

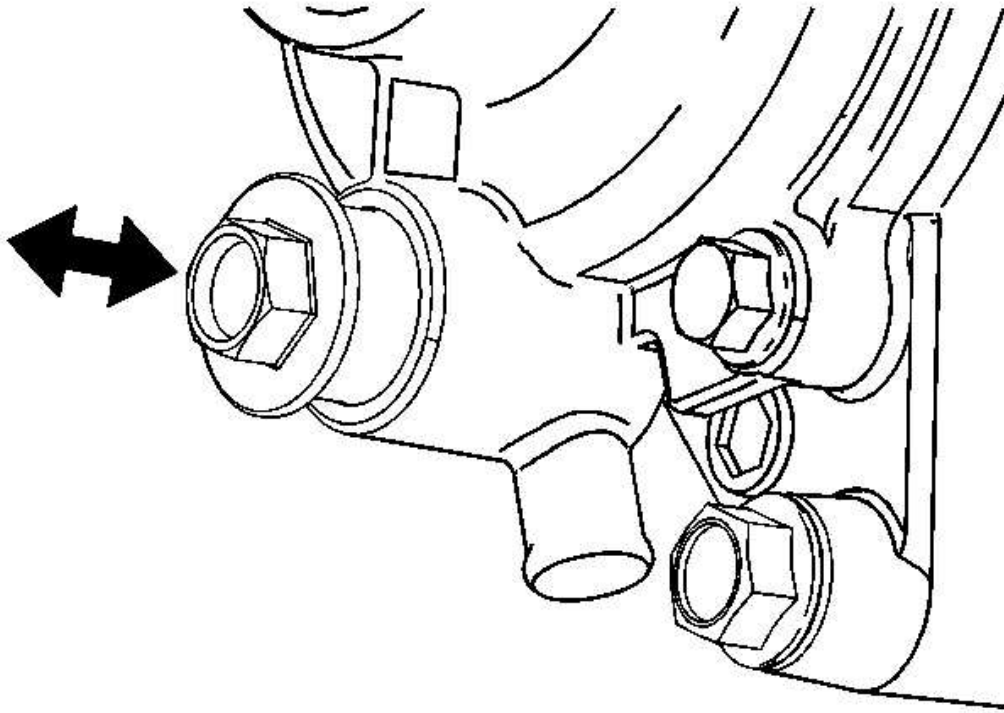
Removal Procedure

Fig. 57: Opening Water Pump Drain Plug (2.2L)

Courtesy of GENERAL MOTORS CORP.

1. Drain the cooling system. Refer to **Draining and Filling Cooling System (Static Fill)** or **Draining and Filling Cooling System (GE 47716 Fill)**.

IMPORTANT: A drain has been provided at the bottom of the water pump for engine block coolant drainage.

2. Drain the coolant from the engine block at the water pump drain. After the coolant has drained, tighten the drain bolt.
3. Lower the vehicle.

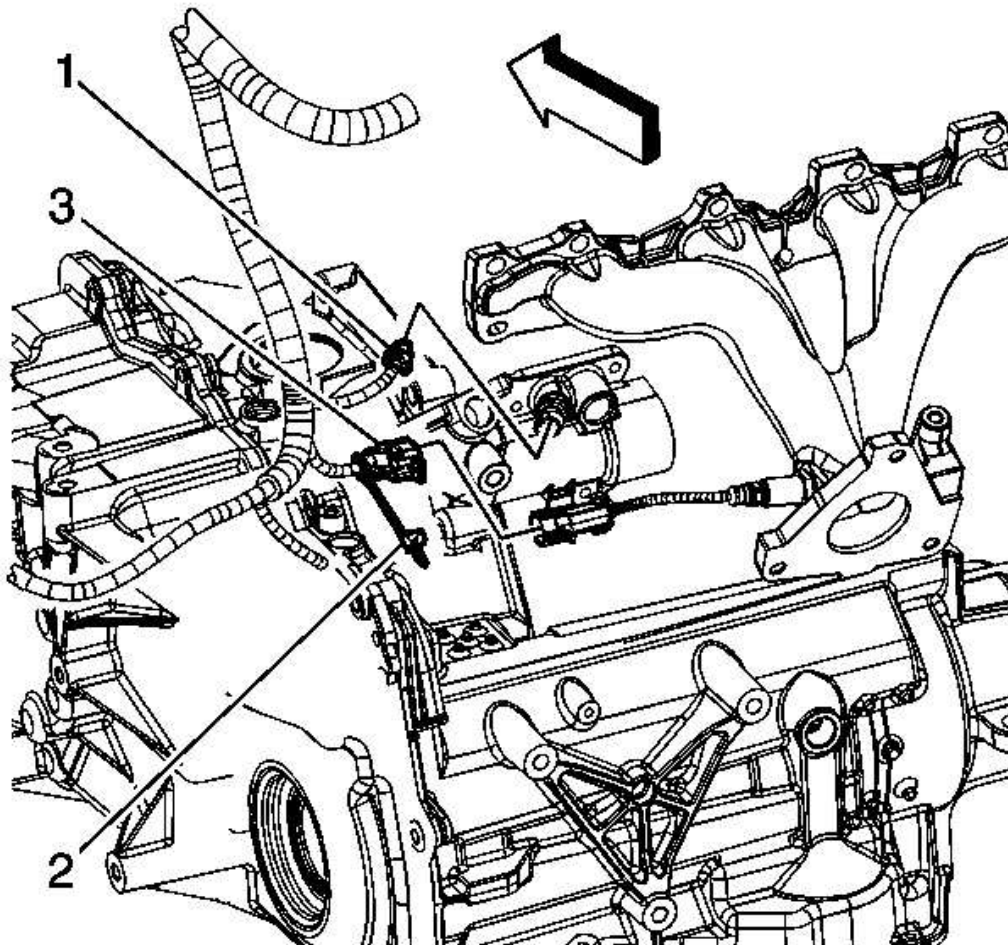


Fig. 58: ECT Sensor Connector (A/T)
Courtesy of GENERAL MOTORS CORP.

4. If equipped with a automatic transaxle, perform the following steps, disconnect the engine coolant temperature (ECT) sensor electrical connector (1).
5. Disconnect the heated oxygen sensor (HO2S) electrical connector clip from the thermostat housing.

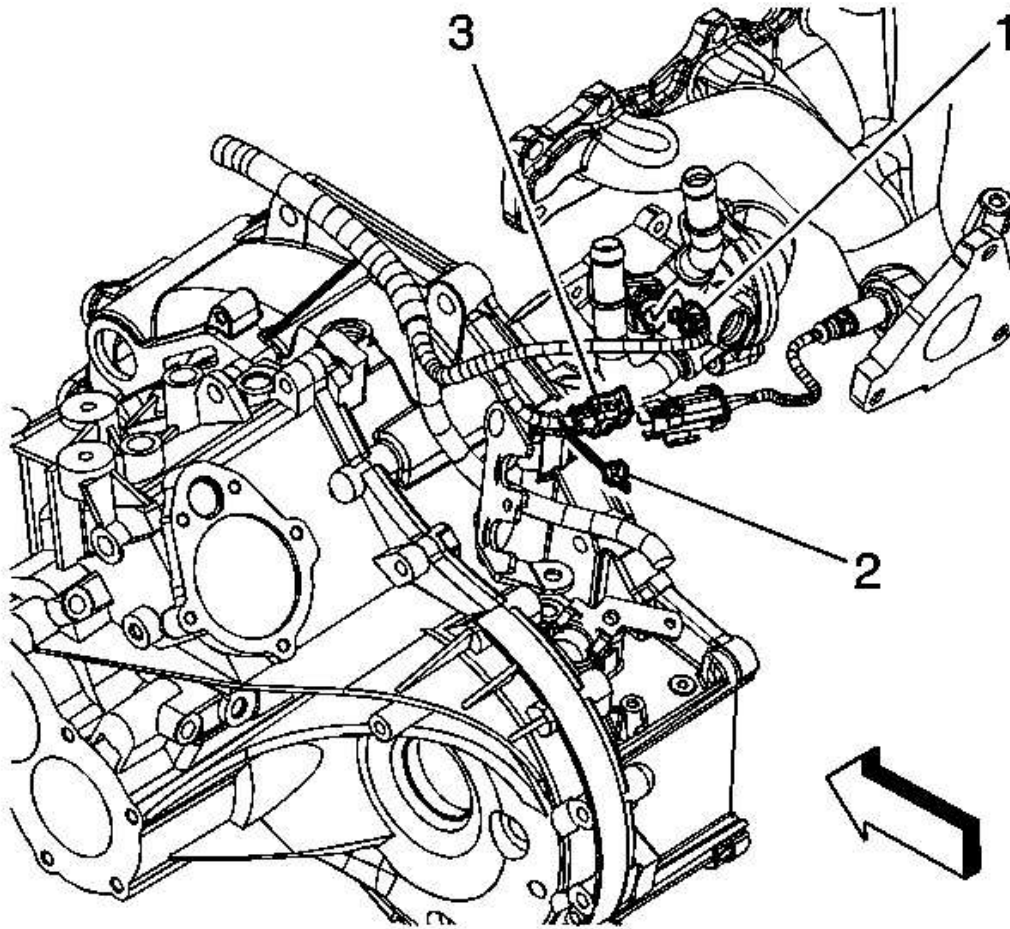


Fig. 59: ECT Sensor Electrical Connector (M/T)

Courtesy of GENERAL MOTORS CORP.

6. If equipped with a manual transaxle, disconnect the ECT sensor electrical connector (1).

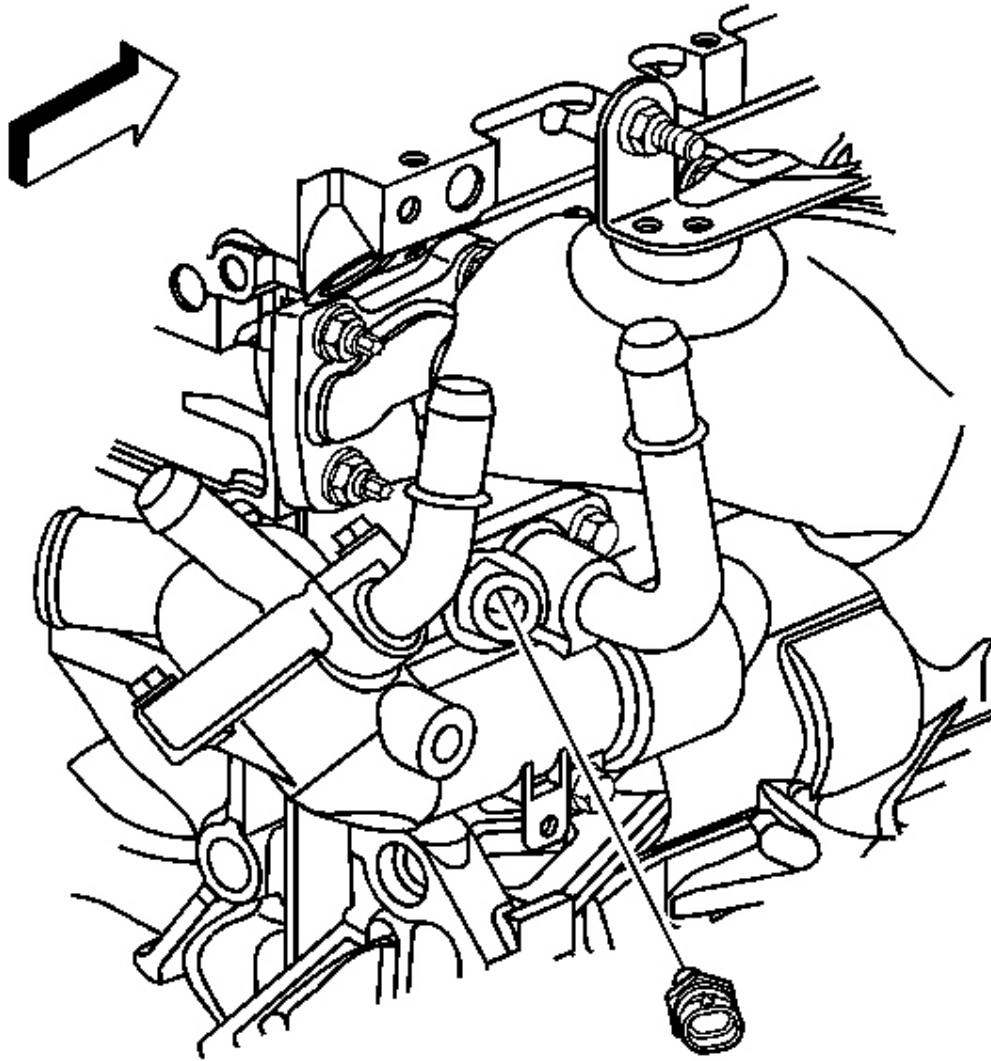


Fig. 60: ECT Sensor
Courtesy of GENERAL MOTORS CORP.

7. Remove the ECT sensor, if necessary.

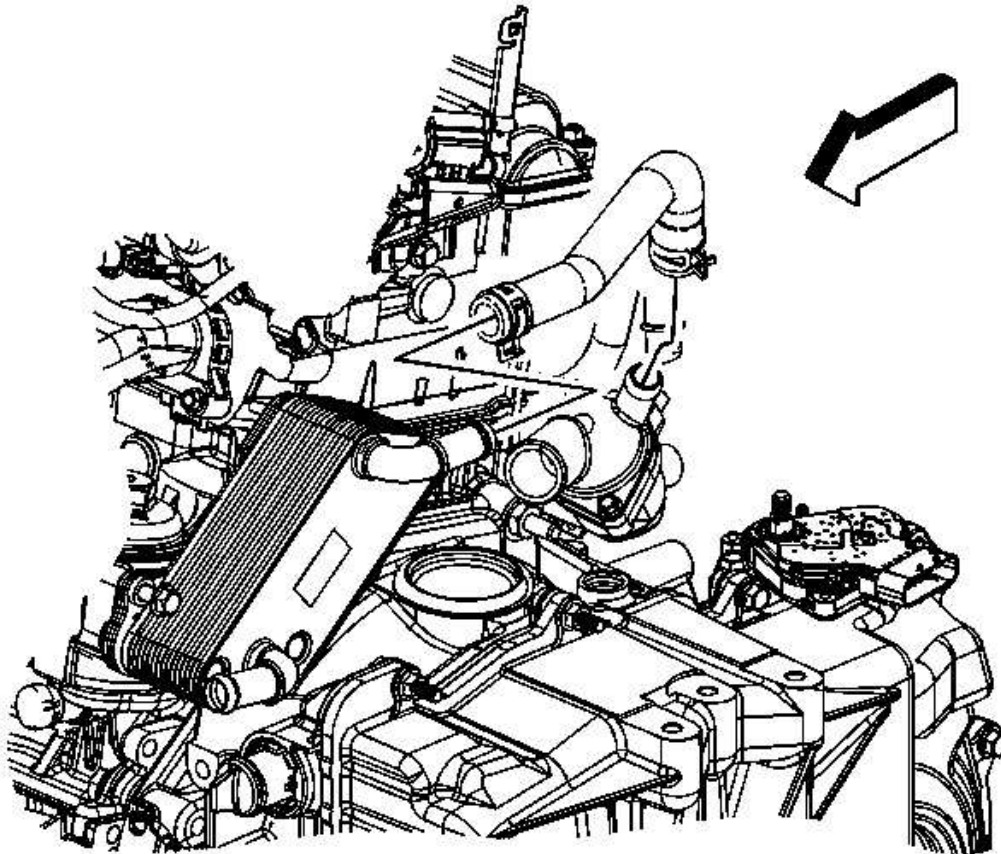


Fig. 61: Oil Cooler Outlet Hose
Courtesy of GENERAL MOTORS CORP.

8. Reposition the oil cooler outlet hose clamp at the thermostat housing.
9. Remove the oil cooler outlet hose from the thermostat housing.

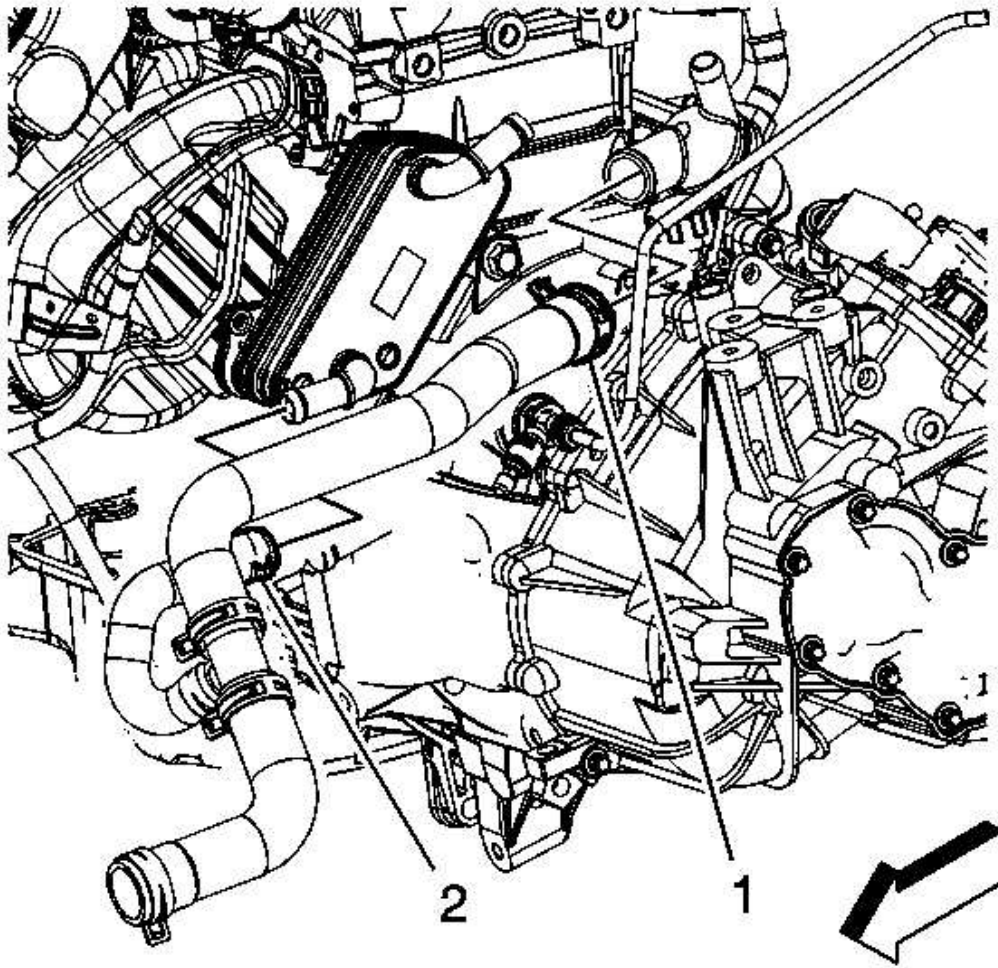


Fig. 62: Radiator Outlet Hose
Courtesy of GENERAL MOTORS CORP.

10. Reposition the radiator outlet hose clamp (1) at the thermostat housing.
11. Remove the radiator outlet hose from the thermostat housing.

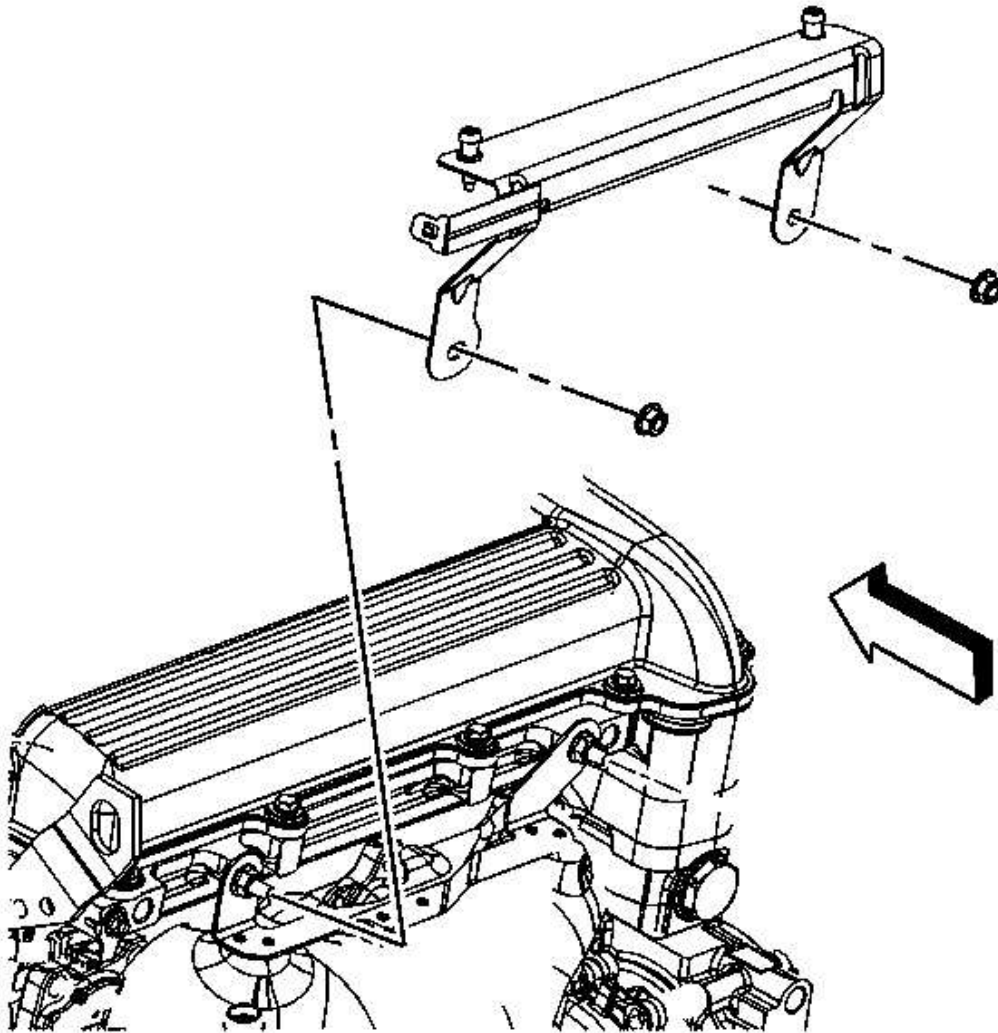


Fig. 63: Air Cleaner Bracket
Courtesy of GENERAL MOTORS CORP.

12. Remove the air cleaner bracket nuts.
13. Remove the air cleaner bracket.

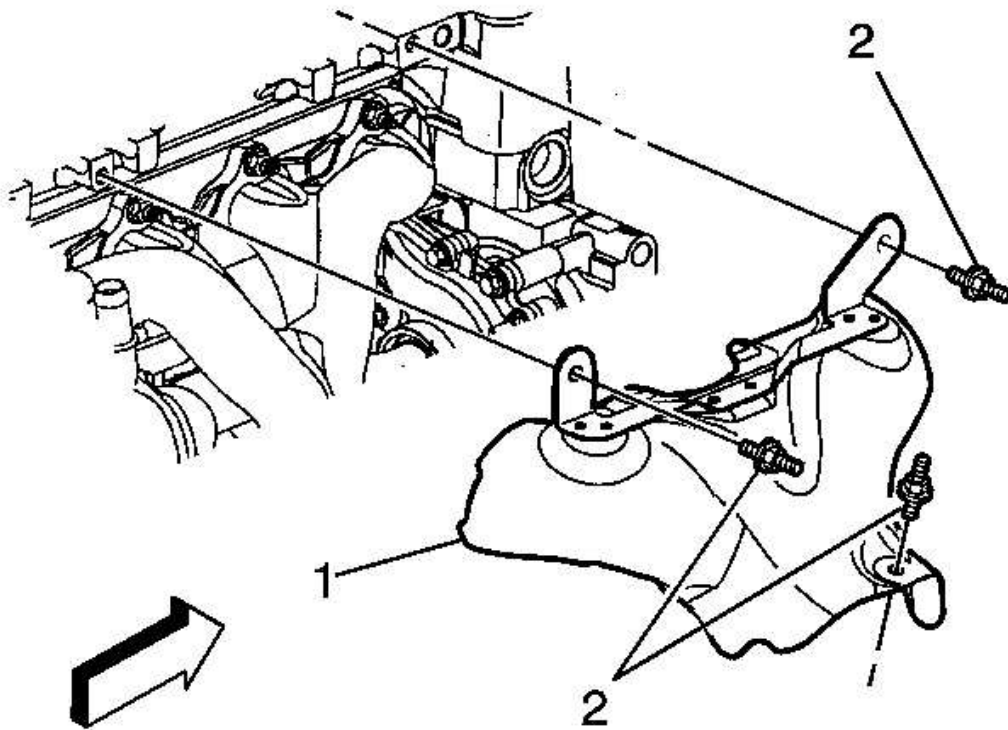


Fig. 64: Exhaust Heat Shield
Courtesy of GENERAL MOTORS CORP.

14. Remove the exhaust heat shield studs (2).
15. Remove the exhaust heat shield (1).

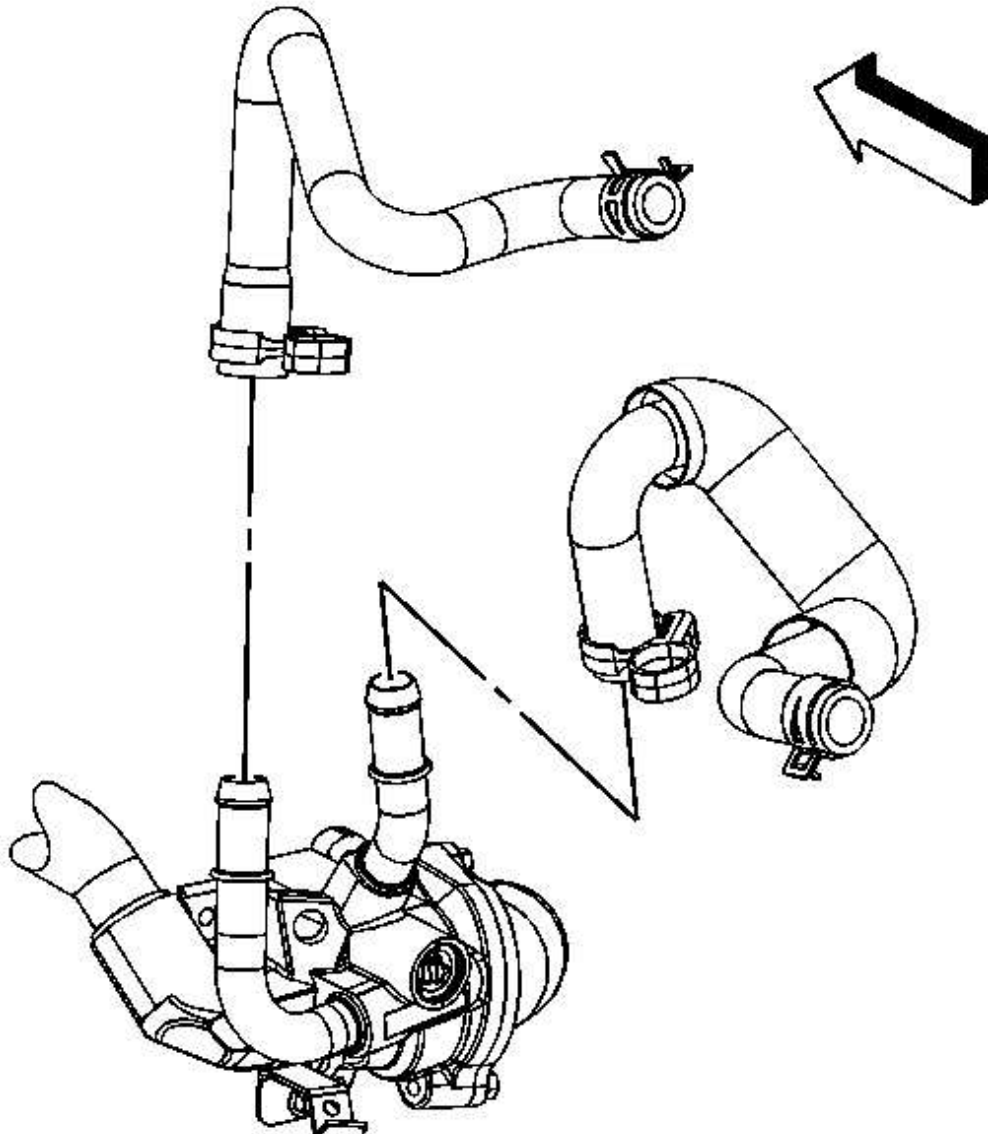


Fig. 65: Heater Inlet And Outlet Hoses
Courtesy of GENERAL MOTORS CORP.

16. Reposition the heater inlet and outlet hose clamps at the thermostat housing pipes.
17. Disconnect the heater inlet and outlet hoses from the thermostat housing pipes.
18. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#) .

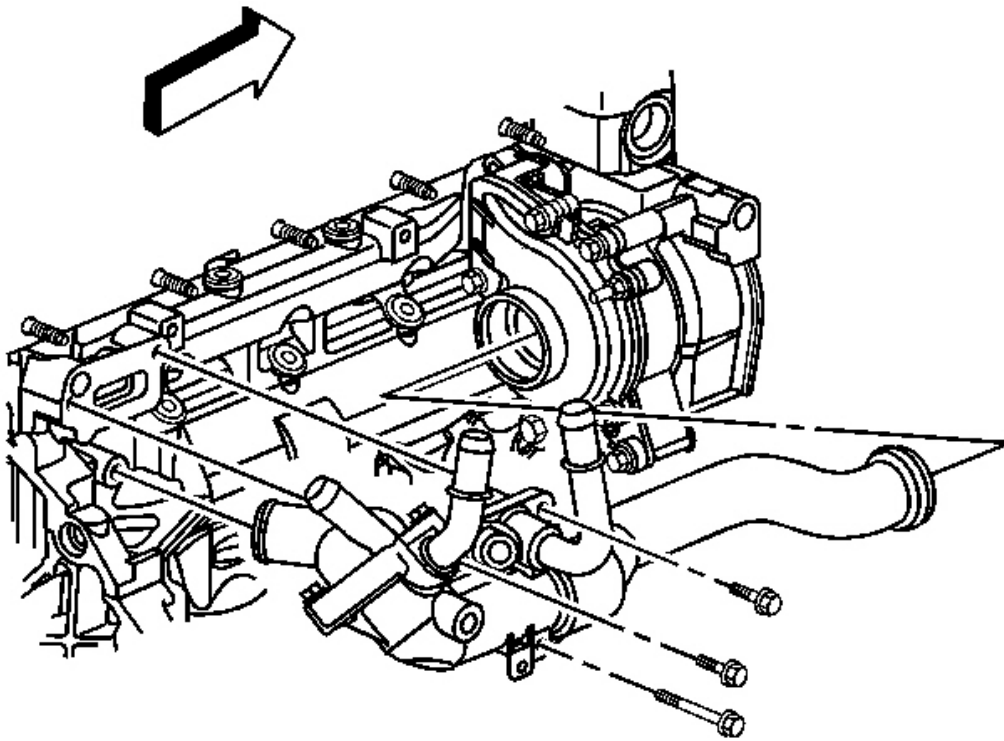


Fig. 66: Thermostat Housing
Courtesy of GENERAL MOTORS CORP.

19. Remove the thermostat housing bolts.

IMPORTANT: Twist the water transfer pipe while pulling in order to remove it from the water pump.

20. Remove the thermostat housing from the vehicle.
21. Remove the water transfer pipe from the thermostat housing, if necessary.
22. Remove and discard the water transfer pipe O-ring seals, if necessary.

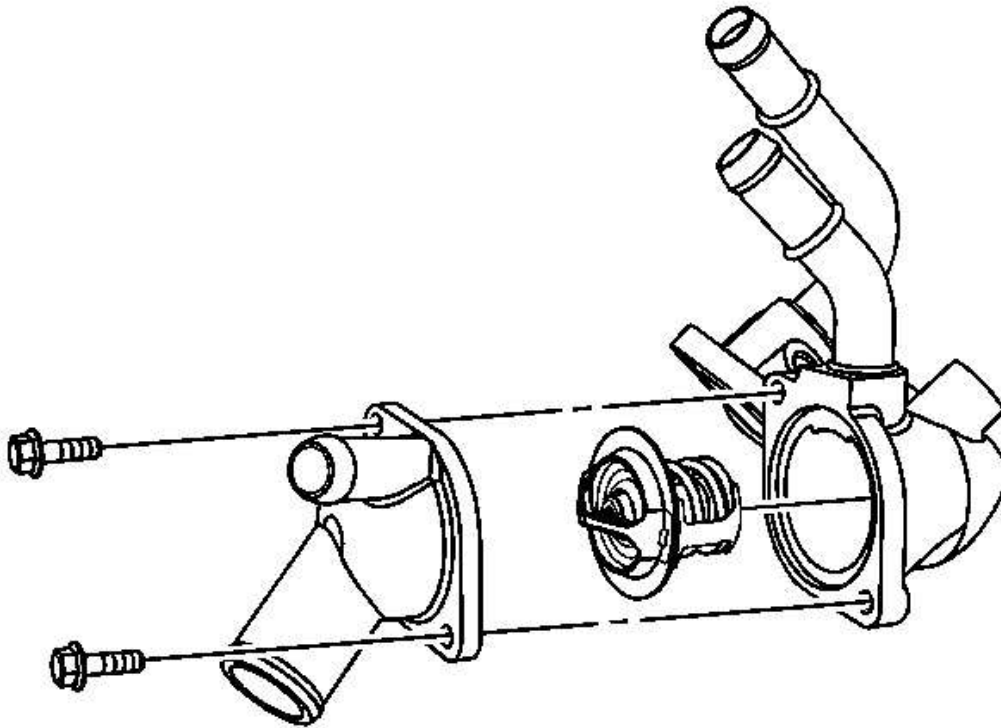


Fig. 67: Thermostat Housing Cover Bolts And Cover
Courtesy of GENERAL MOTORS CORP.

23. Remove the thermostat housing cover bolts and cover, if necessary.
24. Remove the thermostat, if necessary.
25. Remove and discard the thermostat housing O-ring seal, if necessary.
26. Remove all debris and thread sealant from the engine coolant temperature sensor and bolt holes if the housing is being re-used.