

## **EVACUATION PROCEDURE**

The **Evacuation System (EVS)** is to be used to evacuate/inspect fluid leakage into the cavity between the cylinder and PVC liner of new and existing in-ground hydraulic systems. It can also be used in conjunction with the Leak Monitor System.

To evacuate fluid please follow these steps.

- Land car and secure.
- Insure all power to the elevator system is turned off.
- Open pressure relief valve.
- Remove cap from plastic evacuation hose or copper tube.
- Attach suction pump to evacuation hose.
- Turn pump on.
- Run pump until all fluid has been evacuated.

Replace suction hose cap when completed.

Note: If fluid exists further testing is required to determine where the leak has developed.

## **ELECTRONIC LEAK MONITORING SYSTEM**

### **General Design**

The **Electronic Leak Monitor system (ELMS)** is designed as a discriminating device. That is, the monitor array is designed to report the presence of a liquid trapped between the jack cylinder and the sealed PVC liner and to determine whether the liquid is water or oil. A secondary test for verification of can be made by applying a suction pump to the test line at the monitor block.

### **Purpose**

To detect the leakage of either water or oil into the sealed PVC liner and also provides a manual monitoring method for verifying the leakage in the liner.

The monitoring Station functions as a 24/ 7 test for oil or water within the jack liner. On the cover there are 3 LED's each with a specific function.

- Green**      This indicator monitors that the correct 12 volt DC power is operational.
- Yellow**     This indicator, when lit indicates the presence of water with a depth of approximately 2 inches in the liner.
- Red**         This indicator monitors oil, if any, in the jack liner. It reacts at about a 4 inches depth in the liner.
- Alert Signal**   This alarm is contained within the case. It is similar to a smoke alarm sound. This alarm sounds approximately every eight (8) minutes until the alarm condition is resolved.
- Alert Relay**    The alert relay is contained within the Monitoring Station. The relay has normally open and normally closed contacts. (SPDT) This relay could be wired into the low oil circuit to cause the elevator to react the same as a low oil condition. It could also be used to control a signal light or similar function. This option may be used as local code applies.

**Installing** The Monitoring Station should be connected in or close to the controller cabinet.

**Requirements** 120 VAC, always on supply.  
The extended 4 conductor wiring from the jack head.  
4 crimp type butt connectors.  
Any necessary wire required if the relay option is to be used.

### Installation Procedures

Add the necessary length of 20 ga. 4 conductor wire to the 4 wires at the jack assembly. It is recommended that pass-thru crimp-on connectors be used at this point. *Be sure to identify which colors in your wire are connected to which colors from the jack assembly.* You will need to know this in the next step. Route the wire to the equipment room.

Install the Monitoring Station in the desired location using the mounting ears to fasten.

Remove the 4 screws from the cover and gently open the cover. The LED leads can be unplugged and the cover removed.

Attach the water detector leads to the water sensor connecting block. These wires are normally red and green at the jack head.

Attach the oil detector leads to the oil sensor connecting block. Wires are normally white and black at the jack head.

When all low voltage connections are complete you may attach the 120 VAC supply to the circuit board connector where indicated.

***NOTE: Bring the 120 VAC thru its own grommet. DO NOT cross the high voltage over or near the sensor wires.***

The unit is now online. The green LED should be lit or flashing indicating that you have a fully functioning low voltage to the circuit board. The testing has now begun automatically and will continue monitoring as long as the green LED is lit.

### **Specifications**

Power Supply ..... 120 VAC  
Circuit board voltage ..... 12 VDC  
Oil detector sensor ..... Dry contact SPST – N/O, Glass enclosed  
Water Detector sensor ..... Capacitance type circuit, no voltage applied  
Idle state/ sensing ..... 2.7 watt

### **Using the Monitoring Station**

The monitor is a passive device. As such it requires only occasional observation to assure the green LED is on.

If any alarm condition is indicated on the Monitor, if either a yellow light or a red light is illuminated the mechanic should proceed to the Jack assembly and apply a suction device to the tube exiting the jack head assembly. In this way, safe evacuation of the liquid can be accomplished and the liquid can then be analyzed and the appropriate action to resolve the leak may be taken.

### **Replacement Sensors**

The entire leak detector assembly may be removed from the liner should a malfunction be detected. Since the Monitor is of a passive design, failure is not likely due to moving, or component stress reasons. For specific instructions on removal and re-installation, should this be necessary, contact EECO engineering.