PURPOSE

To provide instructions for setting the Pressure Switch on the DHLT.

SCOPE

(1) Includes the DHLT. Excludes the SHLT.

(2) Includes only setting the Pressure Switch. Excludes Calibration and setting the Limit Switch.

(3) Calibration based on using Harrington 5T Electric Chain Hoist (either NER050L or ER050L).

BACKGROUND

Refer to EDOC0440 for the System Description for the DHLT. Refer to EDOC0400 for the Operating Instructions for the DHLT.

INSTRUCTIONS

> **WARNING**: This operation involves working in close proximity to electrically energized components. Contact with these energized components can cause injury and death. To avoid these hazards:
>
> - Be absolutely aware and sure of which components are electrically energized.
> - DO NOT come into contact with any electrically energized components.

The following instructions pertain to the Pressure Switch utilizing a single setpoint adjuster. DHLT units shipped after 10/2010, utilize a dual setpoint adjuster. Refer to page 4 of this document for setting the dual set point pressure switch.

Single Setpoint Pressure Switch Adjustment:

1. To perform this operation, the DHLT must be turned on. The DHLT should not be in use for any other operation such as calibration or performing a load test.

2. Remove the cover of the Pressure Switch.

> **WARNING**: The wires and the switch in the Pressure Switch enclosure are electrically energized. Contact with these energized components can cause injury and death. To avoid these hazards:
>
> - DO NOT come into contact with any electrically energized components.

3. Adjust the Set Point for pump/motor to stop [set point is 2,200 psi, +/- 50 psi]. The Set Point is adjusted by turning the “Set Point Adjuster” (see Fig. 1).

(a) Loosen the bottom locking nut of the Set Point Adjuster. Do not allow the top nut of the Set Point Adjuster to turn.

(b) PARTIALLY and VERY SLOWLY open the Accumulator Discharge Valve to relieve pressure from the Accumulator. When the pump/motor starts, close the Accumulator Discharge Valve.

(c) Allow system pressure to increase. Using the System Pressure Gauge, note the pressure at which the pump/motor turns off.

(i) If pump/motor turns off between 2,150 psi and 2,250 psi, do not move the top nut of the Set Point, and use the bottom nut of the Set Point Adjuster to lock the Set Point. After locking, perform (b) and (c) one more time to confirm Set Point is set to between 2,150 psi and 2,250 psi.

(ii) If pump/motor turns off lower than 2,150 psi, then turn the top nut of the Set Point Adjuster clockwise [note that the adjustment of the Set Point is very sensitive – only slight turning of this nut is required].

(iii) If pump/motor turns off higher than 2,250 psi, then turn the top nut of the Set Point Adjuster counter-clockwise [note that the adjustment of the Set Point is very sensitive – only slight turning of this nut is required].

(iv) Repeat (b) and (c) until Set Point is properly adjusted so pump/motor turns off when the system pressure increases to between 2,150 psi and 2,250 psi. Refer to (c)(i) and ensure that the Set Point Adjuster is properly locked.

4. Set the Deadband/Differential Adjustment for pump/motor to start [setting is 1,800 psi, +/- 50 psi]. The Deadband/Differential is set by turning the “Deadband/Differential Adjustment” knob/wheel (see Fig. 1).

(a) PARTIALLY and VERY SLOWLY open the Accumulator Discharge Valve to relieve pressure from the Accumulator. Using the System Pressure Gauge, note the pressure at which the pump/motor starts. When the pump/motor starts, close the Accumulator Discharge Valve.

(i) If pump/motor starts between 1,750 psi and 1,850 psi, leave the Deadband/Differential Adjustment knob/wheel where it is.

(ii) If pump/motor starts lower than 1,750 psi, then the deadband/differential is too great. Turn the Deadband/Differential Adjustment knob/wheel counter-clockwise to reduce the deadband/differential and cause the pump/motor to start at a higher pressure.

(iii) If pump/motor starts higher than 1,850 psi, then the deadband/differential is too small. Turn the Deadband/Differential Adjustment knob/wheel clockwise to increase the deadband/differential and cause the pump/motor to start at a lower pressure.

(iv) Repeat (a) until the Deadband/Differential is properly set so the pump/motor starts when the system pressure decreases to between 1,750 psi and 1,850 psi.

5. Replace the cover of the Pressure Switch.
6. The DHLT is now ready for use (assuming it has been properly calibrated and all other functions and components have been found acceptable).

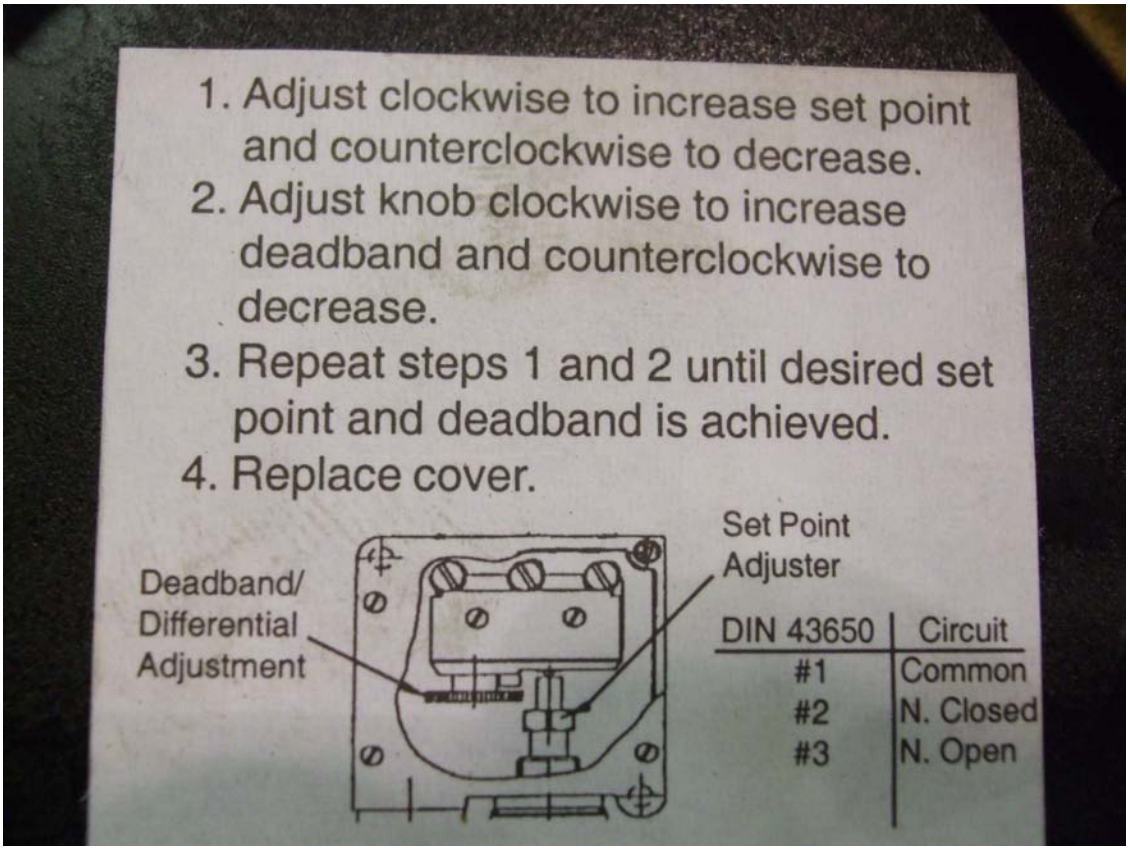

Fig. 1

Dual Setpoint Pressure Switch Adjustment:

1. To perform this operation, the DHLT must be turned on. The DHLT should not be in use for any other operation such as calibration or performing a load test.

2. Remove the two small covers on the top of the Pressure Switch. This allows access to the min pressure "cycle on" adjustment screw and the max pressure "cycle off" adjustment screw. (See Fig.2)

> **WARNING**: The wires and the switch in the Pressure Switch enclosure are electrically energized. Contact with these energized components can cause injury and death. To avoid these hazards:
>
> - DO NOT come into contact with any electrically energized components.

3. Adjusting max pressure "cycle off". This is the maximum pressure achieved and the pump/motor turns off. This pressure should be [2,400 psi, +/- 50 psi] and is indicated by the system pressure gauge located directly below the accumulator.

   (a) To determine where the max pressure occurs and the pump/motor turns off; partially and slowly open the Accumulator Discharge Valve. This will relieve pressure from the Accumulator. When the motor/pump begins to run, close the Accumulator Discharge Valve.

   (b) Allow the system pressure to increase. Look at the System Pressure Gauge, note the pressure at which the pump/motor turns off.

   (c) If this pressure is greater than or less than [2,400 psi, +/- 50 psi], the adjustment screw on the Pressure switch, labeled "Circuit 2" will need to be turned clockwise to decrease the psi or counterclockwise to increase the psi. Repeat steps 3a, 3b and 3c until the pump/motor turns off at [2,400 psi, +/- 50 psi].

4. Adjusting min pressure "cycle on". This is the minimum pressure achieved and the pump/motor turns on. This pressure should be [1,750 psi, +/- 50 psi] and is indicated by the system pressure gauge located directly below the accumulator.

   (a) To determine where the min pressure occurs and the pump/motor turns on; partially and slowly open the Accumulator Discharge Valve. This will relieve pressure from the Accumulator.

   (b) When the motor/pump begins to run, take note of the pressure reading on the System Pressure Gauge.

   (c) If this pressure is greater than or less than [1,750 psi, +/- 50 psi], the adjustment screw on the Pressure switch, labeled "Circuit 1" will need to be turned clockwise to decrease the psi or counterclockwise to increase the psi. Repeat steps 4a, 4b and 4c until the pump/motor turns on at [1,750 psi, +/- 50 psi].

5. With the “cycle on” and “cycle off” pressures adjusted, reinstall both screw covers on the Pressure Switch.
6. The DHLT is now ready for use (assuming it has been properly calibrated and all other functions and components have been found acceptable).

Fig. 2	