NEW FLYER

INSTRUCTION TO SERVICE

ITS: 6164	
SECTION:	231 Coolant System
WRITTEN BY:	Mike Pearson
SUBJECT:	Replace surge tank low coolant level sensor

ITS6164

PROCEDURE:

1. Turn the main battery disconnect switch to the “OFF” position.

⚠ CAUTION: To avoid personal injury from hot coolant, DO NOT work on the engine if it is hot and the coolant is steaming. Allow the engine to cool before working on the cooling system.

2. Open the coolant fill door and release the coolant system pressure completely by lifting the coolant pressure cap vent lever on the surge tank, see Figure 1 for location.

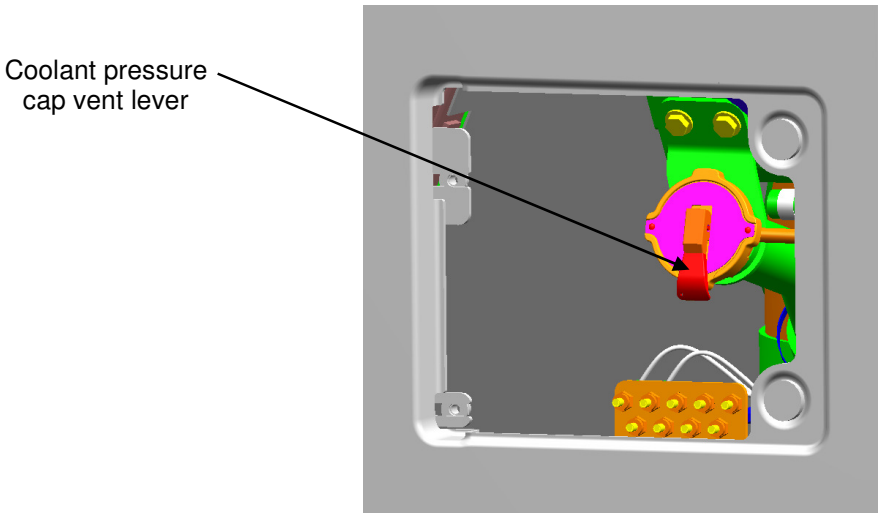


Figure 1: Surge Tank Coolant Pressure Cap Vent Lever

3. Open the rear exterior engine door.
4. Open the rear interior engine access door and locate the surge tank low coolant derate sensor harness (lower sensor is derate). Disconnect the existing low coolant derate sensor harness, see Figure 2.

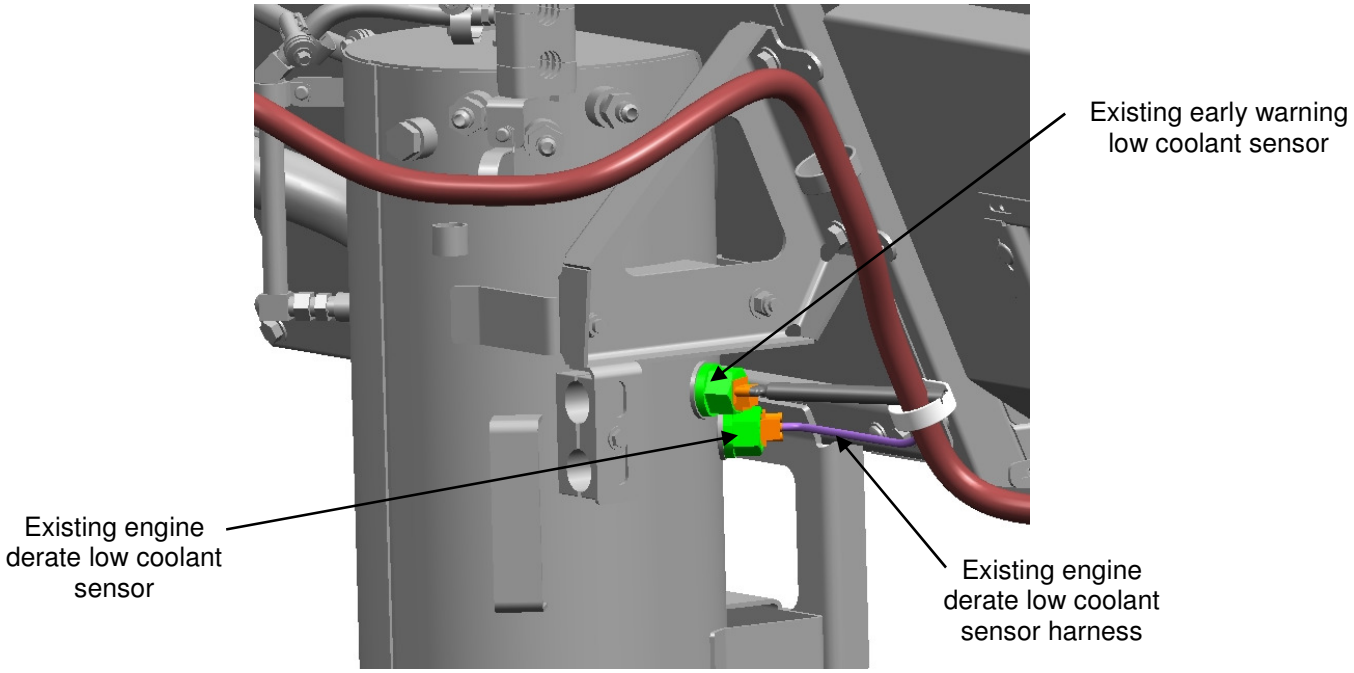
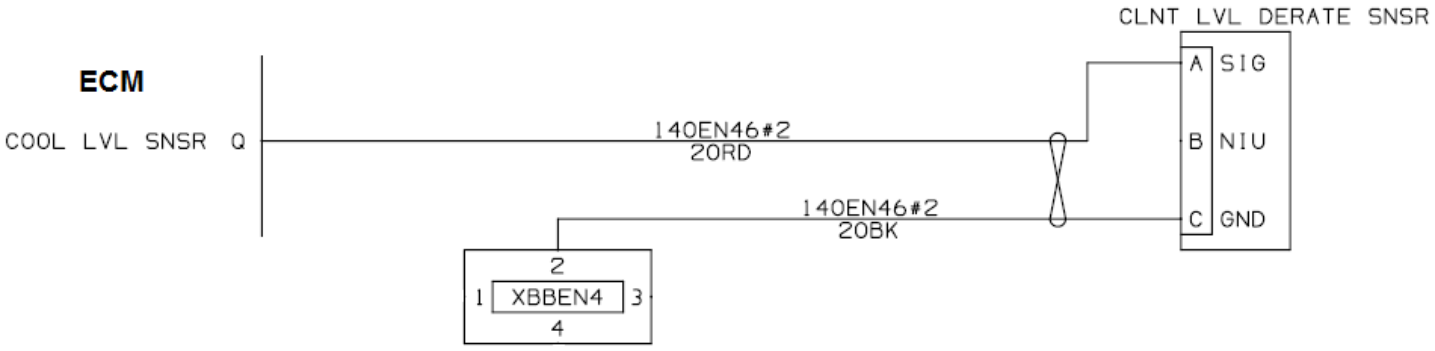


Figure 2: Low Coolant Sensor Locations

☞ **NOTE: When replacing or removing a low coolant sensor it should be replaced as quickly as possible to mitigate the amount of coolant lost during the replacement.**

5. Remove and discard the existing (derate) low coolant sensor and replace with new potted sensor p/n 610607. Urgency and care is to be taken when replacing the existing sensor with the new sensor. Swap the sensors as quickly as possible to minimize coolant loss. The new sensor orientation is not important. Torque sensor to 14-16 ft*lbs dry.
6. Cut off the existing 3 circuit tower as close as possible to the connector of the disconnected harness and terminate each wire with the supplied terminal (NF P/N 198432).
7. Insert wire 140EN46#2 (red) into supplied 2-pin Deutsch tower p/n 130029 from Kit p/n 166949 at cavity 1 (SIG).
8. Insert wire 140EN46#2 (black) into supplied 2-pin Deutsch tower p/n 130029 from Kit p/n 166949 at cavity 2 (GND).
9. Once the tower has been pinned insert the wedge lock p/n 130030 from Kit p/n 166949.
10. Connect the newly terminated low coolant harness from Step 9 to the newly installed surge tank low coolant derate sensor from Step 5. See Figure 3 for correct rework wiring schematic.

Existing Derate Low Coolant Sensor Circuit



Reworked Derate Low Coolant Sensor Circuit

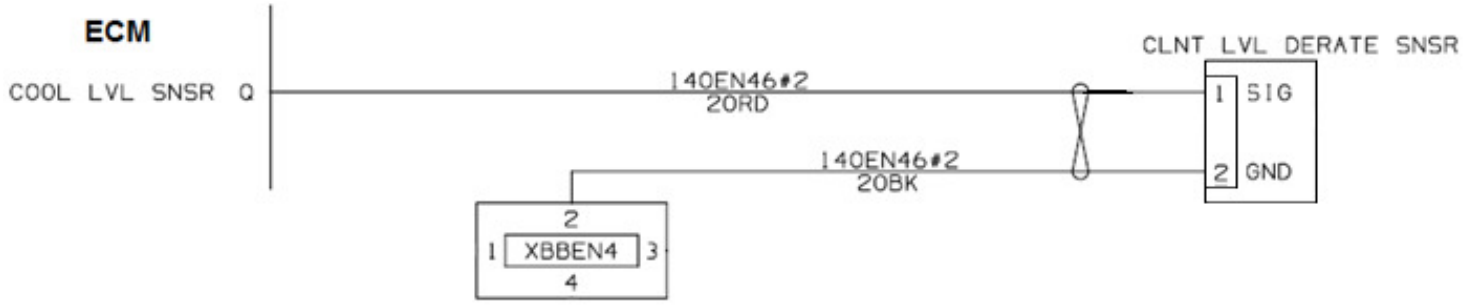


Figure 3: Surge Tank Derate Low Coolant Sensor Circuit

11. Secure to existing structure and/or existing harnesses where possible for support using tyrap p/n 5958112 (x4). Harness routing should have not have any sharp bends or undue stress applied to the harness.

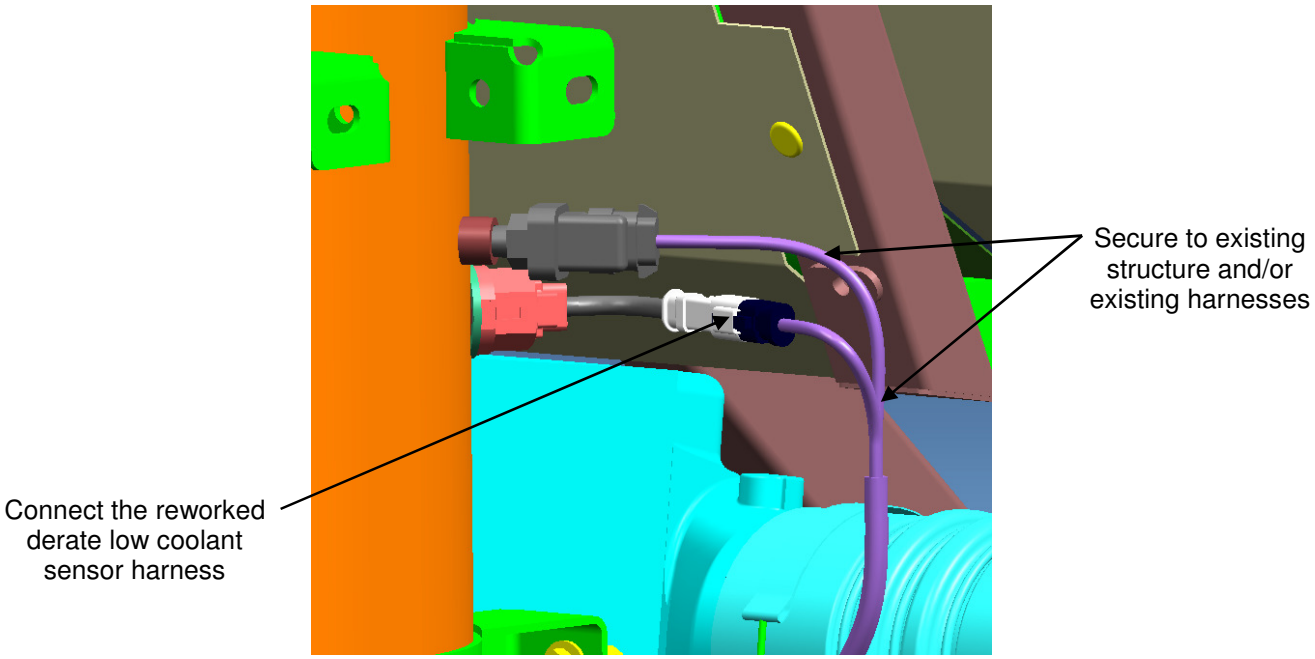


Figure 4: Surge Tank Low Coolant Sensors

12. Close the rear interior and exterior engine access doors.
13. Close the coolant fill door.
14. Turn the main battery disconnect switch to the “ON” position.
15. Run the engine for 5 minutes at low idle and top up coolant if needed.

NEW FLYER

LABOUR ESTIMATE

	Operation	Men	Hours	Labour Time M X HR
1	Replace surge tank low coolant level sensor	1	0.75	0.75

PARTS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	610607	Sensor-Low Coolant Level	1	EA	Vpn 4359193
2	166949	Kit-2 Circuit Tower, Deutsch	1	EA	
3	5958112	Tyrap-7” Black	4	EA	
4	198432	Terminal-20GA #16 Socket	2	EA	