Fastener Tightening Specifications

Application	Specification	
	Metric	English
A/C High Pressure Recirculation Switch	6 N·m	53 lb in
A/C Line Bracket Nuts and Bolts	10 N·m	8 lb ft
A/C Line Mounting Nuts and Bolts	15 N·m	11 lb ft
A/C Underbody Line Bracket Nuts	4 N·m	35 lb in
Compressor Bracket Mounting Bolts	60 N·m	45 lb ft
Compressor Clutch Plate Retaining Bolt	18 N·m	13 lb ft
Compressor Mounting Bolts	25 N·m	18 lb ft
HVAC Module Case Screws	1.5 N·m	13 lb in
HVAC Module Mounting Bolt	3 N·m	27 lb in
HVAC Module Mounting Nuts	10 N·m	8 lb ft
Instrument Panel (I/P) Duct Mounting Bolts	3 N·m	27 lb in
Rear Duct Mounting Screws	10 N·m	8 lb ft

Compressor Suction Screen and Tool Selection Specifications

Part Number	Screen Size	Fitting ID Application Range
J-44551-40	10.03 mm (0.395 in)	9.75-9.96 mm (0.384-0.392 in)
J-44551-60	11.96 mm (0.471 in)	11.68-11.89 mm (0.460-0.468 in)
J-44551-70	12.50 mm (0.492 in)	12.22-12.42 mm (0.481-0.489 in)
J-44551-80	12.70 mm (0.500 in)	12.42-12.62 mm (0.489-0.497 in)
J-44551-10	12.95 mm (0.510 in)	12.67-12.88 mm (0.499-0.507 in)
J-44551-20	14.02 mm (0.552 in)	13.74-13.94 mm (0.541-0.549 in)
J-44551-30	15.11 mm (0.595 in)	14.83-15.04 mm (0.584-0.592 in)
J-44551-90	0.600 in (15.24 mm)	14.96-15.16 mm (0.589-0.597 in)

Refrigerant System Capacities

Refrigerant System Capacities

Application	Specification	
	Metric	English
PAG Oil GM P/N 12378526 for United States PAG Oil GM P/N 88900060 for Canada PAG Oil Saturn P/N 22695048		
Total System PAG Oil Capacity	195 ml	6.5 oz
Compressor	75 ml[1]	2.5 oz[1]
The Denso service compressor contains 75 ml (2.5 oz) of PAG oil.		
Condenser	10 ml[1]	0.3 oz[1]
Desiccant Cartridge	10 ml[1]	0.3 oz[1]
Evaporator, Front	10 ml[1]	0.3 oz[1]
Evaporator, Rear	10 ml[1]	0.3 oz[1]
Abrupt Refrigerant Loss	60 ml[2]	2.0 oz[2]
Refrigerant Charge, R134a	1.05 kg	2.3 Lb
[1]If more than the specified amount of PAG oil was drained from a component, add the equal amount of oil drained. [2]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.		

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 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 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 . For the proper quantities of oil to add to the A/C refrigerant system, refer to Refrigerant System Capacities.

Flushing

Tools Required

- J 43600 ACR 2000 Air Conditioning Service Center
- J 45268 A/C Flushing Adapter Kit
- J 41447 Leak Detection Dye
- J 42220 R-134A A/C Tracer Dye - Box of 24

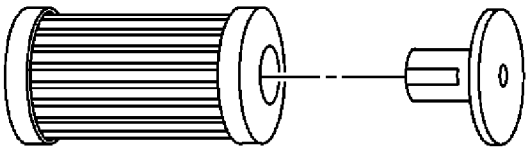
Important: Flushing with the J 43600 is not intended to remove metal from the A/C system.

Flushing is intended to remove the following contaminants:

- 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 front thermal expansion valve (TXV). Refer to Thermal Expansion Valve Replacement .
3. Install the J 45268-121 in place of the TXV.
4. Remove the A/C compressor. Refer to Air Conditioning Compressor Replacement .
5. Install J 45268-5 to the discharge hose.
6. Install J 45268-4 to the suction hose.



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

   Perform the following procedure:

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

   7.1. Service the filter with ACDelco P/N GF 470 before each flush.
   7.2. Connect J 45268-1 to the suction port of J 45268-4.
   7.3. Connect the blue hose from J 43600 to J 45268-1 flush filter adapter.
   7.4. Connect the red hose from J 43600 to J 45268-5 flush adapter.
8. Reverse flow refrigerant flushing is recommended for desiccant failure. Replace the desiccant when the A/C flush is complete and perform the following procedure:

   Important: The filter inside J 45268-1 is serviceable.

   8.1. Service the filter with ACDelco P/N GF 470 before each flush.
   8.2. Connect J 45268-1 to the discharge port of J 45268-5.
   8.3. Connect the blue hose from J 43600 to J 45268-1 flush filter adapter.
   8.4. Connect the red hose from J 43600 to the suction port of J 45268-4 flush adapter.

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

9. Flush the front A/C system. Follow the instructions supplied with the J 43600 .

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

10. If the vehicle is equipped with rear A/C, flush the auxiliary A/C system separately.
    10.1. Remove J 45268-121 from the front evaporator.
    10.2. Inspect the front TXV for debris. Clean or replace as needed.
    10.3. Install the front TXV. Refer to Thermal Expansion Valve Replacement.
    10.4. Install J 45268-121 in place of the auxiliary TXV.
11. Flush the auxiliary A/C system. Follow the instructions supplied with J 43600 .
12. Remove J 45268-5 from the discharge hose.
13. Remove J 45268-4 from the suction hose.

    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.

14. If the removed A/C compressor is being reinstalled, perform the following procedure:
    14.1. Drain the PAG oil from the A/C compressor.

    Rotate the compressor input shaft to assist in draining the PAG oil from the compressor.

14.2. Add the total system capacity of PAG oil to the A/C compressor. Refer to Refrigerant System Capacities .

15. If you will replace the A/C compressor after flushing the system, perform the following procedure:
    15.1. A new service compressor is shipped with PAG oil. Refer to the Refrigerant System Capacities .
    15.2. If the service compressor is shipped with PAG oil, DO NOT drain the new PAG oil from the compressor.
    15.3. 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.

16. Add one bottle of J 41447 directly to the A/C compressor.
17. Install the A/C compressor. Refer to Air Conditioning Compressor Replacement .
18. Remove J 45268-121.
19. Inspect the auxiliary TXV for debris. Clean or replace as needed.
20. Install the auxiliary TXV. Refer to Auxiliary Air Conditioning Evaporator Thermal Expansion Valve Replacement .
21. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging .
22. Leak test the fittings using J 42220 .

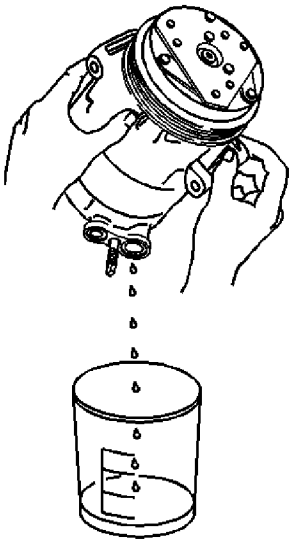
Air Conditioning Compressor Oil Balancing

Draining Procedure

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

1. 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.



2. Measure and record the amount of oil drained from the removed compressor.

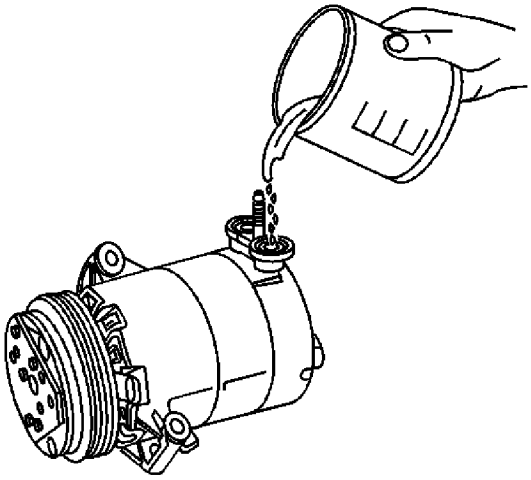
   This measurement will be used during installation of the replacement compressor.

3. Inspect the oil drained from the compressor. Refer to Air Conditioning Compressor Oil Diagnosis.
4. Properly discard the used refrigerant oil.

Balancing Procedure

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

1. The replacement compressor is shipped with 74 ml (2.5 oz) of refrigerant oil.

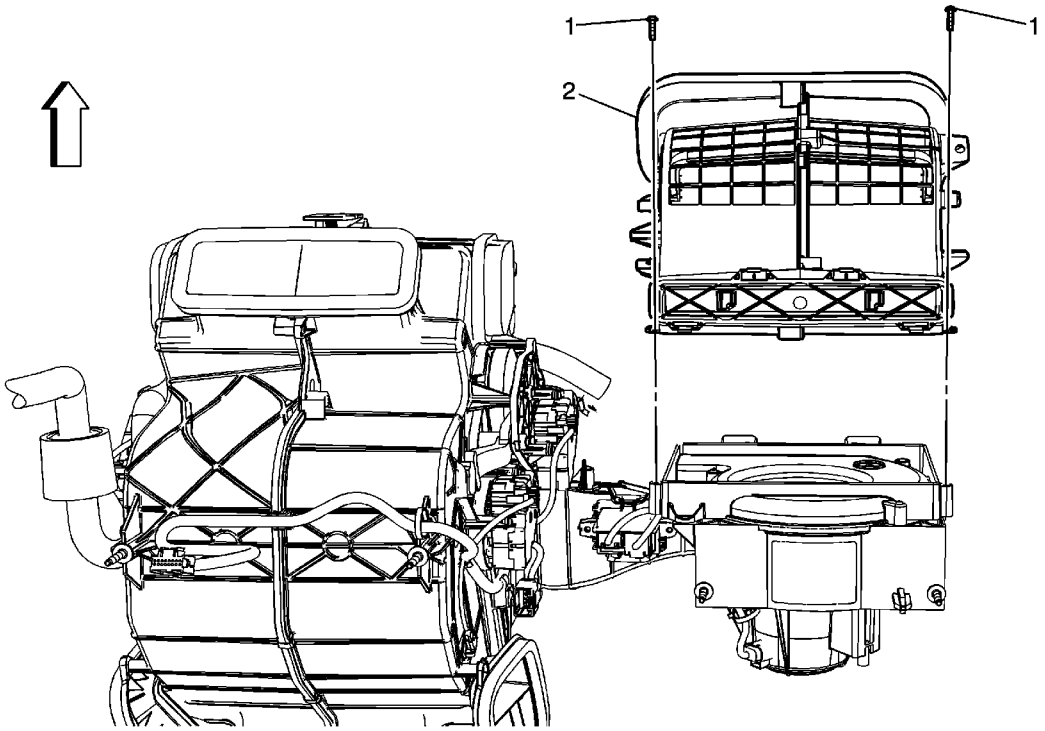


2. Compare the amount of refrigerant oil recorded during compressor removal to the amount of refrigerant oil shipped in the replacement compressor.

   If the amount of refrigerant oil drained and recorded from the removed compressor is:

   - Less than 74 ml (2.5 oz)
   - Leave the 74 ml (2.5 oz) in the replacement compressor.
   - More than 74 ml (2.5 oz)
   - Add to the compressor the difference between the 74 ml (2.5 oz) and the amount drained.

Air Distributor Case Replacement



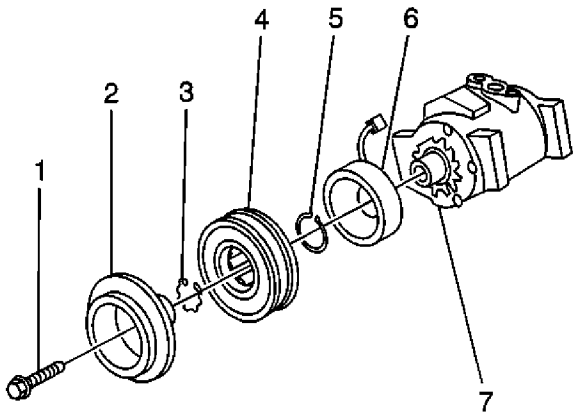
Callout	Component Name
Preliminary Procedure 1. Remove the HVAC Module. Refer to HVAC Module Assembly Replacement 2. Reposition any wiring harnesses before removal.	
1	Air Distribution Case Screw Qty: (2). **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 3 N·m (27 lb in)
2	Air Distribution Case. **Procedure** 1. Prior to removing the air distribution case, note the routing of the wiring to ensure proper reinstallation. 2. Disconnect all electrical connections. 3. When replacing the air distribution case, transfer all necessary components. 4. If the recirculation actuator is removed or the wiring harness disconnected,

	the actuator must be re-calibrated. Refer to Actuator Recalibration

Compressor Clutch Assembly Replacement

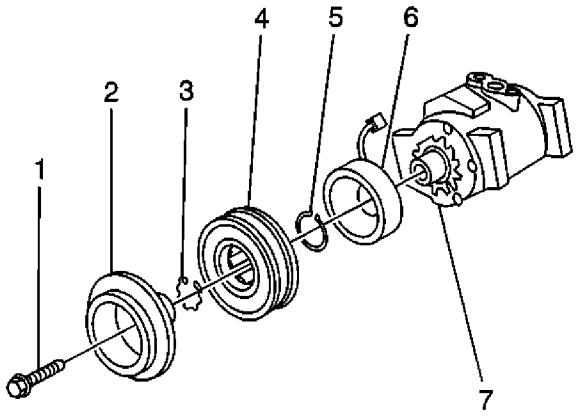
Removal Procedure

1. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the drive belt. Refer to Drive Belt Replacement.

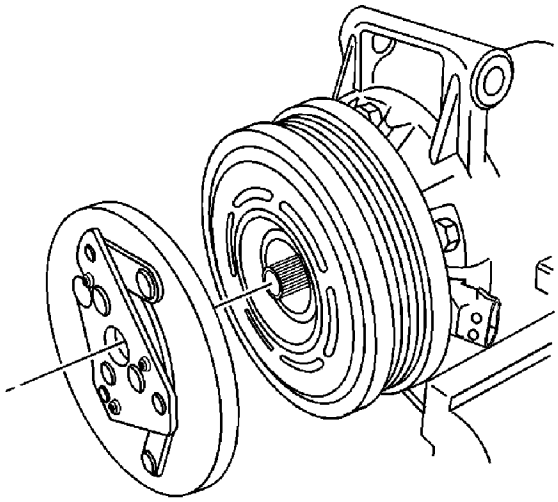


3. Remove the clutch plate retaining bolt (1).
4. Remove the clutch plate assembly (2).
5. Remove the clutch hub/bearing snap ring (3).
6. Remove the clutch hub/bearing assembly (4).
7. Remove clutch coil harness retainer.
8. Remove the snap ring (5) from the clutch coil (6).
9. Remove the clutch coil (6) from the A/C compressor (7).

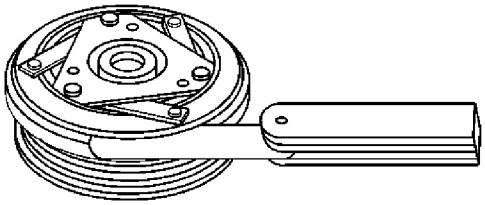
Installation Procedure



1. Install the clutch coil (6) to the A/C compressor (7).
2. Install the snap ring (5) to the clutch coil (6).
3. Install clutch coil harness retainer.
4. Install the clutch hub/bearing assembly (4).
5. Install the clutch hub/bearing snap ring (3).
6. Place a small amount of oil on the thinnest air gap shim and place it inside the clutch plate.



7. Install the clutch plate assembly.



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

8. Measure the air gap between the pulley and the drive plate. Adjust the shims to achieve a 0.35-0.65 mm (0.014-0.026 in) air gap.

   Caution: Refer to Fastener Caution in the Preface section.

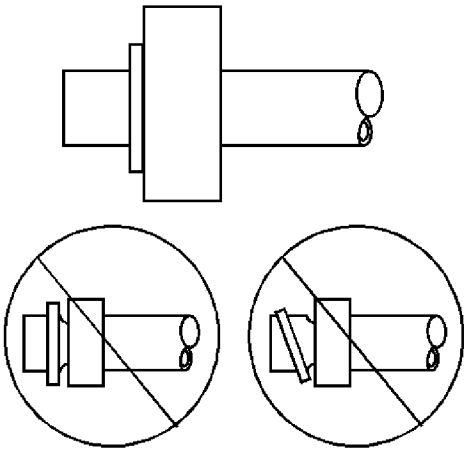
9. Install the clutch plate retaining bolt.

   Tighten
   Tighten the bolt to 18 N·m (13 lb ft).

10. Install the drive belt. Refer to Drive Belt Replacement.
11. Lower the vehicle.

Sealing Washer Replacement

Removal Procedure



1. Remove the seal washer from the A/C refrigerant component.
2. Inspect the seal washer for any signs of damage.
3. Inspect the A/C refrigerant components for damage or burrs. Repair if necessary.

Important: DO NOT reuse sealing washer.

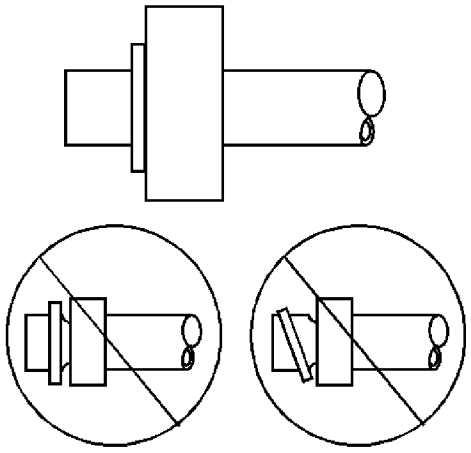
4. Discard the sealing washer.

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.



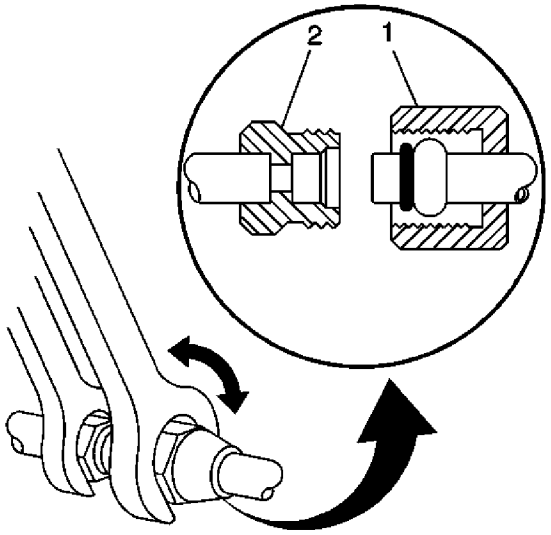
2. Using a lint-free clean, dry cloth, clean the sealing surfaces of the A/C refrigerant components.
3. Carefully install the new seal washer onto the A/C refrigerant component.
4. The washer must completely bottom against the surface of the fitting.

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.
4. Inspect the A/C refrigerant components for damage or burrs. Repair if necessary.
5. Discard the O-ring seal.

Installation Procedure

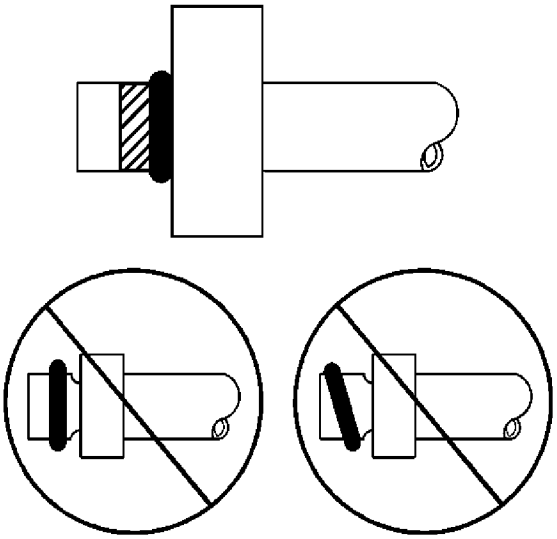
1. Inspect the new O-ring seal for any sign or cracks, cuts, or damage. Replace if necessary.
2. Using a lint-free clean, dry cloth, carefully clean the sealing surfaces of the A/C refrigerant components.

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

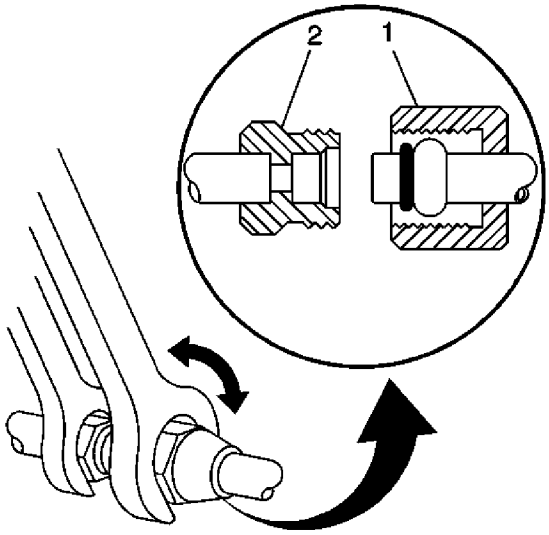
3. Lightly coat the new O-ring seal with mineral base 525 viscosity refrigerant oil.

   Important: DO NOT reuse O-ring seals.

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



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



6. 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.

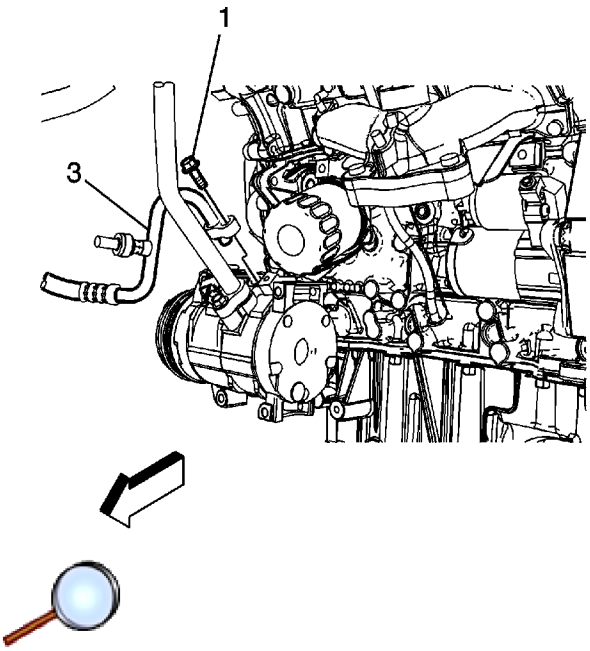
Discharge Hose Replacement

Tools Required

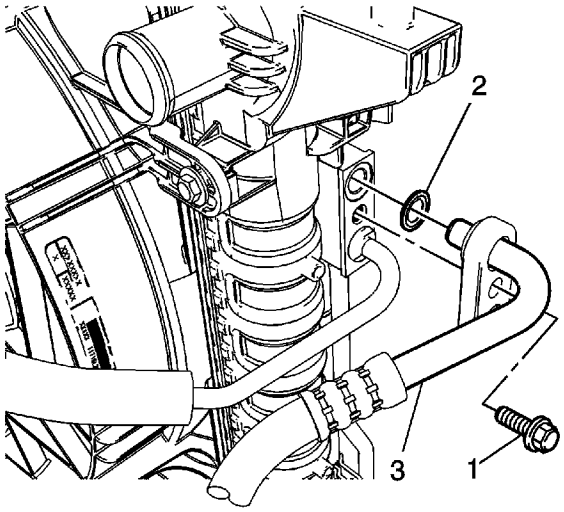
J 39400-A Halogen Leak Detector

Removal Procedure

1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
2. Remove front facia. Refer to Front Bumper Fascia Replacement
3. Remove front bumper upper fascia support. Refer to Front Bumper Fascia Upper Support Replacement

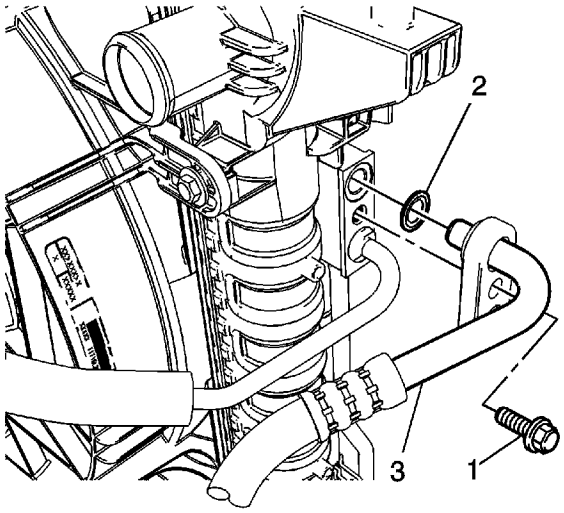


4. Remove the electrical connector from the A/C pressure switch.
5. Remove the discharge line bolt from the A/C compressor (1).
6. Disconnect the discharge line from the A/C compressor (3).



7. Remove the discharge line to condenser bolt (1).
8. Disconnect the discharge line from the condenser (3).
9. Remove the discharge line.
10. Remove the A/C pressure switch. Refer to Air Conditioning (A/C) Refrigerant Pressure Sensor Replacement.
11. Remove and discard the discharge line O-rings (2).

Installation Procedure



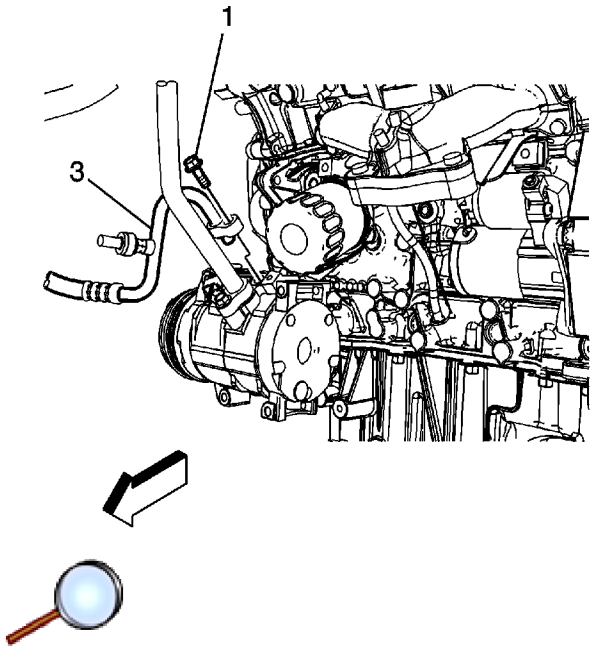
1. Install new O-rings to the discharge line (2). Refer to O-Ring Replacement.
2. Install the A/C pressure switch. Refer to Air Conditioning (A/C) Refrigerant Pressure Sensor Replacement.

3. Connect the discharge line to the condenser (3).

   Caution: Refer to Fastener Caution in the Preface section.

4. Install the discharge line to condenser bolt (1).

   Tighten
   Tighten the bolt to 9 N·m (80 lb in).



5. Connect the discharge line to the A/C compressor (3).
6. Install the discharge line bolt to the A/C compressor (1).

   Tighten
   Tighten the bolt to 9 N·m (80 lb in).

7. Install front bumper upper fascia support. Refer to Front Bumper Fascia Upper Support Replacement
8. Install front facia. Refer to Front Bumper Fascia Replacement
9. Evacuate and recharge the refrigerant system. Refer to Refrigerant Recovery and Recharging.
10. Leak test the fittings of the component using J 39400-A .

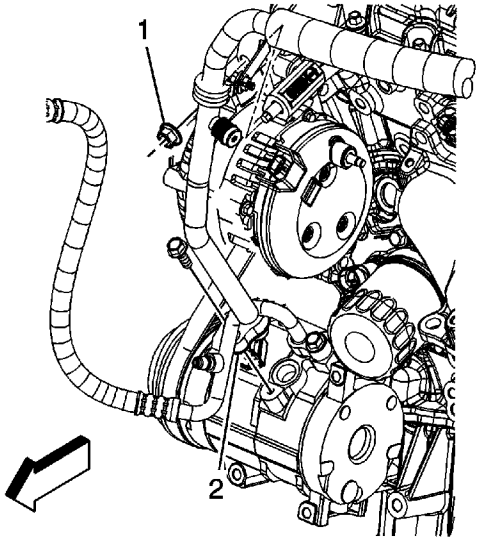
Suction Hose Replacement

Tools Required

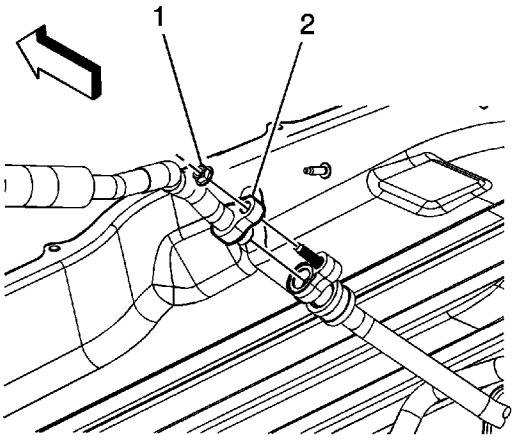
J 39400-A Halogen Leak Detector

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.

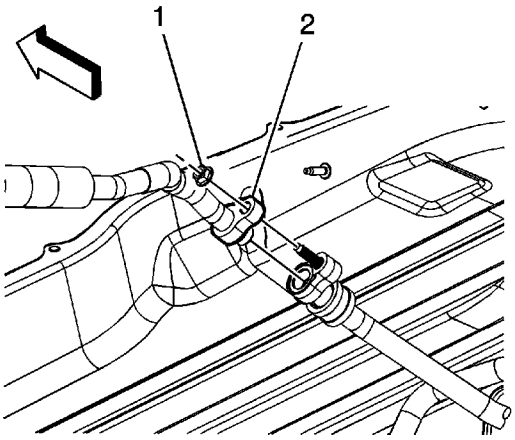


3. Remove the suction hose bracket nut (1) and remove bracket.
4. Remove the suction hose/pipe bolt from the A/C compressor.
5. Disconnect the suction hose/pipe from the A/C compressor.



6. Remove the suction hose/pipe nut (1) from TXV tube.
7. Disconnect the suction hose/pipe from the TXV tube (2).
8. Remove the suction hose/pipe.
9. Remove and discard the suction hose/pipe O-rings.

Installation Procedure

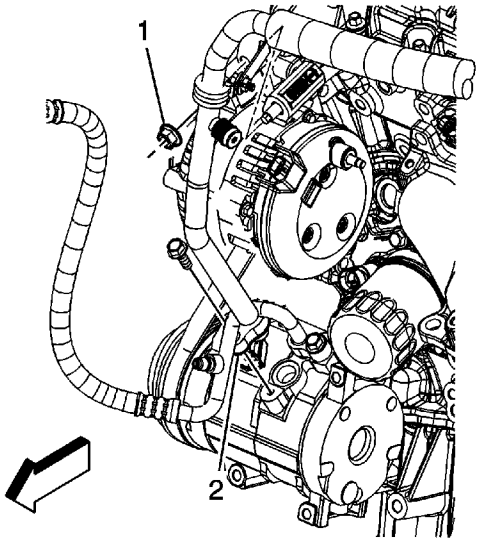


1. Install new O-rings to the suction hose/pipe. Refer to O-Ring Replacement.
2. Connect the suction hose/pipe to the TXV tube.

Caution: Refer to Fastener Caution in the Preface section.

3. Install the suction hose/pipe to TXV nut (1).

Tighten
Tighten the bolt to 9 N·m (80 lb in).



4. Connect the suction hose/pipe to the A/C compressor.
5. Install the suction hose/pipe bolt to the A/C compressor.

Tighten
Tighten the bolt to 9 N·m (80 lb in).

6. Install the suction hose/pipe bracket and secure with nut (1).
7. Install the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
8. Evacuate and recharge the refrigerant system. Refer to Refrigerant Recovery and Recharging.
9. Leak test the fittings of the component using J 39400-A .

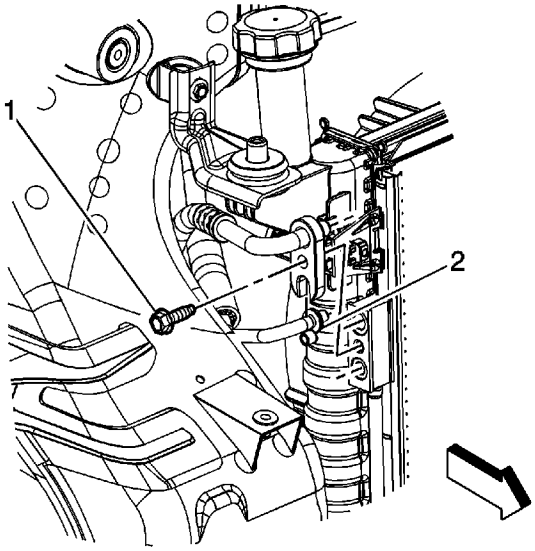
Liquid Line Replacement

Tools Required

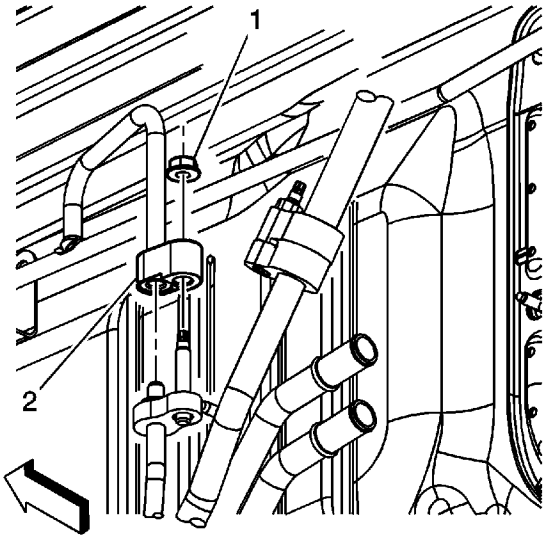
J 39400-A Halogen Leak Detector

Removal Procedure

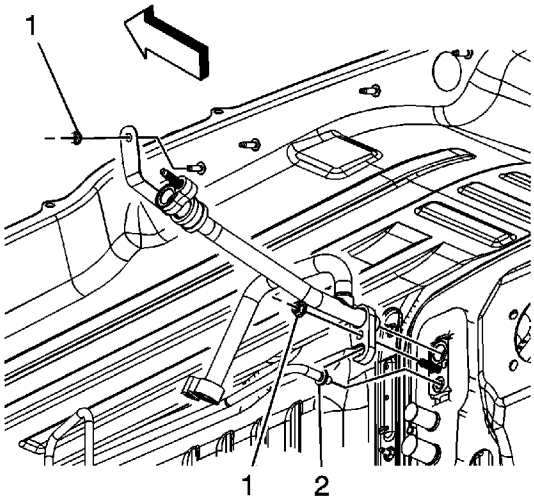
1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
2. Remove injector sight shield.
3. Remove right engine mount strut. Refer to Engine Mount Strut Replacement - Right Side
4. Remove underhood electrical center. Refer to Underhood Electrical Center or Junction Block Replacement
5. Remove underhood electrical center bracket.
6. Reposition wiring harness as required.
7. Remove front bumper upper facia support. Refer to Front Bumper Fascia Upper Support Replacement



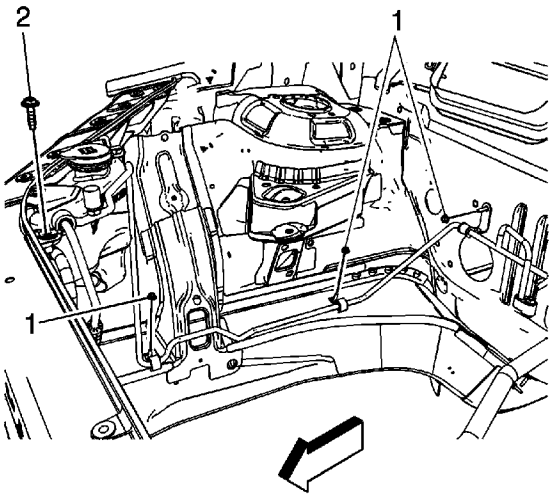
8. Remove the liquid line bolt from the A/C condenser (1).
9. Disconnect the liquid line from the A/C condenser (2).



10. Remove the liquid line to auxiliary tube nut (1).

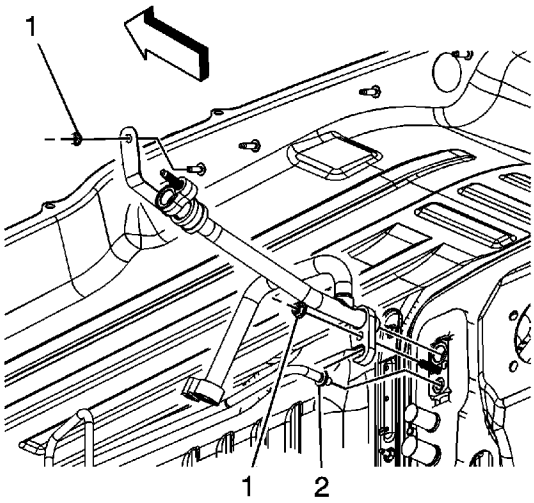


11. Remove TXV tube retainer nut (1).
12. Disconnect the liquid line (2) and evaporator hose/tube from the TXV at plenum panel.



13. Remove the attaching liquid line clamp nuts along right inner frame rail and plenum panel (1).
14. Remove the liquid line bracket bolt at right side of upper tie bar support (2).
15. Remove the liquid line.
16. Remove and discard the discharge line sealing washer.

Installation Procedure

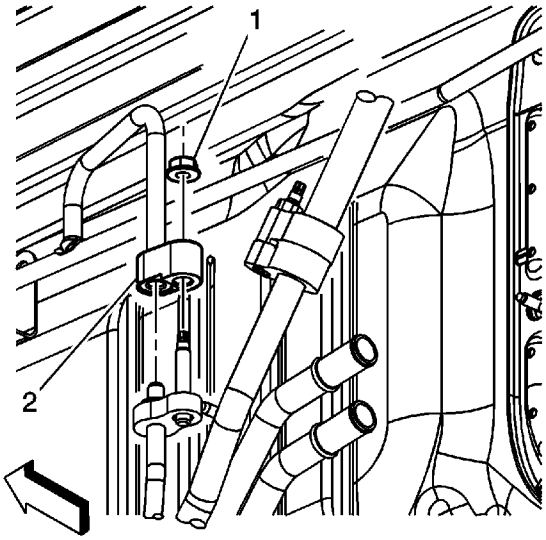


1. Install new sealing washers to the liquid line. Refer to Sealing Washer Replacement.
2. Connect the liquid line (2) and evaporator hose/tube to the TXV at plenum panel.

Caution: Refer to Fastener Caution in the Preface section.

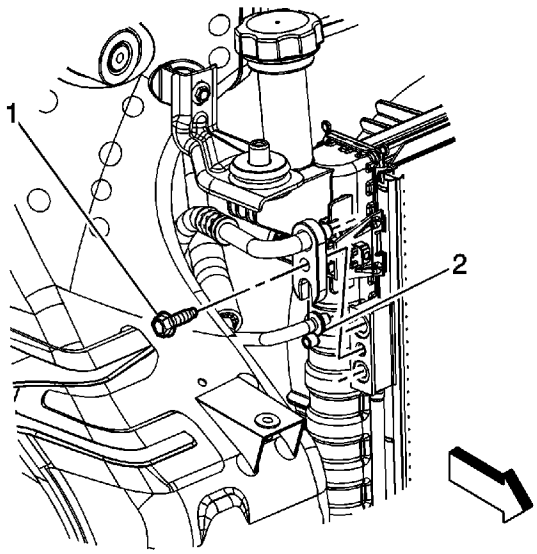
3. Install the liquid line to TXV nut (1).

Tighten
Tighten the bolt to 9 N·m (80 lb in).



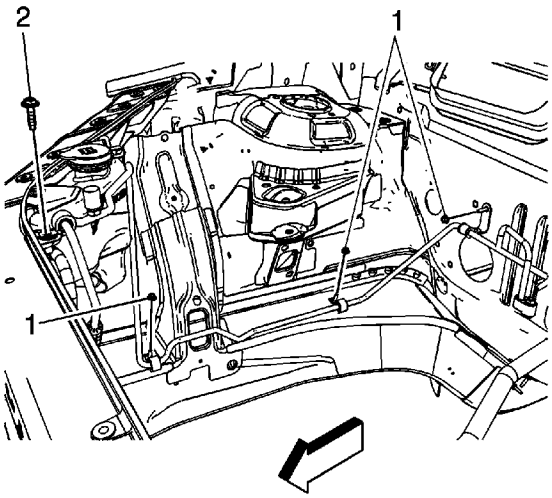
4. Connect the liquid line to the auxiliary evaporator tube.
5. Install the liquid line nut (1).

Tighten
Tighten the bolt to 9 N·m (80 lb in).



6. Install the liquid line to the condenser (2).
7. Install the liquid line nut (1).

Tighten
Tighten the bolt to 9 N·m (80 lb in).



8. Install liquid line bracket bolt to upper tie bar support (2).

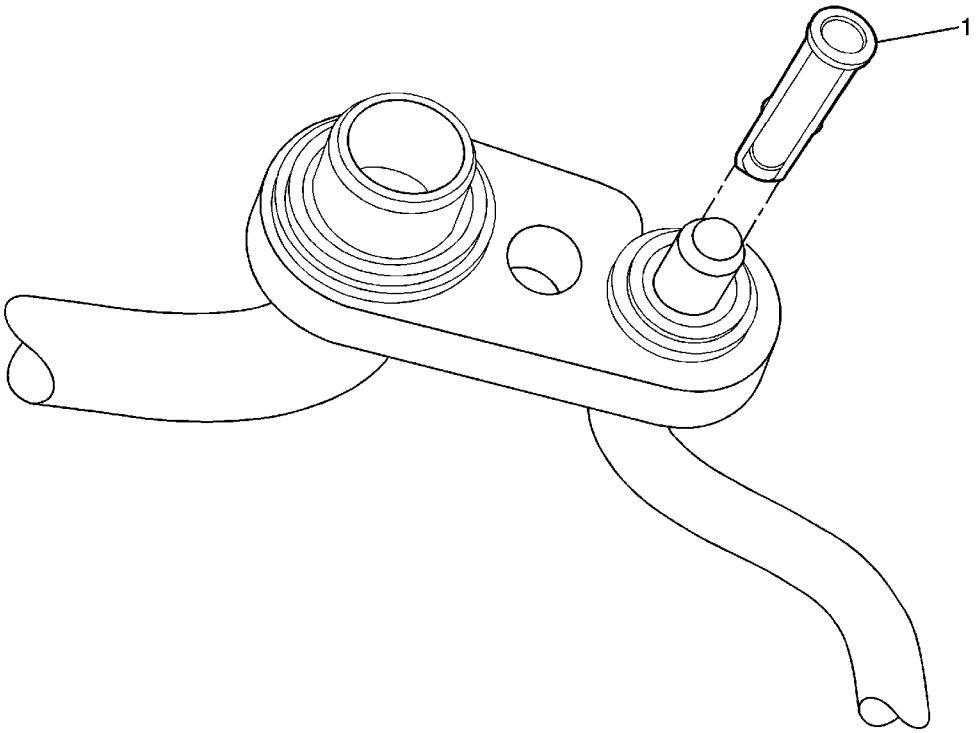
Tighten
Tighten the bolt to 9 N·m (80 lb in).

9. Install the liquid line bracket nuts along frame rail and plenum panel (1).

Tighten
Tighten the bolt to 4 N·m (35 lb in).

10. Install underhood electrical center bracket.
11. Install underhood electrical center. Refer to Underhood Electrical Center or Junction Block Replacement
12. Install front bumper upper facia support. Refer to Front Bumper Fascia Upper Support Replacement
13. Install right engine mount strut. Refer to Engine Mount Strut Replacement - Right Side
14. Install injector sight shield.
15. Evacuate and recharge the refrigerant system. Refer to Refrigerant Recovery and Recharging.
16. Leak test the fittings of the component using J 39400-A .

Air Conditioning (AC) Refrigerant Filter Replacement (Auxiliary)



Callout	Component Name
Procedure Remove the Auxiliary A/C Evaporator Tube. Refer to Auxiliary Air Conditioning Evaporator Tube Replacement	
1	Auxiliary A/C Refrigerant Filter.

Suction Screen Installation

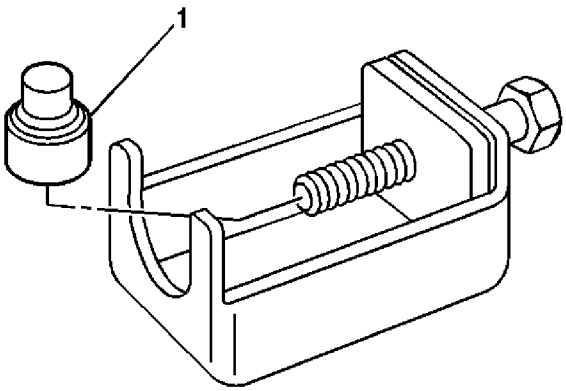
Tools Required

J 44551 Suction Screen Kit

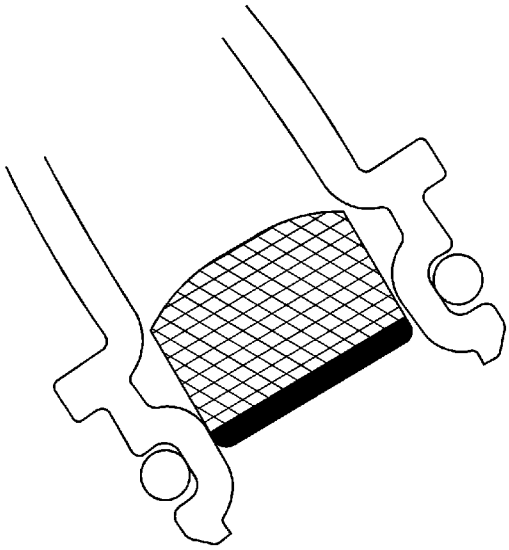
Installation Procedure

Important: Suction screens are intended to be installed in the suction hose after a major compressor failure.

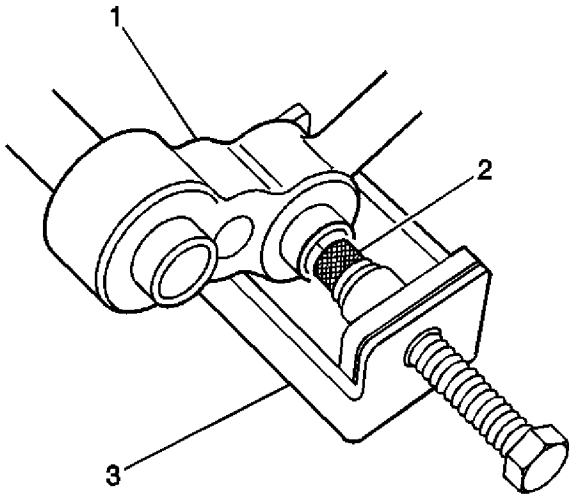
1. Remove the A/C suction hose from the A/C compressor. Refer to .
2. Using a caliper that reads to 3 decimal places, measure the ID of the suction hose or manifold suction fitting. To determine the correct size screen for the application, refer to Compressor Suction Screen and Tool Selection Specifications .



3. Select and install the correct mandrel (1) on the threaded portion of the installation tool bolt:
   - The brass Universal Mandrel is for use on hose fittings with a smooth bore where the screen installs flush with the end of the fitting.
   - The 11.96 mm (0.471 in) Mandrel is only for the 11.96 mm (0.471 in) screen in hose fittings with an internal hourglass shape where the screen installs at the recessed, reduced diameter point.



4. Install the 11.96 mm (0.471 in) screen in the middle of the reduced diameter point of the fitting.



5. Place the suction hose fitting or suction hose side of the manifold into the installation tool fixture J-44551-5 (3) so it is supported by the tools legs.

Important: Correct placement of the J-44551-5 is critical.

6. Lubricate the A/C suction screen with the applicable refrigerant oil.
7. Align the screen (2), basket first; into the suction hose bore then hand tighten the bolt until contact is made between the hose, screen and tool.
8. Turn the bolt of the installation tool clockwise pressing the screen into the bore until the mandrel shoulder contacts the end of the hose fitting.
9. Unscrew the bolt and remove the installation tool from the hose or manifold.

Important: Clean the surface to be used for attaching the label.

10. Install the J-44551-1 Suction Screen Notification Label.
11. Install the A/C hose to the A/C compressor. Refer to Suction Hose Replacement .

Suction Screen Replacement

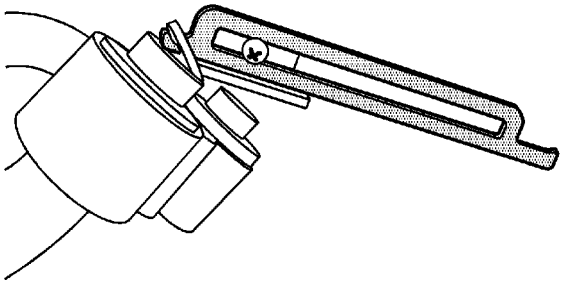
Tools Required

J 44551 Suction Screen Kit

Removal Procedure

Important: Suction screens are intended to be installed in the suction hose after a major compressor failure.

1. Remove the A/C suction hose from the A/C compressor. Refer to Suction Hose Replacement .



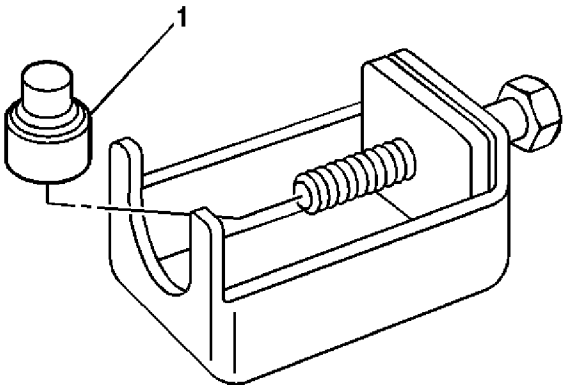
2. Using the J-44551-9 Universal Removal Tool, place the tip of the tool under the inside edge of the compression band of the suction screen and the cushioning fulcrum pad against the open end of the hose or manifold fitting.

   Important: Do not damage the end of the hose or manifold.

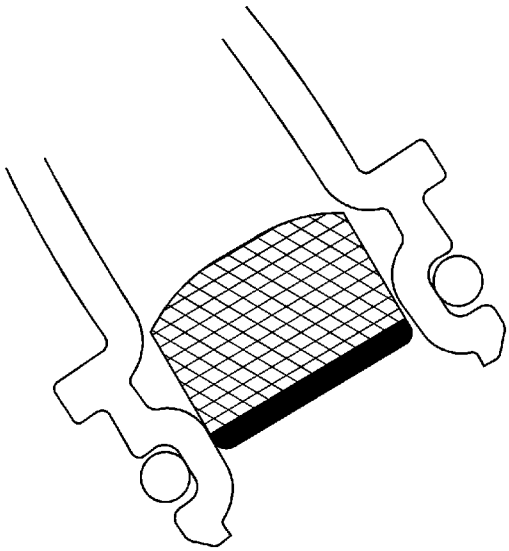
3. Pry upward on the band and move the tool around the diameter of the screen as necessary to remove the screen.

Installation Procedure

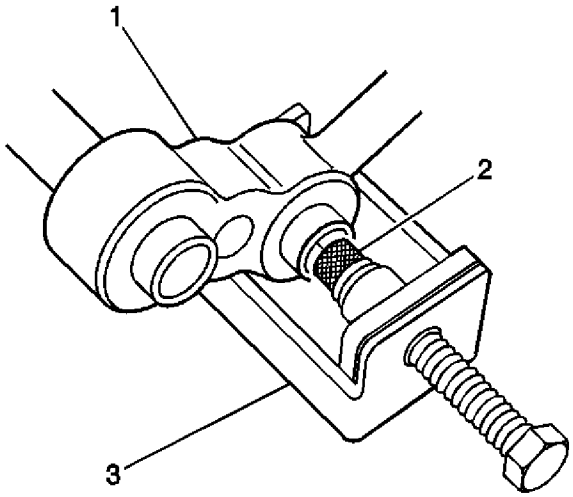
1. Using a caliper that reads to 3 decimal places, measure the ID of the suction hose or manifold suction fitting. To determine the correct size screen for the application, refer to Compressor Suction Screen and Tool Selection Specifications .



2. Select and install the correct mandrel (1) on the threaded portion of the installation tool bolt:
   - The brass Universal Mandrel is for use on hose fittings with a smooth bore where the screen installs flush with the end of the fitting.
   - The 11.96 mm (0.471 in) Mandrel is only for the 11.96 mm (0.471 in) screen in hose fittings with an internal hourglass shape where the screen installs at the recessed, reduced diameter point.



3. Install the 11.96 mm (0.471 in) screen in the middle of the reduced diameter point of the fitting.



4. Place the suction hose fitting or suction hose side of the manifold into the installation tool fixture J-44551-5 (3) so it is supported by the tools legs.

Important: Correct placement of the J-44551-5 is critical.

5. Lubricate the A/C suction screen with the applicable refrigerant oil.
6. Align the screen (2), basket first; into the suction hose bore then hand tighten the bolt until contact is made between the hose, screen and tool.
7. Turn the bolt of the installation tool clockwise pressing the screen into the bore until the mandrel shoulder contacts the end of the hose fitting.
8. Unscrew the bolt and remove the installation tool from the hose or manifold.

Important: Clean the surface to be used for attaching the label.

9. Install the J-44551-1 Suction Screen Notification Label.
10. Install the A/C hose to the A/C compressor. Refer to Suction Hose Replacement .

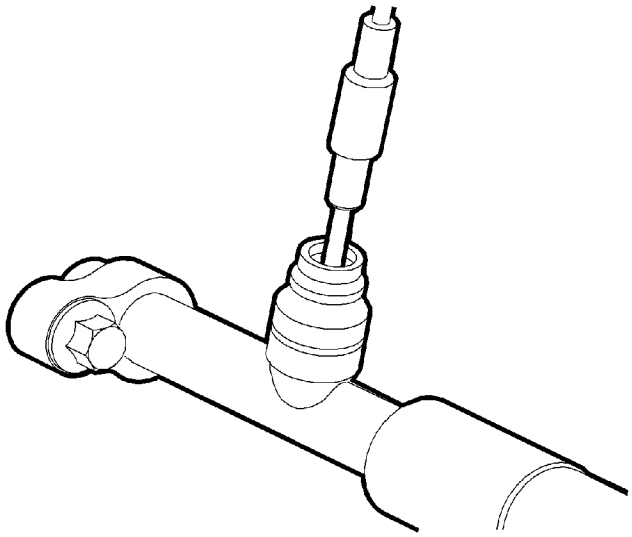
Service Ports Replacement

Tools Required

- J 39400-A Halogen Leak Detector
- J 46246 Valve Core Removal Tool

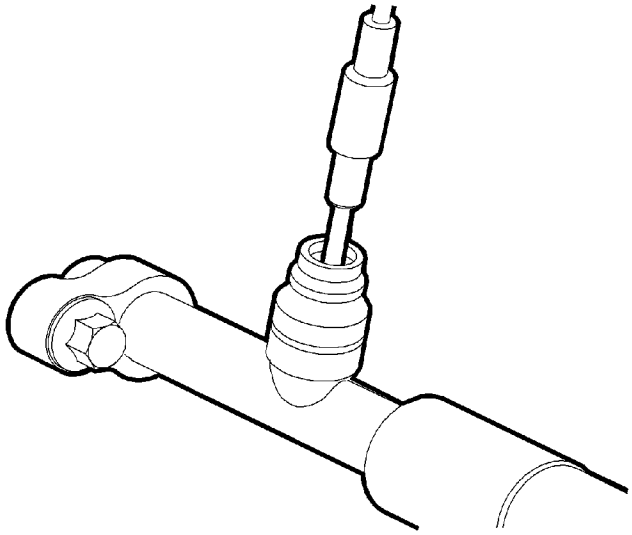
Removal Procedure

1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging .



2. Use J 46246 or equivalent to remove the valve core.

Installation Procedure

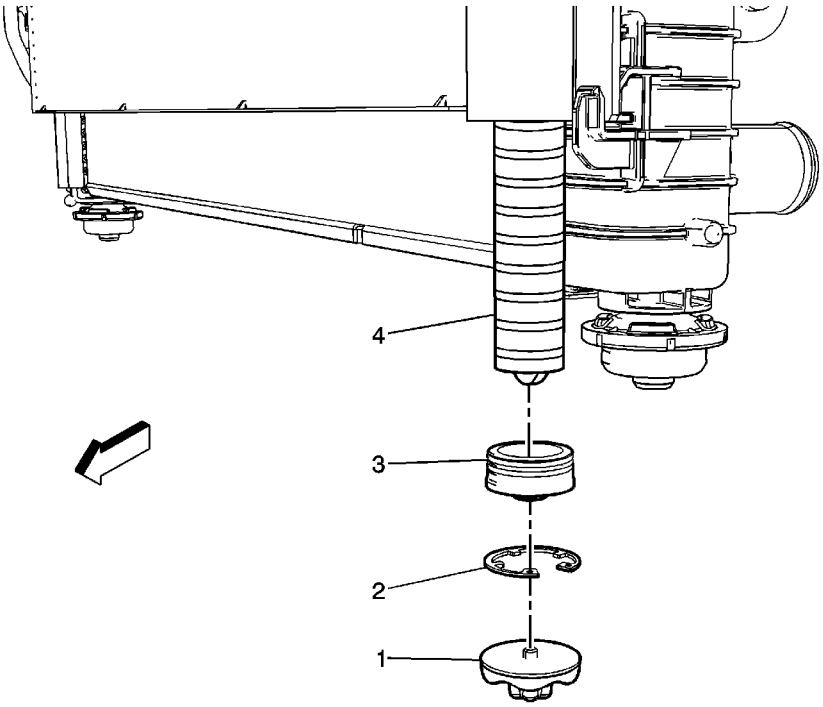


1. Use J 46246 or equivalent to install and tighten the valve core.
2. Evacuate and charge the A/C system. Refer to Refrigerant Recovery and Recharging .

Important: To prevent loss of refrigerant charge, tighten the cap. Replace the cap if the seal is missing or damaged.

3. Test the affected A/C fittings for leaks using J 39400-A .

Air Conditioning Refrigerant Desiccant Replacement



Callout	Component Name
Preliminary Procedure 1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging . 2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 3. Remove the Fromt Bumper Fasica. Refer to Front Bumper Fascia Replacement .	
1	Desiccant Cartridge Cap
2	Desiccant Cartridge Snap Ring **Procedure** Lightly tap inward on Desiccant Cartridge plug to gain clearance for snap ring removal.
3	Desiccant Cartridge Plug **Procedure** Insert a 5 mm screw into plug and pull outward for removal.
	Desiccant Cartridge

4	**Procedure** Use of pliers or vice grips may aid in cartridge removal.

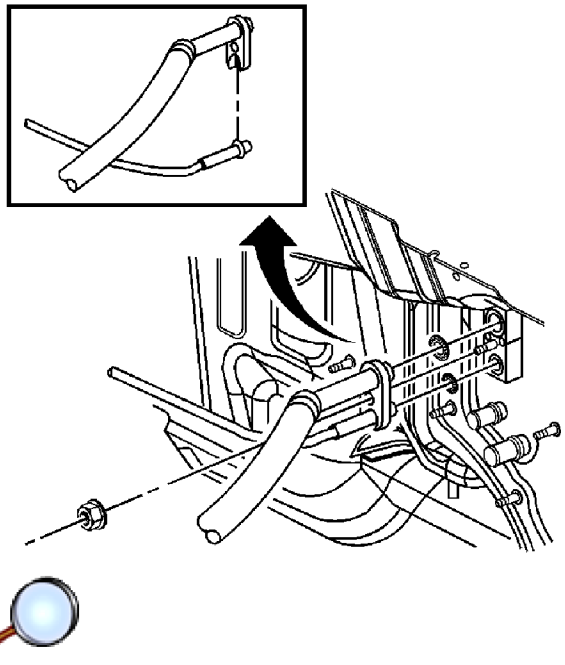
Air Conditioning Evaporator Thermal Expansion Valve Replacement

Special Tools

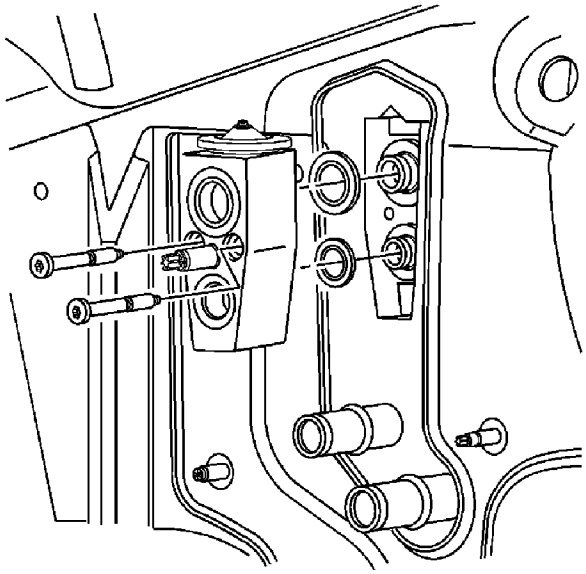
J 39400-A Halogen Leak Detector

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. If equipped, remove the windshield washer solvent heater. Refer to Windshield Washer Solvent Heater Replacement.

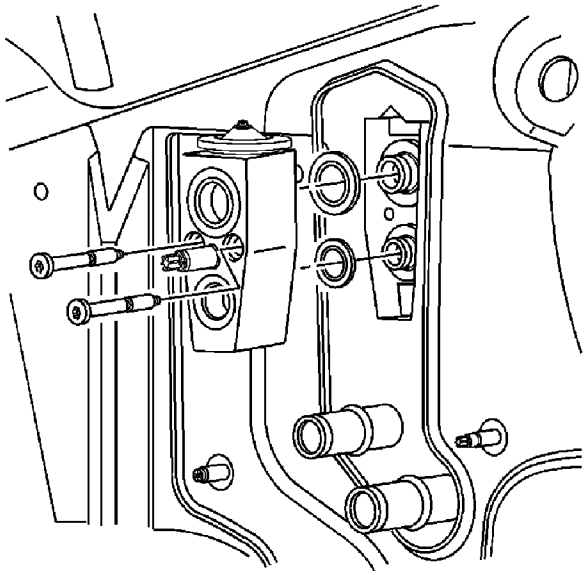


4. Remove the evaporator thermal expansion valve (TXV) tube from the TXV.
5. Remove and discard the seal washers.



6. Remove the TXV bolts.
7. Remove the TXV.
8. Remove and discard the seal washers.

Installation Procedure

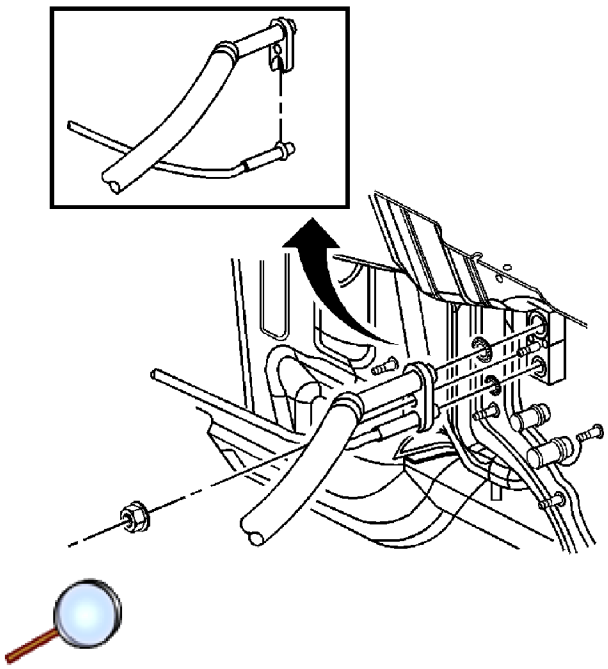


1. Install new seal washers to the evaporator core fittings. Refer to Sealing Washer Replacement.
2. Install the TXV.

Caution: Refer to Fastener Caution in the Preface section.

3. Install the TXV bolts. Insert a small phillips screwdriver through one of the TXV bolt holes and into the threaded hole of the mounting plate. Install the TXV bolt into the other hole without the screwdriver. Remove the screwdriver and install the other TXV bolt.

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

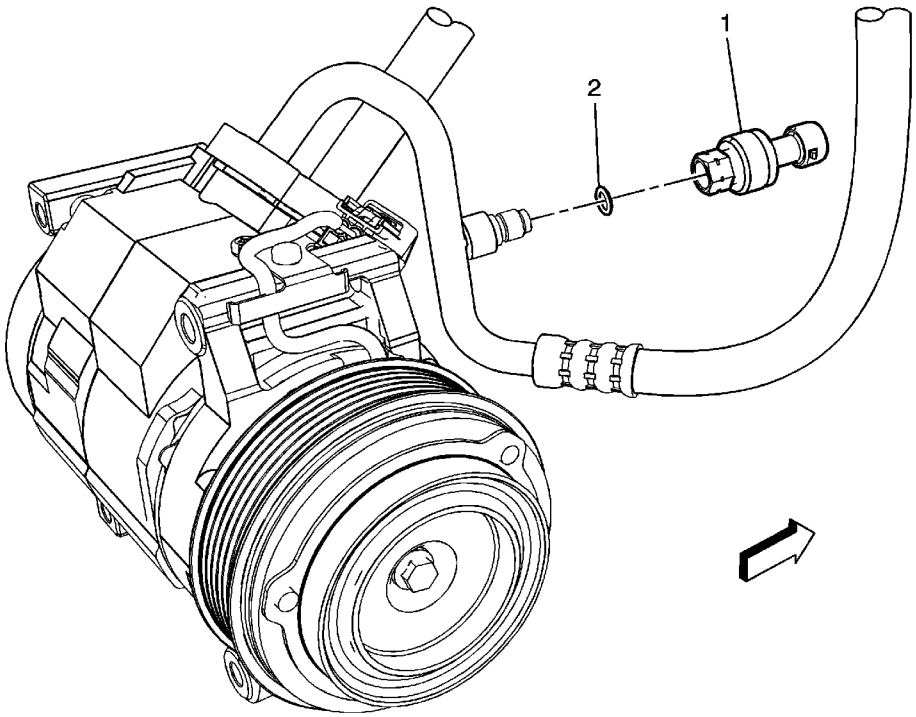


4. Install new sealing washers on the evaporator TXV tube fittings. Refer to Sealing Washer Replacement.
5. Install the condenser tube and evaporator hose to the TXV.
6. Install the TXV nut.

   Tighten
   Tighten the nut to 20 N·m (15 lb ft).

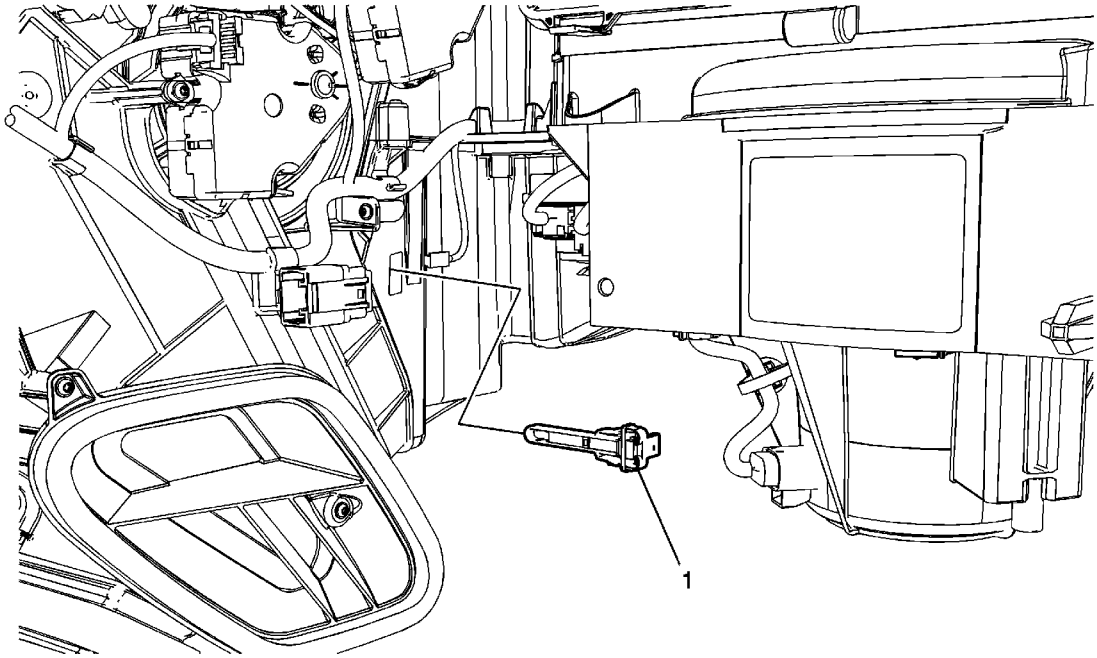
7. Evacuate and charge the refrigerant system. Refer to Refrigerant Recovery and Recharging.
8. If removed, install the windshield washer solvent heater. Refer to Windshield Washer Solvent Heater Replacement.
9. Install the air cleaner outlet duct. Refer to Air Cleaner Outlet Duct Replacement.
10. Leak test the fittings using the J 39400-A .

Air Conditioning (A/C) Refrigerant Pressure Sensor Replacement



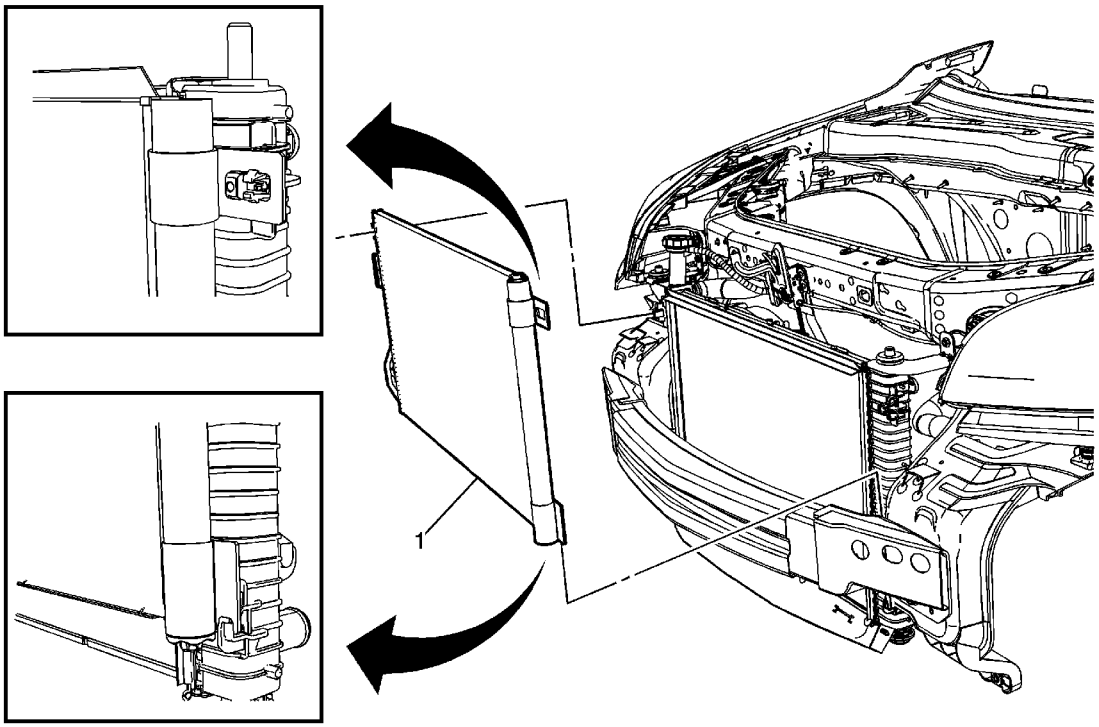
Callout	Component Name
1	Refrigerant Pressure Sensor. **Caution:** Refer to Fastener Caution in the Preface section. **Procedure** • Hand start the refrigerant pressure sensor to the compressor hose, taking care not to pinch the O-ring and tighten. • Remove electrical connector. **Tighten** 4 N·m (35 lb in)
2	O-ring **Procedure** Lubricate the refrigerant pressure sensor O-ring with mineral oil.

Evaporator Air Temperature Sensor Replacement



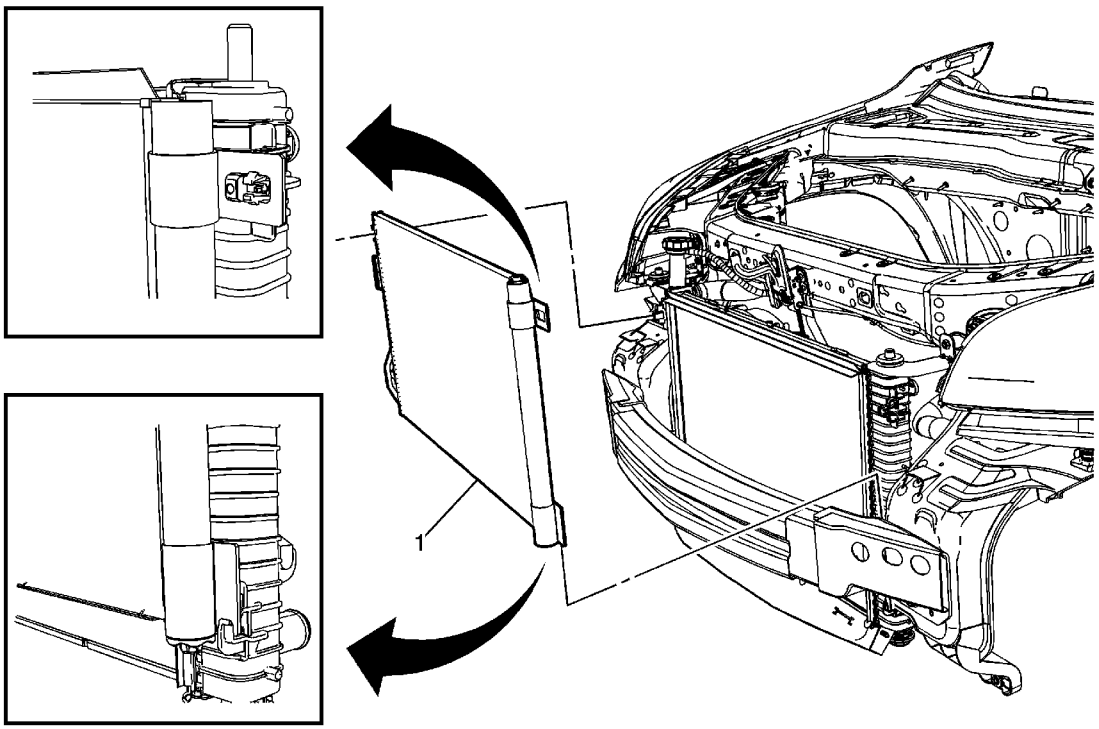
Callout	Component Name
Preliminary Procedure Remove the I/P insulator panel - right side. Refer to Instrument Panel Insulator Panel Replacement - Right Side .	
1	Evaporator Temperature Sensor **Procedure** 1. Disconnect the sensor electrical connector. 2. Apply downward pressure on sensor to release tabs for removal.

Air Conditioning Condenser Replacement (Enclave)



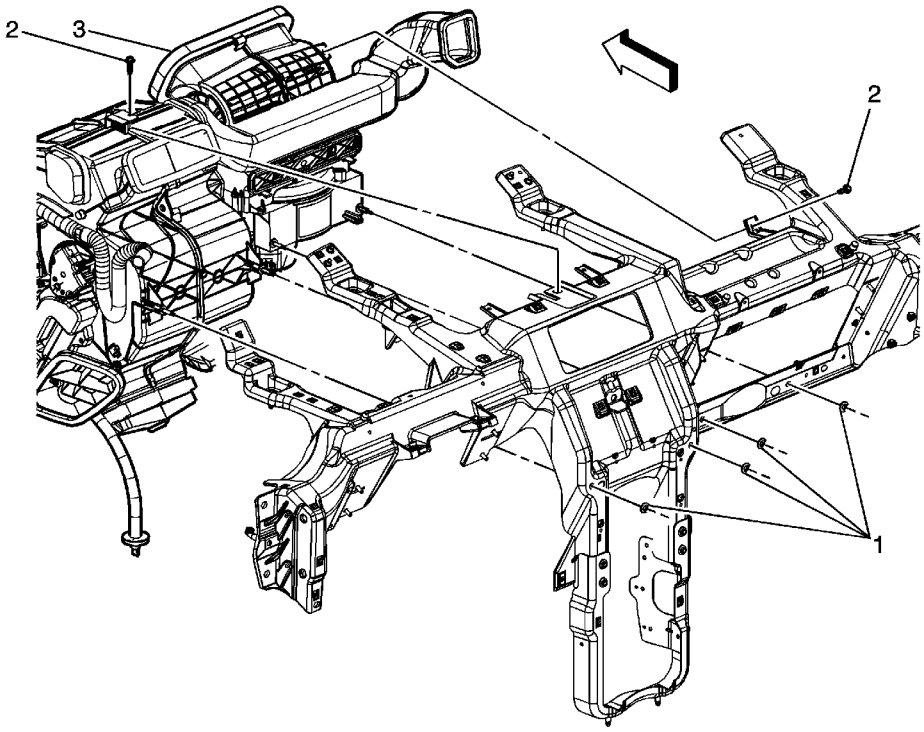
Callout	Component Name
Preliminary Procedure 1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging. 2. Remove the A/C discharge line at condenser. Refer to Discharge Hose Replacement. 3. Remove the A/C liquid line at condenser. Refer to Liquid Line Replacement. 4. Pinch fastening tabs together at top of condenser and slide upward to remove.	
1	Condenser Assembly **Tip** Bottom of condenser mounts into holding fixtures at bottom of radiator.

Air Conditioning Condenser Replacement (Acadia, Outlook, Traverse)



Callout	Component Name
Preliminary Procedure 1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging. 2. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement 3. Remove the A/C discharge line at condenser. Refer to Discharge Hose Replacement. 4. Remove the A/C liquid line at condenser. Refer to Liquid Line Replacement. 5. Pinch fastening tabs together at top of condenser and slide upward to remove.	
1	Condenser Assembly **Tip** Bottom of condenser mounts into holding fixtures at bottom of radiator.

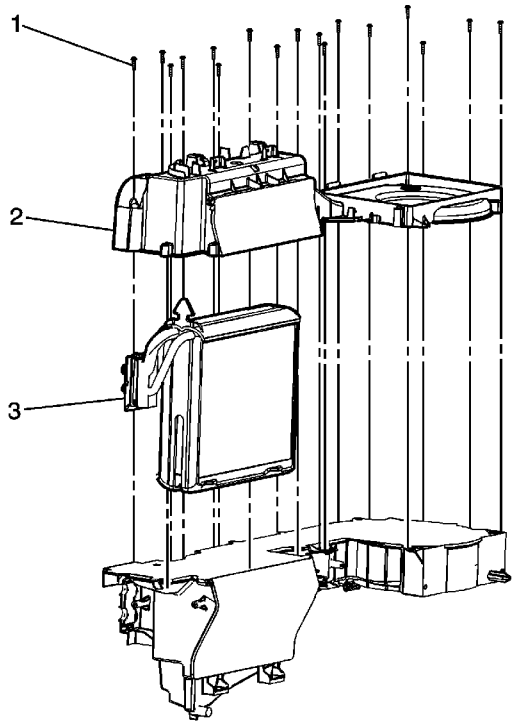
HVAC Module Assembly Replacement



Callout	Component Name
Preliminary Procedure 1. Drain the coolant. Refer to Cooling System Draining and Filling 2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging. 3. Remove heater inlet hose from heater core. Refer to Heater Inlet Hose Replacement. 4. Remove heater outlet hose from heater core. Refer to Heater Outlet Hose Replacement. 5. Remove A/C lines from TXV. Refer to Air Conditioning Evaporator Thermal Expansion Valve Replacement. 6. Remove I/P Carrier Assembly. Refer to Instrument Panel Carrier Replacement.	
1	HVAC Module Assembly Nut (Qty: 4) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 6 N·m (53 lb in)
2	HVAC Module to I/P Carrier Bolt (Qty: 2) **Tighten** 6 N·m (53 lb in)

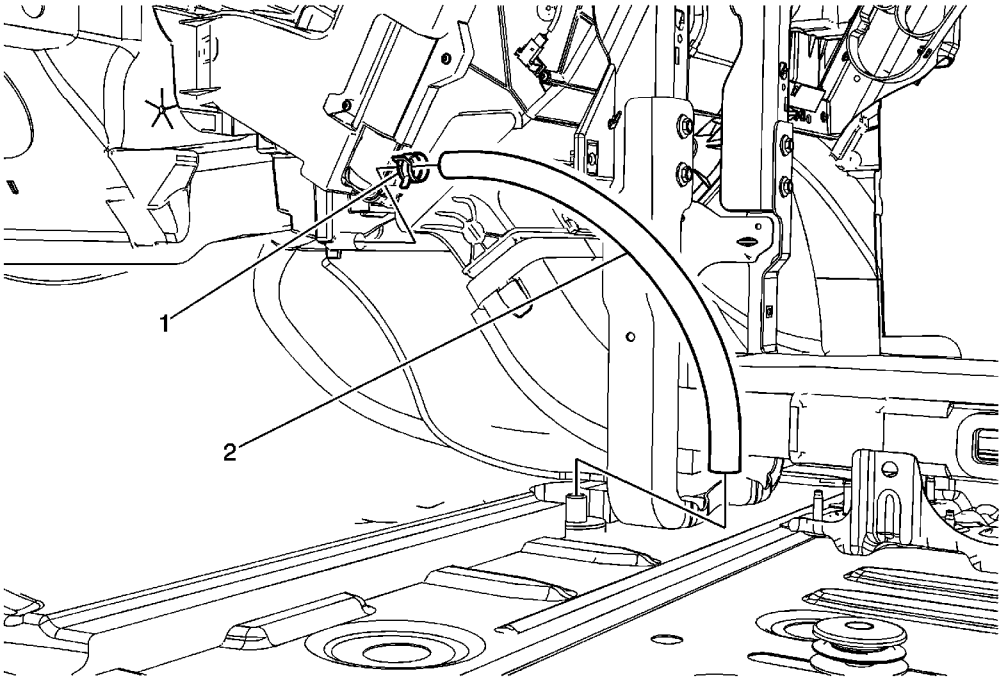
3	HVAC Module Assembly **Procedure** Cap or plug A/C and heater pipe openings to prevent spillage of fluids upon removal.

Air Conditioning Evaporator Core Replacement



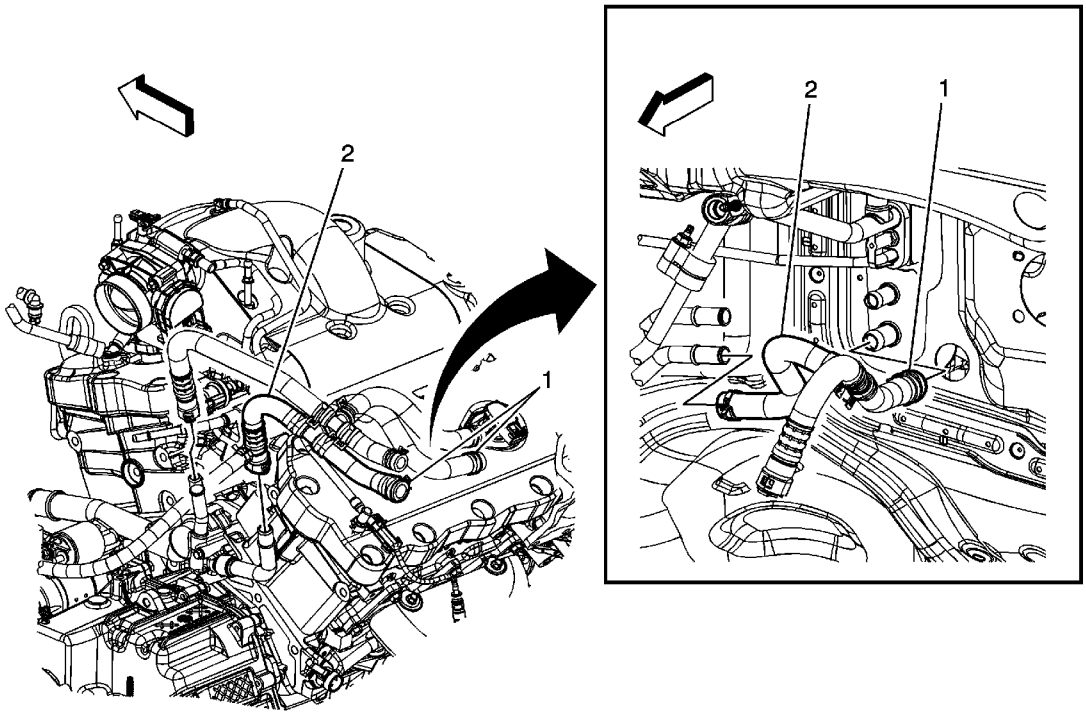
Callout	Component Name
Preliminary Procedure 1. Remove the HVAC Module. Refer to HVAC Module Assembly Replacement. 2. Remove Thermal Expansion Valve (TXV). Refer to Air Conditioning Evaporator Thermal Expansion Valve Replacement.	
1	Evaporator Upper Case Screw (Qty: 17) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 6 N·m (53 lb in)
2	Evaporator Upper Case
3	Evaporator Core **Tip** Ensure all seals are in place upon installation.

Air Conditioning Evaporator and Blower Module Drain Hose Replacement



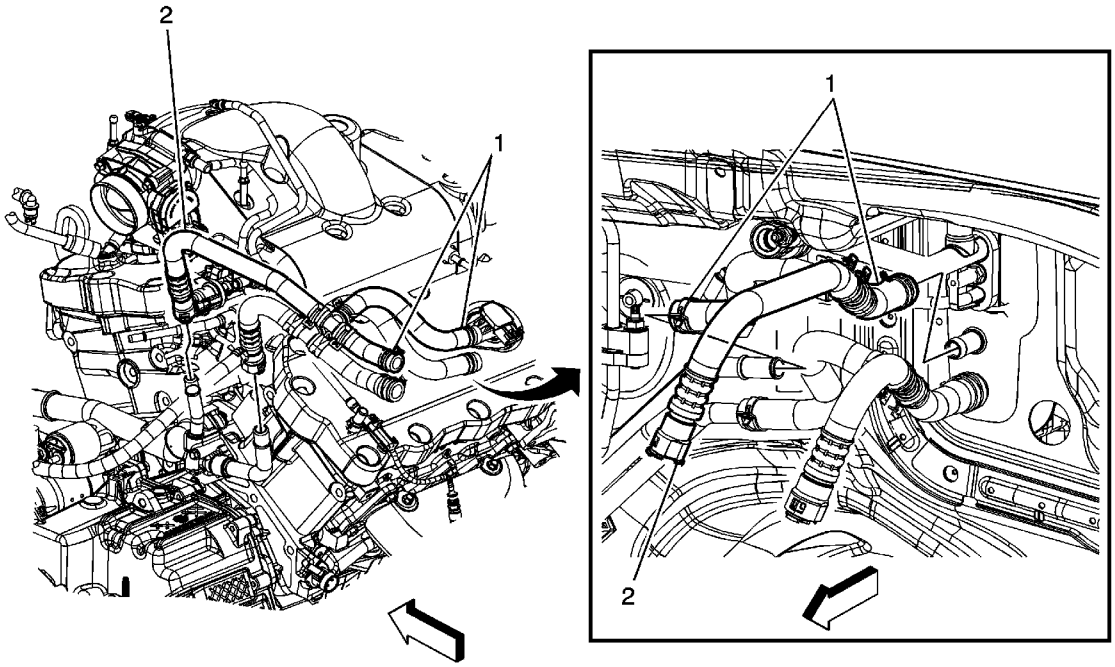
Callout	Component Name
Preliminary Procedure 1. Remove the left front floor console extension panel. 2. Reposition carpet and pad from evaporator drain hose area.	
1	Evaporator Drain Hose Clamp
2	Evaporator Drain Hose

Heater Inlet Hose Replacement



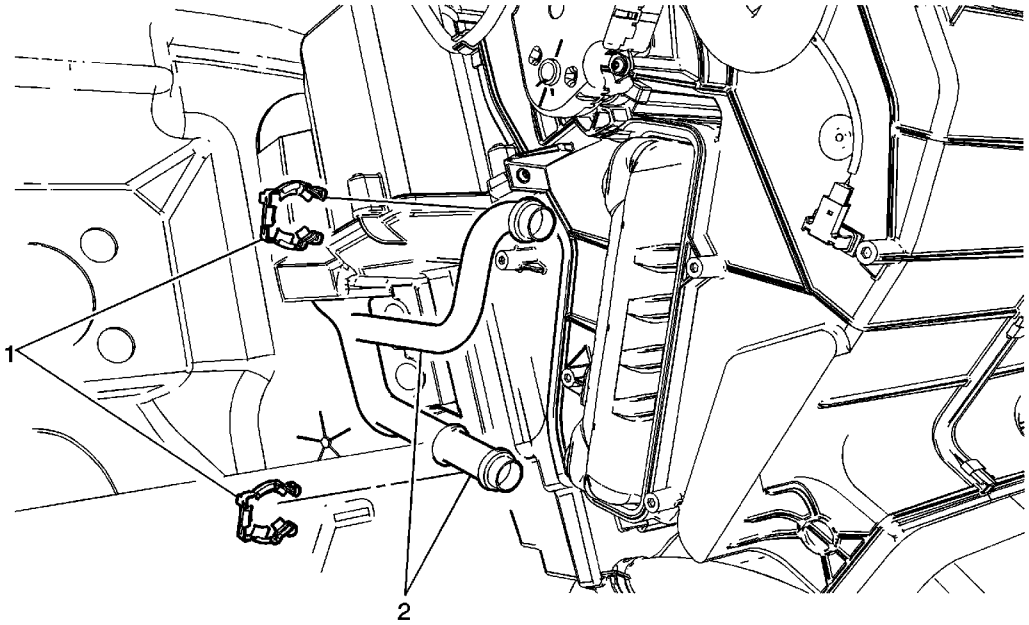
Callout	Component Name
Preliminary Procedure Drain the coolant. Refer to Cooling System Draining and Filling	
1	Heater Inlet Hose Clamp (Qty: 3)
2	Heater Inlet Hose **Procedure** Disconnect the heater inlet hose from the auxiliary heater pipe, if equipped.

Heater Outlet Hose Replacement



Callout	Component Name
Preliminary Procedure Drain the coolant. Refer to Cooling System Draining and Filling	
1	Heater Outlet Hose Clamp (Qty: 3)
2	Heater Outlet Hose **Procedure** Disconnect the heater outlet hose from the auxiliary heater pipe, if equipped.

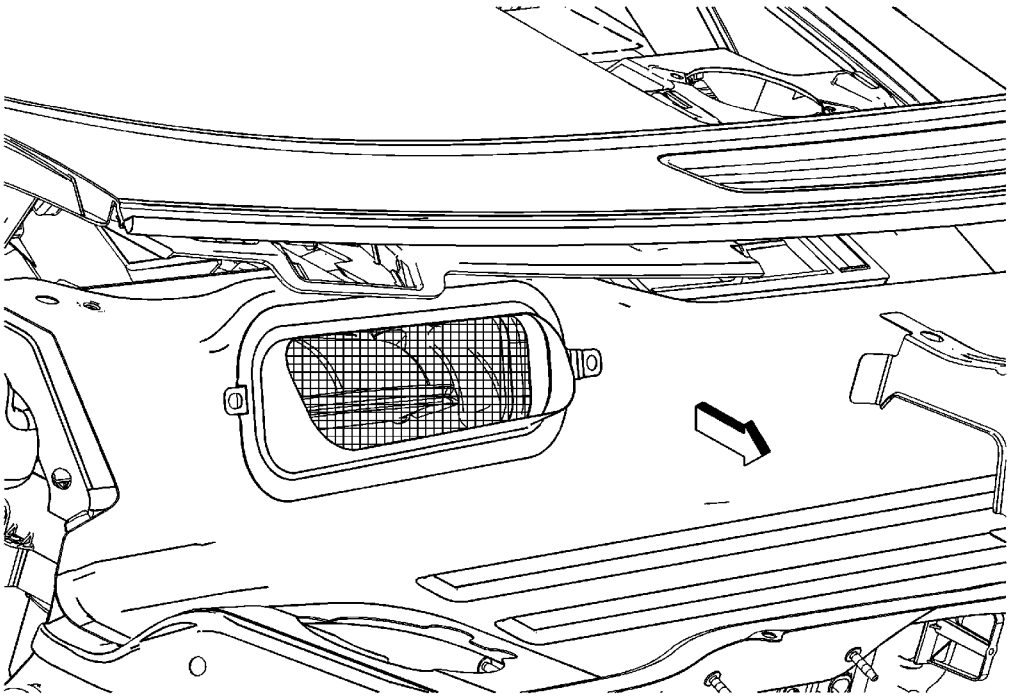
Heater Core Tube Replacement



Callout	Component Name
Preliminary Procedure 1. Drain the coolant. Refer to Cooling System Draining and Filling . 2. Remove heater inlet hose from heater core. Refer to Heater Inlet Hose Replacement . 3. Remove heater outlet hose from heater core. Refer to Heater Outlet Hose Replacement . 4. Remove heater core cover. Refer to Heater Core Cover Replacement .	
1	Heater Core Tube Clip (Qty: 2) **Procedure** Use new Heater Core Tube Clips upon installation.
2	Heater Core Tube **Procedure** 1. Cap or plug heater core, hoses and tubes to prevent any fluid leakage. 2. Position tube forward to release from heater core and slide rearward to remove.

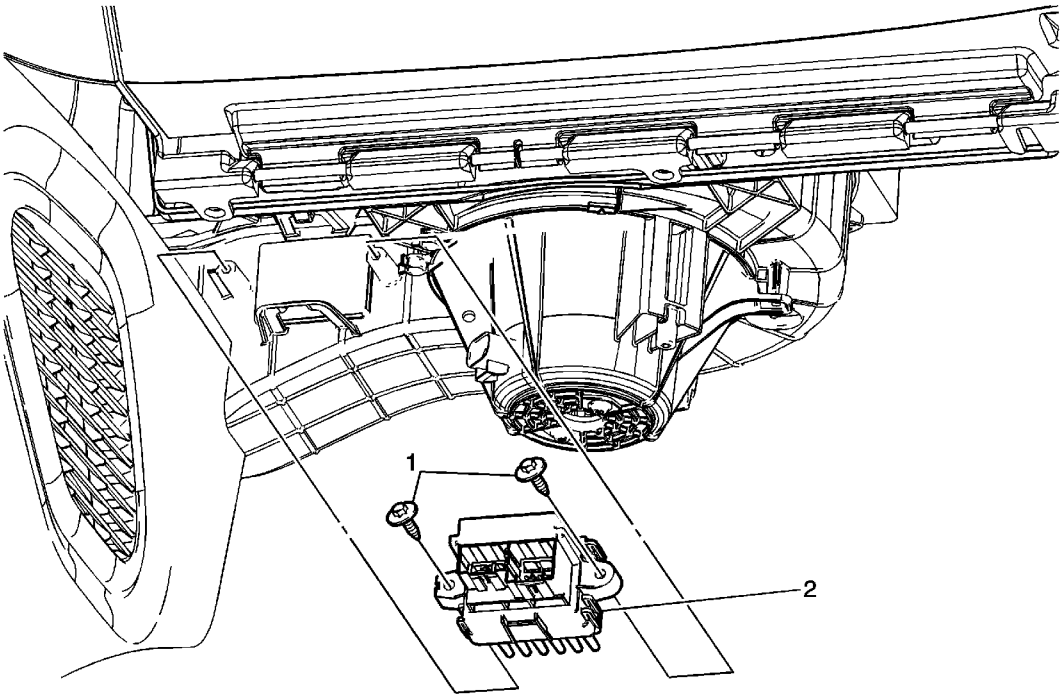
Tip
Ensure heater core tube seals are in place upon installation.

Air Inlet Screen Cleaning



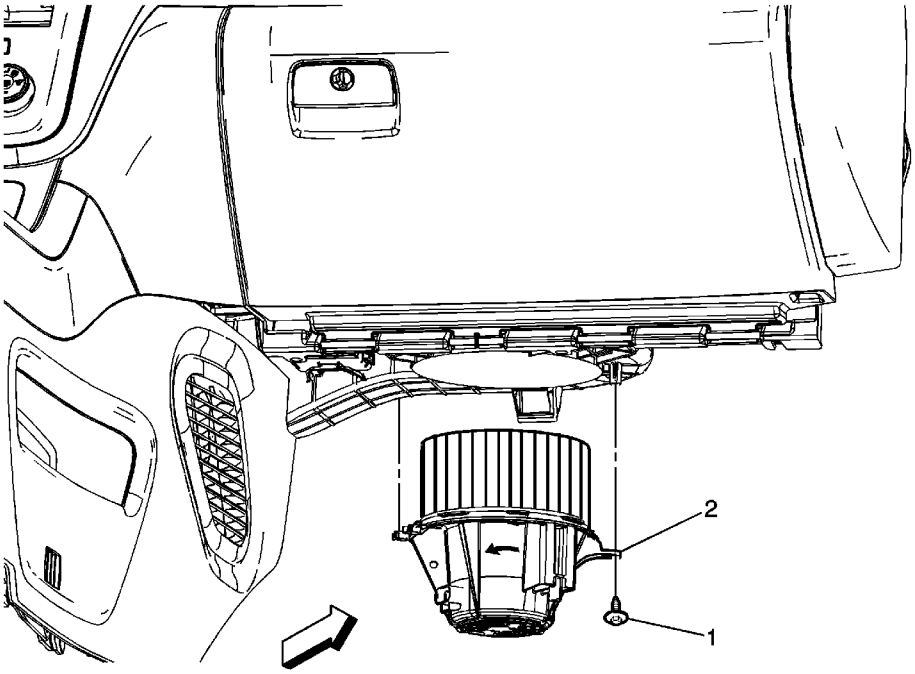
Callout	Component Name
Preliminary Procedures 1. Remove the air inlet grille panel. Refer to Air Inlet Grille Panel Replacement. 2. Remove the remote battery ground stud. 3. Remove the underhood electrical center cover. 4. Reposition any wiring or hoses to gain access to air inlet screen.	
1	Air Inlet Screen **Procedure** 1. Lift the air inlet grille panel enough to access the air inlet screen. 2. Use shop vacuum to remove any debris from the air inlet screen.

Blower Motor Control Module Replacement



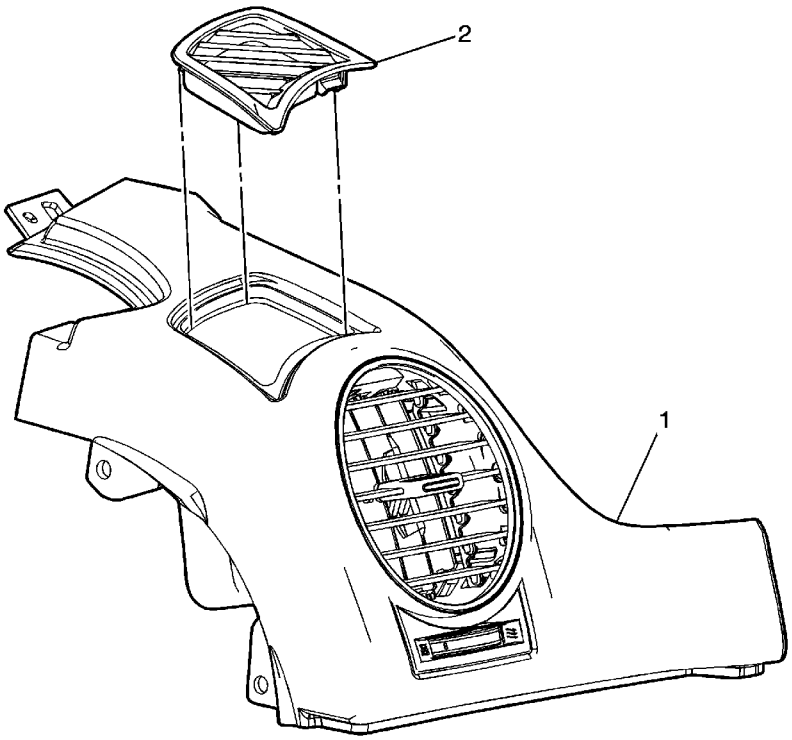
Callout	Component Name
Preliminary Procedure Remove the instrument panel insulator - right side. Refer to Instrument Panel Insulator Panel Replacement - Right Side.	
1	Blower Motor Control Module Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Blower Motor Control Module **Procedure** Disconnect electrical connectors.

Blower Motor Replacement



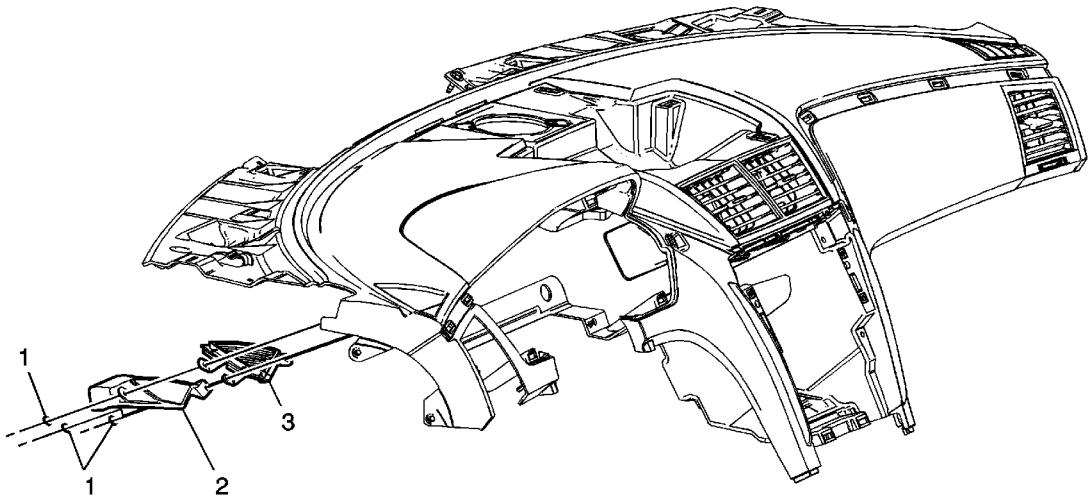
Callout	Component Name
Preliminary Procedure Remove the instrument panel insulator - right side. Refer to Instrument Panel Insulator Panel Replacement - Right Side.	
1	Blower Motor Screw **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Blower Motor **Procedure** • Disconnect the electrical connectors. • Rotate the blower motor counterclockwise to remove.

Side Window Defogger Outlet Grille Replacement - Left Side (Enclave)



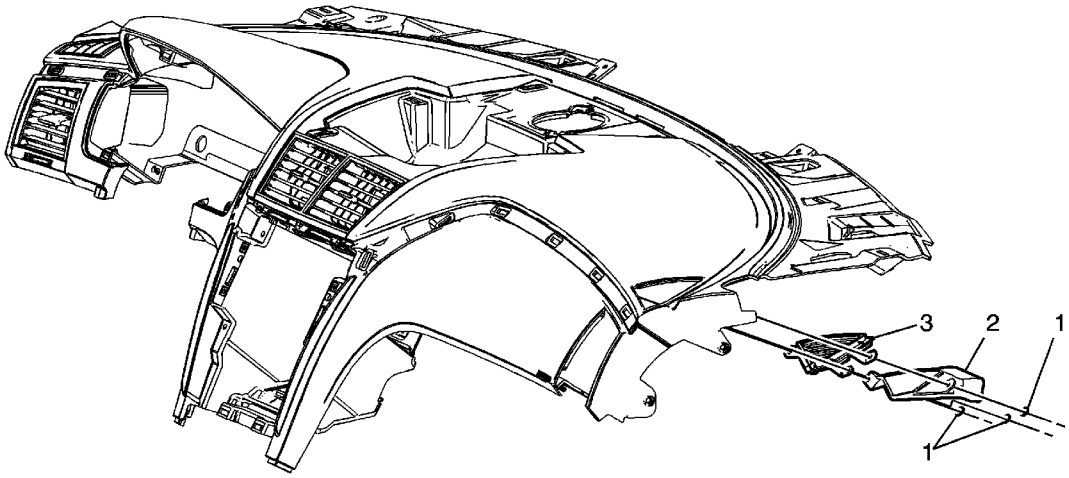
Callout	Component Name
1	Left Instrument Panel Trim Panel. Refer to Instrument Panel Trim Panel Replacement - Left Side.
2	Instrument Panel Left Window Air Outlet **Procedure** Release the tab on the air outlet from the underside of the trim panel and push the air outlet upward out of the trim panel.

Side Window Defogger Outlet Grille Replacement - Left Side (Traverse)



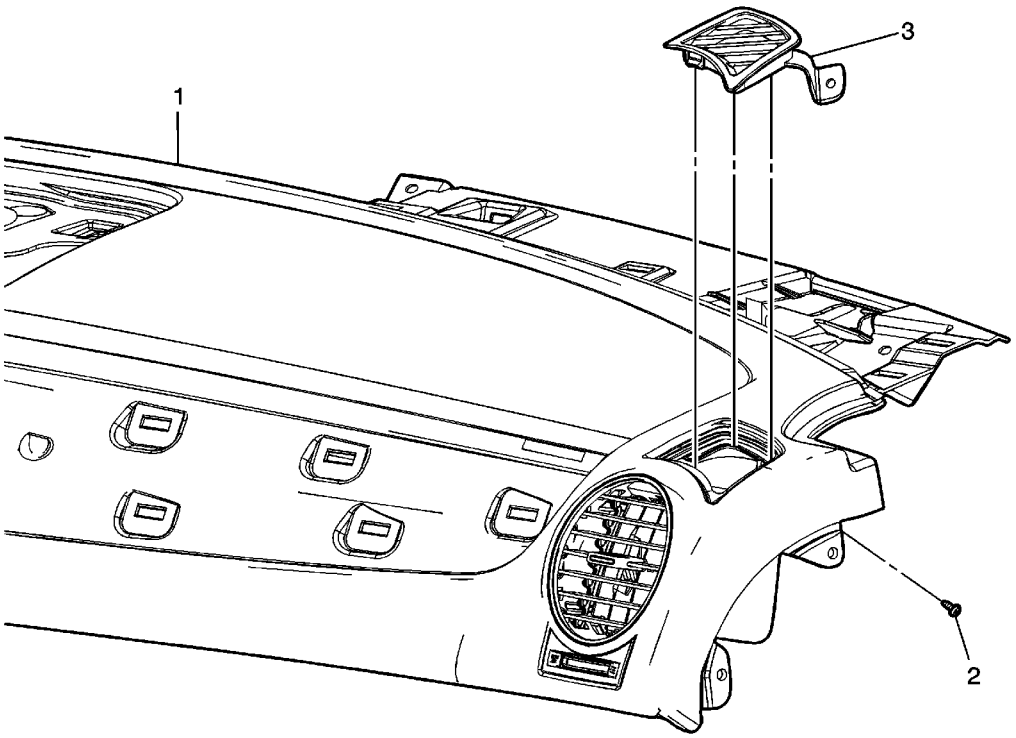
Callout	Component Name
Preliminary Procedure Remove the left instrument panel air outlet assembly. Refer to Instrument Panel Outer Air Outlet Replacement - Left Side.	
1	Pal Nuts (Qty: 3) **Procedure** Tighten the pal nuts until fully seated but not stripped
2	Side Window Defroster Outlet Duct Assembly
3	Side Window Defroster Outlet Grille Assembly

Side Window Defogger Outlet Grille Replacement - Right Side (Traverse)



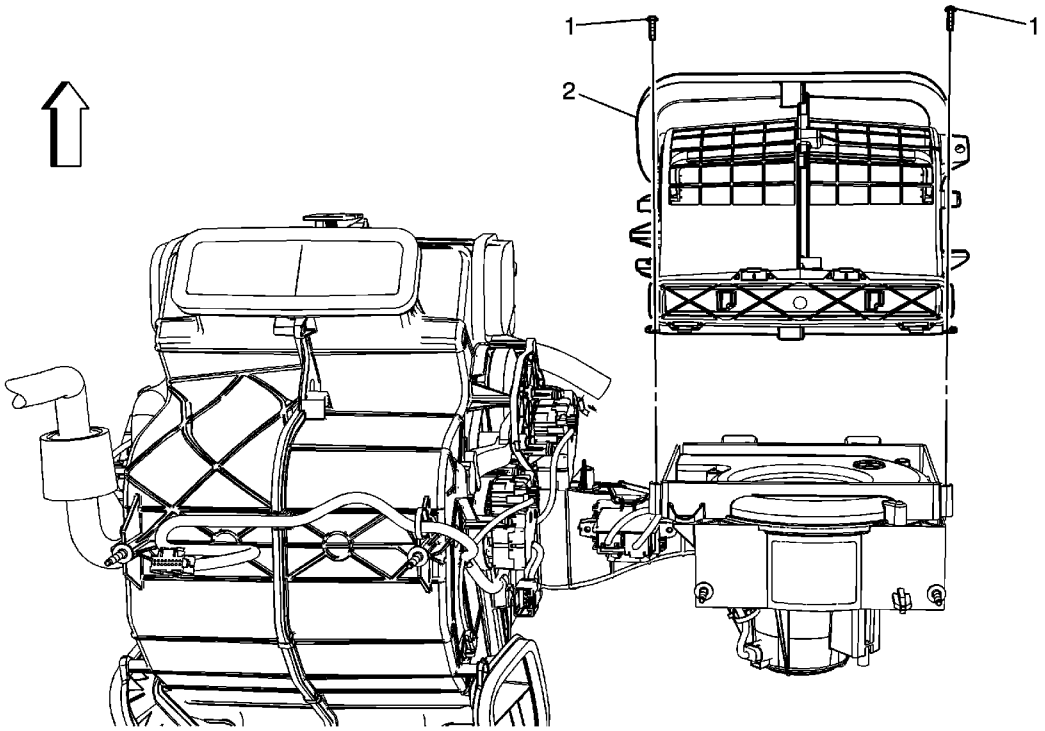
Callout	Component Name
Preliminary Procedure Remove the right instrument panel air outlet assembly. Refer to Instrument Panel Outer Air Outlet Replacement - Right Side.	
1	Pal Nuts (Qty: 3) **Procedure** Tighten the pal nuts until fully seated but not stripped
2	Side Window Defroster Outlet Duct Assembly
3	Side Window Defroster Outlet Grille Assembly

Side Window Defogger Outlet Grille Replacement - Right Side (Enclave)



Callout	Component Name
1	Instrument Panel Trim Pad Refer to Instrument Panel Trim Pad Replacement.
2	Instrument Panel Right Window Air Outlet Screw (Qty: 1) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
3	Instrument Panel Right Window Air Outlet **Procedure** Release the tab on the air outlet from the underside of the trim pad and push the air outlet upward out of the trim pad.

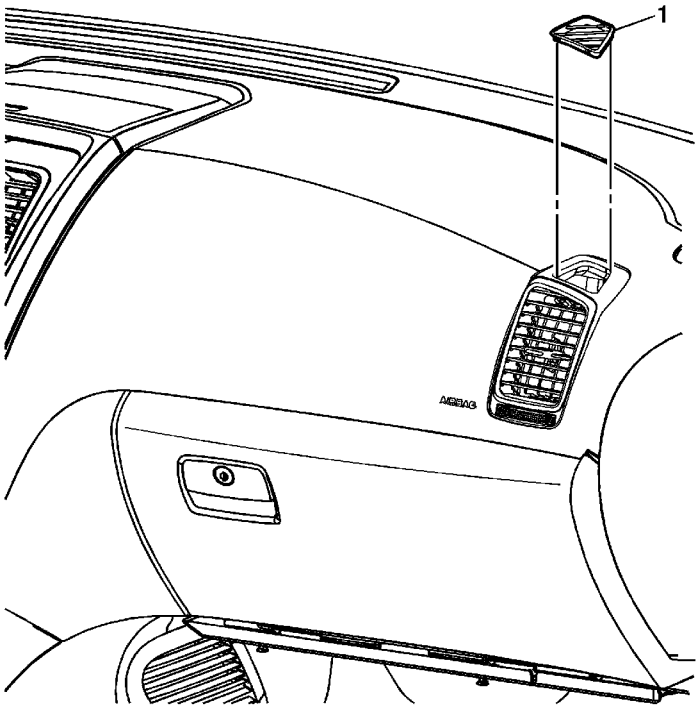
Air Distributor Case Replacement



Callout	Component Name
Preliminary Procedure 1. Remove the HVAC Module. Refer to HVAC Module Assembly Replacement 2. Reposition any wiring harnesses before removal.	
1	Air Distribution Case Screw Qty: (2). **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 3 N·m (27 lb in)
2	Air Distribution Case. **Procedure** 1. Prior to removing the air distribution case, note the routing of the wiring to ensure proper reinstallation. 2. Disconnect all electrical connections. 3. When replacing the air distribution case, transfer all necessary components. 4. If the recirculation actuator is removed or the wiring harness disconnected,

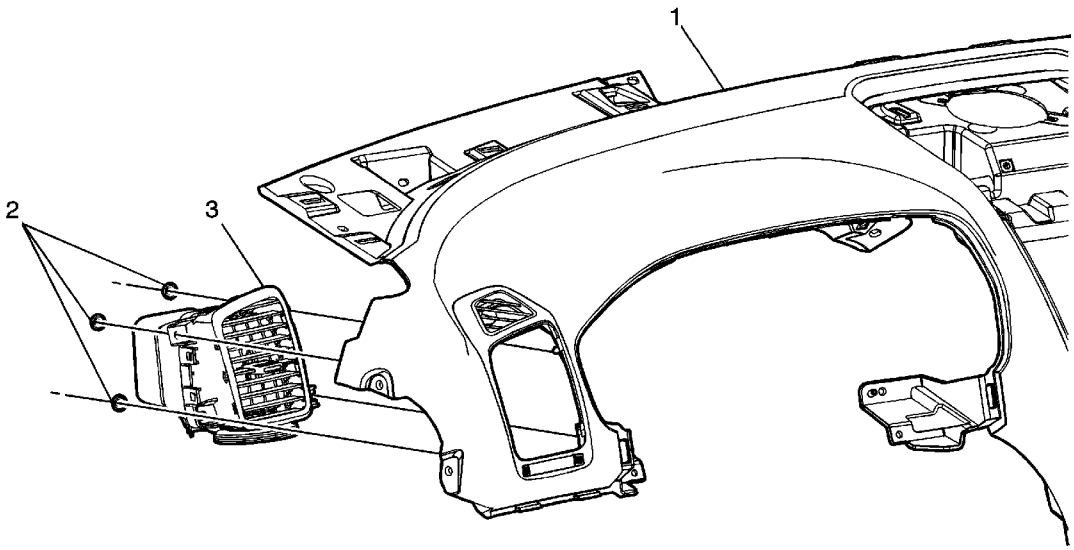
	the actuator must be re-calibrated. Refer to Actuator Recalibration

Side Window Air Outlet Replacement (Acadia)



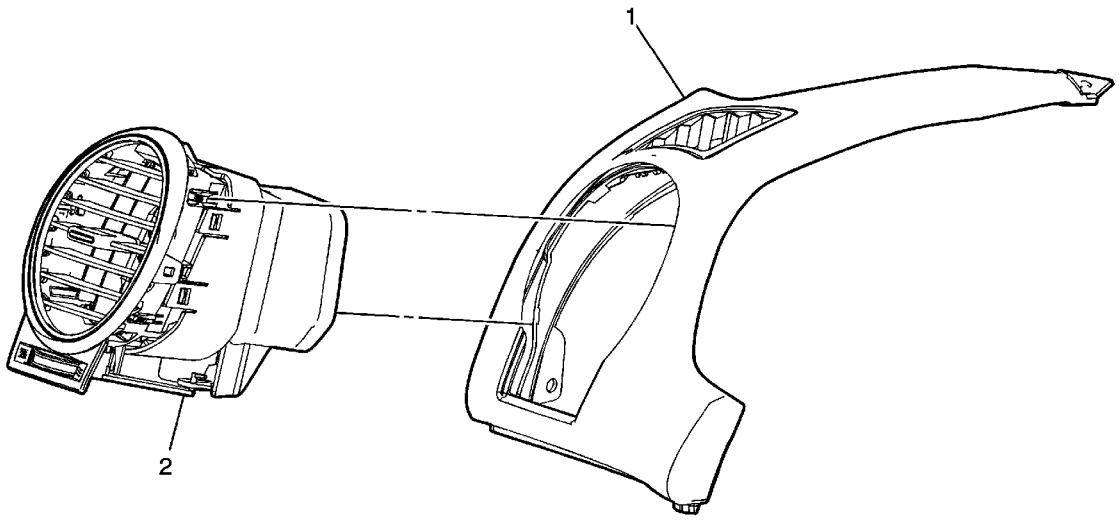
Callout	Component Name
1	Side Window Air Outlet Assembly **Procedure** Use a flat bladed plastic trim tool to release the air outlet from the instrument panel.

Instrument Panel Outer Air Outlet Replacement - Left Side (Acadia)



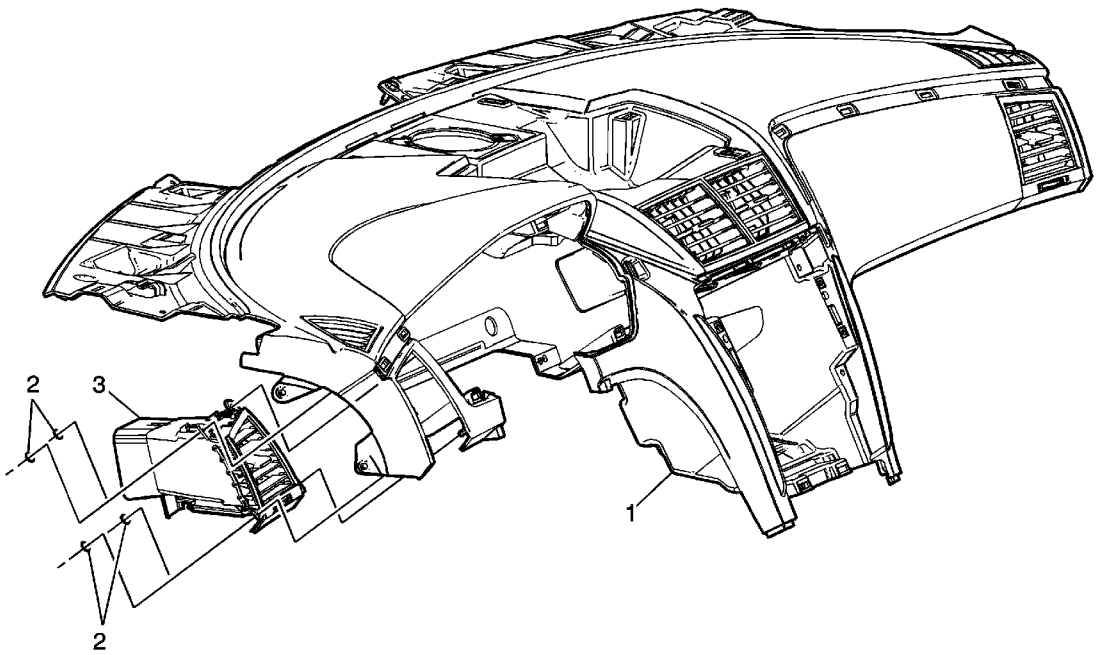
Callout	Component Name
1	Instrument Panel Trim Pad Refer to Instrument Panel Trim Pad Replacement .
2	Pal Nuts (Qty: 4) **Procedure** Tighten the pal nuts until fully seated but not stripped.
3	Instrument Panel Left Air Outlet Assembly

Instrument Panel Outer Air Outlet Replacement - Left Side (Enclave)



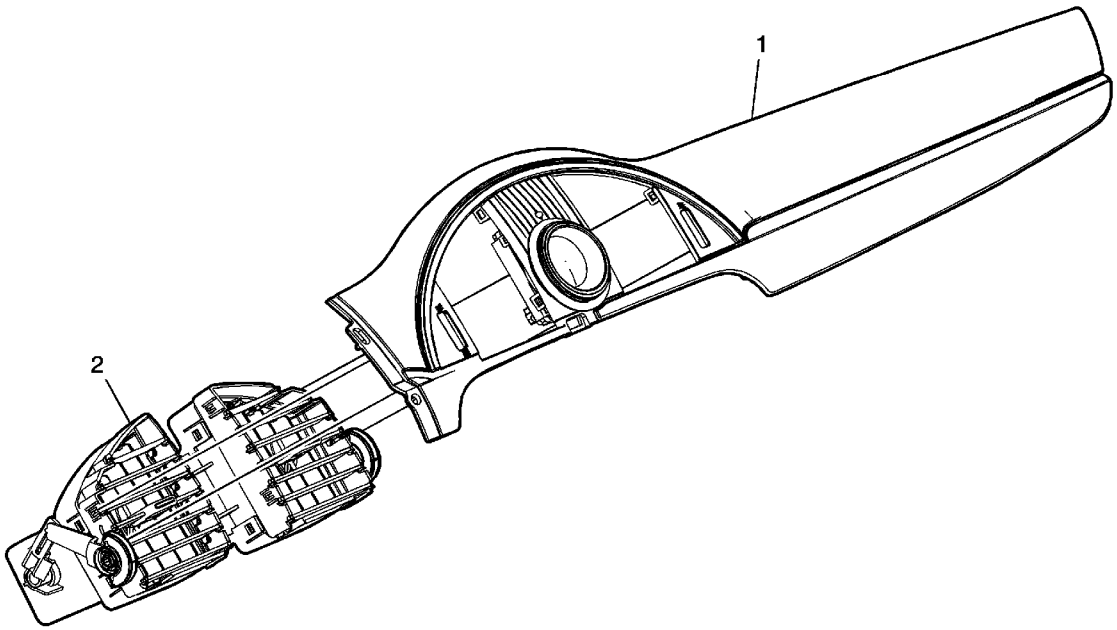
Callout	Component Name
1	Left Instrument Panel Trim Panel. Refer to Instrument Panel Trim Panel Replacement - Left Side.
2	Instrument Panel Left Air Outlet **Procedure** Unsnap the air outlet from the back side of the trim panel and push the air outlet forward out of the trim panel.

Instrument Panel Outer Air Outlet Replacement - Left Side (Traverse)



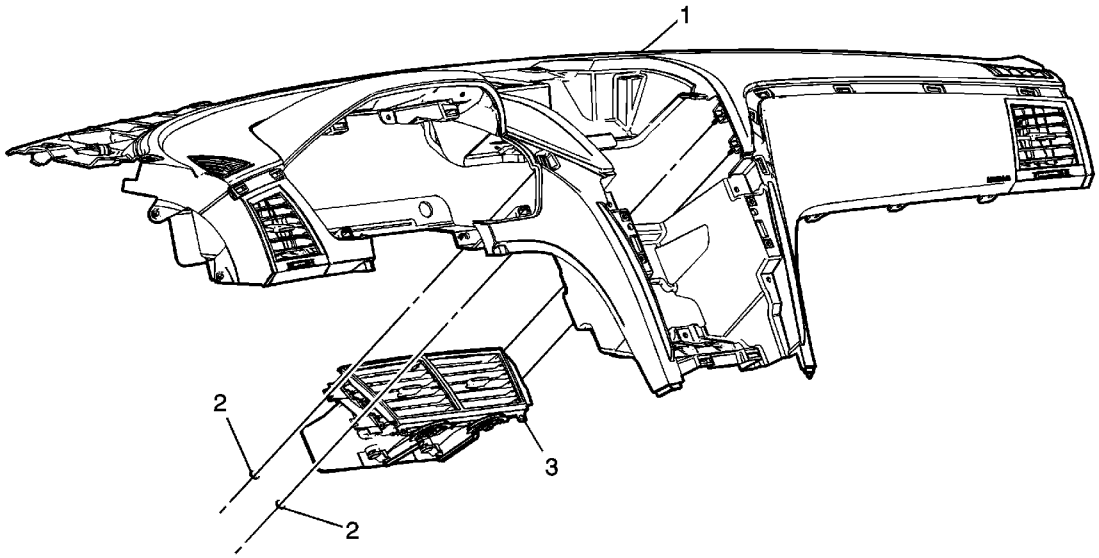
Callout	Component Name
1	Instrument Panel Trim Pad. Refer to Instrument Panel Trim Pad Replacement.
2	Pal Nuts (Qty: 4) **Procedure** Tighten the pal nuts until fully seated but not stripped
3	Instrument Panel Left Air Outlet Assembly

Instrument Panel Center Air Outlet Replacement (Enclave)



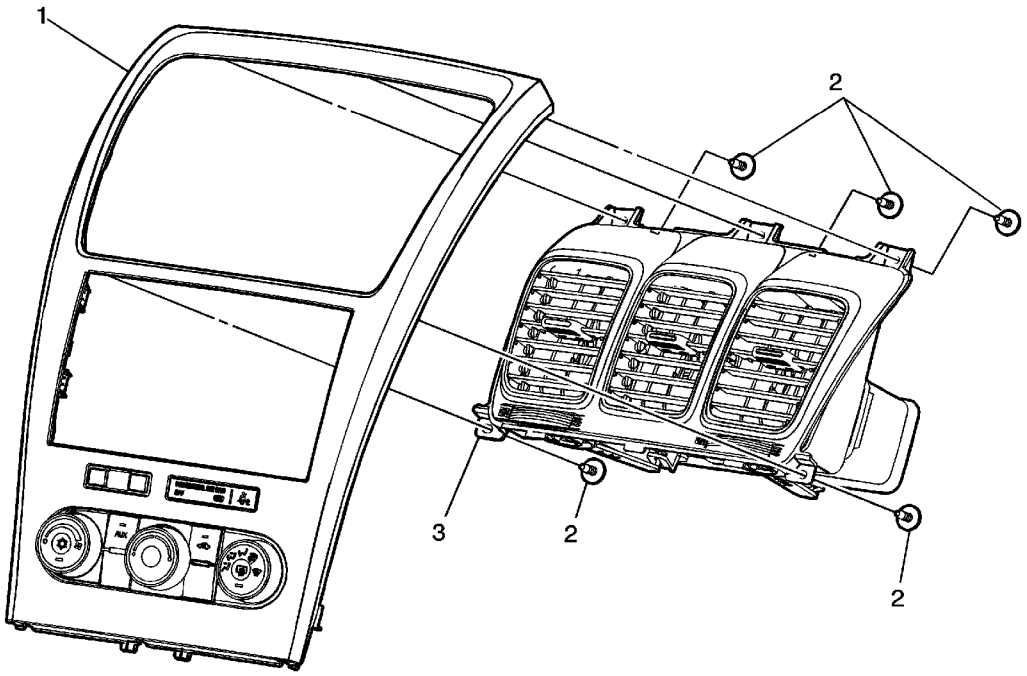
Callout	Component Name
1	Instrument Panel Trim Panel - Center Refer to Instrument Panel Center Trim Panel Replacement.
2	Instrument Panel Center Air Outlet **Procedure** Unsnap the air outlet from the trim panel.

Instrument Panel Center Air Outlet Replacement (Traverse)



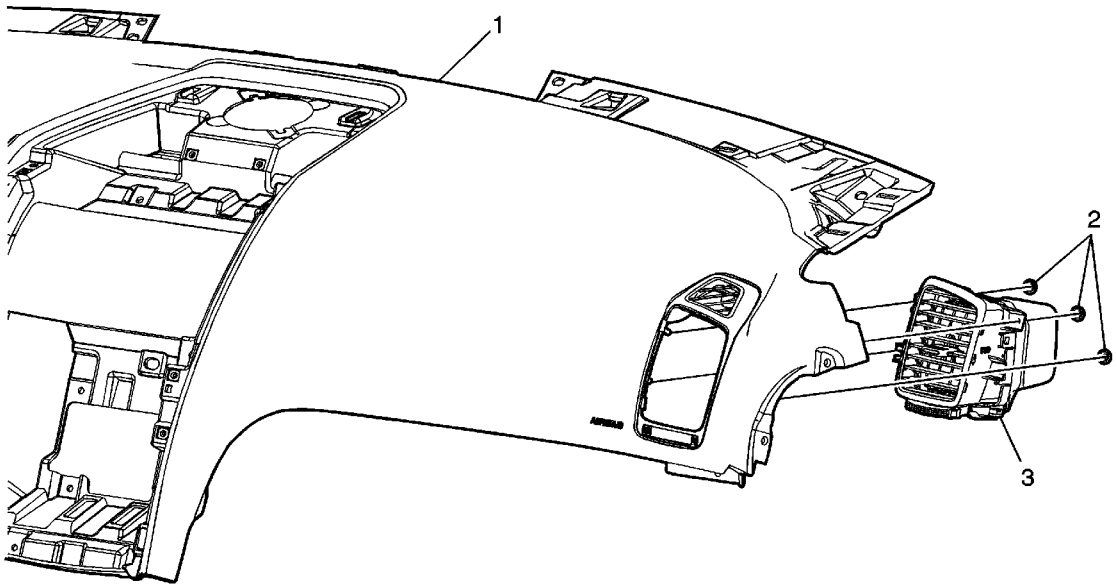
Callout	Component Name
1	Instrument Panel Trim Pad. Refer to Instrument Panel Trim Pad Replacement.
2	Pal Nuts (Qty: 4) **Procedure** Tighten the pal nuts until fully seated but not stripped
3	Instrument Panel Center Air Outlet Assembly

Instrument Panel Center Air Outlet Replacement (Acadia)



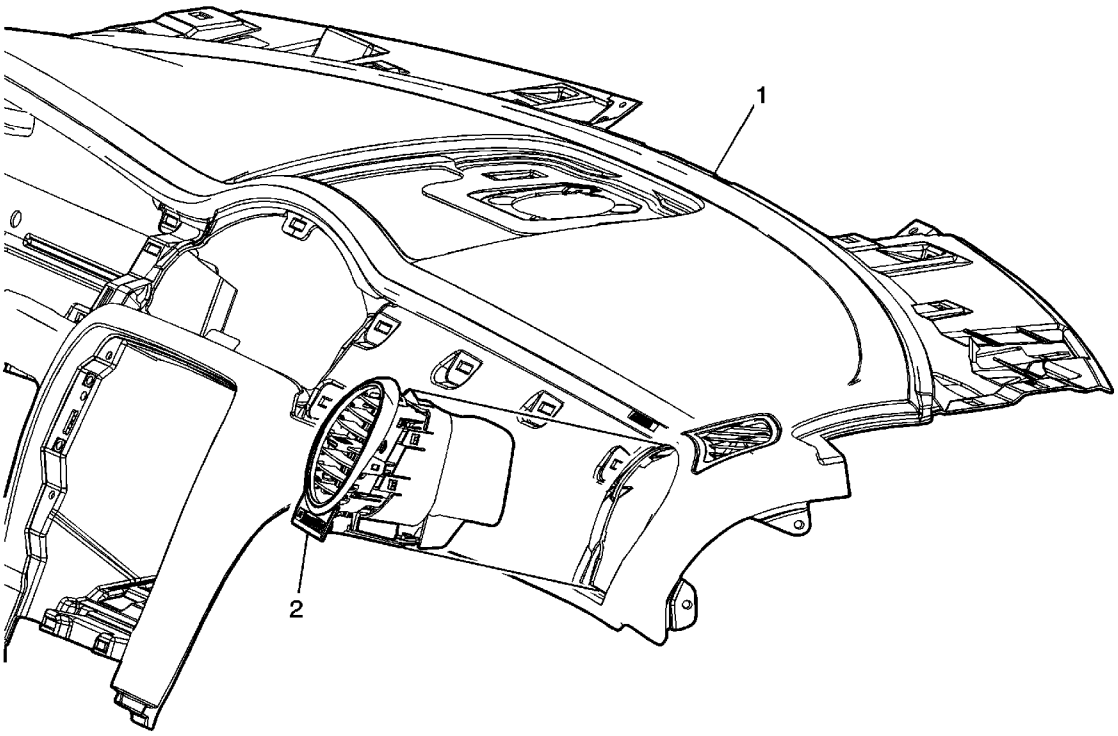
Callout	Component Name
1	Instrument Panel Accessory Trim Plate Refer to Instrument Panel Accessory Trim Plate Replacement.
2	Instrument Panel Center Air Outlet Screw (Qty: 5) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
3	Instrument Panel Center Air Outlet Assembly

Instrument Panel Outer Air Outlet Replacement - Right Side (Acadia)



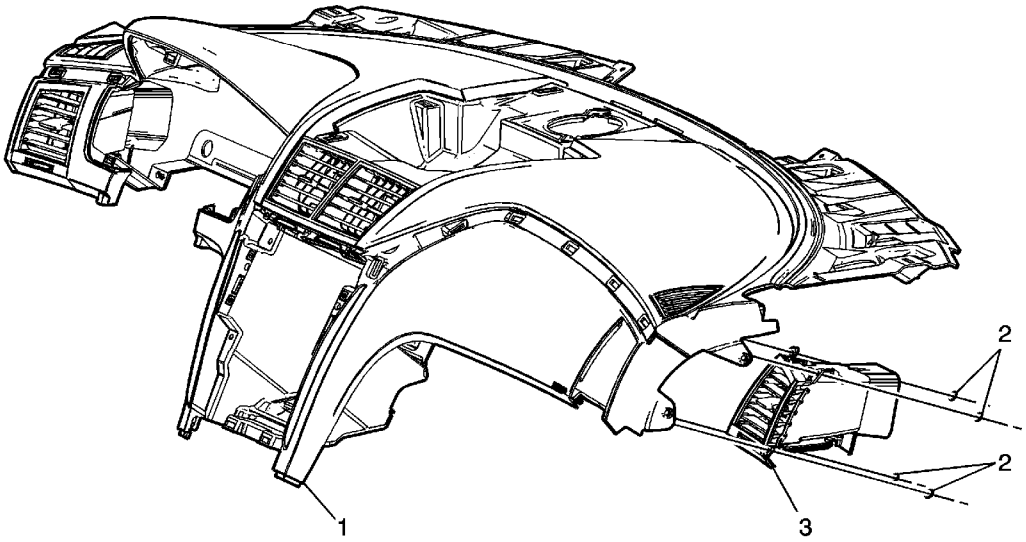
Callout	Component Name
1	Instrument Panel Trim Pad Refer to Instrument Panel Trim Pad Replacement .
2	Pal Nuts (Qty: 4) **Procedure** Tighten the pal nuts until fully seated but not stripped.
3	Instrument Panel Right Air Outlet Assembly

Instrument Panel Outer Air Outlet Replacement - Right Side (Enclave)



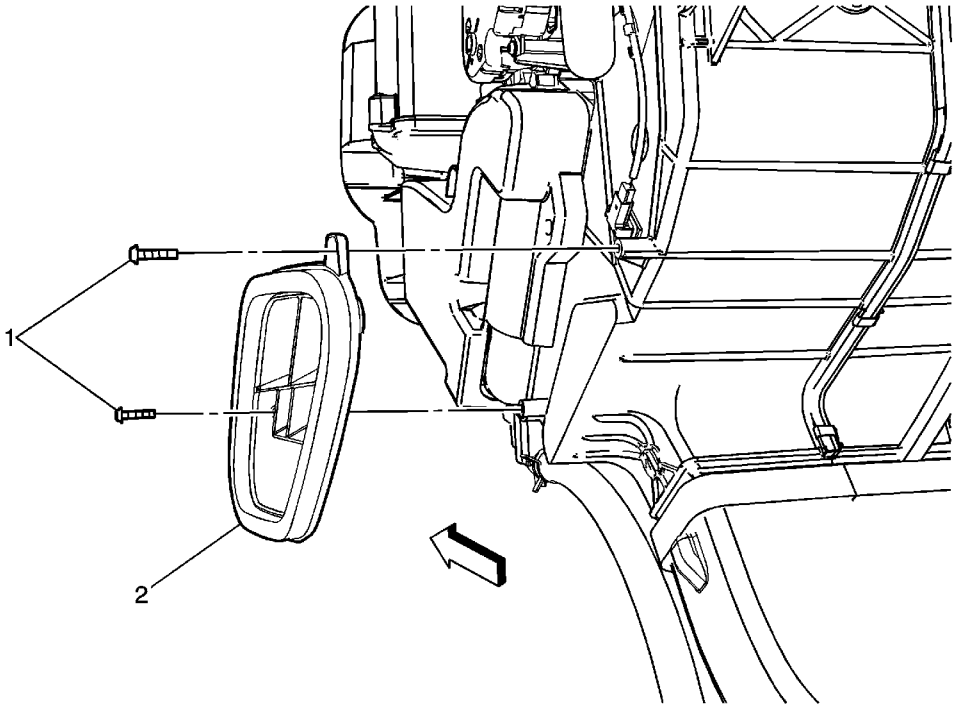
Callout	Component Name
1	Instrument Panel Trim Pad. Refer to Instrument Panel Trim Pad Replacement.
2	Instrument Panel Right Air Outlet **Procedure** Unsnap the air outlet from the back side of the trim panel and push the air outlet forward out of the trim panel.

Instrument Panel Outer Air Outlet Replacement - Right Side (Traverse)



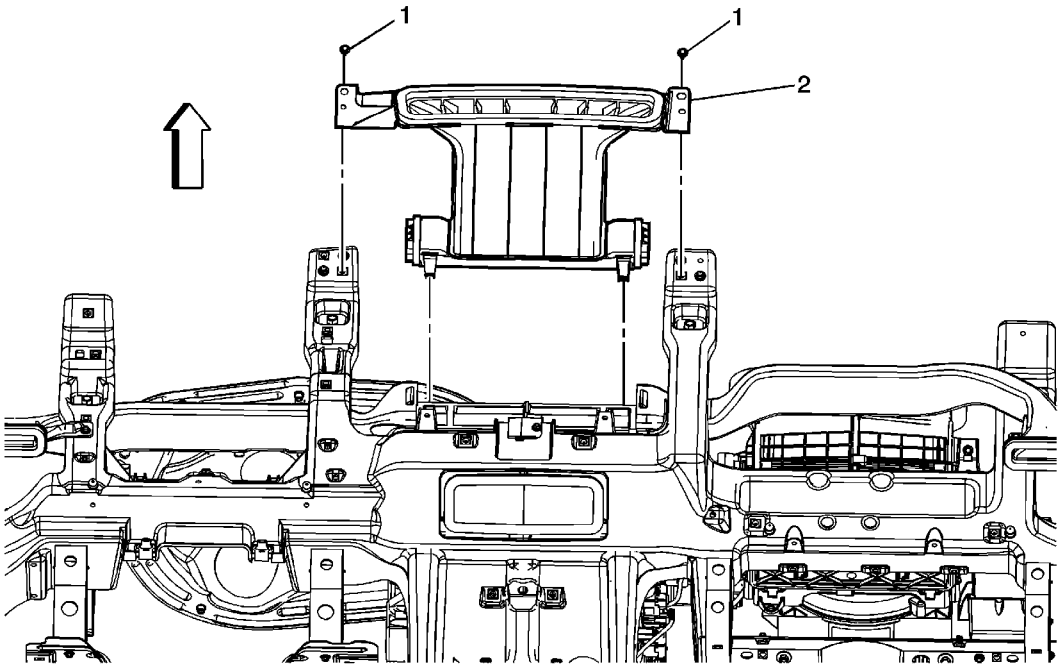
Callout	Component Name
1	Instrument Panel Trim Pad. Refer to Instrument Panel Trim Pad Replacement.
2	Pal Nuts (Qty: 4) **Procedure** Tighten the pal nuts until fully seated but not stripped
3	Instrument Panel Right Air Outlet Assembly

Floor Air Outlet Duct Replacement - Left Side



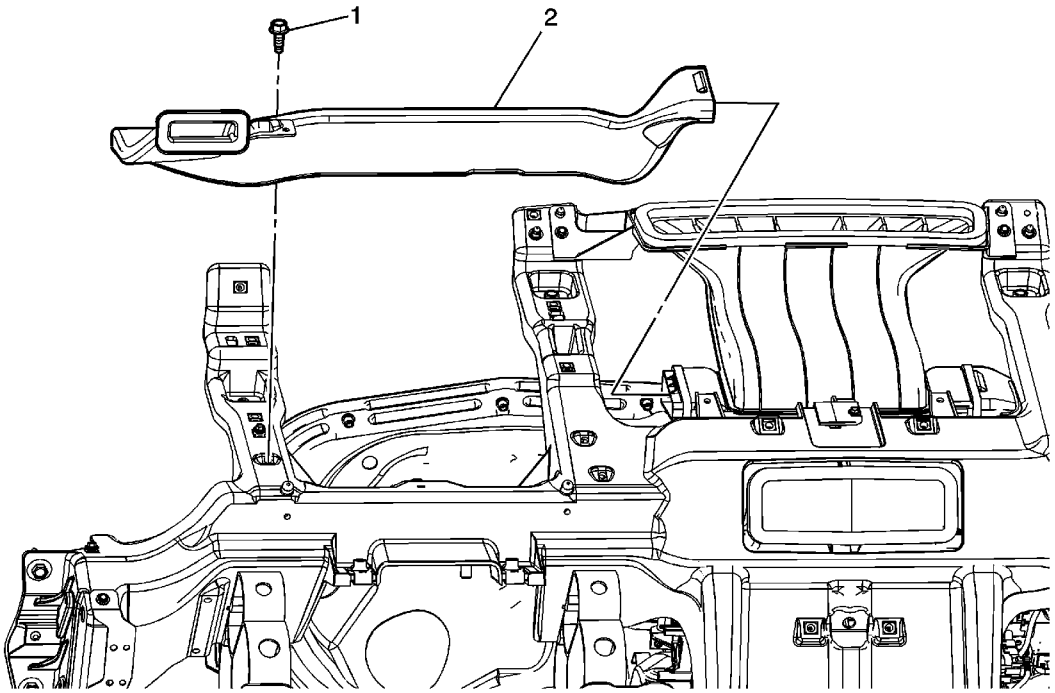
Callout	Component Name
1	Heater Outlet Duct Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Heater Outlet Duct

Windshield Defroster Duct Replacement



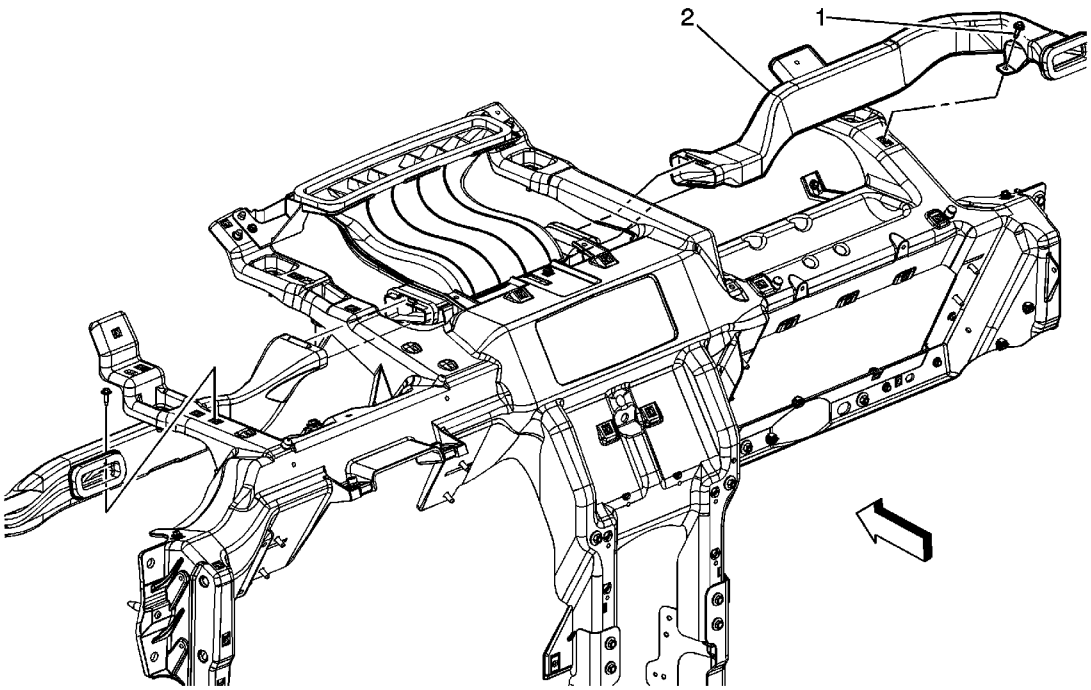
Callout	Component Name
Preliminary Procedure Remove the I/P trim pad. Refer to Instrument Panel Trim Pad Replacement	
1	Windshield Defroster Duct Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Windshield Defroster Duct

Side Window Defogger Outlet Duct Replacement - Left Side



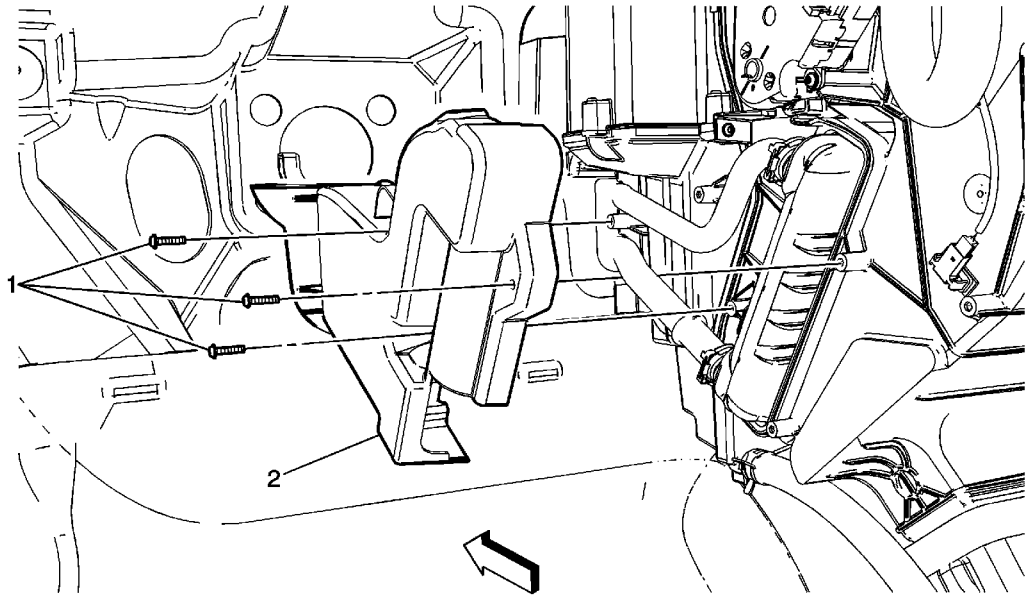
Callout	Component Name
Preliminary Procedure Remove the I/P carrier. Refer to Instrument Panel Carrier Replacement	
1	Left Side Window Defogger Outlet Duct Screw **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Left Side Window Defogger Outlet Duct **Procedure** Squeeze tab to release from windshield defroster duct.

Side Window Defogger Outlet Duct Replacement - Right Side



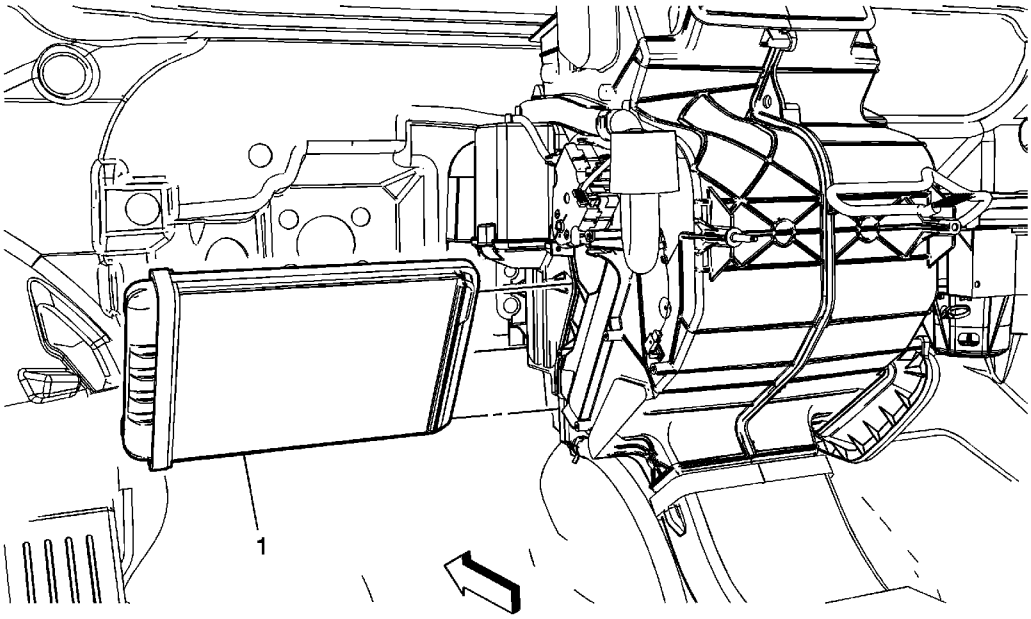
Callout	Component Name
Preliminary Procedure Remove the I/P trim pad. Refer to Instrument Panel Trim Pad Replacement.	
1	Right Side Window Defogger Outlet Duct Screw **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Right Side Window Defogger Outlet Duct **Procedure** Squeeze tab to release from windshield defroster duct.

Heater Core Cover Replacement



Callout	Component Name
Preliminary Procedure 1. Remove left front floor console extension panel. 2. Remove Floor Outlet Air Duct. Refer to Floor Air Outlet Duct Replacement - Left Side. 3. Reposition any wiring harness to access heater core cover.	
1	Heater Core Cover Screw (Qty: 3) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 3 N·m (27 lb in)
2	Heater Core Cover

Heater Core Replacement

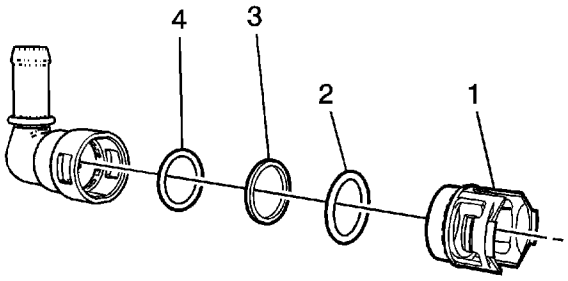


Callout	Component Name
Preliminary Procedure Remove the heater core tubes from heater core while leaving the heater hoses connected to the tubes. Cap or plug heater core and tube openings to prevent spillage of fluids upon removal. Refer to Heater Core Tube Replacement .	
1	Heater Core **Procedure** 1. Reposition the heater core outward from the heater case to ease in removal. 2. Mark the location of the center foam seal from the old heater core to the new heater core. 3. Press on foam seals to activate adhesive. 4. Keep the heater core horizontal and straight when inserting into the HVAC module in order to prevent foam seal damage. 5. Push heater core until the foam seal around the heater core tank is inserted into the HVAC module and the heater core is fully seated.

Auxiliary Heater Inlet and Outlet Hose Connector Retainer and Seal Replacement

Removal Procedure

1. Drain the cooling system. Refer to Cooling System Draining and Filling.



2. Before removing the quick connect fitting from the vehicle, clean area and remove any loose dirt or debris.
3. Remove the fitting from the tube by squeezing the retainer clip legs together and pulling the fitting from the tube.
4. Remove the retainer from the tube by folding the legs back on themselves and sliding the retainer clip out of the tube (1).
5. Place a flat-blade tool through the window of the quick connect fitting to just below the outer bushing and above the top O-ring (2).

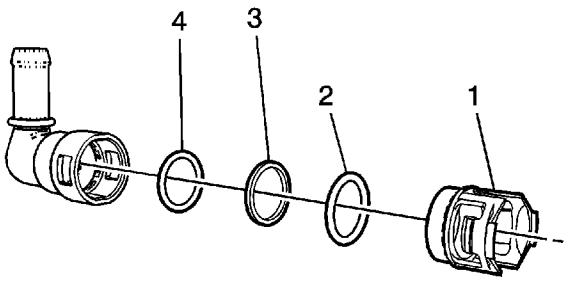
   Caution: Do NOT damage the fitting while removing the outer bushing. Damage may affect the seal integrity and cause a coolant leak.

6. Remove the outer bushing with a gentle prying motion. Discard the outer bushing.
7. Remove other components and discard.
8. Thoroughly clean and inspect the inside surface of the fitting for nicks, scratches or cracks.

   Remove any dirt or debris using water and a lint free cloth.

Installation Procedure

1. Lubricate O-rings with coolant.

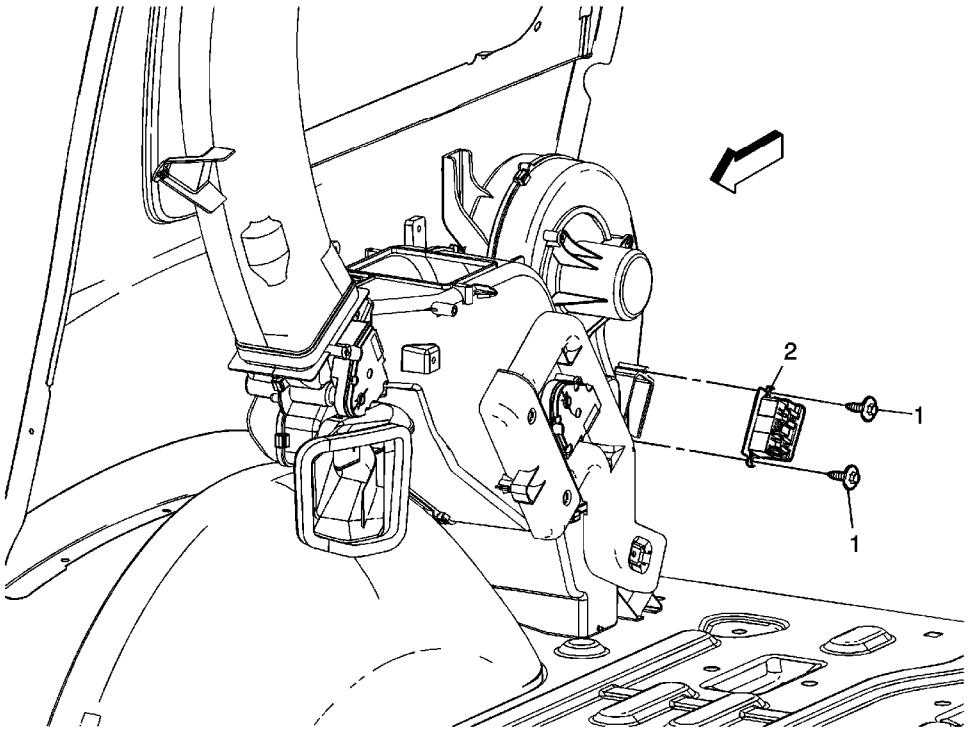


2. Install the first O-ring and gently push down into the O-ring pocket (4).
3. Install the midspacer and gently push down to first O-ring (3).
4. Install the second O-ring and gently push down to the top of midspacer (2).
5. Install the retainer clip by lining up the retainer legs with windows on the fitting housing (1).

   Push the retainer clip down until the retainer clip legs are engaged into the windows.

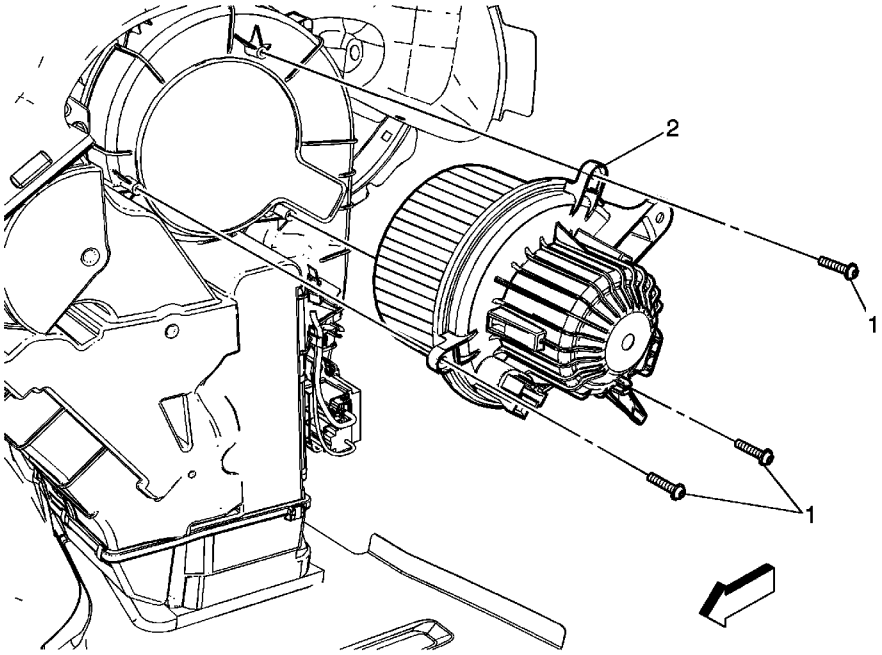
6. Clean and inspect the pipe end for any nicks, scratches or cracks.
7. Install the fitting to the vehicle by pushing the fitting onto the tube until an audible click is heard. Pull back to verify the connection is secure.
8. Fill the cooling system. Refer to Cooling System Draining and Filling.

Auxiliary Blower Control Module Replacement



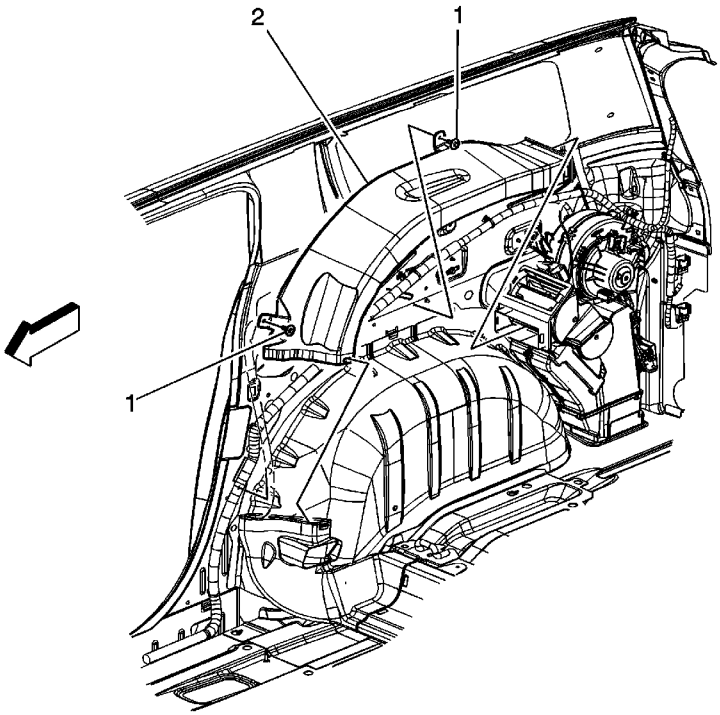
Callout	Component Name
Preliminary Procedures 1. Remove the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement. 2. Disconnect the blower motor control module electrical connector.	
1	Blower Motor Resistor Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 1.5 N·m (13 lb in)
2	Blower Motor Control Module

Auxiliary Blower Motor Replacement



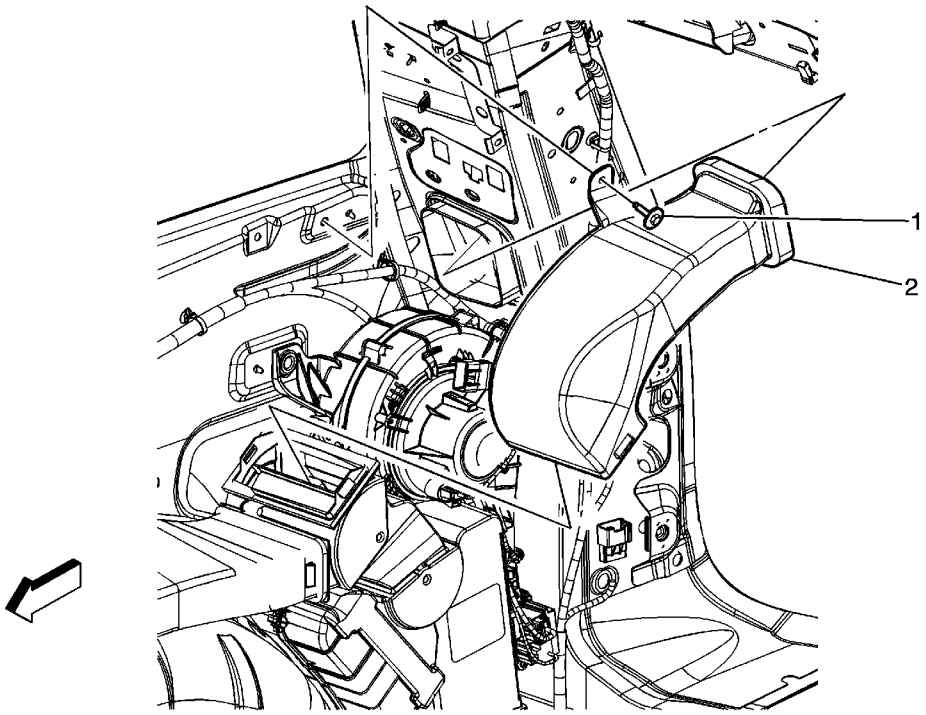
Callout	Component Name
Preliminary Procedures 1. Remove the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement . 2. Disconnect the blower motor electrical connector.	
1	Blower Motor Tab Retaining Screw (Qty: 3)
2	Blower Motor Assembly

Auxiliary Air Distributor Lower Duct Replacement



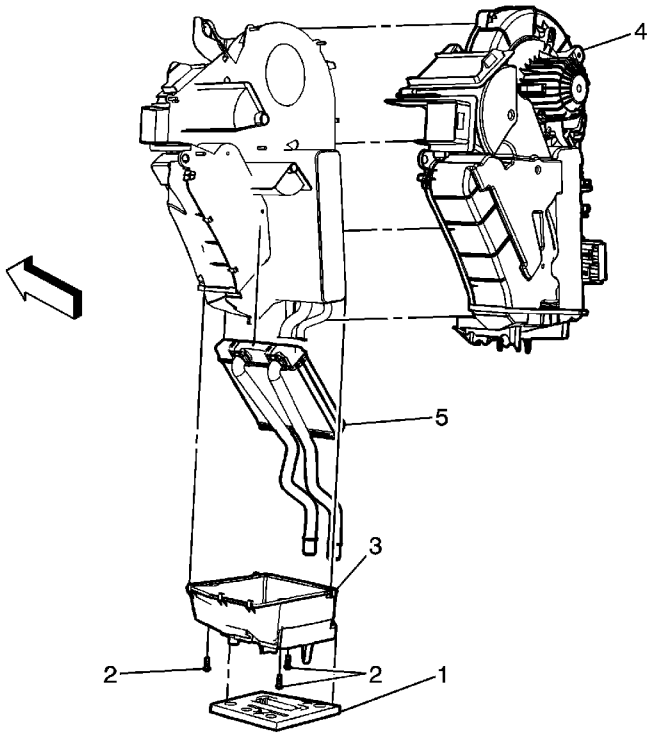
Callout	Component Name
Preliminary Procedure 1. Remove the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement. 2. Remove the upper air temperature sensor, if equipped.	
1	Air Distribution Duct Screw (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Lower Air Distribution Duct **Procedure** Squeeze both ends of distribution duct to release for removal.

Auxiliary Air Distributor Duct Replacement - Upper



Callout	Component Name
Preliminary Procedure 1. Remove the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement. 2. Remove the upper air temperature sensor, if equipped.	
1	Air Distribution Duct Bolt **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 2 N·m (18 lb in)
2	Upper Air Distribution Duct **Procedure** Squeeze both ends of distribution duct to release for removal.

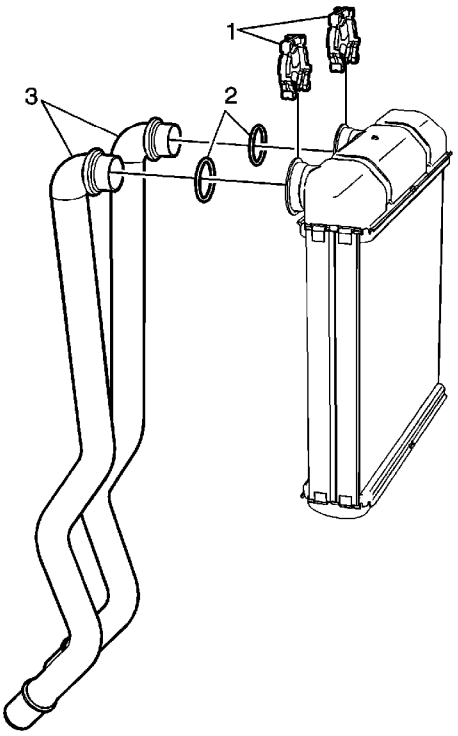
Auxiliary Heater Core Replacement



Callout	Component Name
Preliminary Procedure 1. Remove the HVAC module - auxiliary. Refer to Auxiliary HVAC Module Replacement. 2. Disconnect any wiring connectors or harnesses form HVAC module. 3. Remove evaporator tube retaining clips before removing lower gasket and cover.	
1	HVAC Module Gasket
2	Auxiliary HVAC Module Lower Cover Bolt (Qty: 3) **Caution:** Refer to Fastener Caution in the Preface section. **Procedure** Remove any fastener clips that secure cover to module. **Tighten** 3 N·m (27 lb in)
3	Auxiliary HVAC Module Lower Cover
	HVAC Module Case Screw (Qty: 10)

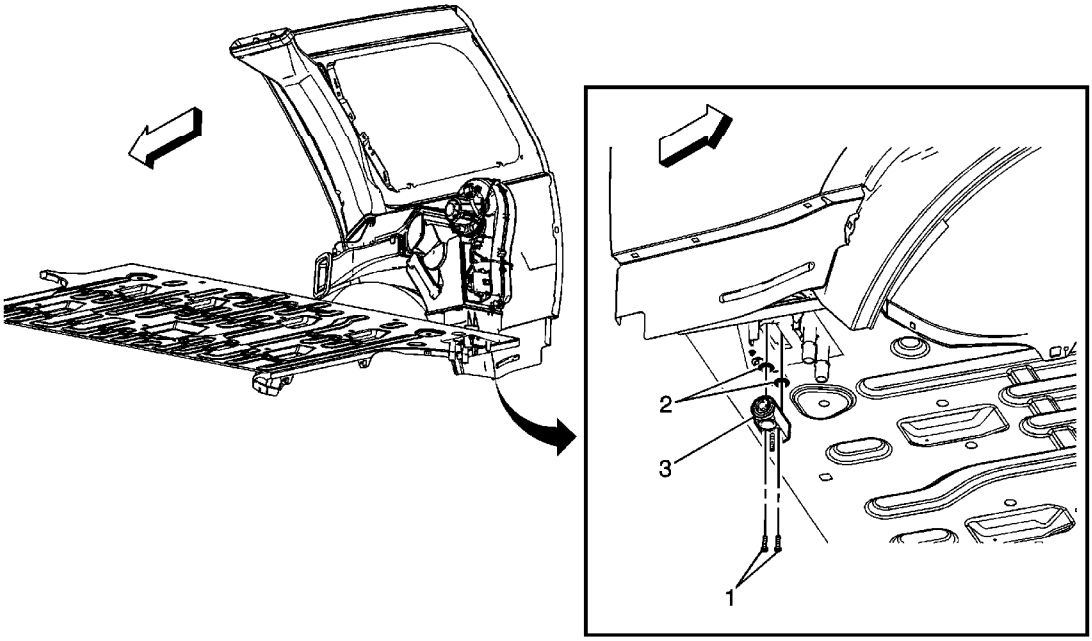
4	**Procedure** Remove any fastener clips that secure cover to module. **Tighten** 3 N·m (27 lb in)
5	Auxiliary HVAC Heater Core **Tip** Ensure all seals and gaskets are in place upon installation.

Auxiliary Heater Core Tube Replacement



Callout	Component Name
Preliminary Procedure Remove the auxiliary heater core. Refer to Auxiliary Heater Core Replacement .	
1	Heater Core Tube Clip (Qty: 2) **Procedure** Expand the retaining clips outward to aid in removal.
2	Heater Core Tube O-rings (Qty: 2) **Tip** Do not reuse O-rings
3	Heater Core Tube

Auxiliary Air Conditioning Evaporator Thermal Expansion Valve Replacement



Callout	Component Name
Preliminary Procedures 1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging. 2. Remove the retaining nut and the auxiliary A/C evaporator tubes from the auxiliary HVAC module. Refer to Auxiliary Air Conditioning Evaporator Tube Replacement.	
1	Thermal Expansion Valve Bolt (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tip** Insert a small phillips screwdriver through one of the thermal expansion valve (TXV) bolt holes and into the threaded hole of the mounting plate. Install the TXV bolt into the other hole without the screwdriver. Remove the screwdriver and install the other TXV bolt. **Tighten** 5 N·m (44 lb in)
	Sealing Washer

2	**Tip** Remove and discard the sealing washer. Refer to Sealing Washer Replacement.
3	Thermal Expansion Valve **Procedure** The auxiliary A/C refrigerant filter must be replaced when the auxiliary thermal expansion valve is serviced. Refer to Air Conditioning (AC) Refrigerant Filter Replacement.

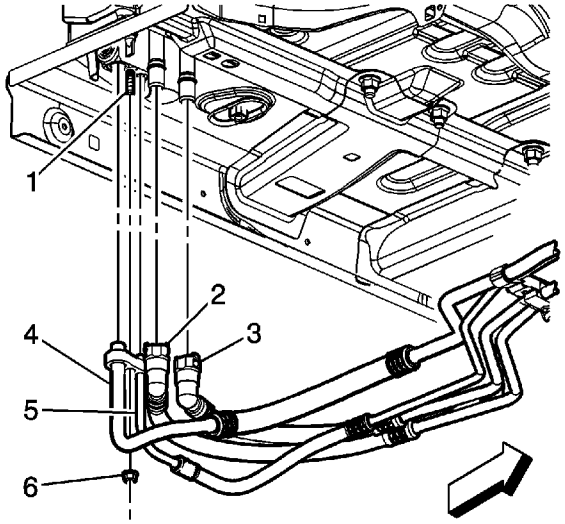
Auxiliary HVAC Module Replacement

Tools Required

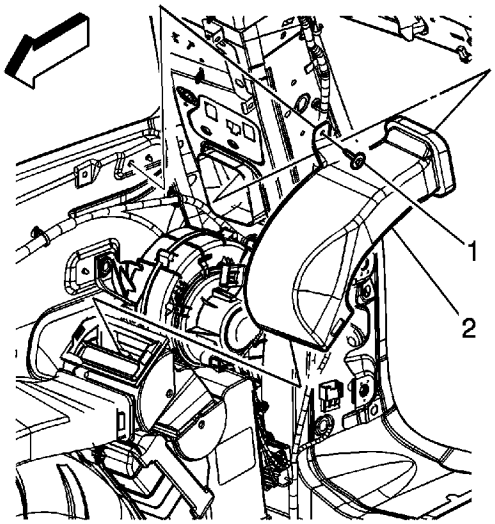
J 39400-A Halogen Leak Detector

Removal Procedure

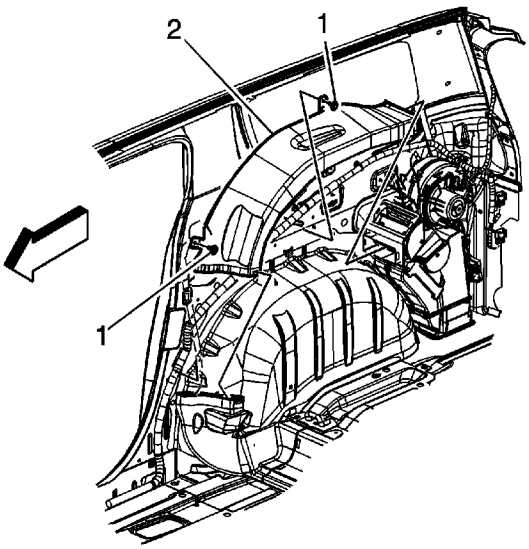
1. Recover the refrigerant from the air conditioning (A/C) system. Refer to Refrigerant Recovery and Recharging.
2. Drain the engine coolant. Refer to Cooling System Draining and Filling.
3. Raise the vehicle. Refer to Lifting and Jacking the Vehicle.
4. Remove the right rear wheelhouse liner panel. Refer to Rear Wheelhouse Panel Liner Replacement.



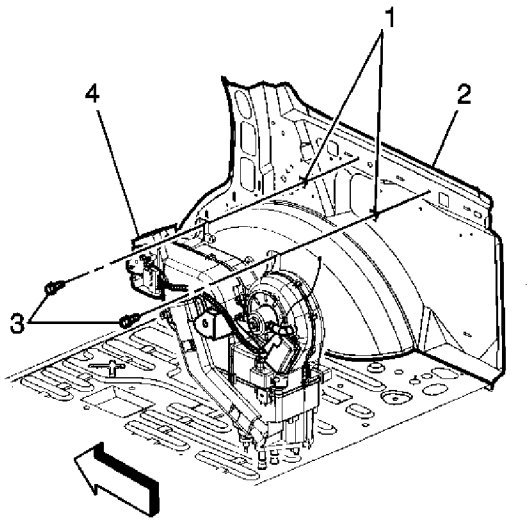
5. Disconnect the heater lines (2, 3) from the auxiliary HVAC module at the underside of the vehicle.
6. Disconnect the air conditioning lines (4, 5) from the auxiliary HVAC module at the underside of the vehicle.
7. Remove the nuts (6) from the studs (1) that secure the auxiliary HVAC module to the underside of the vehicle.
8. Lower the vehicle.
9. Remove the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement.
10. Disconnect the electrical connectors from the auxiliary HVAC module.



11. Remove the upper auxiliary air distributor duct (2). Refer to Auxiliary Air Distributor Duct Replacement - Upper.

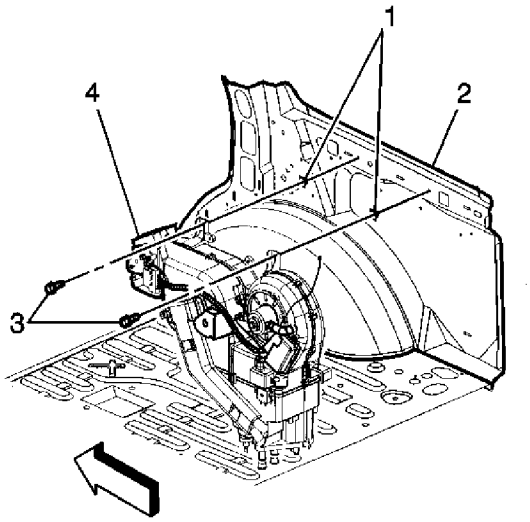


12. Remove the lower auxiliary air distributor duct (2). Refer to Auxiliary Air Distributor Lower Duct Replacement.

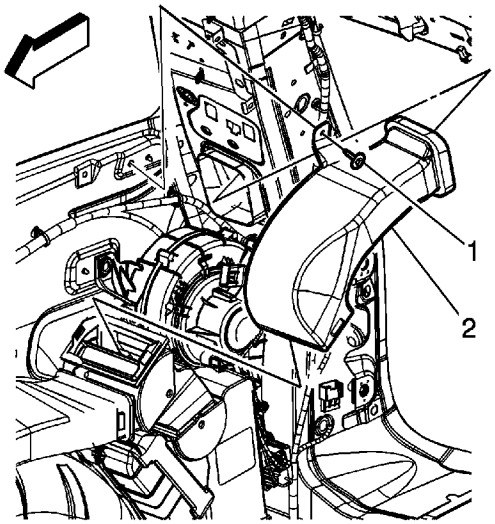


13. Remove the fasteners (3) retaining the auxiliary HVAC module to the vehicle.
14. Remove the auxiliary HVAC module (4) from the vehicle.

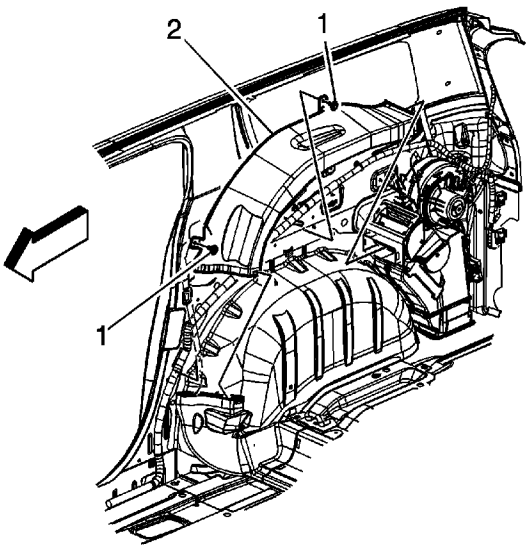
Installation Procedure



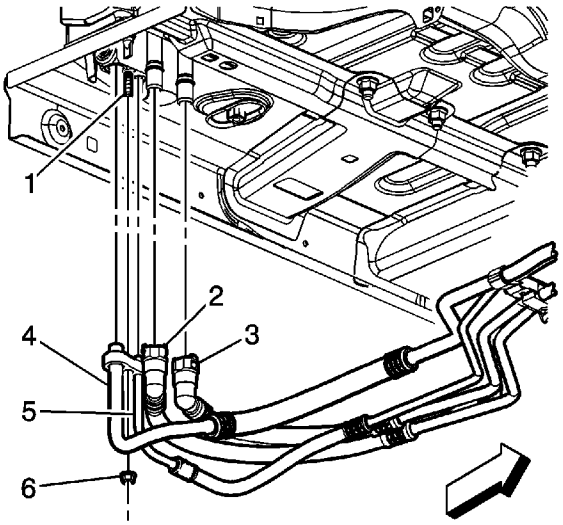
1. Install the auxiliary HVAC module assembly (4) to the vehicle.
2. Install the 2 bolts (3) inside the vehicle in order to retain the auxiliary HVAC module to the vehicle.



3. Install the upper auxiliary air distributor duct. Refer to Auxiliary Air Distributor Duct Replacement - Upper.



4. Install the lower auxiliary air distributor duct. Refer to Auxiliary Air Distributor Lower Duct Replacement.
5. Connect the electrical connectors to the auxiliary HVAC module.
6. Install the right rear quarter trim panel. Refer to Quarter Lower Rear Trim Panel Replacement.



7. Raise the vehicle.

   Caution: Refer to Fastener Caution in the Preface section.

8. Install the nuts that secure the auxiliary HVAC module to the vehicle.

   Tighten
   Tighten the nuts to 9 N·m (80 lb in).

9. Install the air conditioning lines (4, 5) and the nut (6) to the auxiliary HVAC module.

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

10. Install the heater lines (2, 3) to the auxiliary HVAC module at the underside of vehicle.
11. Install the right rear wheelhouse liner panel. Refer to Rear Wheelhouse Panel Liner Replacement.
12. Lower the vehicle.
13. Fill the engine coolant. Refer to Cooling System Draining and Filling.
14. Recharge the refrigerant to the system. Refer to Refrigerant Recovery and Recharging.
15. Leak test the fittings of the component using the J 39400-A .

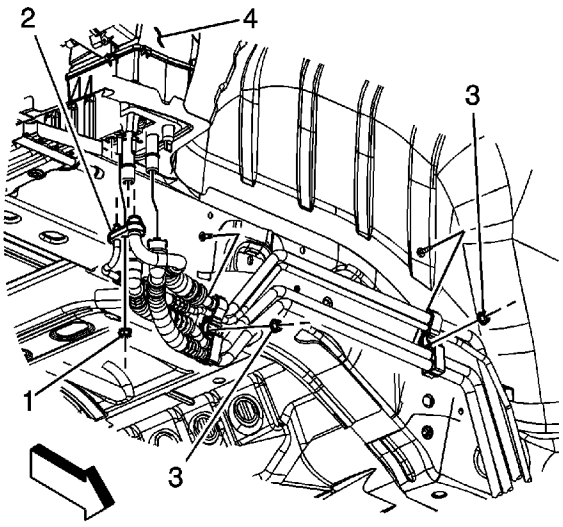
Auxiliary Air Conditioning Evaporator Tube Replacement

Tools Required

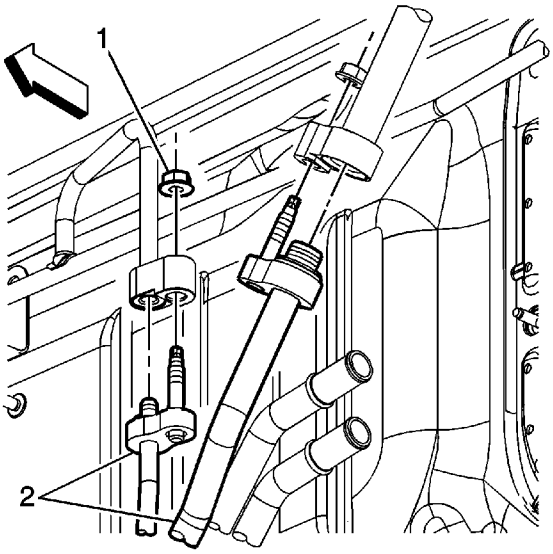
J 39400-A Halogen Leak Detector

Removal Procedure

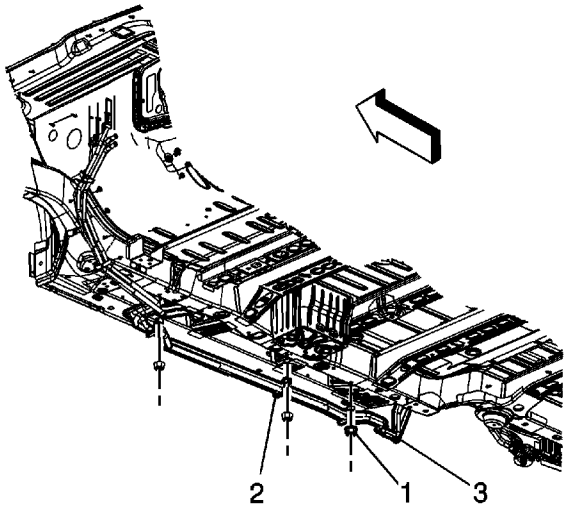
1. Recover the refrigerant from the system. Refer to Refrigerant Recovery and Recharging.
2. Raise the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Remove the right rear inner wheelhouse liner if necessary. Refer to Rear Wheelhouse Panel Liner Replacement.



4. Remove auxiliary evaporator tube nut (1) and pull downward to release the auxiliary A/C evaporator tubes (2) from the auxiliary HVAC module (4).
5. Remove auxiliary evaporator tube clip nuts (3) and release tubes from clips.
6. Remove air cleaner duct. Air Cleaner Outlet Duct Replacement.



7. Remove the retaining nuts (1) and the auxiliary A/C evaporator tubes (2) from the TXV tube and condenser tube.

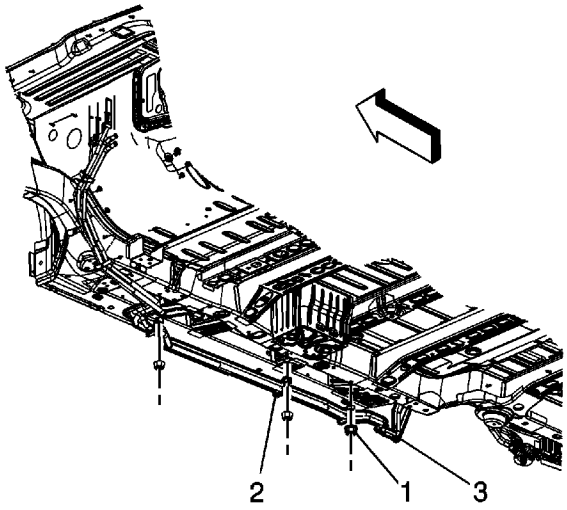


8. Remove the heater/A/C tubes retaining nuts (1) from the retaining studs and clips along the frame in four places.
9. Remove the auxiliary A/C evaporator tubes (3) from the clamps (2).
10. Remove the auxiliary A/C evaporator tubes from the vehicle.

Installation Procedure

Note: The replacement A/C and heater pipes are shipped in two sections and spliced together upon installation. Refer to Auxiliary Heater and Air Conditioning Pipe Replacement/Repair.

1. Install the auxiliary A/C evaporator tubes to the vehicle.

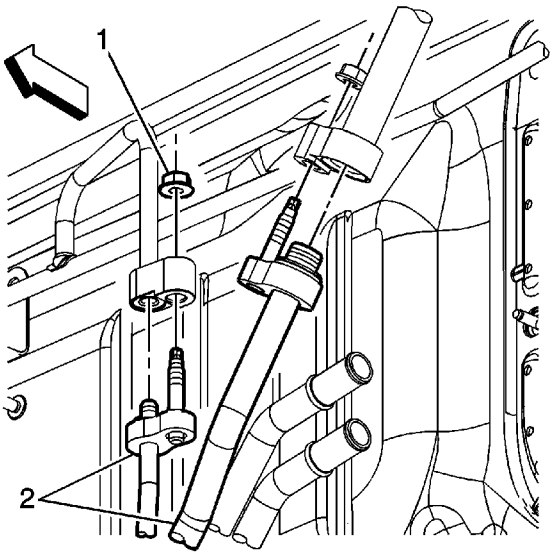


2. Install the auxiliary A/C evaporator tubes (3) to the clamps (2).

Caution: Refer to Fastener Caution in the Preface section.

3. Install the heater/A/C tubes retaining nut (1) to the retaining studs and clips (2) along the frame in four places.

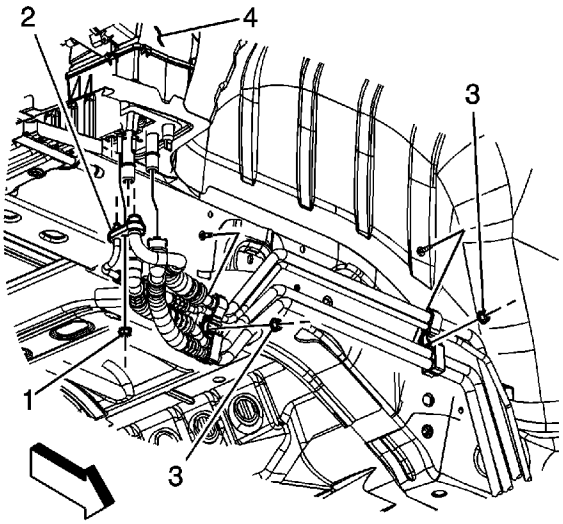
Tighten
Tighten the nut to 7 N·m (62 lb in).



4. Install the auxiliary A/C evaporator tubes (2) to the TXV tube and condenser tube and install the retaining nuts (1).

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

5. Install air cleaner duct. Air Cleaner Outlet Duct Replacement.



6. Install the auxiliary A/C evaporator tubes (2) to the HVAC module (4) and install retaining nut (1).

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

7. Install auxiliary evaporator tubes to retaining clips and install nuts (3) to secure.

Tighten
Tighten the nuts to 4 N·m (35 lb in).

8. Install the right rear inner wheelhouse liner if necessary. Refer to Rear Wheelhouse Panel Liner Replacement.
9. Lower the vehicle.
10. Recharge the refrigerant to the system. Refer to Refrigerant Recovery and Recharging.
11. Leak test the fittings of the component using the J 39400-A .

Auxiliary Heater and Air Conditioning Pipe Replacement/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.

You can obtain the various sections of line 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.

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 tool.
14. Install the J 41425-1 tool 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 tool body with a 3/8-inch breaker bar.

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

    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 tool 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 tool.
16. Install the J 41425-1 tool 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-inch 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 .