Fastener Tightening Specifications

Application	Specification	
	Metric	English
Air Cleaner Housing Assembly Retaining Bolts	12 N·m	106 lb in
Air Deflector Screws	2 N·m	18 lb in
A/C System Hose Connector Retaining Nut	33 N·m	24 lb ft
A/C Pressure Transducer	8 N·m	71 lb in
Blower Motor Screws	6 N·m	53 lb in
Blower Resistor Retaining Screws	6 N·m	53 lb in
Clutch Drive Shaft Bolt (SP10 Compressor)	12-15 N·m	106-133 lb in
Clutch Plate and Hub Assembly Nut (V5 Compressor)	17 N·m	13 lb ft
Compressor-to-Bracket Mounting Bolts	27 N·m	20 lb ft
Compressor Through Bolt	10 N·m	89 lb in
Condenser Pipe Connector Block-to-Receiver Dryer Nut	10 N·m	89 lb in
Expansion Valve Retaining Bolts	12 N·m	106 lb in
Heater/Air Distribution Case Assembly Retaining Screws	8 N·m	71 lb in
Liquid Pipe Connector Block-to-Condenser Retaining Bolt	14 N·m	10 lb ft
Liquid Evaporator Pipe Connector Block Retaining Nut	15 N·m	11 lb ft
Receiver Dryer Bolt	14 N·m	10 lb ft
Refrigerant Discharge Hose Support Clamp Bolt	7 N·m	62 lb in
Refrigerant Discharge Hose Connector Block Bolt	16 N·m	12 lb ft
Refrigerant Discharge Hose-to-Compressor Block Retaining Nut	33 N·m	24 lb ft
Refrigerant Suction Hose Connector Block Retaining Nut	15 N·m	11 lb ft
Upper Condenser Mount Nut	3 N·m	27 lb in

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Refrigerant System Capacities (V5 System)

Application	Specification	
	Metric	English
R-134a System	520±20 g RHD - 570±20 g	18±1 oz RHD - 20±1 oz
Refrigerant Oil in A/C System		
• Type	Union Carbide 488 Polyalkylene Glycol (PAG) Oil	
• Capacity	200 ml	6.8 oz

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Refrigerant System Capacities (SP10 System - 1.2L Engine)

Application	Specification	
	Metric	English
R-134a System	520±20 g RHD - 570±20 g	18±1 oz RHD - 20±1 oz
Refrigerant Oil in A/C System		
• Type	Union Carbide RL897 Polyalkylene Glycol (PAG) Oil (ISU513)	
• Capacity	150 ml	5.0 oz

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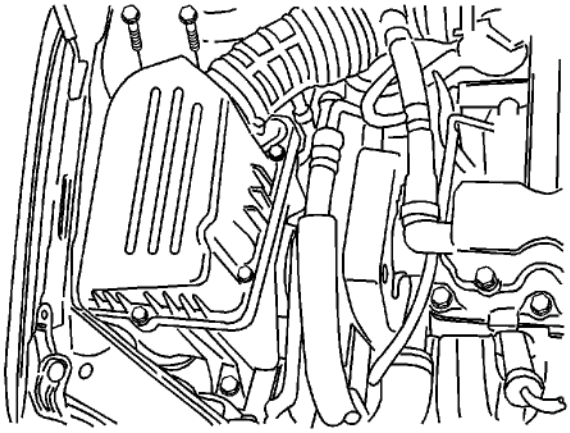
Refrigerant Tubes Replacement (North America)

Removal Procedure

Note: Left-hand Drive Shown, Right-Hand Drive Similar.

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the air cleaner housing bolts and the air filter housing assembly.

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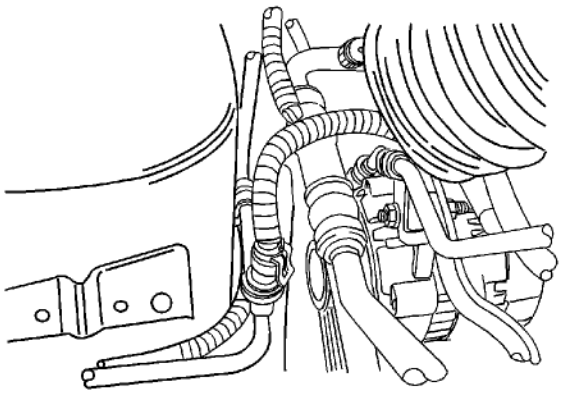
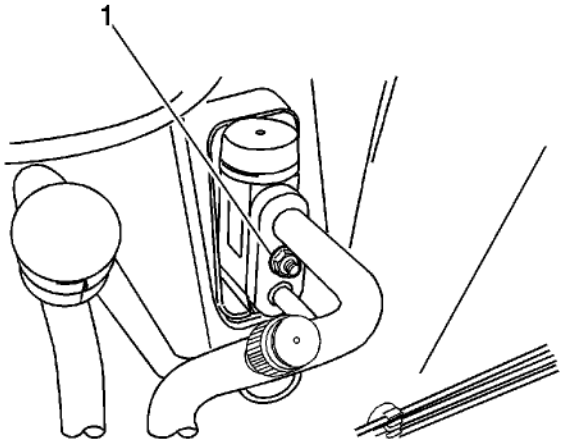


4. Disconnect the electrical connector at the pressure transducer.



5. Remove the evaporator pipe connector block retaining nut (1) at the fire wall.

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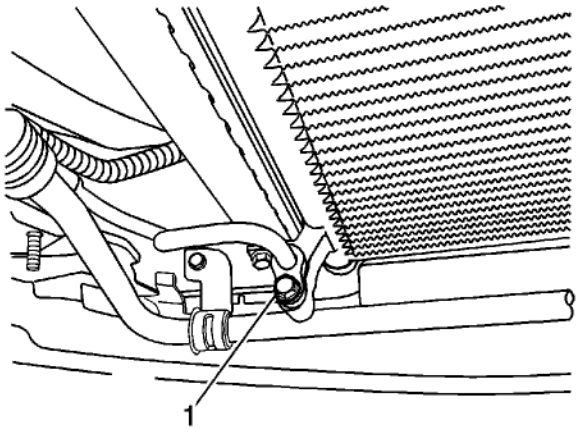
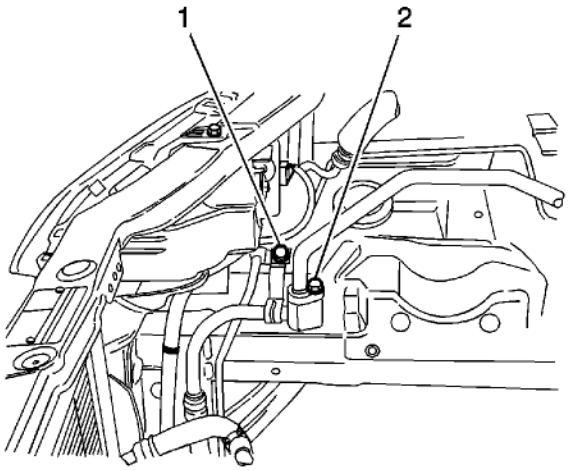


6. Remove the pipe connector block to condenser retaining bolt (1).



7. Remove the refrigerant suction hose to liquid pipe block retaining nut (2).
8. Remove the liquid evaporator pipe support clamp bolt (1).

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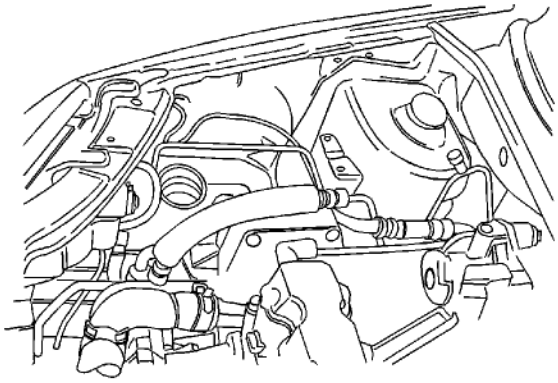
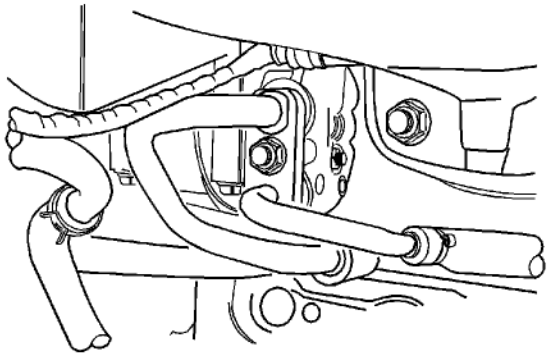


9. Remove the liquid evaporator pipe and the refrigerant suction hose.



10. Remove the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut.

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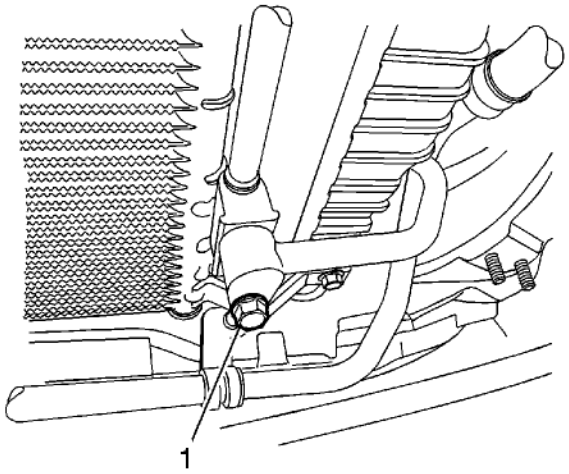
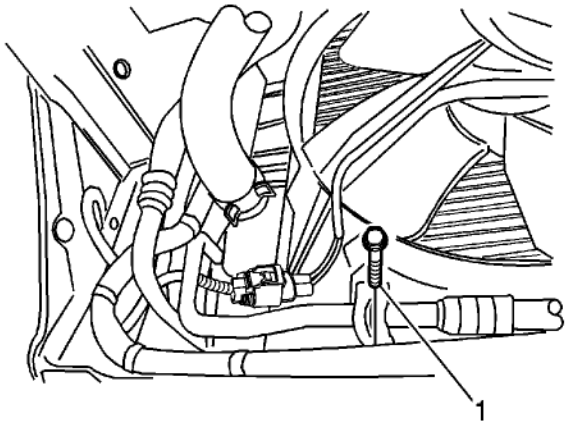


11. Remove the refrigerant discharge hose connector block bolt (1) at the condenser.



12. Remove the refrigerant discharge hose support clamp bolt (1).
13. Remove the refrigerant discharge hose.
14. Cap the opening at the receiver-dryer to prevent contamination.

Installation Procedure

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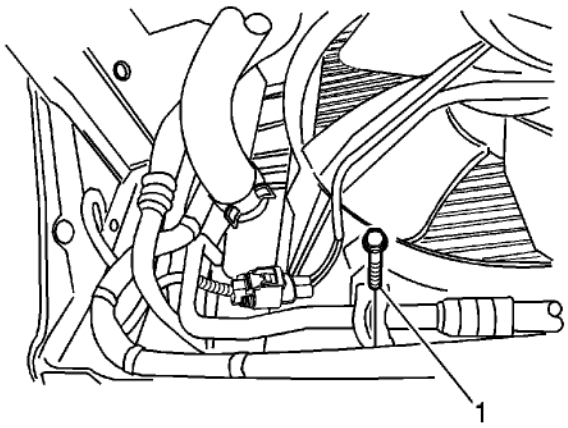
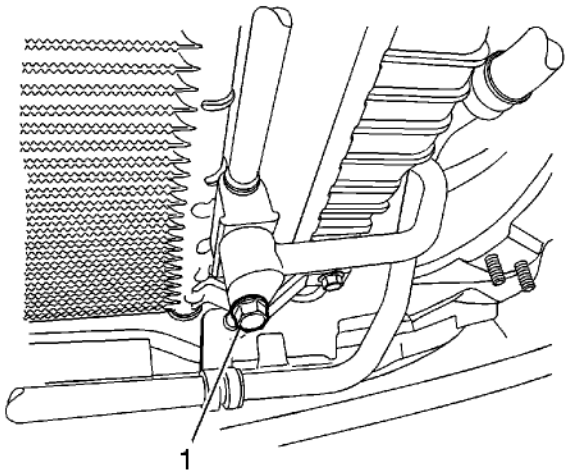


1. Position the refrigerant suction hose section into the vehicle.
2. Install a new O-ring on the connector block at the condenser.
3. Install a new O-ring at the liquid condenser to evaporator plate pipe connector block.

Caution: Refer to Fastener Caution in the Preface section.

4. Install the refrigerant discharge hose support clamp bolt (1).

Tighten
Tighten the refrigerant discharge hose support clamp bolt to 8 N·m (71 lb in).



5. Install the refrigerant discharge hose connector block bolt (1) at the condenser.

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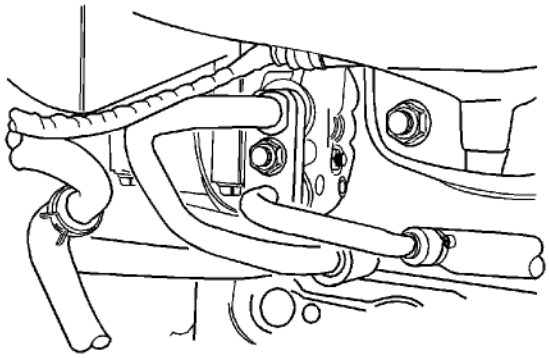
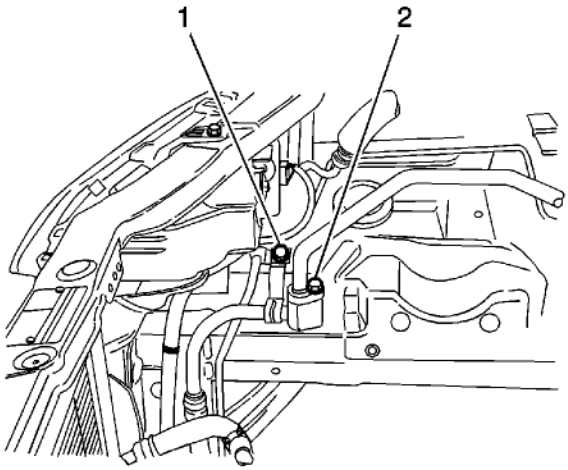
Tighten
Tighten the refrigerant discharge hose connector block bolt to 16 N·m (12 lb ft).



6. Install the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut.

Tighten
Tighten the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut to 33 N·m (24 lb ft).



7. Install the refrigerant suction hose connector block retaining nut (2).

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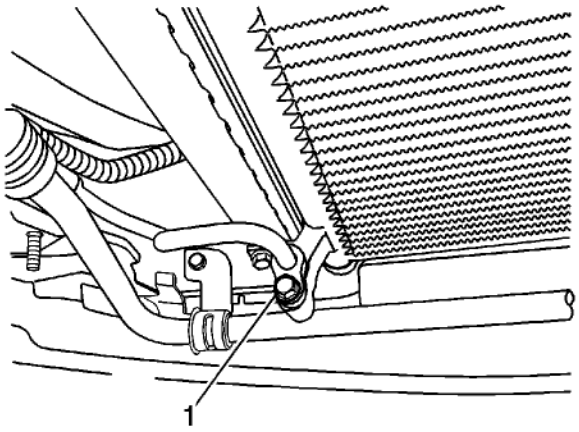
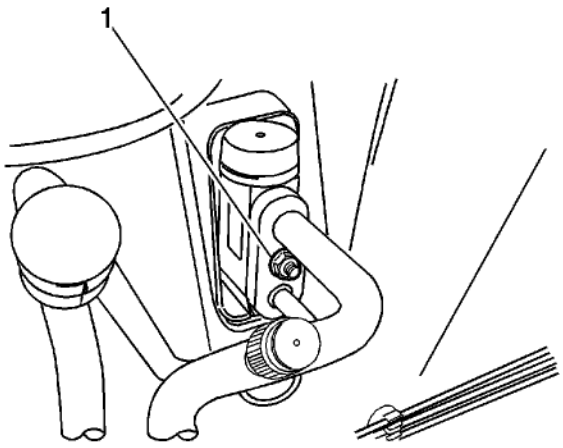
Tighten
Tighten the refrigerant suction hose connector block retaining nut to 15 N·m (11 lb ft).



8. Install the liquid pipe connector block to condenser retaining bolt (1).

Tighten
Tighten the liquid pipe connector block to condenser retaining bolt to 14 N·m (10 lb ft).



9. Install the liquid evaporator pipe connector block retaining nut (1) at the fire wall.

Tighten

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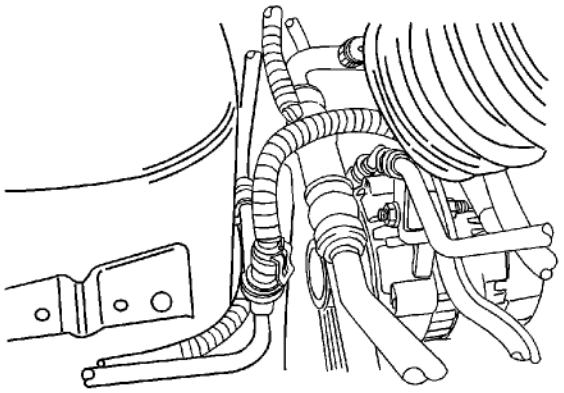
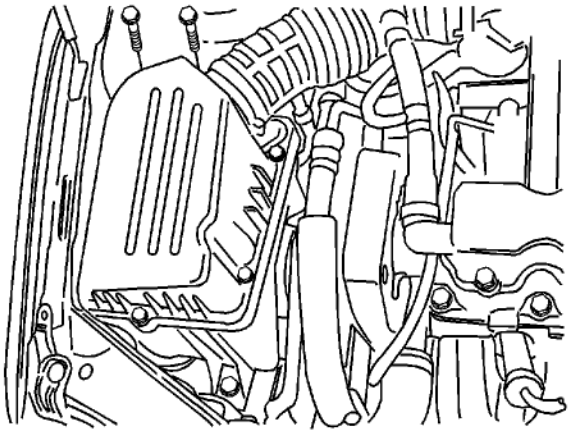
Tighten the liquid evaporator pipe connector block retaining nut to 15 N·m (11 lb ft).



10. Connect the electrical connector to the pressure transducer.



11. Install the air cleaner housing assembly with the retaining bolts.

Tighten
Tighten the air cleaner housing assembly retaining bolts to 12 N·m (106 lb in).

12. Connect the negative battery cable.
13. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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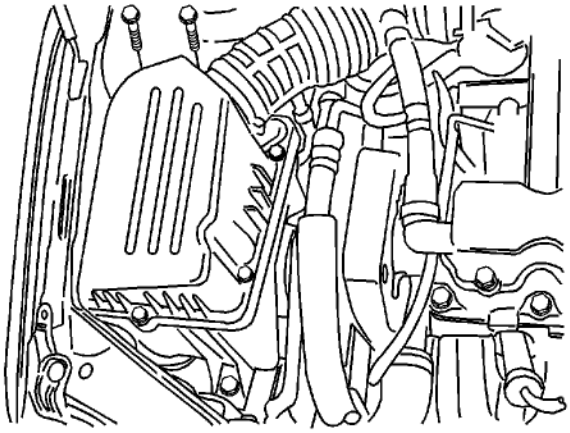
Refrigerant Tubes Replacement (Except North America)

Removal Procedure

Note: Left-hand Drive Shown, Right-Hand Drive Similar.

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the air cleaner housing bolts and the air filter housing assembly.

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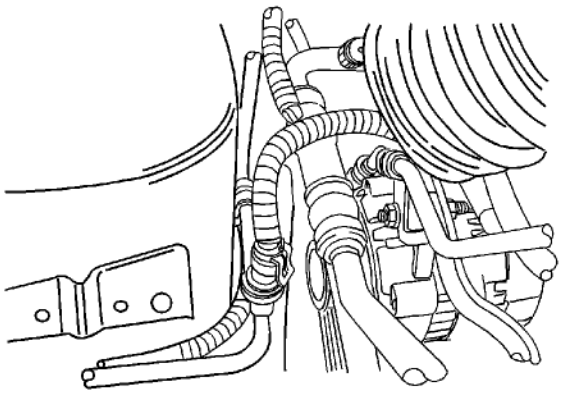
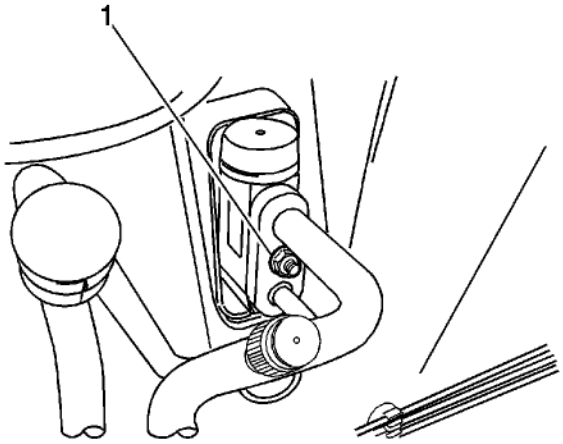


4. Disconnect the electrical connector at the pressure transducer.



5. Remove the evaporator pipe connector block retaining nut (1) at the fire wall.

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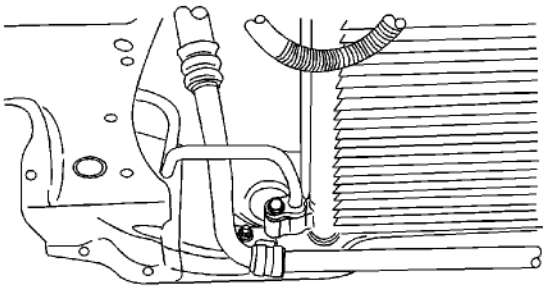
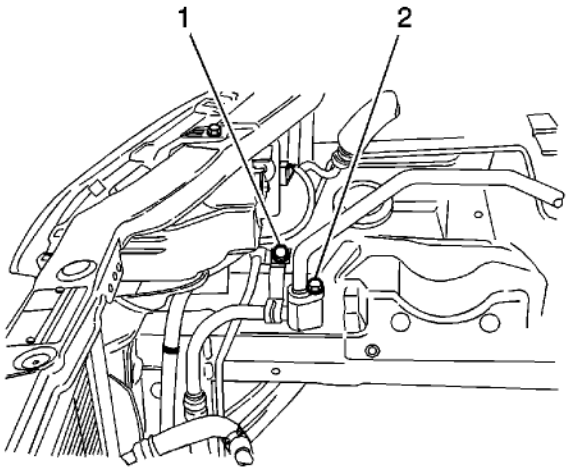


6. Remove the pipe connector block to condenser retaining bolt.



7. Remove the refrigerant suction hose to liquid pipe block retaining nut (2).
8. Remove the liquid evaporator pipe support clamp bolt (1).

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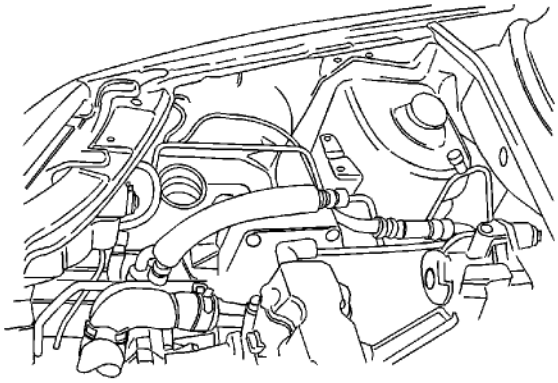
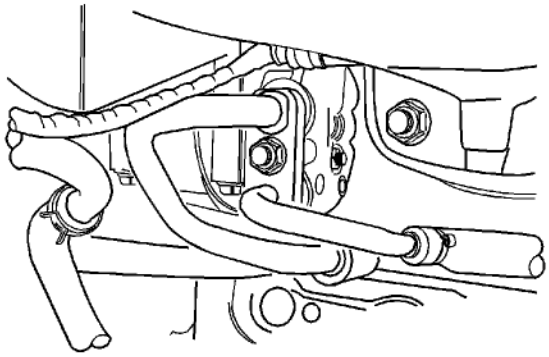


9. Remove the liquid evaporator pipe and the refrigerant suction hose.



10. Remove the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut.

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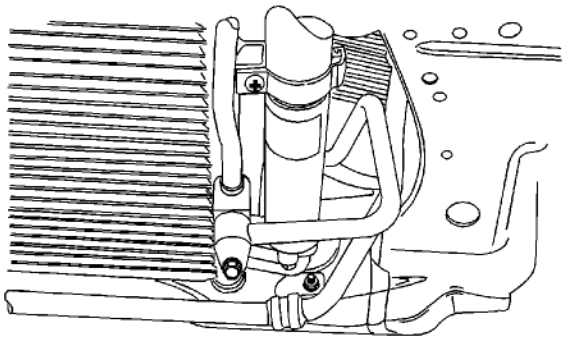
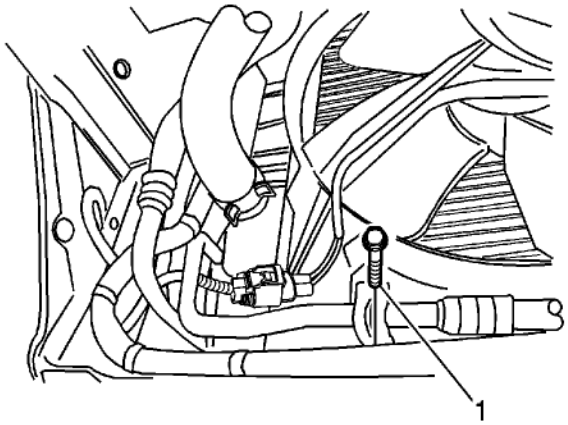


11. Remove the refrigerant discharge hose connector block bolt at the condenser.



12. Remove the refrigerant discharge hose support clamp bolt (1).
13. Remove the refrigerant discharge hose.
14. Cap the opening at the receiver-dryer to prevent contamination.

Installation Procedure

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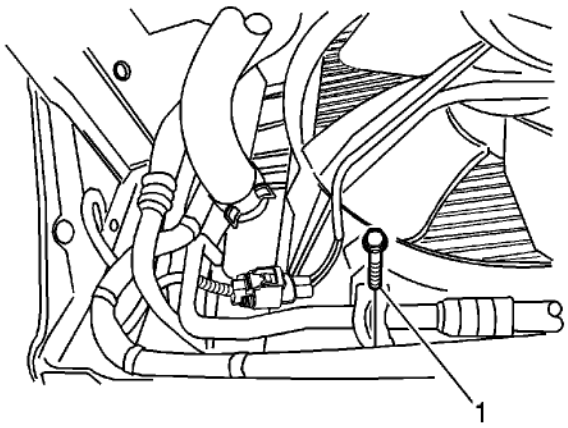
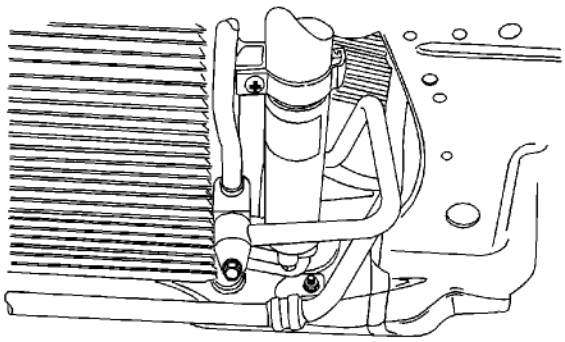


1. Position the refrigerant suction hose section into the vehicle.
2. Install a new O-ring on the connector block at the condenser.
3. Install a new O-ring at the liquid condenser to evaporator plate pipe connector block.

Caution: Refer to Fastener Caution in the Preface section.

4. Install the refrigerant discharge hose support clamp bolt (1).

Tighten
Tighten the refrigerant discharge hose support clamp bolt to 8 N·m (71 lb in).



5. Install the refrigerant discharge hose connector block bolt at the condenser.

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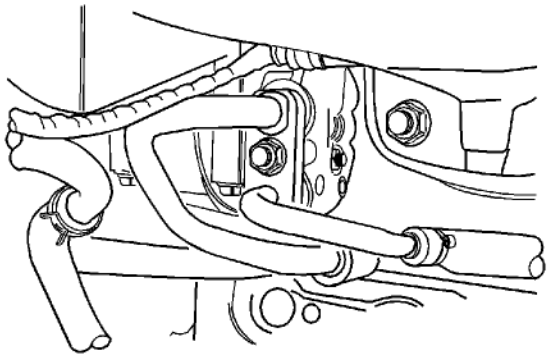
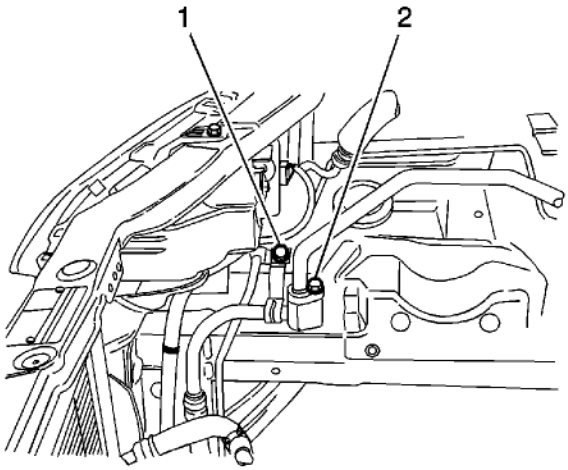
Tighten
Tighten the refrigerant discharge hose connector block bolt to 16 N·m (12 lb ft).



6. Install the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut.

Tighten
Tighten the refrigerant suction hose and the refrigerant discharge hose to compressor connector block retaining nut to 33 N·m (24 lb ft).



7. Install the refrigerant suction hose connector block retaining nut (2).

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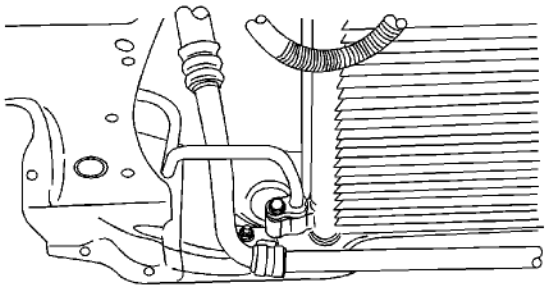
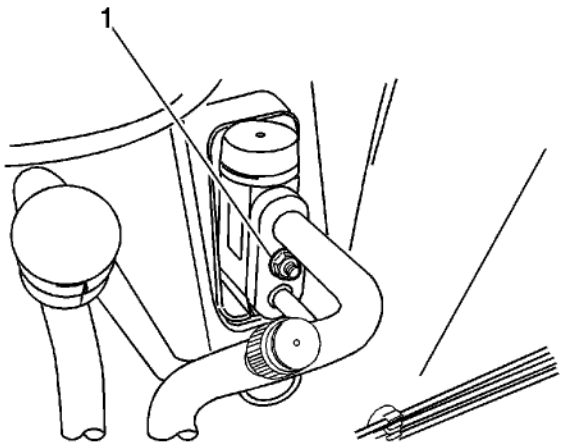
Tighten
Tighten the refrigerant suction hose connector block retaining nut to 15 N·m (11 lb ft).



8. Install the liquid pipe connector block to condenser retaining bolt.

Tighten
Tighten the liquid pipe connector block to condenser retaining bolt to 14 N·m (10 lb ft).



9. Install the liquid evaporator pipe connector block retaining nut (1) at the fire wall.

Tighten

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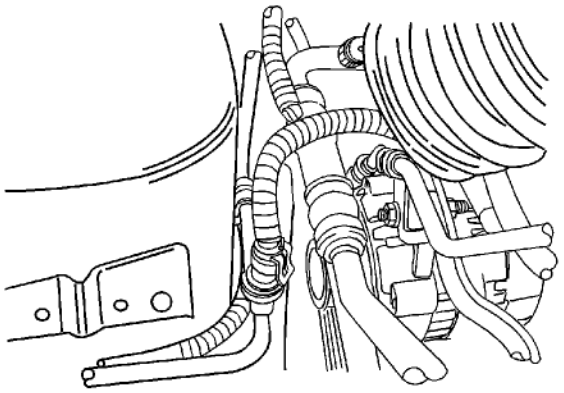
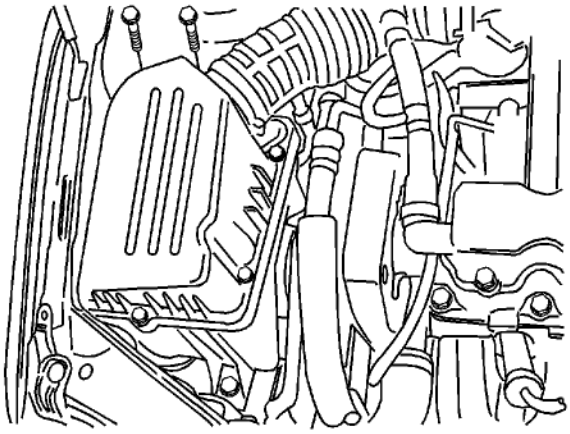
Tighten the liquid evaporator pipe connector block retaining nut to 15 N·m (11 lb ft).



10. Connect the electrical connector to the pressure transducer.



11. Install the air cleaner housing assembly with the retaining bolts.

Tighten
Tighten the air cleaner housing assembly retaining bolts to 12 N·m (106 lb in).

12. Connect the negative battery cable.
13. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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Refrigerant Recovery and Recharging

The efficient operation and life of the air conditioning system is dependent upon the chemical stability of the refrigeration system. When foreign materials, such as dirt, air, or moisture, contaminate the refrigeration system, they will change the stability of the refrigerant and the polyalkaline glycol (PAG) compressor oil. They will also affect the pressure-temperature relationship, reduce efficient operation, and can possibly cause interior corrosion and abnormal wear of moving parts.

Observe the following practices to ensure chemical stability in the system:

- Wipe away dirt or oil at and near any connection before opening that connection. This will reduce the chance of dirt entering the system.
- Cap, plug, or tape both sides of a connection as soon as possible after opening the connection. This will prevent the entry of dirt, foreign material, and moisture.
- Keep all tools clean and dry, including the manifold gage set and all replacement parts.
- Use a clean and dry transfer device and container to add PAG refrigerant oil. This will ensure that the oil remains as moisture-free as possible.
- Have everything you need ready to allow you to perform all operations quickly when opening an A/C system. Do not leave the A/C system open any longer than necessary.
- Evacuate and recharge any A/C system that has been opened.

All service parts are dehydrated and sealed before shipping. They should remain sealed until just before making connections. All the parts should be at room temperature before uncapping. This prevents condensation of moisture from the air from entering the system. Reseal all parts as soon as possible if the caps have been removed but the connections cannot be made promptly.

Warning: Use only refillable refrigerant tanks that are authorized for the charging station being used. The use of other tanks may cause personal injury or void the warranty. Refer to the Manufacturer's instructions for the charging station.

Warning: Refer to Protective Goggles and Glove Warning in the Preface section.

A charging station discharges, evacuates, and recharges an air conditioning system with one hook-up. Filtering during the recovery cycle together with filtering during the evacuation cycle ensures a supply of clean, dry refrigerant for A/C system charging.

- Never use the R-134a charging station on a system charged with R-12. The refrigerants and the oils are not compatible and must never be mixed in even the smallest amount. Mixing refrigerant residue will damage the equipment.
- Never use adapters which convert from one size fitting to another. This will allow contamination which may cause system failure.

Charging Station Setup and Maintenance

Refer to the manufacturer's instructions for all initial setup procedures and all maintenance procedures. There are many charging stations available. All perform the various tasks required to discharge the system and recover refrigerant, evacuate the system, add a measured amount of oil,

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and recharge an air conditioning system with a measured amount of refrigerant.

Control Panel Functions

A charging station will have controls and indicators to allow the operator to control and monitor the operation in progress. Refer to the manufacturer's instructions for details. These can be expected to include:

1. Main power switch--The main power switch supplies electrical power to the control panel.
2. Display--The display shows the time programmed for vacuum and the weight of the refrigerant programmed for recharging. Refer to the manufacturer's instructions for detailed programming information.
3. Low-side manifold gage--This gage shows the system's low-side pressure.
4. High-side manifold gage--This gage shows the system's high-side pressure.
5. Controls--This will contain the controls that control various operating functions.
6. Low-side valve--This valve connects the low side of the A/C system to the unit.
7. Moisture indicator--This indicator shows if the refrigerant is wet or dry.
8. High-side valve--This valve connects the high side of the A/C system to the unit.

Refrigerant Recovery

Note: Use only a refrigerant tank that is designed for the charging station in use. The unit's overfill limitation mechanism is calibrated specifically for use with this tank. The tank's valves are also specifically for this unit.

1. Attach the high-side hose with the quick disconnect coupler to the high-side fitting of the vehicle's A/C system.
2. Open the coupler valve after attachment.
3. Attach the low-side hose with the quick disconnect coupler to the low-side fitting of the vehicle's A/C system.
4. Open the coupler valve after attachment.
5. Check the high-side and the low-side gages on the unit's control panel in order to ensure that the A/C system has pressure. If there is no pressure, there is no refrigerant in the system to recover.

   Note: If there is no refrigerant in the system, do not continue with the recovery operation. This will draw air into the recovery tank.

6. Open both the high-side and the low-side valves.
7. Open the gas and the liquid valves on the tank.
8. Drain any oil that may be in the oil separator.
9. Close the oil drain valve.
10. Plug the unit into the proper voltage outlet.
11. Turn ON the main power switch.

    Caution: Never reuse refrigerant oil. Damage to the A/C system may result. Dispose of the refrigerant oil properly.

12. Begin the recovery process. Refer to the manufacturer's instructions for the charging station in use.

    Note: Some A/C system PAG lubricating oil may be removed with the refrigerant during recovery. The amount of oil removed varies. A charging station separates the oil from the

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refrigerant and allows a means of determining how much oil was removed. Replace the same amount of oil when you recharge the system. Refer to the manufacturer's instructions for the charging station in use.

13. Wait 5 minutes. Check the control panel low-side gage. If the A/C has maintained vacuum, the recovery is complete.

    Note: If the control indicator shows that the refrigerant tank is full during the recovery process and the unit shuts OFF, install an empty unit tank to store the refrigerant needed for steps later in the procedure. Do not use any other type of tank.

14. There is more refrigerant in the system if the low side gage pressure rises above zero. Recover the additional refrigerant. Repeat this step until the system maintains vacuum for 2 minutes.

Evacuation

The unit tank must contain a sufficient amount of R-134a refrigerant for charging. Check the amount of refrigerant in the tank. If there is less than 3.6 kg (8 lbs) of refrigerant, add new refrigerant to the tank. Refer to the manufacturer's instructions for adding refrigerant.

1. Verify that the high side and the low side hoses are connected to the A/C system. Open both the high side and the low side valves on the unit's control panel.
2. Open both the gas and the liquid valves on the tank.

   Note: Refer to the manufacturer's instructions for the charging station in use. It is necessary to evacuate the system before recharging it with new or recycled refrigerant.

3. Start the vacuum pump and begin the evacuation process. Non-condensable gases, mostly air, are automatically vented from the tank during the recycling process. You may hear the pressure being released.

   Note: Change the vacuum pump oil frequently. Refer to the manufacturer's instructions for the charging station in use.

4. Check for leaks in the system. Refer to the manufacturer's instructions for the charging station in use.

A/C System Oil Charge Replenishing

Any oil removed from the A/C system during the recovery process must be replenished at this time.

1. Use the correct graduated bottle of PAG oil for the R-134a system.
   - Keep the oil bottles tightly capped at all times to protect the oil from moisture and contamination.
   - Never open the oil injection valve while there is positive pressure in the A/C system. This will result in oil blow-back through the bottle vent. You must have A/C system vacuum for this operation.
   - Never let the oil level drop below the pick-up tube while charging or replenishing the system. This will allow air into the A/C system.
2. Refer to the manufacturer's instructions for the charging station in use. Add the proper

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amount of PAG oil to the system.
3. Close the valve when the required oil charge has been pulled into the system.

Charging

Note: Evacuate the air conditioning system before charging.

1. Close the low-side valve on the control panel.
2. Open the high-side valve on the control panel.
3. Refer to the manufacturer's instructions for the charging station in use.
4. Enter the amount of refrigerant needed to charge the A/C. Be sure that you are using the correct system of measurement (kg, lb).
5. Begin the charging process.

Successful Transfer Complete

1. Close the high-side valve on the unit's control panel. Both valves should be closed.
2. Start the vehicle and the A/C system.
3. Let the engine run until the readings on the high-side and low-side gages stabilize.
4. Compare the readings to the system specifications.
5. Check the evaporator outlet temperature to ensure that the A/C system is operating within the system specifications.
6. Keep the A/C running.
7. Close the high side coupler valve.
8. Disconnect the high-side hose from the vehicle.
9. Open the high-side and low-side valves on the control panel.
10. The system will quickly draw in refrigerant from both hoses through the low-side hose.
11. Close the low-side coupler valve.
12. Disconnect the low-side hose from the vehicle.

Unsuccessful Transfer

Sometimes the total charge does not transfer into the A/C system. There are 2 reasons why this may occur.

1. The pressure in the unit's tank and the pressure in the A/C system are roughly equal. This will cause the transfer to proceed too slowly. Refer to the manufacturer's instructions for the charging station in use.
2. There was not enough refrigerant in the unit's tank to transfer the full charge. It is necessary to recover the partial charge of refrigerant from the vehicle and evacuate and charge the A/C system again. Refer to the manufacturer's instructions for the charging station in use.

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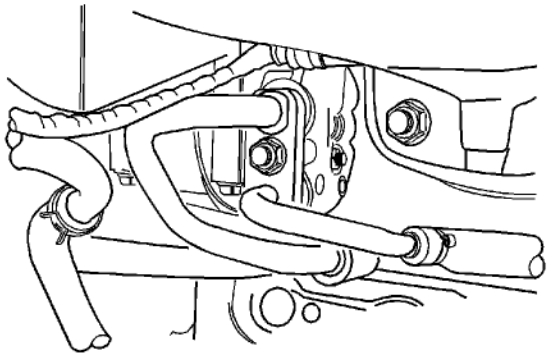
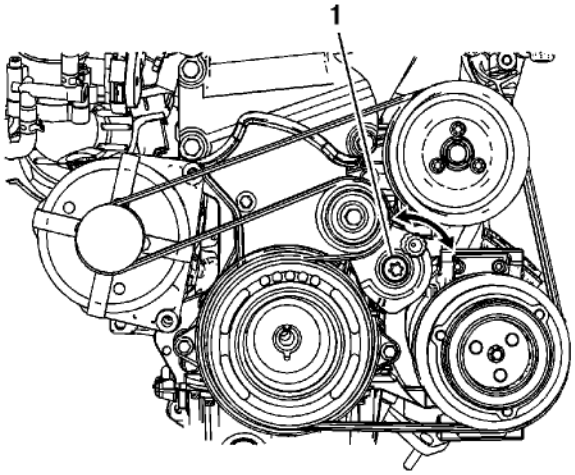
Air Conditioning Compressor Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the compressor A/C hose assembly connector block fitting nut.
4. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle.
5. Disconnect the electrical connector at the compressor.



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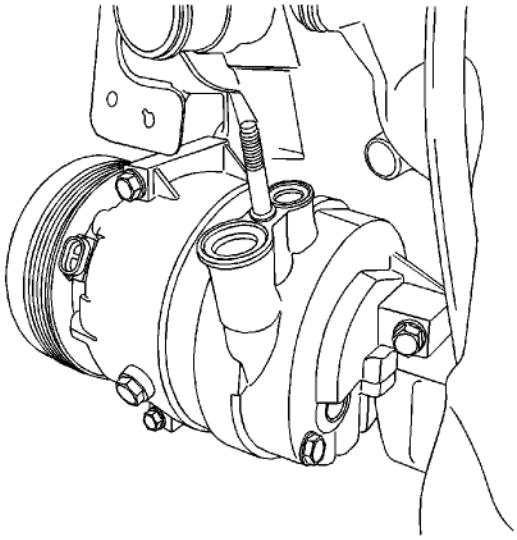
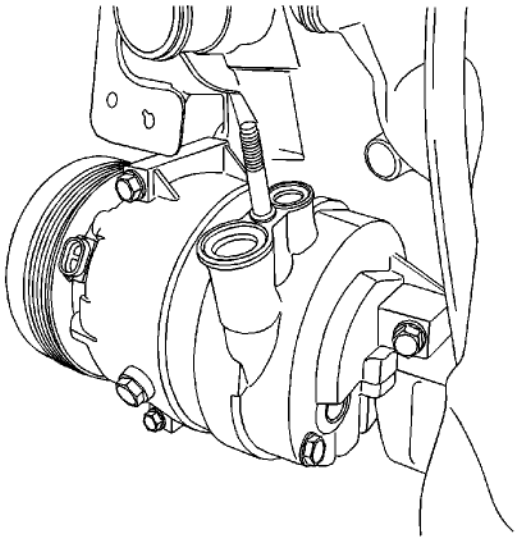
6. Remove serpentine accessory drive belt.



7. Remove the A/C compressor-to-bracket bolts.
8. Remove the compressor.
9. Drain the oil from the compressor into a container. Measure the amount of oil drained and then discard the used oil.

Installation Procedure



1. Add oil to the new compressor. Use the exact amount of oil that you drained from the old

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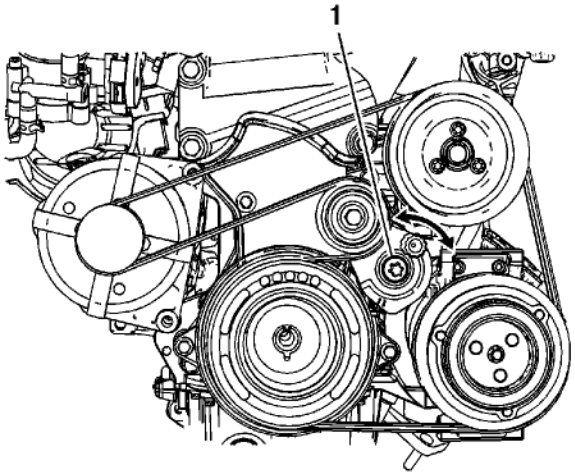
compressor.
2. Install the compressor.

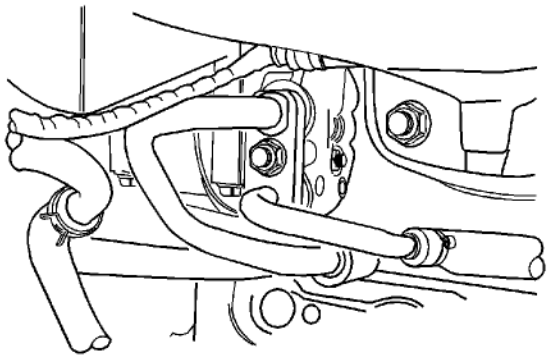
Caution: Refer to Fastener Caution in the Preface section.

3. Install the compressor-to-bracket mounting bolts.

Tighten
Tighten the compressor bracket bolt to 27 N·m (20 lb ft).



4. Install the serpentine accessory drive belt.
5. Lower the vehicle.



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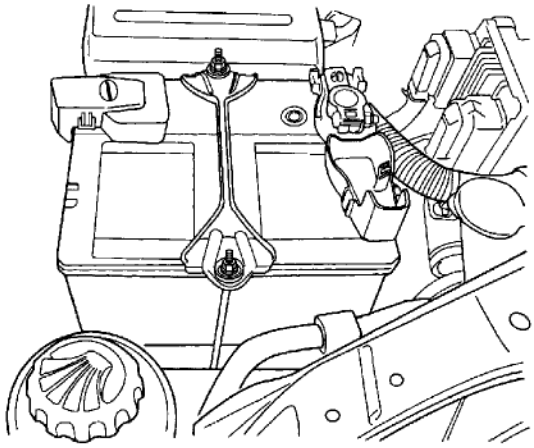
6. Install new O-ring to the A/C hose assembly connector block fitting.
7. Install the compressor hose assembly connector block fitting and tighten the retaining nut.

Tighten
Tighten the A/C system hose connector retaining nut to 33 N·m (24 lb ft).



8. Connect the electrical connector at the compressor.
9. Connect the negative battery cable.
10. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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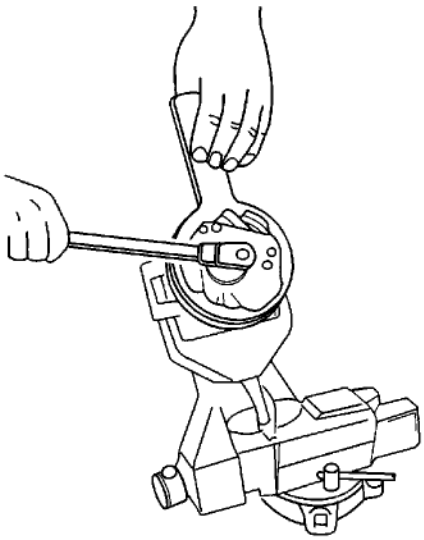
Compressor Clutch Plate and Hub Assembly Removal (V5 Compressor)

Tools Required

- J 33013-B Hub and Drive Plate Remover/Installer
- J 33027-A Clutch Hub Holding Tool
- J 42428 Compressor Holding Fixture

Disassembly Procedure



1. Remove the compressor. Refer to Air Conditioning Compressor Replacement .
2. Install the J 42428 to the compressor and hold the compressor holding fixture using a bench vise.
3. Use the J 33027-A to keep the clutch drive plate and the hub assembly from turning. Remove the shaft nut.

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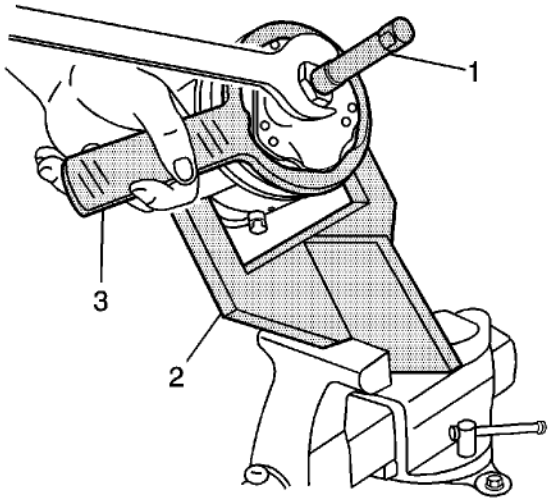

4. Thread the J 33013-B (1) into the hub. Hold the body of the remover with a wrench and turn the center screw into the remover body to remove the clutch drive plate and hub assembly.
5. Remove the clutch hub key. Retain the key for assembly (3).

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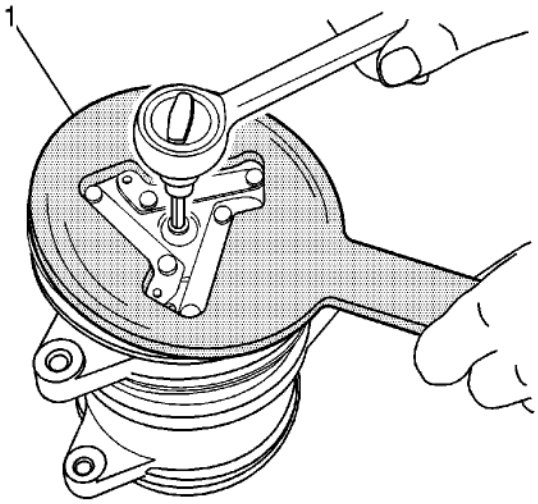
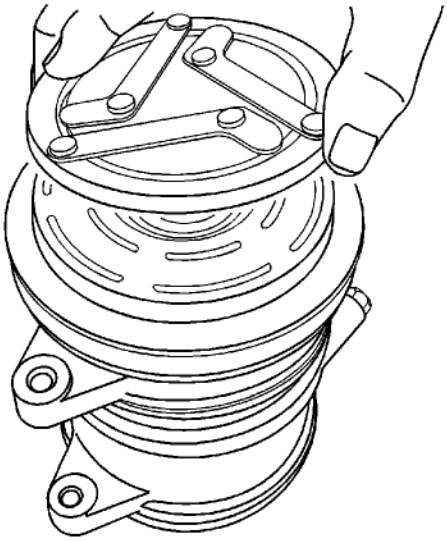
Compressor Clutch Plate and Hub Assembly Removal (SP10 Compressor)

Tools Required

DW-610-010 Clutch Hub Holding Tool



1. Remove the compressor. Refer to Air Conditioning Compressor Replacement .
2. Use the DW-610-010 clutch hub holding tool (1) to keep the clutch drive assembly from turning.
3. Remove the shaft bolt.



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4. Pull the clutch drive assembly up by hand.

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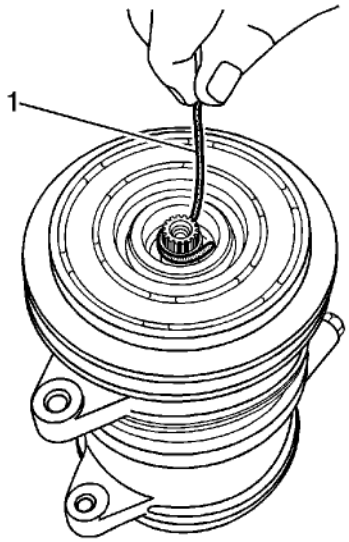
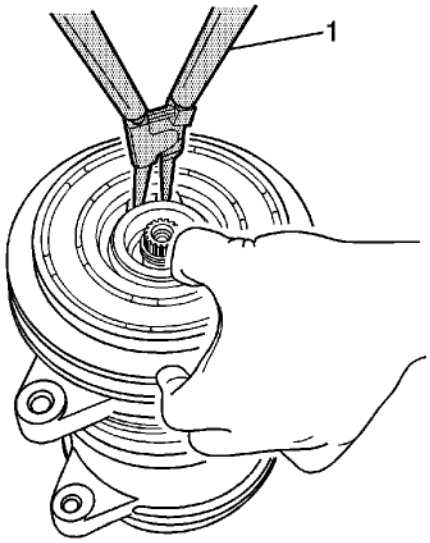
Clutch Rotor and Bearing Removal (SP10 Compressor)

Tools Required

J 9553-01 O-Ring Remover



1. Remove the clutch and drive assembly. Refer to Compressor Clutch Plate and Hub Assembly Removal .
2. Remove the shims using the J 9553-01 O-ring remover.



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3. Remove the pulley ring retainer using the snap ring pliers (1).
4. Pull the pulley groove with both hands until the pulley and bearing assembly is free.

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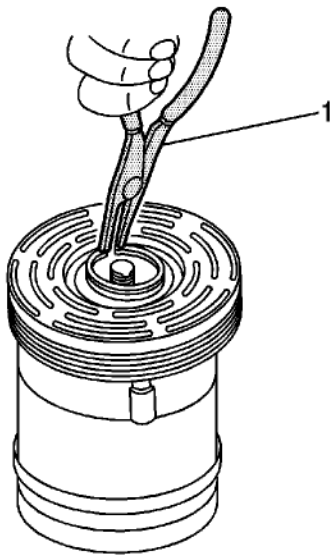
Clutch Rotor and Bearing Removal (V5 Compressor)

Special Tools

- J 6083 Snap Ring Pliers
- J 8092 Driver Handle
- J 9398-A Bearing Remover
- J 33020 Pulley Puller

Disassembly Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the compressor. Refer to Air Conditioning Compressor Replacement.
4. Remove the clutch drive plate and hub assembly. Refer to Compressor Clutch Plate and Hub Assembly Removal.

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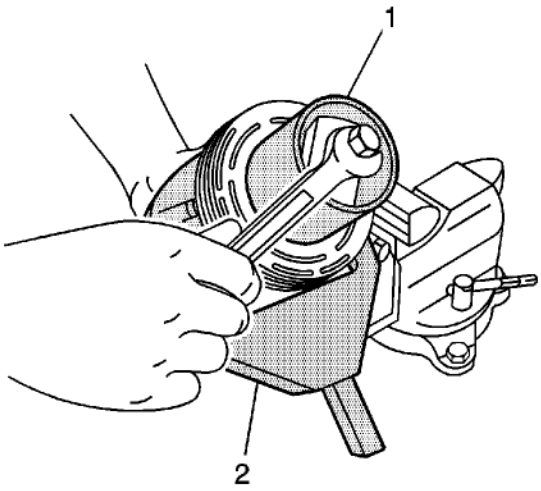
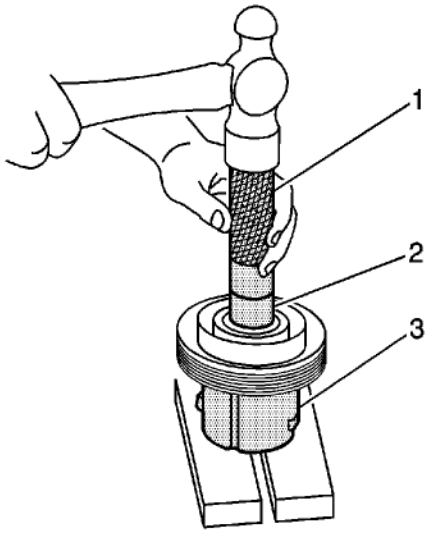


5. Remove the pulley rotor and the bearing assembly retaining ring using the J 6083 .
6. Install the J 33020 (1) into the inner circle of slots in the pulley rotor. Turn the J 33020 (1) clockwise in the slots to engage the puller tangs with the segments between the slots in the rotor.
7. Hold the J 33020 (1) in place and tighten the puller bolt against the compressor shaft to remove the pulley rotor and the bearing assembly.



Caution: The rotor hub must be properly supported to prevent damage to the pulley rotor during bearing removal.

8. Remove the puller bolt from the J 33020 . With the puller tangs still engaged in the rotor slots, invert the assembly onto a solid flat surface or blocks.

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Caution: When removing the bearing, it is not necessary to remove the staking in front of the bearing. It will be necessary to file away the old stake metal for proper clearance for the new bearing to be installed into the rotor bore or the bearing may be damaged.

9. Drive the bearing out of the rotor hub with the J 9398-A (2) and the J 8092 (1).

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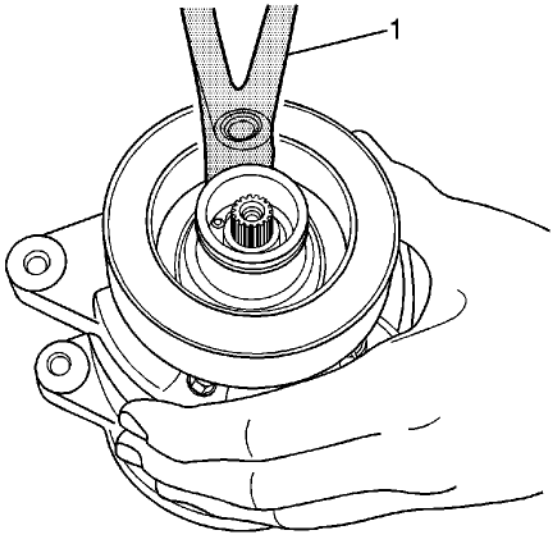
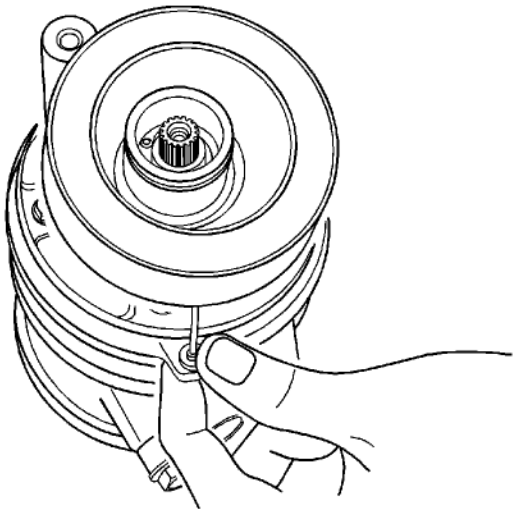
Air Conditioning Clutch Coil Removal (SP10 Compressor)



1. Remove the clutch and drive assembly. Refer to Compressor Clutch Plate and Hub Assembly Removal .
2. Remove the pulley and bearing assembly. Refer to Clutch Rotor and Bearing Removal .
3. Remove the coil retainer using the snap ring pliers (1).



4. Remove the coil and housing assembly.

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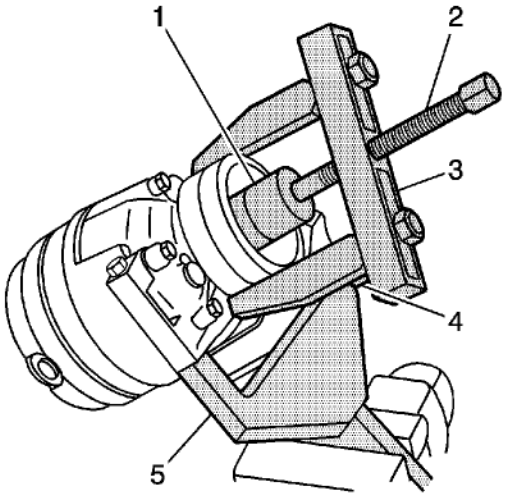
Air Conditioning Clutch Coil Removal (V5 Compressor)

Special Tools

- J 8433-1 Puller Crossbar
- J 8433-3 Forcing Screw
- J 33023-A Puller Pilot
- J 33025 Clutch Coil Puller Legs

Disassembly Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the compressor. Refer to Air Conditioning Compressor Replacement.
4. Remove the clutch plate and hub assembly. Refer to Compressor Clutch Plate and Hub Assembly Removal.
5. Remove the clutch rotor and bearing. Refer to Clutch Rotor and Bearing Removal.
6. Mark the clutch coil terminal location on the compressor housing.
7. Install the J 33023-A (1) on the compressor housing. Also install the J 8433-1 (3) with the J 33025 (4).
8. Tighten the J 8433-3 (2) against the J 33023-A (1) to remove the clutch coil.

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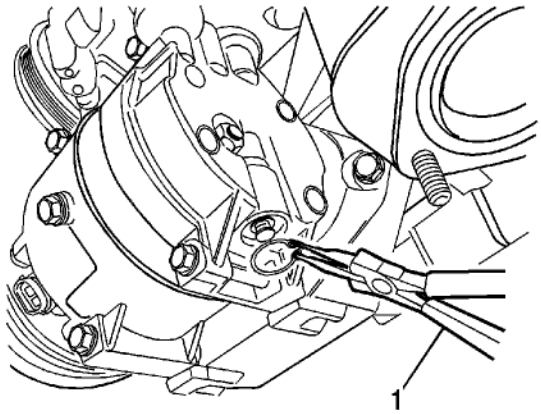
Compressor Control Valve Assembly Removal

Tools Required

J 5403 Snap Ring Pliers



1. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging .
2. Remove the control valve retaining ring using the J 5403 (1).
3. Remove the control valve assembly.

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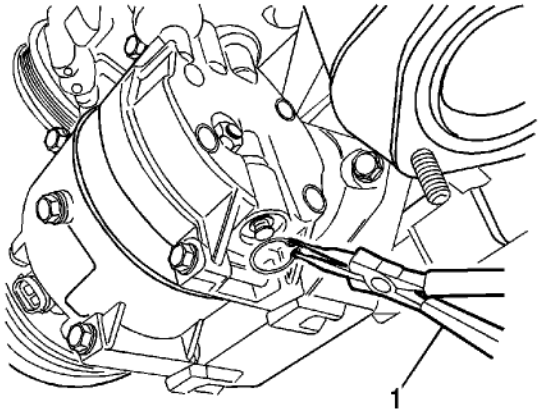
Compressor Control Valve Assembly Install



Tools Required

J 5403 Snap Ring Pliers

1. Install the control valve assembly.
2. Install the control valve retaining ring using J 5403 (1).
3. Recover the refrigerant. Refet to Refrigerant Recovery and Recharging .

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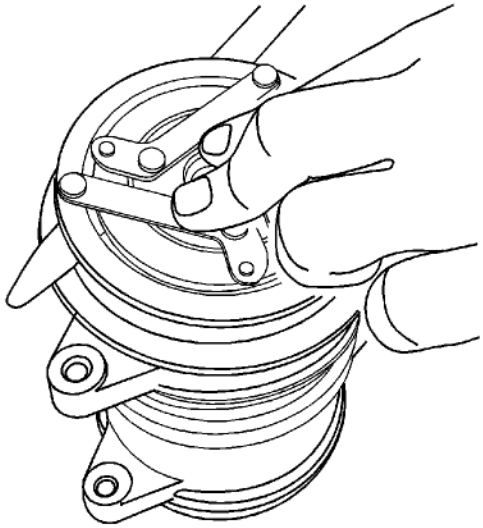
Compressor Clutch Plate / Hub Assembly Install (SP10 Compressor)



1. Place the clutch drive assembly to match the shaft serration with the drive hub serration.
2. Gently insert the clutch drive assembly.

Important: If the air gap is correct, proceed to the next step. If not, change the shim to meet the specified air gap.

3. Check the air gap with the feeler gage roughly by pressing the clutch drive assembly before fastening the shaft bolt.

Specification
0.3-0.7 mm (0.012-0.028 in)

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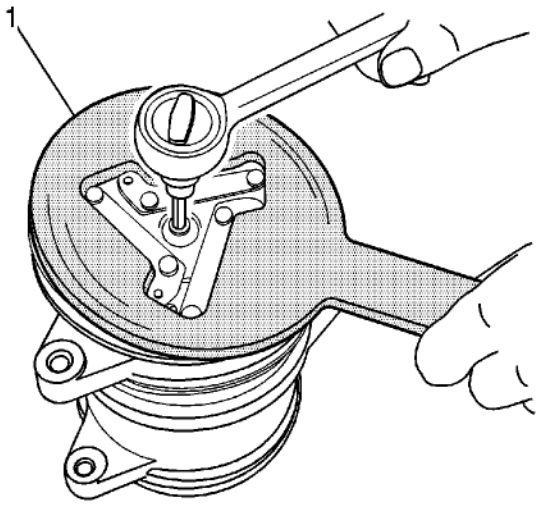

4. Use the DW-610-010 clutch hub holding tool (1) to keep the clutch drive assembly from turning.
5. Place the washer before fastening the shaft bolt.

Tighten
Tighten the shaft bolt to 12-15 N·m (106-133 lb in).

6. Recheck the air gap with the feeler gage.

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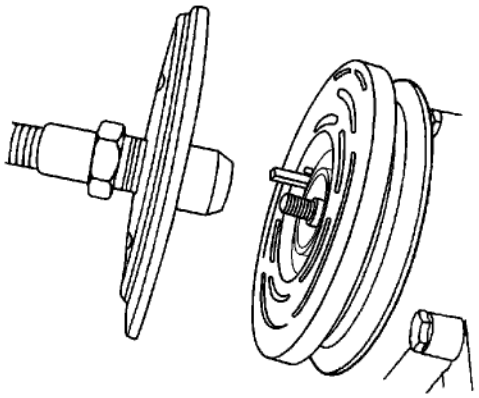
Compressor Clutch Plate / Hub Assembly Install (V5 Compressor)

Special Tools

- J 33013-B Hub and Drive Plate Remover/Installer
- J 33022 Shaft Nut Socket
- J 33027-A Clutch Hub Holding Tool
- J 42428 Compressor Holding Fixture



1. Install the clutch hub key into the hub keyway. Allow the key to project approximately 3.2 mm (1/8 in) out of the keyway. The hub key is curved slightly to provide an interference fit in the hub key groove.
2. Be sure the frictional surface of the clutch plate and the pulley rotor are clean before installing the clutch drive plate and the hub assembly.

   Caution: Do not drive or pound on the clutch hub or the shaft. Internal damage to the compressor may result.

3. Align the clutch hub key with the shaft keyway. Place the clutch drive plate and hub assembly onto the compressor shaft.

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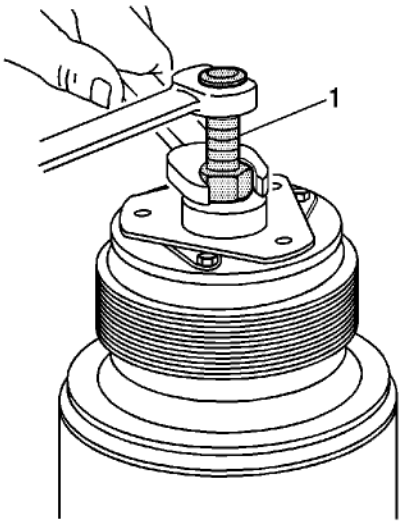
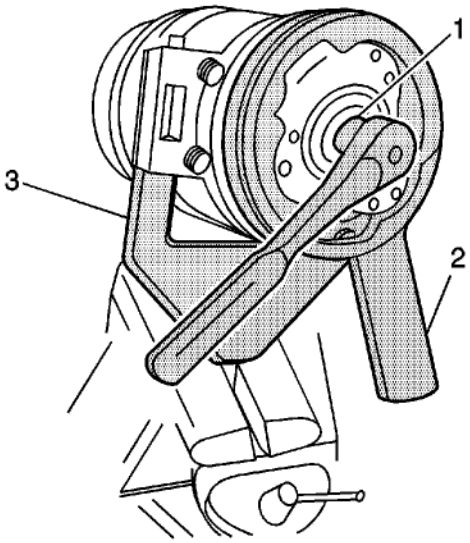


Note: If the center bolt is threaded fully onto the end of the compressor shaft, or if the body of the J 33013-B (1) is held and the center bolt is rotated, the key will wedge and could break the clutch drive plate and the hub assembly.

4. Remove the J 33013-B (1) center bolt and reverse the body direction on the center bolt. The body of the J 33013-B (1) should be backed off sufficiently to allow the center bolt to be threaded onto the end of the compressor shaft.
5. Install the J 33013-B (1) and the bearing onto the clutch drive plate. Thread the center bolt onto the compressor shaft.
6. Hold the center bolt with a wrench. Tighten the hex portion of the J 33013-B (1) body to press the hub onto the shaft. Tighten the body several turns.
7. Remove the J 33013-B (1) and check to see that the clutch hub key is still in place in the keyway before installing the clutch drive plate and the hub assembly to its final position. The air gap between frictional surfaces of the clutch drive plate and the clutch pulley rotor should be 0.38-0.64 mm (0.015-0.025 in).



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8. Remove the J 33013-B . Check for proper positioning of the clutch hub key. It should be even or slightly above the clutch hub.

   Caution: Refer to Fastener Caution in the Preface section.

9. Install the shaft nut. Hold the clutch drive plate and the hub assembly with the J 33027-A (2). Use the J 33022 (1) and tighten the nut against the compressor shaft shoulder.

   Tighten
   Tighten the clutch plate and hub assembly nut to 17 N·m (13 lb ft).

10. Spin the pulley rotor by hand to verify that the pulley is not rubbing the clutch drive plate.
11. Remove the compressor from the bend vise and remove the J 42428 (3) on the compressor.
12. Install the compressor. Refer to Air Conditioning Compressor Replacement.

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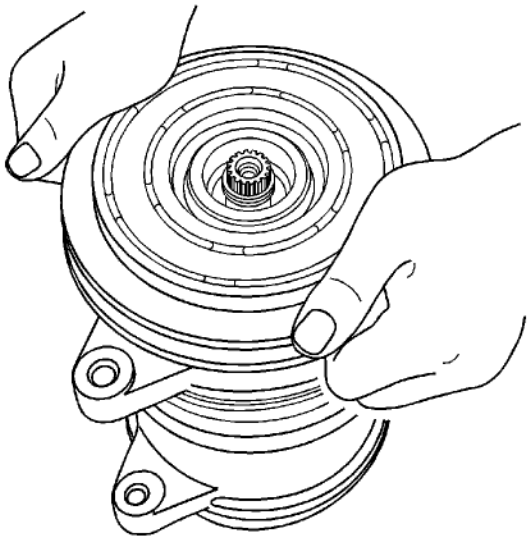
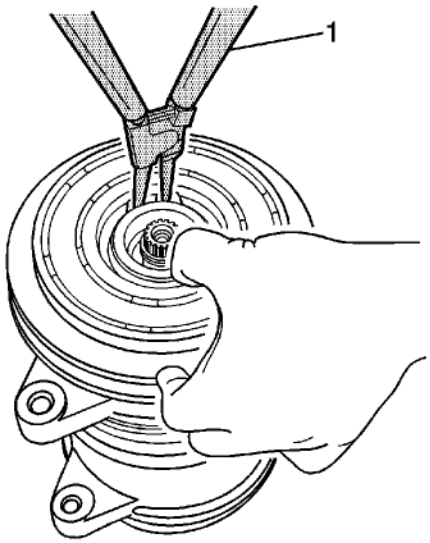
Clutch Rotor and/or Bearing Install (SP10 Compressor)



1. Locate the rotor pulley on the front head housing squarely and precisely.
2. Insert the pulley and bearing assembly by gradually increasing the force on the pulley surface.

Important: Ensure pulley is fully seated.

3. Check for proper installation of the pulley by spinning it.



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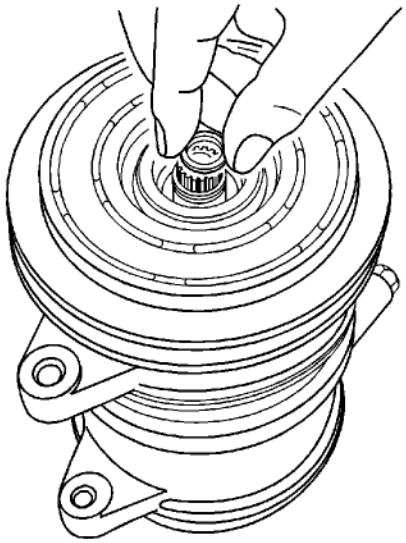
Important: Care must be taken to avoid damage to the bearing seal when assembling.

Important: Sharp edge of the retainer should be placed on its upper side during installation. Upon completion, squeeze the retainer to ensure it is well installed.

4. Install the retainer ring using the snap ring pliers (1).



5. Place the shim(s) on the shaft shoulder. Determine type and quantity of shim(s) to use to make an air gap of the specified size.

   Specification
   0.3-0.7 mm (0.012-0.028 in)

6. Install the clutch and drive assembly. Refer to Compressor Clutch Plate/Hub Assembly Install .

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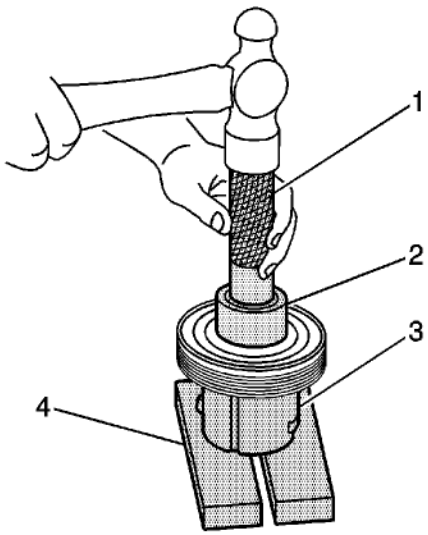
Clutch Rotor and/or Bearing Install (V5 Compressor)

Special Tools

- J 33017 Pulley Rotor and Bearing Assembly Installer
- J 33019 Bearing Staking Guide/Bearing Staking Pin
- J 33023-A Puller Pilot
- J 42428 Compressor Holding Fixture
- J 6083 Snap Ring Pliers
- J 8092 Driver Handle
- J 8433-1 Puller Crossbar
- J 8433-3 Forcing Screw
- J 9481-A Bearing Installer



Caution: Do not support the rotor by resting the pulley rim on a flat surface during the bearing installation or the rotor face could be damaged.

1. Invert the pulley rotor and place it on a support block to fully support the rotor hub during bearing installation.
2. Align the new bearing squarely in the pulley bore. Use the J 9481-A (2) and the J 8092 (1), drive the bearing fully into the pulley bore.

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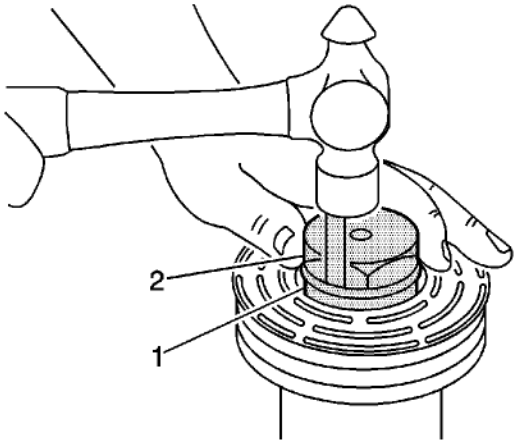
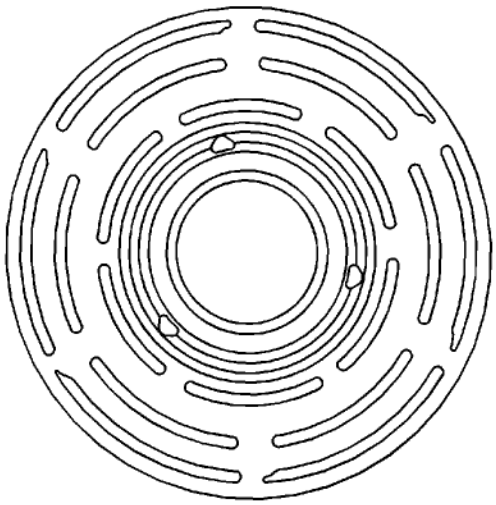


3. Place the J 33019 (1) and the J 33019 (2) in the rotor hub core. Shift the rotor and bearing assembly on the block to give full support to the hub under the staking pin location. A heavy-duty rubber band may be used to hold the staking tool pin in the guide. The pin should be properly positioned in the guide after each impact on the pin.



4. Strike the pin with a hammer until a metal stake, similar to the original, is formed down to, but not touching, the bearing. The metal stake should not contact the outer race of the bearing to avoid the possibility of distorting the outer race. Stake in 3 places 120° apart.

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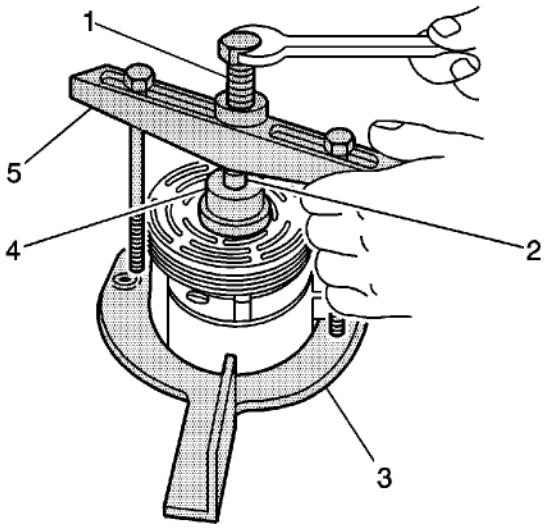
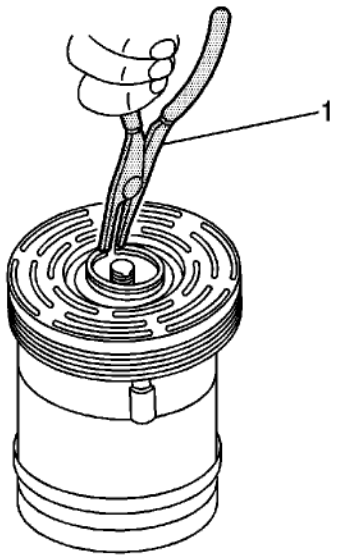


5. With the compressor mounted to the J 42428 (3), position the rotor and the bearing assembly on the compressor housing.
6. Position the J 33017 (4) and the J 33023-A (2) directly over the inner race of the bearing.
7. Position the J 8433-1 (5) center forcing bolt on the J 33023-A (2) and assemble the 2 through-bolts and the washers through the J 8433-1 (5) slots. Thread them into the J 42428 (3). The thread of the through-bolts should engage the full thickness of the fixture.
8. Tighten the center J 8433-3 (1) in the J 8433-1 (5) to force the pulley rotor and the bearing assembly onto the compressor housing.



9. Install the rotor and the bearing assembly retainer ring using the J 6083 (1).
10. Reinstall the clutch drive plate and the hub assembly. Refer to Compressor Clutch Plate/Hub Assembly Install.
11. Install the compressor. Refer to Air Conditioning Compressor Replacement.
12. Connect the negative battery cable.
13. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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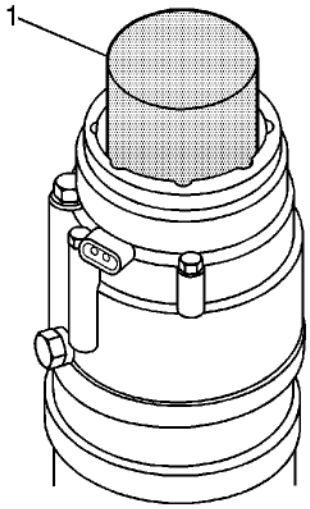
Air Conditioning Clutch Coil Installation (V5 Compressor)

Tools Required

- J 8433-1 Puller Crossbar
- J 8433-3 Forcing Screw
- J 33024 Clutch Coil Installer Adapter
- J 42428 Compressor Holding Fixture



1. Place the clutch coil assembly on the compressor housing with the terminals positioned at the marked location.
2. Place the J 33024 (1) over the internal opening of the clutch coil housing and align the J 33024 (1) with the compressor housing.

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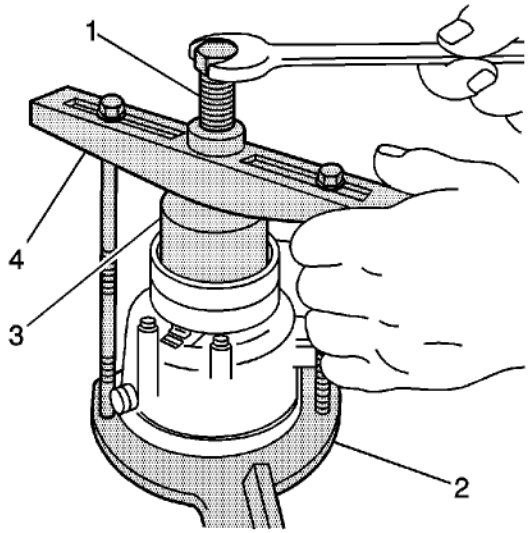
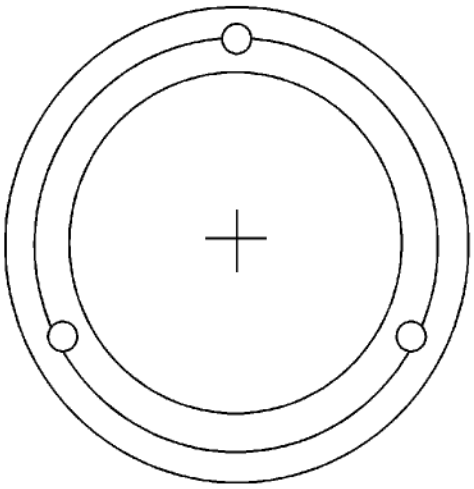


3. Center the J 8433-1 (4) in the countersunk center hole of the J 33024 (3). Install the J 42428 (2) through-bolts and the washers through the crossbar slots. Thread them into the holding fixture to the full thickness of the holding fixture.

Important: Be sure the clutch coil and the installer stay in-line during installation.

4. Turn the J 8433-3 (1), or use a suitable vise, to force the clutch coil onto the compressor housing.



5. When the clutch coil is fully seated on the compressor housing, use a 3 mm (1/8 inch) diameter drift punch and stake the housing at 3 places, 120° apart, to ensure that the clutch coil will remain in position. Stake point size should be only one-half the area of the punch tip and approximately 0.28-0.35 mm (0.01-0.015 in) deep.
6. Install the clutch rotor and bearing assembly. Refer to Clutch Rotor and/or Bearing Install .

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7. Install the clutch plate and hub assembly. Refer to Compressor Clutch Plate/Hub Assembly Install .
8. Install the compressor. Refer to Air Conditioning Compressor Replacement .
9. Connect the negative battery cable.
10. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging .

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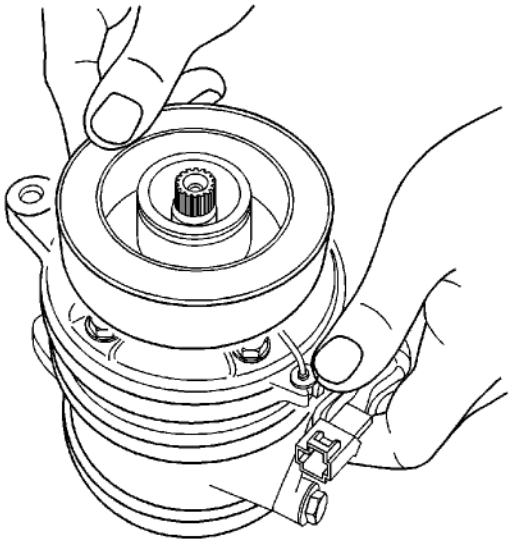
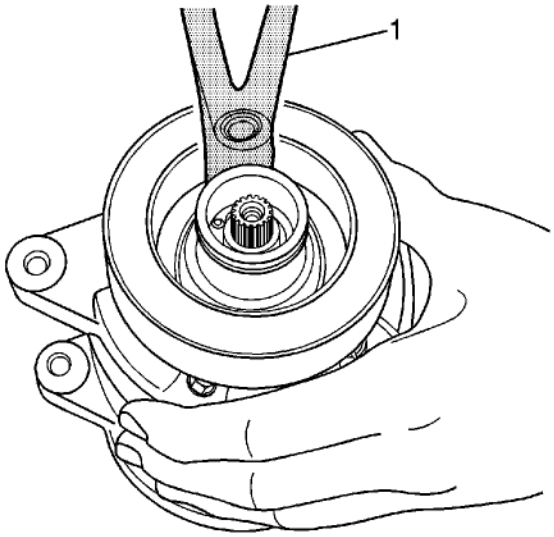
Air Conditioning Clutch Coil Installation (SP10 Compressor)



Important: Coil flange protrusion must match front head hole to prevent coil movement and allow for correct lead wire location. The lead wire must then be tightened by pulling it toward the compressor body to prevent it from touching the pulley.

1. Gently install the coil and housing assembly. The lead wire clamp must be inserted tightly onto the front head slot.



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2. Install the retainer ring using the snap ring pliers (1).

   Important: Sharp edge side of the coil retainer should be placed on its upper side during assembly. Upon completion, squeeze the retainer to ensure it is well installed.

3. Install the pulley and bearing assembly. Refer to Clutch Rotor and/or Bearing Install .
4. Install the clutch and drive assembly. Refer to Compressor Clutch Plate/Hub Assembly Install .

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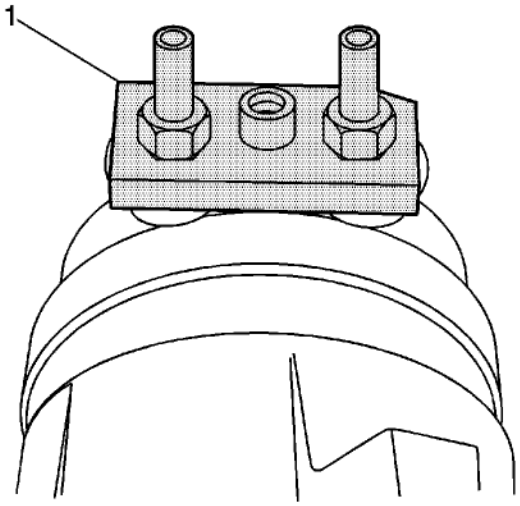
Compressor Leak Testing

Tools Required

J 9625-A Pressure Test Set



1. Install the J 9625-A (1) connector to the suction/discharge ports on the compressor.
2. Attach the center hose of the manifold gage set on the charging station to a refrigerant drum standing in an upright position. Open the valve on the drum.
3. Connect the charging station high and low-pressure lines to the corresponding fittings on the J 9625-A (1) connectors, or hoses equipped with valve depressors. The suction port, low-side, of the compressor has a large internal opening. The discharge port, high-side, has a smaller internal opening into the compressor.
4. Open the low-pressure control, the high-pressure control, and the refrigerant control on the charging station to allow the refrigerant vapor to flow into the compressor.
5. Using a leak detector, check for leaks at the high-pressure relief valve seal, the housing seal, the rear head seal, the center cylinder seal, the through-bolt gaskets, and the compressor shaft seal. After checking for leaks, shut off the low-pressure control, the high-pressure control, and the refrigerant control lines on the charging station.
6. If an external leak is present, perform the necessary corrective measures and recheck for leaks to verify that the leak has been corrected.
7. Loosen the manifold gage hose connections to the gage adapters connected to the low and high sides. Allow the vapor pressure to release from the compressor. If the valve depressor-type hoses are used, loosen the hose connections at the gage manifold to release vapor pressure from the compressor.
8. Disconnect both gage hoses. Remove the J 9625-A (1).

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O-Ring Replacement

Important: Even though O-rings may look identical, it is extremely important that only recommended service replacement air conditioning O-rings be used, or excessive leakage of refrigerant may occur.

Important: Always slip the O-ring onto the flange tube to ensure proper locating and sealing.

Install new General Motors-approved service replacement air conditioning O-rings whenever a joint or a fitting is assembled, except when the O-rings are provided on new components.

When replacing O-rings on an air conditioning component or a joint connection, the fitting design should be identified to ensure installation of the correct air conditioning service replacement O-ring. Some joint connections and components will implement a captured O-ring design fitting that uses a groove to retain the O-ring. Others do not have a groove and use a non-captured or standard O-ring. Assembly and tightening procedures are the same for both designs, but the O-rings are different.

Before installation, verify that both O-rings and fittings have not been nicked or deformed. Deformed or nicked parts must be replaced. Failure to use the proper service replacement parts and procedures may result in excessive refrigerant leakage.

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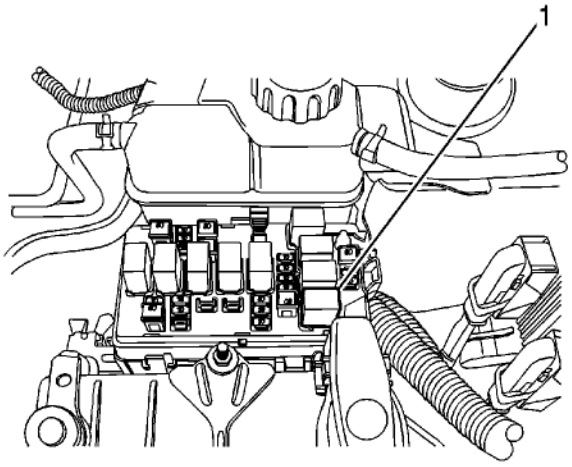
Compressor Relay Replacement (Notchback)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. The relay is located in the fuse junction box in the engine compartment on the right-hand side.
3. Pull the relay (1) straight up and out.

Installation Procedure

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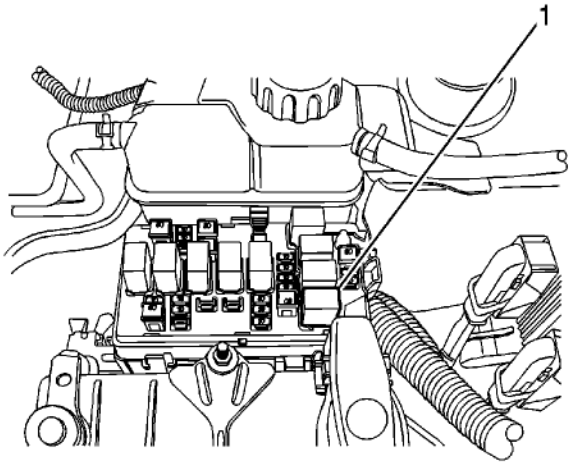

1. Align the relay terminal contacts with the base receptacle.
2. Push the relay (1) into the base until it is seated.
3. Connect the negative battery cable.

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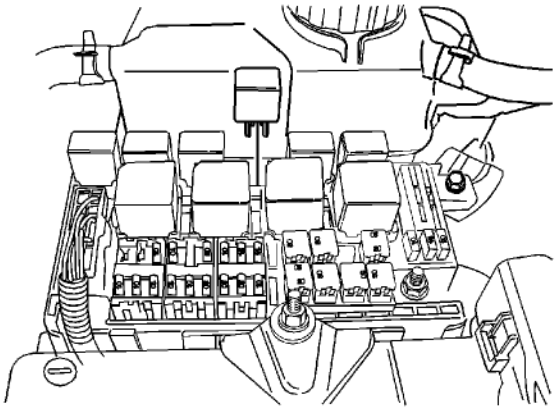
Compressor Relay Replacement (Hatchback)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. The relay is located in the fuse junction box in the engine compartment on the right-hand side.
3. Pull the relay straight up and out.

Installation Procedure

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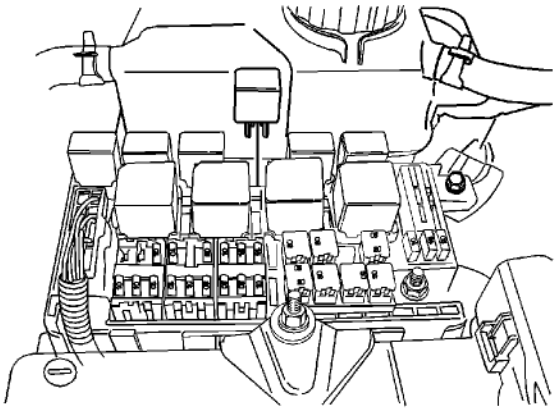

1. Align the relay terminal contacts with the base receptacle.
2. Push the relay into the base until it is seated.
3. Connect the negative battery cable.

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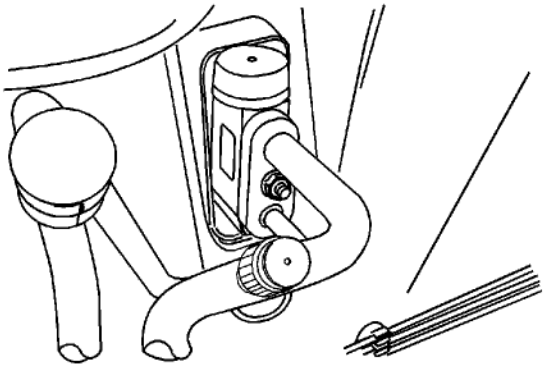
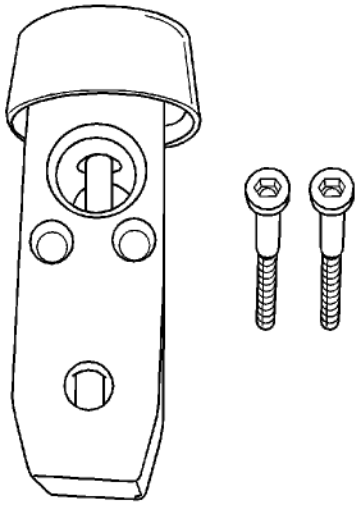
Air Conditioning Evaporator Thermal Expansion Valve Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the liquid evaporator pipe connector block retaining nut at the cowl.



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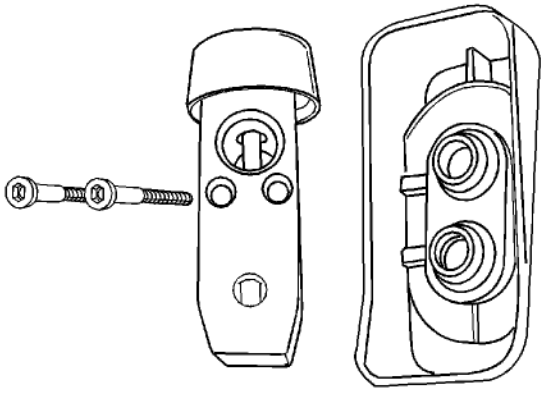
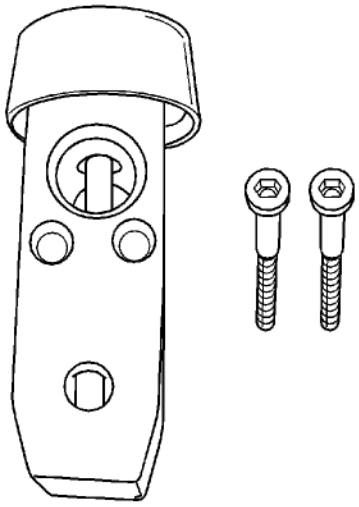
4. Remove the expansion valve connector block retaining bolts.
5. Remove the expansion valve.



6. Discard the O-rings.

Installation Procedure



1. Clean the O-ring surface areas of dirt or contamination.
2. Install new O-rings on the evaporator tubes.
3. Install a new expansion valve onto the evaporator tubes.

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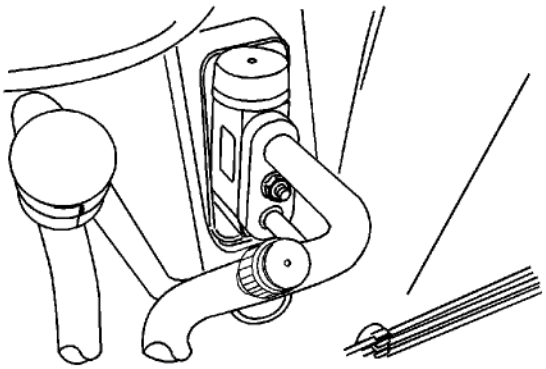
Caution: Refer to Fastener Caution in the Preface section.

4. Install the expansion valve retaining bolts.

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



5. Install the liquid evaporator pipe connecting block retaining nut at the cowl.

   Tighten
   Tighten the liquid evaporator pipe connecting block retaining nut to 15 N·m (11 lb ft).

6. Connect the negative battery cable.
7. Evacuate and recharge the system. Refer to Refrigerant Recovery and Recharging.

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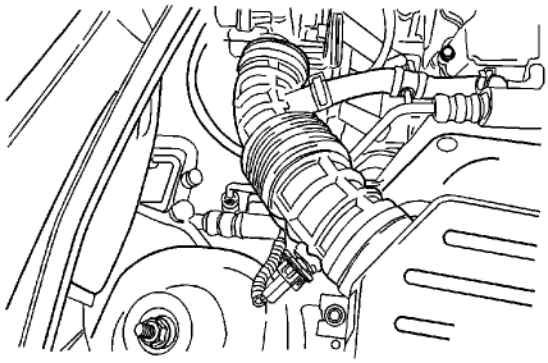
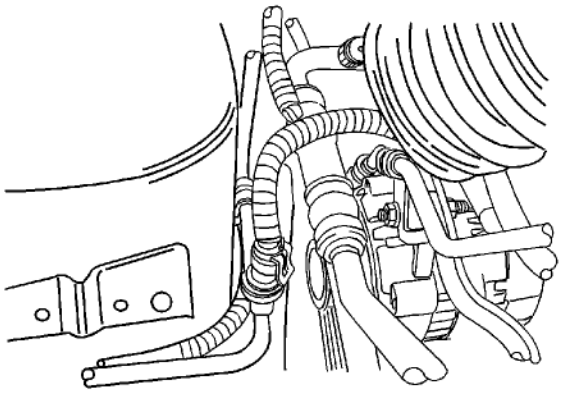
Air Conditioning (A/C) Refrigerant Pressure Sensor Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Remove the air cleaner housing bolts and the air filter housing assembly.



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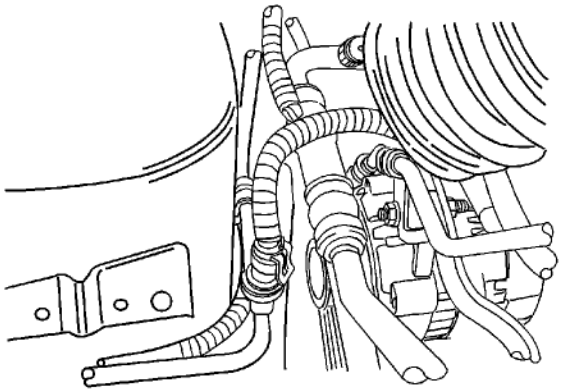
3. Release the connector lock and pull the air conditioning (A/C) pressure transducer wire connector out.
4. Hold the line fitting boss with one wrench and remove the A/C pressure transducer with another wrench.
5. Discard the O-ring seal.

Installation Procedure



1. Install the new seal on the A/C pressure transducer.

   Caution: Refer to Fastener Caution in the Preface section.

2. Install the A/C pressure transducer.

   Tighten
   Tighten the pressure transducer, using 2 wrenches, to 8 N·m (71 lb in).

3. Install the electrical connector.

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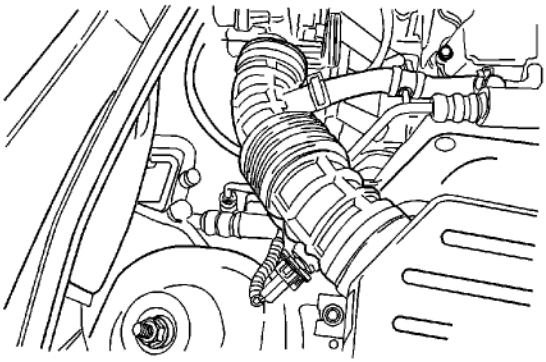

4. Install the air cleaner housing bolts and the air filter housing assembly.

Tighten
Tighten the air cleaner housing assembly retaining bolts to 12 N·m (106 lb in).

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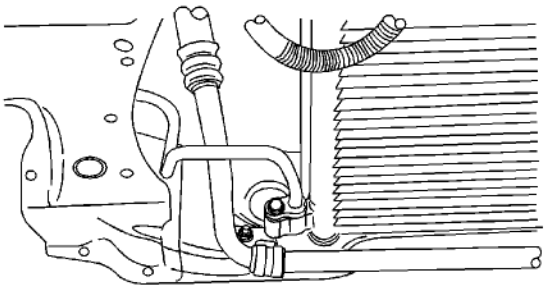
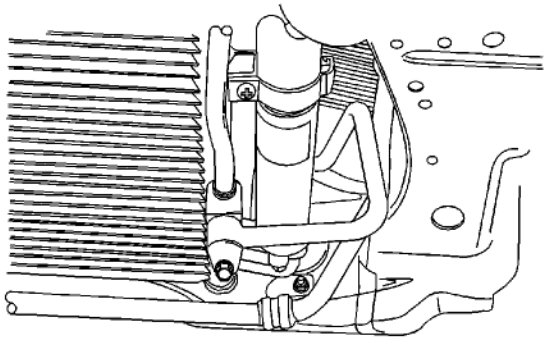
Air Conditioning Condenser Replacement (Except North America)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the liquid pipe connector block to condenser retaining bolt.



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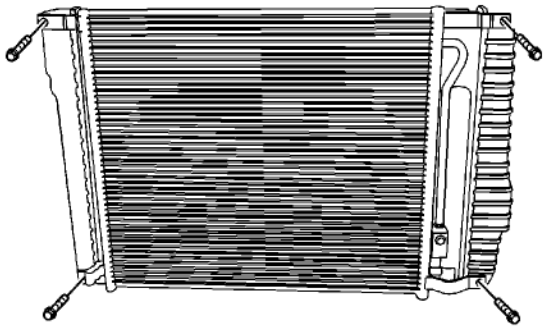
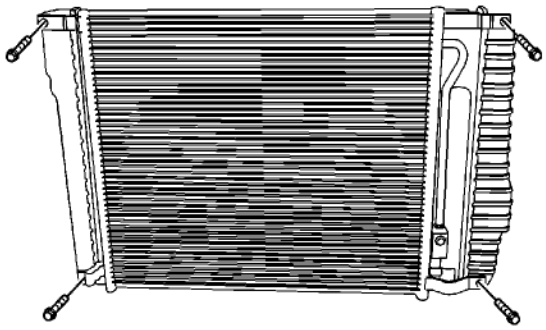
4. Remove the refrigerant discharge hose connector block bolt at the condenser.
5. Remove the radiator. Refer to Radiator Replacement.
6. Cap all the openings to prevent contamination.



7. Remove the condenser mount bolts.
8. Remove the condenser from the radiator.

Installation Procedure



1. Install new O-rings onto the receiver-dryer tube fittings.

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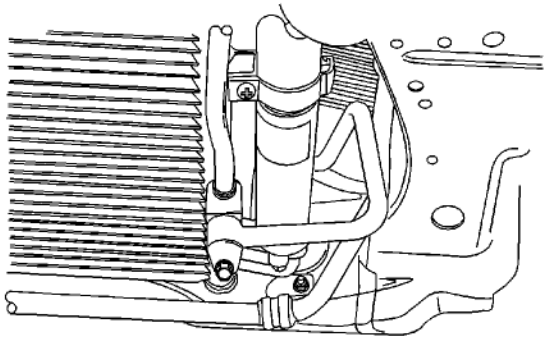
2. Ensure that the condenser rubber mounts are in place.
3. Install the condenser to the radiator. The lower mount shock protectors must fit into the holes provided.

Caution: Refer to Fastener Caution in the Preface section.

4. Install the condenser mount bolts.

Tighten
Tighten the upper condenser bolts to 8 N·m (70 lb in).

5. Install the radiator. Refer to Radiator Replacement.



6. Install the refrigerant discharge hose connector block bolt at the condenser.

Tighten
Tighten the refrigerant discharge hose connector block bolt to 16 N·m (12 lb ft).

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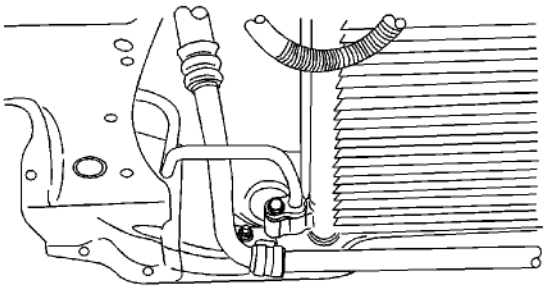

7. Install the liquid pipe connector block to condenser retaining bolt.

   Tighten
   Tighten the liquid pipe connector block to condenser retaining bolt to 14 N·m (10 lb ft).

8. Connect the negative battery cable.
9. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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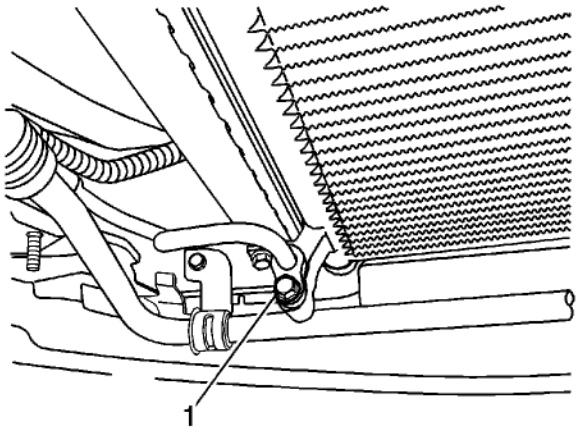
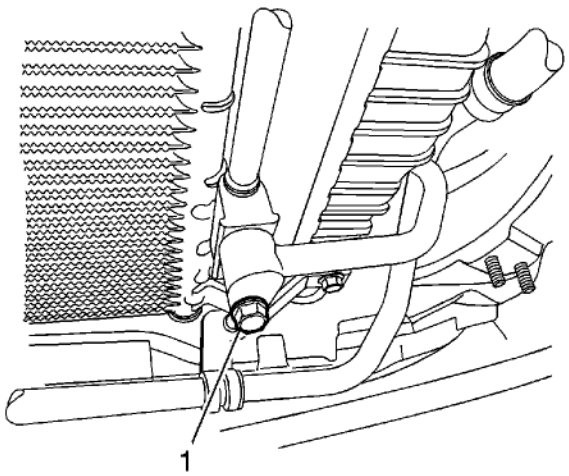
Air Conditioning Condenser Replacement (North America)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
3. Remove the liquid pipe connector block to condenser retaining bolt.



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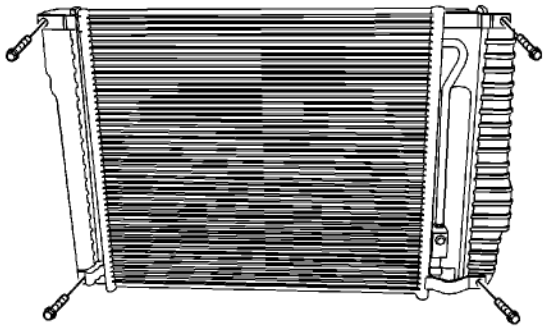
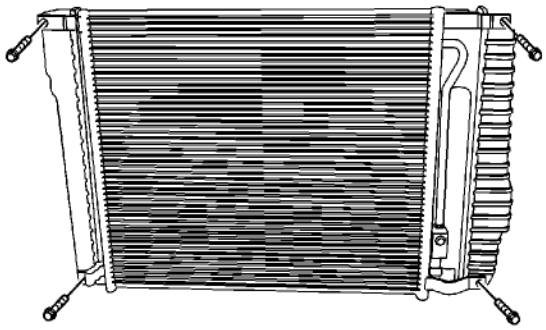
4. Remove the refrigerant discharge hose connector block bolt at the condenser.
5. Remove the radiator. Refer to Radiator Replacement.
6. Cap all the openings to prevent contamination.



7. Remove the condenser mount bolts.
8. Remove the condenser from the radiator.

Installation Procedure



1. Install new O-rings onto the receiver-dryer tube fittings.

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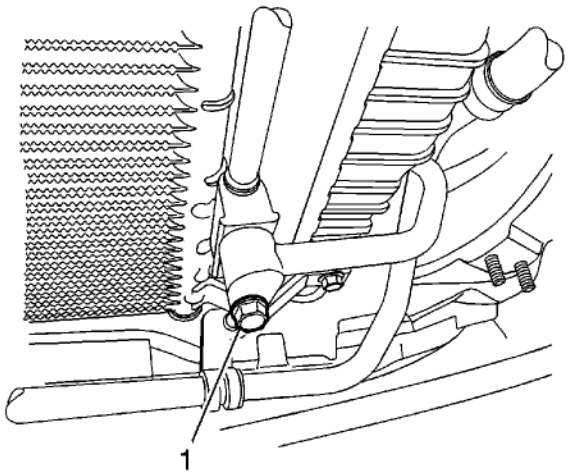
2. Ensure that the condenser rubber mounts are in place.
3. Install the condenser to the radiator. The lower mount shock protectors must fit into the holes provided.

Caution: Refer to Fastener Caution in the Preface section.

4. Install the condenser mount bolts.

Tighten
Tighten the upper condenser bolts to 8 N·m (70 lb in).

5. Install the radiator. Refer to Radiator Replacement.



6. Install the refrigerant discharge hose connector block bolt at the condenser.

Tighten
Tighten the refrigerant discharge hose connector block bolt to 16 N·m (12 lb ft).

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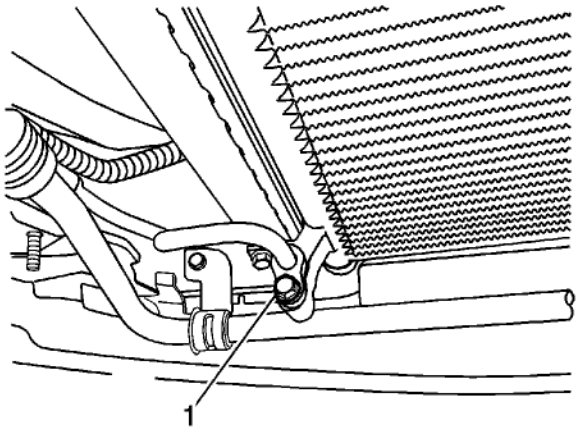

7. Install the liquid pipe connector block to condenser retaining bolt.

   Tighten
   Tighten the liquid pipe connector block to condenser retaining bolt to 14 N·m (10 lb ft).

8. Connect the negative battery cable.
9. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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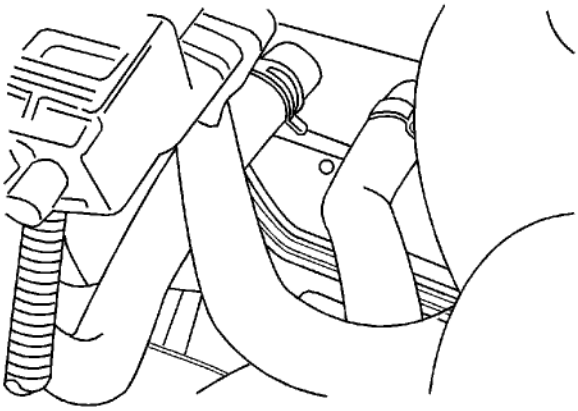
HVAC Module Assembly Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Remove the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.
3. Drain the cooling system. Refer to Cooling System Draining and Filling.
4. Recover the refrigerant. Refer to Refrigerant Recovery and Recharging.
5. Compress the heater hose clamps at the cowl and slide the clamps toward the engine.
6. Remove the 2 heater hoses from the core lines at the cowl.
7. Turn the condensation drain hose and pull the hose off.

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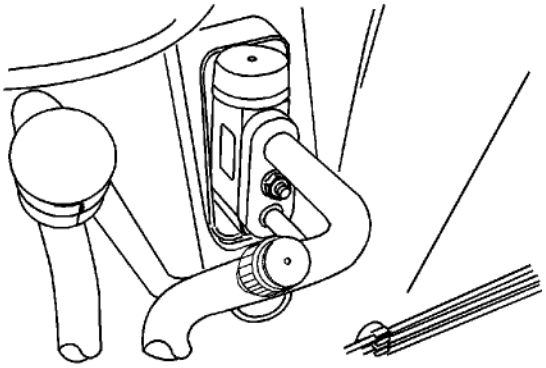
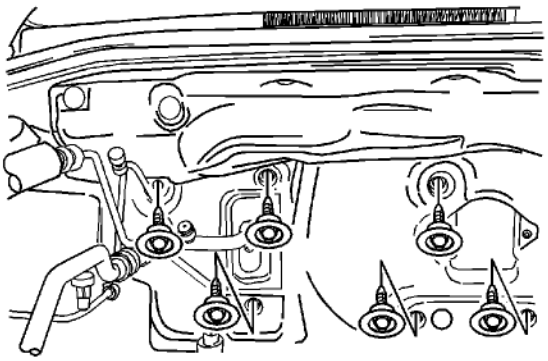


8. Remove the nuts that secure the A/C suction hose and liquid evaporator pipe connector block at the cowl.



9. From the engine side of the cowl, remove the screws that secure the heater/air distribution case assembly to the cowl.
10. Remove the heater/air distribution case assembly from the vehicle.

Installation Procedure

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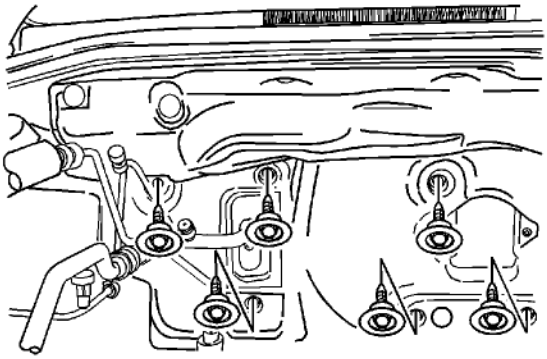
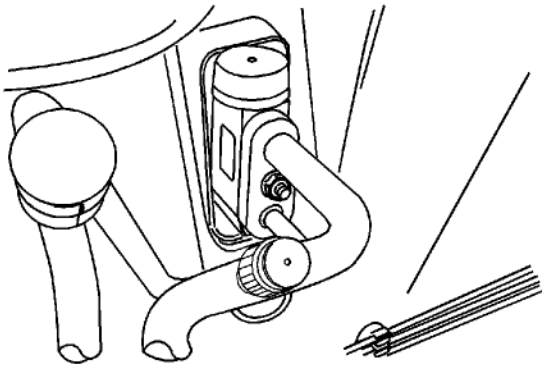


1. Clean the O-ring surface areas of dirt and contamination.
2. Install 2 new O-rings onto the A/C suction hose and the liquid evaporator pipe at the cowl in the engine compartment.

Caution: Refer to Fastener Caution in the Preface section.

3. Install the heater/air distribution case assembly and tighten the screws.

Tighten
Tighten the heater/air distribution case assembly retaining screws on the cowl side to 8 N·m (71 lb in).



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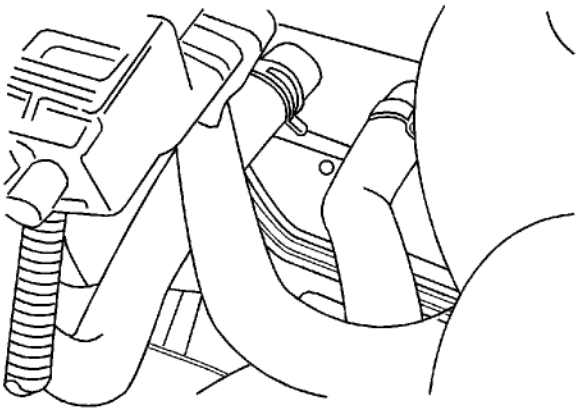
4. Install the A/C suction hose and liquid evaporator pipes onto the evaporator flange connector block and tighten the nut.

   Tighten
   Tighten the liquid evaporator pipe connector block nut to 15 N·m (11 lb ft).



5. Connect the 2 heater hoses to the heater core tubes.
6. Slide the heater hose clamps into position.
7. Install the case condensation drain hose.
8. Install the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.
9. Fill the cooling system.
10. Connect the negative battery cable.
11. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.
12. Operate the HVAC control to verify the proper function of the heating and cooling systems.

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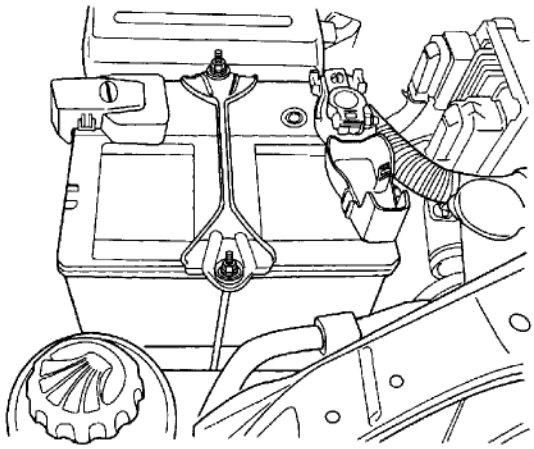
Air Conditioning Evaporator Core Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Remove the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.

Caution: Handle the case carefully to avoid damage to the door actuating linkage.

3. Remove the heater/air distribution case assembly. Refer to HVAC Module Assembly Replacement.

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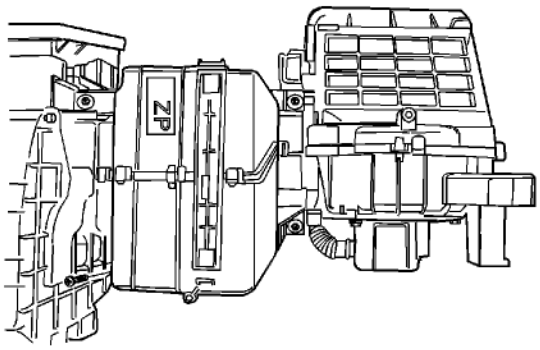
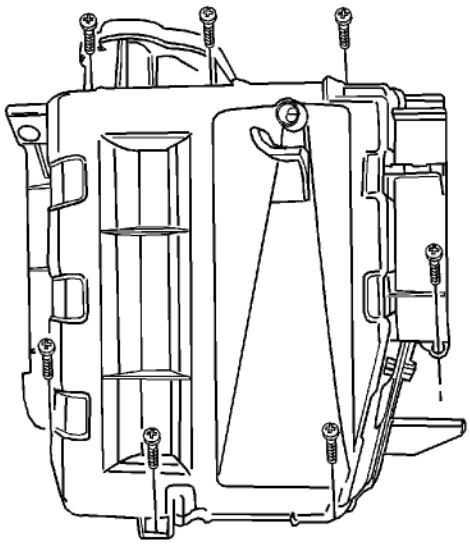


4. Remove the screws that secure the evaporator case cover.



5. Remove the cover.

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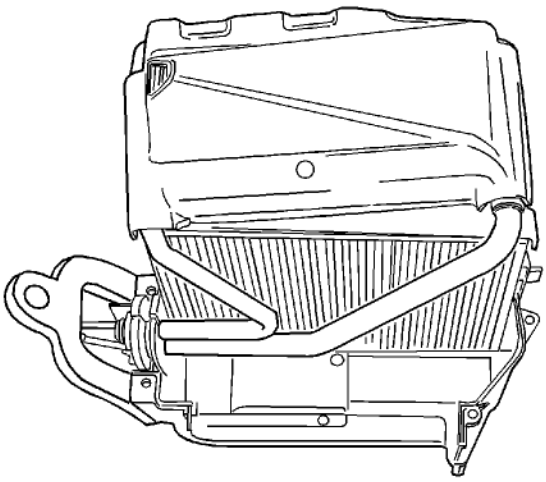
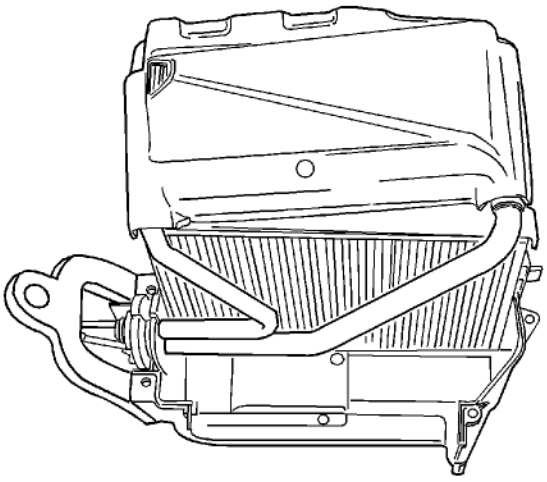


6. Slide the evaporator flange support plate upward to facilitate evaporator removal.
7. Remove the evaporator from the case.

Installation Procedure



1. Install new O-rings onto the evaporator tubes.
2. Install the evaporator core into the case. Center the evaporator flange in the case opening.

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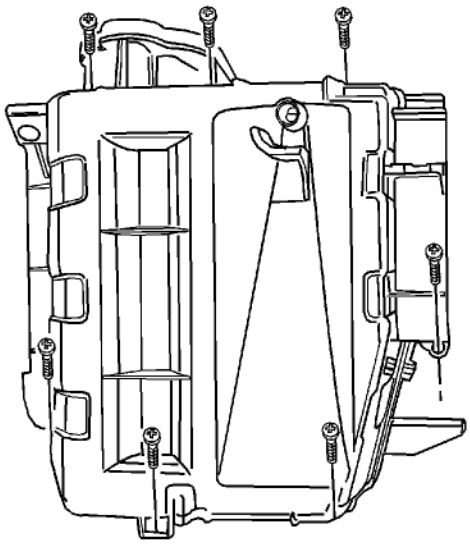
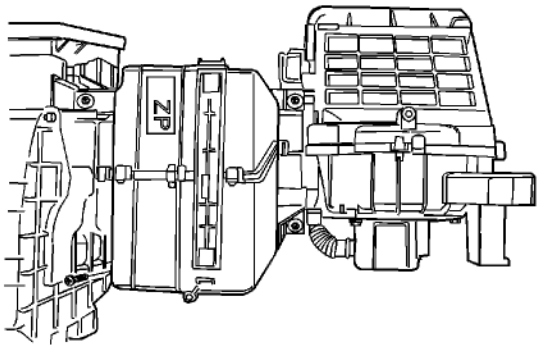


3. Install the evaporator core case cover with the screws.



4. Install the heater/air distribution case. Refer to HVAC Module Assembly Replacement.

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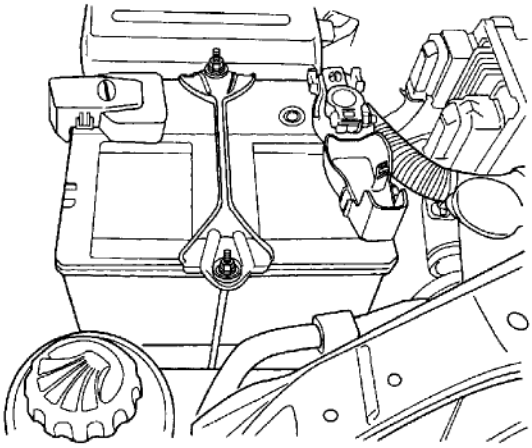

5. Install the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.
6. Connect the negative battery cable.
7. Evacuate and recharge the A/C system. Refer to Refrigerant Recovery and Recharging.

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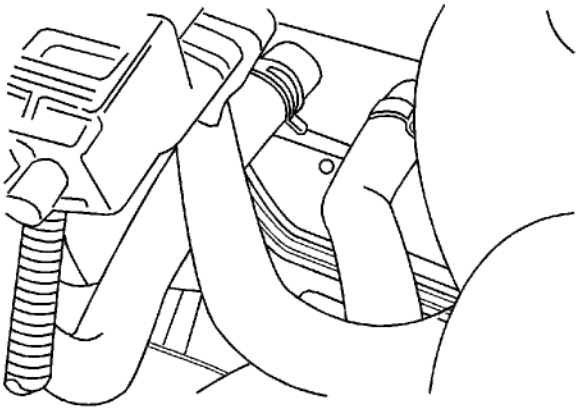
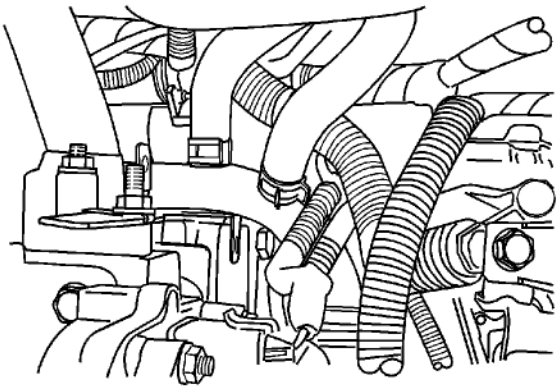
Heater Hoses Replacement (Hatchback)

Removal Procedure



1. Partially drain the cooling system.
2. Compress and slide rearward the two heater hose spring clamps at the fire wall.



3. Gently twist the hose from the left to the right and back again to loosen the bond between the hose and the tube.
4. Remove the end of the hose from the tube.

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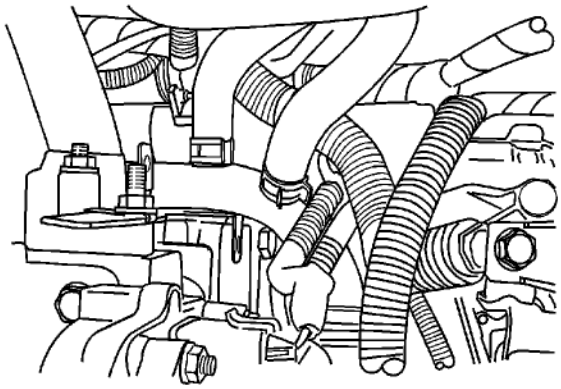
5. Repeat Steps 3 and 4 with the other hose.
6. Compress the heater hose spring clamp on the inlet coolant line and slide the clamp rearward.
7. Remove the hose from the vehicle.
8. Compress the heater hose spring clamp at the connection below the intake manifold and slide the clamp rearward.
9. Remove hose from the vehicle.

Installation Procedure



1. Install the left heater hose to the coolant inlet line fitting. Slide the end of the heater hose over the coolant fitting until the hose is seated.
2. Install the right heater hose to the fitting below the intake manifold. Slide the end of the heater hose over the fitting until it is seated.
3. Install and seat the other end of each heater hose.
4. Compress and slide the spring clamps into position on the heater hoses and release the tension on the spring clamps.

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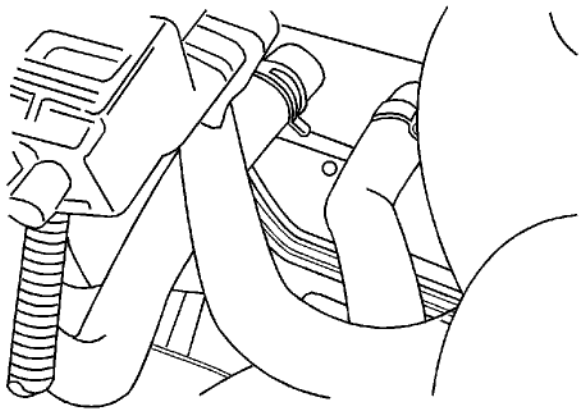

5. Filling the cooling system.
6. Check the hoses for leaks.

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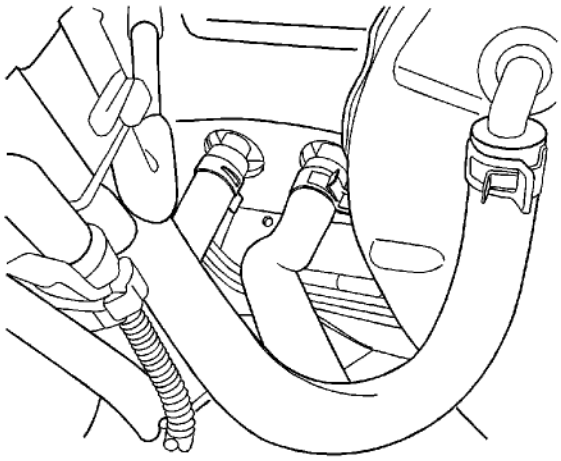
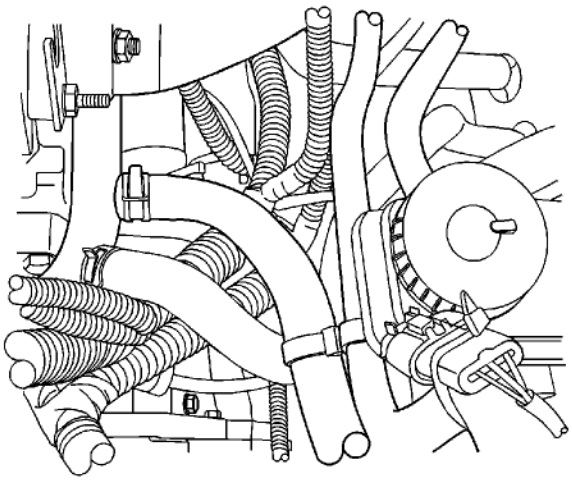
Heater Hoses Replacement (Notchback)

Removal Procedure



1. Partially drain the cooling system.
2. Compress and slide rearward the two heater hose spring clamps at the fire wall.



3. Gently twist the hose from the left to the right and back again to loosen the bond between the hose and the tube.
4. Remove the end of the hose from the tube.

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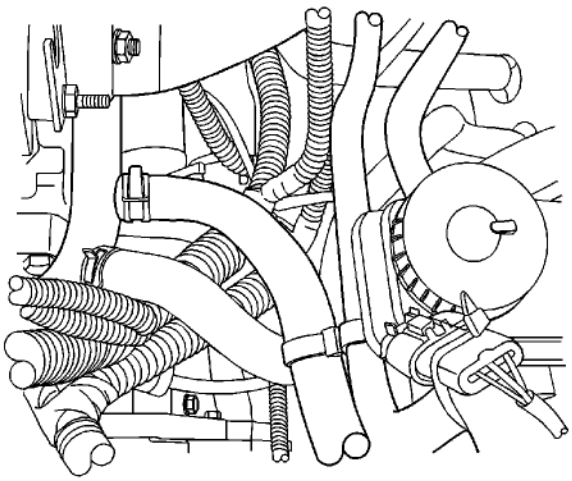
5. Repeat Steps 3 and 4 with the other hose.
6. Compress the heater hose spring clamp on the inlet coolant line and slide the clamp rearward.
7. Remove the hose from the vehicle.
8. Compress the heater hose spring clamp at the connection below the intake manifold and slide the clamp rearward.
9. Remove hose from the vehicle.

Installation Procedure



1. Install the left heater hose to the coolant inlet line fitting. Slide the end of the heater hose over the coolant fitting until the hose is seated.
2. Install the right heater hose to the fitting below the intake manifold. Slide the end of the heater hose over the fitting until it is seated.
3. Install and seat the other end of each heater hose.
4. Compress and slide the spring clamps into position on the heater hoses and release the tension on the spring clamps.

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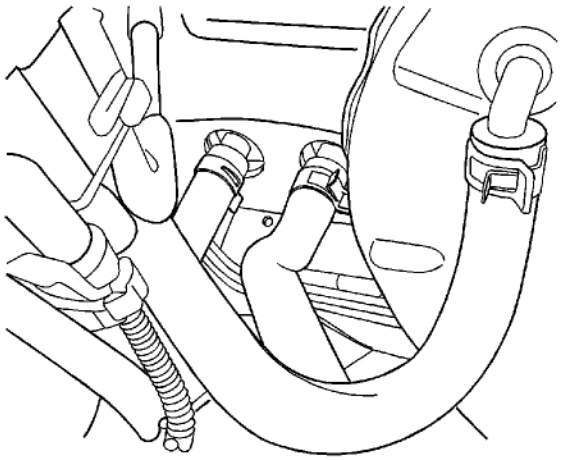

5. Filling the cooling system.
6. Check the hoses for leaks.

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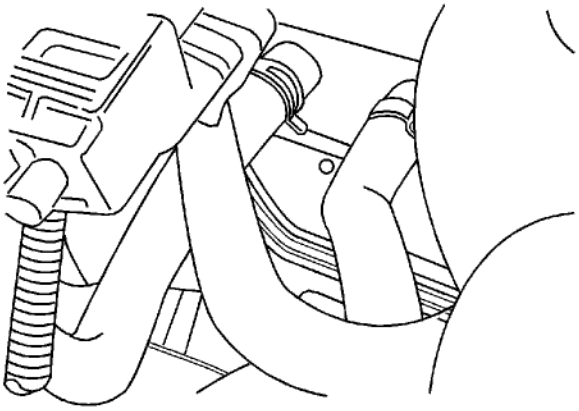
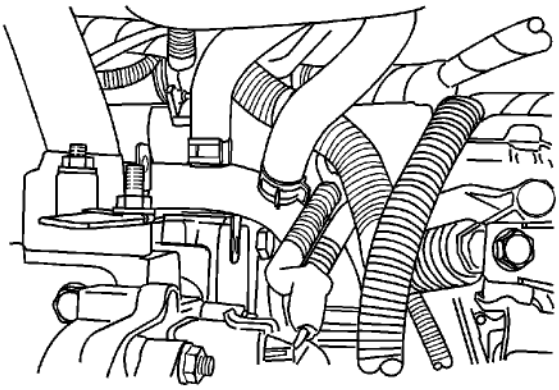
Heater Hose Assembly Replacement (Hatchback)

Removal Procedure



1. Partially drain the cooling system.
2. Compress and slide rearward the 2 heater hose spring clamps at the cowl.



3. Gently twist the hose from left to right and back again to loosen the bond between the hose and the tube.
4. Remove the end of the hose from the tube.

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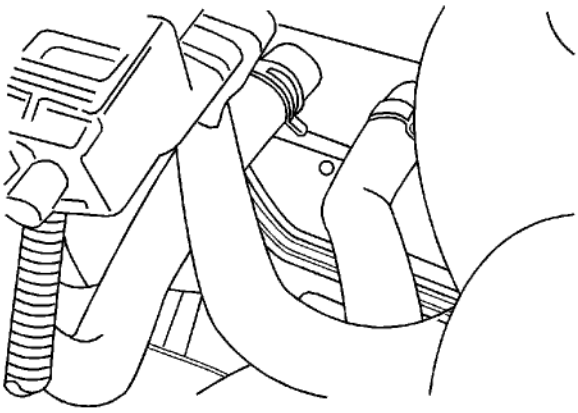
5. Repeat Steps 3 and 4 with the other hose.
6. Compress the heater hose spring clamp on the inlet coolant line and slide the clamp rearward.
7. Remove the hose from the vehicle.
8. Compress the heater hose spring clamp at the connection below the intake manifold and slide the clamp rearward.
9. Remove the hose from the vehicle.

Installation Procedure



1. Install the left heater hose to the coolant inlet line fitting. Slide the end of the heater hose over the coolant fitting until the hose is seated.
2. Install the right heater hose to the fitting below the intake manifold. Slide the end of the heater hose over the fitting until it is seated.
3. Install and seat the other end of each heater hose.
4. Compress and slide the spring clamps into position on the heater hoses and release the tension on the spring clamps.

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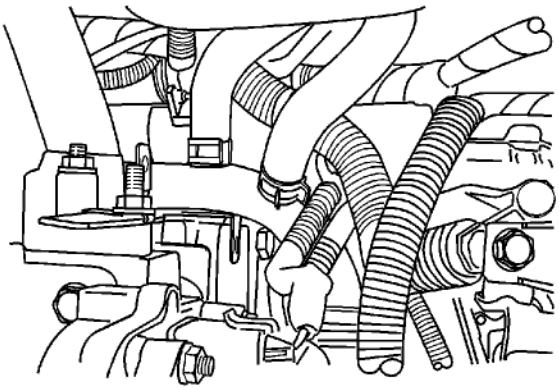

5. Fill the cooling system.
6. Inspect the hoses for leaks.

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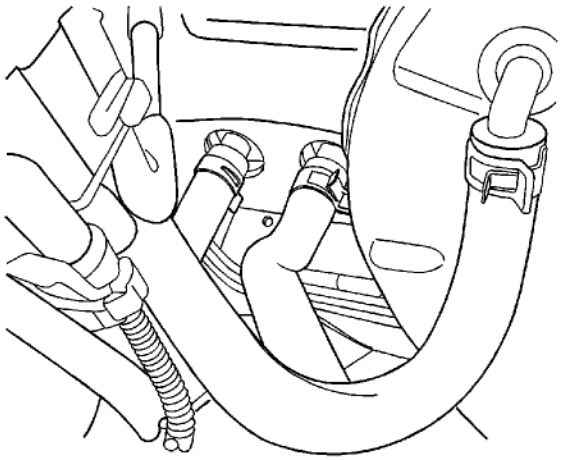
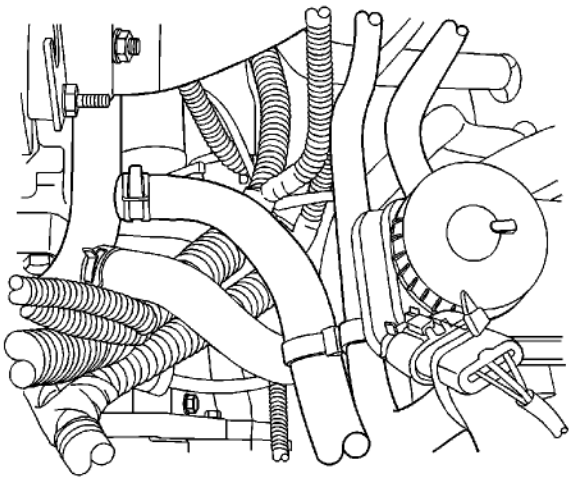
Heater Hose Assembly Replacement (Notchback)

Removal Procedure



1. Partially drain the cooling system.
2. Compress and slide rearward the 2 heater hose spring clamps at the cowl.



3. Gently twist the hose from left to right and back again to loosen the bond between the hose and the tube.
4. Remove the end of the hose from the tube.

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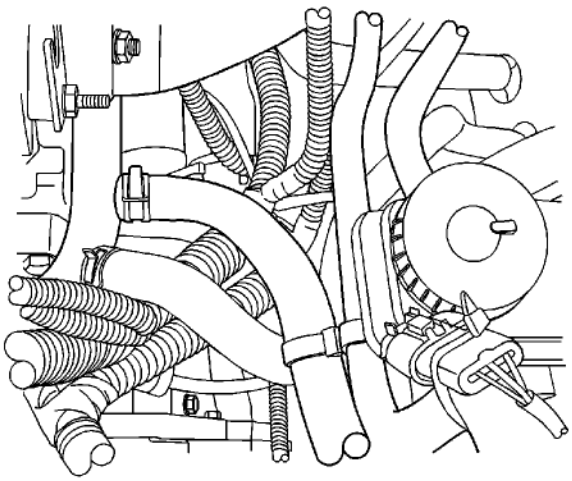
5. Repeat Steps 3 and 4 with the other hose.
6. Compress the heater hose spring clamp on the inlet coolant line and slide the clamp rearward.
7. Remove the hose from the vehicle.
8. Compress the heater hose spring clamp at the connection below the intake manifold and slide the clamp rearward.
9. Remove the hose from the vehicle.

Installation Procedure



1. Install the left heater hose to the coolant inlet line fitting. Slide the end of the heater hose over the coolant fitting until the hose is seated.
2. Install the right heater hose to the fitting below the intake manifold. Slide the end of the heater hose over the fitting until it is seated.
3. Install and seat the other end of each heater hose.
4. Compress and slide the spring clamps into position on the heater hoses and release the tension on the spring clamps.

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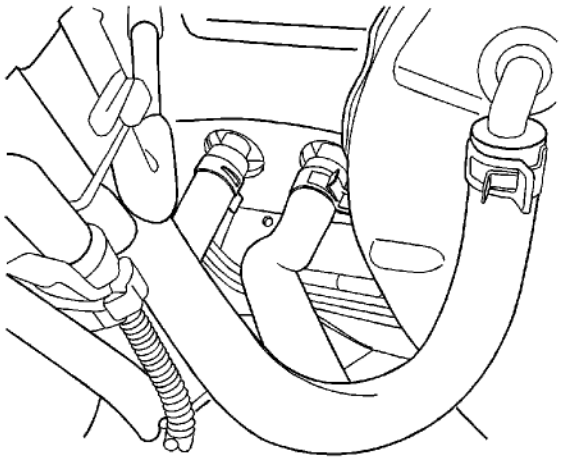

5. Fill the cooling system.
6. Inspect the hoses for leaks.

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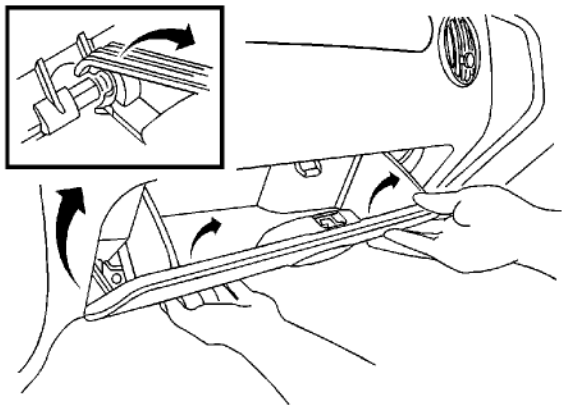
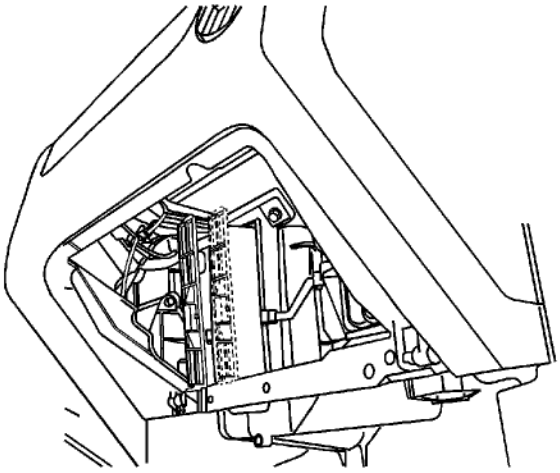
Passenger Compartment Air Filter Replacement

Removal Procedure

1. Open the instrument panel compartment.



2. Grip the glove box by both the upper and lower sides and pull it out of its housing.



3. Remove the filter cover by pressing in on the bottom retaining tab and pulling the cover down.
4. Remove the old passenger compartment air filter.

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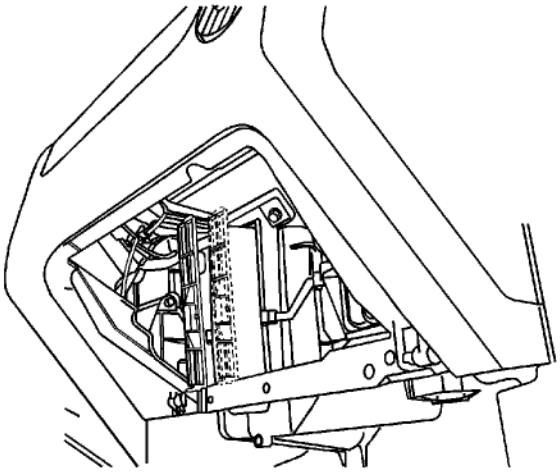
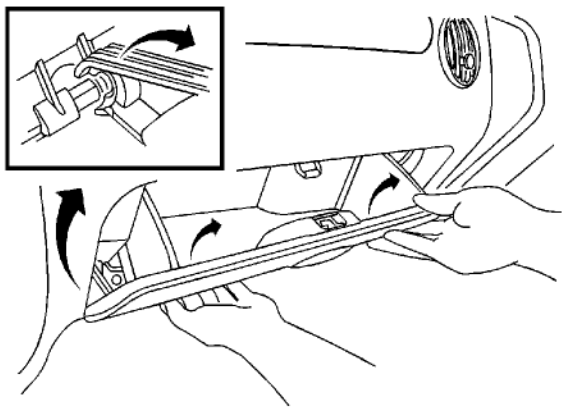
Installation Procedure



Important: View the air flow arrows on the filter before installing to ensure you install the filter correctly.

1. Install the filter into housing.
2. Install filter cover.



3. Position glove box to instrument panel, making sure retaining tabs are engaged.
4. Close glove box.

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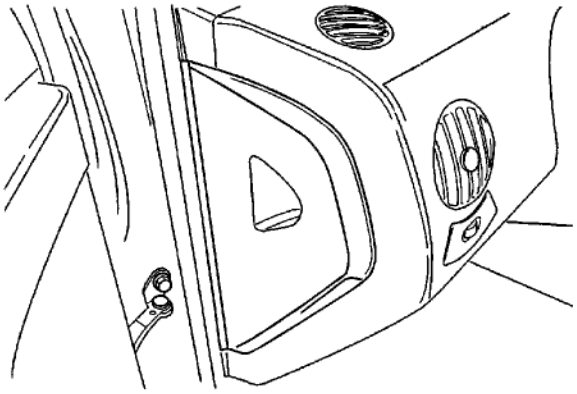
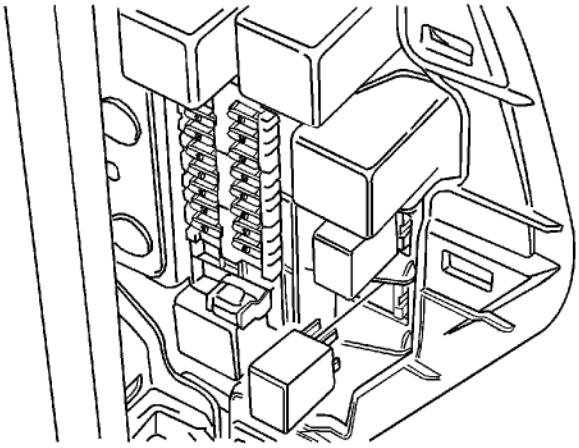
Blower Motor Relay Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Remove the instrument panel fuse cover.



3. Pull out the relay at the front of the relay box.

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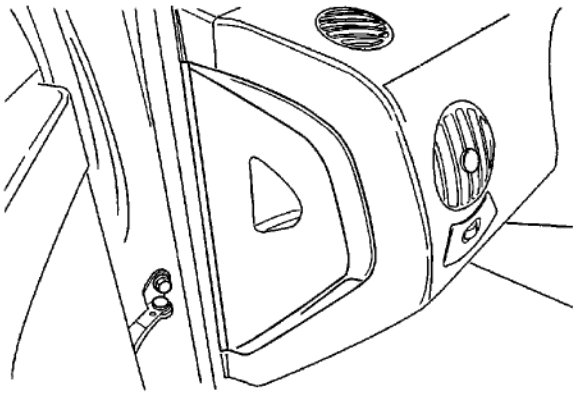
Installation Procedure



1. Align the relay contacts with the relay terminal slots.
2. Push the relay firmly into the base. The relay must be seated and flushed with the base edge.
3. Replace the instrument panel access panel.
4. Replace the remote mirror/lighting control panel.
5. Connect the negative battery cable.

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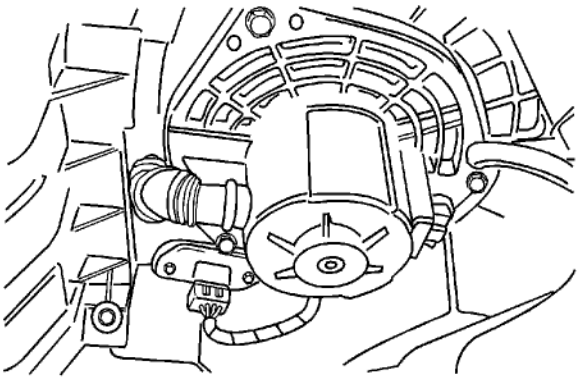
Blower Motor Resistor Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Disconnect the electrical connector at the resistor.
3. Remove the retaining screws from the resistor.
4. Remove the resistor by gently pulling it downward.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.

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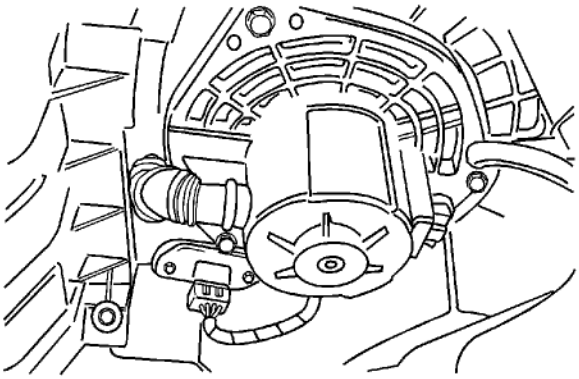

1. Install the new resistor into the heater/air distribution case with the screws.

   Tighten
   Tighten the blower resistor retaining screws to 6 N·m (53 lb in).

2. Connect the electrical connector at the resistor.
3. Connect the negative battery cable.
4. Confirm the proper performance of the blower.

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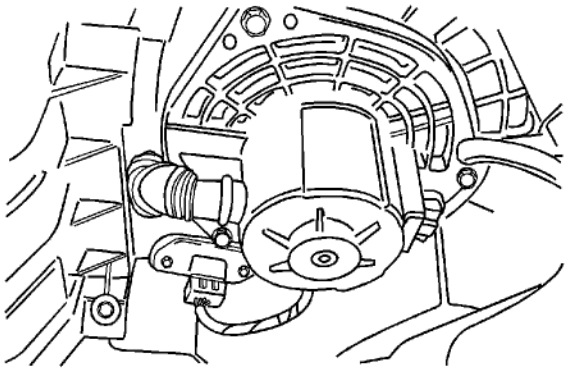
Blower Motor Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Disconnect the blower motor electrical connector.
3. Remove the blower cooling hose.
4. Remove the screws that secure the motor to the heater/air distribution case.
5. Remove the motor and the seal from the heater/air distribution case by gently pulling the motor straight down and out.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.

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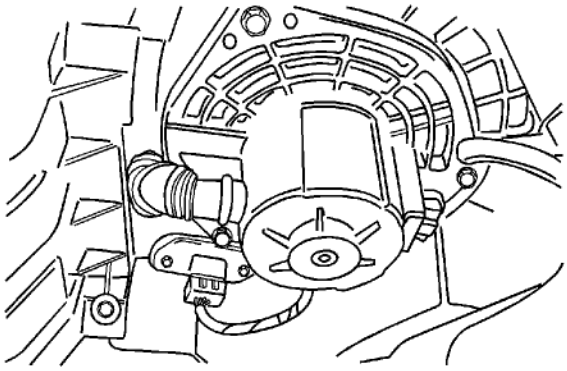

1. Install the blower motor and seal, with the shock mount pads, in the heater/air distribution case. Hold the blower motor in position.
2. Install the screws to secure the blower motor to the heater/air distribution case.

Tighten
Tighten the blower motor retaining screws to 6 N·m (53 lb in).

3. Install the blower motor cooling hose.
4. Connect the electrical connector.
5. Connect the negative battery cable.
6. Confirm that the blower motor operates properly.

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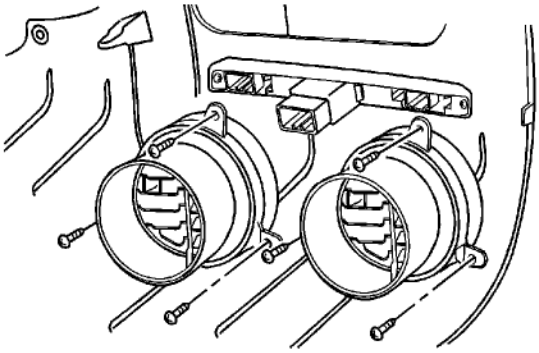
Instrument Panel Air Deflector Replacement

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Remove the instrument panel center upper cover. Refer to Instrument Panel Center Trim Panel Replacement.
3. Remove the screws and the air deflectors.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.

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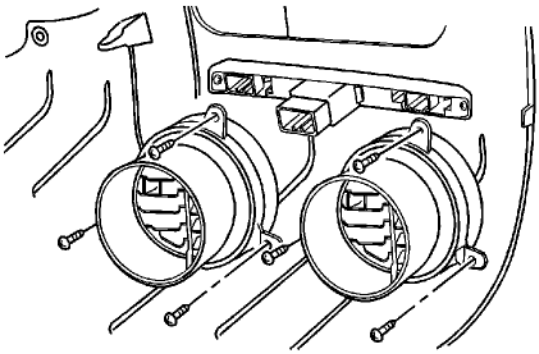

1. Install the air deflectors with the screws.

   Tighten
   Tighten the air deflector screws to 2 N·m (18 lb in).

2. Install the instrument panel center upper cover. Refer to Instrument Panel Center Trim Panel Replacement.
3. Connect the negative battery cable.

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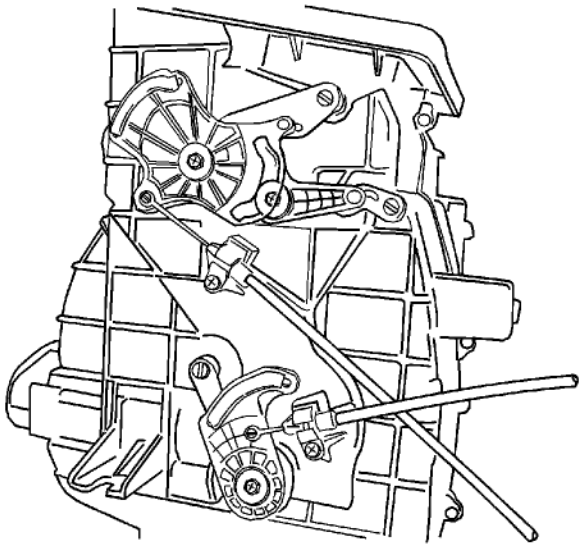
Heater Core Replacement (Hatchback)

Removal Procedure



1. Raise the hood.

   Warning: Refer to Battery Disconnect Warning in the Preface section.

2. Disconnect the negative battery cable.
3. Remove the instrument panel assembly from the vehicle. Refer to Instrument Panel Assembly Replacement.
4. Remove the heater/air distribution case from the vehicle. Refer to HVAC Module Assembly Replacement.
5. Remove the linkage screw from the lower heater core cover post.
6. Remove the linkage lever. Note the position of all the levers to facilitate reassembly.

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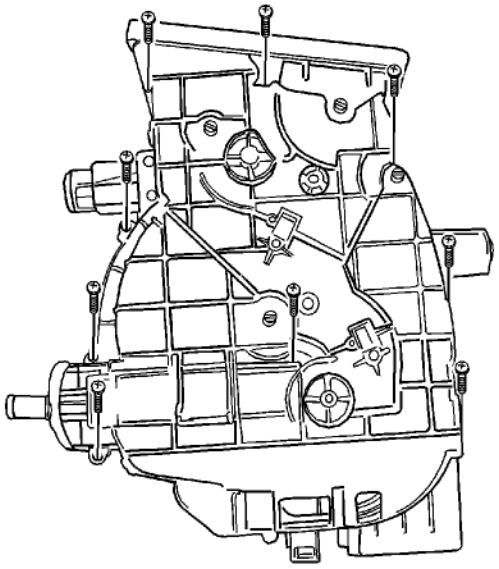
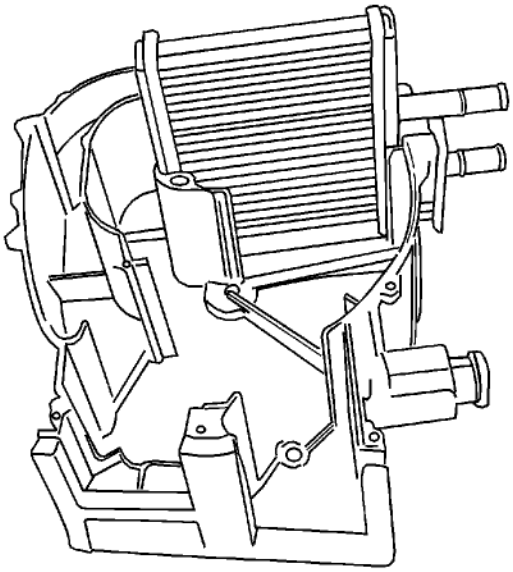


Caution: Handle the case carefully to avoid damage to the linkage levers.

7. Remove the screws that secure the heater core cover.



8. Slowly separate the lower heater core cover from the rest of the assembly. Retain the sealant.
9. Remove the screw and the bracket clamp that secure the heater core lines to the case.
10. Remove the spring clamp that secures the heater core body to the case.
11. Remove the heater core from the case.

Installation Procedure

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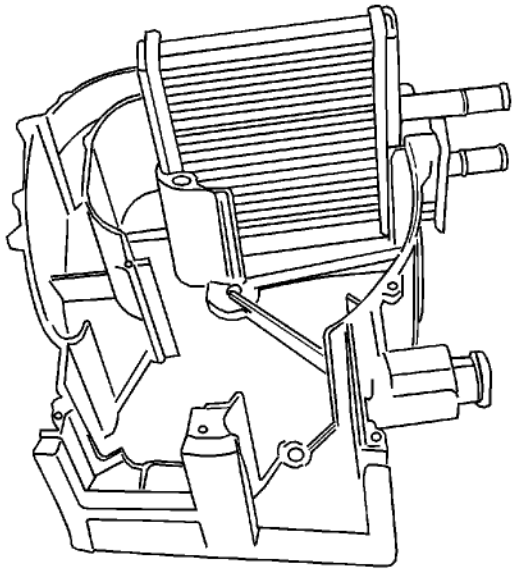
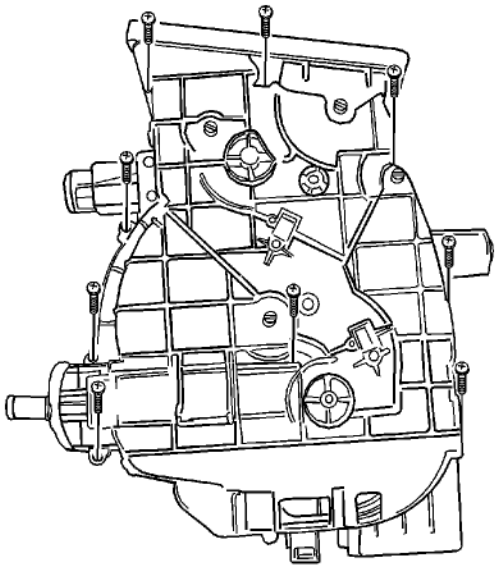


1. Install the heater core into the case.
2. Secure the heater core lines to the case with the retaining bracket clamp and the screw.
3. Install the heater core body with the retaining spring clamp.
4. Reapply the sealant to the heater core cover mounting channel flange as removed.



5. Install the heater core cover.
6. Install the retaining screws.
7. Install the linkage lever onto the cover post with the screw.
8. Confirm proper operation of the actuating levers for the heater/air distribution case doors.

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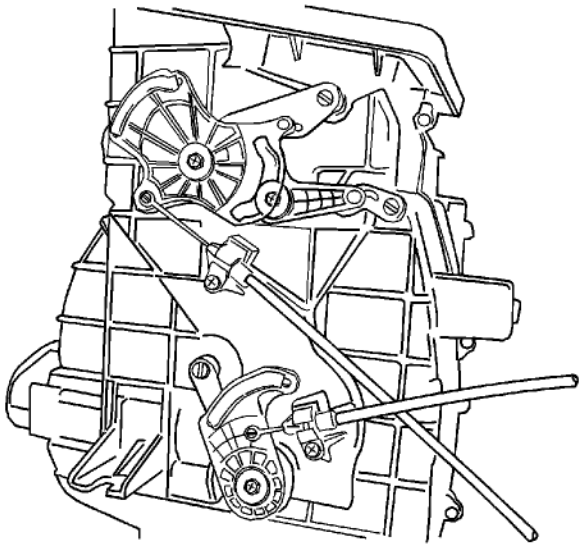

9. Install the heater/air distribution case. Refer to HVAC Module Assembly Replacement.
10. Install the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.
11. Fill the cooling system.
12. Connect the negative battery cable.

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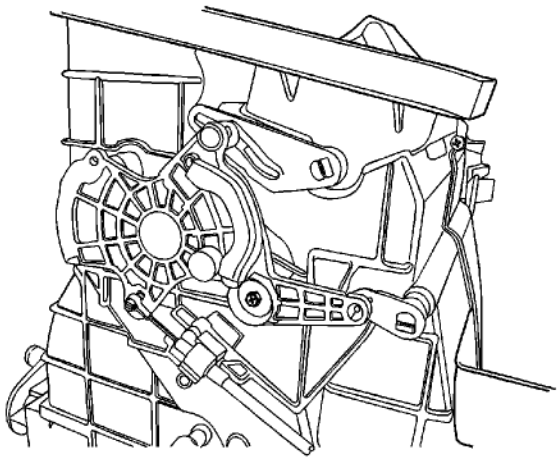
Heater Core Replacement (Notchback)

Removal Procedure



1. Raise the hood.

   Warning: Refer to Battery Disconnect Warning in the Preface section.

2. Disconnect the negative battery cable.
3. Remove the instrument panel assembly from the vehicle. Refer to Instrument Panel Assembly Replacement.
4. Remove the heater/air distribution case from the vehicle. Refer to HVAC Module Assembly Replacement.
5. Remove the linkage screw from the lower heater core cover post.
6. Remove the linkage lever. Note the position of all the levers to facilitate reassembly.

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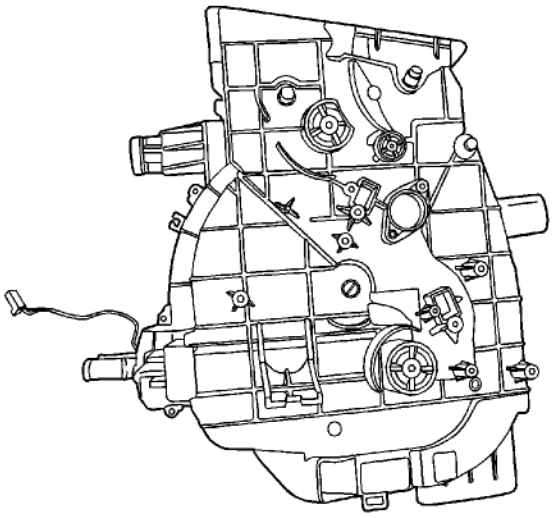
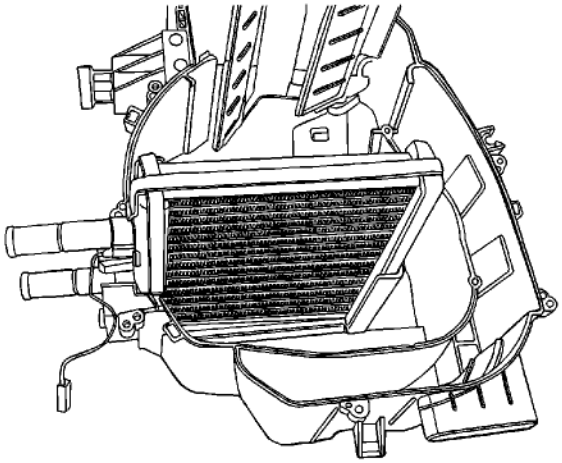


Caution: Handle the case carefully to avoid damage to the linkage levers.

7. Remove the screws that secure the heater core cover.



8. Slowly separate the lower heater core cover from the rest of the assembly. Retain the sealant.
9. Remove the screw and the bracket clamp that secure the heater core lines to the case.
10. Remove the spring clamp that secures the heater core body to the case.
11. Remove the heater core from the case.

Installation Procedure

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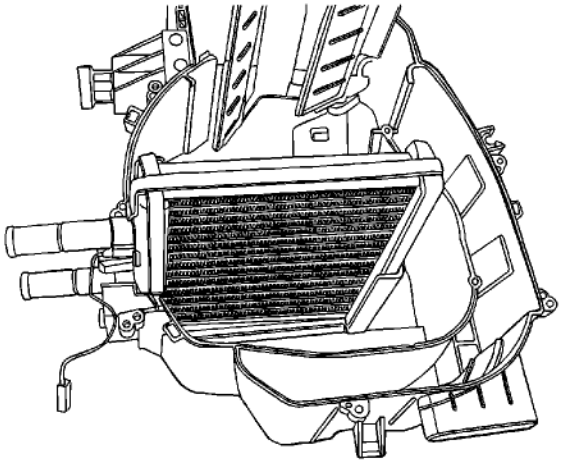
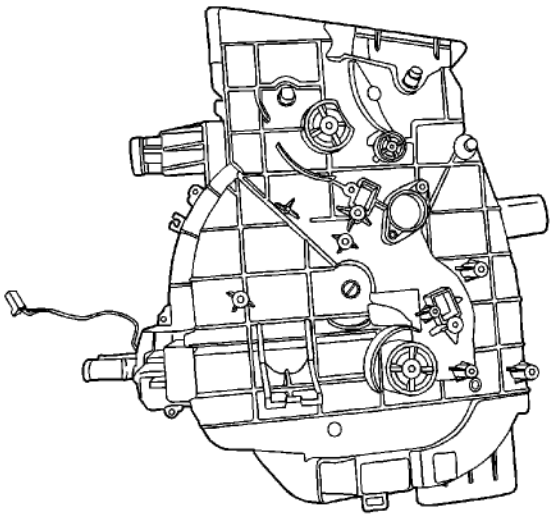


1. Install the heater core into the case.
2. Secure the heater core lines to the case with the retaining bracket clamp and the screw.
3. Install the heater core body with the retaining spring clamp.
4. Reapply the sealant to the heater core cover mounting channel flange as removed.



5. Install the heater core cover.
6. Install the retaining screws.
7. Install the linkage lever onto the cover post with the screw.
8. Confirm proper operation of the actuating levers for the heater/air distribution case doors.

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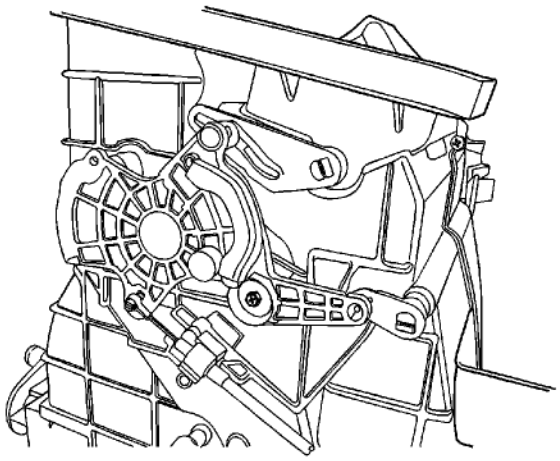

9. Install the heater/air distribution case. Refer to HVAC Module Assembly Replacement.
10. Install the instrument panel assembly. Refer to Instrument Panel Assembly Replacement.
11. Fill the cooling system.
12. Connect the negative battery cable.

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