CATERPILLAR® Service Information System Shutdown SIS

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Special Instruction
CT11, CT13, and CT15 Cooling System Flush After Oil Cooler Failure{7000}
Media Number -REHS8728-00 **Publication Date -27/09/2013** **Date Updated -27/09/2013**

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CT11, CT13, and CT15 Cooling System Flush After Oil Cooler Failure{7000}

SMCS - 7000

On Highway Truck:
CT660 (S/N: TGA1-UP; TGD1-UP; TJD1-UP; TEJ1-UP; TRK1-UP; TKL1-UP; TEM1-UP; TEP1-UP; TGR1-UP; TGS1-UP; TJS1-UP; TGT1-UP; TGW1-UP; TSW1-UP; TEY1-UP; TSY1-UP; TEZ1-UP; TGZ1-UP)

Introduction

In the event of an oil cooler failure, engine oil may have entered the cooling system and mixed with the engine coolant. This special instruction contains the procedure for flushing and cleaning the contaminated cooling system.

Safety

WARNING

Do not operate or work on this machine unless you have read and understand the instructions and warnings in the Operation and Maintenance Manuals. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Caterpillar dealer for replacement manuals. Proper care is your responsibility.

For machines equipped with quick coupler, improper attachment of work tools could result in injury or death.

Do not operate this machine until you have positive indication that the coupler pins are fully engaged. Follow recommended procedure in Operation and Maintenance Manual.

Securely fasten radio (if equipped) and all loose items such as lunch boxes or tools. Failure to do so could allow items to shift position during rough machine operation or tip over and result in injury. Refer to the Operation and Maintenance Manual for specific fastening and latching requirements.

WARNING

Sudden movement or accidental starting of the machine can cause personal injury or death to persons on or near the machine.

To prevent personal injury or death, perform the following:

Park the machine on a smooth level surface.

Lower the blade and or attachments to the ground.

Stop the engine and engage the parking brake.

Block the wheels and install the steering frame lock.

Turn the battery disconnect switch to the OFF position and remove the key.

Place a Special Instruction, SEHS7332, "Do Not Operate" tag at the battery disconnect switch location to inform personnel that the machine is being worked on.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the cooling system pressure cap is cool enough to touch with your bare hand.

Remove the cooling system pressure cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

WARNING

Personal injury can result from improper handling of chemicals.

Make sure you use all the necessary protective equipment required to do the job.

Make sure that you read and understand all directions and hazards described on the labels and material safety data sheet of any product used to clean the components.

Observe all safety precautions recommended by the chemical manufacturer for handling, storage, and disposal of cleaning agents.

To prevent personal injury or death, do not let engine fluids stay on your skin. Clean skin and nails using hand cleaner and wash with soap and water. Wash or discard clothing and rags contaminated with engine fluids.

Engine Fluids (Oil, Fuel and Coolant) are a threat to the environment. Properly recycle or dispose of engine fluids according to local regulations. Never put engine fluids in the trash, on the ground, in sewers or bodies of water.

Wear gloves and other protective gear while working with hot engine fluids. Use caution when draining hot engine fluids and avoid direct skin contact.

Required Parts

- 3.8 L (1 US gal) **269-1948** Soap (Non-Foaming)
- 3.8 L (1 US gal) **4C-4611** Cooling System Cleaner
- **238-8648** Extended Life Coolant

Service Procedure

1. Remove the lower hose on the plastic surge tank. Drain all coolant and contaminants into the pan.

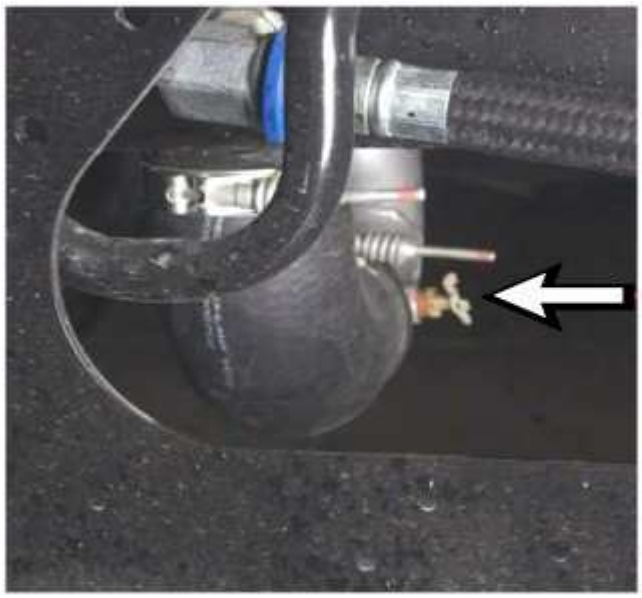

Illustration 1 g03445916

Lower radiator hose drain valve

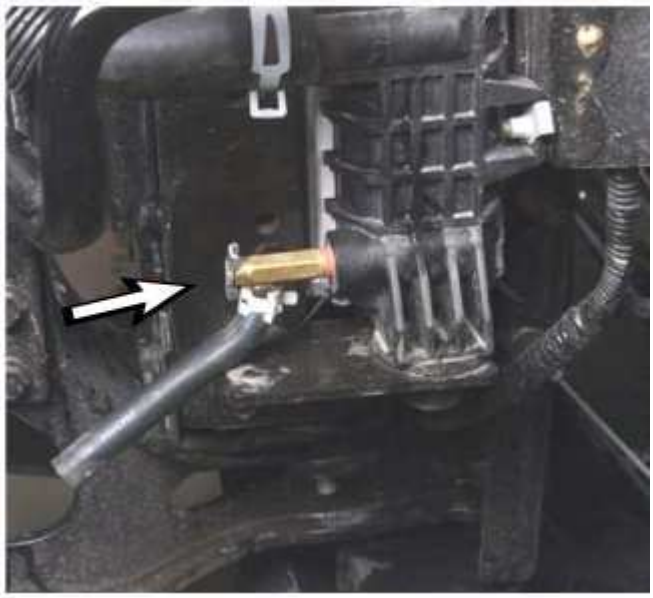

Illustration 2 g03445918

Lower "Low Temperature Radiator" (LTR) drain valve

2. Drain the rest of the cooling system at the lower radiator hose drain valve and the lower "Low Temperature Radiator" (LTR) drain valve. Refer to Illustrations 1 and 2.

   Note: If the fluid is too thick to drain out of the drain valve, then remove the lower radiator hose (if necessary).

3. Remove the surge tank. Clean the tank with detergent and hot water to remove the oil contaminants. Continue until clean.
4. Reinstall surge tank and hoses temporarily during coolant flush.
5. Open all heater valves.
6. Close all drain valves. Refill the cooling system with 3.8 L (1.0 US gal) of **269-1948** Soap (Non -Foaming), and the remaining amount with tap water.
7. Unplug the Coolant Control and Mixing valve. (Unplugging will cause the valves to default to open, allowing proper cleaning of the Low Temperature Coolant circuit.)
8. Run the engine at operating temperature for 20 minutes at 1200 rpm, then drain the system.
9. Repeat Steps 5 and 6 until all contaminants are removed from the cooling system.
10. Fill the cooling system with an appropriate mixture of water and **4C-4611** Cooling System Cleaner . Follow label instructions.
11. Run the engine at operating temperature for 20 minutes at 1200 rpm.
12. Drain the cooling system as described in Step 2.
13. Refill with water and run the engine for 5 minutes at 1200 rpm.
14. Drain the water.
15. Reconnect the Coolant Control and Mixing valve
16. Refer to Special Instruction, REHS5462, "Coolant Management Tool for the CT660 On Highway Truck". Fill the system with **238-8648** Extended Life Coolant 50/50 premix.