

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accumulator Bracket Retaining Screw	9 N·m	80 lb in
Accumulator Retaining Nut	18 N·m	13 lb ft
A/C Low Pressure Switch to Accumulator	4 N·m	35 lb in
A/C Refrigerant Filter Nut	34 N·m	25 lb ft
Air Temperature Screw	1.9 N·m	17 lb in
Auxiliary Blower Motor Screw	5 N·m	44 lb in
Auxiliary Evaporator to Compressor Hose Fitting	48 N·m	35 lb ft
Auxiliary Evaporator Underbody Rear Tube to Core	28 N·m	21 lb ft
Auxiliary Heater Retaining Nut	10 N·m	89 lb in
Auxiliary HVAC Module Bottom Screw	1.9 N·m	17 lb in
Auxiliary HVAC Module Screw	2 N·m	18 lb in
Blower Case Screw	2 N·m	18 lb in
Blower Motor Resistor Assembly Screw	2 N·m	18 lb in
Blower Motor Retaining Screw	2 N·m	18 lb in
Clutch Plate Bolt	18 N·m	13 lb ft
Coil Connector Bracket Screw	9 N·m	80 lb in
Compressor Inlet Hose to Accumulator Nut	16 N·m	12 lb ft
Compressor to Mounting Bracket Bolt	50 N·m	37 lb ft
Condenser Retaining Bolt	9 N·m	80 lb in
Coolant Heater Combustion Sensor	2.5 N·m	22 lb in
Coolant Heater Temperature Sensor Screw	1.5 N·m	13 lb in
Discharge Hose to Compressor Bolt (4.8 L, 5.3 L and 6.0 L)	35 N·m	26 lb ft
Discharge Hose to Compressor Bolt (6.6 L)	16 N·m	12 lb ft
Discharge Hose to Condenser Nut	16 N·m	12 lb ft
Distribution Duct Retaining Screw	4 N·m	35 lb in
Evaporator Hose Clip Screw	6 N·m	53 lb in
Evaporator Hose to Evaporator Nut	16 N·m	12 lb ft
Evaporator Inlet Hose to Evaporator Nut	16 N·m	12 lb ft
Evaporator Inlet Hose to Front Evaporator Tube Nut	16 N·m	12 lb ft
Evaporator Inlet Hose to Front Evaporator Tube Fitting	16 N·m	12 lb ft
Evaporator Inlet Tube Retaining Nut	16 N·m	12 lb ft
Evaporator Outlet Hose to Accumulator Nut	16 N·m	12 lb ft
Evaporator Tube to Engine and Body Nut	6 N·m	53 lb in
Evaporator Tube to Auxiliary Evaporator Core Fitting	48 N·m	35 lb ft
Evaporator Tube to TXV Fitting	28 N·m	21 lb ft

Floor Outlet Duct Screw	2 N·m	18 lb in
Front Evaporator Tube to Condenser Nut	16 N·m	12 lb ft
Heater Coolant Heater Blower Cover Screw	3 N·m	27 lb in
Heater Coolant Heater Blower Screw	3 N·m	27 lb in
Heater Coolant Heater Bolt	6 N·m	53 lb in
Heater Coolant Heater Combustion Screw	6 N·m	53 lb in
Heater Coolant Heater Control Module Lower Screw	6 N·m	53 lb in
Heater Coolant Heater Control Module Upper Screw	3 N·m	27 lb in
Heater Coolant Heater Muffler Bolt	6 N·m	53 lb in
Fuel Pump Bolt	8 N·m	71 lb in
Glow Plug	2.5 N·m	22 lb in
Heater Assembly Cover Screw	1.9 N·m	17 lb in
Heater Assembly Retaining Nut	6 N·m	53 lb in
Heater Core Access Door Screw	1.9 N·m	17 lb in
Heater Core Screw	1.9 N·m	17 lb in
Heater Pipe to Engine Nut	8 N·m	71 lb in
Heater Pipe to Transmission Housing Nut	25 N·m	18 lb ft
Hose to Transmission Bracket Bolt	5 N·m	44 lb in
Lower Air Outlet Duct Screw	2 N·m	18 lb in
Module Assembly Nut	6 N·m	53 lb in
Rear Evaporator Tube Nut	16 N·m	12 lb ft
Rear Suction Line Nut	16 N·m	12 lb ft
Suction Line to Accumulator Nut	16 N·m	12 lb ft
Suction Line to Compressor Bolt (4.8 L, 5.3 L and 6.0 L)	35 N·m	26 lb ft
Suction Line to Compressor Bolt (6.6 L)	16 N·m	12 lb ft
Vacuum Pump Bolt	3 N·m	27 lb in
Windshield Defrost Duct Nut	4 N·m	35 lb in
Windshield Defrost Duct Screw	4 N·m	35 lb in

Refrigerant System Capacities

Application	Specification	
	Metric	English
PAG Oil GM P/N 12378526 for United States		
PAG Oil GM P/N 88900060 for Canada		
Accumulator Replacement*	60 ml*	2 oz*
The Denso service compressor is precharged with 240 ml (8oz) of PAG oil.		
Accumulator Replacement	60 ml ¹	2 oz ¹
*Add the same amount of PAG oil drained from the failed accumulator, plus the specified amount.		
Condenser Replacement	30 ml ¹	1 oz ¹
Evaporator Replacement	90 ml ¹	3 oz ¹
Evaporator, Rear Replacement	90 ml ¹	3 oz ¹
¹ Abrupt refrigerant loss due to large leak, hose rupture, collision, or pressure relief valve opening. Conditions that allow the refrigerant to seep or bleed off over time do not cause this oil loss. Upon replacement of a component that caused a large refrigerant loss, also add the required amount of oil for the particular component.		
Total System PAG Oil Capacity	240 ml	8 oz
Total System PAG Oil Capacity with Rear A/C	330 ml	11 oz
Refrigerant Charge	0.91 kg	2.0 lb
Refrigerant Charge with Rear A/C	1.59 kg	3.0 lb

Odor Correction

Eliminating Air Conditioning Odor

Odors may be emitted from the air conditioning system primarily at start up in hot, humid climates. The following conditions may cause the odor:

- Debris is present in the A/C Evaporator and Blower Module
- Microbial growth on the evaporator core

When the blower motor fan is turned on, the microbial growth may release an unpleasant musty odor into the passenger compartment. To remove odors of this type, the mirocbial growth must be eliminated. Perform the following procedure:

Deodorize the evaporator core using Deodorizing Aerosol Kit.

Perform the following steps in order to deodorize the A/C system:

1. Ensure that the plenum that draws outside air into the A/C Evaporator and Blower Module is clear of debris.
2. Disable the A/C compressor clutch operation by disconnecting the clutch coil electrical connector.
3. Dry the evaporator core by performing the following steps:
 - 3.1. Start the engine.
 - 3.2. Select the maximum temperature setting.
 - 3.3. Select the recirculation mode.
 - 3.4. Run the blower motor on high for 10 minutes.
4. Locate an area in the air conditioning duct between the blower motor and the evaporator core downstream of the blower motor.
5. Drill a 3.175 mm (0.125 in) hole where the hole will not interfere with or damage the following components:
 - The blower motor
 - The evaporator core
 - Any other operating part the of system
6. Wear safety goggles and latex gloves in order to perform the following actions:
 - 6.1. Select the maximum blower speed.
 - 6.2. Insert the deodorizer extension tube into the hole to the mark on the extension tube.
 - 6.3. Use short spray bursts and vary the direction of spray for a 2-3 minute period of time.
7. Shut the engine OFF. Allow the vehicle to sit for 3-5 minutes.
8. Seal the 3.175 mm (0.125 in) hole with body sealer or RTV gasket compound.
9. Start the engine.
10. Operate the blower motor on high for 15-20 minutes to dry.
11. Reconnect the A/C compressor clutch coil electrical connector.
12. Verify proper clutch operation.

Refrigerant Recovery and Recharging

Special Tools

- *J-43600* ACR 2000 Air Conditioning Service Center
- *J-45037* A/C Oil Injector

Warning: To prevent personal injury, avoid breathing A/C Refrigerant and lubricant vapor or mist. Work in a well ventilated area. To remove refrigerant from the A/C System, use service equipment designed for recovery that is certified to meet the requirements of the appropriate SAE Standards. If an accidental system discharge occurs, ventilate the work area before continuing service. Additional health and safety information may be obtained from the refrigerant, refrigerant recovery, and lubricant manufacturers.

Warning: For personal protection, goggles and lint-free gloves should be worn and a clean cloth wrapped around fittings, valves, and connections when doing work that includes opening the refrigerant system. If refrigerant comes in contact with any part of the body severe frostbite and personal injury can result. The exposed area should be flushed immediately with cold water and prompt medical help should be obtained.

Caution: R-134a is the only approved refrigerant for use in this vehicle. The use of any other refrigerant may result in poor system performance or component failure.

Caution: To avoid system damage use only R-134a dedicated tools when servicing the A/C system.

Caution: Use only Polyalkylene Glycol Synthetic Refrigerant Oil (PAG) for internal circulation through the R-134a A/C system and only 525 viscosity mineral oil on fitting threads and O-rings. If lubricants other than those specified are used, compressor failure and/or fitting seizure may result.

Caution: R-12 refrigerant and R-134a refrigerant must never be mixed, even in the smallest of amounts, as they are incompatible with each other. If the refrigerants are mixed, compressor failure is likely to occur. Refer to the manufacturer instructions included with the service equipment before servicing.

The *J-43600* service center is a complete air conditioning service center for R-134a. The ACR 2000 recovers, recycles, evacuates and recharges A/C refrigerant quickly, accurately and automatically. The unit has a display screen that contains the function controls and displays prompts that will lead the technician through the recover, recycle, evacuate and recharge operations. R-134a is recovered into and charged out of an internal storage vessel. The ACR 2000 automatically replenishes this vessel from an external source tank in order to maintain a constant 5.45-6.82 kg (12-15 lbs) of A/C refrigerant.

The ACR 2000 has a built in A/C refrigerant identifier that will test for contamination, prior to recovery and will notify the technician if there are foreign gases present in the A/C system. If foreign gases are present, the ACR 2000 will not recover the refrigerant from the A/C system.

The ACR 2000 also features automatic air purge, single pass recycling and an automatic oil drain.

Refer to the *J-43600* service center ACR 2000 manual for operation and setup instruction. Always

recharge the A/C System with the proper amount of R-134a. Refer to [Refrigerant System Capacities](#) for the correct amount.

A/C Refrigerant System Oil Charge Replenishing

If oil was removed from the A/C system during the recovery process or due to component replacement, the oil must be replenished. Oil can be injected into a charged system using *J-45037* oil injector . For the proper quantities of oil to add to the A/C refrigerant system, refer to [Refrigerant System Capacities](#).

Flushing

Tools Required

- [J 43600](#) Air Conditioning Service Center
- [J 45268](#) Flush Adapter Kit
- [J 41447](#) Leak Detection Dye
- [J 42220](#) Universal 12V Leak Detection Lamp

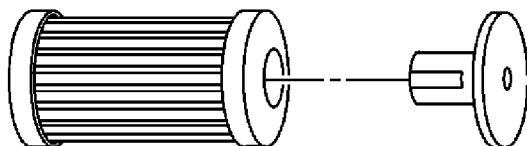
Important: Flushing is not intended to remove metal from the A/C system.

Flushing is intended to remove the following:

- Contaminated polyalkylene glycol (PAG) oil
- Desiccant, following a desiccant bag failure
- Overcharge of PAG oil
- Refrigerant contamination

Important: Warmer engine or ambient temperature decreases the refrigerant recovery time during the A/C flush procedure.

1. Recover the refrigerant. Refer to [Refrigerant Recovery and Recharging](#) .
2. Remove the orifice tube. Refer to [Expansion \(Orifice\) Tube Replacement](#) .
3. Connect the A/C lines with the orifice tube removed.
4. Remove the A/C compressor. Refer to [Air Conditioning Compressor Replacement](#) .
5. Inspect the end of the suction hose for a suction screen.
6. Remove the suction screen, if installed.
7. Install the J 45268-3 to the A/C compressor hose assembly.





8. Forward flow refrigerant flushing is recommended for contaminated refrigerant or PAG oil.

Perform the following procedure:

Important: The filter inside the J 45268-1 is serviceable. Remove and discard the check valve from the filter.

- 8.1. Service the filter with ACDelco P/N GF 470, before each flush.

Connect the J 45268-1 flush filter to the suction port of the J 45268-3 flush adapter.

- 8.2. Connect the blue hose from the [J 43600](#) to the J 45268-1 flush filter adapter.

- 8.3. Connect the red hose from the [J 43600](#) to the J 45268-3 flush adapter.

9. Reverse flow refrigerant flushing is recommended for desiccant bag failure.

Perform the following procedure and replace the accumulator when the flush procedure is complete.

Important: The filter inside the J 45268-1 is serviceable. Remove and discard the check valve from the filter.

- 9.1. Service the filter with ACDelco P/N GF 470, before each flush.

Connect the J 45268-1 flush filter to the discharge port of the J 45268-3 flush adapter.

- 9.2. Connect the blue hose from the [J 43600](#) to the J 45268-1 flush filter adapter.

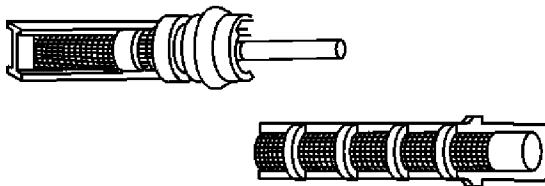
- 9.3. Connect the red hose from the [J 43600](#) to the suction port of the J 45268-3 flush adapter.

10. Flush the front A/C system. Follow the instructions supplied with the [J 43600](#).

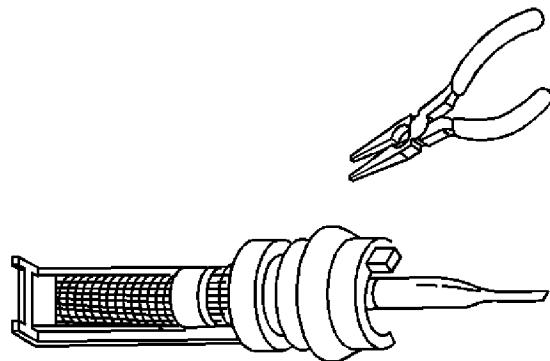
Close the valve on the external refrigerant tank, before starting the flush process.

Important: Flush the front A/C system before flushing the auxiliary A/C system.

11. If the vehicle is equipped with rear A/C, flush the auxiliary A/C system separately.



12. Cut the orifice tube frame and screen, enough to access the end of the orifice tube. Pinch off the orifice tube.



Important: Pinch off the orifice tube in order to prevent refrigerant flow to the front system during the auxiliary system flush.

13. Install the pinched orifice tube. Refer to [Expansion \(Orifice\) Tube Replacement](#).
14. Remove the auxiliary thermostatic expansion valve (TXV). Refer to [Auxiliary Air Conditioning Evaporator Thermal Expansion Valve Replacement](#).
15. Install the J 45268-104.

Important: The auxiliary evaporator core can be flushed without totally reassembling into the auxiliary HVAC module.

16. Install the auxiliary evaporator core to the A/C lines.
17. Raise the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
18. Connect the auxiliary A/C lines to the auxiliary evaporator core.
19. Lower the vehicle.
20. Flush the auxiliary A/C system. Follow the instructions supplied with the [J 43600](#).
21. Raise the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
22. Remove the auxiliary A/C lines from the auxiliary evaporator core.
23. Lower the vehicle.
24. Remove the J 45268-104.
25. Inspect the TXV for debris.

Clean or replace, as needed.

26. Install the auxiliary TXV. Refer to [Auxiliary Air Conditioning Evaporator Thermal Expansion Valve Replacement](#).
27. Remove the J 45268-3 from the A/C compressor hose assembly.

Important: Flushing will remove all the PAG oil from the A/C system. The A/C system must be replenished with the correct amount of PAG oil.

28. Drain the PAG oil from the A/C compressor. Rotate the compressor input shaft to assist in draining the PAG oil from the compressor.
29. Add back the total system capacity of PAG oil to the A/C compressor. Refer to [Refrigerant System Capacities](#).
30. If you will be replacing the A/C compressor after flushing the system, perform the following procedure:
 - Determine if the new service compressor is shipped with PAG oil. Refer to [Refrigerant System Capacities](#).
 - If the service compressor is shipped with PAG oil, DO NOT drain the new PAG oil from the compressor.
 - Deduct the amount of PAG oil shipped with the service compressor from the amount of PAG oil listed in the capacities table. Refer to [Refrigerant System Capacities](#).
 - Add the calculated amount to the compressor, as needed.

Important: Flushing will remove the fluorescent leak detection dye from the A/C system.

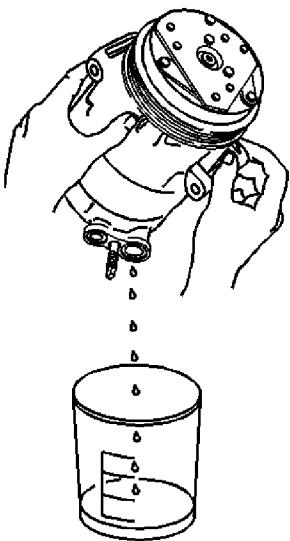
31. Add one bottle of [J 41447](#).
32. Install the A/C compressor. Refer to [Air Conditioning Compressor Replacement](#).
33. Install a new orifice tube. Refer to [Expansion \(Orifice\) Tube Replacement](#).
34. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
35. Leak test the fittings using the [J 42220](#).

Air Conditioning Compressor Oil Balancing

Draining Procedure

Important: Drain and measure as much of the refrigerant oil as possible from the removed compressor.

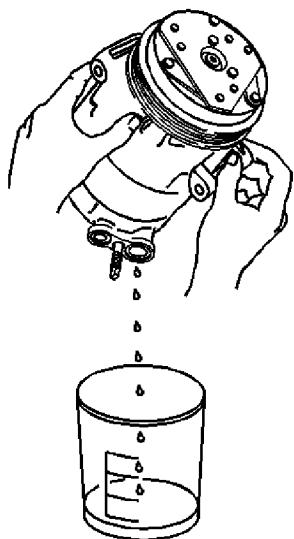
1. Before draining oil, position the compressor vertically (clutch facing upwards) and let it sit for 1 minute.
2. Position the compressor horizontally, with the ports facing downward, rotate the clutch and shake the compressor in order to remove as much oil from the compressor as possible.
3. Drain the oil from both the suction and discharge ports of the removed compressor into a clean, graduated container. Rotate the compressor shaft to assist in draining the compressor.



4. Measure and record the amount of oil drained from the removed compressor. This measurement will be used during installation of the replacement compressor.
5. Inspect oil drained from removed compressor. Refer to [Air Conditioning Compressor Oil Diagnosis](#)
6. Properly discard the used refrigerant oil.

Balancing Procedure

Important: The refrigerant oil in the A/C system must be balanced during compressor replacement.



1. Before installing the compressor, the refrigerant oil will have to be fully drained.
2. Add back the same quantity of polyalkylene glycol (PAG) oil as drained from the removed compressor.

Refer to the amount of refrigerant oil recorded during the compressor removal.

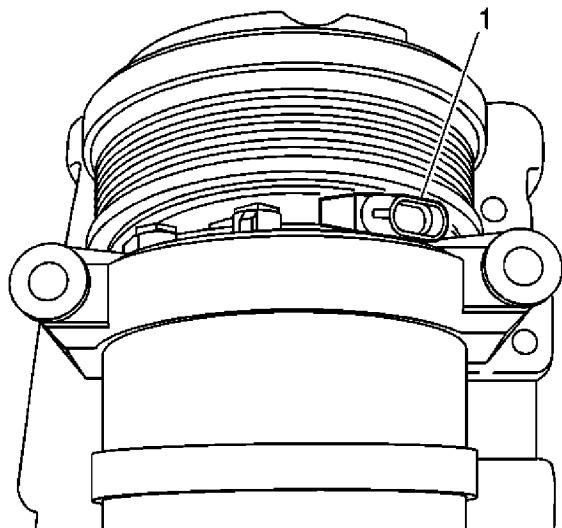
Air Conditioning Compressor Replacement (4.3L)

Special Tools

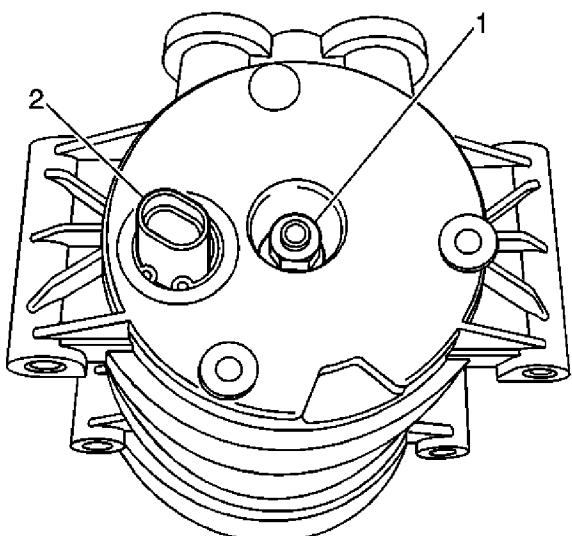
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Remove the air cleaner assembly. Refer to [Air Cleaner Assembly Replacement](#).
2. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).

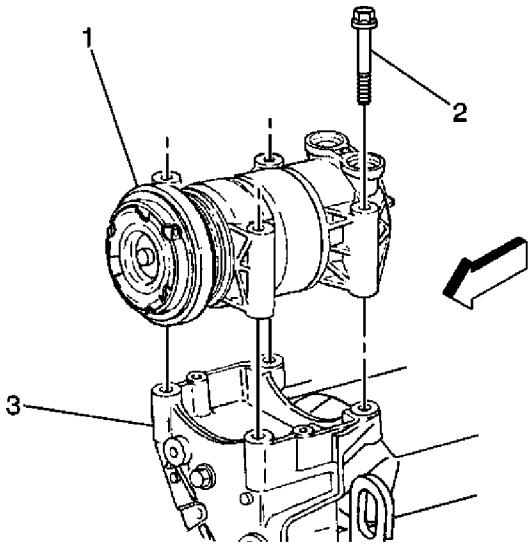


3. Disconnect the clutch coil electrical connector (1) from the compressor.



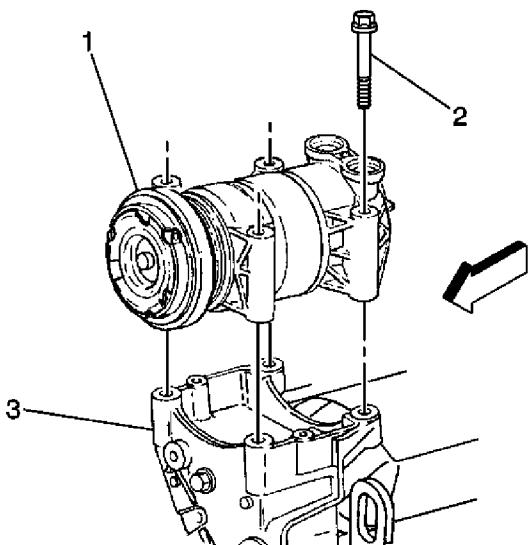


4. Disconnect the A/C high pressure switch electrical connector (2) from the compressor.
5. Remove the drive belt. Refer to [Drive Belt Replacement](#).



6. Remove the compressor hose assembly.
7. Remove the mounting bolts (2) from the compressor.
8. Remove the compressor from the vehicle.
9. If replacing the compressor, balance the refrigerant oil. Refer to [Air Conditioning Compressor Oil Balancing](#).

Installation Procedure

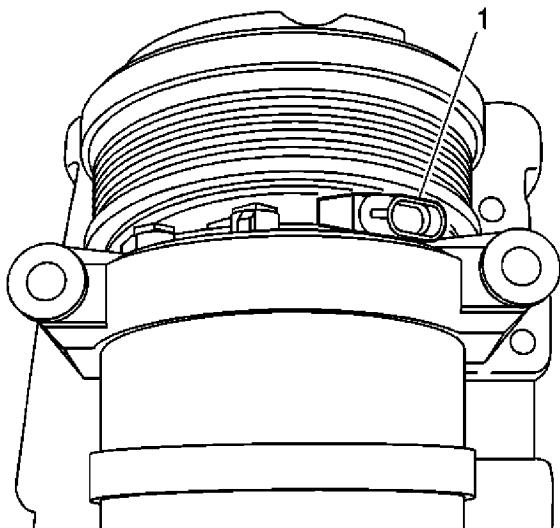




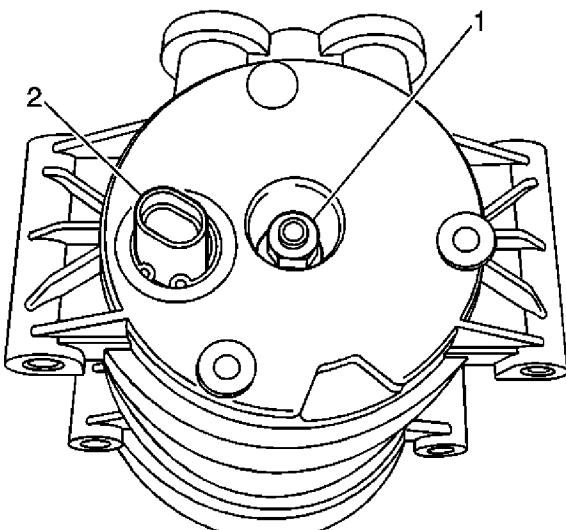
1. Install the compressor (1) to the vehicle.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the compressor retaining bolts to the mounting bracket and tighten to **50 N·m (37 lb ft)**.
3. Install the new sealing washers. Refer to [Sealing Washer Replacement](#).
4. Install the compressor hose assembly.
5. Install the drive belt. Refer to [Drive Belt Replacement](#).



6. Connect the clutch coil electrical connector (1) to the compressor.



7. Connect the A/C high pressure switch electrical connector (2) to the compressor.

8. Install the air cleaner assembly. Refer to [Air Cleaner Assembly Replacement](#).
9. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
10. Leak test the fittings of the components using the [J 39400-A](#).

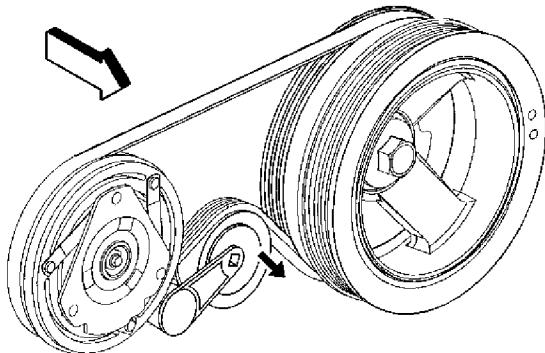
Air Conditioning Compressor Replacement (4.8L, 5.3L, 6.0L)

Special Tools

[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).



2. Remove the engine coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
3. Remove the suction hose bolt from the compressor.
4. Remove the suction hose from the compressor.
5. Remove the discharge hose bolt from the compressor.
6. Remove the discharge hose from the compressor.
7. Loosen the upper compressor mounting bolts and leave bolts in place.
8. Raise the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
9. Remove G104 from the frame and reposition ground strap.
10. Install a ratchet into the A/C belt tensioner adapter opening.
11. Rotate the belt tensioner clockwise in order to relieve the tension on the belt.
12. Remove the A/C belt from the pulley.
13. Disconnect the compressor clutch electrical connector.
14. Remove the lower compressor mounting bolts.
15. Reposition the compressor and disconnect the high pressure switch connector.
16. All wheel drive only, remove the fan and fan shroud. Refer to [Engine Coolant Fan Lower Shroud Replacement](#) and [Fan Replacement](#).
17. Remove the compressor.

Note: When removing the sealing washers, prevent dirt and foreign material from getting onto the following sealing surfaces:

- The washers
- The hose fitting
- The compressor ports

Use a lint-free cloth in order to clean all of the sealing surfaces.

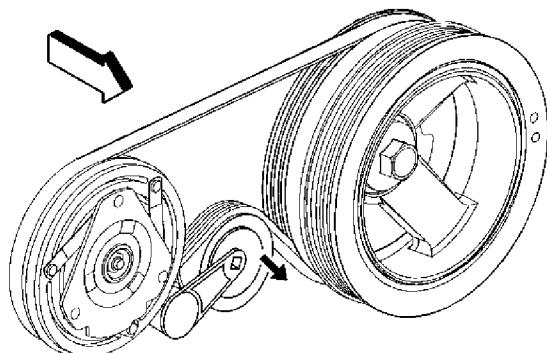
18. Remove the compressor sealing washers.

Discard the compressor sealing washers.

If replacing the compressor, balance the refrigerant oil. Refer to [Air Conditioning Compressor Oil Balancing](#).

Installation Procedure

1. Install the new sealing washers. Refer to [Sealing Washer Replacement](#).
2. Connect the high pressure switch connector.
3. Install the compressor with the mounting bolts in the compressor and tighten to **50 N·m (37 lb ft)**.
4. Connect the compressor clutch electrical connector.
5. Install a ratchet into the A/C belt tensioner adapter opening.
6. Rotate the belt tensioner clockwise in order to install the belt.
7. Install the A/C belt on to the pulley.
8. Install G104 to the frame.
9. Lower the vehicle.
10. Tighten the upper mounting bolts and tighten to **50 N·m (37 lb ft)**.
11. Install the discharge hose to the compressor.
12. Install the discharge hose bolt to the compressor and tighten to **35 N·m (26 lb ft)**.
13. Install the suction hose to the compressor.
14. Install the suction hose bolt to the compressor and tighten to **35 N·m (26 lb ft)**.





15. All wheel drive only, install the fan and fan shroud. Refer to [Fan Replacement](#) and [Engine Coolant Fan Lower Shroud Replacement](#).
16. Install the engine coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
17. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
18. Leak test the fittings of the component using the [J 39400-A](#) .

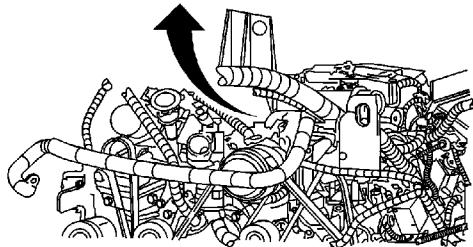
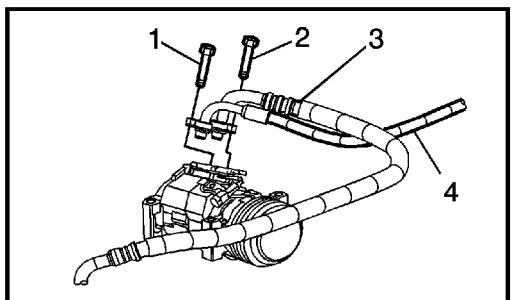
Air Conditioning Compressor Replacement (6.6L)

Special Tools

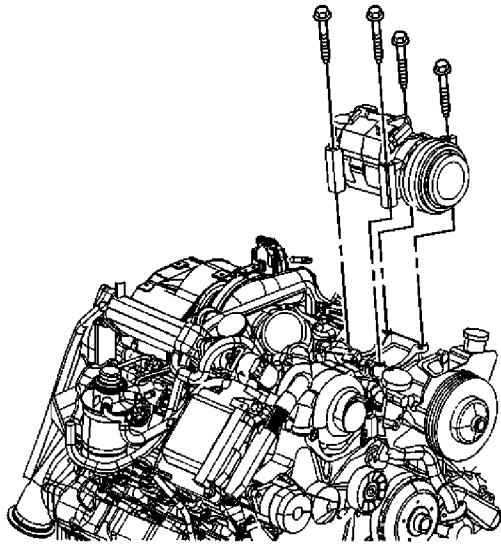
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the air cleaner outlet duct. Refer to [Air Cleaner Outlet Duct Replacement](#).
3. Remove the drive belt. Refer to [Drive Belt Replacement](#).



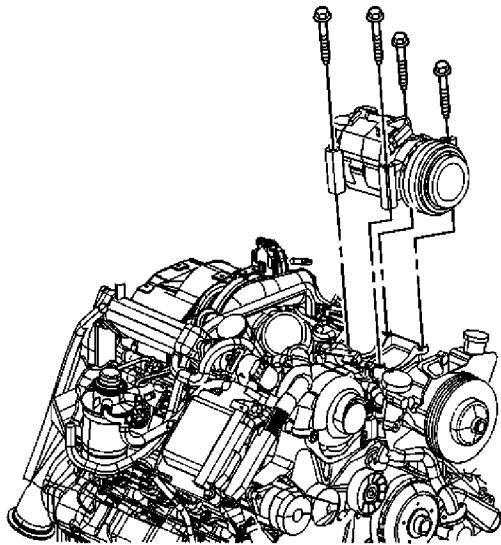
4. Remove the discharge hose bolt (1) from the A/C compressor.
5. Remove the discharge hose (4) from the A/C compressor.
6. Remove the suction hose bolt (2) from the A/C compressor.
7. Remove the suction hose (3) from the A/C compressor.
8. Discard the sealing washers. Cap all of the openings.
9. Disconnect the A/C compressor electrical connection.



10. Remove the A/C compressor mounting bolts.
11. Remove the A/C compressor from the vehicle.

Installation Procedure

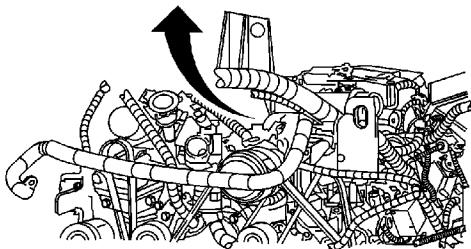
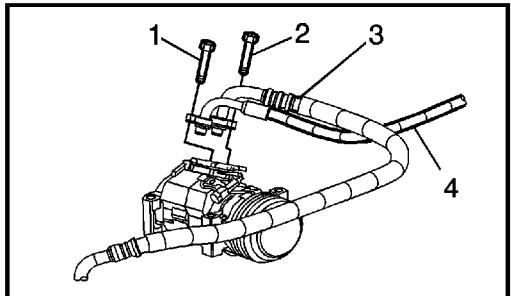
1. If replacing the A/C compressor, balance the compressor oil. Refer to [Air Conditioning Compressor Oil Balancing](#).



2. Remove the caps or tape from the hose and line ends.
3. Install the A/C compressor.

Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the A/C compressor mounting bolts and tighten to **50 N·m (37 lb ft)**.
5. Connect the A/C compressor electrical connection.
6. Install new sealing washers on the A/C compressor hoses. Refer to [Sealing Washer Replacement](#).



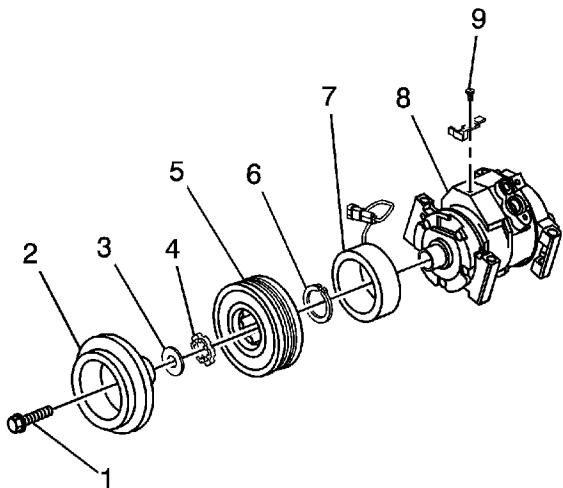
7. Install the A/C discharge hose (4) to the compressor.
8. Install the A/C discharge hose bolt (1) to the A/C compressor and tighten to **16 N·m (12 lb ft)**.
9. Install the A/C suction hose (3) to the compressor.
10. Install the A/C suction hose bolt (2) to the A/C compressor and tighten to **16 N·m (12 lb ft)**.
11. Install the drive belt. Refer to [Drive Belt Replacement](#).
12. Install the air cleaner outlet duct. Refer to [Air Cleaner Outlet Duct Replacement](#).
13. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
14. Leak test the fittings of the component using the [J 39400-A](#).

Air Conditioning Clutch Coil Replacement (4.3L)

Special Tools

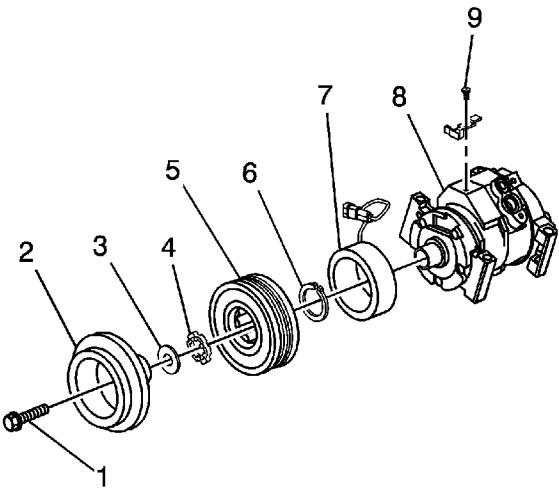
[J 33027-A](#) A/C Clutch Hub Holder

Removal Procedure



1. Remove the air conditioning (A/C) compressor. Refer to [Air Conditioning Compressor Replacement](#).
2. Use the [J 33027-A](#) to keep the clutch drive assembly from turning.
3. Remove the clutch plate retaining bolt (1).
4. Remove the clutch plate assembly (2) with shims (3).
5. Remove the clutch hub/bearing snap ring (4).
6. Remove the clutch hub/bearing assembly (5).
7. Remove the clutch coil connector bracket retaining screw (9).
8. Remove the clutch coil snap ring (6).
9. Remove the clutch coil assembly (7).

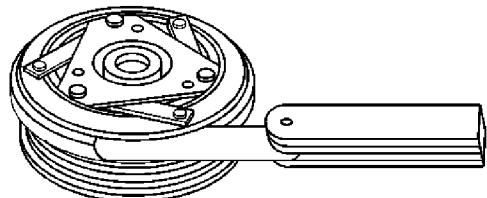
Installation Procedure



1. Install the coil assembly (7) to the compressor (8).
2. Install the coil snap ring (6).

Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the coil connector retaining bracket screw (9) and tighten to **9 N·m (80 lb in)**.
4. Install the clutch hub/bearing assembly (5).
5. Install the clutch hub/bearing snap ring (4).



6. Install the clutch plate assembly (2) with shims (3).

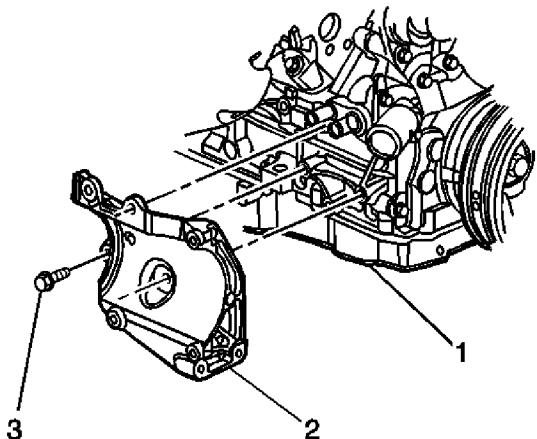
Note: Ensure the drive plate does not drag against the pulley when the pulley is rotated.

7. Measure the air gap between the pulley and the drive plate. Adjust the shims (3) to achieve a

0.35-0.65 mm (0.014-0.026 in) air gap.

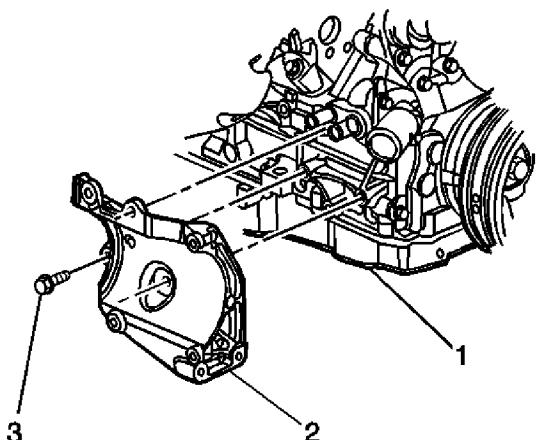
8. Install the clutch plate retaining bolt and tighten to **18 N·m (13 lb ft)**.
9. Hold the clutch drive plate and hub assembly with the [J 33027-A](#).
10. Install the A/C compressor. Refer to [Air Conditioning Compressor Replacement](#).

Air Conditioning Compressor Bracket Replacement Removal Procedure



1. Remove the compressor. Refer to [Air Conditioning Compressor Replacement](#).
2. Remove the compressor mounting bracket bolts (3).
3. Remove the compressor mounting bracket (2).

Installation Procedure





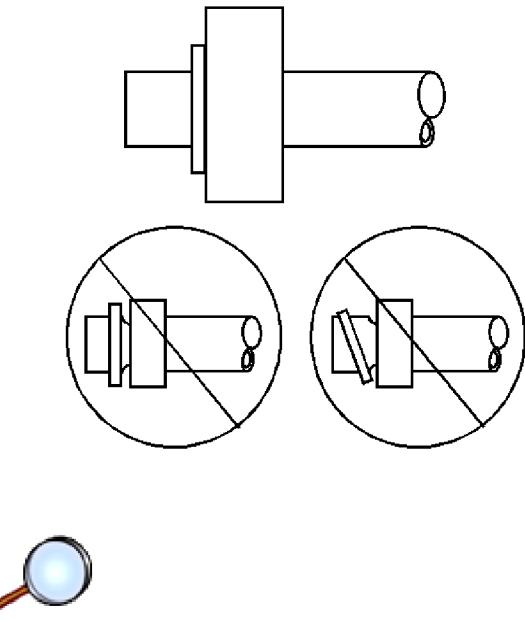
1. Install the compressor mounting bracket (2).

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the compressor mounting bracket bolts (3) and tighten to **50 N·m (37 lb ft)**.
3. Install the compressor. Refer to [Air Conditioning Compressor Replacement](#).

Sealing Washer Replacement

Removal Procedure



1. Remove the seal washer from the A/C refrigerant component.

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

2. Inspect the seal washer for signs of damage to help determine the root cause of the failure.
3. Inspect the A/C refrigerant components for damage or burrs. Repair if necessary.

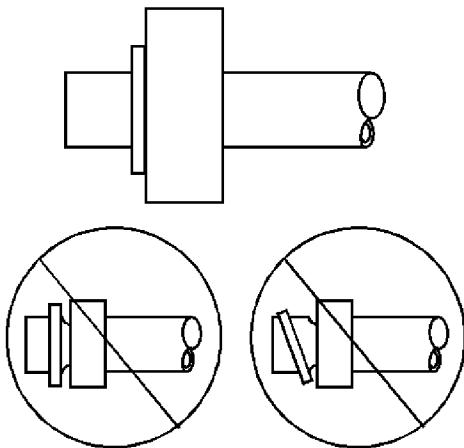
Important: DO NOT reuse sealing washer.

4. Discard the sealing washer.

Installation Procedure

Important: Flat washer type seals do not require lubrication.

1. Inspect the new seal washer for any signs of cracks, cuts, or damage.
Do not use a damaged seal washer.
2. Remove the cap or tape from the A/C refrigerant components.



3. Using a lint-free clean, dry cloth, clean the sealing surfaces of the A/C refrigerant components.
4. Carefully install the new seal washer onto the A/C refrigerant component.

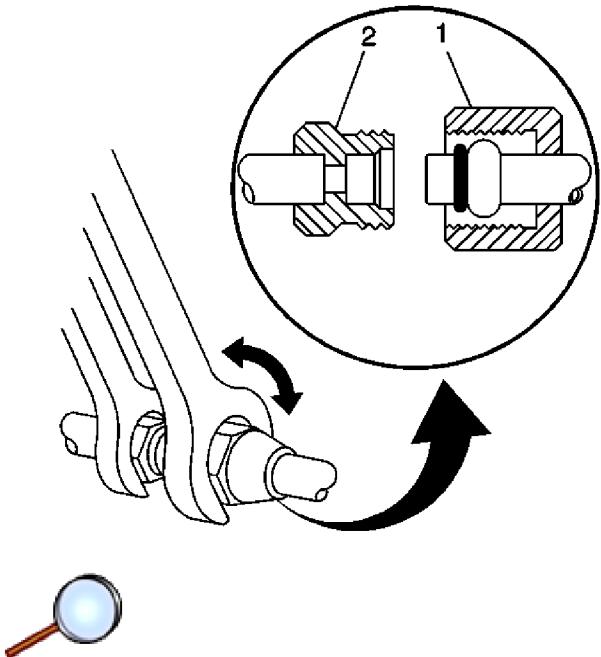
The washer must completely bottom against the surface of the fitting.

Important: After tightening the A/C components, there should be a slight sealing washer gap of approximately 1.2 mm (3/64 in) between the A/C line and the A/C component.

5. Assemble the remaining A/C refrigerant components. Refer to the appropriate repair procedure.

O-Ring Replacement

Removal Procedure



1. Disassemble the A/C refrigerant components. Refer to the appropriate repair procedure
 - For compression style fittings use a back up wrench on the fitting (2) and loosen the fitting nut (1).
 - For banjo style fittings remove the bolt retaining the banjo type fitting.
2. Remove the O-ring seal from the A/C refrigerant component.
3. Inspect the O-ring seal for signs of damage to help determine the root cause of the failure.
4. Inspect the A/C refrigerant components for damage or burrs. Repair if necessary.

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

5. Cap or tape the A/C refrigerant components.
6. Discard the O-ring seal.

Installation Procedure

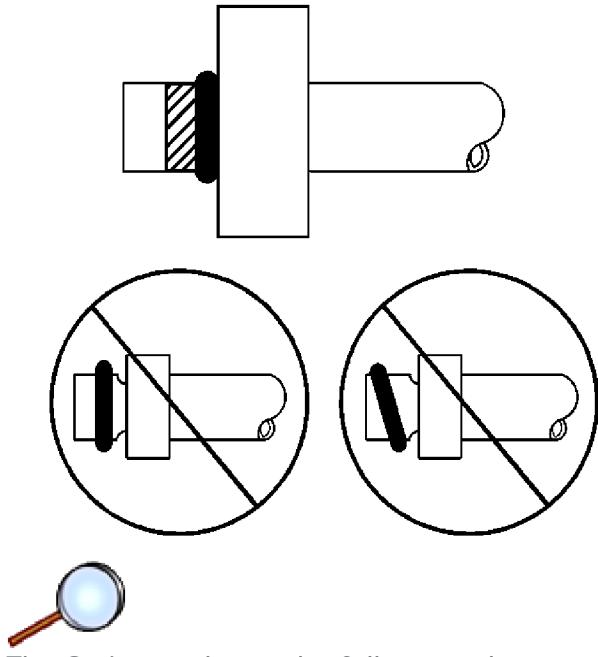
1. Inspect the new O-ring seal for any sign or cracks, cuts, or damage. Replace if necessary.
2. Remove the cap or tape from the A/C refrigerant components.
3. Using a lint-free clean, dry cloth, carefully clean the sealing surfaces of the A/C refrigerant components.

Important: DO NOT allow any of the mineral base 525 viscosity refrigerant oil on the new O-ring seal to enter the refrigerant system.

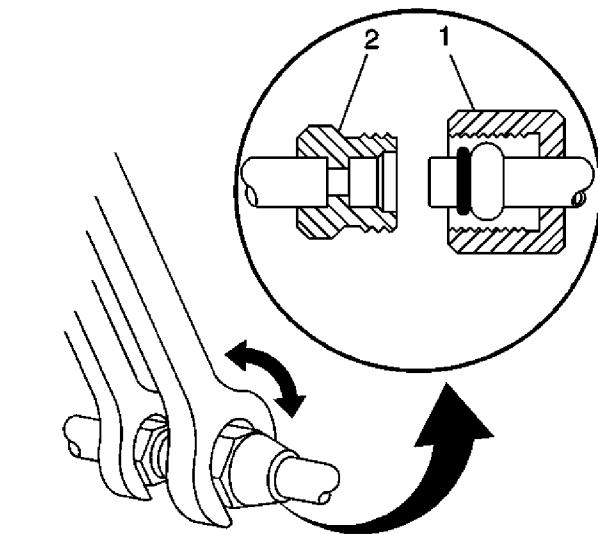
4. Lightly coat the new O-ring seal with mineral base 525 viscosity refrigerant oil.

Important: DO NOT reuse O-ring seals.

5. Carefully slide the new O-ring seal onto the A/C refrigerant component.



6. The O-ring seal must be fully seated.



7. Assemble the A/C components.

Refer to the appropriate repair procedure.

- For compression style fittings use a back up wrench on the fitting (2) and tighten the fitting nut (1) to specification.

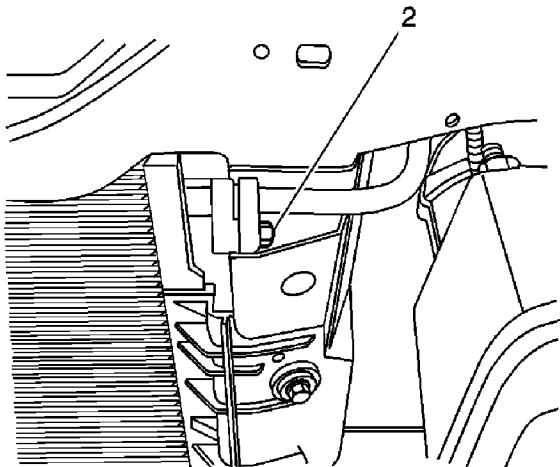
- For banjo style fittings install the bolt retaining the banjo type fitting and tighten to specification.

Discharge Hose Replacement (4.8L, 5.3L, 6.0L)

Special Tools

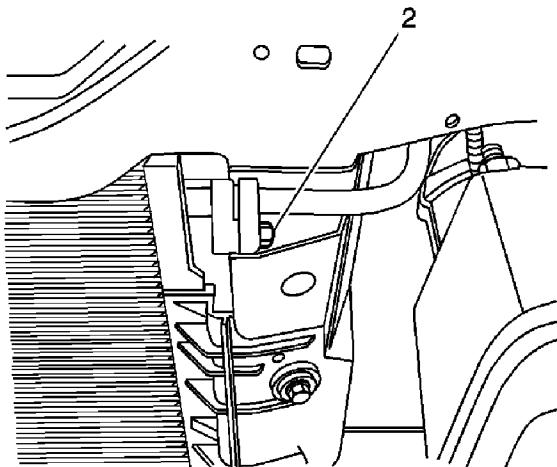
[J 39400-A](#) Halogen Leak Detector

Removal Procedure



1. Recover the refrigerant. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
3. Remove the grille. Refer to [Grille Replacement](#).
4. Remove the discharge line nut (2) from the condenser.
5. Remove the discharge line bolt from the compressor.
6. Remove the discharge line from the vehicle.

Installation Procedure



1. Install the discharge hose into the vehicle.

Caution: Refer to [Fastener Caution](#) in the Preface section.

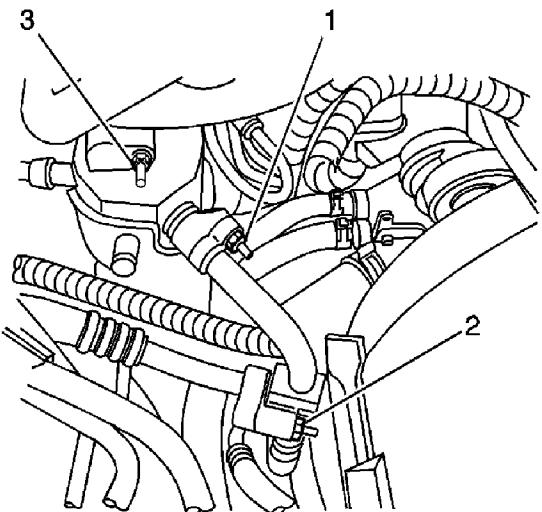
2. Install the discharge hose nut (2) to the condenser and tighten to **16 N·m (12 lb ft)**.
3. Install the grille. Refer to [Grille Replacement](#).
4. Install the discharge hose to the compressor.
5. Install the discharge hose to the compressor bolt and tighten to **35 N·m (26 lb ft)**.
6. Install the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
7. Leak test the fittings of the component using the [J 39400-A](#).

Suction Hose Replacement (4.8L, 5.3L, 6.0L)

Special Tools

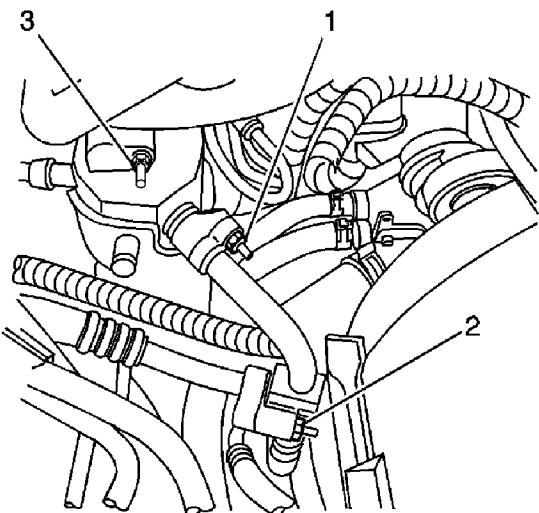
[J 39400-A](#) Halogen Leak Detector

Removal Procedure



1. Recover the refrigerant. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
3. Remove the suction line nut (1) from the accumulator.
4. Remove the rear suction line nut (2) if equipped with rear air.
5. Remove the suction line bolt from the compressor.
6. Remove the suction line from the vehicle.

Installation Procedure



1. Install the suction line into the vehicle.

Caution: Refer to [Fastener Caution](#) in the Preface section.

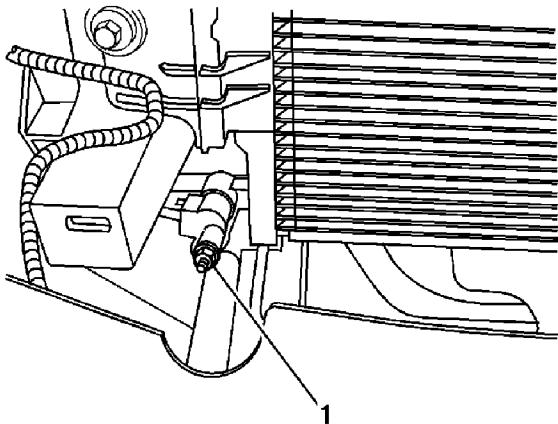
2. Install the suction line bolt to the compressor and tighten to **35 N·m (26 lb ft)**.
3. Install the rear suction line nut (2) if equipped with rear air and tighten to **16 N·m (12 lb ft)**.
4. Install the suction line nut (1) to the accumulator and tighten to **16 N·m (12 lb ft)**.
5. Install the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
6. Leak test the fittings of the component using the [J 39400-A](#).

Air Conditioning Evaporator Front Tube Replacement

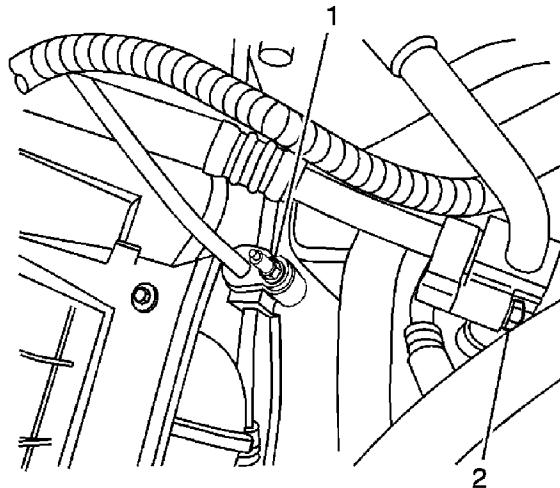
Special Tools

[J 39400-A](#) Halogen Leak Detector

Removal Procedure

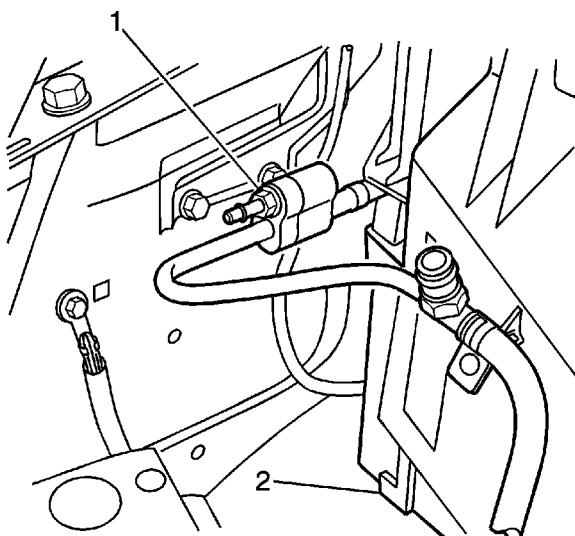


1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant recover reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
3. Remove the grille. Refer to [Grille Replacement](#).
4. Remove the front evaporator hose nut (1) from the condenser.



5. Remove the evaporator inlet hose nut (1) from the front evaporator tube hose.
6. Remove the evaporator inlet hose from the front hose.
7. Remove the nut from the rear evaporator (If Equipped).
8. Remove the front evaporator hose from the vehicle.
9. Remove the sealing washers.

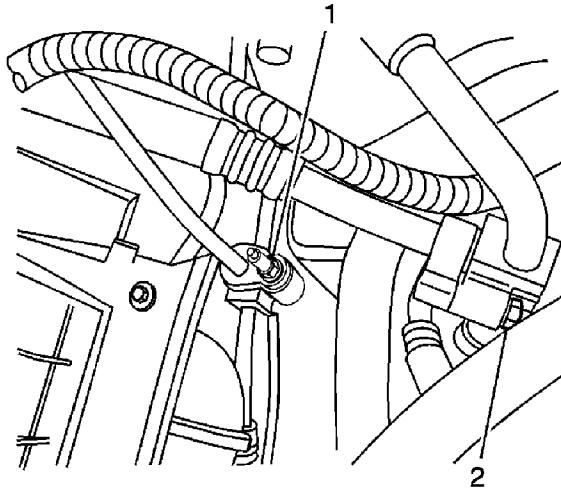
Installation Procedure



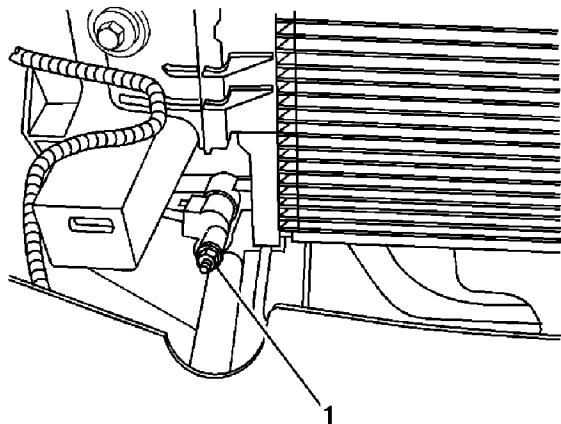
1. Install the new sealing washers. Refer to [Sealing Washer Replacement](#).
2. Install the front evaporator tube into the vehicle.
3. Install the front evaporator tube to the rear evaporator tube.

Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the rear evaporator tube retaining nut (1) (If Equipped) and tighten to **16 N·m (12 lb ft)**.
5. Install the evaporator inlet hose to the front evaporator tube.



6. Install the evaporator inlet hose nut to the front evaporator tube and tighten to **16 N·m (12 lb ft)**.



7. Install the front evaporator tube to the condenser.
8. Install the front evaporator tube nut (1) to the condenser and tighten to **16 N·m (12 lb ft)**.
9. Install the grille. Refer to [Grille Replacement](#).
10. Install the coolant recover reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
11. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
12. Leak test the fittings of the components using the [J 39400-A](#).

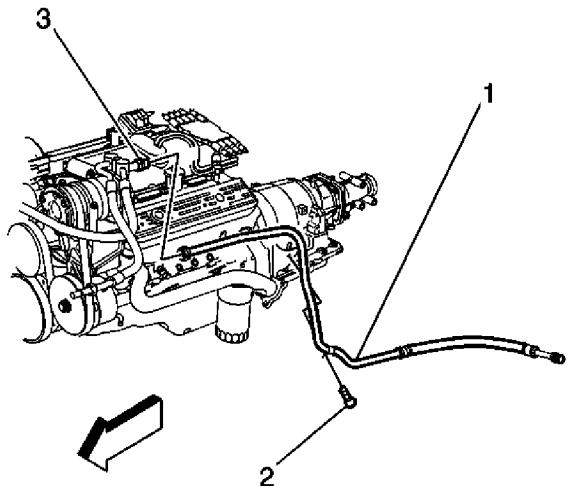
Air Conditioning Evaporator Tube Replacement - Outlet (C69)

Special Tools

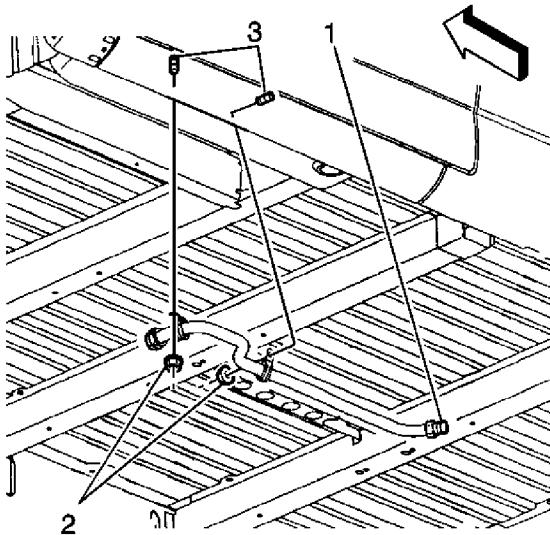
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the engine cover. Refer to [Engine Cover Replacement](#).



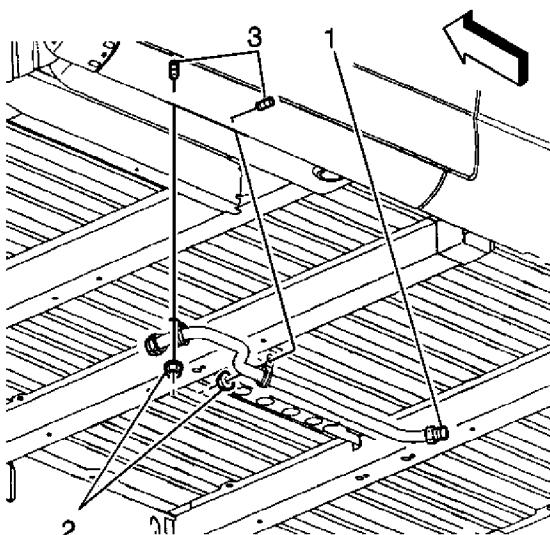
3. Remove the auxiliary evaporator outlet tube (1) from the compressor hose (3).
4. Remove the retaining nut form the engine.
5. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



6. Remove the auxiliary evaporator tube (1) retaining nuts (2) from the body.
7. Remove the bolt retaining the auxiliary evaporator outlet tube to the transmission bracket.
8. Remove the auxiliary evaporator outlet tube from the auxiliary evaporator.
9. Remove the evaporator tube from the vehicle.

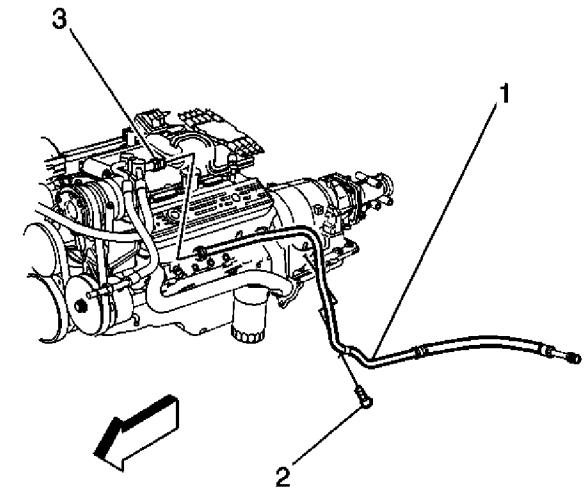
Installation Procedure

Caution: Refer to [Fastener Caution](#) in the Preface section.



1. Connect the evaporator tube (1) to the auxiliary evaporator core and tighten the hose fitting to **48 N·m (35 lb ft)**.
2. Install the evaporator tube retaining nuts (2) to the engine and the body and tighten to

6 N·m (53 lb in).



3. Install the bolt retaining the hose (1) to the transmission bracket and tighten to **5 N·m (44 lb in)**.
4. Lower the vehicle.
5. Install the auxiliary evaporator outlet tube to the compressor hose and tighten the fitting to **48 N·m (35 lb ft)**.
6. Install the engine cover. Refer to [Engine Cover Replacement](#).
7. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
8. Leak test the fittings of the components using the [J 39400-A](#).

Air Conditioning Evaporator Thermal Expansion Valve Screen Replacement

Special Tools

[J 39400-A](#) Halogen Leak Detector

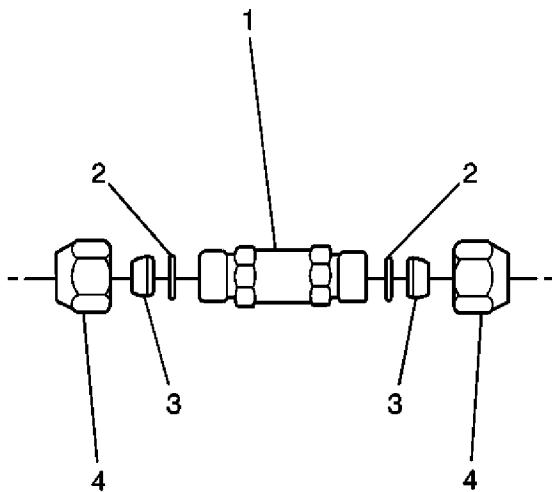
Note:

- The A/C refrigerant filter installation procedure applies to vehicles with an auxiliary system only.
- The A/C refrigerant filter, must be installed to the A/C evaporator tube between the condenser and the expansion (orifice) tube. The installation of this A/C refrigerant filter eliminates the need for flushing.

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the condenser tube from the condenser.
3. Measure 20 mm (0.75 in) from the bend on the condenser tube (3). Mark the tube.
4. Measure 42 mm (1.65 in) from the mark on the condenser tube (3) from the previous step. Mark the tube.

Note: Do not allow metal burrs to enter the condenser tube (3) during cutting or when removing the burrs.

5. Using a tubing cutter, cut the marked section of the condenser tube (3).
6. Remove the burrs from the condenser tube (3).



7. Remove the nuts (4), the ferrules, and the O-rings (2) from the A/C refrigerant filter (1).

Note: DO NOT install the O-rings (2) in this step.



8. Push the proper size nuts (4) and ferrules (3) over each of the condenser tube halves.
9. Install the ferrules (3) with the small end toward the nut (4).
10. Install the A/C refrigerant filter (1) to the condenser tube with the flow arrow pointing toward the evaporator.

Caution: Refer to [Fastener Caution](#) in the Preface section.

11. While holding the condenser tube in the A/C refrigerant filter (1), tighten the nuts (4) to the A/C refrigerant filter to **34 N·m (25 lb ft)**.
12. Remove the nuts (4) from the A/C refrigerant filter (1).
13. Install the O-rings (2) to the condenser tube. Refer to [O-Ring Replacement](#).
14. Install the nuts (4) to the A/C refrigerant filter (1) and tighten to **34 N·m (25 lb ft)**.
15. Install the condenser tube to the condenser.
16. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
17. Leak test the fittings of the component using the [J_39400-A](#).

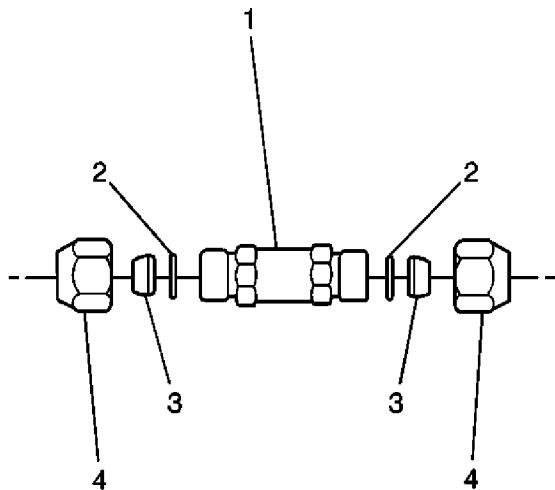
Air Conditioning (AC) Refrigerant Filter Replacement

Special Tools

[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the front evaporator tube. Refer to [Air Conditioning Evaporator Front Tube Replacement](#).



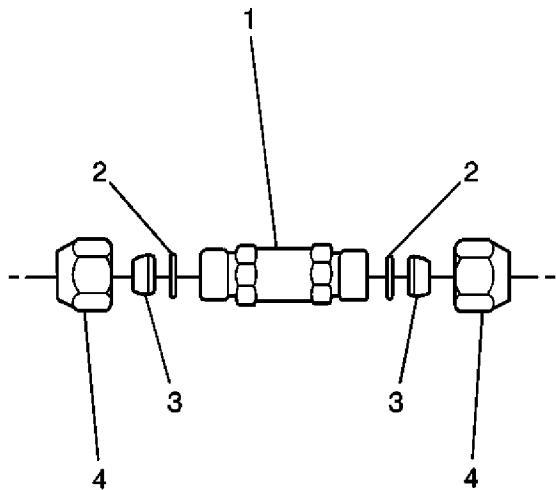
Note: The nuts (4) and ferrules (3) will remain on the condenser tube. Do not try to remove.

3. Remove the nuts (4) from the A/C refrigerant filter (1).
4. Remove the A/C refrigerant filter from the condenser tube.

Installation Procedure

1. Install the O-rings. Refer to [O-Ring Replacement](#).
2. Install the A/C refrigerant filter to the condenser tube with the flow arrow pointing towards the evaporator.

Caution: Refer to [Fastener Caution](#) in the Preface section.



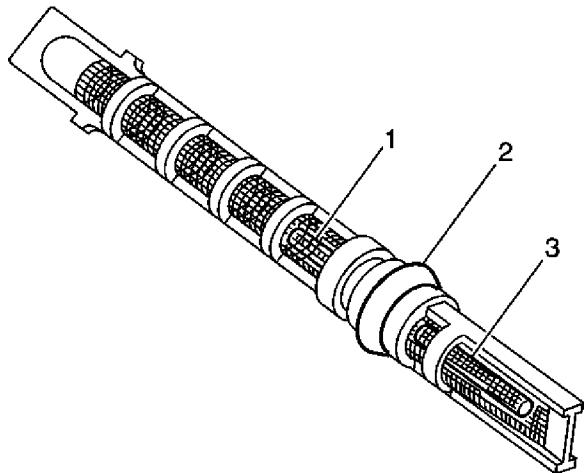
3. Install the nuts (4) to the A/C refrigerant filter (1) and tighten to **34 N·m (25 lb ft)**.
4. Install the front evaporator tube. Refer to [Air Conditioning Evaporator Front Tube Replacement](#).
5. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
6. Leak test the fittings of the installed component using the [J 39400-A](#).

Expansion (Orifice) Tube Replacement

Special Tools

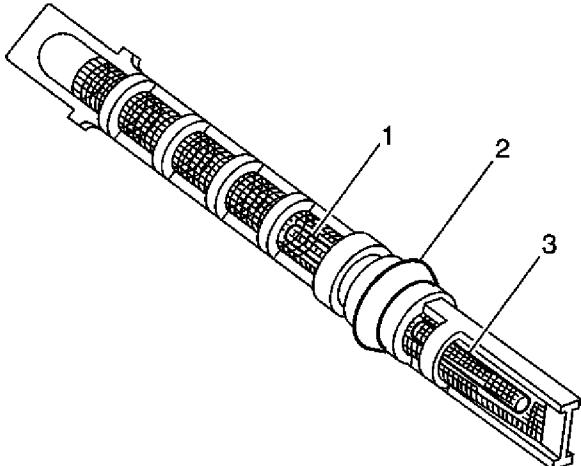
- [J 26549-E](#) Orifice Tube Remover and Installer
- [J 39400-A](#) Halogen Leak Detector

Removal Procedure



1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the evaporator hose retaining nut from the evaporator.
3. Use the [J 26549-E](#) in order to remove the expansion tube (1).
4. If the expansion tube is stuck perform the following:
 - Remove as much of the impacted residue as possible.
 - Carefully apply heat with a heat gun, or hair dryer 7 mm (0.25 in) from the dimples on the inlet pipe.
 - DO NOT overheat the pipe.
 - While applying heat, use the [J 26549-E](#) in order to grip the expansion tube. Use a turning motion along with a push-pull motion to loosen the impacted expansion tube and remove.

Installation Procedure

**Note:**

- Install the shorter screen end (3) first into the evaporator.
- Coat the O-ring seal (2) with 525 viscosity refrigerant oil.

1. Use the [J 26549-E](#) in order to install the expansion tube.
2. Install new sealing washers to the evaporator tube. Refer to [Sealing Washer Replacement](#).
3. Install the evaporator hose to the evaporator.

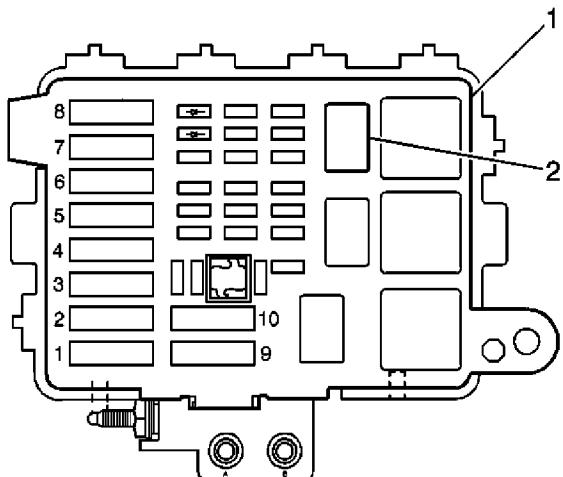
Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the evaporator hose retaining nut to the evaporator and tighten to **16 N·m (12 lb ft)**.
5. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
6. Leak test the fittings of the components using the [J 39400-A](#).

Compressor Relay Replacement

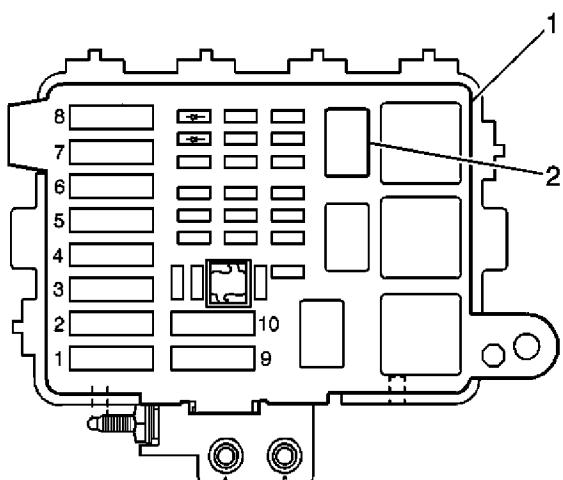
Removal Procedure

1. Remove the cover from the relay center.



2. Remove the compressor relay (2).

Installation Procedure





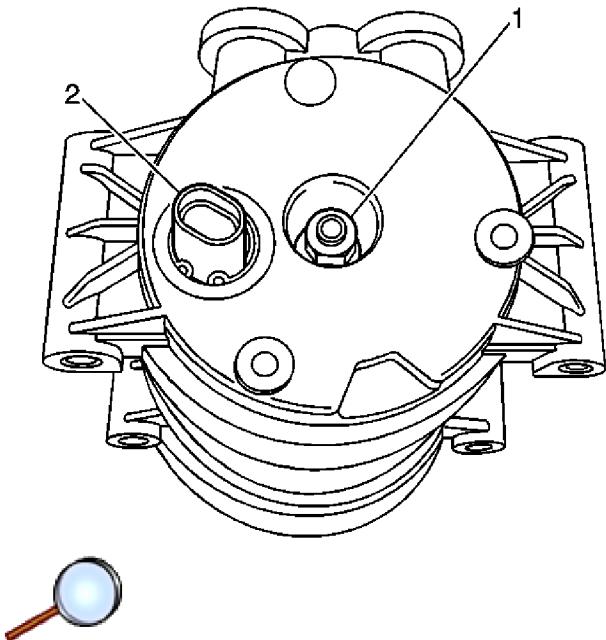
1. Install the compressor relay (2).
2. Install the cover on the relay center.

Air Conditioning (A/C) High Pressure Switch Replacement

Tools Required

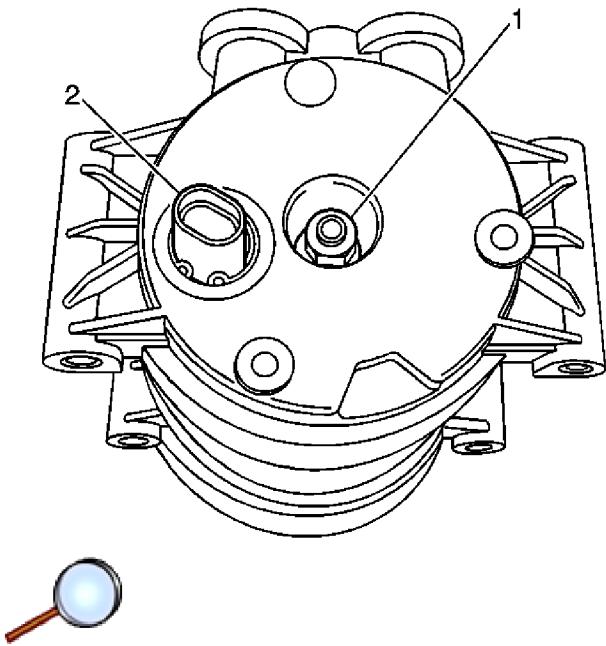
- [J 5403](#) Snap Ring Pliers
- [J 9553-01](#) O-Ring Remover
- [J 39400-A](#) Halogen Leak Detector

Removal Procedure



1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#) .
2. Clean the control A/C high pressure switch area before removing the snap ring.
3. Disconnect the electrical connector from the A/C high pressure switch (2).
4. Remove the A/C high pressure switch snap ring using the [J 5403](#) .
5. Remove the A/C high pressure switch (2) from the compressor.
6. Remove the old O-ring seal from the A/C high pressure switch cavity using the [J 9553-01](#) .
7. Inspect the A/C high pressure switch cavity and the O-ring groove in the rear head for dirt or foreign material. Clean the components as necessary.

Installation Procedure



Important: If you reinstall an existing control switch in the compressor, use a new O-ring and a new retainer ring. An O-ring and a retainer ring is included in a new switch kit.

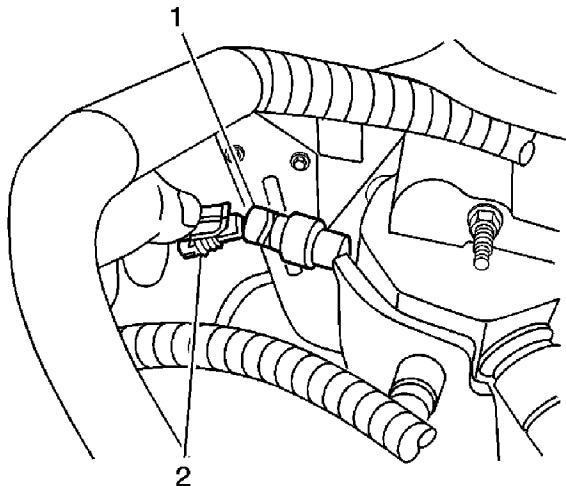
1. Lubricate the new O-ring using new 525 viscosity refrigerant oil.
2. Install the new O-ring into the groove in the switch cavity.
3. Lubricate the control switch housing using new 525 viscosity refrigerant oil.
4. Install the switch (2) into the switch cavity until the switch bottoms in the cavity.
5. Install the A/C high pressure switch snap ring using the [J 5403](#). Ensure that the high point of the curved sides is adjacent to the switch housing. Ensure that the snap ring is properly seated in the switch cavity retaining groove.
6. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
7. Leak test the fittings of the components using the [J 39400-A](#).

Air Conditioning Cycling Switch Replacement

Special Tools

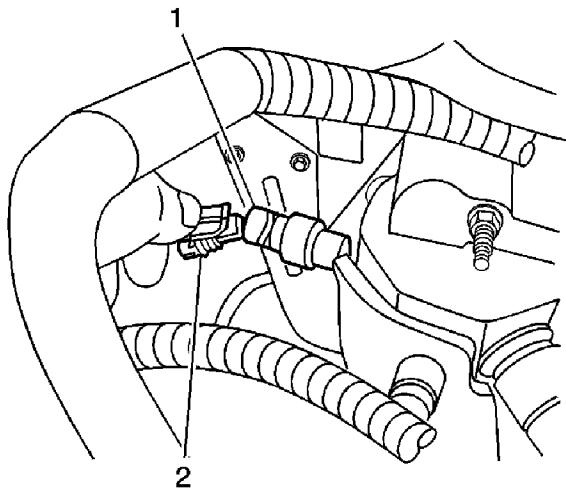
[J 39400-A](#) Halogen Leak Detector

Removal Procedure



1. Disconnect the low pressure switch electrical connector (2).
2. Remove the low pressure switch (1) from the accumulator.
3. Remove the O-ring seal.

Installation Procedure



1. Install the new O-ring seal to the switch. Refer to [O-Ring Replacement](#).

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the A/C low pressure switch (1) to the accumulator and tighten to **4 N·m (35 lb in)**.
3. Connect the low pressure switch electrical connector (2).
4. Leak test the fittings of the component using the [J 39400-A](#).

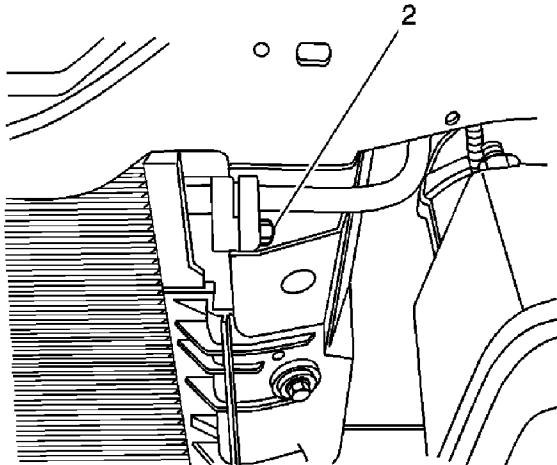
Air Conditioning Condenser Replacement

Special Tools

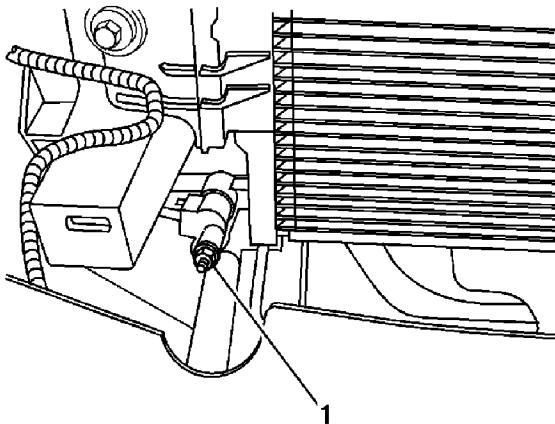
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the grille. Refer to [Grille Replacement](#).

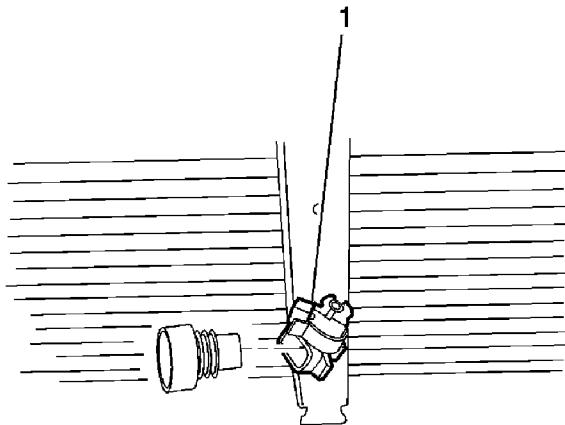


3. Remove the discharge hose retaining nut (2).
4. Remove the discharge hose from the condenser.

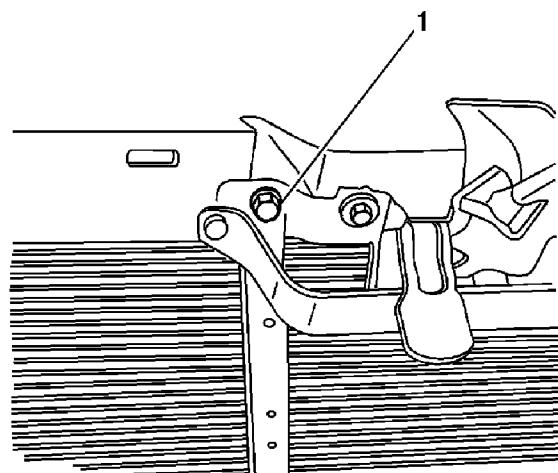




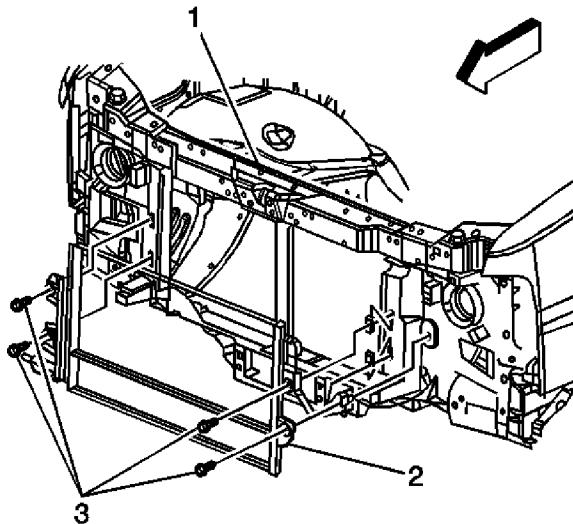
5. Remove the evaporator hose retaining nut (1).
6. Remove the evaporator hose from the condenser.



7. Disconnect the electrical connector from the outside air temperature sensor (1).



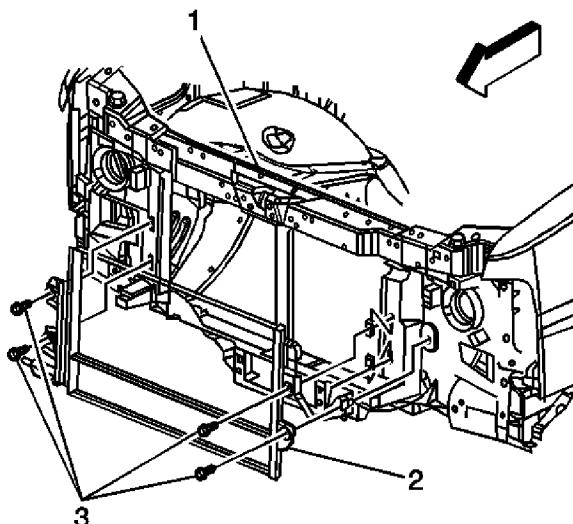
8. Remove the outside air temperature bracket bolt (1).
9. Remove the bracket.
10. Remove the sealing washers from the hoses.



11. Remove the condenser retaining bolts (3).
12. Remove the condenser (2).
13. Cap off the condenser fittings.

Installation Procedure

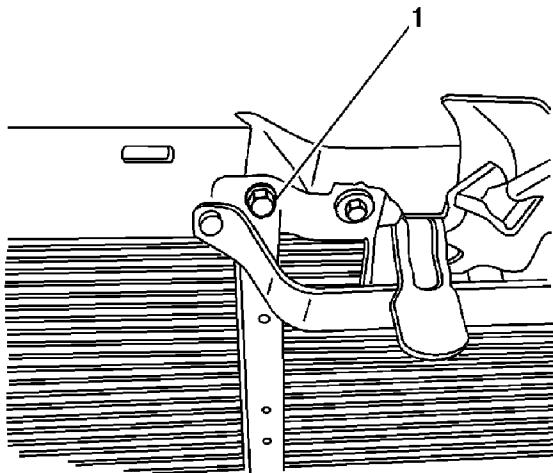
1. If replacing condenser, add the specified amount of PAG oil directly into the condenser. Refer to [Refrigerant System Capacities](#).



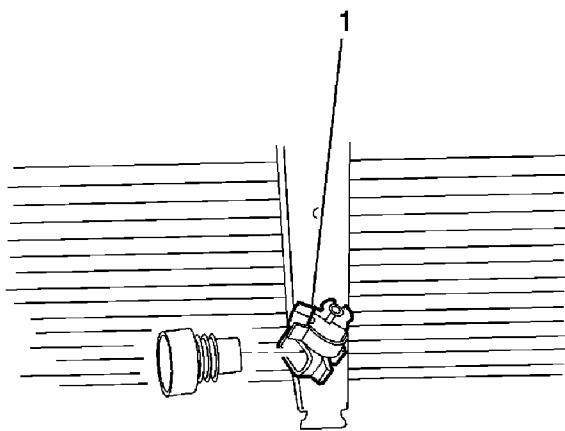
2. Remove the plugs from the condenser fittings.
3. Install new sealing washers. Refer to [Sealing Washer Replacement](#).
4. Install the condenser.

Caution: Refer to [Fastener Caution](#) in the Preface section.

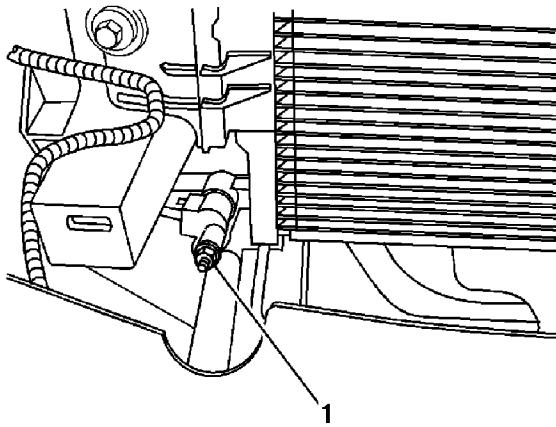
5. Install the condenser retaining bolts (3) and tighten to **9 N·m (80 lb in)**.
6. Install the outside air temperature bracket.



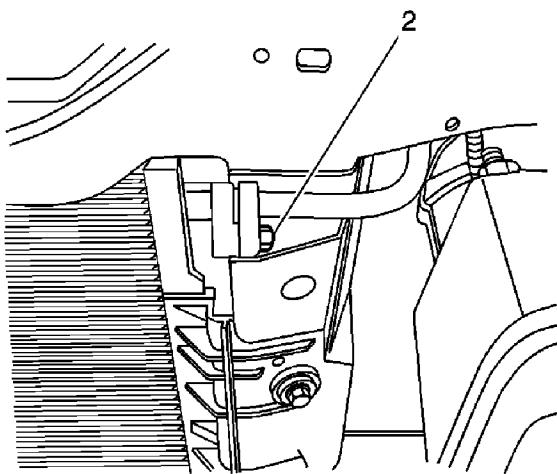
-  7. Install the outside air temperature bracket bolt (1).



-  8. Connect the outside air temperature sensor electrical connector to the sensor (1).



9. Install the evaporator hose to the condenser.
10. Install the evaporator hose retaining nut (1) and tighten to **16 N·m (12 lb ft)**.



11. Install the discharge hose to the condenser.
12. Install the discharge hose nut (2) and tighten to **16 N·m (12 lb ft)**.
13. Install the grille. Refer to [Grille Replacement](#).
14. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
15. Leak test the fittings of the component using the [J 39400-A](#).

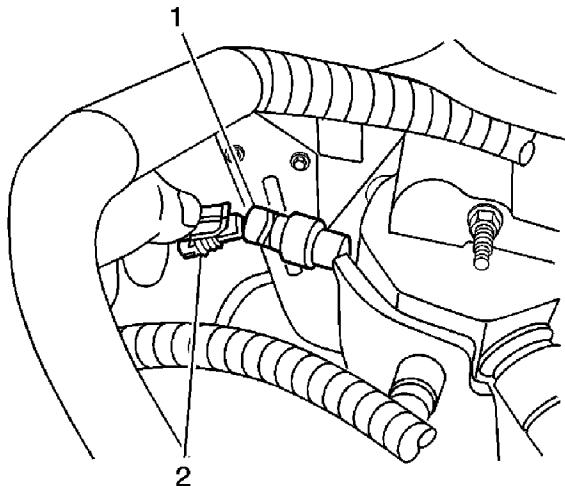
Air Conditioning Accumulator Replacement

Special Tools

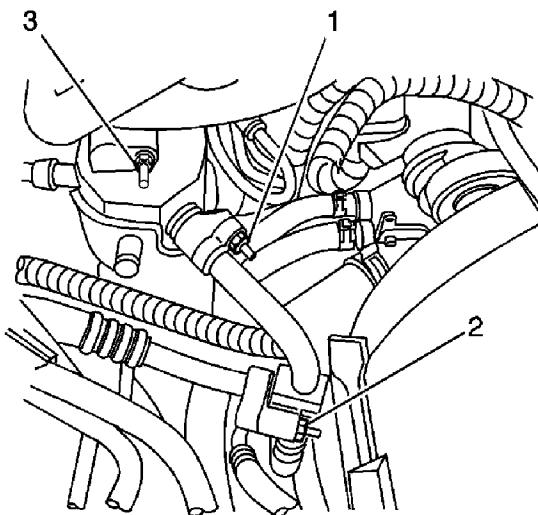
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).

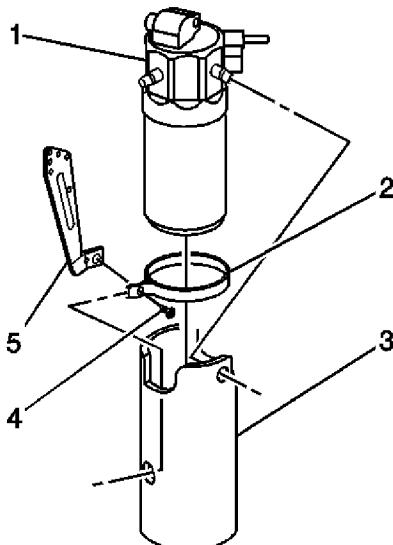


3. Disconnect the electrical connector (2) from A/C low pressure sensor (1).
4. Remove the evaporator outlet pipe retaining nut (3) from the accumulator.





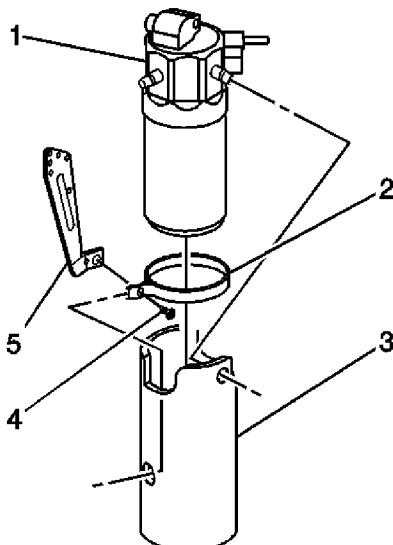
5. Remove the compressor suction hose retaining nut (1).
6. Remove the compressor suction hose from the accumulator.



7. Remove the retaining screw (4) from the accumulator retaining bracket (2).
8. Remove the accumulator (1).
9. Remove the sealing washers.

Installation Procedure

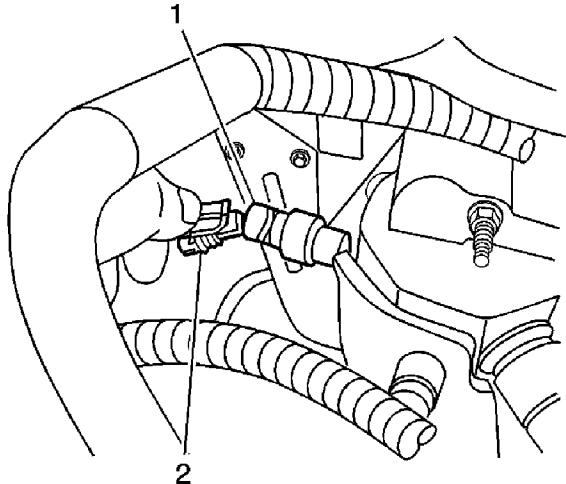
1. If replacing the accumulator, add the specified amount of PAG oil directly into the accumulator. Refer to [Refrigerant System Capacities](#).



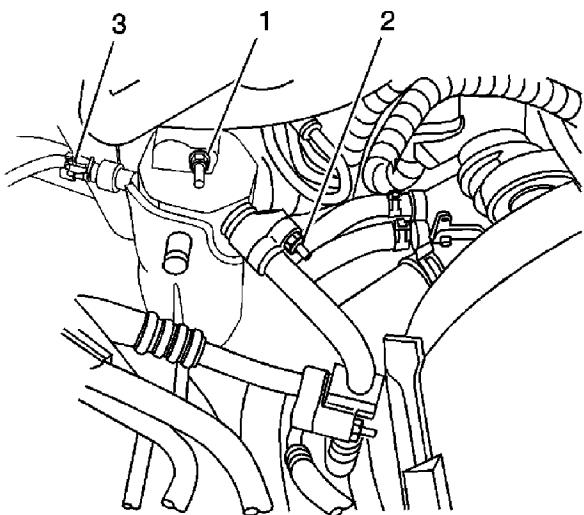
2. Install the accumulator (1).

Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the screw (4) to the accumulator retaining bracket (2) and tighten to **9 N·m** (**80 lb in**).



-  4. Connect the low pressure sensor electrical connector (1).



-  5. Install new sealing washers. Refer to [Sealing Washer Replacement](#).
6. Install the evaporator outlet pipe.
7. Install the evaporator outlet pipe retaining nut (1) to the accumulator and tighten to **16 N·m** (**12 lb ft**).
8. Install the compressor suction hose.
9. Install the compressor suction hose retaining nut (2) to the accumulator and tighten to

16 N·m (12 lb ft).

10. Install the coolant reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
11. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
12. Leak test the fittings of the component using the [J 39400-A](#) .

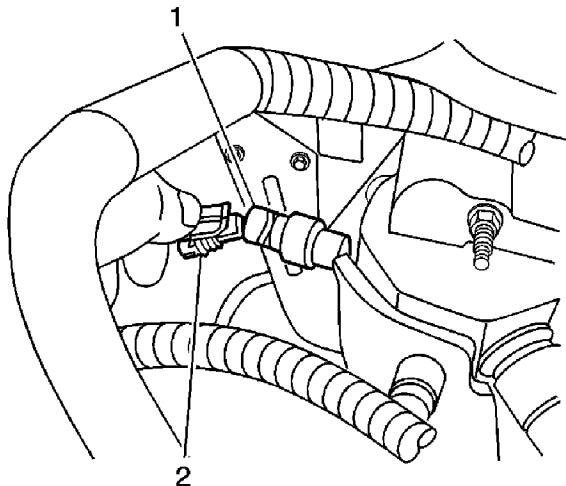
Air Conditioning (A/C) Evaporator and Blower Module Assembly Replacement

Special Tools

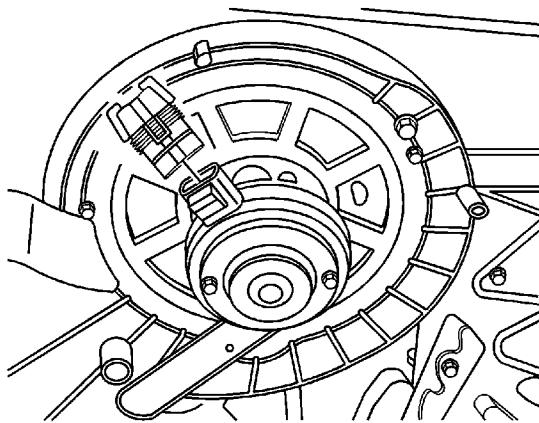
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

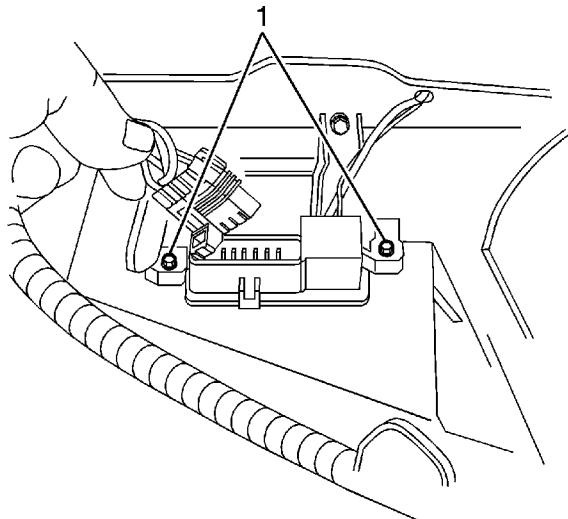
1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).



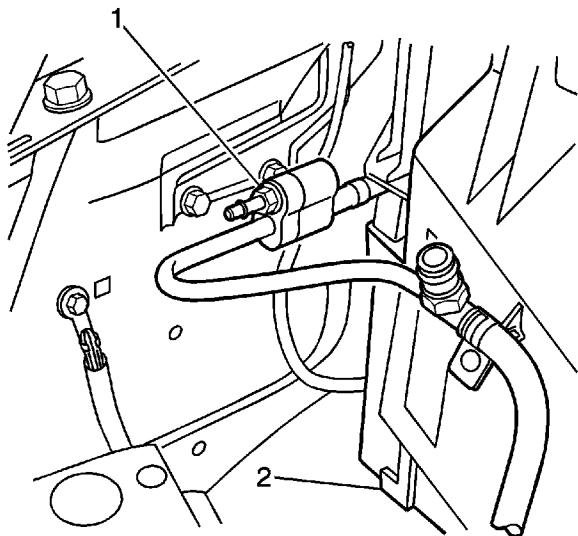
3. Disconnect the low pressure sensor electrical connector (2).



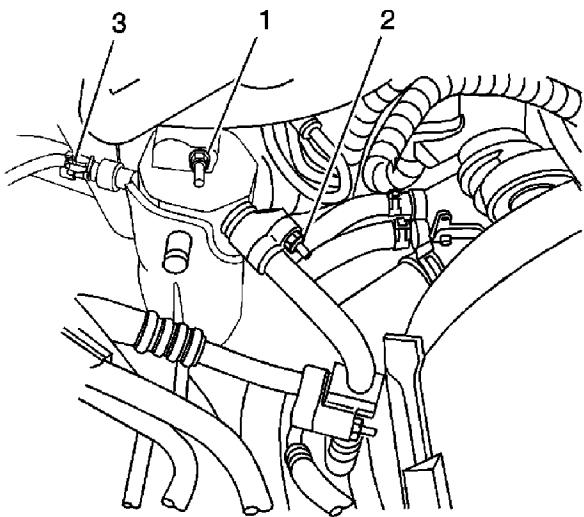
4. Disconnect the blower motor assembly electrical connector.



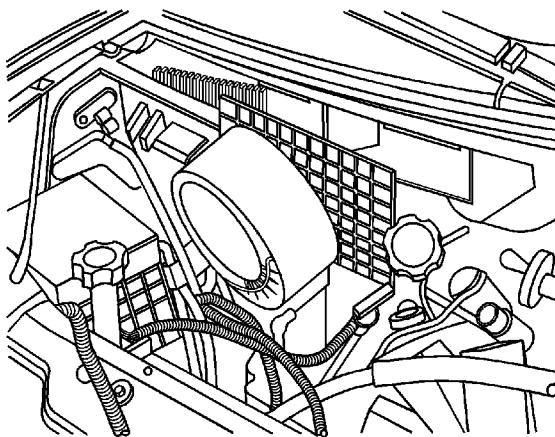
5. Disconnect the blower motor resistor assembly electrical connector.



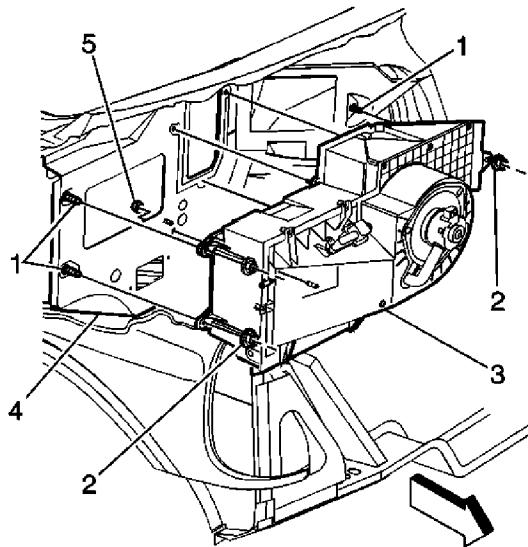
6. Remove the retaining nut (1) from the evaporator inlet tube.
7. Remove the evaporator inlet tube retaining screw.
8. Remove the evaporator inlet tube from the evaporator.
9. Remove the O-ring seal.



10. Remove the retaining nut (1) from the accumulator.
11. Remove the accumulator from the evaporator.
12. Remove the O-ring seal.



13. Remove the blower module assembly screws.
14. Remove the blower module assembly.
15. Remove the heater assembly. Refer to [Heater Assembly Replacement](#).

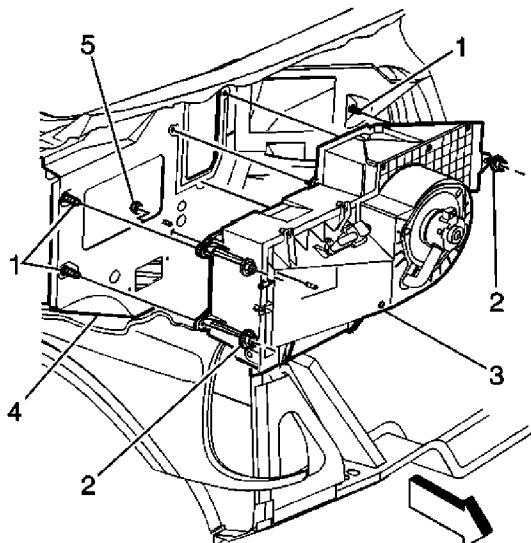


16. Remove the module assembly nuts (5).
17. Remove the module assembly nuts (2).
18. Remove the module from the vehicle.

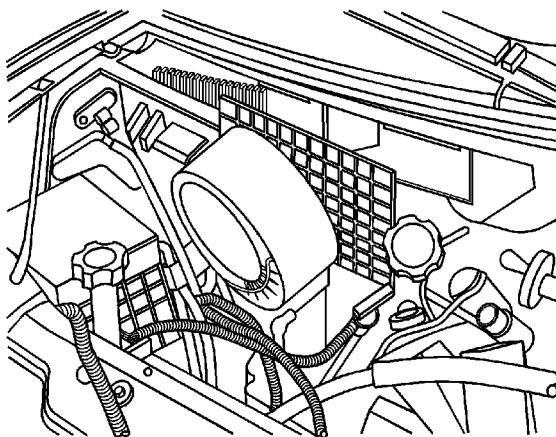
Installation Procedure

1. Install the module from the vehicle.

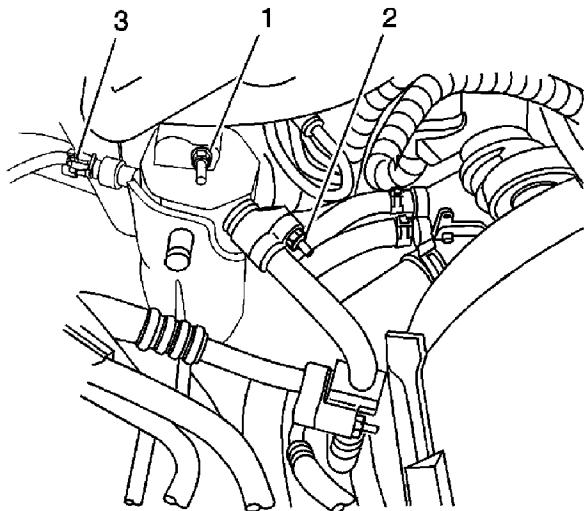
Caution: Refer to [Fastener Caution](#) in the Preface section.



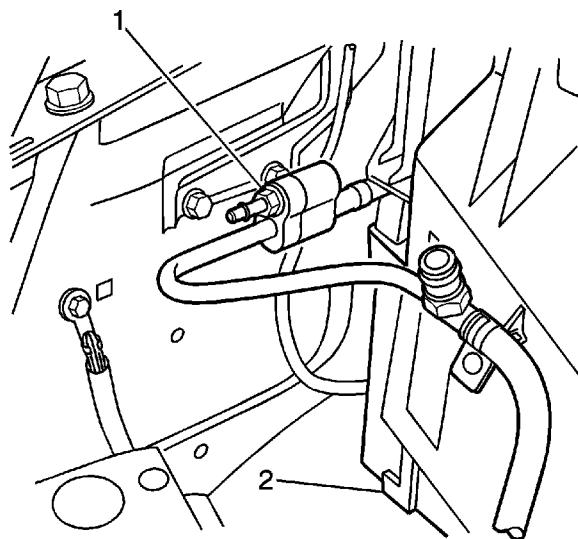
2. Install the module assembly nuts (2) and tighten to **6 N·m (53 lb in)**.
3. Install the module assembly nuts (5) and tighten to **6 N·m (53 lb in)**.
4. Install the heater assembly. Refer to [Heater Assembly Replacement](#).



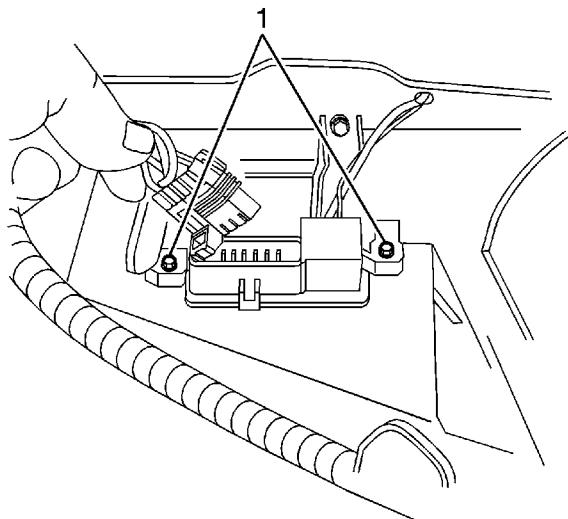
5. Install the evaporator and blower module assembly.
6. Install the evaporator and blower module assembly retaining screws.
7. Install new O-ring seals. Refer to [O-Ring Replacement](#).



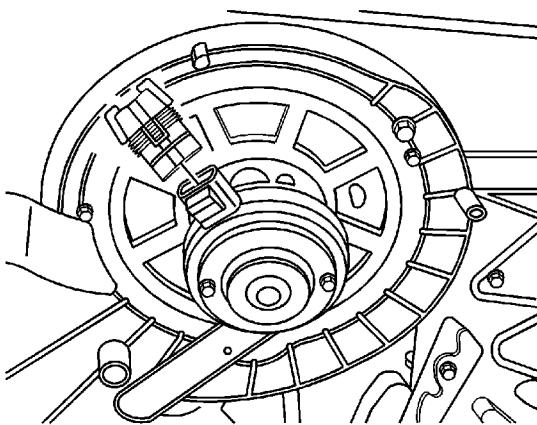
8. Install the accumulator to the evaporator.
9. Install the accumulator retaining nut (1) and tighten to **18 N·m (13 lb ft)**.
10. Install the evaporator inlet tube to the evaporator.



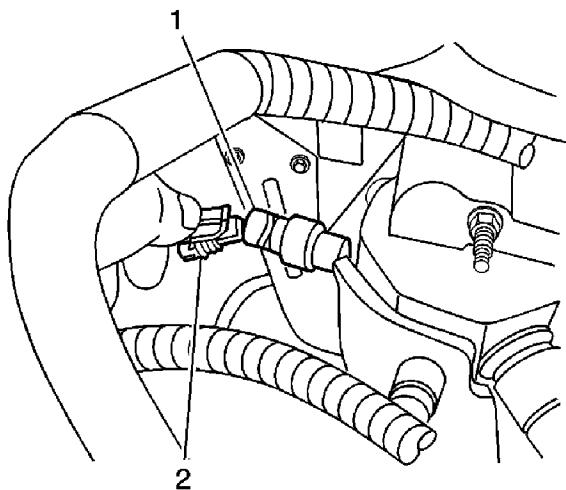
11. Install the evaporator inlet tube retaining nut (1) and tighten to **16 N·m (12 lb ft)**.
12. Install the evaporator inlet tube retaining screw.



13. Connect the blower motor resistor assembly electrical connector.



14. Connect the blower motor assembly electrical connector.

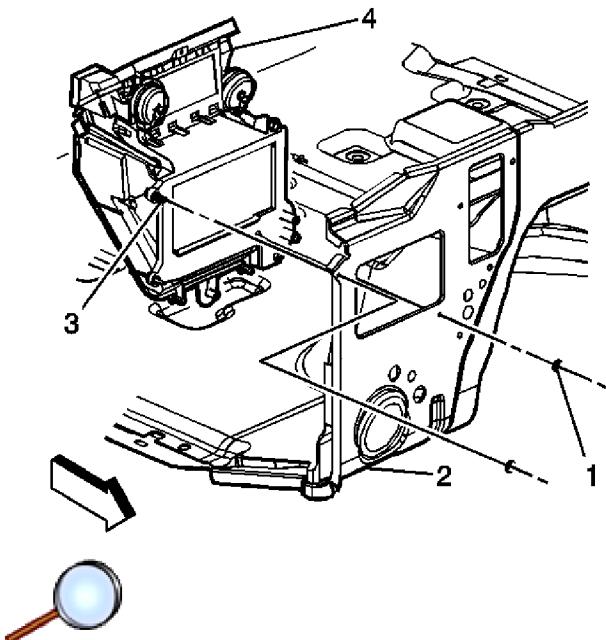


15. Connect the low pressure sensor electrical connector (2).
16. Install the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
17. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
18. Leak test the fittings of the components using the [J 39400-A](#) .

Heater Assembly Replacement

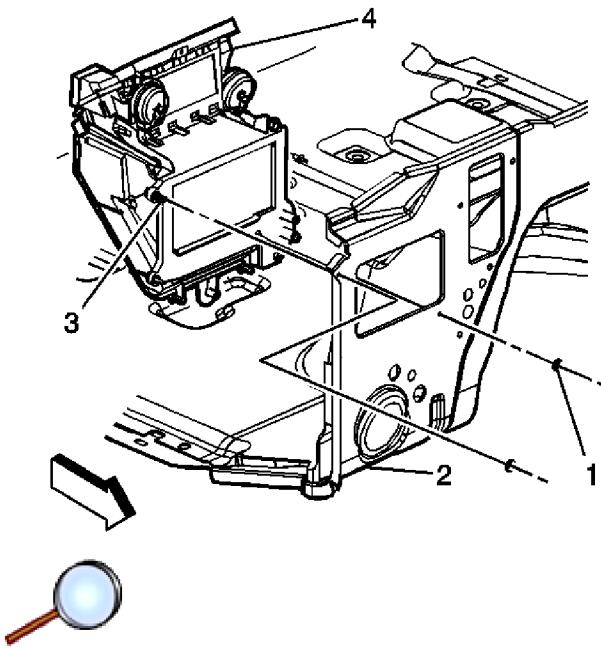
Removal Procedure

1. Remove the evaporator and blower module assembly. Refer to [Air Conditioning \(A/C\) Evaporator and Blower Module Assembly Replacement](#).



2. Remove the heater assembly retaining nuts (1) from the engine compartment.
3. Remove the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).
4. Disconnect the temperature actuator electrical connector.
5. Disconnect the vacuum lines from the actuators.
6. Remove the heater assembly.

Installation Procedure



1. Install the heater assembly.
2. Connect the vacuum lines to the actuators.
3. Connect the temperature actuator electrical connector.
4. Install the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).

Caution: Refer to [Fastener Caution](#) in the Preface section.

5. Install the heater assembly retaining nuts (2) to the engine compartment and tighten to **6 N·m (53 lb in)**.
6. Install the evaporator and blower module assembly. Refer to [Air Conditioning \(A/C\) Evaporator and Blower Module Assembly Replacement](#).

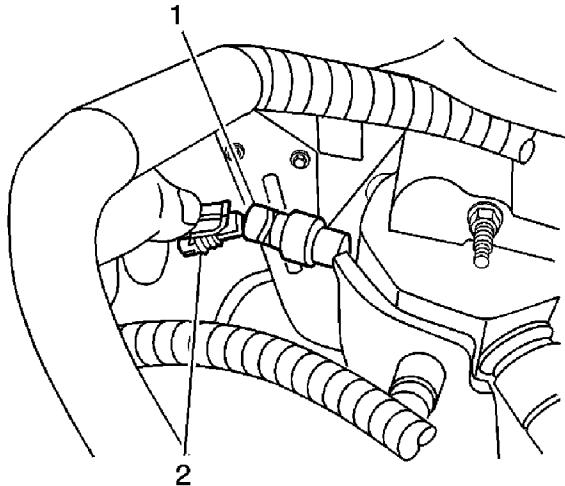
Air Conditioning Evaporator Core Replacement

Special Tools

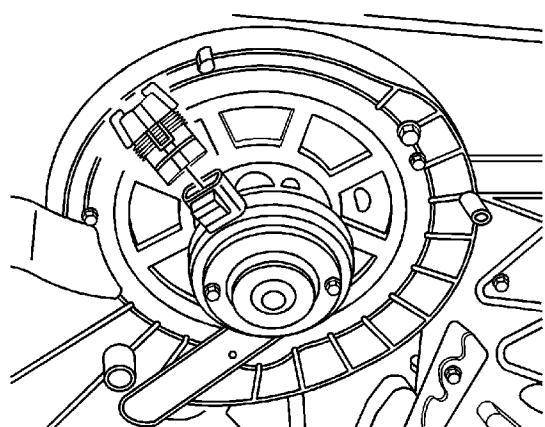
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant from the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
2. Remove the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).

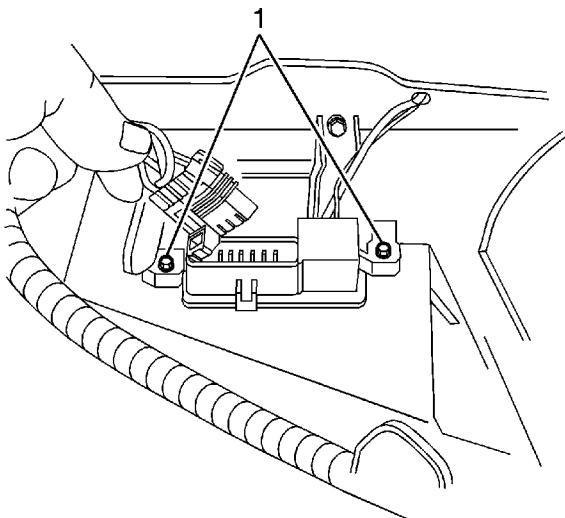


3. Disconnect the low pressure sensor electrical connector (2).

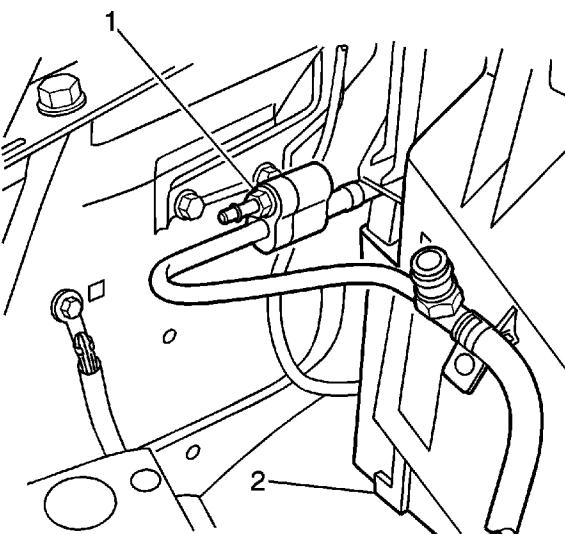




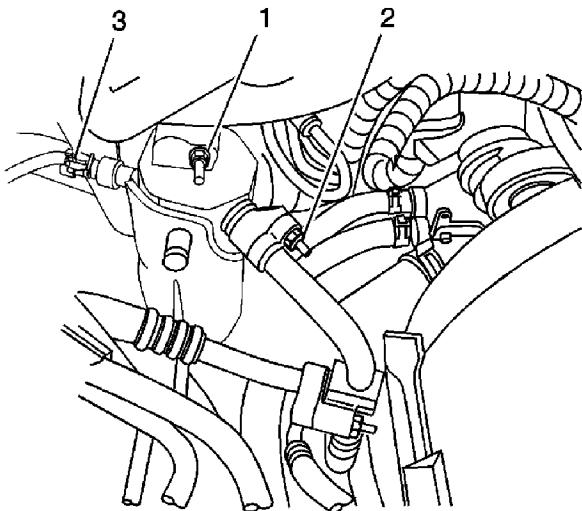
4. Disconnect the blower motor assembly electrical connector.



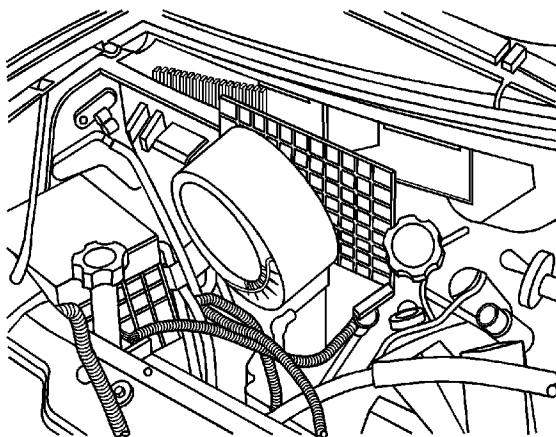
5. Disconnect the blower motor resistor assembly electrical connector.



6. Remove the retaining nut (1) from the evaporator inlet tube.
7. Remove the evaporator inlet tube retaining screw.
8. Remove the evaporator inlet tube from the evaporator.
9. Remove the O-ring seal.



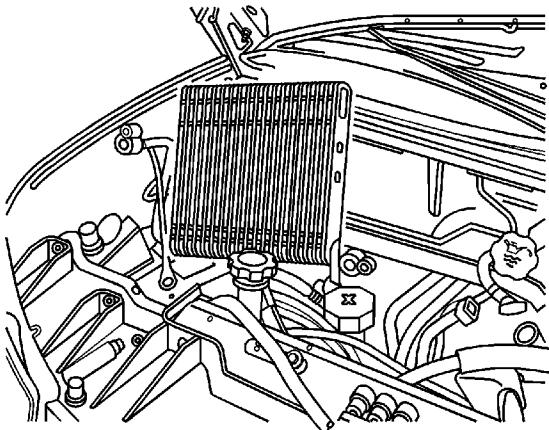
10. Remove the retaining nut (1) from the accumulator.
11. Remove the accumulator from the evaporator.
12. Remove the O-ring seal.



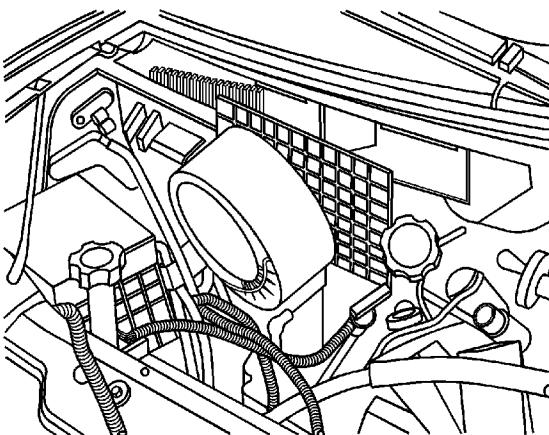
13. Remove the blower module assembly screws.
14. Remove the blower module assembly.
15. Remove the evaporator core from the evaporator and blower module assembly.

Installation Procedure

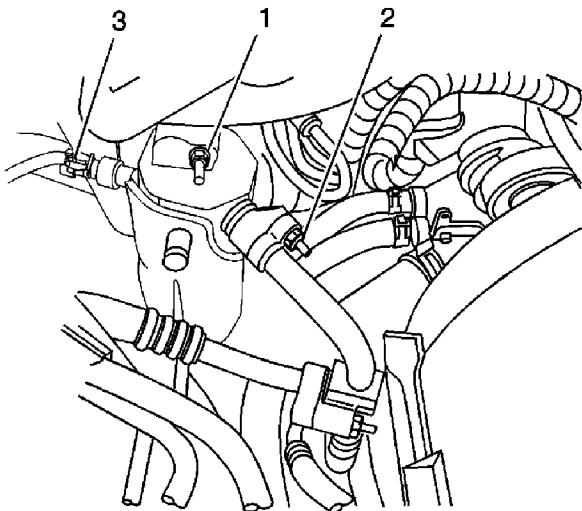
1. If replacing the evaporator core, add the specified amount of PAG oil directly into the evaporator. Refer to [Refrigerant System Capacities](#).



- 
2. Install the evaporator.



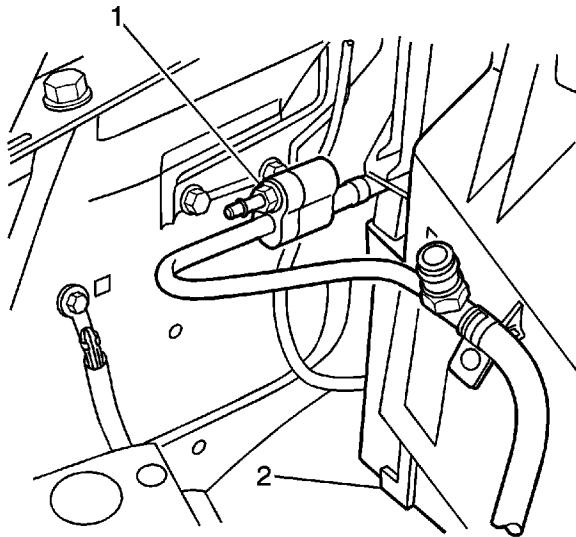
- 
3. Install the evaporator and blower module assembly.
 4. Install the evaporator and blower module assembly retaining screws.
 5. Install new O-ring seals. Refer to [O-Ring Replacement](#).



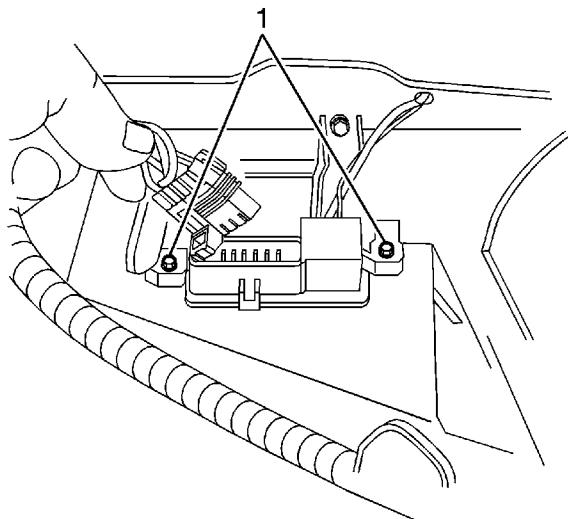
6. Install the accumulator to the evaporator.

Caution: Refer to [Fastener Caution](#) in the Preface section.

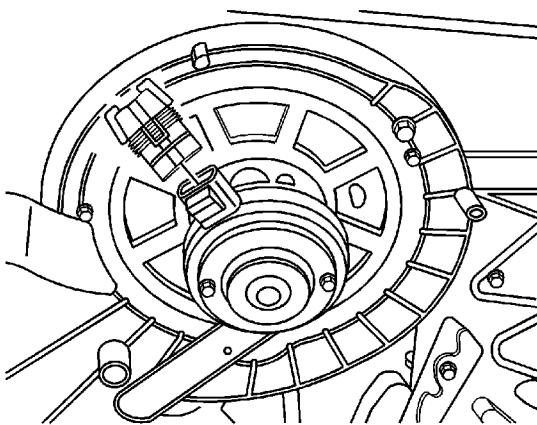
7. Install the accumulator retaining nut (1) and tighten to **18 N·m (13 lb ft)**.
8. Install the evaporator inlet tube to the evaporator.



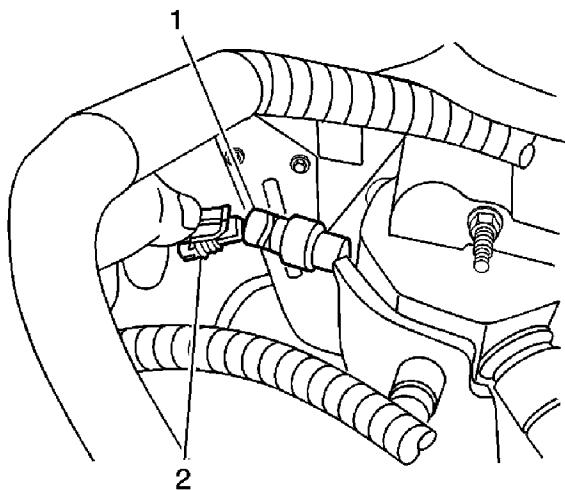
9. Install the evaporator inlet tube retaining nut (1) and tighten to **16 N·m (12 lb ft)**.
10. Install the evaporator inlet tube retaining screw.



11. Connect the blower motor resistor assembly electrical connector.



12. Connect the blower motor assembly electrical connector.



13. Connect the low pressure sensor electrical connector (2).
14. Install the coolant recovery reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).
15. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
16. Leak test the fittings of the components using the [J 39400-A](#) .

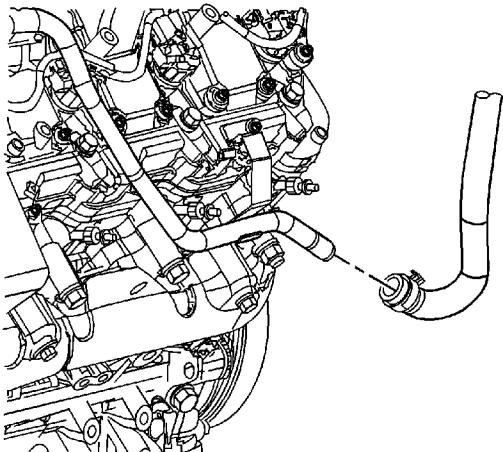
Heater Coolant Heater Inlet Hose Replacement

Special Tools

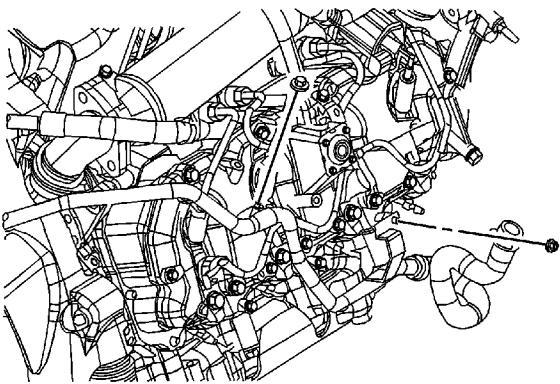
[J 38185](#) Hose Clamp Pliers

Removal Procedure

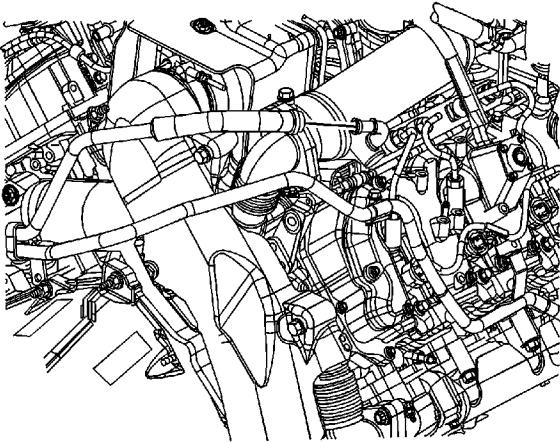
1. Remove the engine cover. Refer to [Engine Cover Replacement](#).
2. Partially drain the cooling system. Refer to [Cooling System Draining and Filling](#).
3. Remove the air cleaner. Refer to [Air Cleaner Assembly Replacement](#) for the 4.3L engine, or [Air Cleaner Assembly Replacement](#) for the 4.8L, 5.3L, 6.0L, 6.2L and 7.0L engine, or [Air Cleaner Assembly Replacement](#) for the 6.6L engine.
4. Remove the upper fan shroud. Refer to [Engine Coolant Fan Upper Shroud Replacement](#).



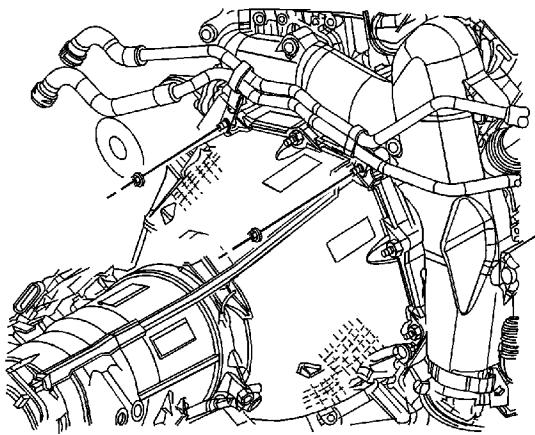
5. Reposition the heater hose clamp at the heater pipe assembly using [J 38185](#).
6. Remove the heater hose from the heater pipe assembly near the front of the engine.



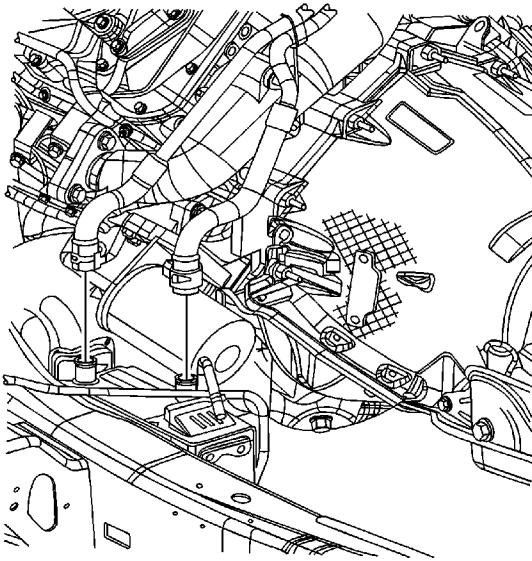
7. Remove the heater pipe to the engine retaining nut.



8. Reposition the heater hose clamp at the heater pipe assembly using [J 38185](#).
9. Remove the heater hose from the heater pipe assembly near the rear of the engine.



10. Remove the heater pipe to transmission housing retaining nuts.

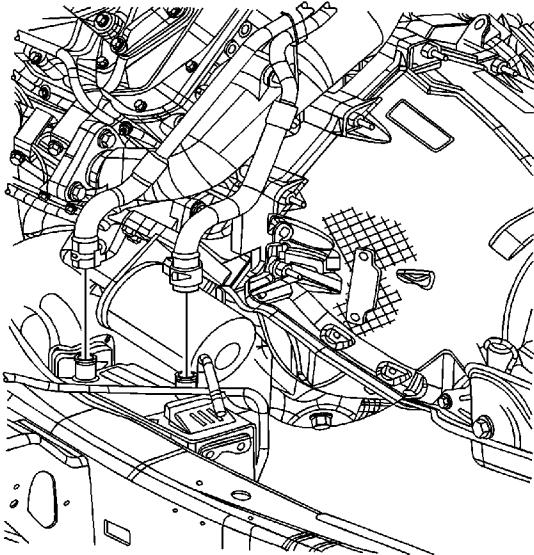


11. Reposition the heater pipe hoses to the fuel operated heater clamps using [J 38185](#) .
12. Remove the heater pipe hoses from the fuel operated heater.

Note: Note the routing of the hose assembly to ensure proper installation.

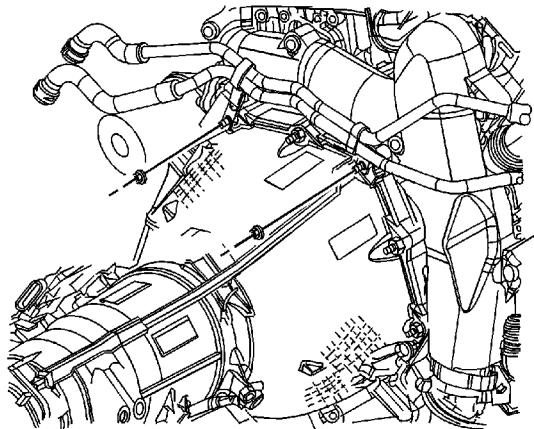
13. Remove the heater pipe hose assembly from the vehicle.

Installation Procedure

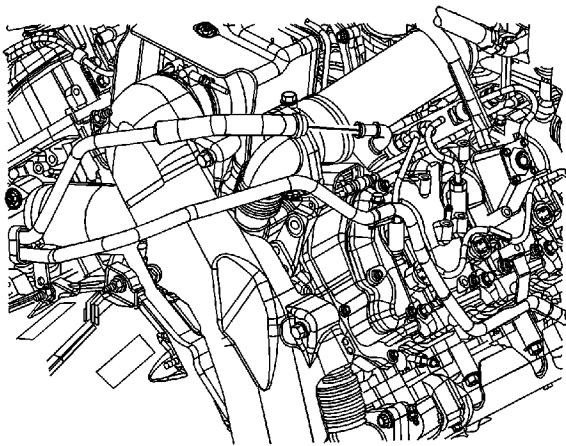


1. Install the heater pipe hose assembly to the vehicle.
2. Install the heater pipe hoses to the fuel operated heater.
3. Reposition the heater pipe hoses to the fuel operated heater clamps using [J 38185](#).

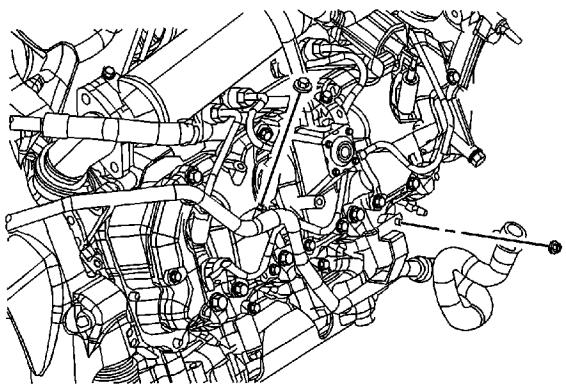
Caution: Refer to [Fastener Caution](#) in the Preface section.



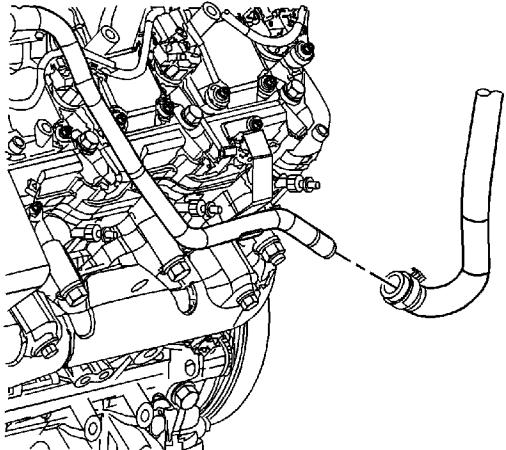
4. Install the heater pipe to transmission housing retaining nuts and tighten to **25 N·m** (**18 lb ft**).



5. Install the heater hose to the heater pipe assembly near the rear of the engine.
6. Reposition the heater hose clamp at the heater pipe assembly using [J 38185](#).

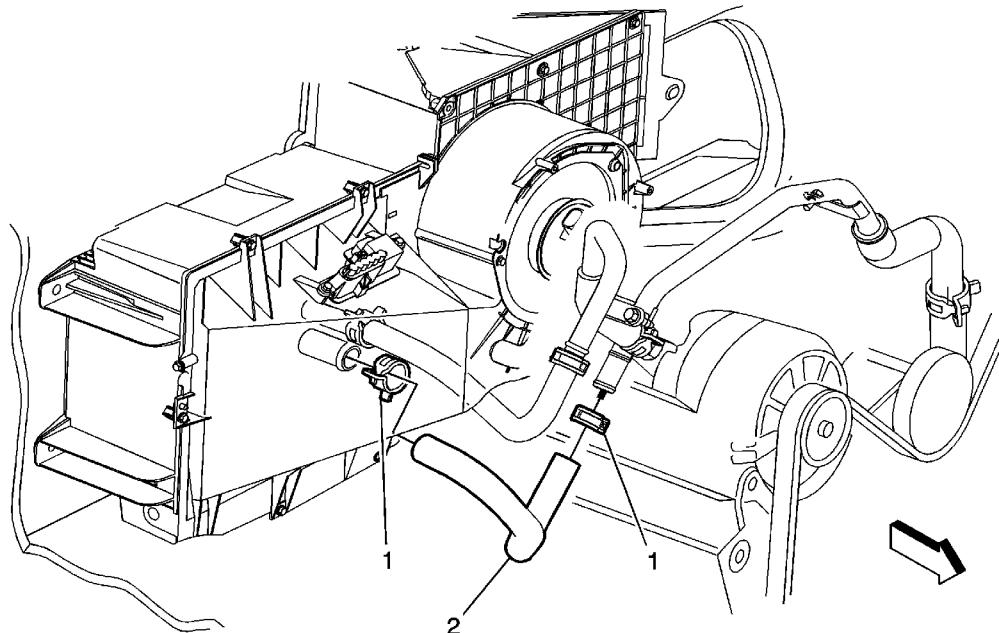


7. Install the heater pipe to the engine retaining nut and tighten to **8 N·m (71 lb in)**.



8. Install the heater hose to the heater pipe assembly near the front of the engine.
9. Reposition the heater hose clamp at the heater pipe assembly using [J 38185](#).
10. Install the upper fan shroud. Refer to [Engine Coolant Fan Upper Shroud Replacement](#).
11. Install the air cleaner. Refer to [Air Cleaner Assembly Replacement](#) for the 4.3L engine, or [Air Cleaner Assembly Replacement](#) for the 4.8L, 5.3L, 6.0L, 6.2L and 7.0L engine, or [Air Cleaner Assembly Replacement](#) for the 6.6L engine.
12. Fill the cooling system. Refer to [Cooling System Draining and Filling](#).
13. Install the engine cover. Refer to [Engine Cover Replacement](#).

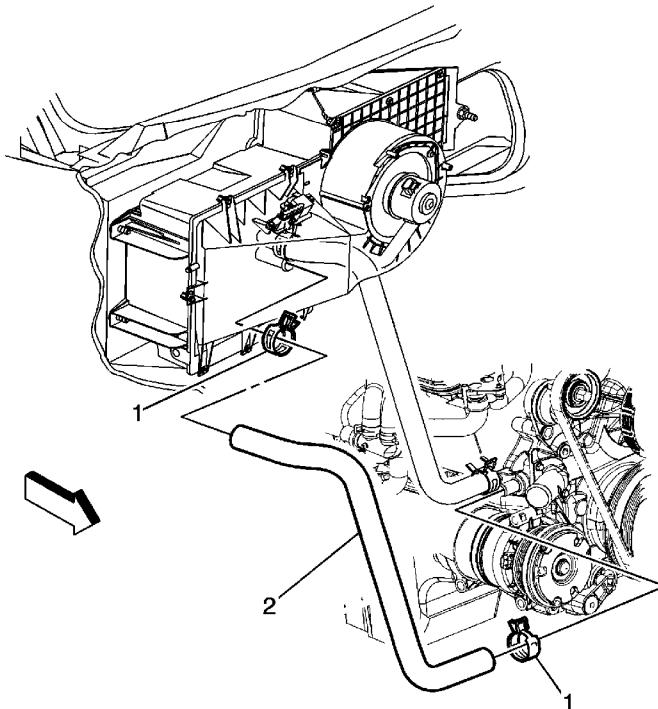
Heater Inlet Hose Replacement (4.3L)



Callout **Component Name**

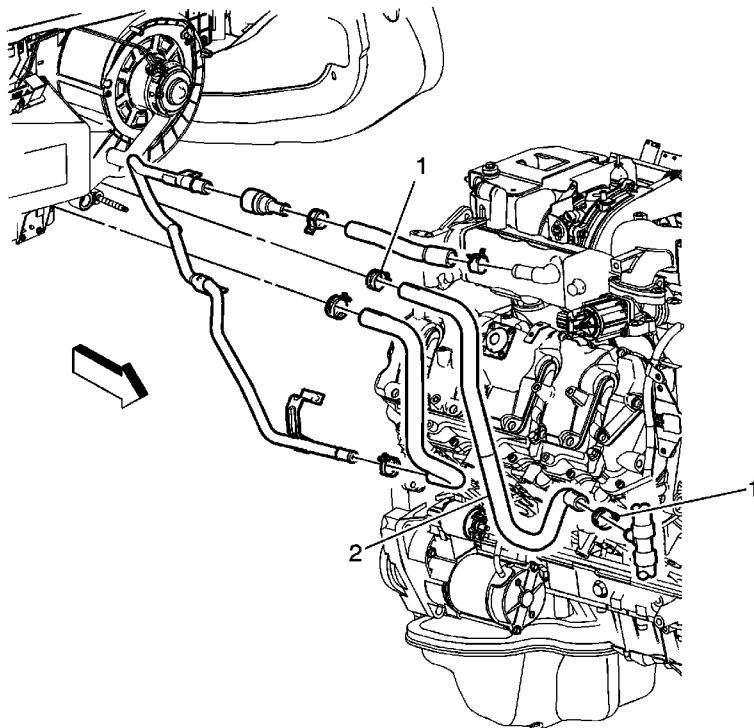
Callout	Component Name
Preliminary Procedures	
1. Partially drain the cooling system. Refer to Cooling System Draining and Filling . 2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement .	
1	Heater Inlet Hose Clamp (Qty:2)
2	Heater Inlet Hose

Heater Inlet Hose Replacement (4.8L, 5.3L, 6.0L)



Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Heater Inlet Hose Clamp (Qty:2)
2	Heater Inlet Hose

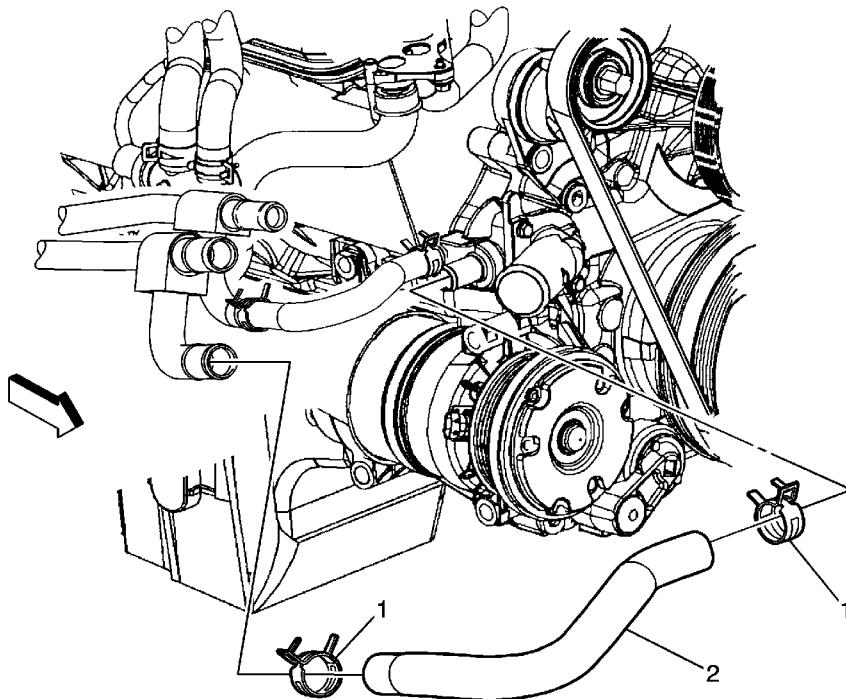
Heater Inlet Hose Replacement (6.6L -without Bypass Valve)



Callout	Component Name
<h3>Preliminary Procedure</h3>	
<ol style="list-style-type: none">1. Drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.3. Remove the upper fan shroud. Refer to Engine Coolant Fan Upper Shroud Replacement.4. Remove the accumulator. Refer to Air Conditioning Accumulator Replacement.	
	Heater Inlet Hose Clamp (Qty: 2)
<h3>Procedure</h3>	
1	Using <i>J38185</i> Hose Clamp Pliers to reposition the heater hose clamps.
<h3>Special Tools</h3>	
	<i>J38185</i> Hose Clamp Pliers
2	Heater Inlet Hose

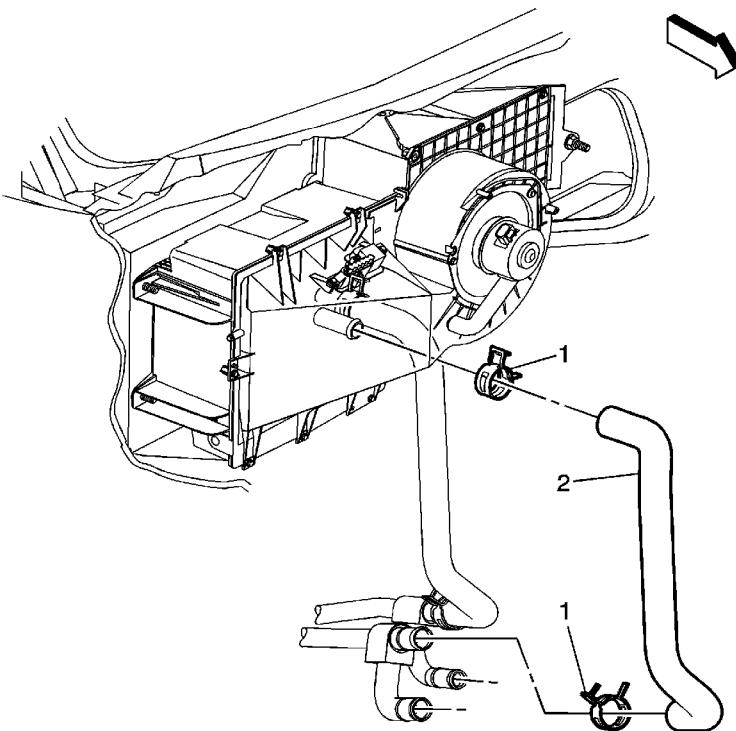
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Auxiliary Heater Inlet Hose Replacement (V8-C36,C60-Engine to Rear Pipe)



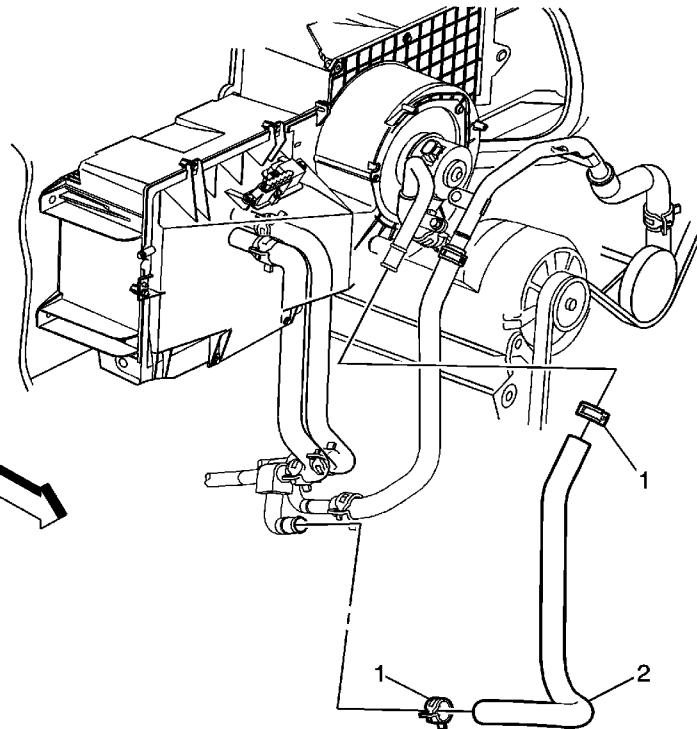
Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Inlet Hose Clamp (Qty:2)
2	Auxiliary Heater Inlet Hose

Auxiliary Heater Inlet Hose Replacement (C36, C60-Heater Core to Rear Pipe)



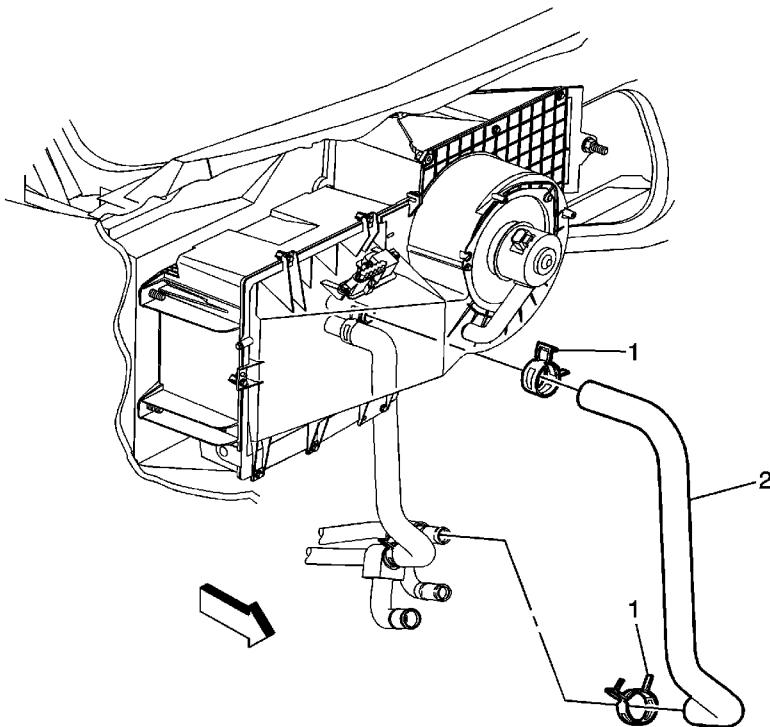
Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Inlet Hose Clamp (Qty:2)
2	Auxiliary Heater Inlet Hose

Auxiliary Heater Inlet Hose Replacement (4.3L-C36-Engine to Rear Pipe)



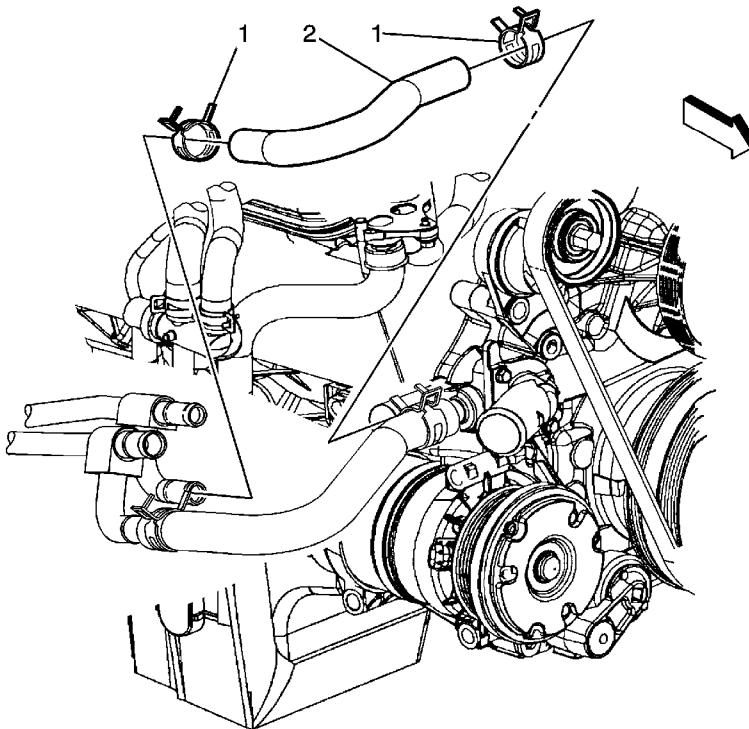
Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Inlet Hose Clamp (Qty:2)
2	Auxiliary Heater Inlet Hose

Auxiliary Heater Outlet Hose Replacement (C36-Heater Core to Rear Pipe)



Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Outlet Hose Clamp (Qty:2)
2	Auxiliary Heater Outlet Hose

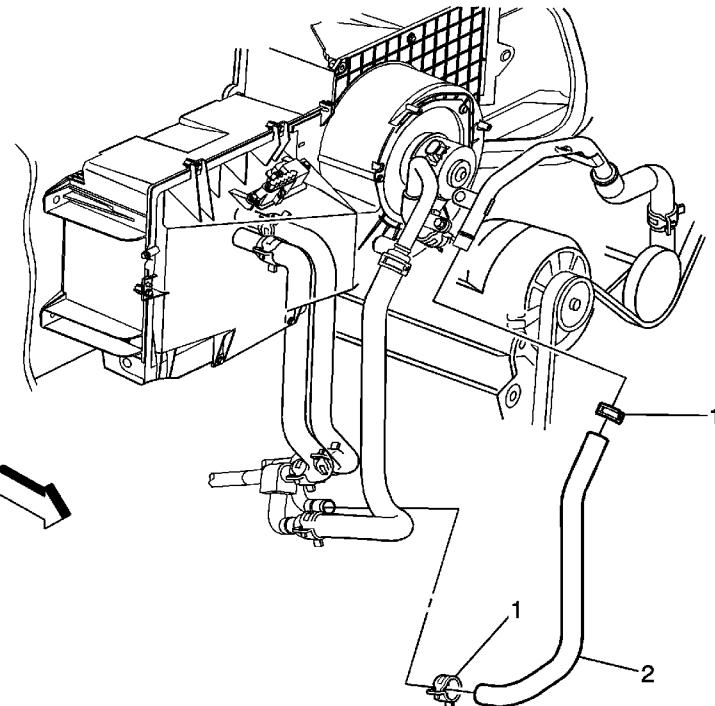
Auxiliary Heater Outlet Hose Replacement (V8-C36,C60-Engine to Rear Pipe)



Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Outlet Hose Clamp (Qty:2)
2	Auxiliary Heater Outlet Hose

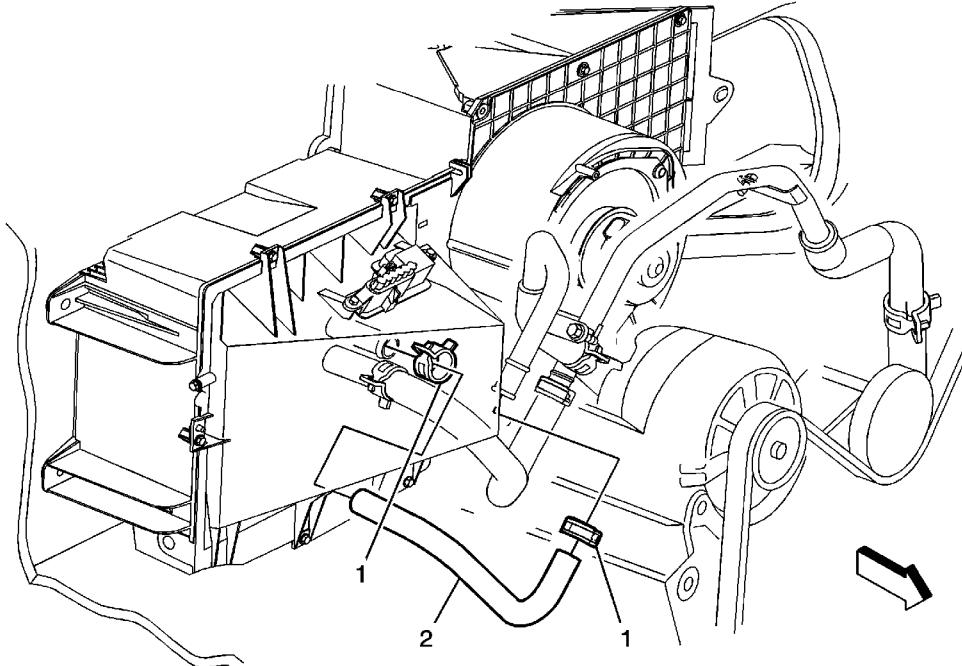
[2009 Chevrolet Express - AWD](#) | [Express, Savana \(VIN G/H\) Service Manual](#) | [HVAC](#) |
[Heating, Ventilation, and Air Conditioning](#) | [Repair Instructions](#) | Document ID: 1896152

Auxiliary Heater Outlet Hose Replacement (4.3L-C36-Engine to Rear Pipe)



Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.	
1	Auxiliary Heater Outlet Hose Clamp (Qty:2)
2	Auxiliary Heater Outlet Hose

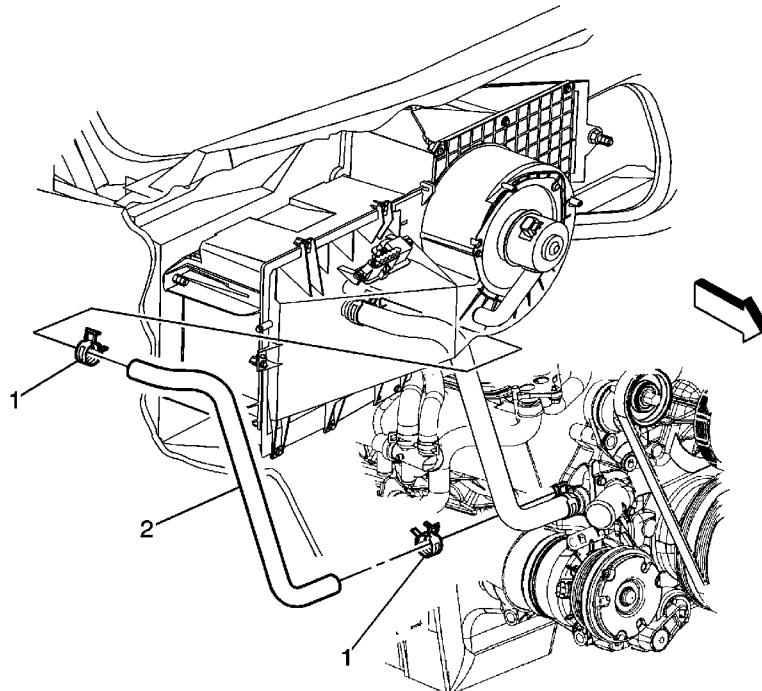
Heater Outlet Hose Replacement (4.3L)



 **Callout** **Component Name**

Callout	Component Name
Preliminary Procedures	
1. Partially drain the cooling system. Refer to Cooling System Draining and Filling . 2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement .	
1	Heater Outlet Hose Clamp (Qty:2)
2	Heater Outlet Hose

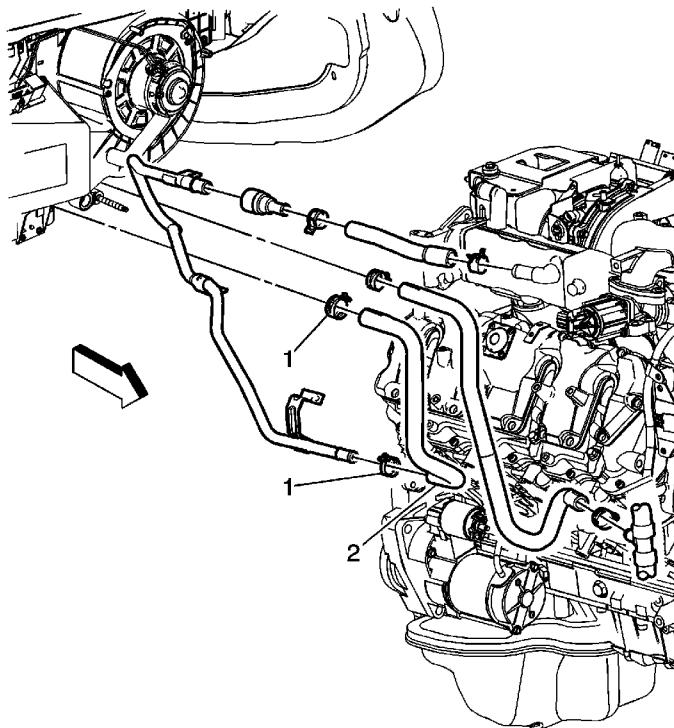
Heater Outlet Hose Replacement (4.8L, 5.3L, 6.0L)



 **Callout** **Component Name**

Callout	Component Name
Preliminary Procedures	
1	Heater Outlet Hose Clamp (Qty:2)
2	Heater Outlet Hose

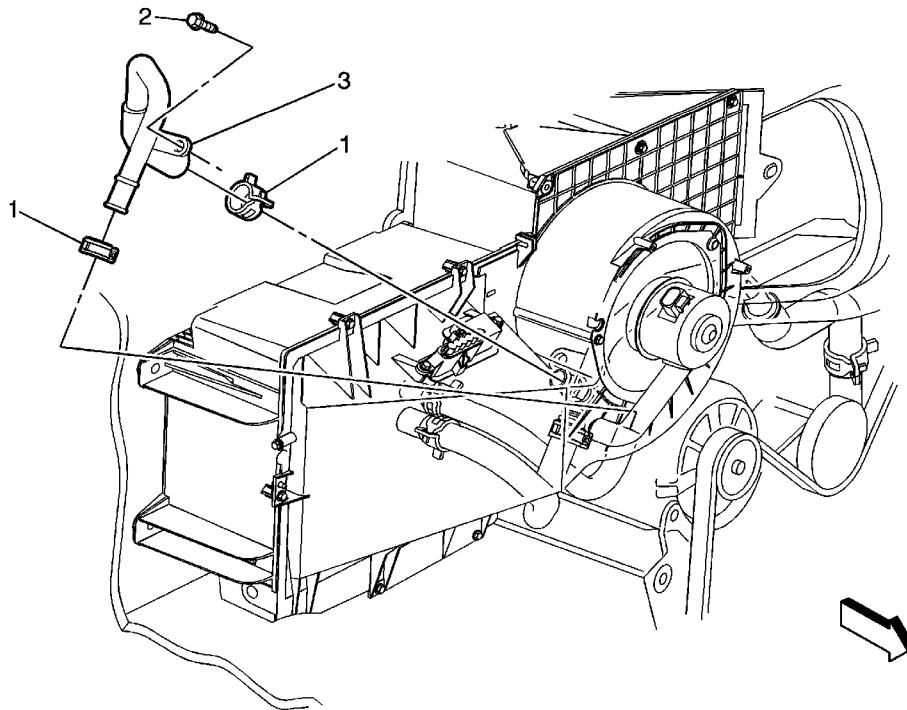
Heater Outlet Hose Replacement (6.6L- without Bypass Valve)



Callout	Component Name
<h3>Preliminary Procedure</h3>	
<ol style="list-style-type: none">1. Drain the cooling system. Refer to Cooling System Draining and Filling.2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement.3. Remove the upper fan shroud. Refer to Engine Coolant Fan Upper Shroud Replacement.4. Remove the accumulator. Refer to Air Conditioning Accumulator Replacement.	
	Heater Outlet Hose Clamp (Qty: 2)
<h3>Procedure</h3>	
1	Using <i>J38185</i> Hose Clamp Pliers to reposition the heater hose clamps.
<h3>Special Tools</h3>	
	<i>J38185</i> Hose Clamp Pliers
2	Heater Outlet Hose

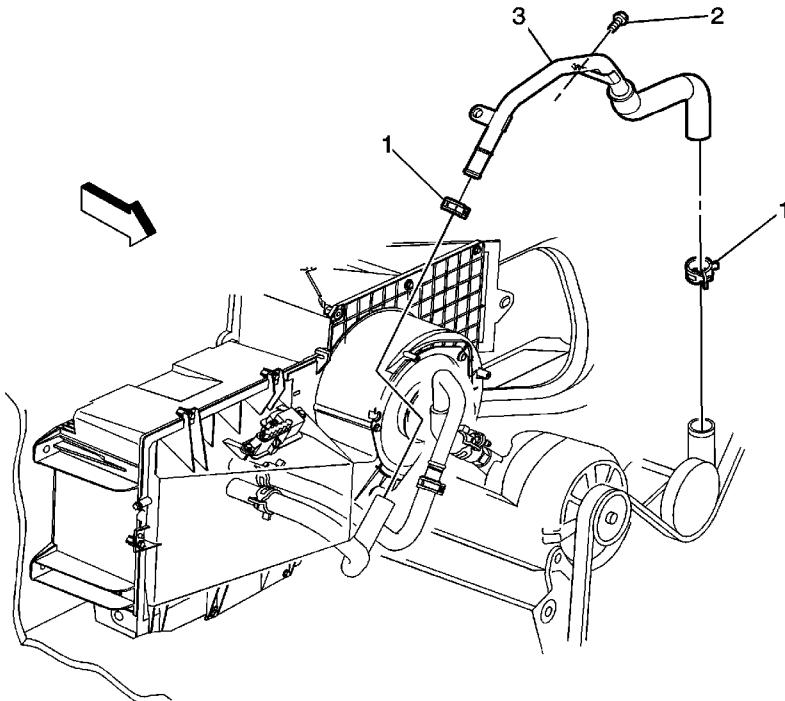
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Heater Inlet Pipe Replacement (4.3L)



Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling .2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement .	
1	Heater Inlet Pipe Clamp (Qty:2)
2	Heater Inlet Pipe Bolt
3	Heater Inlet Pipe

Heater Outlet Pipe Replacement (4.3L)

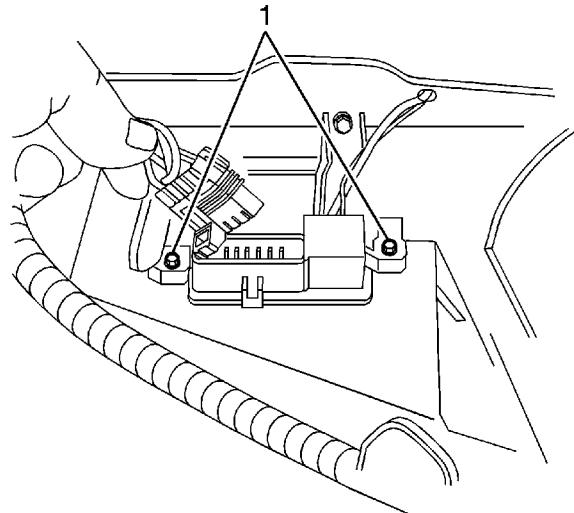


Callout	Component Name
<h3>Preliminary Procedures</h3>	
<ol style="list-style-type: none">1. Partially drain the cooling system. Refer to Cooling System Draining and Filling .2. Remove the air cleaner assembly. Refer to Air Cleaner Assembly Replacement .	
1	Heater Outlet Pipe Clamp (Qty:2)
2	Heater Outlet Pipe Bolt
3	Heater Outlet Pipe

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[Heating, Ventilation, and Air Conditioning](#) | [Repair Instructions](#) | Document ID: 2127076

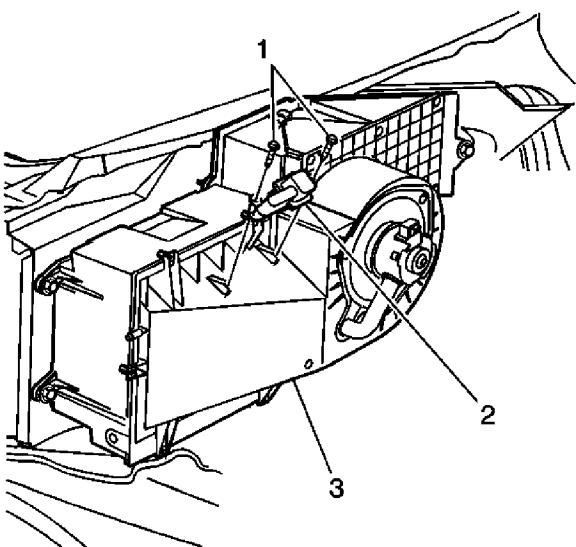
Blower Motor Resistor Assembly Replacement

Removal Procedure



Note: The blower motor relay is an integral part of the blower motor resistor and cannot be serviced separately from the resistor.

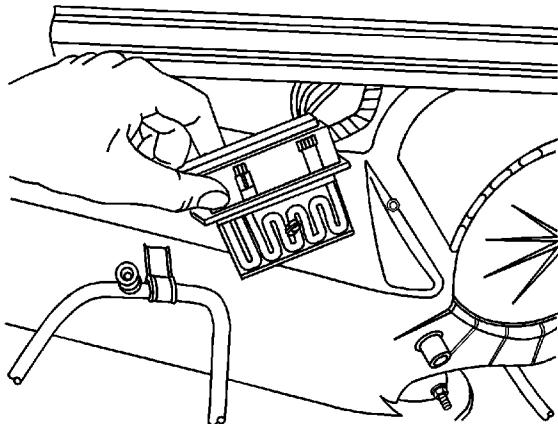
1. Disconnect the electrical connectors from the blower motor resistor assembly.
2. Disconnect the resistor to blower motor wire from the retainer on the heat case.
3. Remove the blower motor resistor assembly retaining screws (1).





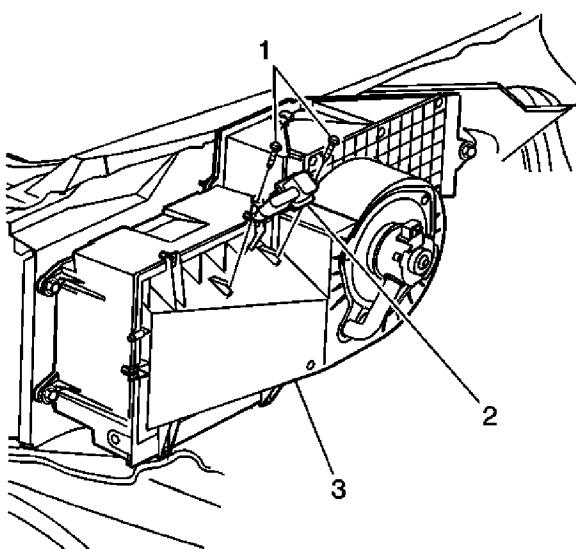
4. Remove the blower motor resistor assembly (2) from the evaporator and blower module assembly (3).

Installation Procedure



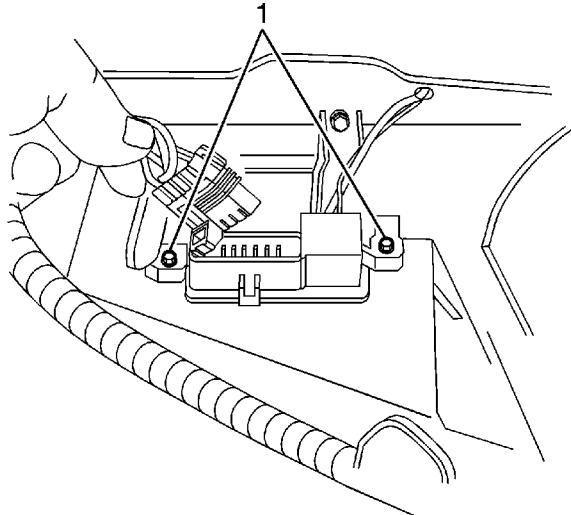
1. Install the blower motor resistor assembly.

Caution: Refer to [Fastener Caution](#) in the Preface section.





2. Install the blower motor resistor assembly retaining screws (1) and tighten to **2 N·m (18 lb in)**.
3. Connect the wires between the blower motor and resistor to retainer on heater case.

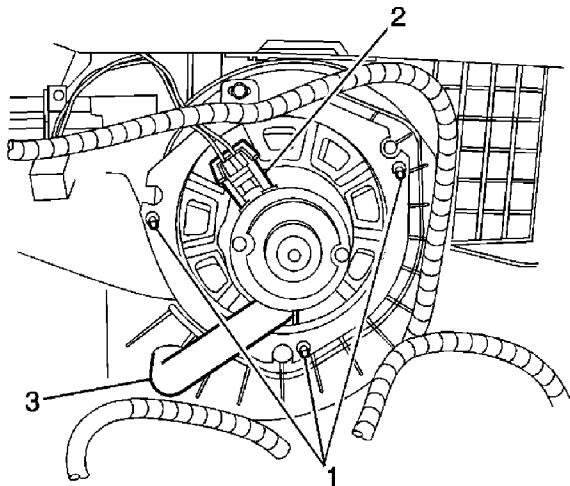


4. Connect the electrical connectors to the blower motor resistor assembly.

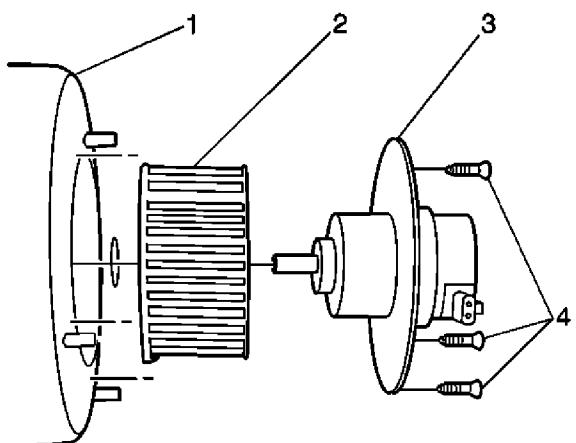
Blower Motor Replacement

Removal Procedure

1. Remove the coolant reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).



2. Disconnect the blower motor electrical connector (2).
3. Remove the blower motor cooling tube (3).
4. Remove the blower motor retaining screws (1).
5. Remove the blower motor.

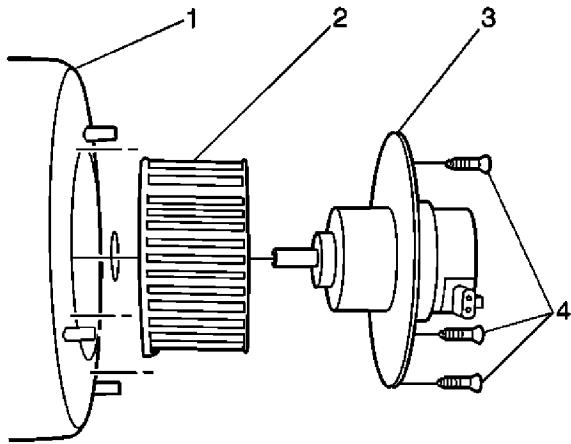


6. Remove the retaining clip from the fan cage (2).

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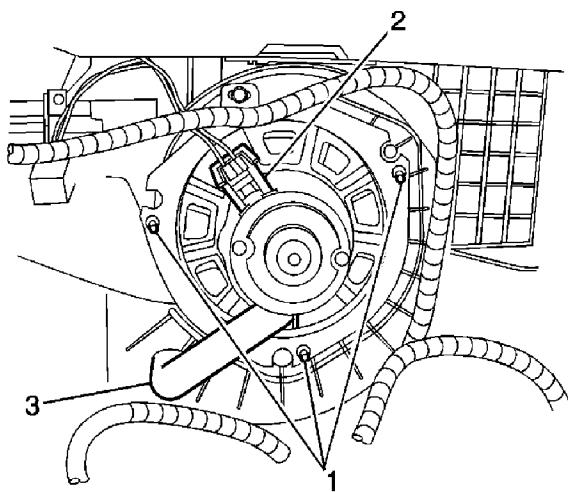
7. Remove the fan cage (2) from the blower motor (3).

Installation Procedure



1. Install the fan cage (2) to the blower motor (3).
2. Install the retaining clip to the fan cage (2).
3. Install the blower motor.

Caution: Refer to [Fastener Caution](#) in the Preface section.

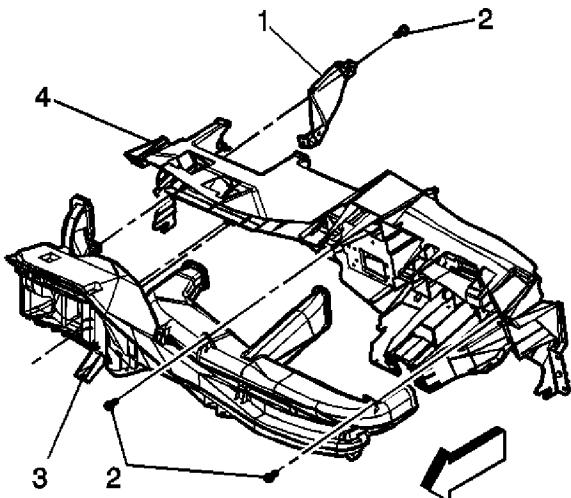


4. Install the blower motor retaining screws (1) and tighten to **2 N·m (18 lb in)**.
5. Install the blower motor cooling tube (3).
6. Connect the blower motor electrical connector (2).
7. Install the coolant reservoir. Refer to [Coolant Recovery Reservoir Replacement](#).

Air Distributor Duct Replacement

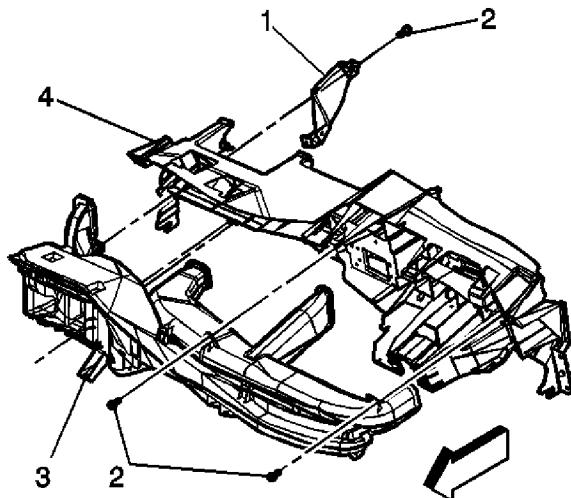
Removal Procedure

1. Remove the engine cover. Refer to [Engine Cover Replacement](#).
2. Remove the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).



3. Remove the air distribution duct retaining screws (2).
4. Remove the retaining screws at the instrument panel.
5. Remove the air distribution duct from the instrument panel.

Installation Procedure

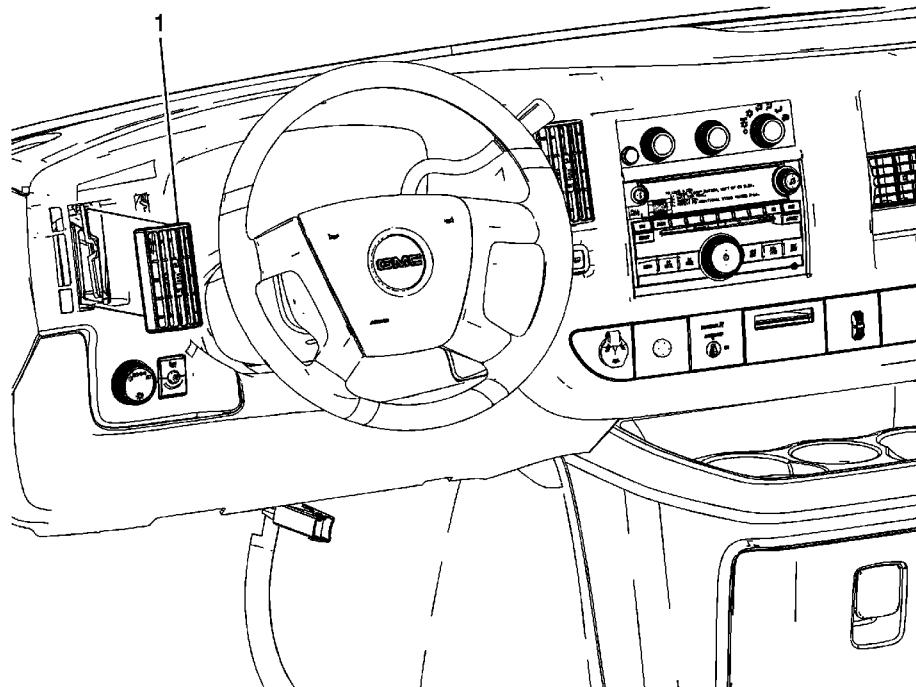


1. Install the air distribution duct to the instrument panel.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the air distribution duct retaining screws (2) to the instrument panel and tighten to **4 N·m (35 lb in)**.
3. Install the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).
4. Install the engine cover. Refer to [Engine Cover Replacement](#).

Instrument Panel Outer Air Outlet Deflector Replacement - Left Side

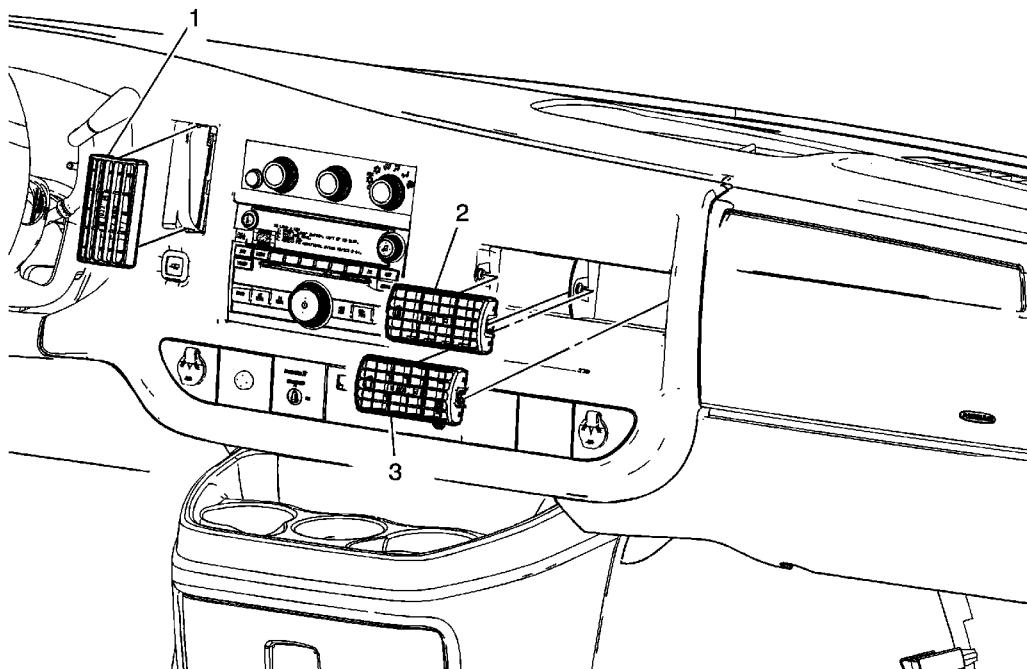


Callout	Component Name
1	Instrument Panel Left Air Outlet Deflector

Procedure

Use a flat bladed plastic trim tool in order to release the air outlet deflector from the instrument panel assembly.

Instrument Panel Center Air Outlet Deflector Replacement

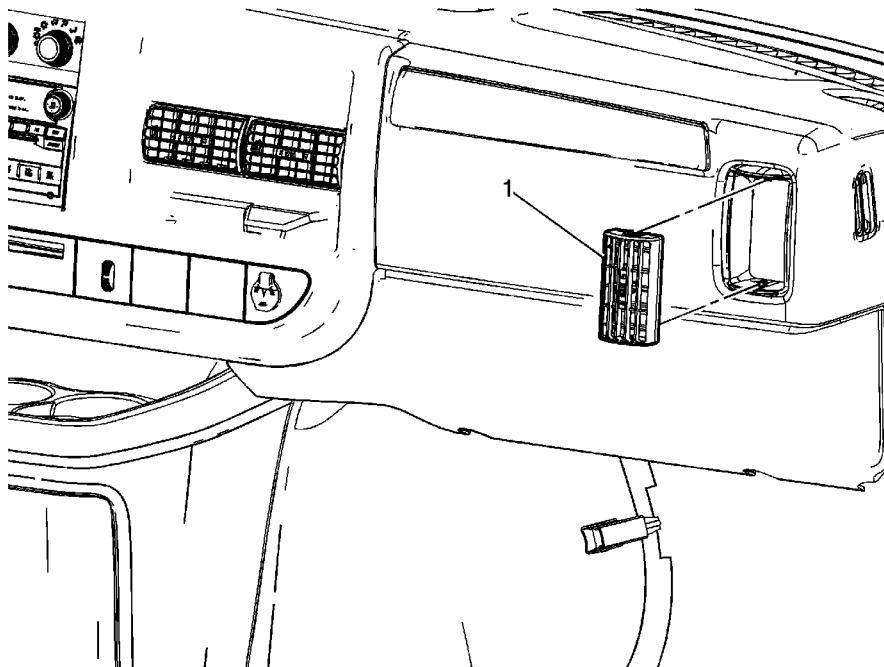


Callout	Component Name
1	Instrument Panel Center Air Outlet Deflector- Left Procedure Use a flat bladed plastic trim tool in order to release the air outlet deflector from the instrument panel assembly.
2	Instrument Panel Center Air Outlet Deflector- Middle Procedure Use a flat bladed plastic trim tool in order to release the air outlet deflector from the instrument panel assembly.
3	Instrument Panel Center Air Outlet Deflector- Right Procedure Use a flat bladed plastic trim tool in order to release the air outlet deflector from the instrument panel assembly.

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instrument panel assembly.

Instrument Panel Outer Air Outlet Deflector Replacement - Right Side



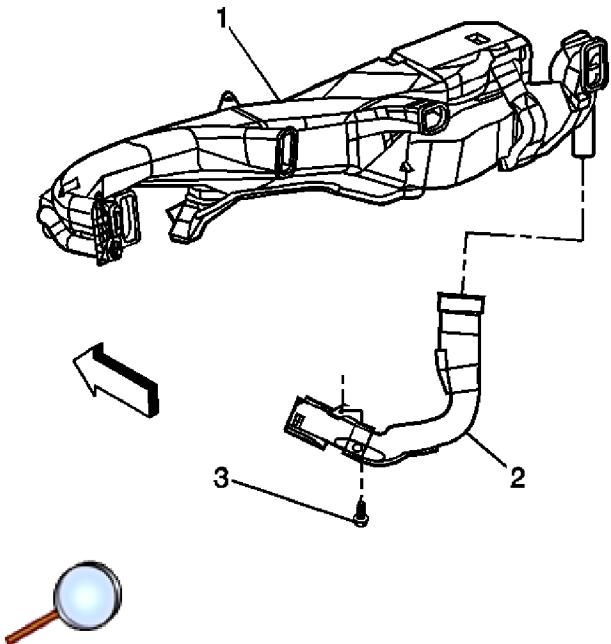
Callout	Component Name
1	Instrument Panel Right Air Outlet Deflector

Procedure

Use a flat bladed plastic trim tool in order to release the air outlet deflector from the instrument panel assembly.

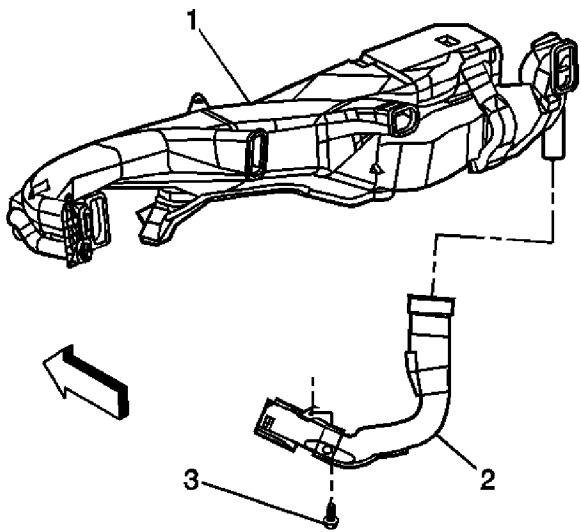
Floor Air Outlet Replacement - Right Side

Removal Procedure



- 1. Remove the right floor outlet duct retaining screw (3) from the instrument panel (I/P) support bracket.
- 2. Remove the right floor outlet duct.

Installation Procedure



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1. Install the right floor outlet duct.

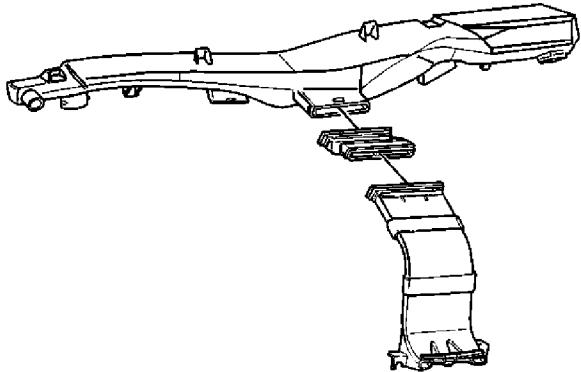
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the right floor outlet duct screw (3) to the I/P support bracket and tighten to **2 N·m (18 lb in)**.

Floor Air Outlet Replacement - Center

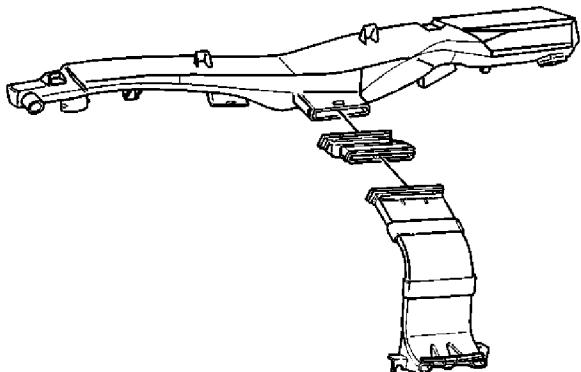
Removal Procedure

1. Remove the engine cover. Refer to [Engine Cover Replacement](#).



2. Remove the floor air outlet duct from the vehicle.

Installation Procedure

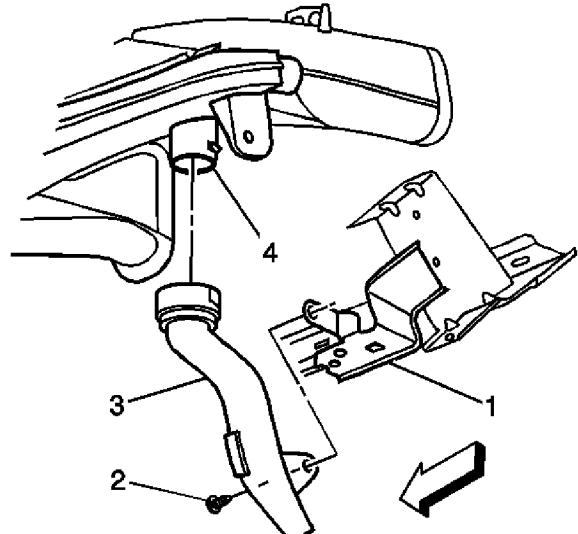




1. Install the floor air outlet duct to the vehicle.
2. Install the engine cover. Refer to [Engine Cover Replacement](#).

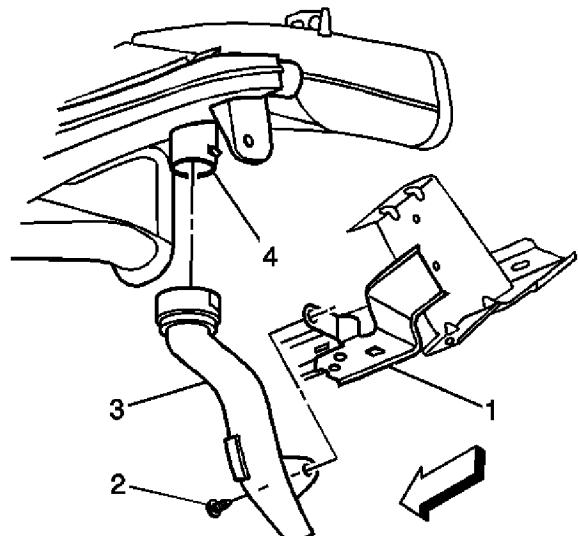
Floor Air Outlet Duct Replacement - Left Side

Removal Procedure



1. Remove the lower air outlet duct screw (2) from the instrument panel (I/P) bracket (1).
2. Remove the lower air outlet duct from the air distribution duct.

Installation Procedure





1. Install the lower air outlet duct (3) to the air distribution duct (4).

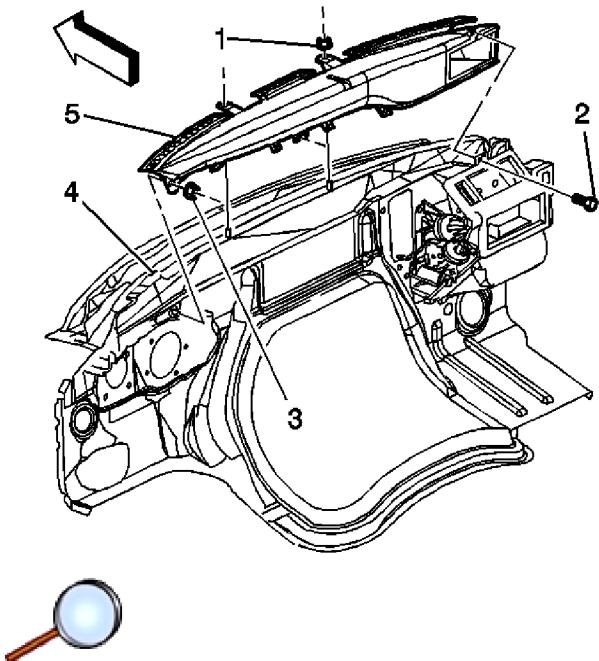
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the lower air outlet duct screw to the I/P bracket and tighten to **2 N·m (18 lb in)**.

Windshield Defroster Duct Replacement

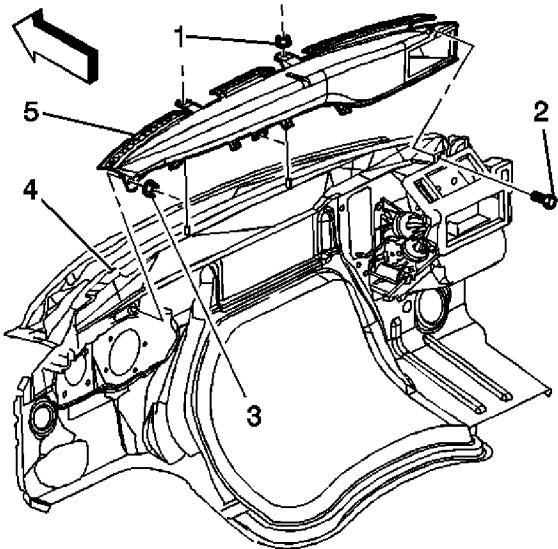
Removal Procedure

1. Remove the engine cover. Refer to [Engine Cover Replacement](#).
2. Remove the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).



3. Remove the windshield defrost duct retaining screws at the heater case.
4. Remove the windshield defrost duct retaining nuts at the cowl.
5. Remove the windshield defrost duct (5) from the vehicle.

Installation Procedure



1. Install the windshield defrost duct (5) to the vehicle.

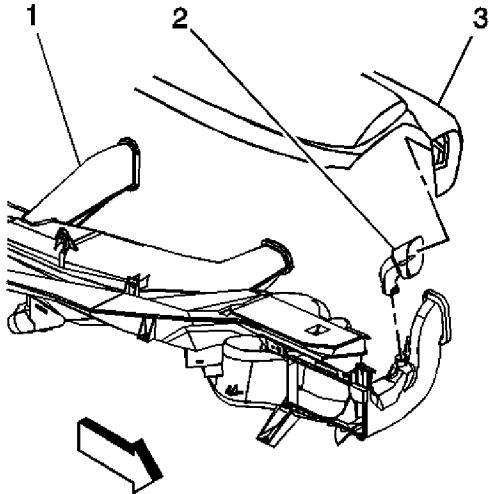
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the windshield defrost duct retaining nuts to the cowl and tighten to **4 N·m (35 lb in)**.
3. Install the windshield defrost duct retaining screws to the heater case and tighten to **4 N·m (35 lb in)**.
4. Install the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).
5. Install the engine cover. Refer to [Engine Cover Replacement](#).

Side Window Defogger Outlet Duct Replacement - Left Side

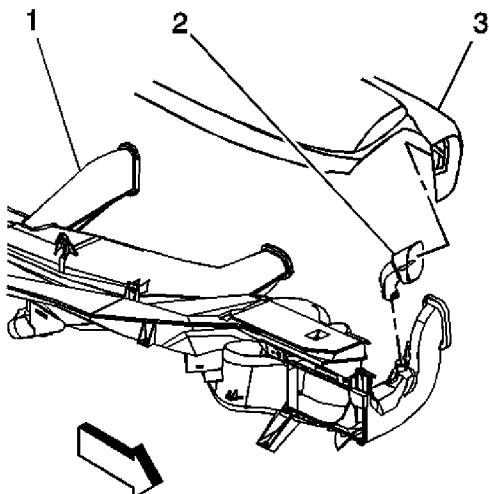
Removal Procedure

1. Remove the I/P trim pad. Refer to [Instrument Panel Upper Trim Pad Replacement](#).



2. Remove the left window defogger duct (2) from the air distribution duct (1).

Installation Procedure



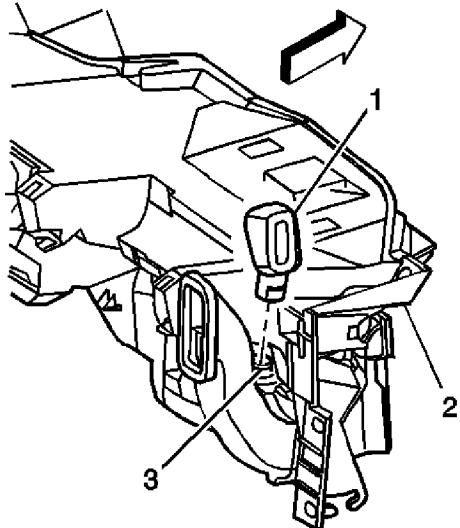


1. Install the left window defogger duct (2) to the air distribution duct (1).
2. Install the I/P trim pad. Refer to [Instrument Panel Upper Trim Pad Replacement](#).

Side Window Defogger Outlet Duct Replacement - Right Side

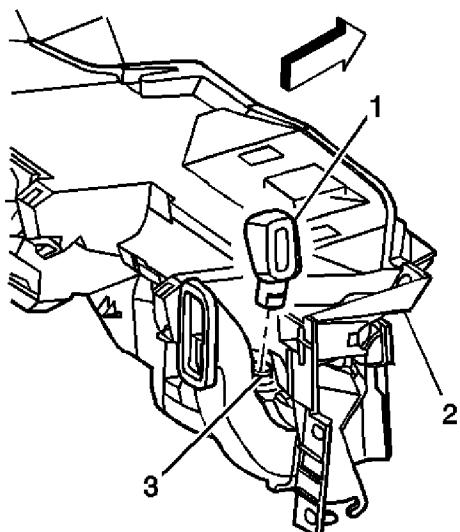
Removal Procedure

1. Remove the I/P trim pad. Refer to [Instrument Panel Upper Trim Pad Replacement](#).



2. Remove the right window defogger duct (1) from the air distribution duct (3).

Installation Procedure



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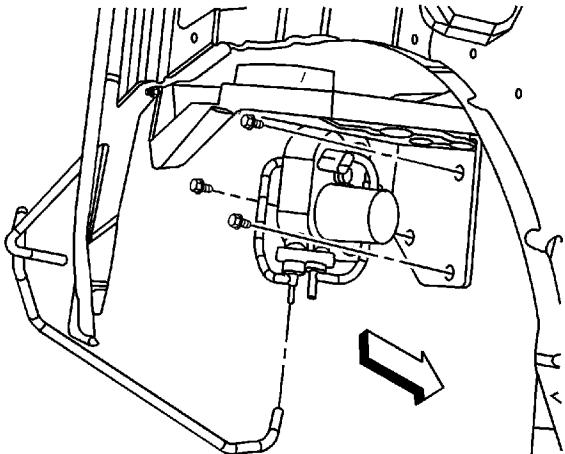


1. Install the right window defogger duct (1) to the air distribution duct (3).
2. Install the I/P trim pad. Refer to [Instrument Panel Upper Trim Pad Replacement](#).

Heater and Air Conditioning Control Vacuum Pump Replacement

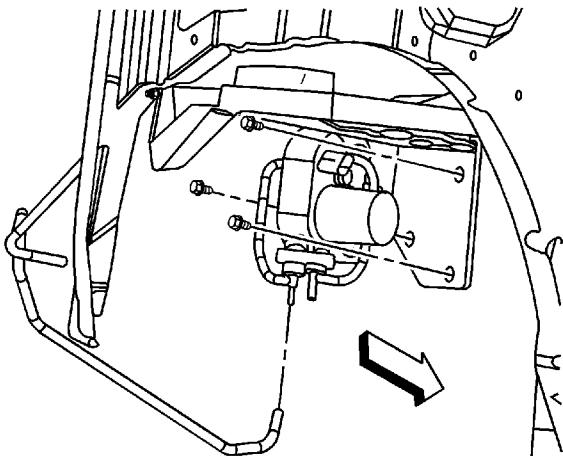
Removal Procedure

1. Remove the air cleaner. Refer to [Air Cleaner Assembly Replacement](#) for the 4.3L engine, or [Air Cleaner Assembly Replacement](#) for the 4.8L, 5.3L, 6.0L, 6.2L and 7.0L engine, or [Air Cleaner Assembly Replacement](#) for the 6.6L engine.
2. Disconnect the vacuum pump electrical connector.



3. Disconnect the vacuum hose from the vacuum pump.
4. Remove the vacuum pump retaining bolts.
5. Remove the vacuum pump from the vehicle.

Installation Procedure



1. Install the vacuum pump to the vehicle.

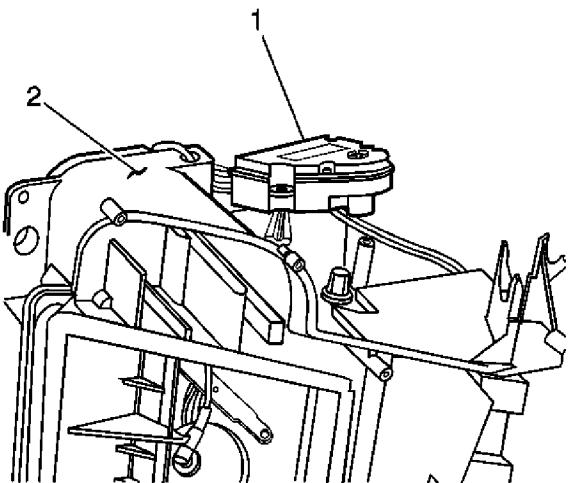
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the vacuum pump retaining bolts and tighten to **3 N·m (27 lb in)**.
3. Connect the vacuum hose to the vacuum pump.
4. Connect the vacuum pump electrical connector.
5. Install the air cleaner. Refer to [Air Cleaner Assembly Replacement](#) for the 4.3L engine, or [Air Cleaner Assembly Replacement](#) for the 4.8L, 5.3L, 6.0L, 6.2L and 7.0L engine, or [Air Cleaner Assembly Replacement](#) for the 6.6L engine.

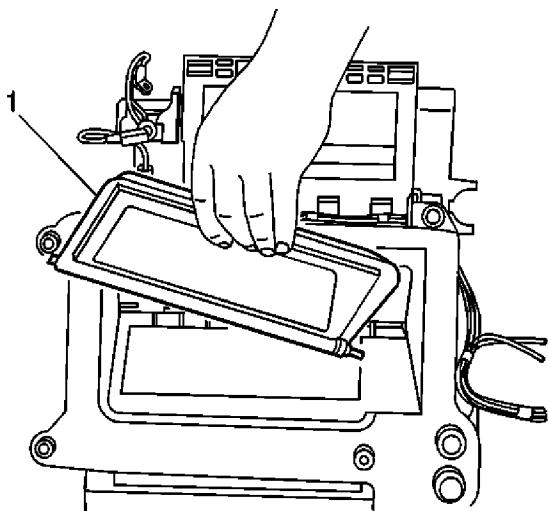
Air Temperature Door Replacement

Removal Procedure

1. Remove the heater assembly. Refer to [Heater Assembly Replacement](#).
2. Disconnect the air temperature actuator electrical connector.



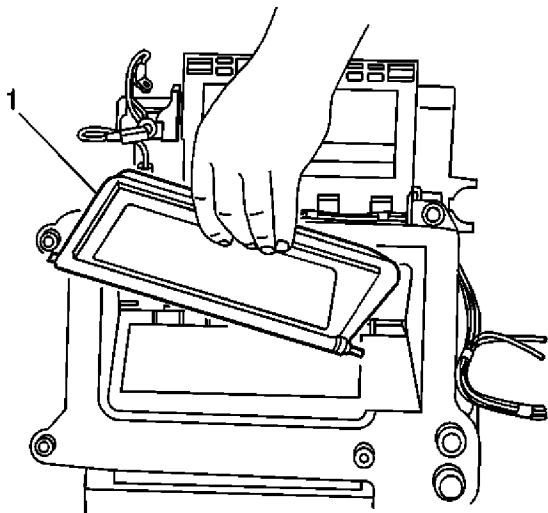
3. Remove the air temperature actuator retaining screws.
4. Remove the air temperature actuator (1) from the heater assembly (2).



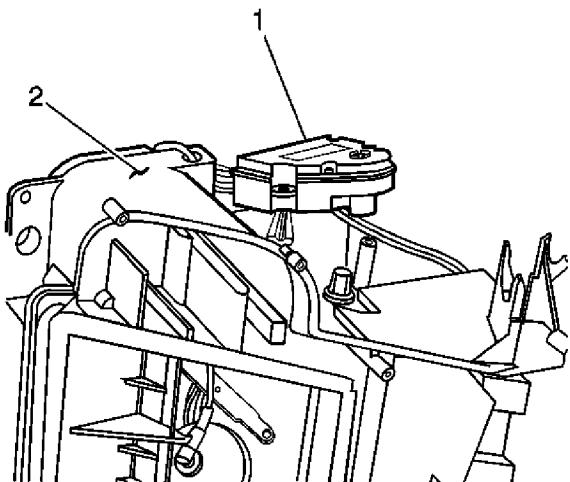
5. Remove the air temperature door (1) from the heater assembly.

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Installation Procedure



1. Install the air temperature door (1) to the heater assembly.



2. Install the air temperature actuator (1) to the heater assembly (2).

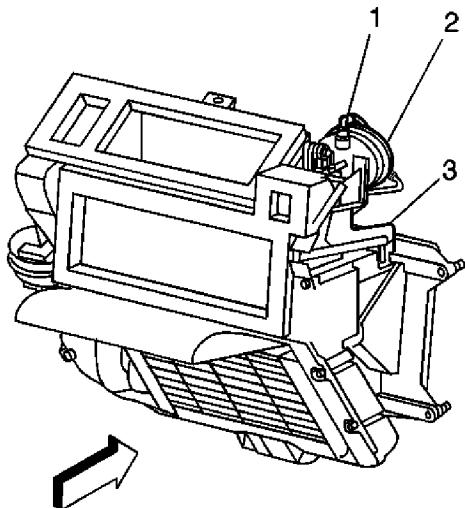
Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the air temperature actuator retaining screws and tighten to **1.9 N·m (17 lb in)**.
4. Connect the air temperature actuator electrical connector.
5. Install the heater assembly. Refer to [Heater Assembly Replacement](#).

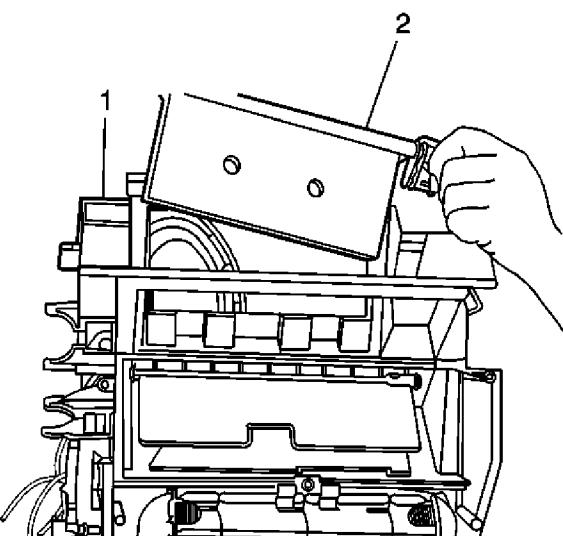
Defroster Door Replacement

Removal Procedure

1. Remove the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).
2. Remove the heater assembly cover retaining screws.
3. Remove the heater assembly cover.



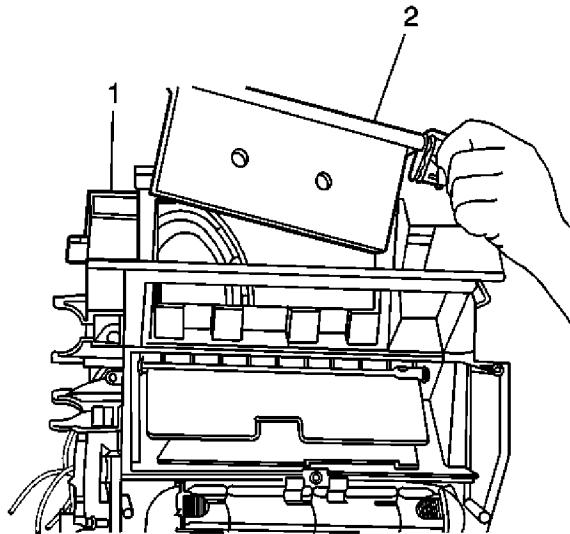
4. Disconnect the vacuum hose (1) from the defrost actuator (2).
5. Depress the clip and remove the defrost actuator (2) from the heater assembly.



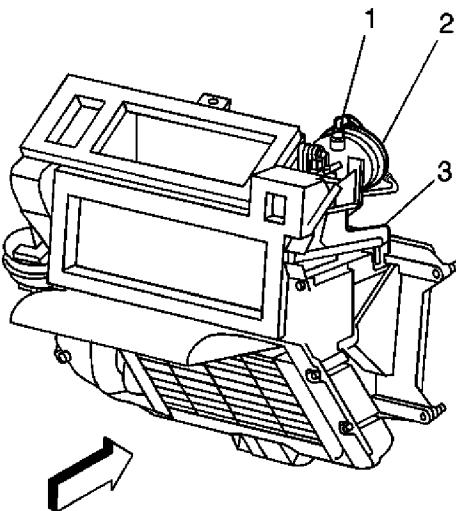
6. Remove the defroster door (2) from the heater assembly (1).

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Installation Procedure



1. Install the defroster door (2) to the heater assembly (1).



2. Install the defrost actuator (2) to the heater assembly.
3. Connect the vacuum hose (1) to the defrost actuator (2).
4. Install the heater assembly cover.

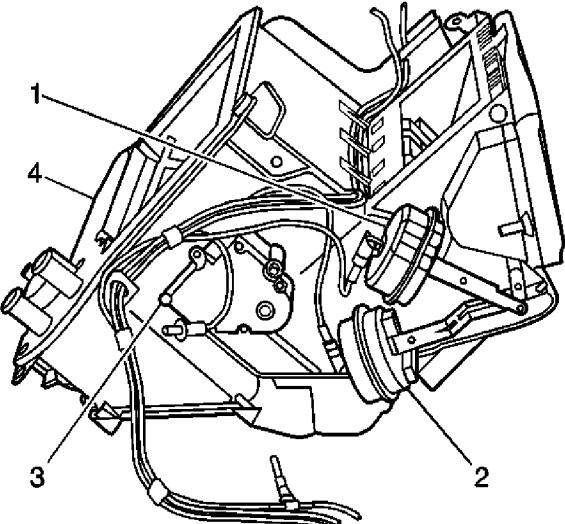
Caution: Refer to [Fastener Caution](#) in the Preface section.

5. Install the heater assembly cover retaining screws and tighten to **1.9 N·m (17 lb in)**.
6. Install the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).

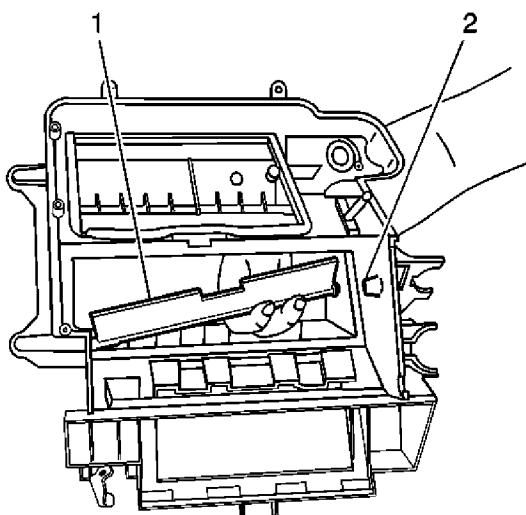
Mode Door Replacement - Lower

Removal Procedure

1. Remove the instrument panel carrier. Refer to [Instrument Panel Carrier Replacement](#).



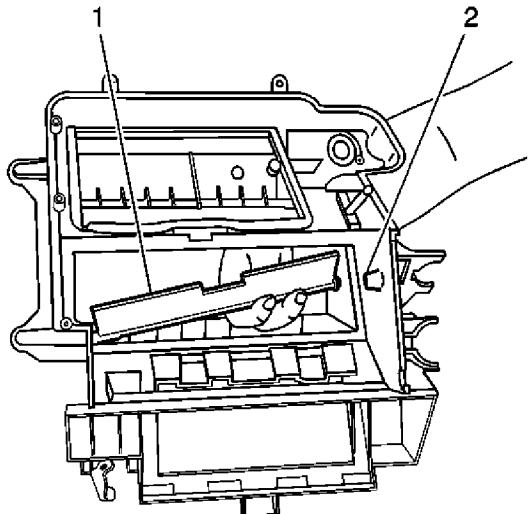
2. Disconnect the vacuum hose from the lower mode actuator (2).
3. Remove the lower mode actuator (2) from the heater assembly (4).
4. Remove the linkage from the lower mode actuator (2).
5. Remove the heater case screws.
6. Remove the outer heater case.



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7. Remove the lower mode door (1) from the inner heater case (2).

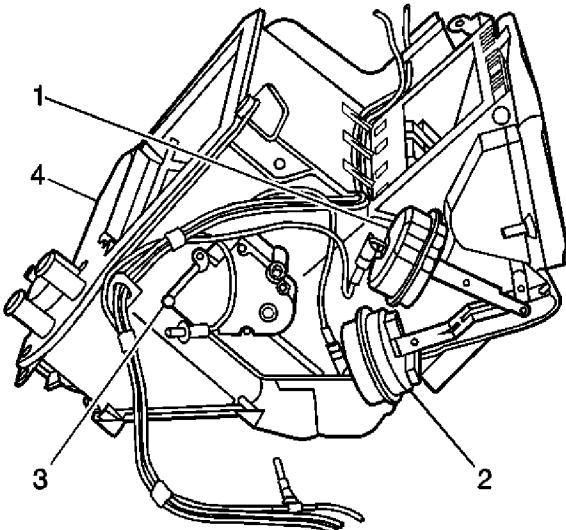
Installation Procedure



1. Install the lower mode door (1) to the inner heater case (2).
2. Install the outer heater case.

Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the heater case retaining screws and tighten to **1.9 N·m (17 lb in)**.



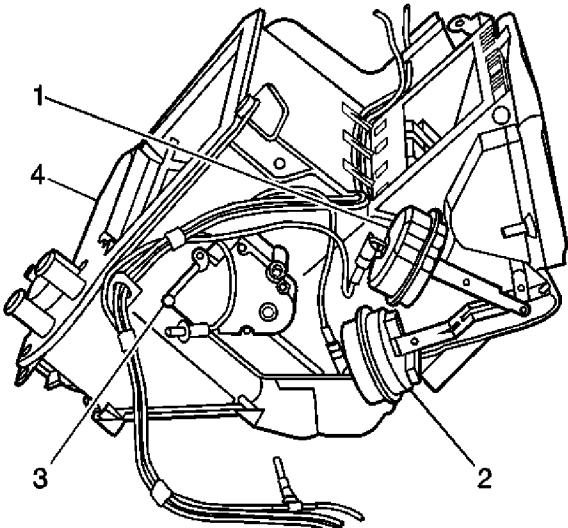
4. Install the linkage to the lower mode actuator (2).

5. Install the lower mode actuator (2) to the heater assembly.
6. Connect the vacuum hose to the lower mode actuator (2).
7. Install the instrument panel carrier. Refer to [Instrument Panel Carrier Replacement](#).

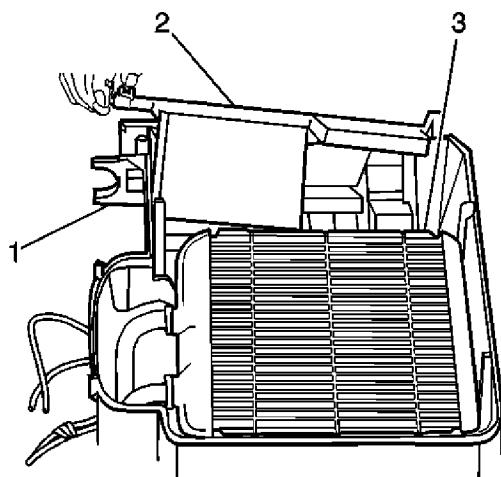
Mode Door Replacement - Upper

Removal Procedure

1. Remove the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).
2. Remove the heater assembly cover screws.
3. Remove the heater assembly cover.



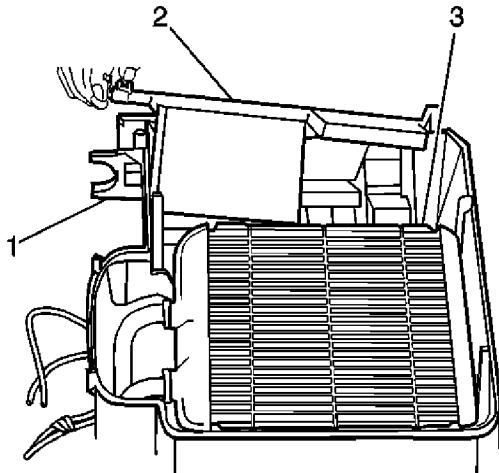
4. Disconnect the vacuum hose from the upper mode actuator (1).
5. Remove the upper mode actuator (1) from the heater assembly (4).
6. Remove the linkage from the upper mode actuator (1).



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7. Remove the upper mode door (2) from the heater module (1).

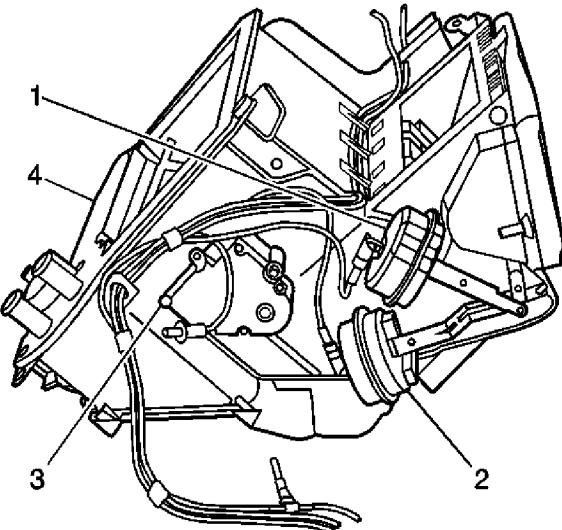
Installation Procedure



1. Install the upper mode door (2) to the heater module (1).
2. Install the heater assembly cover.

Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the heater assembly cover screws and tighten to **1.9 N·m (17 lb in)**.



4. Install the linkage to the upper mode actuator (1).

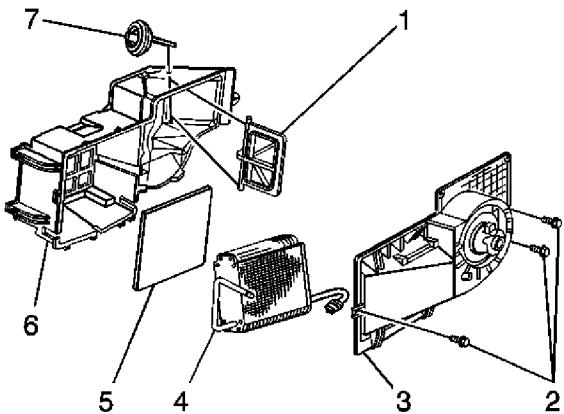
5. Install the upper mode actuator (1) to the heater assembly (4).
6. Connect the vacuum hose to the upper mode actuator (1).
7. Install the I/P carrier. Refer to [Instrument Panel Carrier Replacement](#).

Recirculation Door Replacement

Tools Required

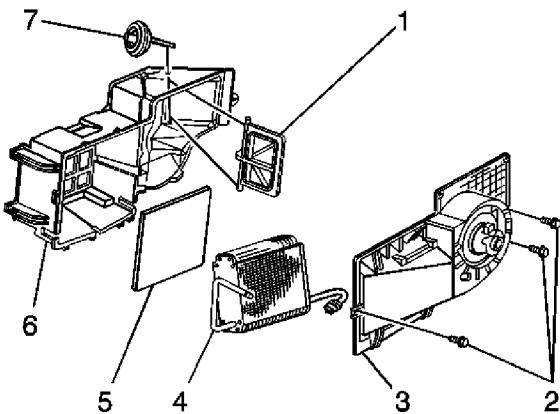
[J 39400-A](#) Electronic Halogen Leak Detector

Removal Procedure



1. Remove the evaporator and blower module assembly front cover (3). Refer to [Air Conditioning \(A/C\) Evaporator and Blower Module Assembly Replacement](#) .
2. Remove the recirculation door actuator (7) and the linkage.
3. Remove the recirculation door (1) from the evaporator and blower module assembly.

Installation Procedure



1. Install the recirculation door (1) to the evaporator and blower module assembly.
2. Install the recirculation door actuator (7) and the linkage.
3. Install the evaporator and blower module assembly cover (3). Refer to [Air Conditioning \(A/C\) Evaporator and Blower Module Assembly Replacement](#).
4. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
5. Leak test the fittings of the component replaced using the [J 39400-A](#).

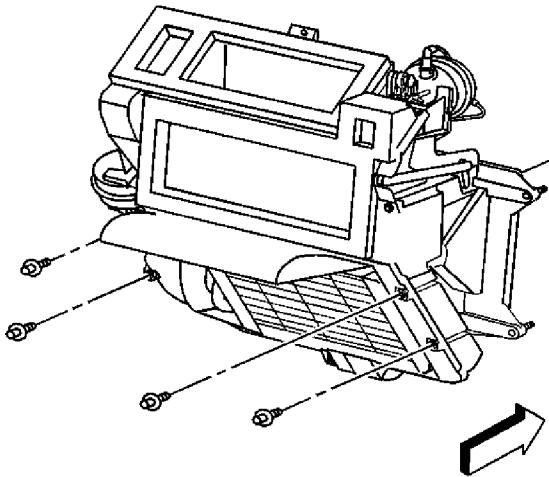
Heater Core Replacement

Special Tools

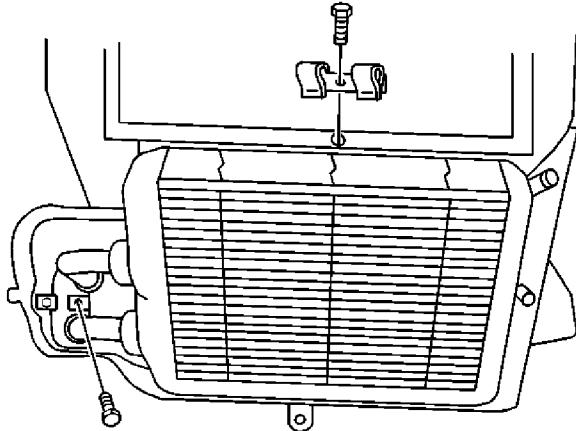
[J 38185](#) Hose Clamp Pliers

Removal Procedure

1. Drain the engine coolant. Refer to [Cooling System Draining and Filling](#).
2. Remove the A/C accumulator. Refer to [Air Conditioning Accumulator Replacement](#).
3. Remove the engine cover. Refer to [Engine Cover Replacement](#).
4. Remove the right knee bolster bracket. Refer to [Passenger Knee Bolster Bracket Replacement](#).
5. Remove the cowl drain tube bolts.
6. Remove the cowl drain tube.
7. Remove the hose clamps using the [J 38185](#).
8. Remove the inlet and outlet heater hoses from the heater core.
9. Remove right hinge pillar trim. Refer to [Body Hinge Pillar Trim Panel Replacement](#).
10. Remove the ground lead at the right hinge pillar.
11. Remove the harness connector and bracket in the right hinge pillar.
12. Disconnect the radio antenna lead-in cable at the right hinge pillar.
13. Remove the heater outlet duct at the left side of the heater case.
14. Reposition the wire harness at the hinge pillar and at the heater case.

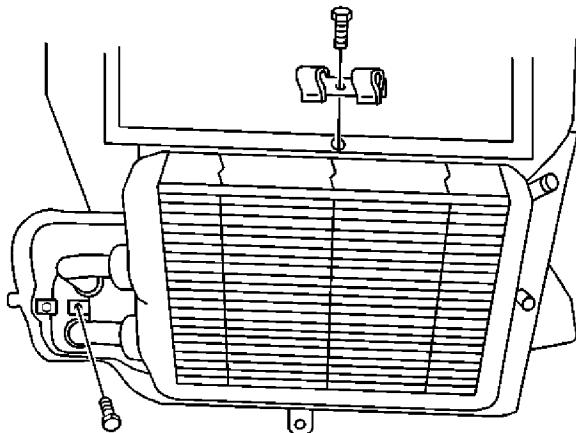


15. Remove the screws from the heater assembly.
16. CAREFULLY open the heater core access door in order to cut the heater core access door.
17. Cut the marked section of the heater core access door and remove the access door.



18. Remove the retainers from the heater core.
19. Remove the heater core.

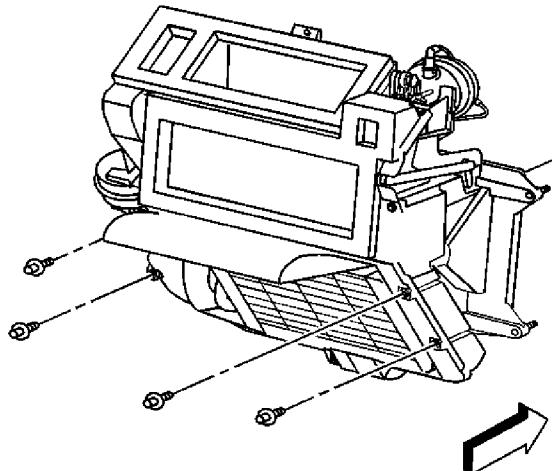
Installation Procedure



1. Install the heater core.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the heater core retainers and tighten to **1.9 N·m (17 lb in)**.

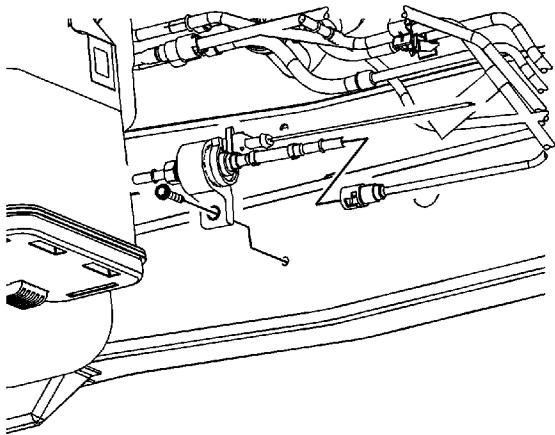


3. Install the heater core access door.
4. Install the heater core access door retaining screws and tighten to **1.9 N·m (17 lb in)**.
5. Reposition the wire harness at the hinge pillar and at the heater case.
6. Install the heater outlet duct at the left side of the heater case.
7. Connect the antenna lead-in cable.
8. Install the harness connector and bracket to the hinge pillar.
9. Install the ground lead at the hinge pillar.
10. Install hinge pillar trim. Refer to [Body Hinge Pillar Trim Panel Replacement](#).
11. Install the inlet and outlet heater hoses to the heater core.
12. Install the heater hose clamps using the [J 38185](#) .
13. Install the cowl drain tube and bolts.
14. Install the right knee bolster bracket. Refer to [Passenger Knee Bolster Bracket Replacement](#).
15. Install the engine cover. Refer to [Engine Cover Replacement](#).
16. Install the A/C accumulator. Refer to [Air Conditioning Accumulator Replacement](#).
17. Fill the engine coolant. Refer to [Cooling System Draining and Filling](#).

Heater Coolant Heater Fuel Pump Replacement

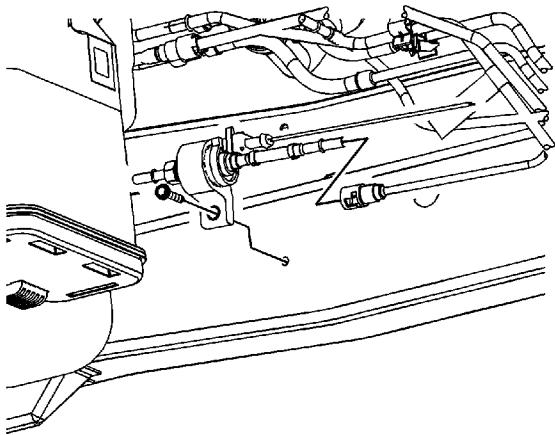
Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Disconnect the fuel lines to the fuel pump. Refer to [Plastic Collar Quick Connect Fitting Service](#).
3. Disconnect the fuel pump electrical connector.



4. Remove the fuel pump retaining bolt.
5. Remove the fuel pump from the vehicle.

Installation Procedure



1. Install the fuel pump to the vehicle.

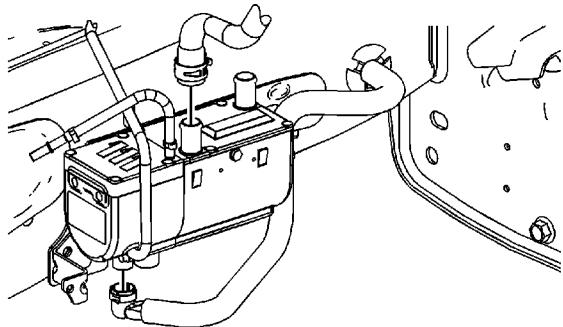
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the fuel pump retaining bolt and tighten to **8 N·m (71 lb in)**.
3. Connect the fuel lines to the fuel pump. Refer to [Plastic Collar Quick Connect Fitting Service](#).
4. Connect the fuel pump electrical connector.
5. Lower the vehicle.

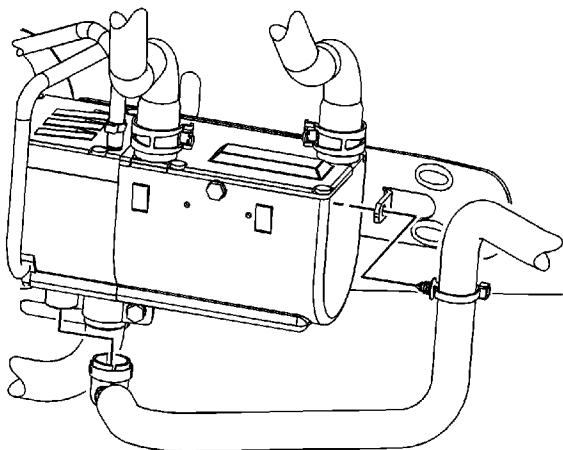
Heater Coolant Heater Air Supply Hose Replacement

Removal Procedure

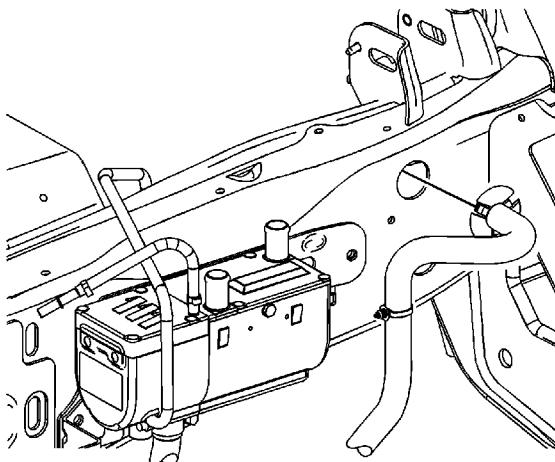
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



2. Remove the air supply hose from the heater coolant heater.

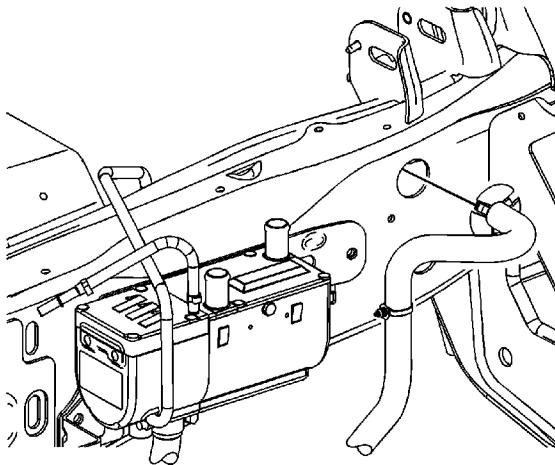


3. Disconnect the air supply hose retaining clip from the heater coolant heater bracket.

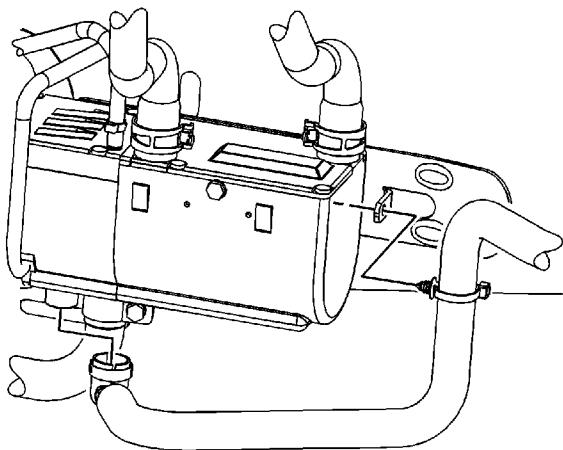


4. Remove the air supply hose from the frame assembly.
5. Remove the air supply hose from the vehicle.

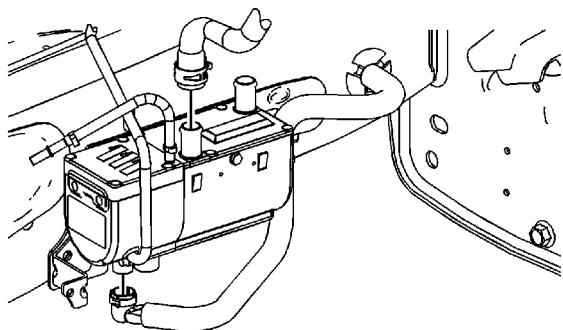
Installation Procedure



1. Install the air supply hose to the vehicle.
2. Install the air supply hose to the frame assembly.



3. Connect the air supply hose retaining clip to the heater coolant heater bracket.

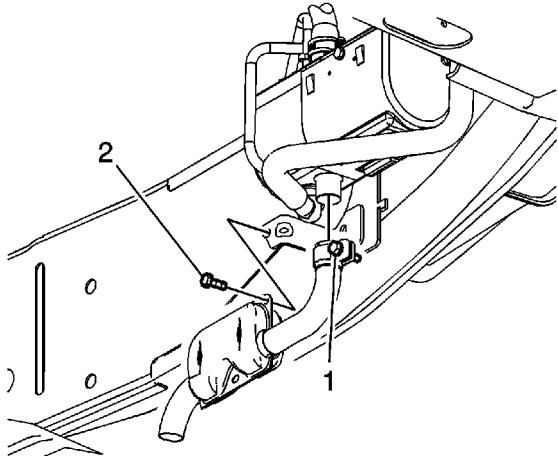


4. Install the air supply hose to the heater coolant heater.
5. Lower the vehicle.

Heater Coolant Heater Exhaust Muffler Replacement

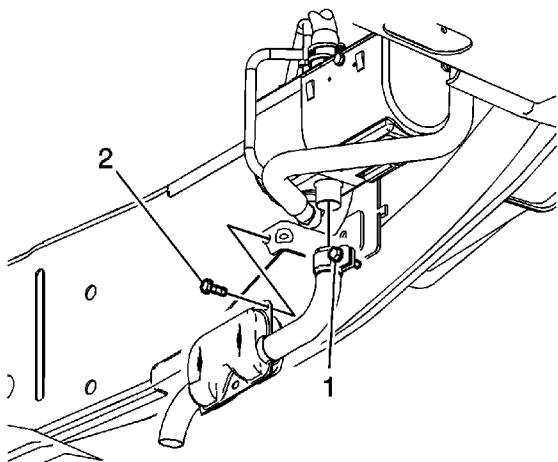
Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



2. Loosen the bolt (1) securing the muffler to the heater coolant heater.
3. Remove the muffler to the heater coolant heater bracket retaining bolt (2).
4. Remove the muffler from the vehicle.

Installation Procedure





1. Install the muffler to the heater coolant heater.
- Caution:** Refer to [Fastener Caution](#) in the Preface section.
2. Install the muffler to the heater coolant heater retaining bolt (2) and tighten to **6 N·m (53 lb in)**.
 3. Lower the vehicle.

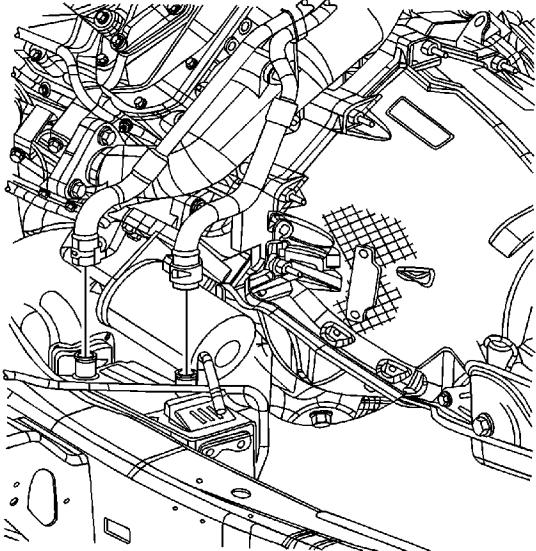
Heater Coolant Heater Replacement

Special Tools

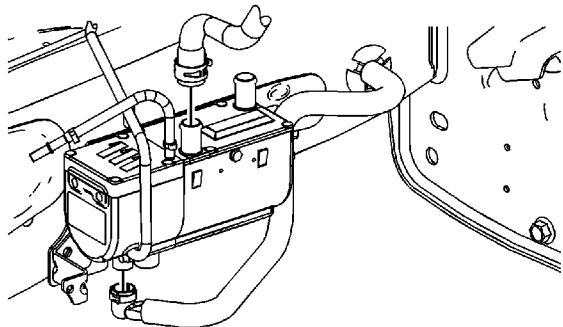
[J 38185](#) Hose Clamp Pliers

Removal Procedure

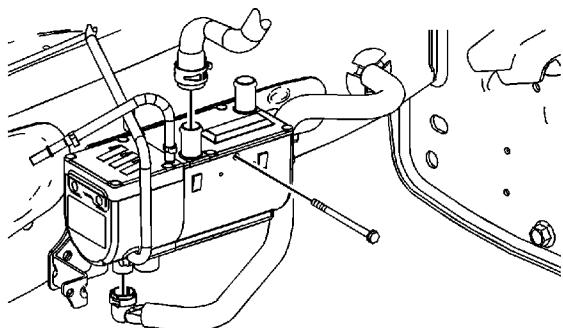
1. Partially drain the cooling system. Refer to [Cooling System Draining and Filling](#).
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the heater coolant heater muffler. Refer to [Heater Coolant Heater Exhaust Muffler Replacement](#).
4. Disconnect the heater coolant heater electrical connectors.
5. Disconnect the fuel supply hose to the heater coolant heater. Refer to [Plastic Collar Quick Connect Fitting Service](#).



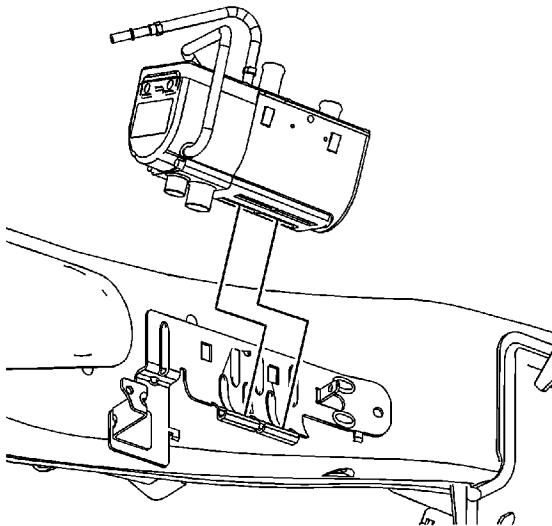
6. Reposition the heater hose clamps at the heater coolant heater using [J 38185](#).
7. Remove the heater hoses from the heater coolant heater.



8. Remove the air supply hose from the heater coolant heater.

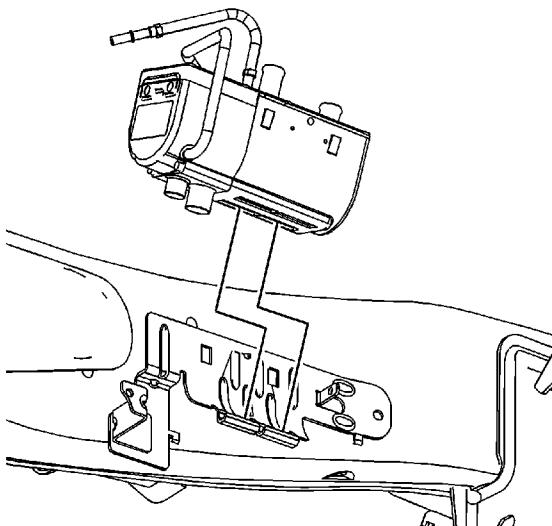


9. Remove the heater coolant heater retaining bolt.



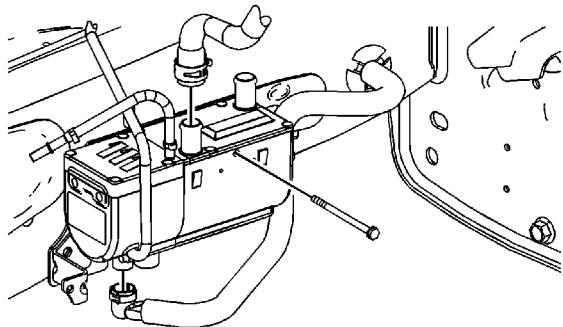
10. Remove the heater coolant heater from the bracket.

Installation Procedure

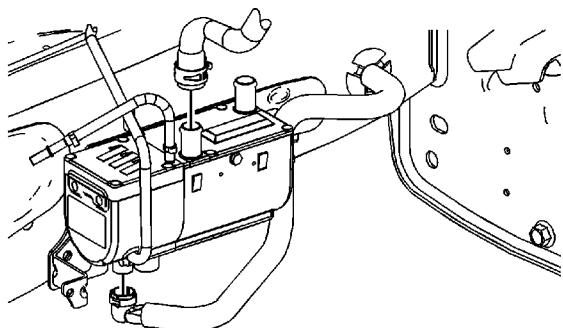


1. Install the heater coolant heater to the bracket.

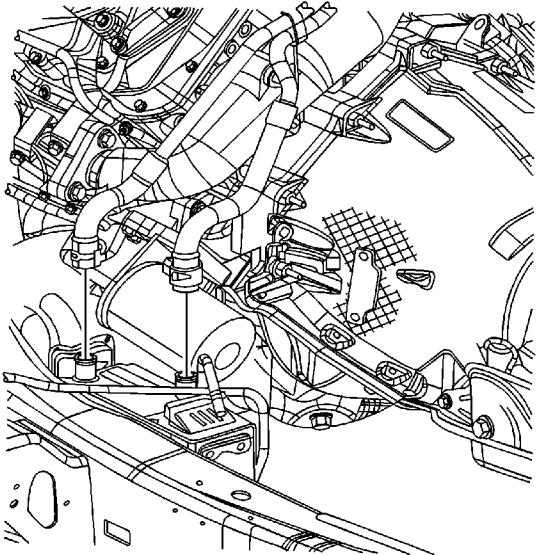
Caution: Refer to [Fastener Caution](#) in the Preface section.



2. Install the heater coolant heater retaining bolt and tighten to **6 N·m (53 lb in)**.



3. Install the air supply hose to the heater coolant heater.

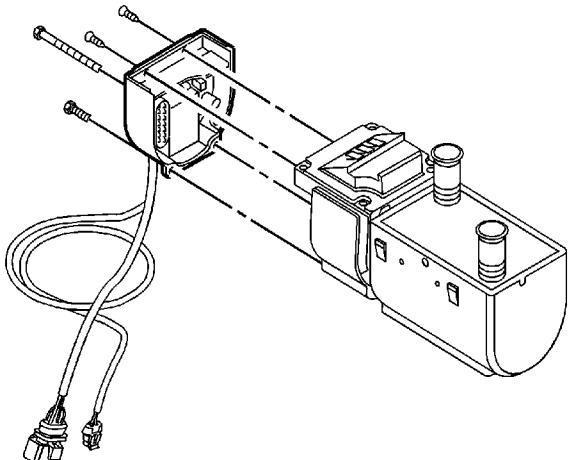


4. Install the heater hoses to the heater coolant heater.
5. Reposition the heater hose clamps at the heater coolant heater using [J 38185](#).
6. Connect the fuel supply hose to the heater coolant heater. Refer to [Plastic Collar Quick Connect Fitting Service](#).
7. Connect the heater coolant heater electrical connectors.
8. Install the heater coolant heater muffler. Refer to [Heater Coolant Heater Exhaust Muffler Replacement](#).
9. Lower the vehicle.
10. Fill the cooling system. Refer to [Cooling System Draining and Filling](#).

Heater Coolant Heater Control Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Disconnect the heater coolant heater electrical connectors.

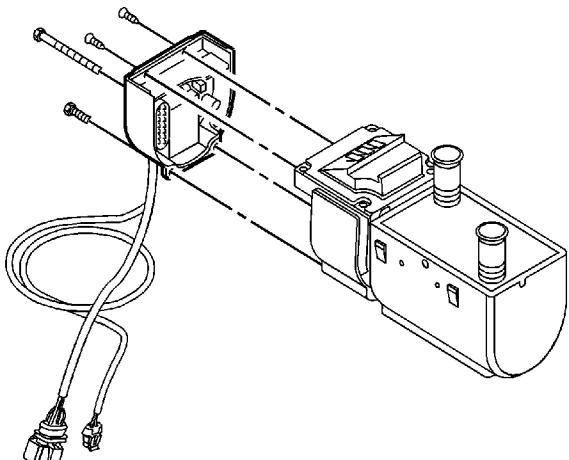


3. Remove the heater coolant heater control module upper retaining screws.
4. Remove the heater coolant heater control module lower retaining screws.
5. Remove the heater coolant heater control module from the coolant heater.
6. Disconnect the heater coolant heater control module to coolant heater electrical connector.

Installation Procedure

1. Connect the heater coolant heater control module to coolant heater electrical connector.
2. Install the heater coolant heater control module to the coolant heater.

Caution: Refer to [Fastener Caution](#) in the Preface section.



3. Install the heater coolant heater control module retaining screws.
 - Tighten the upper screws to **3 N·m (27 lb in)**.
 - Tighten the lower screws to **6 N·m (53 lb in)**.
4. Connect the heater coolant heater electrical connectors.
5. Lower the vehicle.

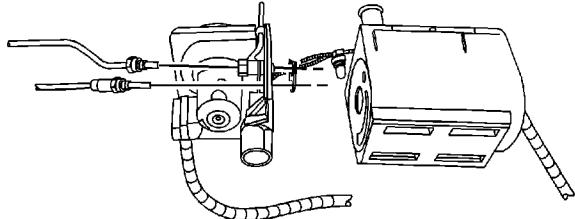
Heater Coolant Heater Combustion Sensor Replacement

Special Tools

[J-38125](#) Terminal Repair Kit

Removal Procedure

1. Remove the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
2. Remove the heater coolant heater control unit. Refer to [Heater Coolant Heater Control Replacement](#).

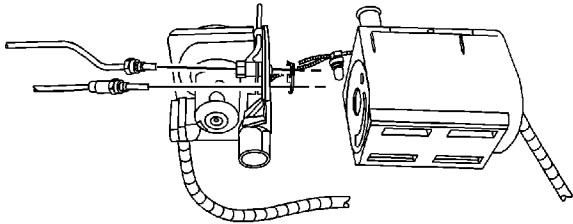


Note: Note the routing of the wiring to ensure proper installation.

3. Using J-38125-560 remove the coolant heater combustion sensor wiring from the electrical connector.
4. Remove the coolant heater combustion sensor from the coolant heater.

Installation Procedure

Caution: Refer to [Component Fastener Tightening Caution](#) in the Preface section.



1. Install the heater coolant heater combustion sensor to the coolant heater and tighten to **2.5 N·m (22 lb in)**.
2. Install the heater coolant heater combustion sensor wiring to the electrical connector.
3. Install the heater coolant heater control unit. Refer to [Heater Coolant Heater Control Replacement](#).
4. Install the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
5. Lower the vehicle.

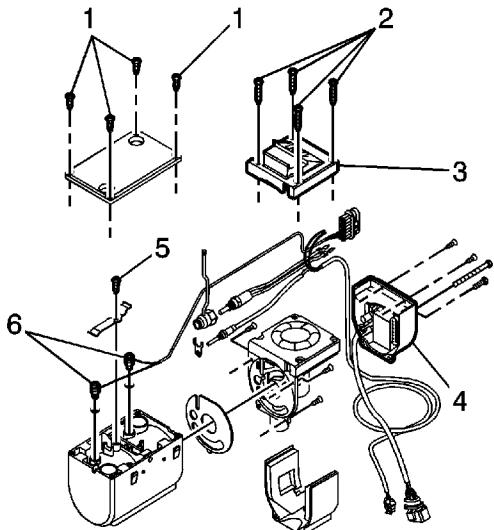
Heater Coolant Heater Air Temperature Sensor Replacement

Special Tools

[J-38125](#) Terminal Repair Kit

Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
3. Remove the heater coolant heater control module (4). Refer to [Heater Coolant Heater Control Replacement](#).



4. Remove the heater coolant heater blower cover retaining screws (2).
5. Remove the heater coolant heater blower cover (3).
6. Remove the heater coolant heater combustion cover retaining screws (1).
7. Remove the heater coolant heater combustion cover.
8. Remove the heater coolant heater temperature sensor retaining screw.
9. Remove the heater coolant heater temperature sensor retaining bracket.

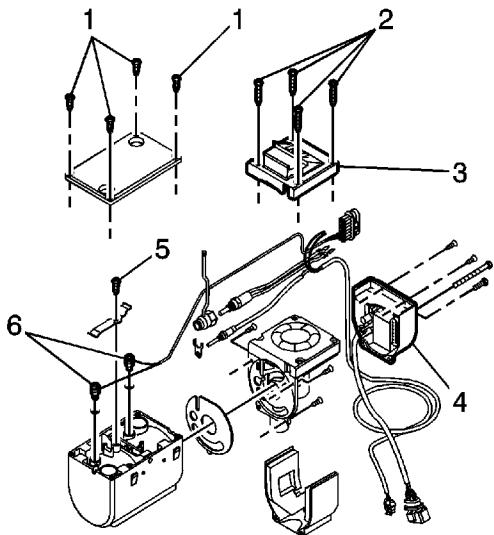
Note: Remove and discard the O-ring on the temperature sensors.

10. Remove the heater coolant heater temperature sensors.

Note: Note the routing of the wiring to ensure proper installation.

11. Using J-38125-560 remove the heater coolant heater temperature sensors wiring from the electrical connector.

Installation Procedure



1. Install the heater coolant heater temperature sensors wiring to the electrical connector.
2. Install the heater coolant heater temperature sensors with new O-rings.
3. Install the heater coolant heater temperature sensor retaining bracket.

Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the heater coolant heater temperature sensor retaining screw (5) and tighten to **1.5 N·m (13 lb in)**.
5. Install the heater coolant heater combustion cover.
6. Install the heater coolant heater combustion cover retaining screws (1) and tighten to **6 N·m (53 lb in)**.
7. Install the heater coolant heater blower cover (3).
8. Install the heater coolant heater blower cover retaining screws (2) and tighten to **6 N·m (53 lb in)**.
9. Install the heater coolant heater control module (4). Refer to [Heater Coolant Heater Control Replacement](#).
10. Install the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
11. Lower the vehicle.

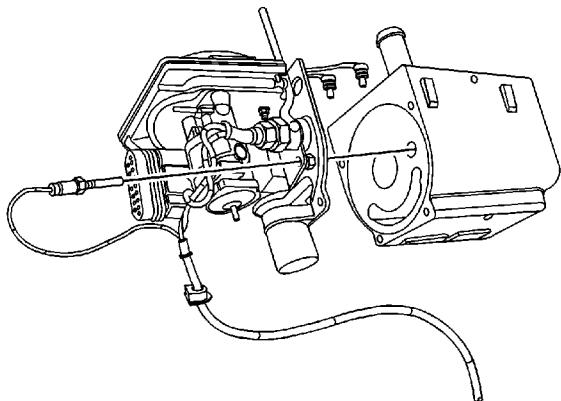
Heater Coolant Heater Glow Plug Replacement

Special Tools

[J-38125](#) Terminal Repair Kit

Removal Procedure

1. Remove the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
2. Remove the heater coolant heater control unit. Refer to [Heater Coolant Heater Control Replacement](#).

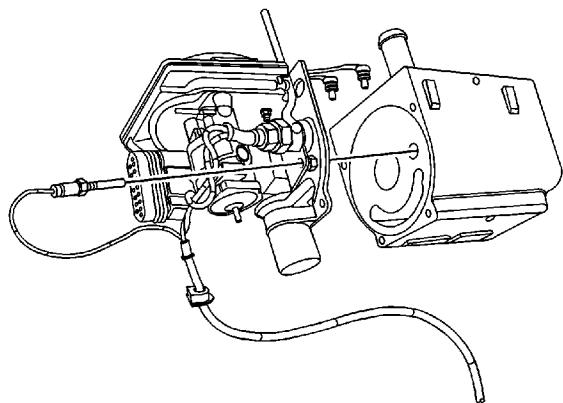


Note: Note the routing of the wiring to ensure proper installation.

3. Using J-38125-560 remove the glow plug wiring from the electrical connector.
4. Remove the glow plug from the heater coolant heater.

Installation Procedure

Caution: Refer to [Component Fastener Tightening Caution](#) in the Preface section.

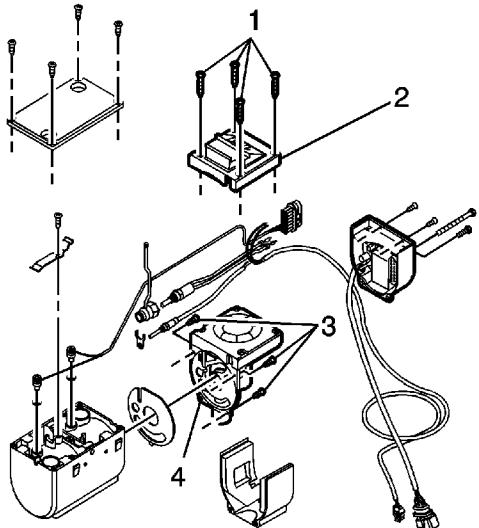


1. Install the glow plug to the heater coolant heater and tighten to **2.5 N·m (22 lb in)**.
2. Install the glow wiring to the electrical connector.
3. Install the heater coolant heater control unit. Refer to [Heater Coolant Heater Control Replacement](#).
4. Install the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
5. Lower the vehicle.

Heater Coolant Heater Blower Replacement

Removal Procedure

1. Remove the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
2. Remove the heater coolant heater glow plug. Refer to [Heater Coolant Heater Glow Plug Replacement](#).



3. Remove the heater coolant heater blower cover retaining screws (1).
4. Remove the heater coolant heater blower cover.
5. Remove the heater coolant heater blower retaining screws (3).

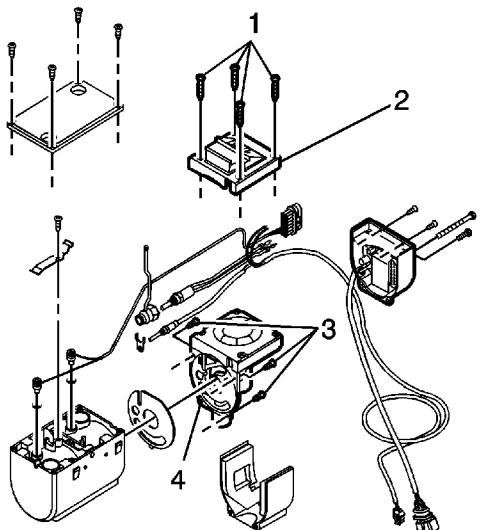
Important: Remove and discard the gasket.

6. Remove the heater coolant heater blower (4) from the combustion unit.

Important: Note the routing of the wiring to ensure proper installation.

7. Using J-38125-560 remove the heater coolant heater blower wiring from the electrical connector.

Installation Procedure



1. Install the heater coolant heater blower wiring to the electrical connector.
2. Install the heater coolant heater blower (4) to the combustion unit with a new gasket.
3. Install the heater coolant heater blower retaining screws (3).

Tighten

Tighten the screws to 3 N·m (27 lb in).

4. Install the heater coolant heater blower cover.
5. Install the heater coolant heater blower cover retaining screws (1).

Tighten

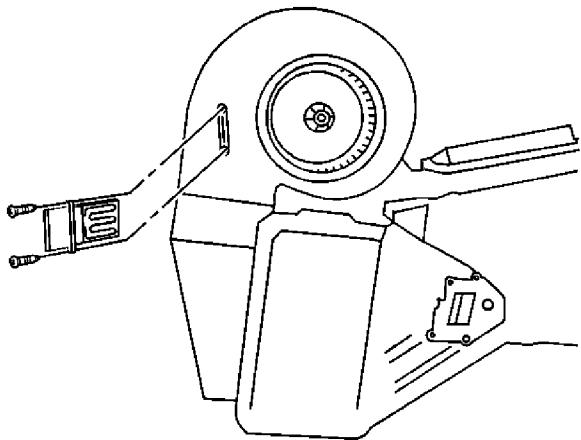
Tighten the screws to 3 N·m (27 lb in).

6. Install the heater coolant heater glow plug. Refer to [Heater Coolant Heater Glow Plug Replacement](#).
7. Install the heater coolant heater. Refer to [Heater Coolant Heater Replacement](#).
8. Lower the vehicle.

Auxiliary Blower Motor Resistor Assembly Replacement

Removal Procedure

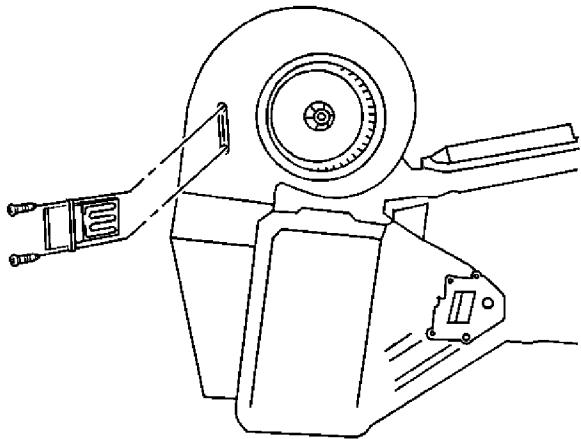
1. Remove the left rear quarter trim panels. Refer to [Body Side Trim Panel Replacement - Left Side](#).



2. Disconnect the electrical connector from the blower motor resistor.
3. Remove the retaining screws.
4. Remove the blower motor resistor from the blower case.



Installation Procedure



1. Install the blower motor resistor into the blower case.

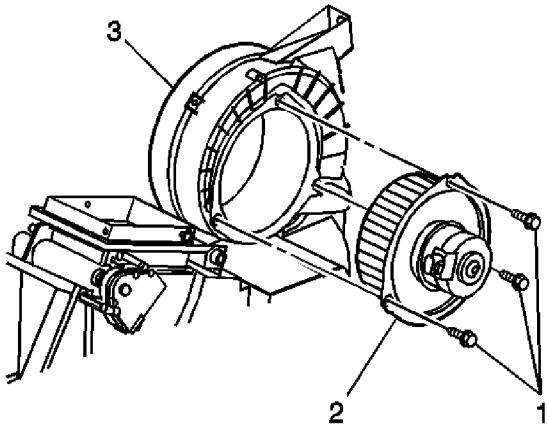
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install the retaining screws to the blower case and tighten to **2 N·m (18 lb in)**.
3. Connect the electrical connector to the blower motor resistor.
4. Install the left rear quarter trim panels. Refer to [Body Side Trim Panel Replacement - Left Side](#).

Auxiliary Blower Motor Replacement

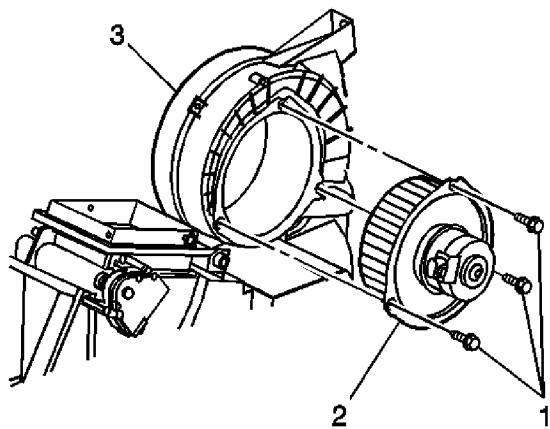
Removal Procedure

1. Remove the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).
2. Disconnect the electrical connectors from the auxiliary blower motor.



3. Remove the screws (1) from the auxiliary blower motor.
4. Remove the auxiliary blower motor (2).
5. Remove the retaining clip from the fan cage.
6. Remove the fan cage from the auxiliary blower motor.

Installation Procedure



1. Install the fan cage to the auxiliary blower motor.
2. Install the retaining clip to the fan cage.
3. Install the auxiliary blower motor.

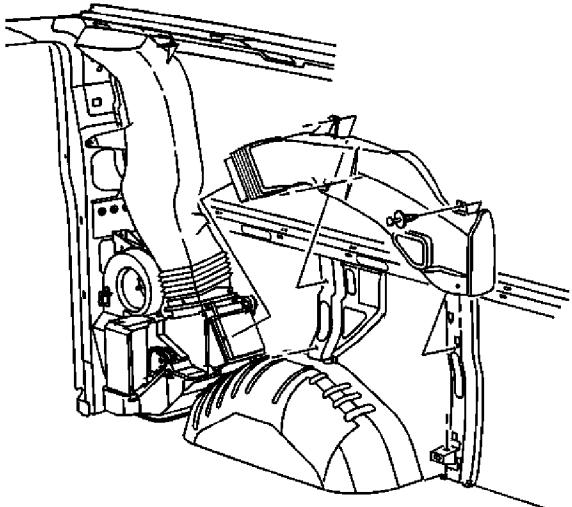
Caution: Refer to [Fastener Caution](#) in the Preface section.

4. Install the screws (1) to the auxiliary blower motor (2) and tighten to **5 N·m (44 lb in)**.
5. Connect the electrical connectors to the auxiliary blower motor.
6. Install the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).

Auxiliary Air Distributor Lower Duct Replacement

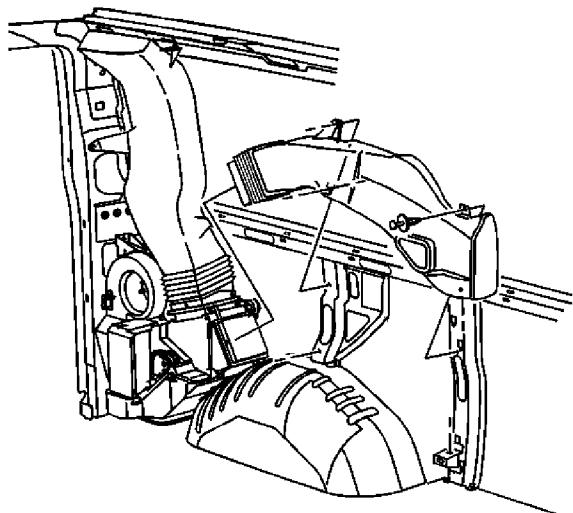
Removal Procedure

1. Remove the left rear quarter trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).



2. Remove the retainers from the air outlet duct.
3. Disconnect the air outlet duct from the floor vent.
4. Remove the air outlet duct from the vehicle.

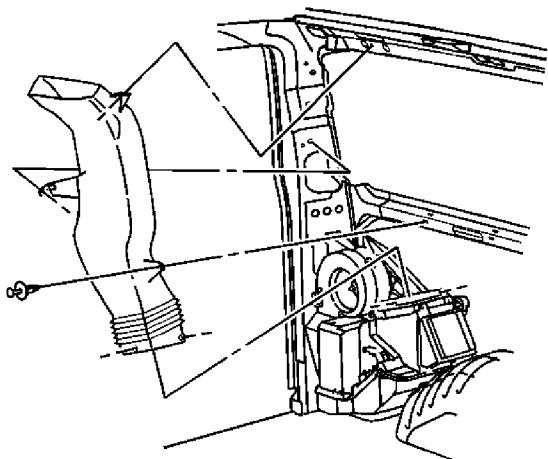
Installation Procedure



1. Install the air outlet duct to the vehicle.
2. Connect the air outlet duct to the floor vent.
3. Install the retainers to the air outlet duct.
4. Install the left rear quarter trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).

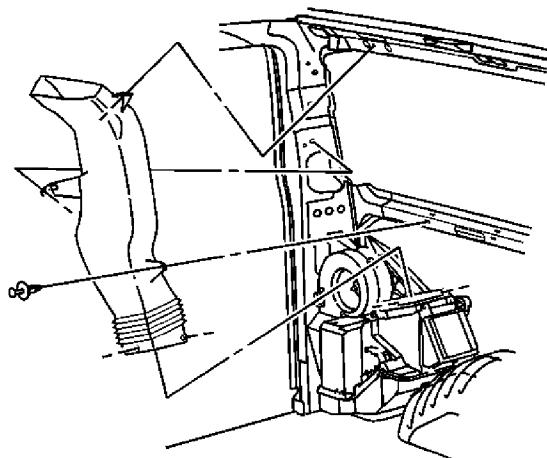
Auxiliary Air Distributor Duct Replacement - Upper Removal Procedure

1. Remove the left rear quarter trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).
2. Remove the left rear corner garnish molding. Refer to [Body Rear Corner Garnish Molding Replacement](#).



3. Remove the retainers from the air outlet duct.
4. Partially lower the rear headliner in order to remove the upper air outlet duct from the vent duct.
5. Disconnect the air outlet duct from the auxiliary heater.
6. Remove the air outlet duct from the vehicle.

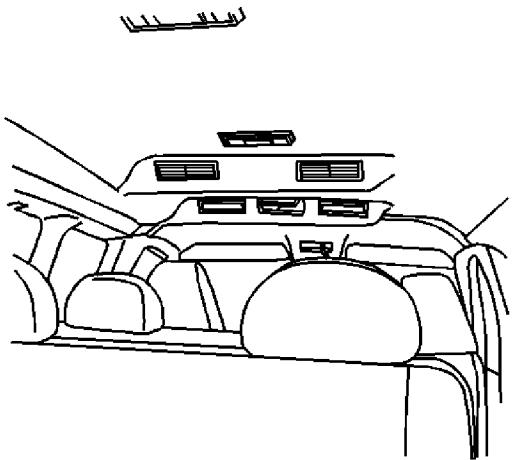
Installation Procedure



1. Install the air outlet duct to the vehicle.
2. Connect the air outlet duct to the auxiliary heater.
3. Connect the air outlet duct to the upper headliner.
4. Install the headliner.
5. Install the retainers to the air outlet duct.
6. Install the left rear corner garnish molding. Refer to [Body Side Trim Panel Replacement - Left Side](#).
7. Install the left rear quarter trim panel. Refer to [Body Rear Corner Garnish Molding Replacement](#).

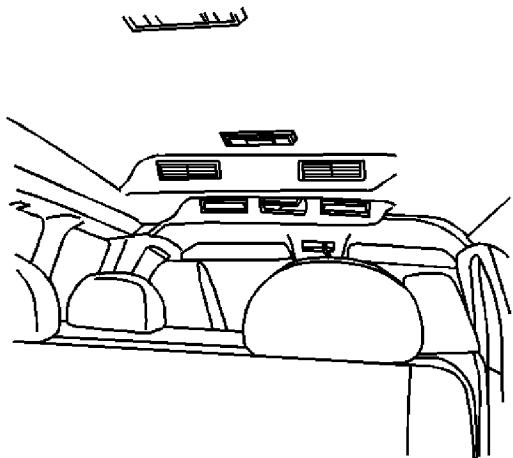
Auxiliary Air Conditioning Air Outlet Deflector Replacement

Removal Procedure



1. Use a flat blade tool in order to remove the air deflector louver from the headliner.
2. Remove the air deflector louver from the vehicle.

Installation Procedure

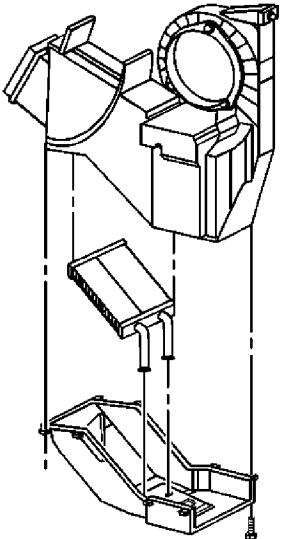


1. Align the air deflector louver into the opening in the headliner.
2. Push the air outlet into the headliner until the deflector snaps into place.

Auxiliary Heater Core Replacement

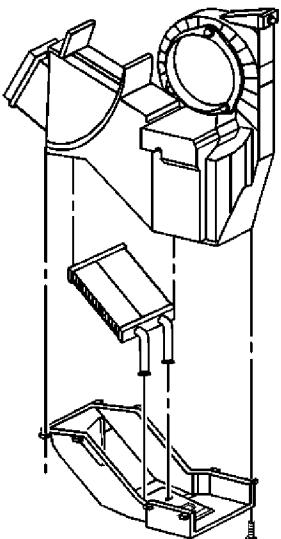
Removal Procedure

1. Remove the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).



2. Remove the screws from the bottom of the auxiliary HVAC module.
3. Remove the heater core from the module.

Installation Procedure

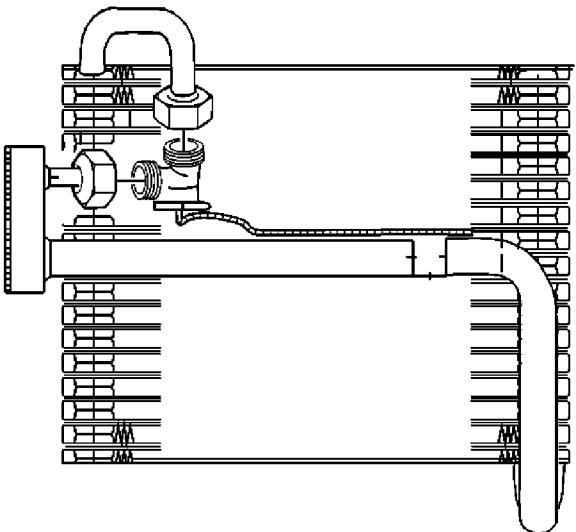




1. Install the heater core to the module.
Caution: Refer to [Fastener Caution](#) in the Preface section.
2. Install the screws to the bottom of the auxiliary HVAC module and tighten to **1.9 N·m (17 lb in)**.
3. Install the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).

Auxiliary Air Conditioning Evaporator Thermal Expansion Valve Replacement

Removal Procedure

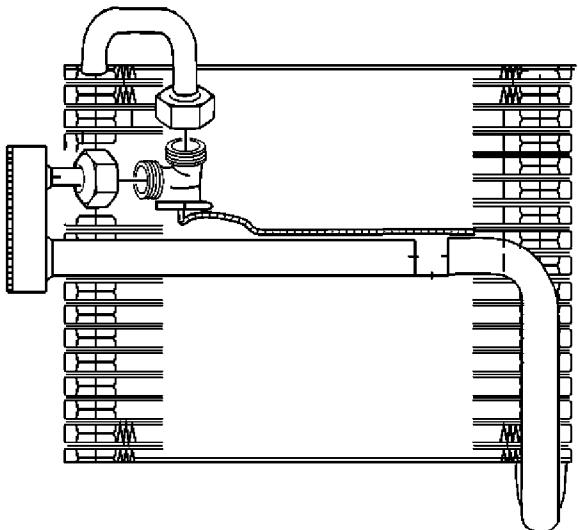


1. Remove the evaporator core. Refer to [Auxiliary Air Conditioning Evaporator Replacement](#).
2. Gently remove the sealer packed around the thermal expansion valve (TXV).

Note: Note the mounting location and the orientation of the tube on the core.

3. Remove the clip retaining the capillary tube to the evaporator core.
4. Disconnect the evaporator tube connections from the TXV.
5. Remove the TXV from the core.

Installation Procedure



1. Install the TXV to the core.

Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Connect the evaporator tube connections to the TXV and tighten to **28 N·m (21 lb ft)**.

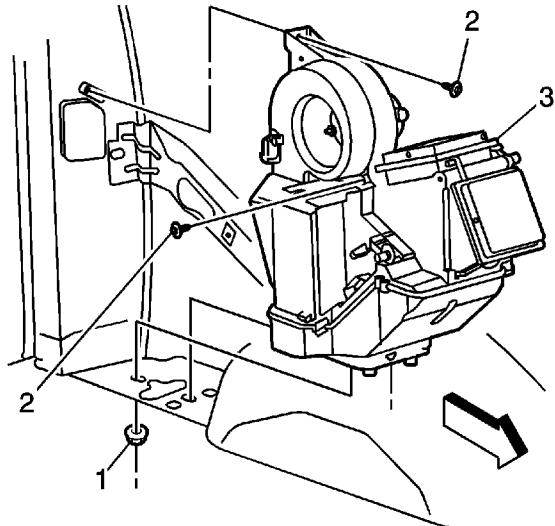
Note: Install the clip and the tube in the location and the orientation as noted during the disassembly.

3. Install the clip in order to retain the capillary tube to the evaporator core.
4. Pack sealer around the TXV in the manner found during the disassembly.
5. Install the evaporator core. Refer to [Auxiliary Air Conditioning Evaporator Replacement](#).

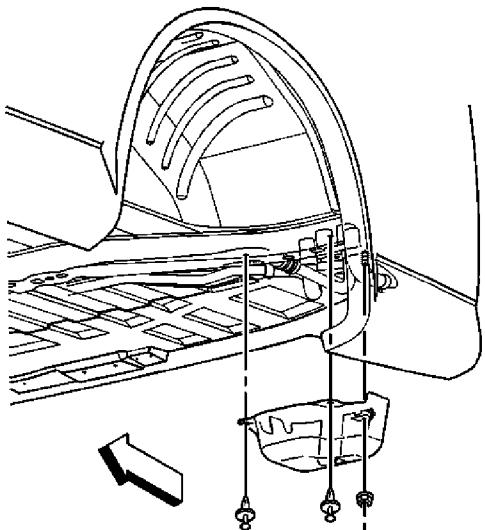
Auxiliary HVAC Module Replacement

Removal Procedure

1. Recover the refrigerant. Refer to [Refrigerant Recovery and Recharging](#).

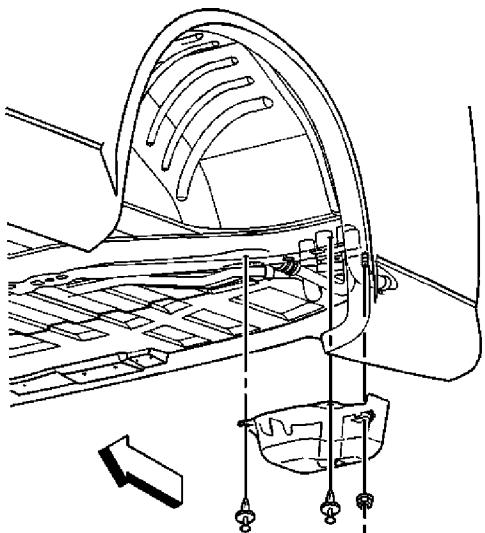


2. Drain the engine coolant. Refer to [Cooling System Draining and Filling](#).
3. Remove the left rear quarter trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).
4. Remove the left rear corner garnish molding. Refer to [Body Rear Corner Garnish Molding Replacement](#).
5. Remove the air distribution duct upper. Refer to [Auxiliary Air Distributor Duct Replacement - Upper](#).
6. Remove the air distribution duct lower. Refer to [Auxiliary Air Distributor Lower Duct Replacement](#).
7. Disconnect the electrical connectors from the auxiliary HVAC module (1).



8. Raise and suitably support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
9. Remove the cover from the underside of the auxiliary HVAC module.
10. Remove the one retaining nut in order to remove the auxiliary evaporator underbody rear tube assembly from the core.
11. Disconnect the heater lines from the underside of the auxiliary HVAC module.
12. Remove the retaining nuts from the underside of the auxiliary HVAC module.
13. Lower the vehicle.
14. Remove the auxiliary HVAC module.

Installation Procedure

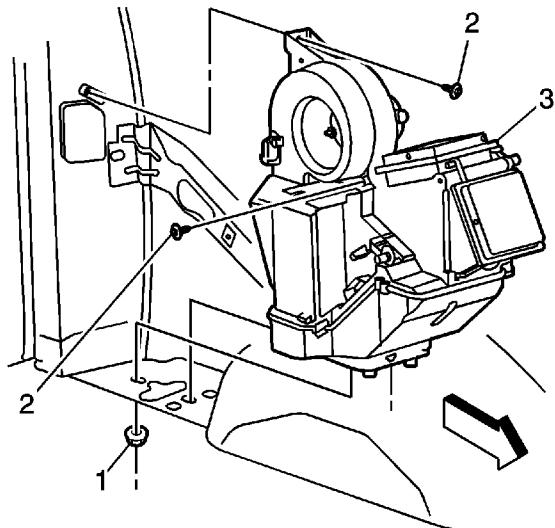


1. Install the auxiliary HVAC module.

2. Raise and suitably support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).

Caution: Refer to [Fastener Caution](#) in the Preface section.

3. Install the retaining nuts to the underside of the auxiliary HVAC module and tighten to **10 N·m (89 lb in)**.
4. Connect the heater lines to the underside of the auxiliary heater.
5. Install the one retaining nut to the auxiliary evaporator underbody rear tube assembly to the core and tighten to **28 N·m (21 lb ft)**.
6. Install the cover to the underside of the auxiliary HVAC module.
7. Lower the vehicle.



8. Connect the electrical connectors to the auxiliary HVAC module (1).
9. Install the air distribution duct upper. Refer to [Auxiliary Air Distributor Duct Replacement - Upper](#).
10. Install the air distribution duct lower. Refer to [Auxiliary Air Distributor Lower Duct Replacement](#).
11. Install the left rear corner garnish molding. Refer to [Body Rear Corner Garnish Molding Replacement](#).
12. Install the left rear quarter trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).
13. Evacuate and recharge the A/C system. Refer to [Refrigerant Recovery and Recharging](#).
14. Fill the engine coolant. Refer to [Cooling System Draining and Filling](#).

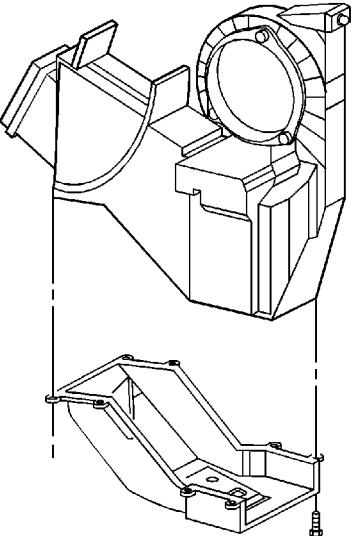
Auxiliary Air Conditioning Evaporator Replacement

Special Tools

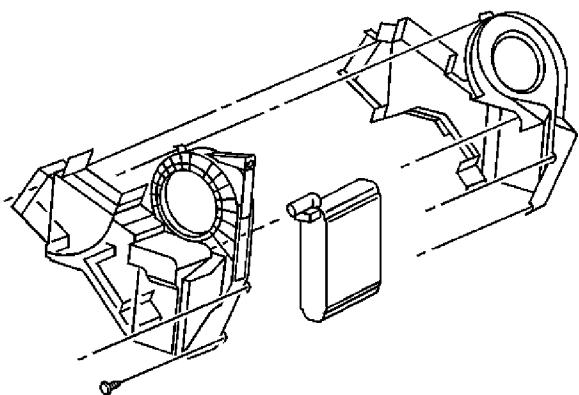
[J 39400-A](#) Halogen Leak Detector

Removal Procedure

1. Remove the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).



2. Remove the screws from the lower HVAC case.
3. Separate the lower case halves.

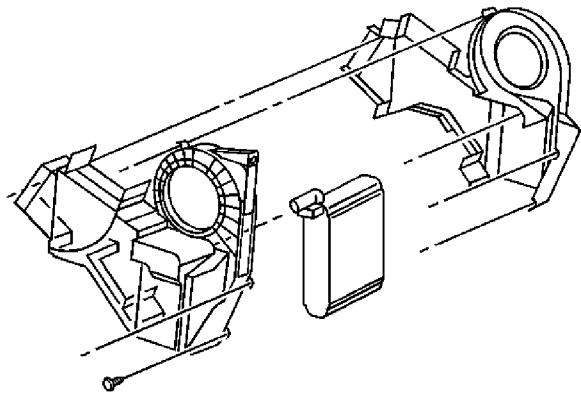




4. Remove the screws from the auxiliary HVAC module.
5. Separate the case halves.
6. Remove the evaporator core seal.
7. Remove the evaporator core from the auxiliary HVAC module.
8. Inspect the gaskets and the seals for damage.
9. Replace the gaskets and the seals.

Installation Procedure

1. Add refrigerant oil to the evaporator. Refer to [Refrigerant System Capacities](#).

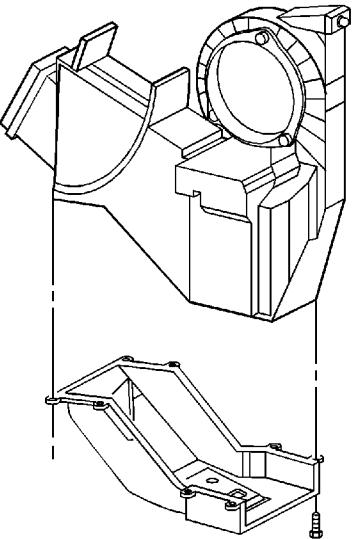


2. Install the evaporator core to the auxiliary HVAC module.
3. Install the evaporator core seal.
4. Reassemble the case halves.

Caution: Refer to [Fastener Caution](#) in the Preface section.

5. Install the auxiliary HVAC module screws and tighten to **2 N·m (16 lb in)**.
6. Reassemble the lower HVAC halves.

Caution: Refer to [Fastener Caution](#) in the Preface section.



7. Install the lower HVAC case screws and tighten to **2 N·m (16 lb in)**.
8. Install the auxiliary HVAC module. Refer to [Auxiliary HVAC Module Replacement](#).
9. Leak test the fittings using the [J 39400-A](#) .

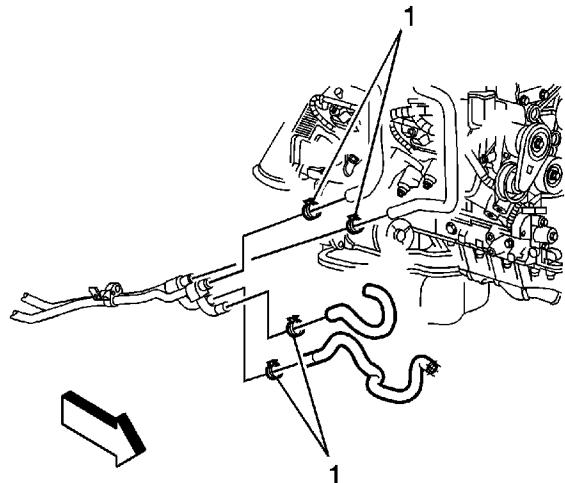
Auxiliary Air Conditioning Evaporator Tube with Auxiliary Heater Inlet and Outlet Pipe Replacement

Special Tools

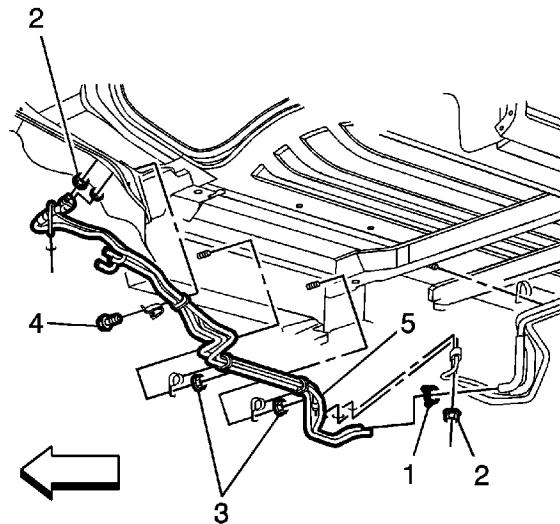
[J 38185](#) Hose Clamp Pliers

Removal Procedure

1. Remove the engine cooling fan. Refer to [Fan Replacement](#).
2. Remove the accumulator. Refer to [Air Conditioning Accumulator Replacement](#)
3. Remove the passenger side wheel house splash shield. Refer to [Wheelhouse Splash Shield Replacement](#)
4. Loosen but DO NOT remove driver side body mount bolts.
5. Remove passenger side body mount bolts.
6. Slowly lift the passenger side of the body off the frame, and support.

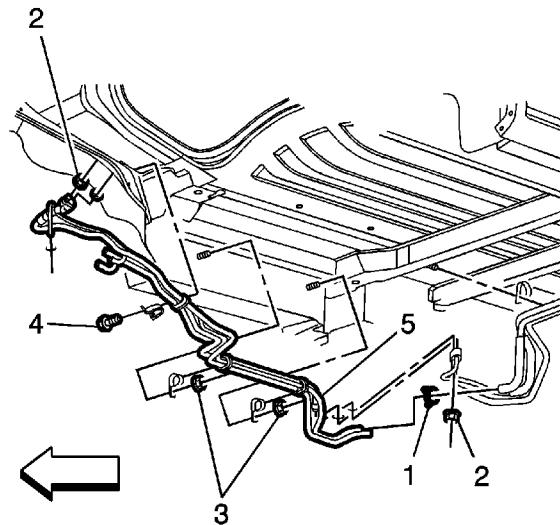


-  7. Remove auxiliary heater hose clamps (1).



8. Remove auxiliary a/c evaporator nuts (2).
9. Remove auxiliary a/c and heater hose bracket nuts (3).
10. Remove auxiliary a/c and heater hose bracket bolt (4).
11. Remove auxiliary air conditioning evaporator & heater tube assembly (5).

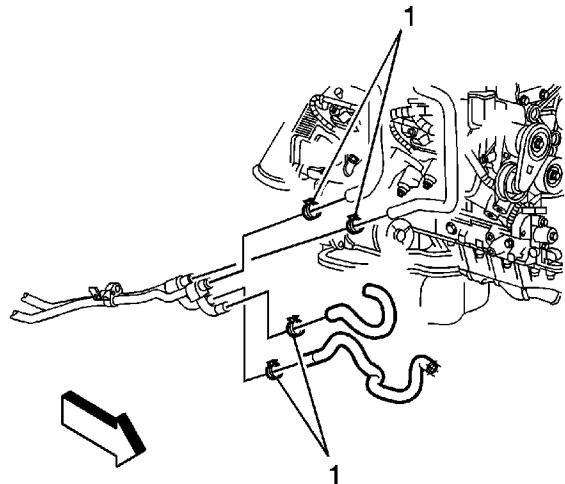
Installation Procedure



1. Install auxiliary air conditioning evaporator & heater tube assembly

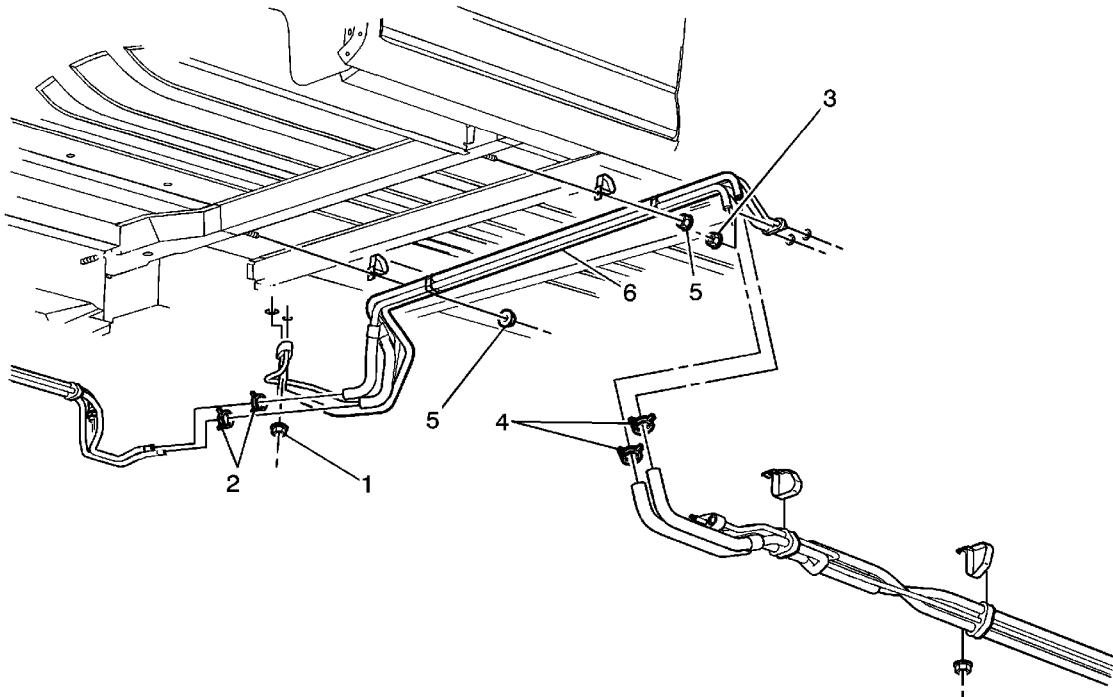
Caution: Refer to [Fastener Caution](#) in the Preface section.

2. Install auxiliary a/c and heater hose bracket bolt (4) and tighten to **6 N·m (5 lb in)**.
3. Install auxiliary a/c and heater hose bracket nuts (3) and tighten to **7 N·m (6 lb in)**.
4. Install auxiliary a/c evaporator nut (2) and tighten to **16 N·m (12 lb ft)**.



5. Install auxiliary heater hose clamps (1).
6. Install rear auxiliary heater hose clamp (1).
7. Slowly and carefully lower the passenger side of the body onto the frame.
8. Install passenger side body mount bolts and tighten to **140 N·m (103 lb ft)**.
9. Tighten driver side body mount bolts and tighten to **140 N·m (103 lb ft)**.
10. Install the passenger side wheel house splash shield. Refer to [Wheelhouse Splash Shield Replacement](#)
11. Lower the vehicle. Refer to [Lifting and Jacking the Vehicle](#)
12. Install the accumulator. Refer to [Air Conditioning Accumulator Replacement](#)
13. Install the engine cooling fan. Refer to [Fan Replacement](#).

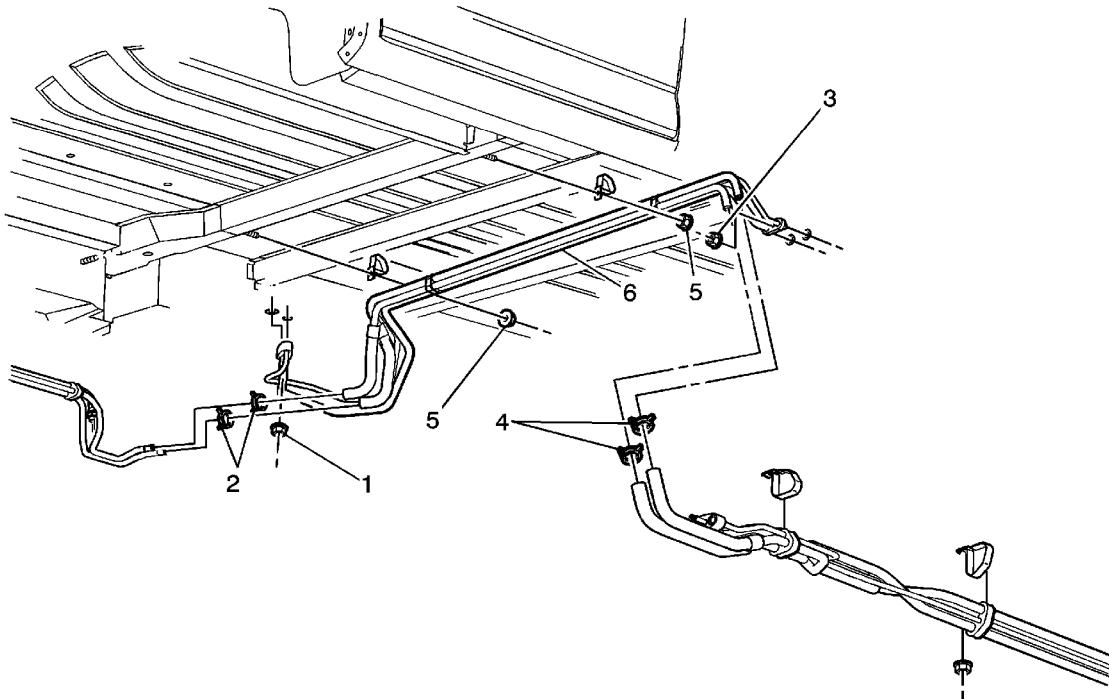
Auxiliary Air Conditioning Evaporator and Auxiliary Heater Hose Replacement - Intermediate (Gasoline)



Callout	Component Name
Preliminary Procedures	
<ol style="list-style-type: none"> 1. Recover the refrigerant from the system. Refer to Refrigerant Recovery and Recharging. 2. Drain the cooling system. Refer to Cooling System Draining and Filling. 3. Remove the lower fan shroud. Refer to Engine Coolant Fan Lower Shroud Replacement. 4. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle. 5. Remove the exhaust tailpipe heat shield covering the intermediate heater, a/c tubes. Refer to Exhaust Heat Shield Replacement - Body Panel. 6. Loosen but DO NOT remove driver side body mount bolts. 7. Remove passenger side body mount bolts. 8. Slowly lift the passenger side of the body off the frame and support. 9. Use J 38185 to release the radiator hose clamp. 	
1	Auxiliary A/C Evaporator Nut Caution: Refer to Fastener Caution in the Preface section. Tighten 16 N·m (12 lb·ft)

2	Auxiliary Heater Hose Clamp (Qty: 2)
3	Auxiliary A/C Evaporator Nut Tighten 16 N·m (12 lb ft)
4	Auxiliary Heater Hose Clamp (Qty: 2)
5	Auxiliary A/C and Heater Hose Bracket Nut (Qty: 2) Tighten 7 N·m (62 lb in)
6	Auxiliary A/C Evaporator and Auxiliary Heater (Intermediate) Hose

Auxiliary Air Conditioning Evaporator and Auxiliary Heater Hose Replacement - Intermediate (Diesel)



Callout	Component Name
Preliminary Procedures	
<ol style="list-style-type: none"> 1. Recover the refrigerant from the system. Refer to Refrigerant Recovery and Recharging. 2. Drain the cooling system. Refer to Cooling System Draining and Filling. 3. Remove the fan and clutch assembly. Refer to Fan Clutch Replacement. 4. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle. 5. Remove the exhaust tailpipe heat shield covering the intermediate heater, a/c tubes. Refer to Exhaust Heat Shield Replacement - Body Panel. 6. Loosen but DO NOT remove driver side body mount bolts. 7. Remove passenger side body mount bolts. 8. Slowly lift the passenger side of the body off the frame and support. 9. Use J 38185 to release the radiator hose clamp. 	
1	Auxiliary A/C Evaporator Nut Caution: Refer to Fastener Caution in the Preface section. Tighten 16 N·m (12 lb·ft)
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2	Auxiliary Heater Hose Clamp (Qty: 2)
3	Auxiliary A/C Evaporator Nut Tighten 16 N·m (12 lb ft)
4	Auxiliary Heater Hose Clamp (Qty: 2)
5	Auxiliary A/C and Heater Hose Bracket Nut (Qty: 2) Tighten 7 N·m (62 lb in)
6	Auxiliary A/C Evaporator and Auxiliary Heater (Intermediate) Hose

Auxiliary Blower Motor Relay Replacement

Removal Procedure

1. Remove the body side rear trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).
2. Pull upward to remove the blower motor relay from the connector.
3. Remove the blower motor relay.

Installation Procedure

1. Install the blower motor relay.
2. Push downward to install the blower motor relay to the connector.

Make sure the relay is fully seated in the connector.

3. Install the body side rear trim panel. Refer to [Body Side Trim Panel Replacement - Left Side](#).

Auxiliary Heater and Air Conditioning Pipe Repair Tools Required

[J 41425](#) A/C Line Repair Kit

Do not service the rear A/C or heater lines as a complete unit. Service the rear A/C or heater lines as a sectional repair.

Replacement lines can be obtained through GMSPO.

Use the [J 41425](#) when any of the following actions damage the rear A/C or heater lines:

- Rub-through
- Collision damage
- Leakage in the system

Minimum Tube Length Required Table

Important: When you section the rear A/C or heater lines, ensure that the correct minimum length remains in the straight part of the line on both sides of the splice.

Follow the Straight Line Repair procedure in order to repair line damage in a straight section of line.

Follow the Line Sectioning Repair procedure in order to repair any damage in a bend area. Do not repair the rear A/C or heater lines in a bend area. Replace the lines. Maintaining the original line shape will prevent vibrations and rub-through.

Tube Size	Dim A Standard Installation	Dim A Jaw Reversed Installation
8 mm (5/16 in)	29 mm (1 1/8 in) MIN	19-29 mm (3/4-1 1/8 in)
10 mm (3/8 in)	29 mm (1 1/8 in) MIN	19-29 mm (3/4-1 1/8 in)
13 mm (1/2 in)	29 mm (1 1/8 in) MIN	19-29 mm (3/4-1 1/8 in)
16 mm (5/8 in)	32 mm (1 1/4 in) MIN	23-32 mm (7/8-1 1/4 in)
19 mm (3/4 in)	34 mm (1 5/16 in) MIN	23-34 mm (7/8-1 5/16 in)

Straight Line Repair

1. Recover the refrigerant, if repairing the A/C lines. Refer to [Refrigerant Recovery and Recharging](#) .
2. Drain the coolant, if repairing the heater lines. Refer to [Cooling System Draining and Filling](#) .
3. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#) .
4. Locate the area that requires repair.
5. Obtain a length of replacement line to make the repair.
6. Use a tubing cutter in order to cut and remove the section of damaged line.

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Important: The length of the replacement line must be the same as the section being replaced.

7. Use a tubing cutter in order to cut the replacement line to length.
8. Use the cleaning pad from the [J 41425](#) in order to clean any burrs or grease from the line ends. Be sure to clean at least 19 mm (0.75 in) from the line ends.
9. Use the LOK prep sealant in order to prep the line ends.
10. Apply one drop of the J 41425-3 sealing compound to the outside of each end of the line.
11. Insert the line ends into the LOK fitting.
12. Rotate the LOK fitting one complete turn in order to evenly distribute the sealing compound around the lines.
13. Install the correct LOK fitting jaws into the J 41425-1.
14. Install the J 41425-1 over the LOK connectors.

Verify that the LOK connector ends are positioned in the counter bores of the jaws.

Important: Hold the J 41425-1 body with a 3/8" breaker bar.

15. Tighten the forcing screw of the J 41425-1.

When fully seated, the LOK connector collars will bottom out on the center shoulder of the LOK fitting.

16. Loosen the forcing screw and remove the J 41425-1 from the repaired line.
17. Repeat steps 8-16 to repair the other end of the line.
18. Verify that the LOK fittings are correctly installed.
19. Lower the vehicle.
20. Refill the coolant, if drained. Refer to [Cooling System Draining and Filling](#).
21. Evacuate and recharge the refrigerant, if repairing the A/C lines. Refer to [Refrigerant Recovery and Recharging](#).

Line Sectioning Repair

1. Recover the refrigerant, if repairing the A/C lines. Refer to [Refrigerant Recovery and Recharging](#).
2. Drain the coolant, if repairing the heater lines. Refer to [Cooling System Draining and Filling](#).
3. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
4. Obtain a new A/C or heater line for sectioning.

Important: Stagger the splices if repairing more than one line.

5. Scribe a mark on the line that will be sectioned.
6. Use a tubing cutter in order to cut the line or lines being replaced.
7. Remove the section of line being replaced from the vehicle.

Important: The length of the replacement line must be the same as the line being replaced.

8. Install the replacement line to the vehicle.
9. Use a tubing cutter in order to cut the replacement line to length.
10. Use the cleaning pad from the [J 41425](#) in order to clean any burrs or grease. Be sure to clean at least 19 mm (0.75 in) from the A/C line.
11. Use the LOK prep sealant in order to prep the A/C or heater line.
12. Apply one drop of the J 41425-3 sealing compound to the outside of each line end.

13. Insert the line ends into the LOK fitting.
14. Rotate the LOK fitting one complete turn in order to evenly distribute the sealing compound around the lines.
15. Install the correct LOK fitting jaws into the J 41425-1.
16. Install the J 41425-1 over the LOK connectors.

Verify that the LOK connector ends are positioned in the counter bores of the jaws.

17. Hold the tool body with a 3/8" breaker bar. Turn the forcing screw until both of the connector collars bottom on the center shoulder of the LOK fitting.
18. Loosen the forcing screw. Remove the tool from the repaired line.
19. Verify that the LOK fitting is correctly installed.
20. Lower the vehicle.
21. Refill the coolant, if drained. Refer to [Cooling System Draining and Filling](#).
22. Evacuate and recharge the refrigerant, if repairing the A/C lines. Refer to [Refrigerant Recovery and Recharging](#).