

PURPOSE

Provide recommended service intervals and a procedure for changing the hydraulic oil and filter.

SCOPE

Includes the DHLT. Excludes the SHLT.

REQUIRED MATERIALS

Quantity	Description	Part Number
1	Cross Replacement Hydraulic Oil Filter Element	1A9021
3.4 Gal.	Hydraulic Oil	Exxon Humble Hydraulic Oil H46 or Equivalent

RECOMMENDED SERVICE INTERVALS

Harrington recommends changing the hydraulic oil and filter based on the following guidelines.

1. Annual Inspection: Remove the vent cap from the reservoir (Figure 3), and use a suction gun or equivalent tool to remove a small amount of oil from the reservoir. Test the oil for cleanliness and lubricity. It should be clear to pale yellow, and be slippery between the fingers with no grit. If oil is clean, verify the oil level is approximately ½ inch from top of reservoir and install vent cap. If oil is dirty, follow the procedure listed below.
2. Change the oil every 10 years, regardless of condition.

RECOMMENDED OIL CHANGE PROCEDURE**Draining Oil**

Before beginning the oil change procedure, the pivoting beams assembly should be in the down position (hydraulic cylinder fully retracted).

1. Turn DHLT on and allow it to run until pump shuts off to get the oil warm.
2. Turn DHLT off.
3. **SLOWLY** open the accumulator discharge valve to relieve system pressure (Figure 1). At this point all of the oil will be in the reservoir and the hydraulic cylinder.
4. Remove the accumulator discharge hose from the reservoir and insert in an empty 5 gallon bucket (Figure 2).

GENERAL USE

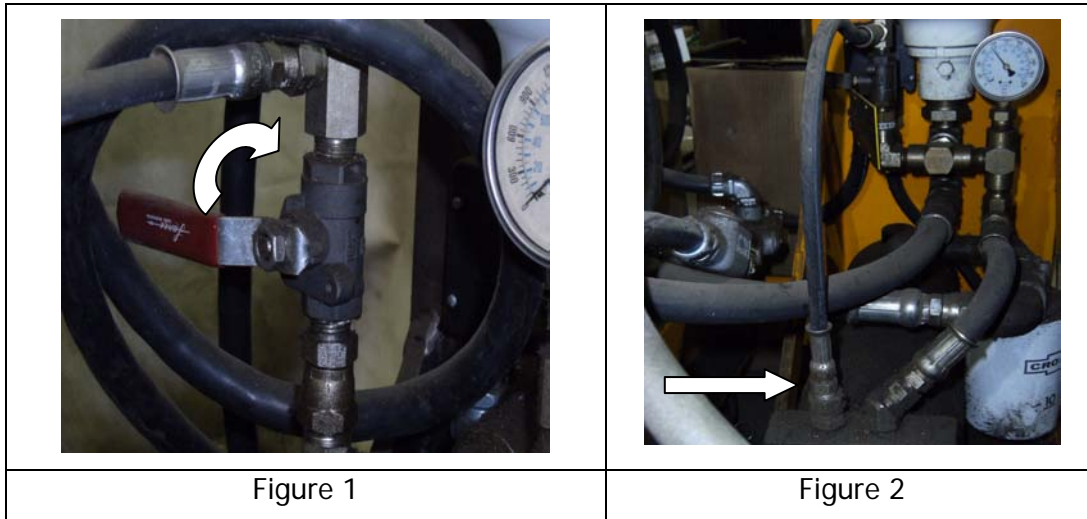
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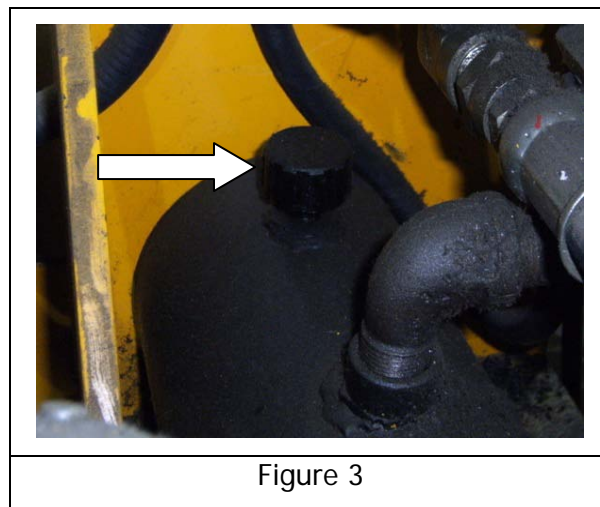
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5. Make sure the discharge valve is completely open and turn on the DHLT to pump the oil from the reservoir into the bucket.
 - a. Note: Turn off DHLT as soon as pump begins to cavitate.
6. Use a manual hoist to raise the pivoting beams assembly to extend the cylinder, forcing oil from the cylinder to the 5 gallon bucket.

CAUTION: Only lift pivoting beams assembly until the limit switch is contacted or limit switch damage may result.



7. Remove the vent cap from the reservoir (Figure 3)



8. Remove the hoist from the pivoting beams assembly.

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9. Raise the motor end of the hydraulic system and use a suction gun to remove the remaining oil from the reservoir.
10. Remove oil filter.
 - a. Note: When the oil filter is removed, oil will continue to drain from the filter housing.

Refilling Oil

Before beginning the fill procedure, remove manual hoist from pivoting beams assembly if you have not already done so (pivoting beams may stay in up position).

1. Apply a light film of oil to the seal and install the new oil filter.
2. Install accumulator discharge hose and close accumulator discharge valve.
 - a. Apply Permatex Hydraulic Sealant or equivalent to the threads of the fitting.
DO NOT use pipe sealant as this may contaminate the hydraulic system.
3. Add hydraulic oil through the vent cap hole in the reservoir until oil level is approximately ½ inch (13 mm) from the top of the reservoir.
4. Turn DHLT on. Hydraulic cylinder will retract as it fills with oil.
 - a. Reservoir will run dry. Turn DHLT off as soon as pump begins to cavitate.
DO NOT allow system to lose pressure.
5. Add approximately 2 quarts. (1.9L) of hydraulic oil to the reservoir, and install vent cap.
6. Turn DHLT on. If pump begins to cavitate, turn DHLT off. Add hydraulic oil to the reservoir 1 pint (.5L) at a time until the pump does not cavitate and the pressure switch shuts the system off. **DO NOT** over fill system, or oil will spill out when accumulator is discharged.

Bleeding Hydraulic System

1. Connect a hoist between the 5 ton link and the pivoting beams assembly.
2. Turn DHLT on.
3. Adjust pressure control valve to 200 psi.
4. Operate hoist to cycle pivoting beams assembly up and down several times to purge the air from the hydraulic system.
5. Verify DHLT shuts off when the pressure switch reaches approximately 2250 psi, and the pump does not cavitate.

END

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