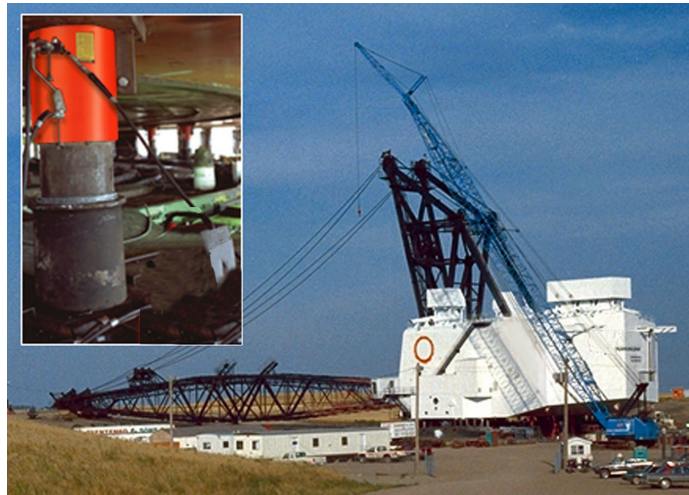


Order No.:

**MCS-PE554-8**



*Power Team supplied the lift equipment expertise for this drag line maintenance operation to successfully complete the job on time.*



**Features**

- Basic systems includes eight (8) jacking points, contact Power Team for larger MCS system requirements.
- Positioning, lifting or lowering accuracy of +/- 1 mm (0.040 in).
- Safety features included: full stop due to power failure, sensor failure, pressure overload, tolerance error, uncontrolled load movement, etc.
- Intuitive graphic, touch screen control
- Displayed information included: startup diagnostics, position of lift points relative to starting position, pressure at each lift point, status of each cylinder and status of alarms.
- MCS works with a wide range of cylinders types, tonnages and strokes to meet your application requirements.
- Operating pressure (up to) 10,000 psi (700 bar).
- Standard system has a 40 gallon (150 liters) gallon tank.



**Touch Screen Enclosure**



- Weather tight enclosure protects your investment while in storage.
- Hinged cover provides protection for HMI touch screen.
- Designed to act as a sun screen in bright conditions.

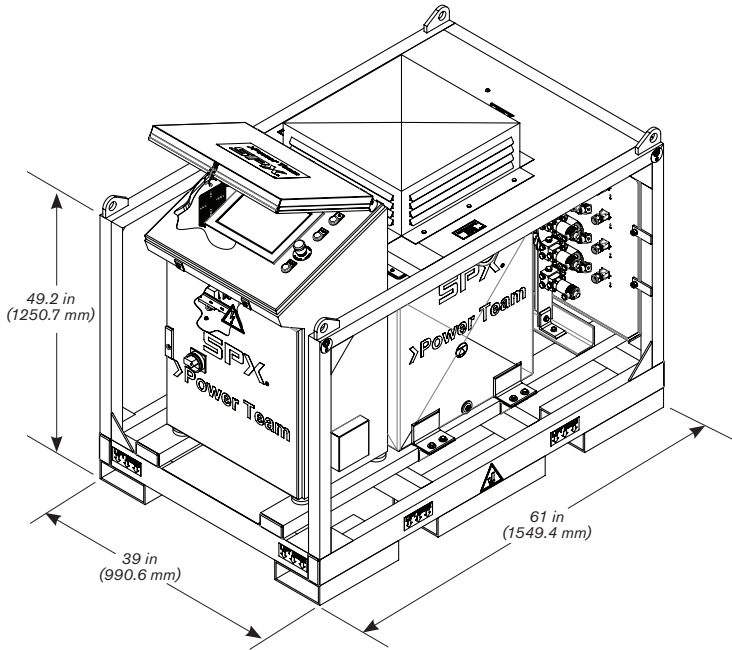


**Cylinder Selection**



Always choose a cylinder with a tonnage rating of 20% or more than what is required to lift or position the load.

Technical Dimensions



Hardware Included



Crate

Motion Control System (MCS) is protected with a robust cage and reusable shipping container.



Sensors

Linear Displacement Sensors have a range of 19.7 in (500 mm). Two cases with four sensors included. Refer to the ordering table for the 39.4 in (1000 mm) ordering option.



Cables

Cables for sensors are 100 ft (30.5 m) in length, eight sets and a hard plastic case.



Plug

Electrical plug female connector allows for quick attachment to your line cord.

Ordering Information

Order No.	Max Lift Points	Pump Flow @ 10,000 psi (700 bar)	Reservoir Size gal (L)	Motor Voltage	Max Pressure psi (bar)	Valves Included	Transducers Included	Weight w/oil lb (kg)
MCS-PE554-8	8	55 in <sup>3</sup> /min (0.9 L/min)	40 (150)	1.125hp (230V, 1Ø)	10,000 (700)	3P-4W & 2P-2W	Pressure & Linear Position (500 mm)	1700 (771)
MCS-PQ1204-8				3hp (230V, 3Ø, 60 Hz)				
MCS-PQ1204-460-8				3hp (460V, 3Ø, 60 Hz)				
MCS-PQ1204-50-220-8				3hp (220V, 3Ø, 50 Hz)				
MCS-PQ1204-50-380-8				3hp (380V, 3Ø, 50 Hz)				

Note: To upgrade to a 1000 mm linear position sensor, add "-1M" to the end of the part number. Example MCS-PE554-8-1M.

**Training Provided**

Every MCS includes one day of on-site training at one of SPX FLOW's Regional Headquarters (Rockford, IL USA or Singapore or the Netherlands). Training includes both classroom and hands-on instruction. Travel & lodging not included.

**Optional Cylinders**

Power Team offers a wide variety of single, double, lock nut, pancake and center hole cylinders to meet your requirements.

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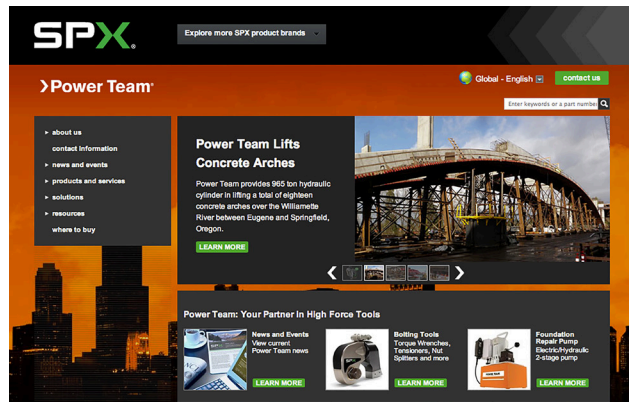
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