Motion Compensation System
Specifications

General

Weight	2400 lbs
Dimensions	Length 2.7 ft Width 2.4 ft Height (retracted) 8 ft Height (fully extended) 12 ft
Hydraulic Cylinder	
Stroke	48 in
Minimum Compression	5,000 lbs line tension
Maximum Compression	12,000 lbs line tension
1 Piston Accumulator	5 gallon capacity
1 Cable Groove Traveling Sheave Assembly	Crosby 14 in; 5/8 in diameter
2 Cable Groove Stationary Snatch Block Assemblies	Crosby 14 in; 5/8 in diameter

Description

The Phoenix motion compensation system reduces snap loads that are imparted to the lifting cable as a result of ship's motion. By hydraulically and pneumatically damping these loads through the rise and fall of the hydraulic cylinder, a consistent tension is maintained on the lift line and thereby allows the safe retrieval of objects from the sea floor.

The motion compensation system operates from an internal hydraulic oil actuated cylinder and nitrogen charged accumulator. The system components identified above are mounted on a rigid base that is bolted or welded to the ship's deck. Two (2) of the sheaves are mounted in a fixed position in the base frame. The other sheave is on a vertical-moving, traveling carriage assembly. A hydraulic cylinder mounted between the fixed rigid base and traveling carriage assembly drives the traveling sheave.

Tension is maintained on the cable by a tensioning spring effect of hydraulic oil movement between the cylinders and nitrogen charged accumulator. The accumulator is pre-charged with nitrogen and, along with the hydraulic oil provides a closed loop internal system.

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