

PURPOSE

Describe the principle of operation for Harrington's Dynamic Hoist Load Tester.

SCOPE

Harrington's Dynamic Hoist Load Tester (DHLT).

DESCRIPTION

The DHLT is a machine designed to apply a dynamic load test to Electric Hoists.

The intent of the DHLT is to impose a constant load equal to 125% of the hoist's WLL to satisfy requirements for load testing of hoists. A dynamic load is one that is maintained constant even as the hoist is operated up and down.

To use the DHLT to conduct a dynamic load test on an electric hoist, the electric hoist is installed in the DHLT, and then the electric hoist is connected to the appropriate power supply for the hoist. The DHLT is adjusted to impose the appropriate load on the hoist. The hoist is then operated in the up and down directions. During this operation, the DHLT maintains the load on the hoist to replicate the lifting and lowering of an actual load (a dynamic load).

The DHLT consists of three main systems.

- (1) Pivoting Beams Assembly – The Electric Hoist is attached between these two pivoting beams.
- (2) Hydraulic System – Uses a Hydraulic Cylinder/Actuator to apply a force to the Pivoting Beams Assembly. This force is transferred by the Pivoting Beams Assembly to the hoist to resist the action of the hoist so the hoist endures the proper dynamic load test. The hydraulic system is controlled so the force applied to the Pivoting Beams and the hoist is maintained at a constant level even as the hoist operates and the Pivoting Beams pivot.
- (3) Electrical System – Coordinates the control of the Electric Hoist and the Hydraulic System. Comprised of a control box, pendant, power supply cord, hoist connection cord, limit switch, pressure switch, and pump motor.
 - a. Control Box – Contains terminal strip, on/off switch & light, fuses, contactor, and plug for connection to the hoist.
 - b. Pendant – Connects to the Control Box. Has up/down control buttons for controlling the hoist operation.
 - c. Power Supply Cord – Used to connect the Control Box to the power supply.
 - d. Hoist Connection Cord – Used to connect the Electric Hoist to the Control Box.
 - e. Limit Switch – Senses whether the Pivoting Beams are acceptably positioned or if they are over-traveled.
 - f. Pressure Switch – Senses the pressure in the hydraulic system.
 - g. Pump Motor – Drives the hydraulic pump to create pressure in the hydraulic system.

END