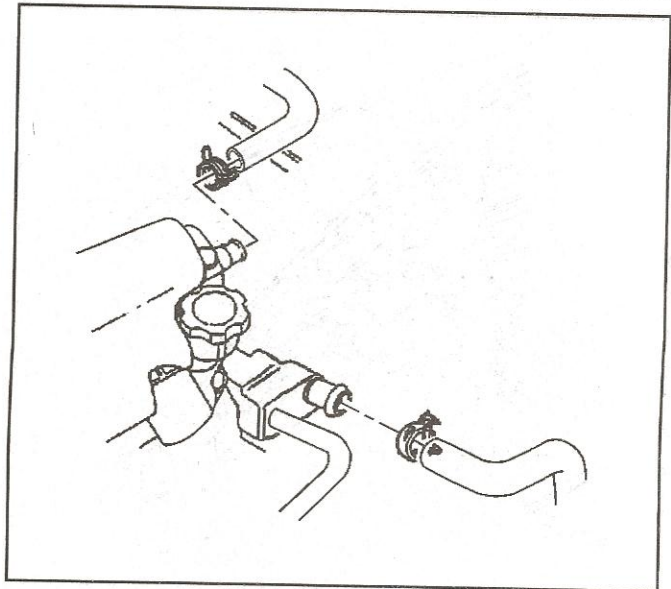
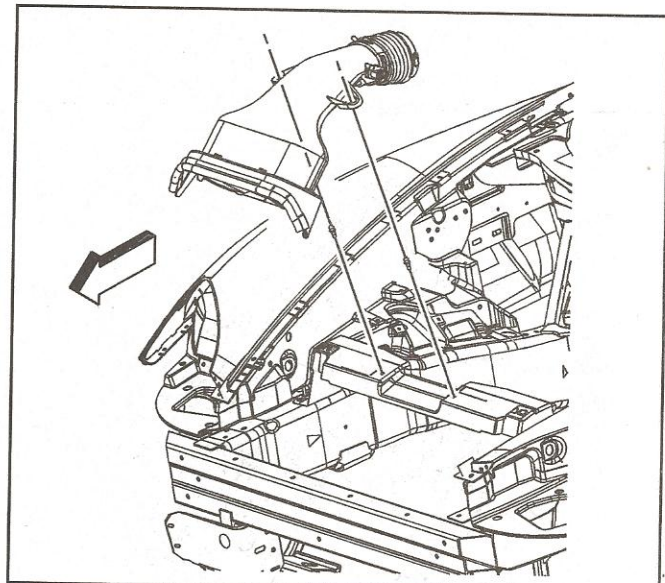


5. Install the inlet and outlet hoses to the water pump.
6. Position the inlet and outlet hose clamps at the water pump.
7. Install the accessory drive belt. Refer to *Drive Belt Replacement - Accessory* on page 6-341.
8. Fill the cooling system. Refer to *Draining and Filling Cooling System (Static Fill)* on page 6-608 or *Draining and Filling Cooling System (GE 47716)* on page 6-609.



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9. Install the air cleaner intake duct.



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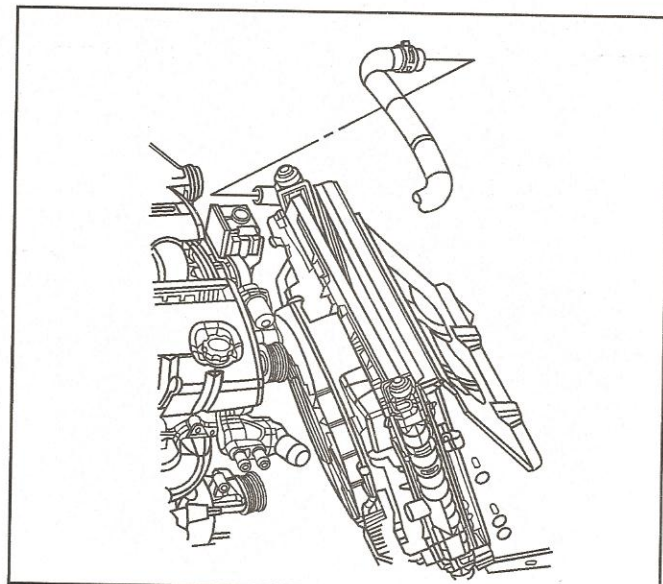
Radiator Replacement

Tools Required

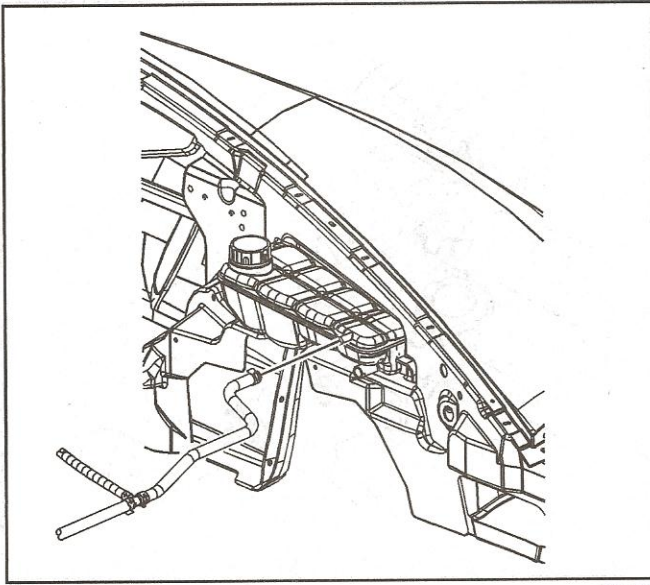
- J 38185 Hose Clamp Pliers
- J 39400-A Halogen Leak Detector

Removal Procedure

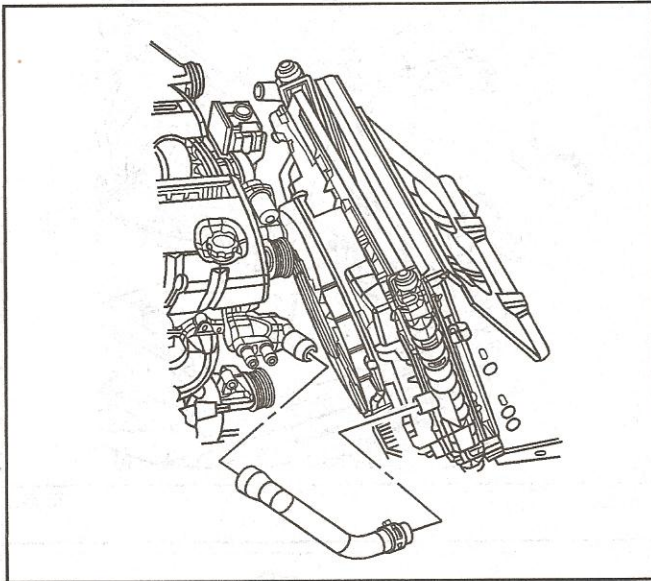
1. Recover the refrigerant from the A/C system. Refer to *Refrigerant Recovery and Recharging* on page 1-27.
2. Drain the cooling system. Refer to *Draining and Filling Cooling System (Static Fill)* on page 6-608 or *Draining and Filling Cooling System (GE 47716)* on page 6-609.
3. Remove the condenser. Refer to *Condenser Replacement* on page 1-53.
4. Disengage tension on the radiator inlet hose clamp at the radiator using J 38185.
5. Disconnect the radiator inlet hose from the radiator.



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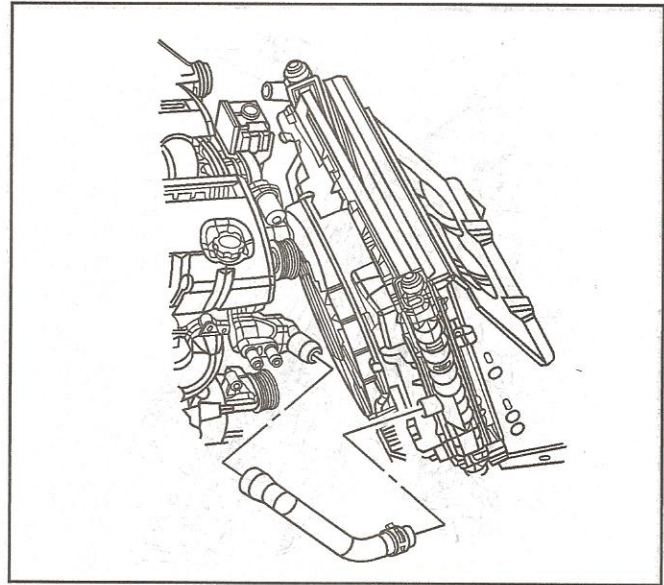
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Important: Lift up on the cooling fan and shroud assembly to disengage the tabs from the radiator slots.

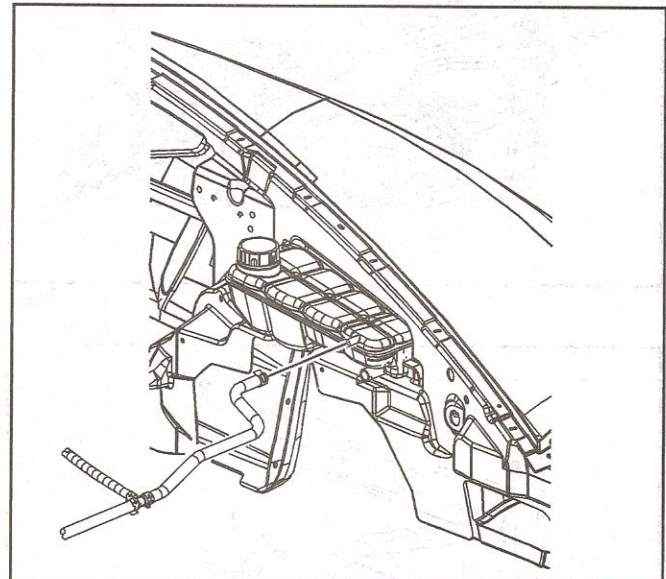
6. Remove the cooling fan and shroud assembly from the radiator. Refer to *Cooling Fan and Shroud Replacement* on page 6-629.
7. Disengage tension and reposition the surge tank inlet hose clamp at the radiator.
8. Disconnect the surge tank inlet hose from the radiator.
9. Vehicles equipped with a transmission oil cooler, disconnect the upper transmission oil cooler line from the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264.
10. Vehicles equipped with a engine oil cooler, disconnect the upper engine oil cooler line from the radiator. Refer to *Engine Oil Cooler Hose/Pipe Replacement (KPS)* on page 6-626 or *Engine Oil Cooler Hose/Pipe Replacement (w/o KPS)* on page 6-627.
11. Raise and support the vehicle. Refer to *Lifting and Jacking the Vehicle* on page 0-22.
12. Disengage tension on the radiator outlet hose clamp at the radiator using the *J 38185*.
13. Disconnect the radiator outlet hose from the radiator.
14. Vehicles equipped with a transmission oil cooler, disconnect the lower transmission oil cooler line from the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264.
15. Vehicles equipped with a engine oil cooler, disconnect the lower engine oil cooler line from the radiator. Refer to *Engine Oil Cooler Hose/Pipe Replacement (KPS)* on page 6-626 or *Engine Oil Cooler Hose/Pipe Replacement (w/o KPS)* on page 6-627.
16. Remove the radiator from the vehicle.

Installation Procedure

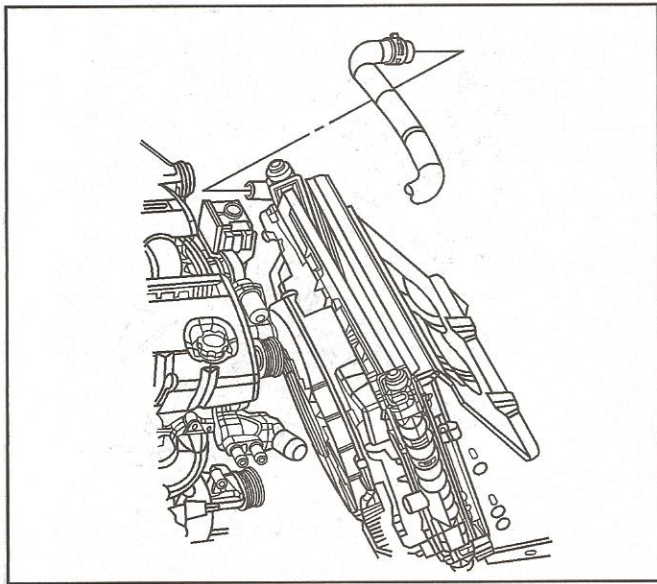
1. Install the radiator to the vehicle.
 2. Raise the vehicle.
 3. Vehicles equipped with a engine oil cooler, connect the lower engine oil cooler line to the radiator. Refer to *Engine Oil Cooler Hose/Pipe Replacement (KPS)* on page 6-626 or *Engine Oil Cooler Hose/Pipe Replacement (w/o KPS)* on page 6-627.
 4. Vehicles equipped with a transmission oil cooler, connect the lower transmission oil cooler line to the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264.
 5. Connect the radiator outlet hose to the radiator.
 6. Engage tension on the radiator outlet hose clamp at the radiator.
 7. Lower the vehicle.
 8. Vehicle equipped with a transmission oil cooler, connect the upper transmission oil cooler line to the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264.
 9. Vehicles equipped with a engine oil cooler, connect the upper engine oil cooler line to the radiator. Refer to *Engine Oil Cooler Hose/Pipe Replacement (KPS)* on page 6-626 or *Engine Oil Cooler Hose/Pipe Replacement (w/o KPS)* on page 6-627.
 10. Connect the surge tank inlet hose to the radiator.
 11. Engage tension on the surge tank inlet hose clamp at the radiator.
- Important:** Lift up on the cooling fan and shroud assembly and engage the tabs to the radiator slots.
12. Install the cooling fan and shroud assembly to the radiator. Refer to *Cooling Fan and Shroud Replacement* on page 6-629.



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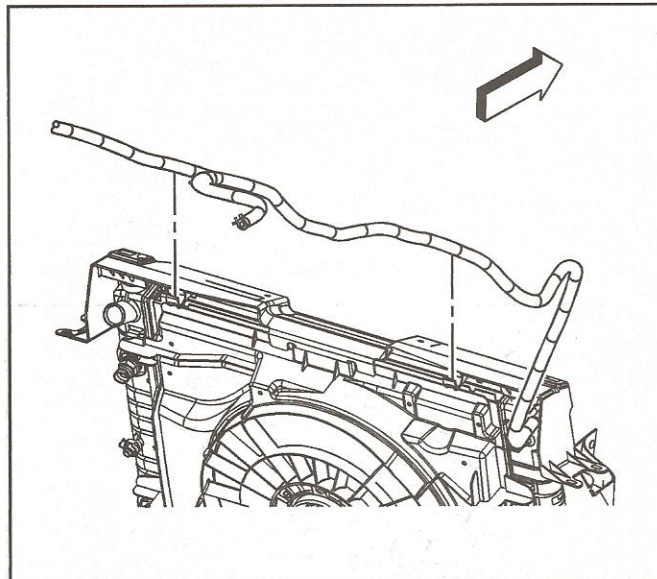


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13. Connect the radiator inlet hose to the radiator.
14. Engage tension on the radiator inlet hose clamp at the radiator using *J 38185*.
15. Install the condenser. Refer to *Condenser Replacement* on page 1-53.
16. Fill the cooling system. Refer to *Draining and Filling Cooling System (Static Fill)* on page 6-608 or *Draining and Filling Cooling System (GE 47716)* on page 6-609.
17. Evacuate and recharge the A/C system. Refer to *Refrigerant Recovery and Recharging* on page 1-27.
18. Leak test the fittings of the component using *J 39400-A*.
19. Inspect the transmission fluid level. Refer to *Transmission Fluid Checking Procedure* on page 7-224.

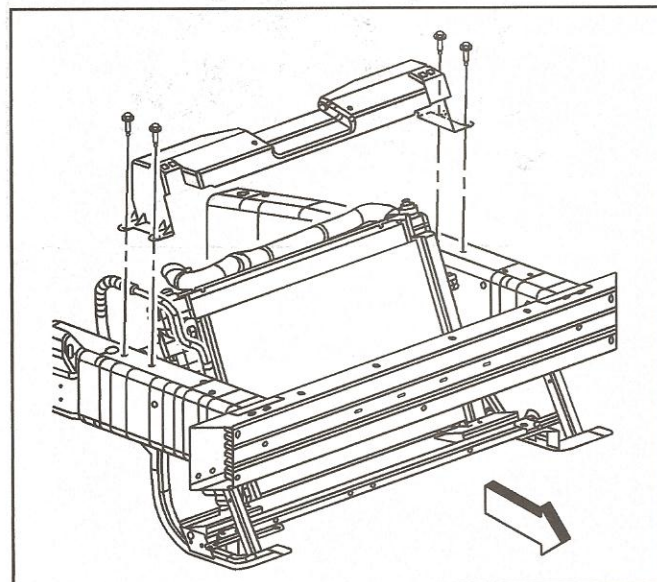


1481369

Radiator Support Replacement

Removal Procedure

1. Remove the air cleaner assembly. Refer to *Air Cleaner Assembly Replacement* on page 6-1143 in Engine Controls – 6.0L.
2. Disconnect the surge tank inlet hose assembly from the radiator support tabs.



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3. Remove the radiator support bolts.

Condenser Replacement

Tools Required

J 39400-A Halogen Leak Detector

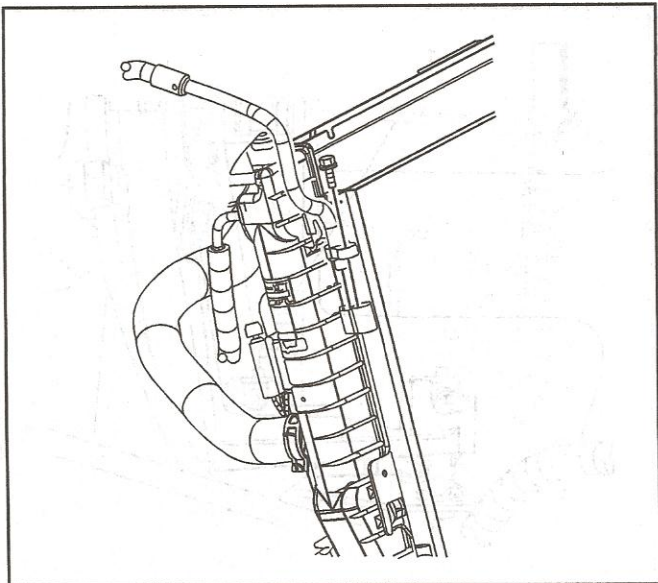
Removal Procedure

Important: The condenser and receiver dehydrator are integrated and cannot be serviced separately.

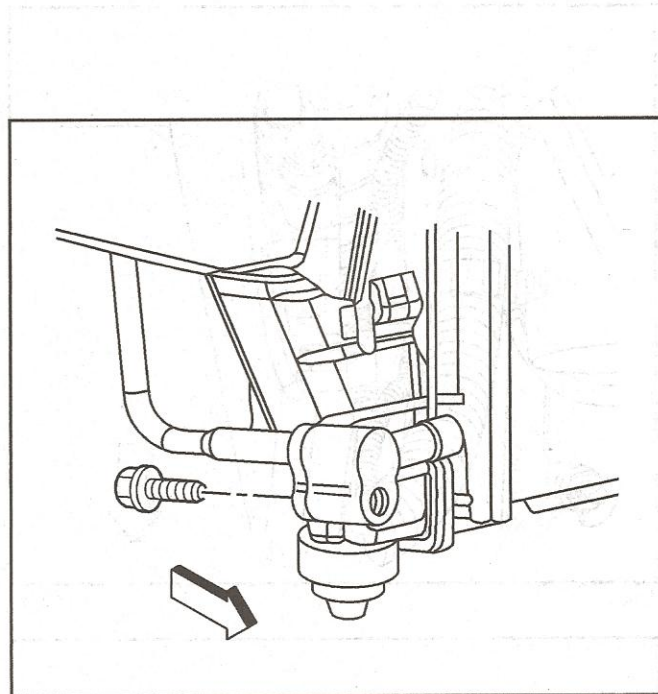
1. Recover the refrigerant from the A/C system. Refer to *Refrigerant Recovery and Recharging* on page 1-27.
2. Remove the upper radiator support. Refer to *Radiator Support Replacement* on page 6-644 in Engine Cooling.
3. Remove the A/C compressor hose assembly to A/C condenser fitting bolt.

Important: Cap or tape the open A/C components immediately to prevent system contamination.

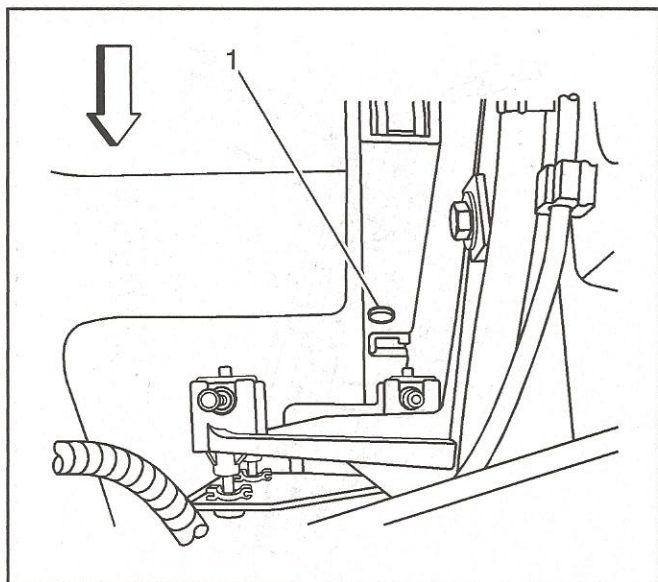
4. Disconnect the A/C compressor hose assembly from the A/C condenser fitting.
5. Remove and discard the seal washer.
6. Cap or tape the A/C compressor hose assembly.
7. Raise and support the vehicle. Refer to *Lifting and Jacking the Vehicle* on page 0-22 in General Information.
8. Remove the front evaporator inlet line bolt from the A/C condenser.
9. Disconnect the front evaporator inlet line from the A/C condenser.
10. Remove and discard the seal washer.
11. Cap or tape the front evaporator inlet line.
12. Lower the vehicle.



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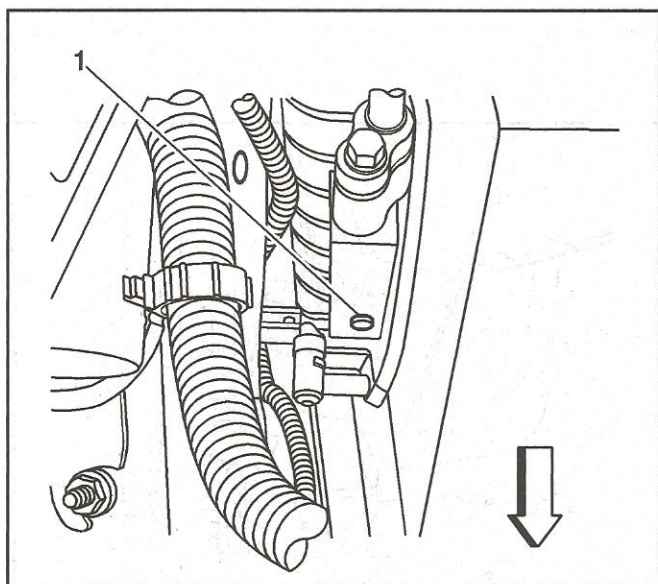


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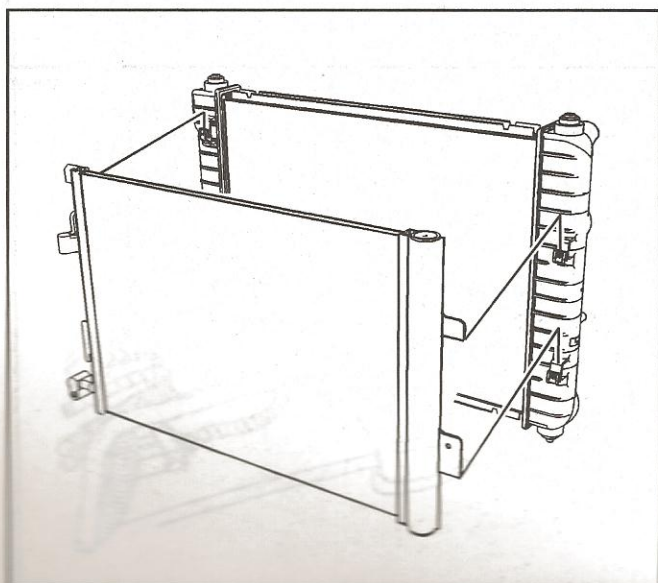
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13. Remove the LH radiator air baffle upper retainer pin (1).



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14. Remove the RH radiator air baffle upper retainer pin (1).



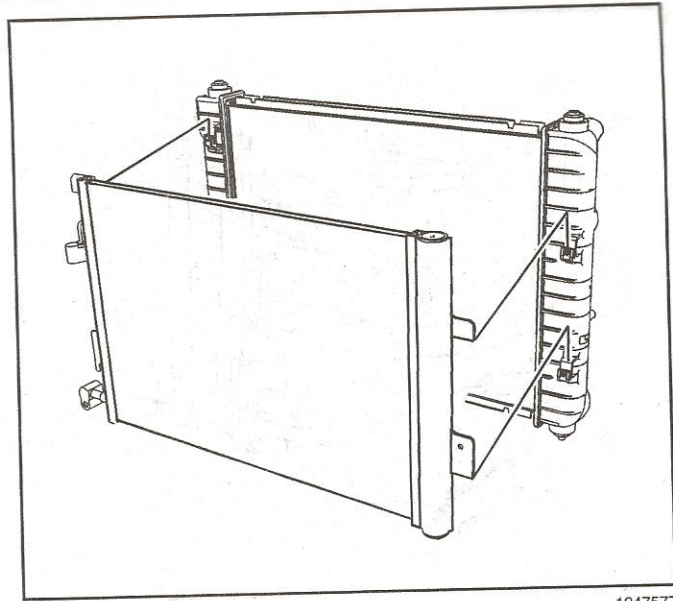
1247577

Important: Gently tilt the air baffle forward for additional clearance when removing A/C condenser.

15. Raise the A/C condenser along the radiator to release the A/C condenser tabs from the radiator slots.
16. Remove the A/C condenser from the vehicle.

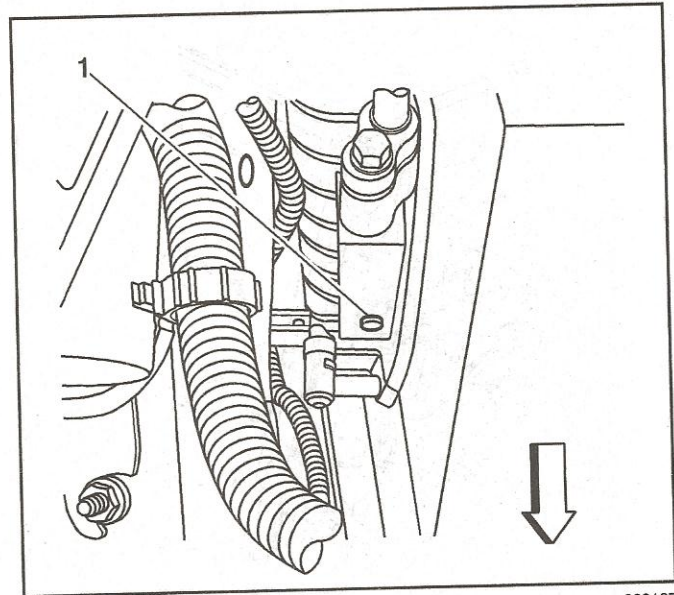
Installation Procedure

1. If replacing the condenser, add the specified amount of PAG oil directly to the condenser. Refer to *Refrigerant System Capacities* on page 1-4.
2. Position the A/C condenser into the vehicle.
3. Lower the A/C condenser to secure the A/C condenser tabs into the radiator slots.



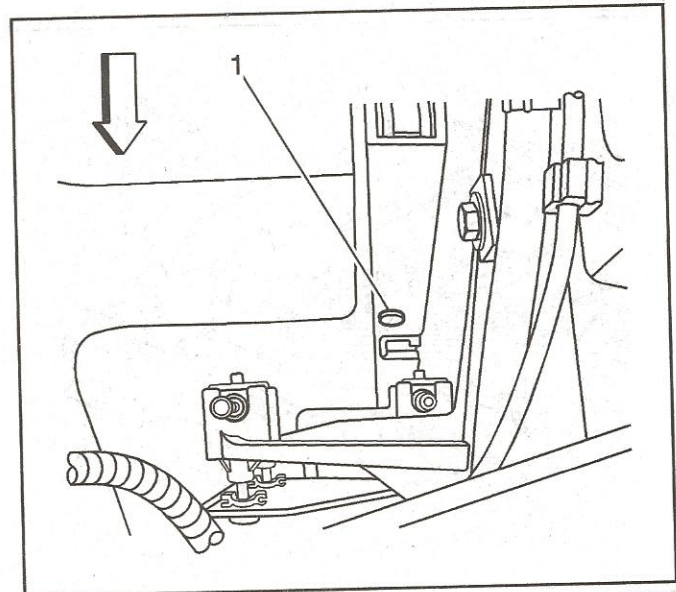
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4. Remove the RH radiator air baffle upper retainer pin (1).

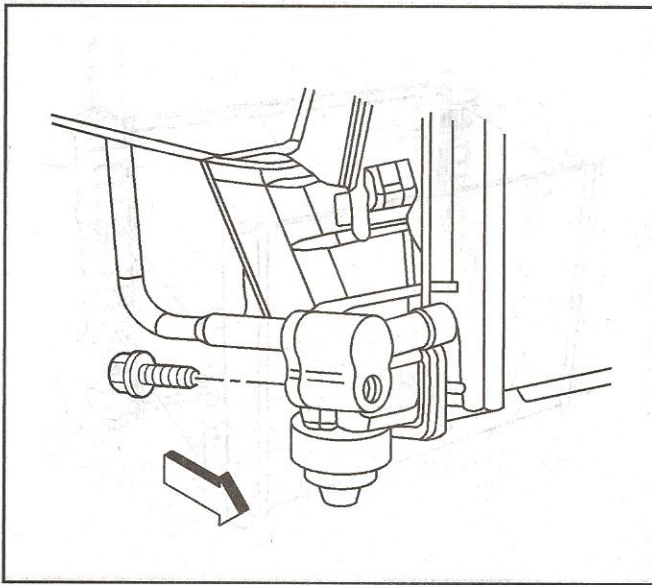


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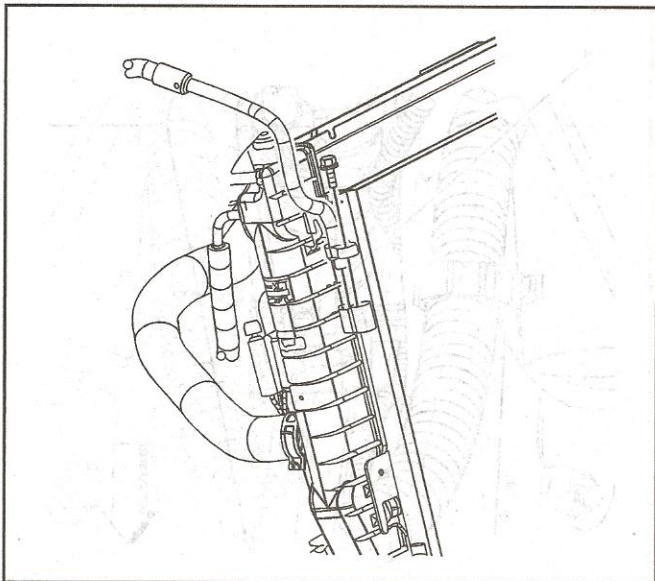
5. Remove the LH radiator air baffle upper retainer pin (1).



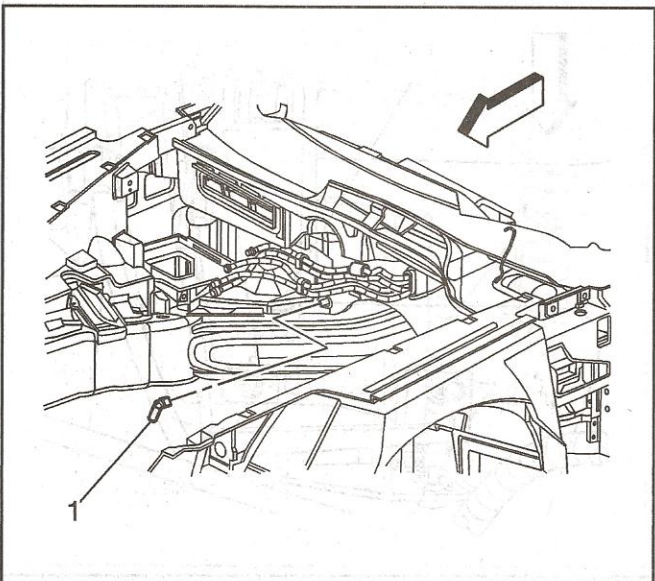
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6. Raise and support the vehicle.
7. Remove the cap or tape from the front evaporator inlet line.
8. Install a new seal washer onto the front evaporator inlet line. Refer to *Sealing Washer Replacement* on page 1-36.
9. Connect the front evaporator inlet line to the A/C condenser.

Notice: Refer to *Fastener Notice* on page P-10 in Cautions and Notices.

10. Install the front evaporator inlet line bolt.

Tighten

Tighten the bolt to 16 N·m (12 lb ft).

11. Lower the vehicle.
12. Remove the cap or tape from the A/C compressor hose assembly.
13. Install a new seal washer to the A/C compressor hose assembly. Refer to *Sealing Washer Replacement* on page 1-36.
14. Connect the A/C compressor hose assembly to the A/C condenser.
15. Install the A/C compressor hose assembly to A/C condenser bolt (1).

Tighten

Tighten the bolt to 16 N·m (12 lb ft).

16. Install the upper radiator support. Refer to *Radiator Support Replacement* on page 6-644 in Engine Cooling.
17. Evacuate and recharge the A/C system. Refer to *Refrigerant Recovery and Recharging* on page 1-27.
18. Leak test the fittings of the component using J 39400-A.

HVAC Module Assembly Replacement

Tools Required

J 39400-A Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to *Refrigerant Recovery and Recharging* on page 1-27.
2. Drain the cooling system. Refer to *Draining and Filling Cooling System (Static Fill)* on page 6-608 or *Draining and Filling Cooling System (GE 47716)* on page 6-609 in Engine Cooling.
3. Remove the heater pipe assembly. Refer to *Heater Pipes Replacement* on page 1-76.
4. Remove the evaporator drain tube (1) from the HVAC module.

Installation Procedure

1. Install new engine oil cooler hose/pipe seals.
2. Install the external engine oil cooler.

Notice: Refer to *Fastener Notice on page P-10*.

3. Install the external engine oil cooler retaining bolts.

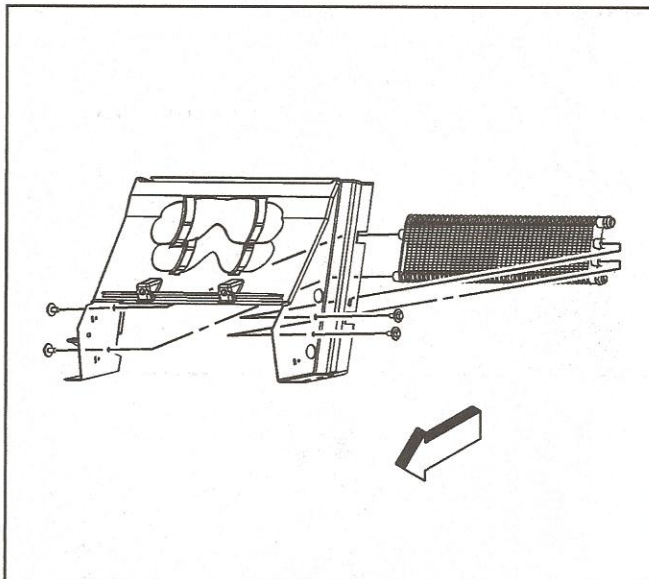
Tighten

Tighten the bolts to 10 N·m (89 lb in).

4. Remove the oil drain pan from under the vehicle.

Important: The quick connect fitting must be pushed on and then pulled back to verify proper connector engagement.

5. Install the engine oil cooler hose/pipes to the external oil cooler. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting on page 6-624*.
6. Install the fascia close out panel and fascia bolts. Refer to *Fascia, Valence, Fascia Close Out Panel Replacement - Front Bumper on page 8-77*.
7. Install the left fender liner. Refer to *Fender, Insulator, Liner, Brake Caliper Cooling Duct Replacement - Front on page 8-17*.
8. Refill the engine with oil and check for leaks.



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Cooling Fan and Shroud Replacement

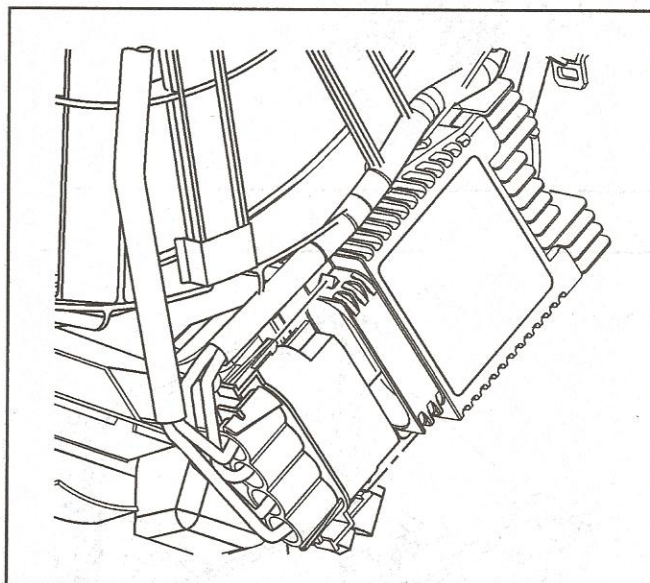
Removal Procedure

Caution: An electric fan under the hood can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.

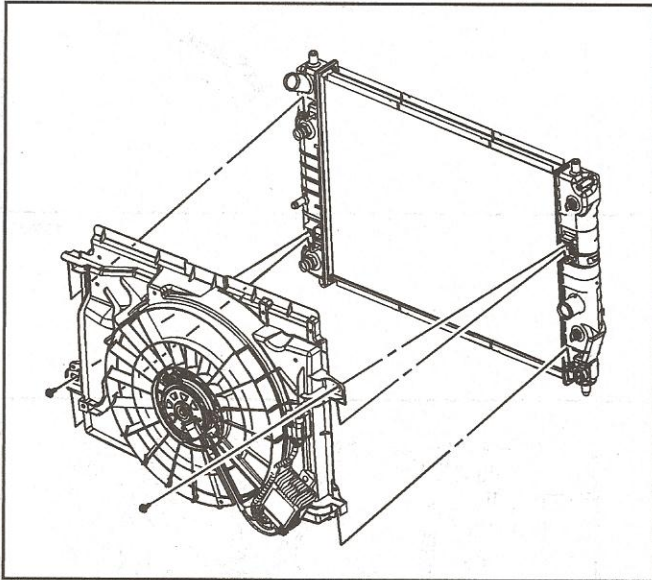
Caution: To help avoid personal injury or damage to the vehicle, a bent, cracked, or damaged fan blade or housing should always be replaced.

Caution: Before servicing any electrical component, the ignition key must be in the OFF or LOCK position and all electrical loads must be OFF, unless instructed otherwise in these procedures. If a tool or equipment could easily come in contact with a live exposed electrical terminal, also disconnect the negative battery cable. Failure to follow these precautions may cause personal injury and/or damage to the vehicle or its components.

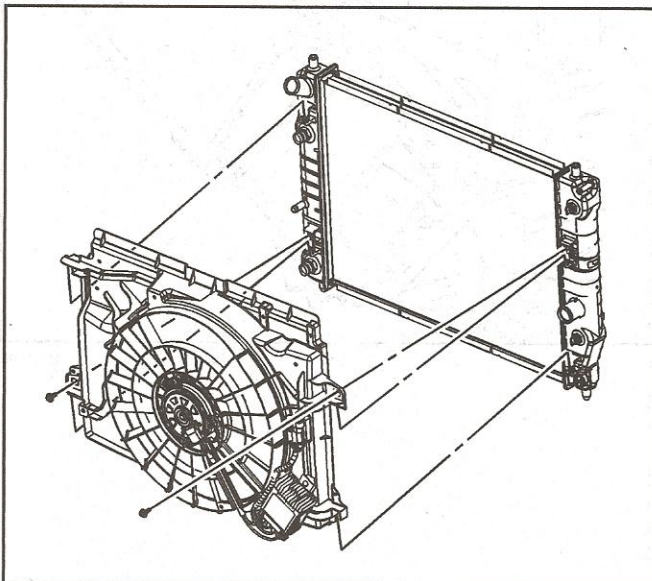
1. Remove the radiator support. Refer to *Radiator Support Replacement on page 6-644*.
2. Disconnect the engine wiring harness from the cooling fan shroud.
3. Disconnect the surge tank outlet hose from the retaining clips on the cooling fan shroud and position aside.
4. Raise and support the vehicle. Refer to *Lifting and Jacking the Vehicle on page 0-22*.
5. Remove the stabilizer shaft. Refer to *Stabilizer Shaft Replacement on page 3-26*.
6. Disconnect the cooling fan electrical connector.



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7. Vehicles equipped with transmission fluid cooler, disconnect the lower transmission oil cooler line from the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264 for the 6L80-E transmission or *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-76 for the Tremec 6-Speed transmission.
8. Vehicles equipped with an engine oil cooler, disconnect the upper and lower engine oil cooler pipes. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting* on page 6-624.
9. Remove the cooling fan shroud retaining bolts.
10. Remove the cooling fan and shroud.

Installation Procedure

Important: Ensure the cooling fan and shroud is properly seated on the radiator

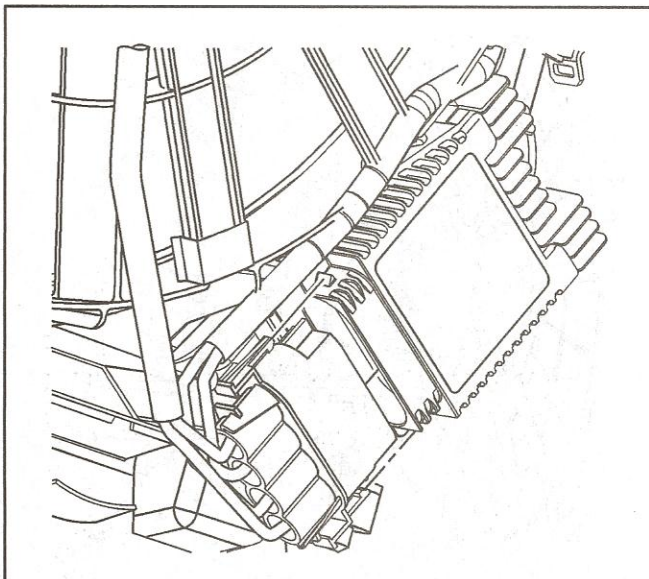
1. Install the cooling fan and shroud.
2. Install the cooling fan shroud retaining bolts.

Tighten

Tighten the bolts to 5 N·m (44 lb in).

3. Vehicles equipped with transmission fluid cooler, Connect the lower transmission oil cooler line to the radiator. Refer to *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-264 for the 6L80-E transmission or *Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Replacement* on page 7-76 for the Tremec 6-Speed transmission.
4. Vehicles equipped with an engine oil cooler, Connect the upper and lower engine oil cooler pipes. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting* on page 6-624.

5. Connect the cooling fan electrical connector.
6. Install the stabilizer shaft. Refer to *Stabilizer Shaft Replacement* on page 3-26.
7. Lower the vehicle.
8. Connect the surge tank outlet hose to the retaining clips on the cooling fan shroud.
9. Connect the engine wiring harness to the cooling fan shroud.
10. Install the radiator support. Refer to *Radiator Support Replacement* on page 6-644.

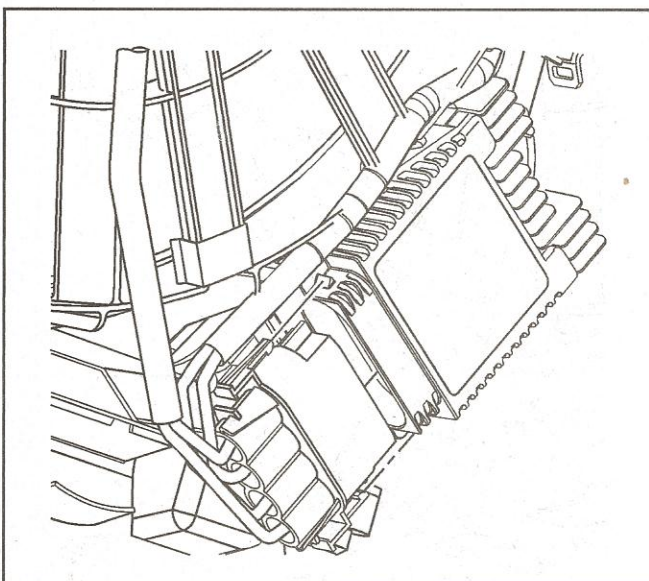


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Cooling Fan Control Module Replacement

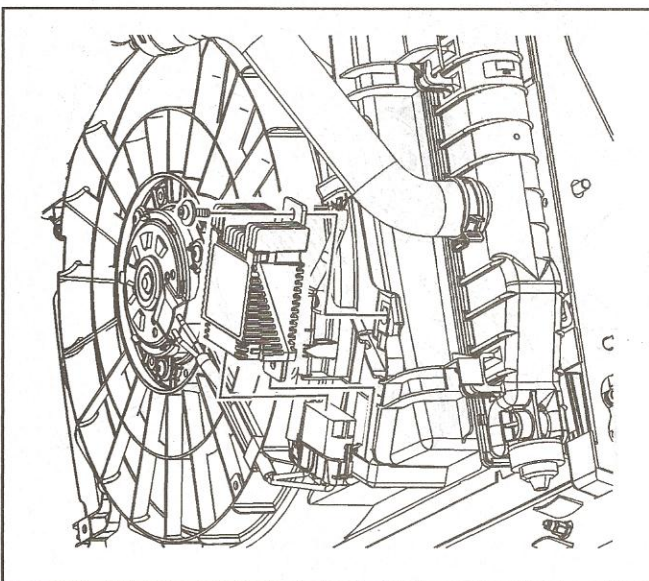
Removal Procedure

1. Raise and support the vehicle. Refer to *Lifting and Jacking the Vehicle* on page 0-22 in General Information.
2. Disconnect the cooling fan control module electrical connector.

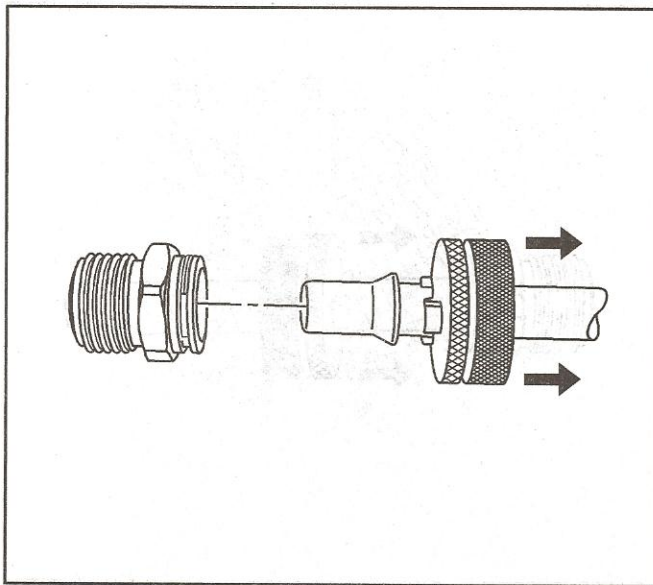


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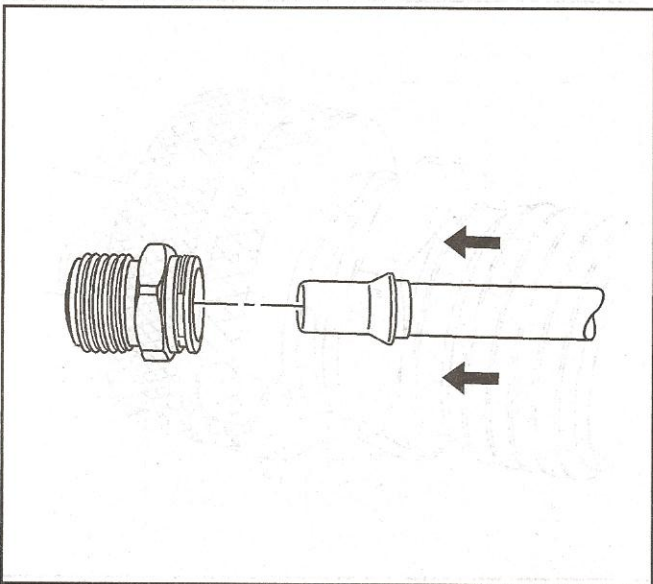
3. Remove the cooling fan control module retaining bolt.
4. Remove the cooling fan control module from the vehicle.



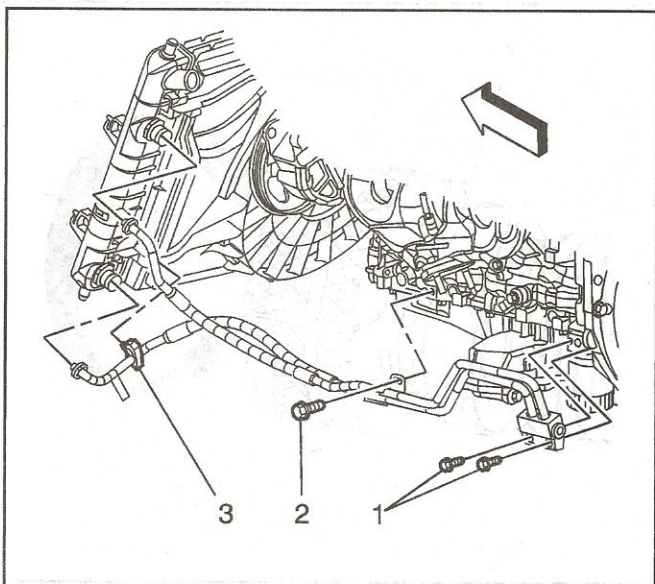
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5. Pull back on the EOC pipe to disengage the pipe from the EOC pipe fitting.
6. Remove the DT-47731 from the EOC pipe.

Installation Procedure

Important: Inspect the EOC pipe fitting and retaining clip for signs of wear or damage. Replace the components if necessary.

1. Install the EOC pipe into the EOC pipe fitting. A distinct snap should be heard or felt when assembling the EOC pipe to the fitting.
2. To ensure the cooler line is properly installed, give the cooler pipe a gentle pull.

Engine Oil Cooler Hose/Pipe Replacement (KPS)

Removal Procedure

1. Install oil drain pan under the vehicle.
2. Remove the engine oil cooler hose/pipe from the radiator. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting* on page 6-624.
3. Remove the engine oil cooler hose/pipe clip (3) from the fan shroud.
4. Remove the bolt (2) securing the engine oil cooler hose/pipe assembly to the engine block.
5. Remove the bolts (1) securing the engine oil cooler hose/pipe to the oil filter housing.
6. Remove the engine oil cooler hose/pipe assembly from the vehicle.
7. Remove and discard all engine oil cooler hose/pipe seals.

Installation Procedure

1. Install new engine oil cooler hose/pipe seals.
2. Install the engine oil cooler hose/pipe assembly to the vehicle.

Notice: Refer to *Fastener Notice on page P-10* in Cautions and Notices.

3. Install the bolts (1) securing the engine oil cooler hose/pipe to the oil filter housing.

Tighten

Tighten the bolts to 12 N·m (106 lb in).

4. Install the bolt (2) securing the engine oil cooler hose/pipe assembly to the engine block.

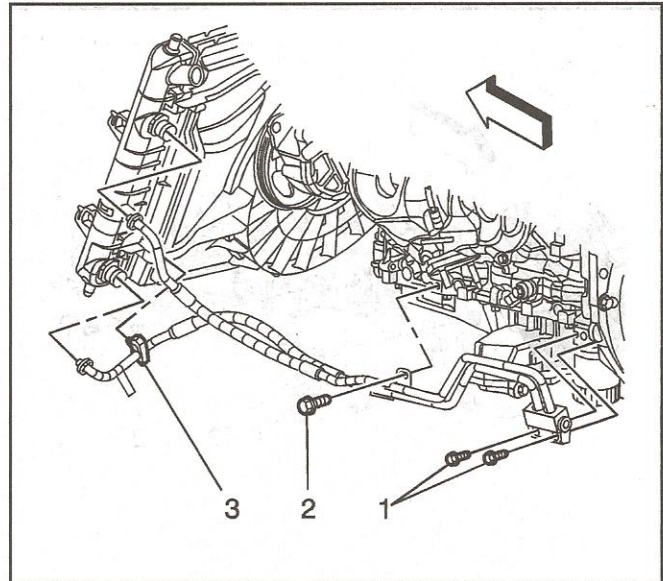
Tighten

Tighten the bolt to 25 N·m (18 lb ft).

5. Remove the oil drain pan from under the vehicle.

Important: The quick connect fitting must be pushed on and then pulled back to verify proper connector engagement.

6. Install the engine oil cooler hose/pipes to the radiator. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting on page 6-624*.
7. Install the engine oil cooler hose/pipe clip (3) to the fan shroud.
8. Refill the engine oil.

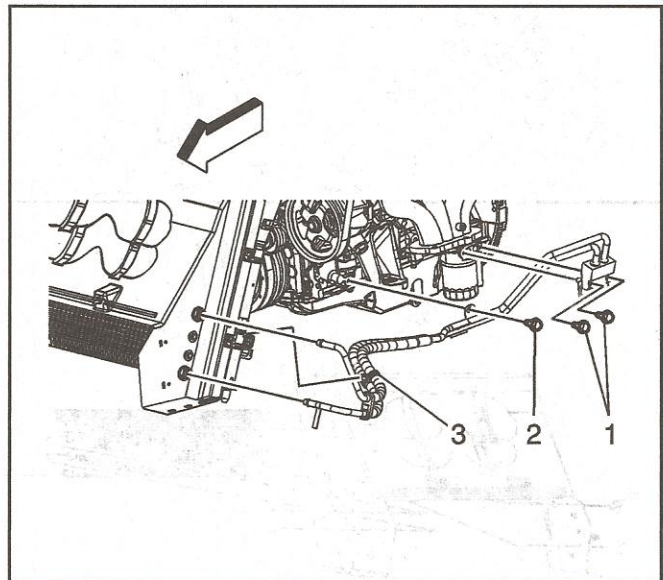


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Engine Oil Cooler Hose/Pipe Replacement (w/o KPS)

Removal Procedure

1. Install oil drain pan under the vehicle.
2. Remove the left catalytic converter. Refer to *Catalytic Converter Replacement - Left (6.0L) on page 6-1619* or *Catalytic Converter Replacement - Left (7.0L) on page 6-1621*.
3. Remove the left fender liner. Refer to *Fender, Insulator, Liner, Brake Caliper Cooling Duct Replacement - Front on page 8-17*.
4. Remove the engine oil cooler hose/pipe from the external oil cooler. Refer to *Engine Oil Cooler Pipe/Hose Quick Connect Fitting on page 6-624*.
5. Remove the engine oil cooler hose/pipe clip (3) from the fan shroud.
6. Remove the bolt (2) securing the engine oil cooler hose/pipe assembly to the engine block.
7. Remove the bolts (1) securing the engine oil cooler hose/pipe to the oil filter housing.
8. Remove the engine oil cooler hose/pipe assembly from the vehicle.
9. Remove and discard all engine oil cooler hose/pipe seals.



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