MAINTENANCE AND REPAIR

ON-VEHICLE SERVICE

GENERAL A/C SYSTEM SERVICE PROCEDURES

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 Daewoo-approved service replacement air conditioning (A/C) O-rings whenever a joint or a fitting is disassembled, except when the O-rings are provided on new components.
When replacing O-rings on an A/C 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.

Notice : 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.

Handling Refrigerant

Caution : Always work in a well-ventilated area and avoid breathing any refrigerant fumes. If you have difficulty with breathing, seek medical attention immediately. If refrigerant comes in contact with any part of your body, flush the exposed area with water. If a rash or pain develops, seek medical attention.

Air conditioning systems contain refrigerant. This is a chemical mixture which requires special handling procedures to avoid personal injury.
Always wear goggles and wrap a clean cloth around the fittings, the valves and the connections when performing work that involves opening the refrigerant system. Do not weld or steam clean on or near any vehicle-installed air conditioning lines or components.
All refrigerant drums are shipped with a heavy metal screw cap. The purpose of the cap is to protect the valve and the safety plug from damage. It is good practice to replace the cap after each use of the drum.
If it is necessary to transport or carry any container of refrigerant in a vehicle, do not carry it in the passenger compartment.

Handling of Refrigerant Lines and Fittings

Notice : Using too low or too high torque when tightening a fitting can result in loose joints or deformed joint parts. Both conditions can result in refrigerant leakage.

- Keep all metal tubing lines free of dents or kinks. Any line restrictions will cause the loss of system capacity.
- Never bend a flexible hose line to a radius of less than four times the diameter of the hose.
- Never allow a flexible hose line to come within 65 mm (2-1/2 inches) of the exhaust manifold.
- Inspect flexible hose lines regularly for leaks or brittleness.
- Replace flexible hose lines with new lines if you find signs of deterioration or leaking.
- Discharge all refrigerant of the refrigeration system before disconnecting any fitting in the refrigeration system.
- Proceed very cautiously regardless of the gauge readings.

Caution : Keep your face and your hands away from the fitting so that you will not be injured if there happens to be liquid refrigerant in the line.

- Open the fittings very slowly.
- If you notice pressure when you loosen a fitting, allow the pressure to bleed off as described under "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
- Cap or tape any refrigerant line immediately after it is opened. This will prevent the entrance of moisture and dirt, which can cause internal compressor wear or plugged lines in the condenser, the evaporator core, the expansion valve, or the compressor inlet screens.

Important : Use two proper wrenches to connect the O-ring fittings.

- Back up the opposing fitting to prevent distortion of the connecting lines or the components.
- Back up both the swagged fitting on the flexible hose connections and the coupling to which it is attached with two wrenches to prevent turning the fitting and damaging the ground seat.
- Keep the O-rings and the seats in perfect condition. A burr or a piece of dirt may cause a refrigerant leak.
- Dip new O-rings in clean polyalkaline glycol refrigerant oil before installation.

Maintaining Chemical Stability In the Refrigeration System

The efficient operation and the life of the air conditioning (A/C) 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 gauge set and all replacement parts.
- Use a clean and dry transfer device and container to add polyalkaline glycol refrigerant oil. This will ensure that the oil remains as moisture-free as possible. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
- 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. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section for the instructions to perform this procedure properly.

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.

Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System

Caution : 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.

Caution : To avoid personal injury, always wear goggles and gloves when performing work that involves opening the refrigeration system.

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

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

Charging Station Setup and Maintenance

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, and recharge an A/C system with a measured amount of refrigerant. Refer to the manufacturer's instructions for all initial setup procedures and all maintenance procedures.

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 the following:

1. Main Power Switch
   - Supplies electrical power to the control panel.
2. Display
   - Shows the time programmed for vacuum.
   - Shows the weight of the refrigerant programmed for recharging.
   - Refer to the manufacturer's instructions for detailed programming information.
3. Low-Side Manifold Gauge
   - Shows the system's low-side pressure.
4. High-Side Manifold Gauge
   - Shows the system's high-side pressure.
5. Controls Panel
   - Controls the various operating functions.
6. Low-Side Valve
   - Connects the low side of the A/C system to the unit.
7. Moisture Indicator
   - Shows whether the refrigerant is wet or dry.
8. High-Side Valve
   - Connects the high side of the A/C system to the unit.

Refrigerant Recovery

Important : 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 manufactured 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.
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.
5. Check the high-side and the low-side gauges 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.

Important : If there is no refrigerant in the system, do not continue with the recovery operation which would, under this condition, 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.

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

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

Important : Some A/C system polyalkaline glycol (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 refrigerant and provides a means of determining how much oil was removed. Replace the same amount of oil when recharging the system. Refer to the manufacturer's instructions for the charging station in use.

13. Wait 5 minutes, then check the control panel low-side gauge. If the A/C has maintained vacuum, the recovery is complete.
14. If the low-side gauge pressure rises above zero, there is more refrigerant in the system. Recover the additional refrigerant. Repeat this step until the system maintains vacuum for 2 minutes.

Important : 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.

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 pounds) 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.

Important : 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 vented from the tank automatically during the recycling process. You may hear the pressure being released.
4. Check for leaks in the system. Refer to the manufacturer's instructions for the charging station in use.

Important : Change the vacuum pump oil frequently. 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.
2. Use the correct graduated bottle of PAG oil for the R-134a system.
   Important:
   - Keep the oil bottles tightly capped at all times to protect the oil from moisture and contamination.
   - You must have an A/C system vacuum for this operation. Never open the oil injection valve while there is positive pressure in the A/C system. This will result in oil blowback through the bottle vent.
   - Never let the oil level drop below the pickup tube while charging or replenishing the system, as 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 amount of PAG oil to the system.
3. Close the valve when the required oil charge has been pulled into the system.

Charging

Important : Evacuate the A/C 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, making sure to use the correct system of measurement, i.e. kilogram (kg) or pound (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 gauge and the low-side gauge 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. The system will quickly draw in refrigerant from both hoses through the low-side hose.
10. Close the low-side coupler valve.
11. Disconnect the low-side hose from the vehicle.

Unsuccessful Transfer

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

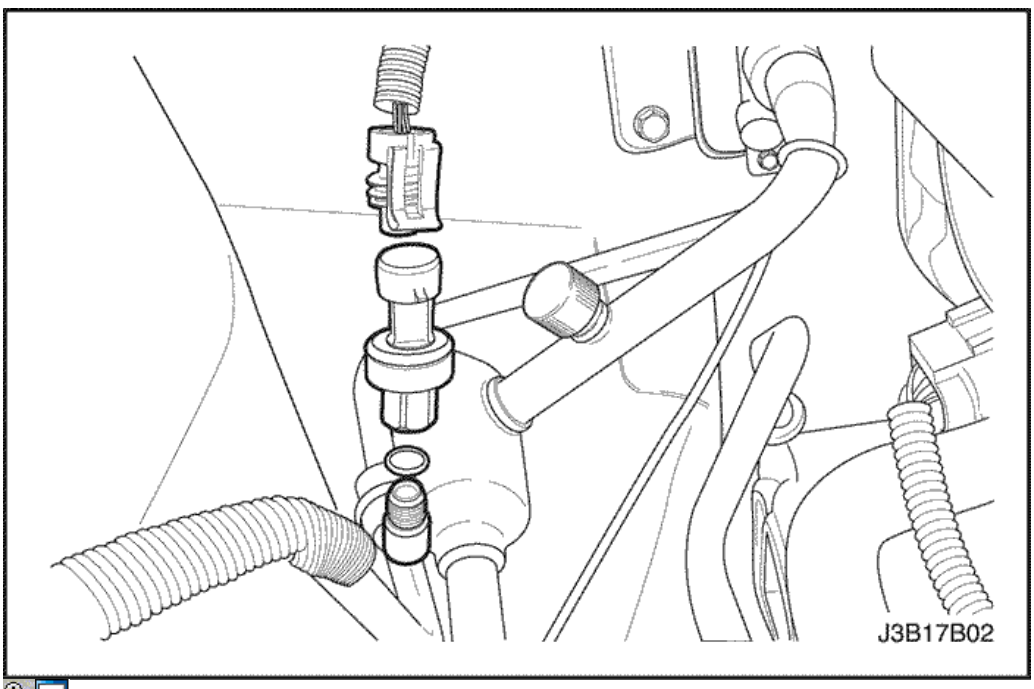
1. The pressure in the unit's tank and the pressure in the A/C system are roughly equal.
   - This will cause the transfer to proceed too slowly.
   - Refer to the manufacturer's instructions for the charging station in use.
2. There was not enough refrigerant in the unit's tank to transfer the full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

SERVICEABLE COMPONENTS

Components Used In Non-A/C Systems

Refer to *Section 7A, Heating and Ventilation System* for on-vehicle service procedures for the following sections:

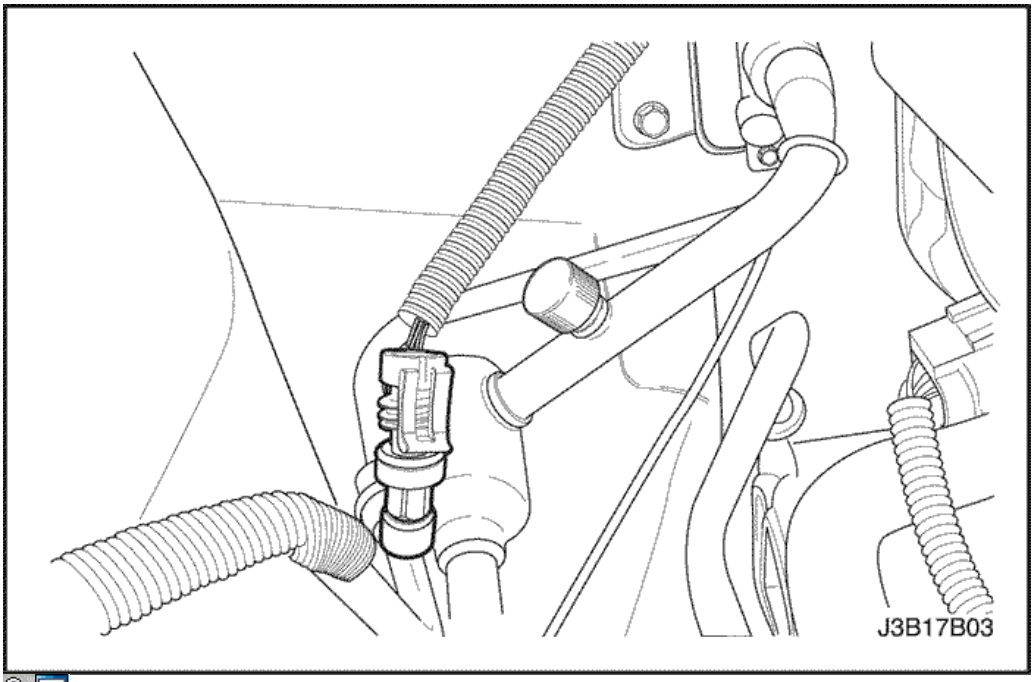
- Blower Motor.
- Blower Resistor.
- Control Assembly Knob Lighting.
- Control Assembly.
- Heater Hoses.
- High-Blower Relay.
- A/C Control Vacuum Tank.
- Temperature Control Cable.
- Heater/Air Distributor Case Assembly (A/C Module).
- Heater Core.



A/C Pressure Transducer

Removal Procedure

1. Disconnect the negative battery cable.
2. Release the connector lock and pull the transducer wire connector out.
3. Remove the transducer with a wrench.
4. Discard the O-ring seal.

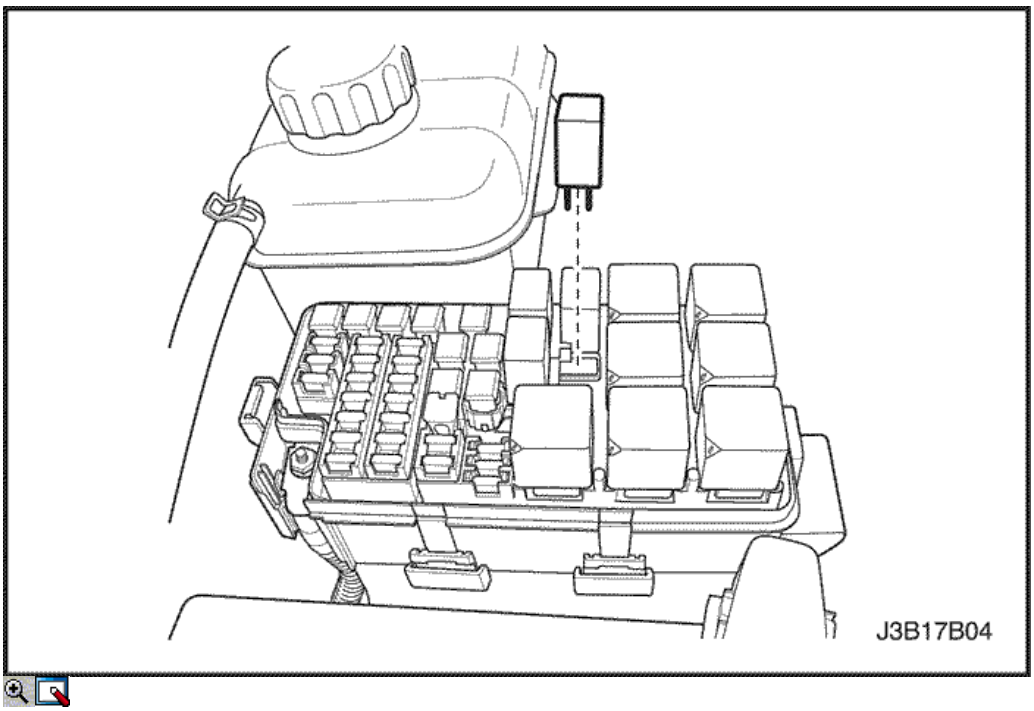


Installation Procedure

1. Install the new O-ring seal on the transducer.
2. Install the pressure transducer.

   Tighten
   Tighten the pressure transducer to 7 N•m (62 lb-in).

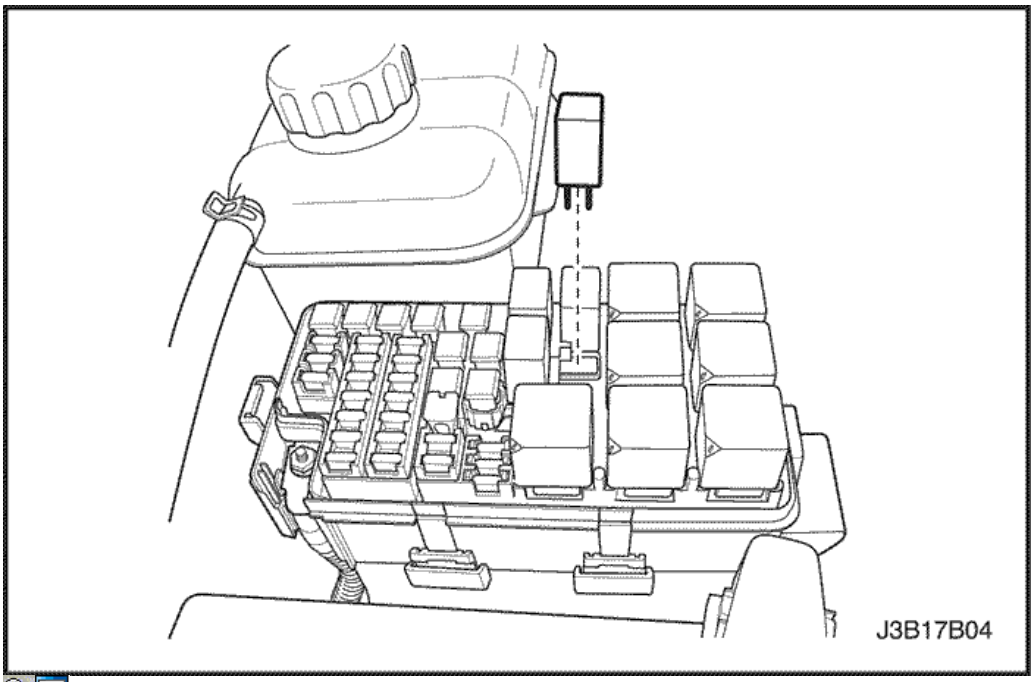
3. Connect the wire connector.
4. Connect the negative battery cable.



A/C Compressor Relay

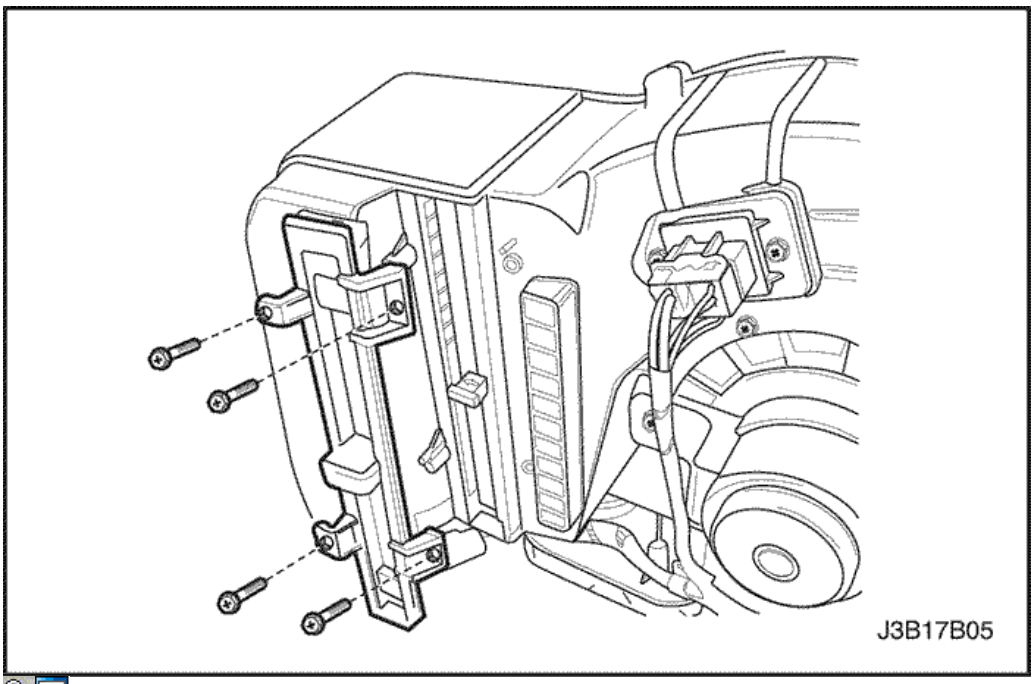
Removal Procedure

1. Disconnect the negative battery cable.
2. Pull the relay straight up and out from its location in the engine fuse block at the left front corner.



Installation Procedure

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.

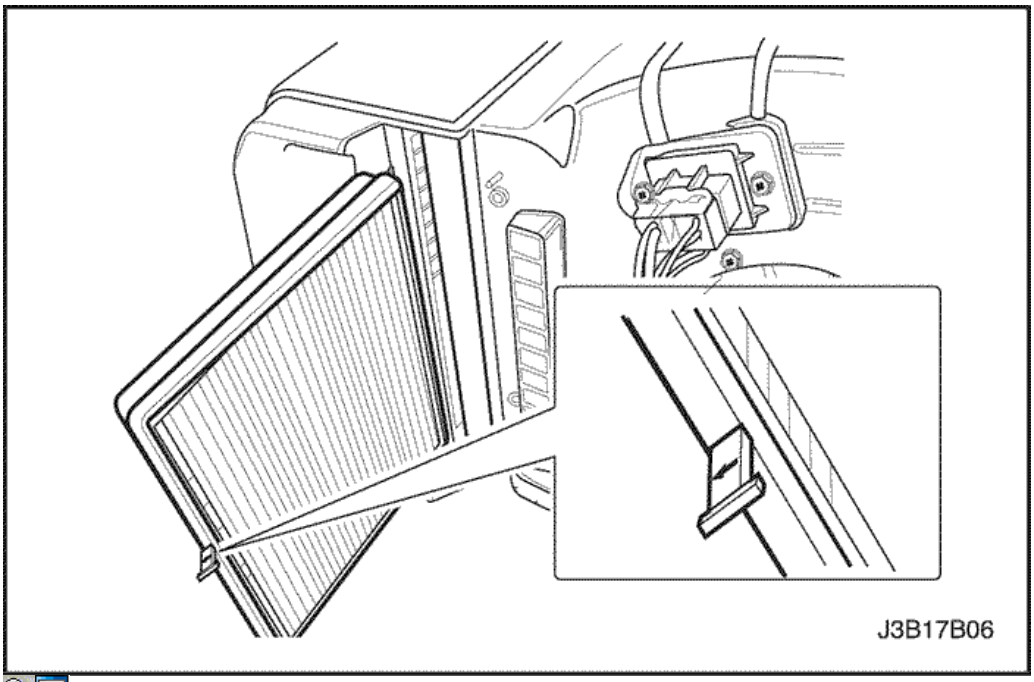


Air Filter

(Left-Hand Drive Shown, Right-Hand Drive Similar)

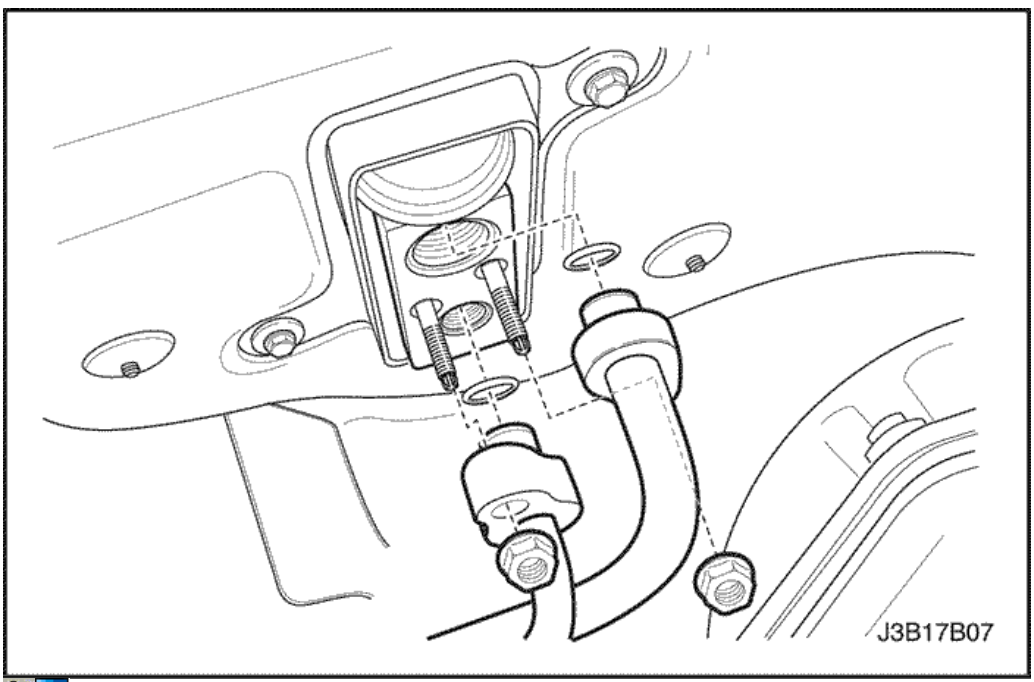
Removal Procedure

1. Remove the glove box. Refer to *Section 9E, Instrumentation/Driver Information.*
2. Remove the screws and the air filter.
3. Remove the air filter.



Installation Procedure

1. Install the air filter.
2. Install the air filter cover and the screws.
3. Install the glove box. Refer to *Section 9E, Instrumentation/Driver Information.*

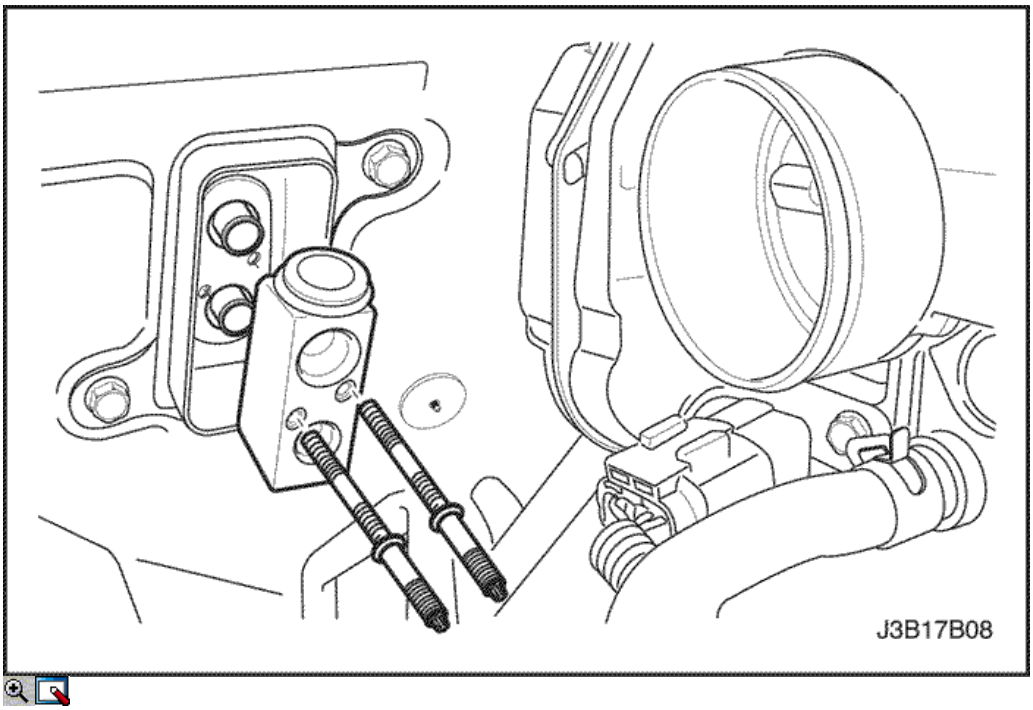


A/C Expansion Valve

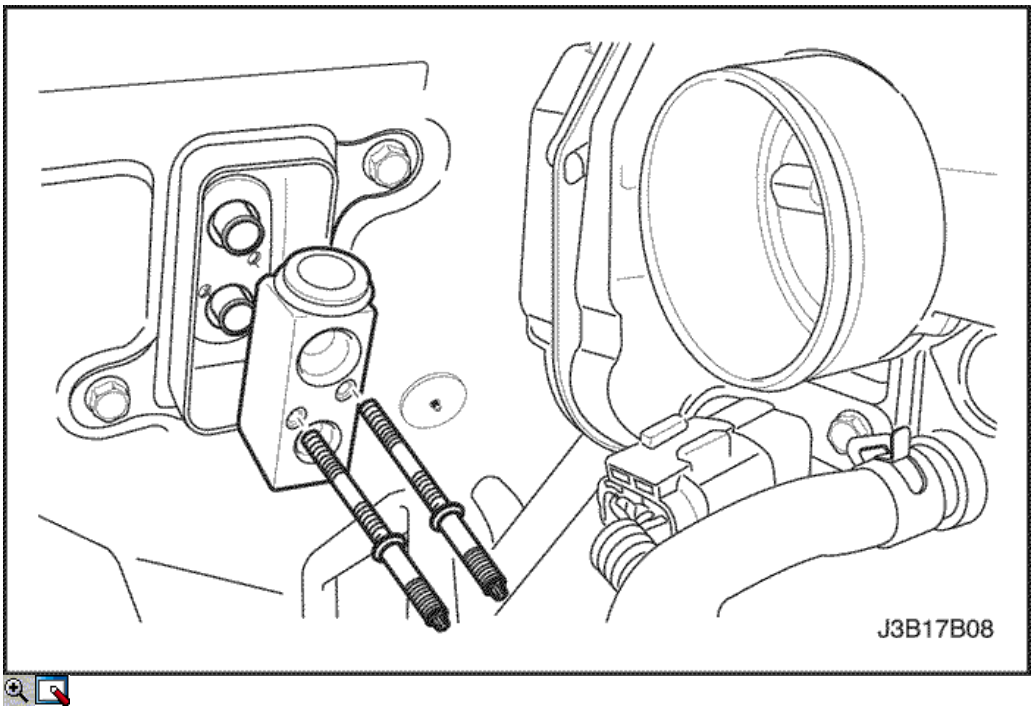
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to *"Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System"* in this section.
3. Remove the suction hose/liquid pipe block retaining nuts at the fire wall.



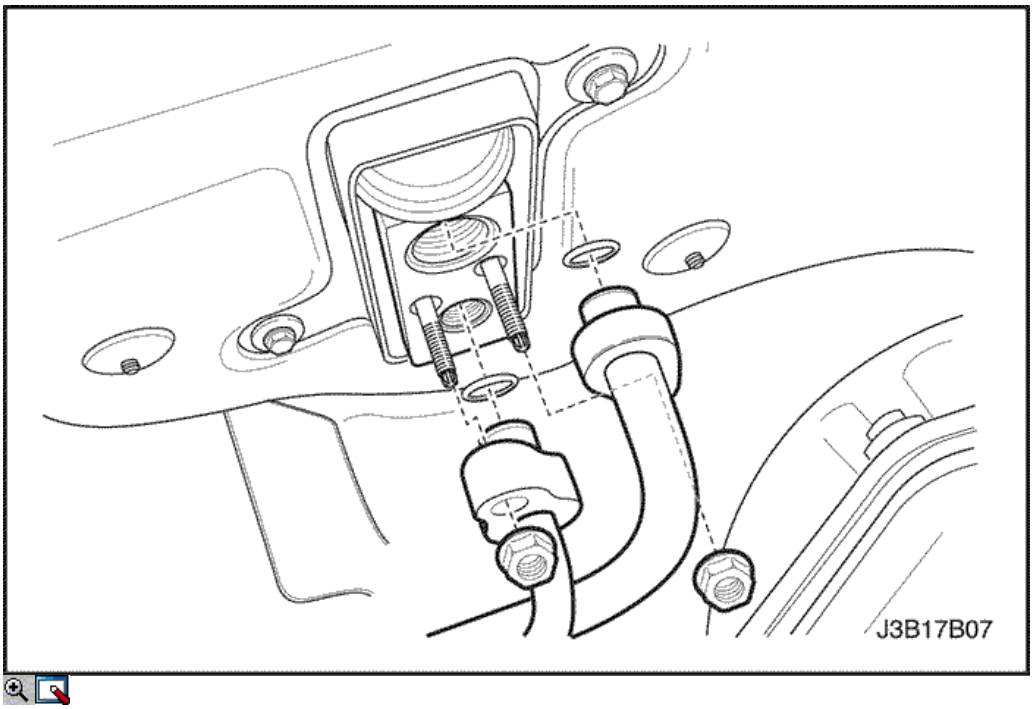
4. Remove the expansion valve connector block retaining stud bolts.
5. Remove the expansion valve.
6. Discard the O-rings.



Installation Procedure

1. Clean the grooves that fit the O-rings of any dirt or contamination.
2. Install new O-rings on the evaporator tubes.
3. Install a expansion valve onto the evaporator tubes.
4. Insert the expansion valve connector block retaining stud bolts.

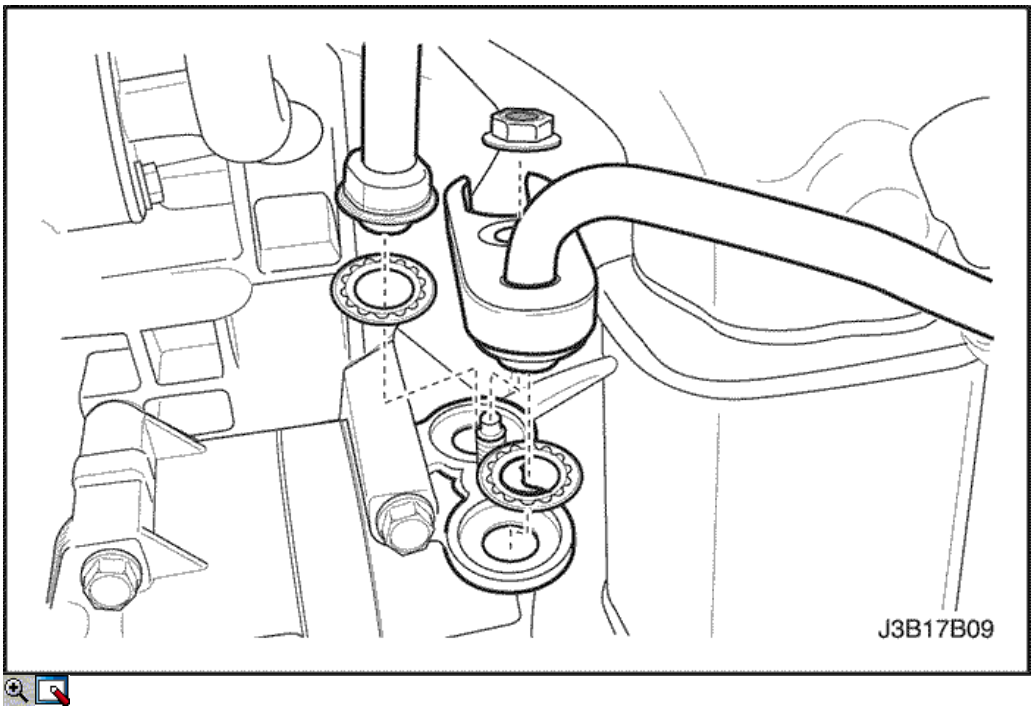
   Tighten
   Tighten the expansion valve retaining stud bolts to 8 N•m (71 lb-in).



5. Install the suction hose/liquid pipe block retaining nuts.

   Tighten
   Tighten the suction hose/liquid pipe block-to-expansion valve retaining nuts to 14 N•m (10 lb-ft).

6. Connect the negative battery cable.
7. Evacuate and recharge the A/C system. Refer to *"Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System"* in this section.

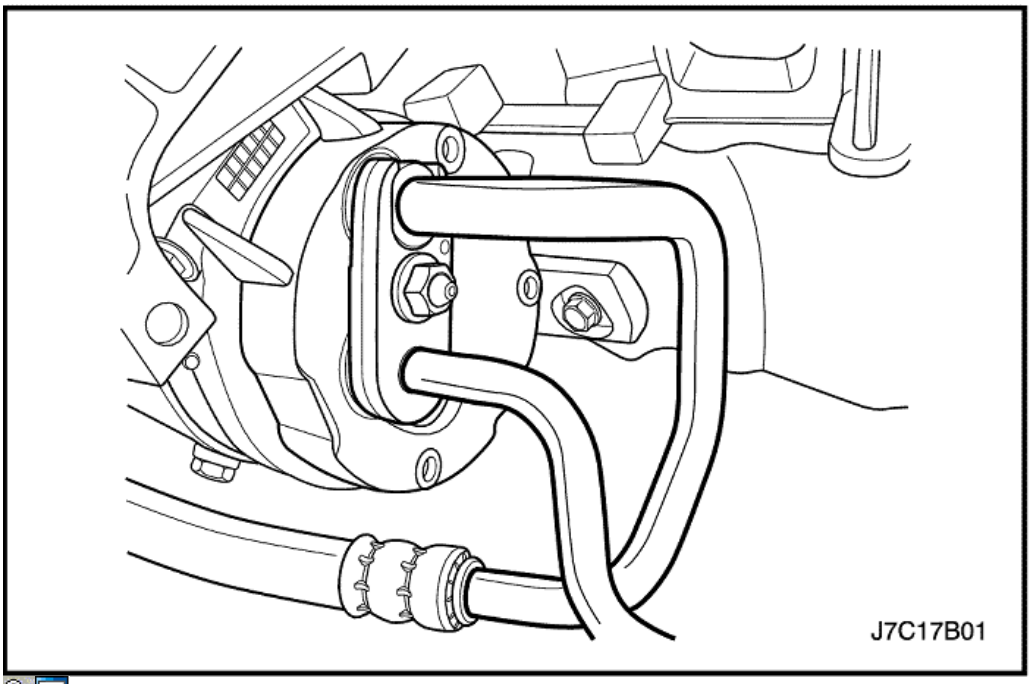


A/C High-Pressure Pipe Line

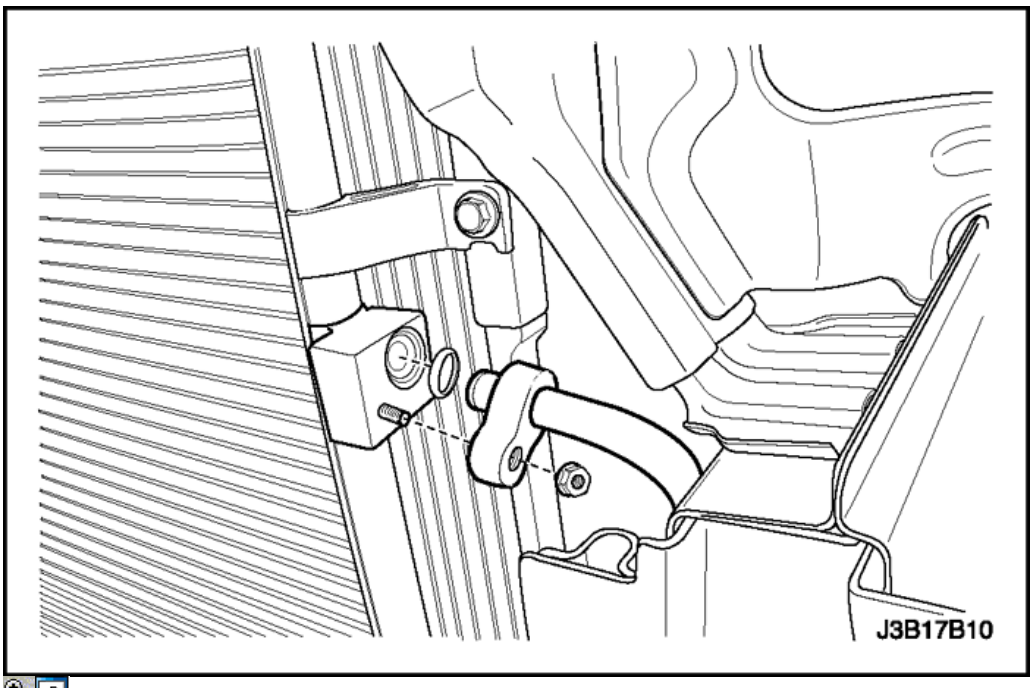
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the nut at the discharge hose block connected to compressor.

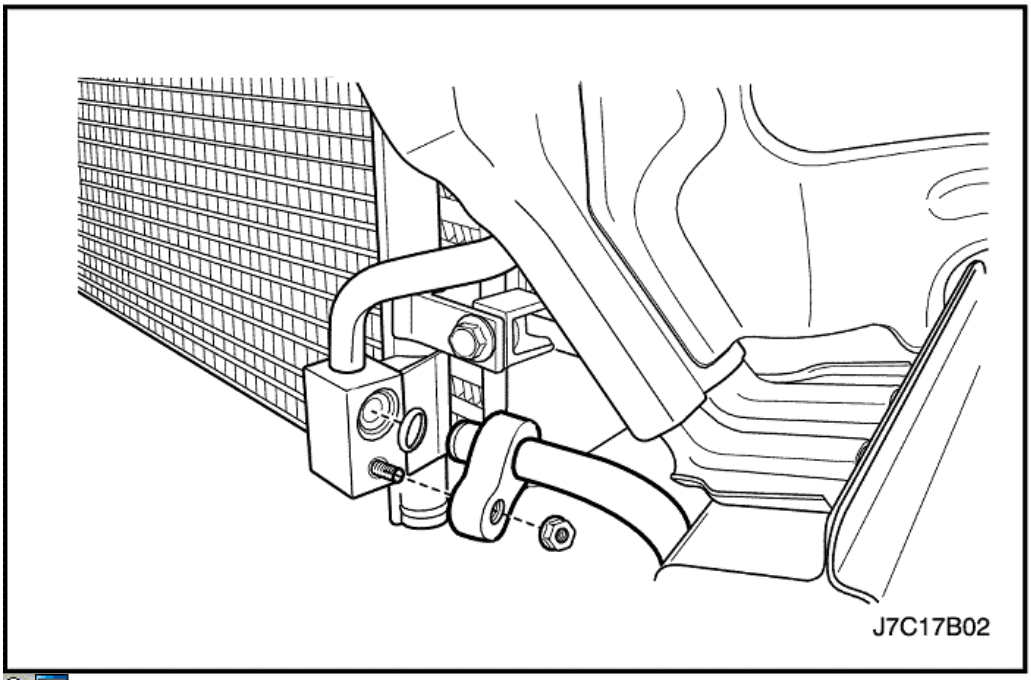


Notice : For diesel engine, refer to this picture.



4. Remove the handlamp housing at the left-hand side. Refer to Section 9B, Lighting Systems.
5. Remove the nut at the condenser connecting block.

6. Remove the refrigerant discharge hose.



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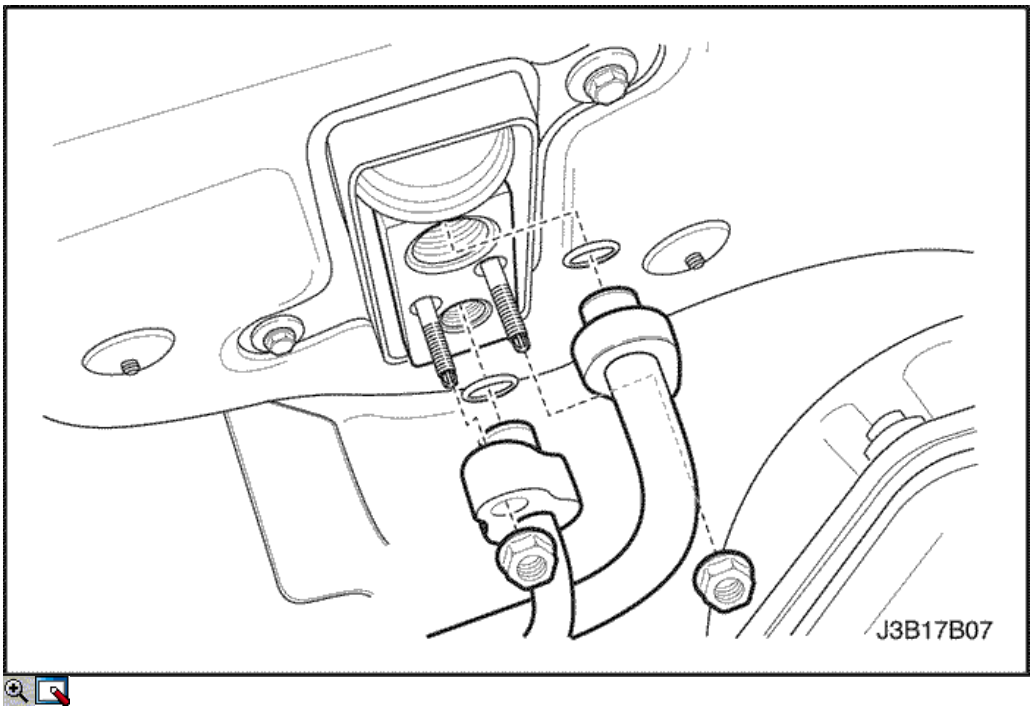
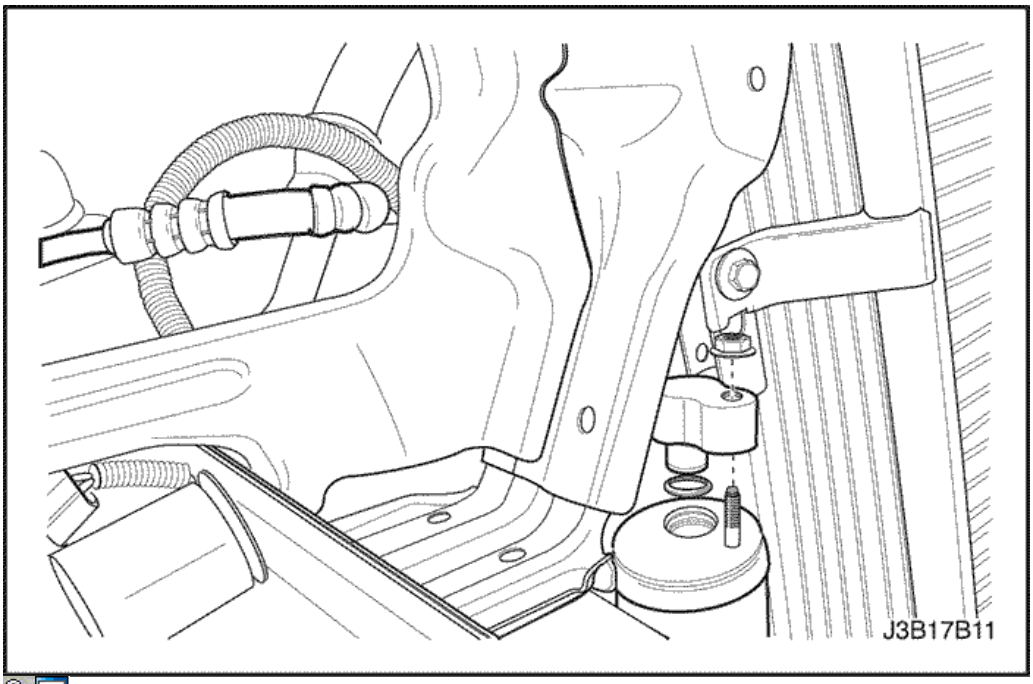
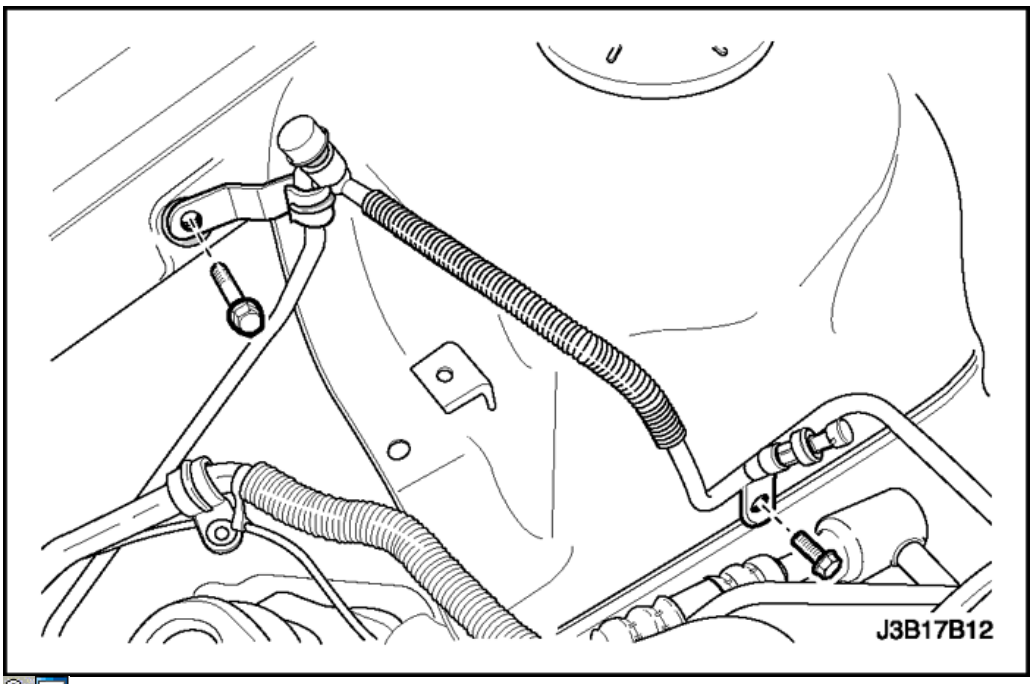


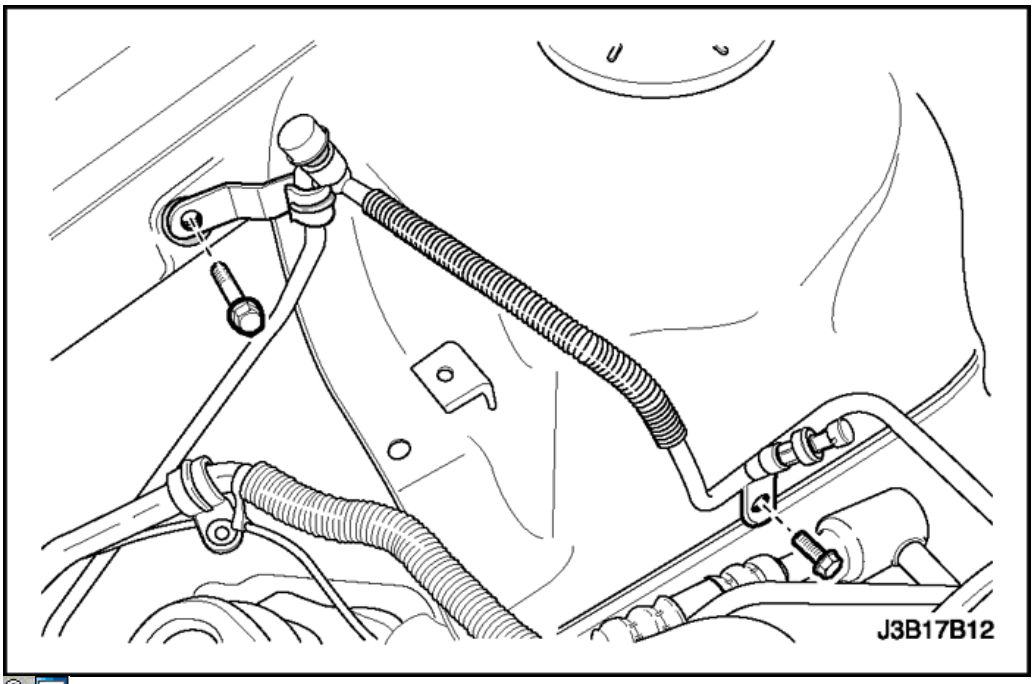
7. Remove the air cleaner housing bolts and the air filter housing assembly.
8. Disconnect the electrical connector at the pressure transducer.
9. Remove the liquid pipe block-to-expansion valve retaining nut at the fire wall.



10. Remove the headlamp housing at the right-hand side. Refer to Section 9B, Lighting Systems.
11. Remove the liquid pipe block-to-receiver dryer retaining nut.



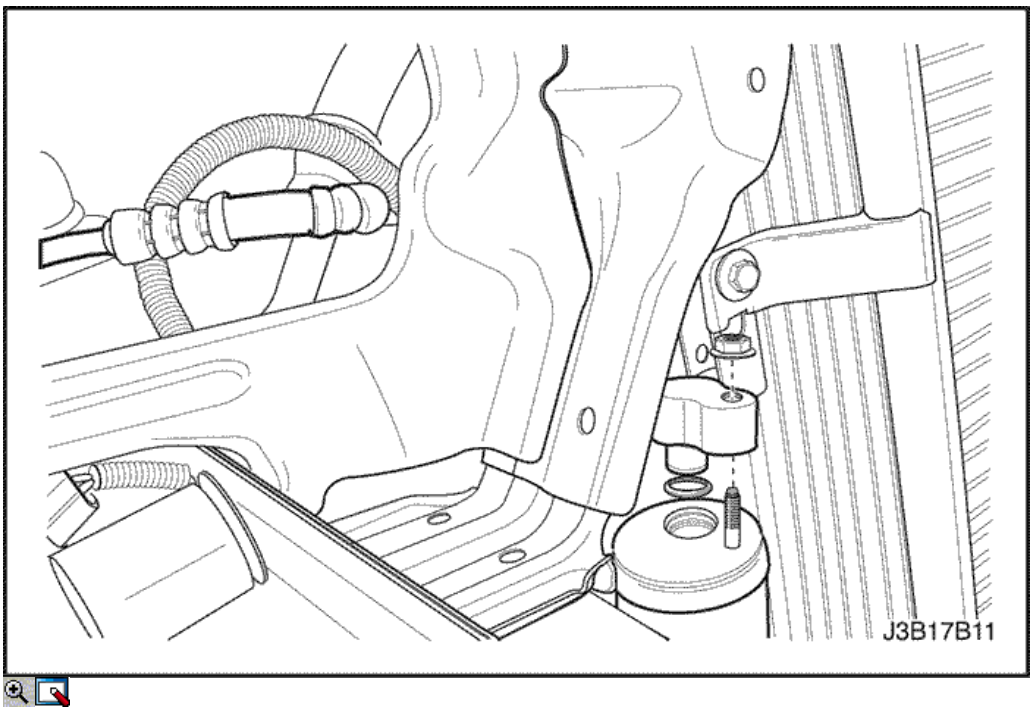
12. Remove the bolts which secure the support clamps that hold the liquid pipe to the vehicle.
13. Remove the liquid pipe from the vehicle.
14. Cap the opening at the receiver-dryer to prevent contamination.



Installation Procedure

1. Position the liquid pipe into the vehicle.
2. Install the liquid pipe support clamp bolts.

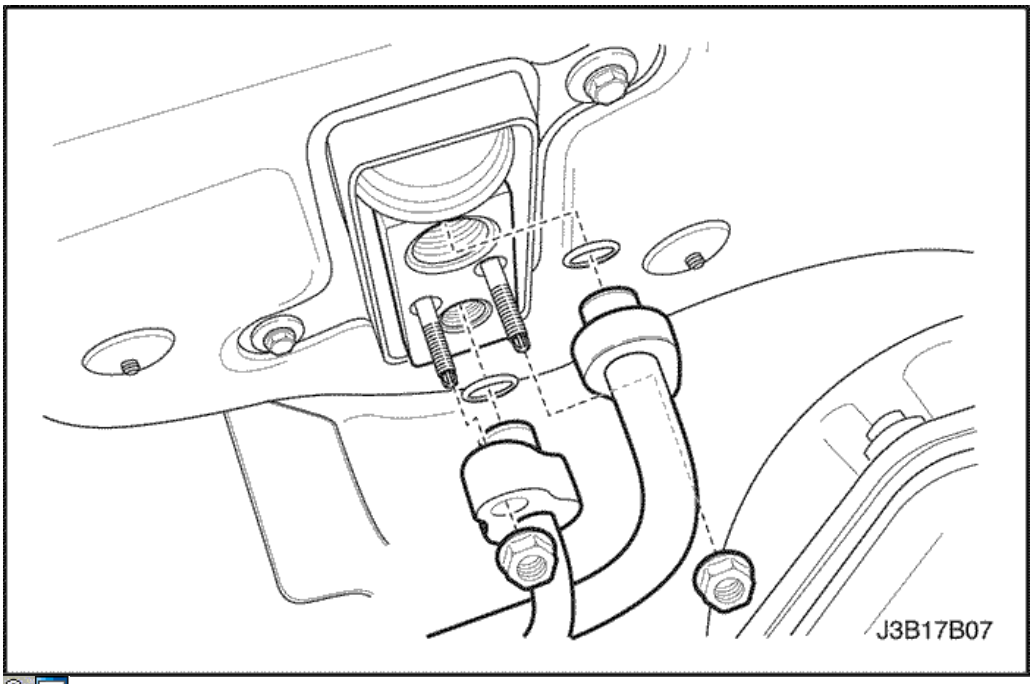
   Tighten
   Tighten the liquid pipe support clamp bolts to 8 N•m (71 lb-in).



3. Install a new O-ring on the pipe at the receiver dryer.
4. Install the liquid pipe block-to-receiver-dryer retaining nut.

   Tighten
   Tighten the liquid pipe block-to-receiver-dryer retaining nut to 14 N•m (10 lb-ft).

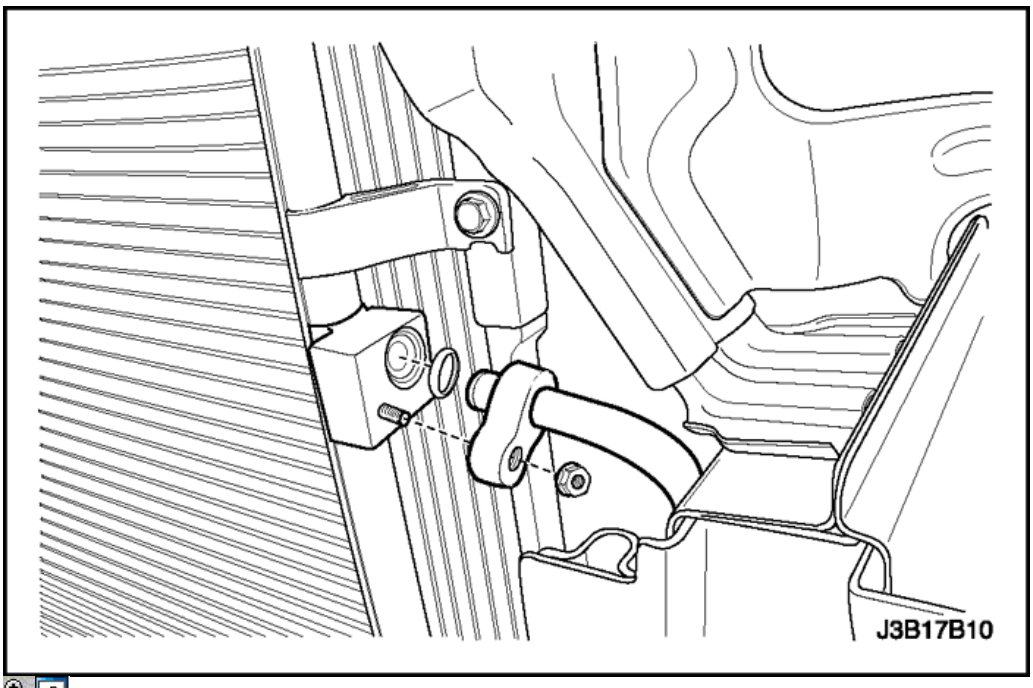
5. Install the handlamp housing at the right-hand side. Refer to Section 9B, Lighting Systems.



6. Install the liquid evaporator pipe block retaining nut to the fire wall.

   Tighten
   Tighten the liquid pipe block-to-expansion valve retaining nut to 14 N•m (10 lb-ft).

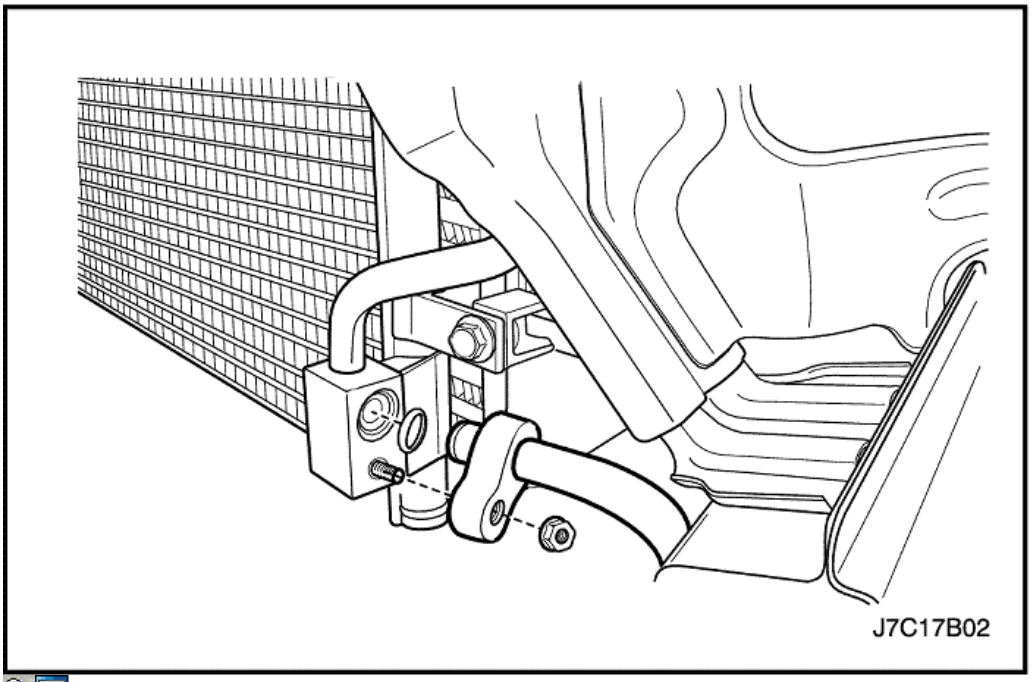
7. Connect the electrical connector at the pressure transducer.
8. Install the air cleaner housing bolts and the air filter housing assembly.



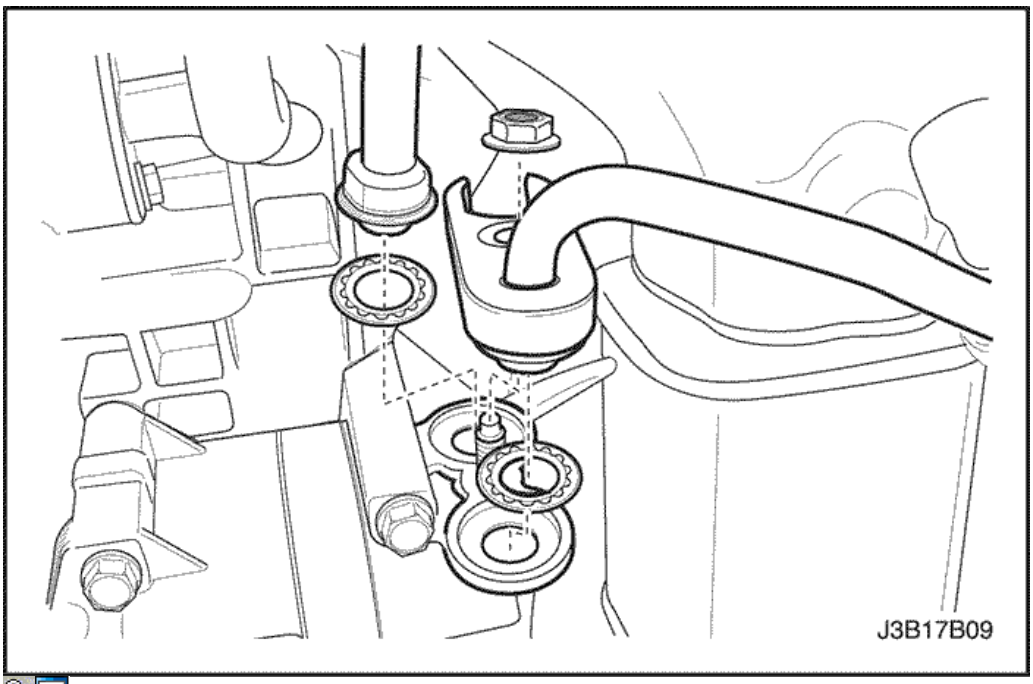
9. Position the refrigerant discharge hose into the vehicle.
10. Install the nut at the condenser connecting block.

    Tighten
    Tighten the refrigerant discharge hose block-to-condenser retaining nut to 16 N•m (12 lb-ft).

11. Install the handlamp housing at the right-hand side. Refer to Section 9B, Lighting Systems.



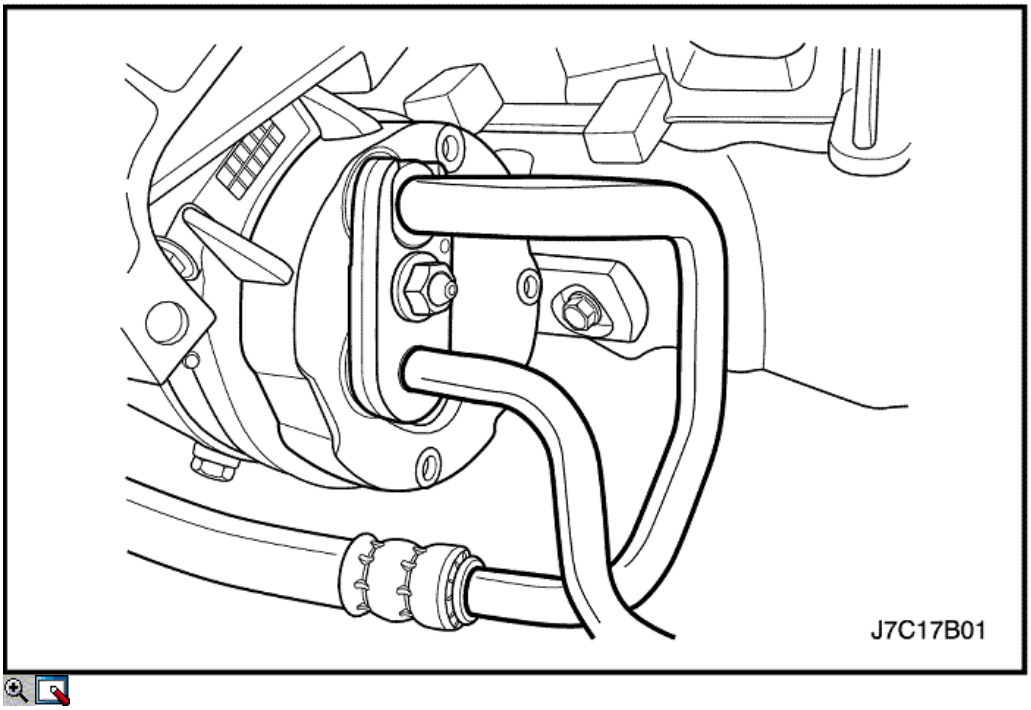
Notice : For diesel engine, refer to this picture.



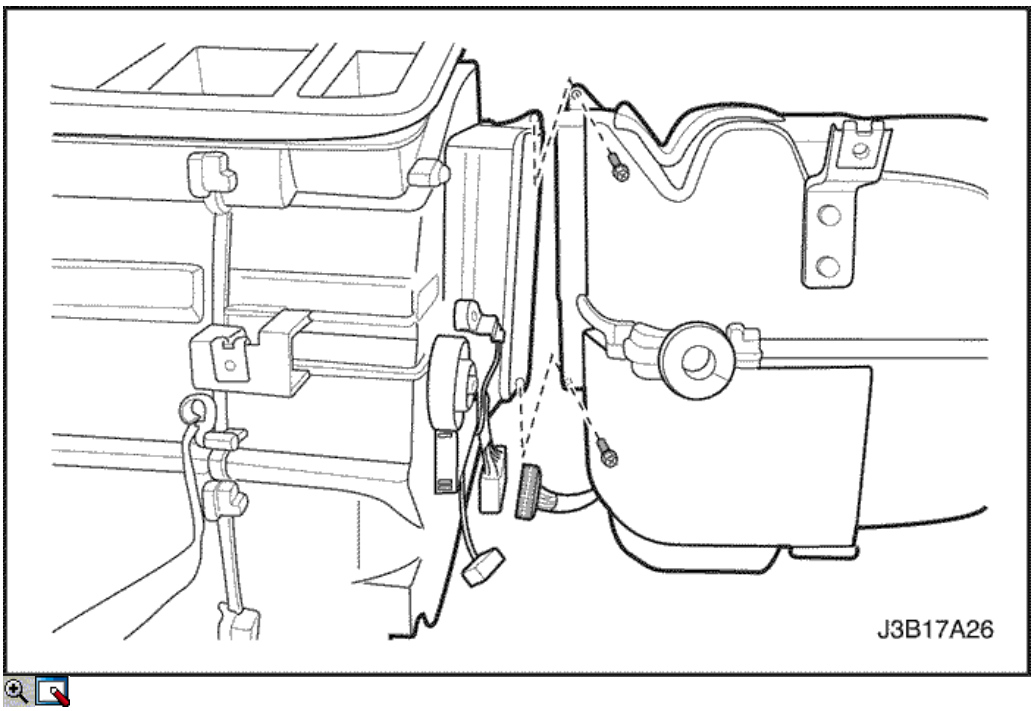
12. Install the nut at the discharge hose block connected to compressor.

    Tighten
    Tighten the refrigerant discharge hose block-to-compressor retaining nut to 33 N•m (24 lb-ft).

13. Connect the negative battery cable.
14. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.



Notice : For diesel engine, refer to this picture.

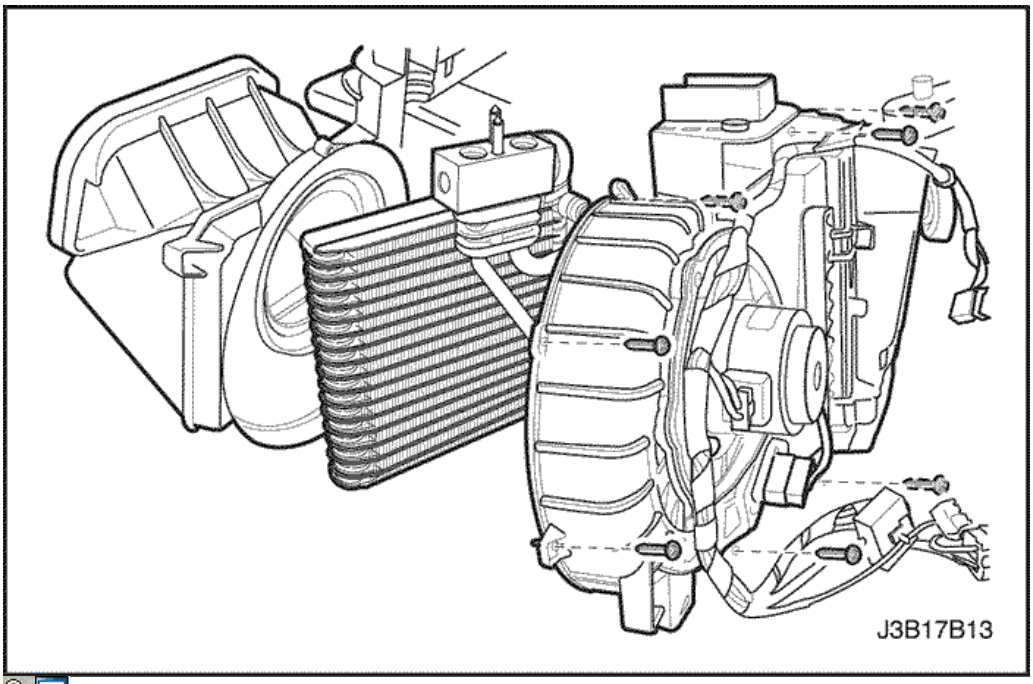


Evaporator Core

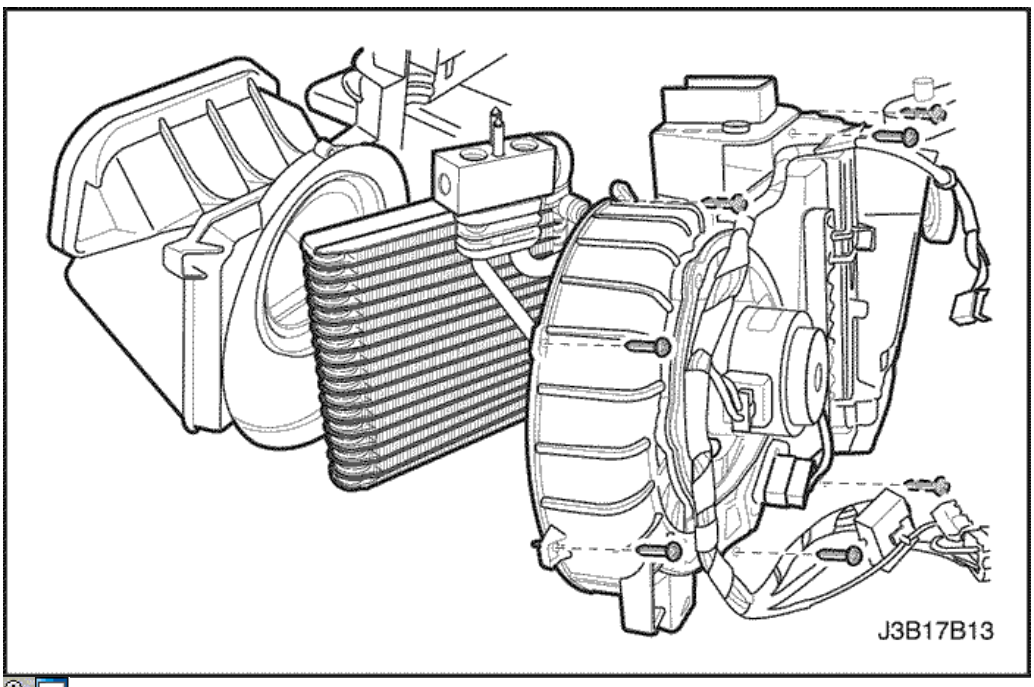
(Left-Hand Drive Shown, Right-Hand Drive Similar)

Removal Procedure

1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System"in this section.
3. Remove the heater/air distributor case assembly. Refer to *Section 7A, Heating and Ventilation System.*
4. Remove the wiring harness and electrical connectors from the heater/air distributor case assembly.
5. Remove the screws that connect the heater core housing and the evaporator housing.



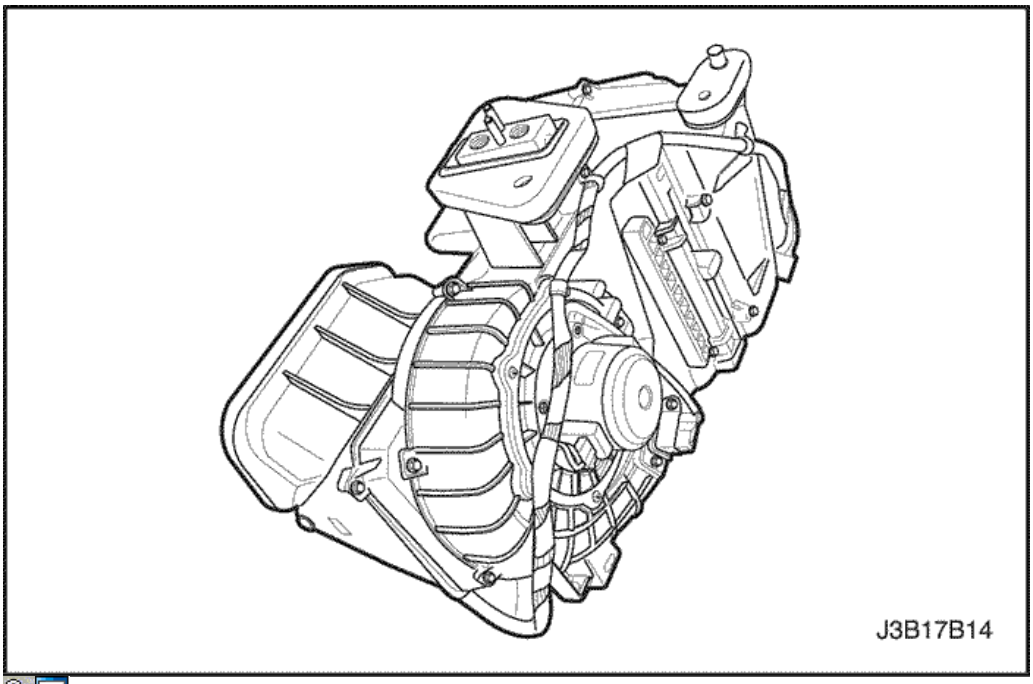
6. Remove evaporator core cover screws from the evaporator core housing.
7. Remove the evaporator core.



Installation Procedure

1. Install the evaporator core into the case.
2. Install the screws on the evaporator core housing.

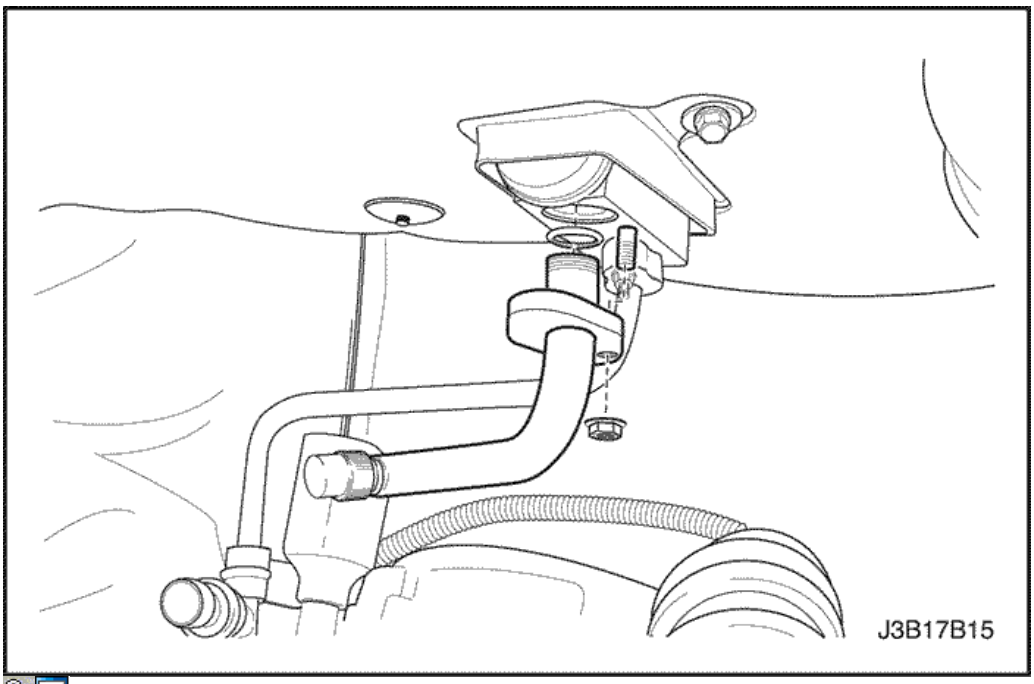
Tighten
Tighten the evaporator core cover screws to 1.2 N•m (11 lb-in).



3. Install the screws that connect the heater core housing and the evaporator housing.

   Tighten
   Tighten the screws to 1.2 N•m (11 lb-in).

4. Connect the wiring harness and electrical connectors to the heater/air distributor case assembly.
5. Install the heater/air distributor case assembly. Refer to *Section 7A, Heating and Ventilation System.*
6. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
7. Connect the negative battery cable.

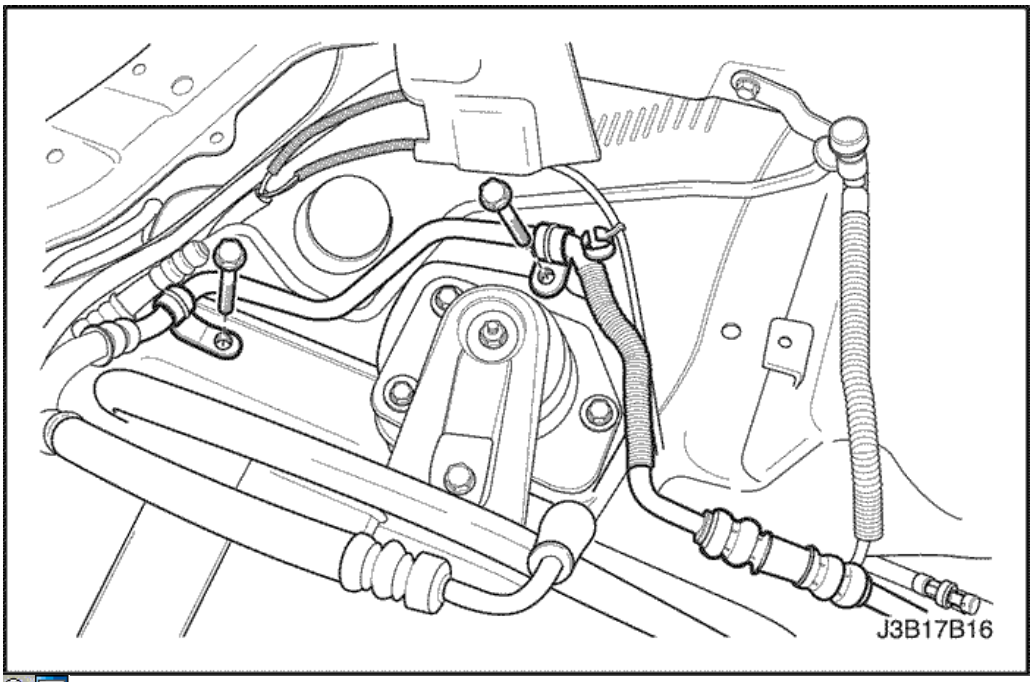


A/C Suction Hose Assembly

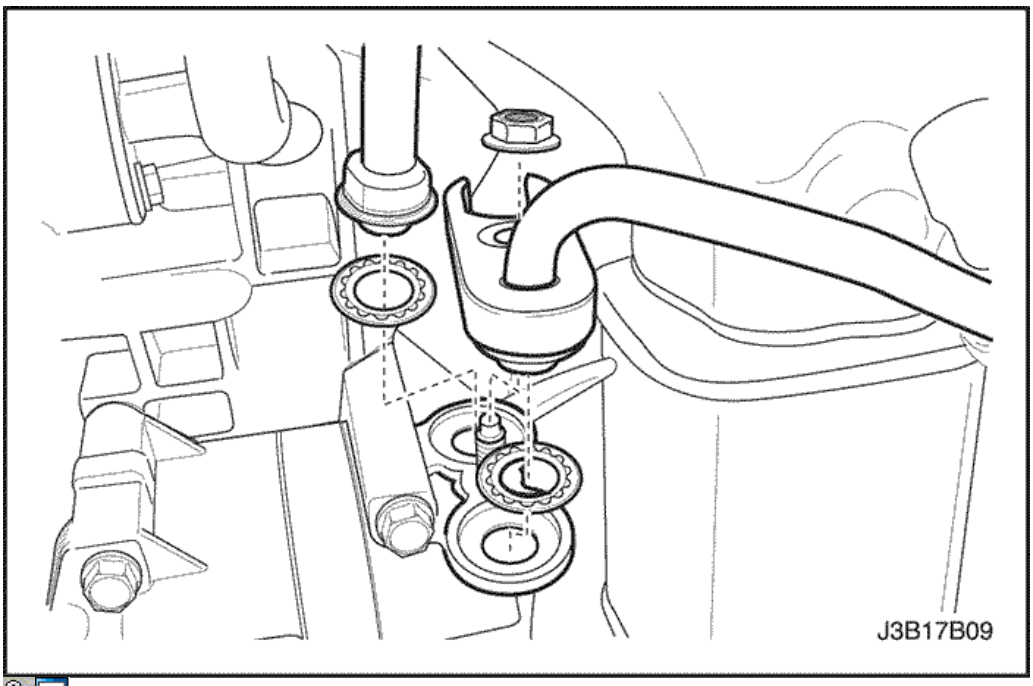
Removal Procedure

1. Disconnect the negative battery cable.

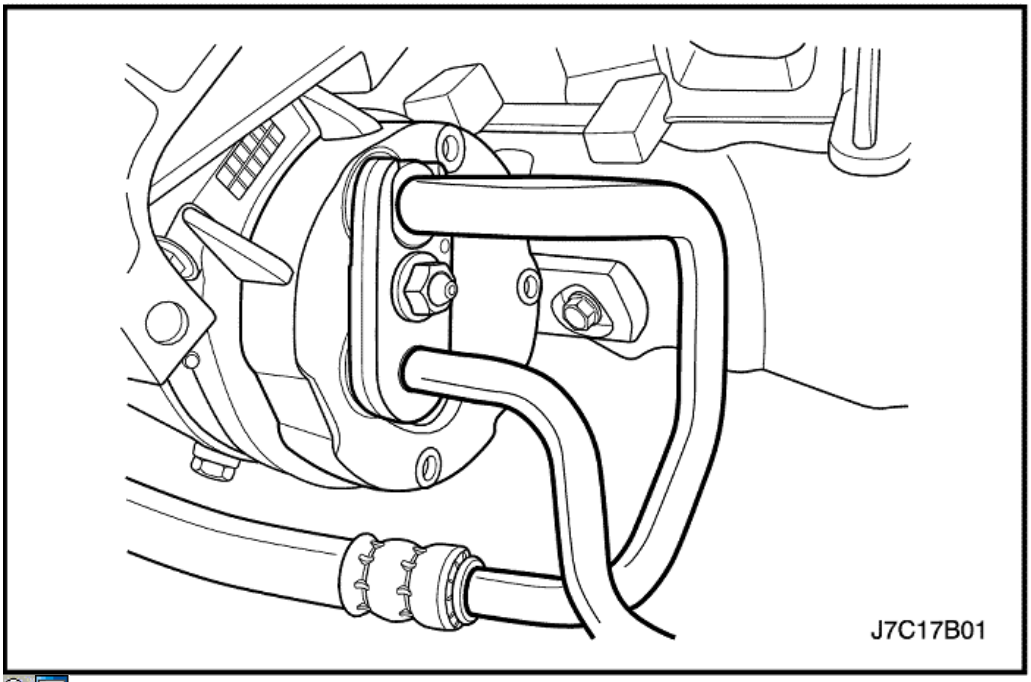
2. Discharge and recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the air cleaner housing bolts and the air filter housing assembly.
4. Disconnect the electrical connector at the pressure transducer.
5. Remove the suction hose block retaining nut at the fire wall.
6. Cap the openings to the expansion valve to prevent contamination.



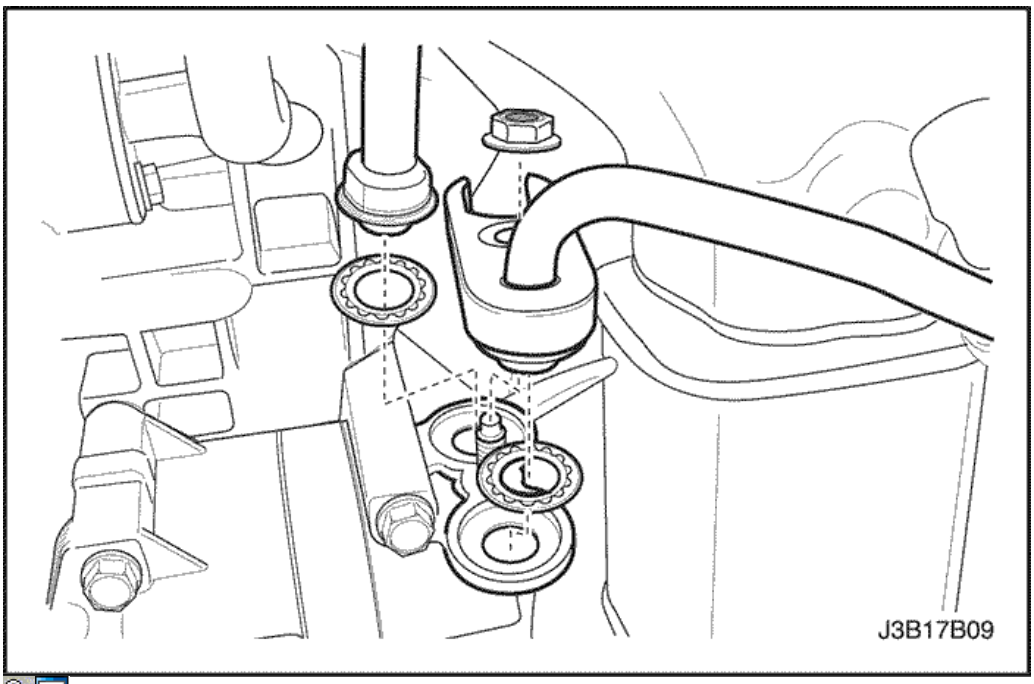
7. Remove the suction hose support clamp bolts.



8. Remove the retaining nut from the hose connecting block and disconnect the air conditioning hose assembly connector block from the compressor.
9. Remove the A/C suction hose assembly.
10. Cap the openings to the compressor to prevent contamination.



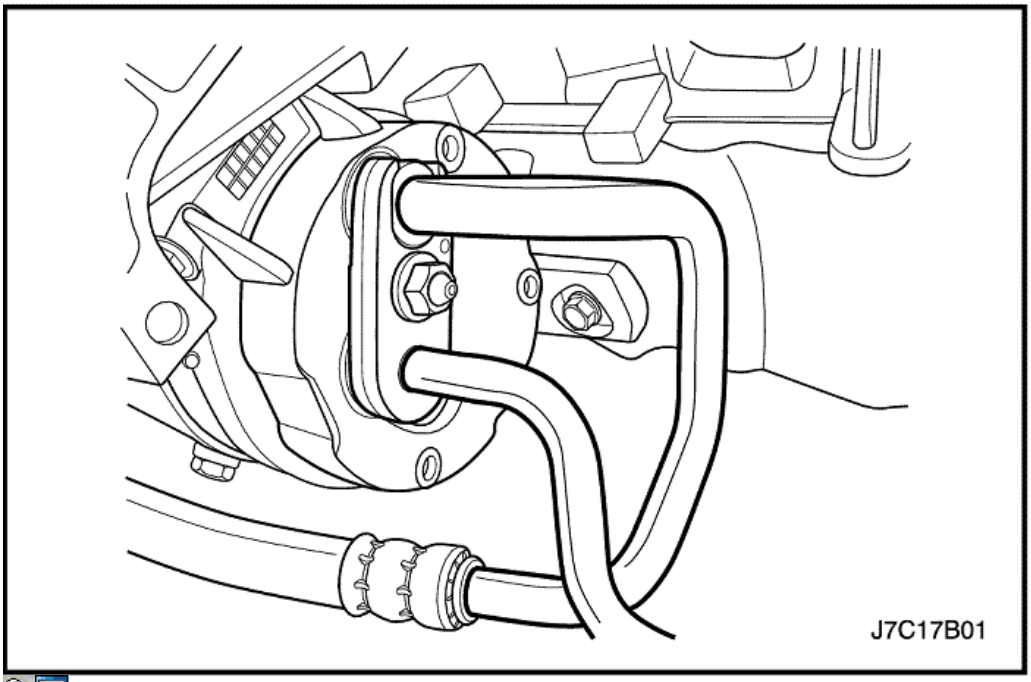
Notice : For diesel engine, refer to this picture.



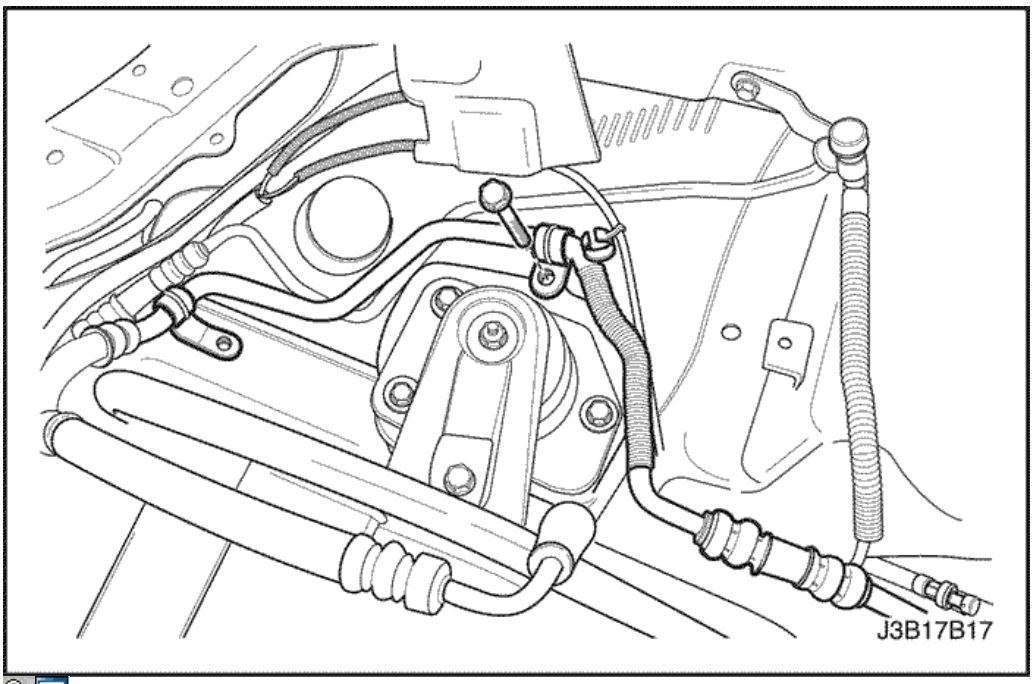
Installation Procedure

1. Position the A/C suction hose into the vehicle.
2. Insert the suction hose block-to-compressor to the compressor.

Tighten
Tighten the retaining nut at the suction hose block to 33 N•m (24 lb-ft).

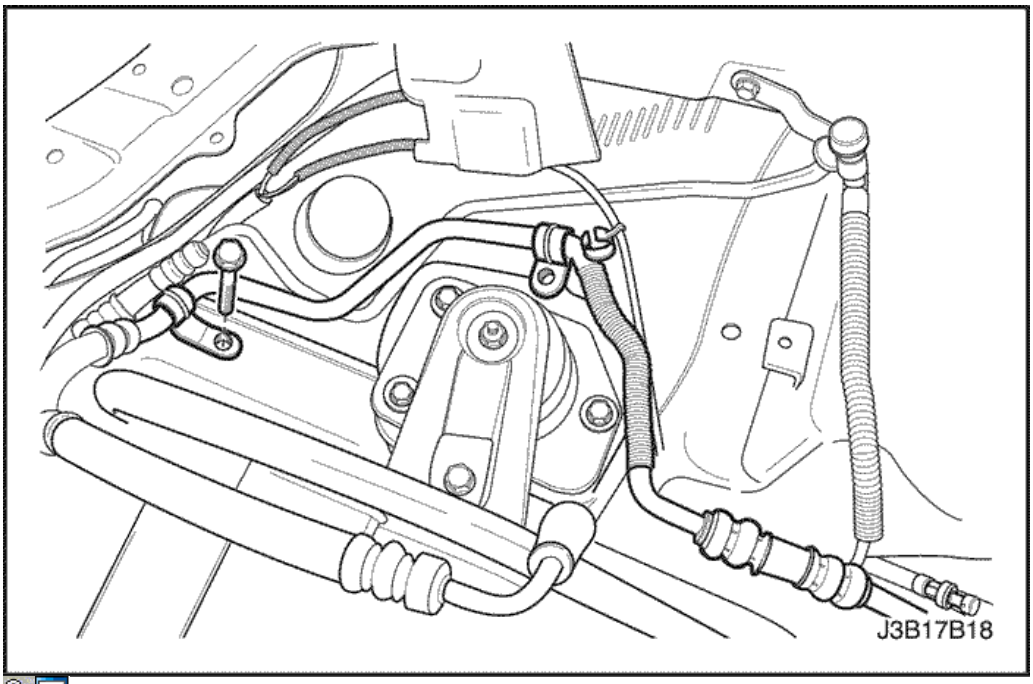


Notice : For diesel engine, refer to this picture.



3. Install the suction hose support clamp-to-longitudinal member.

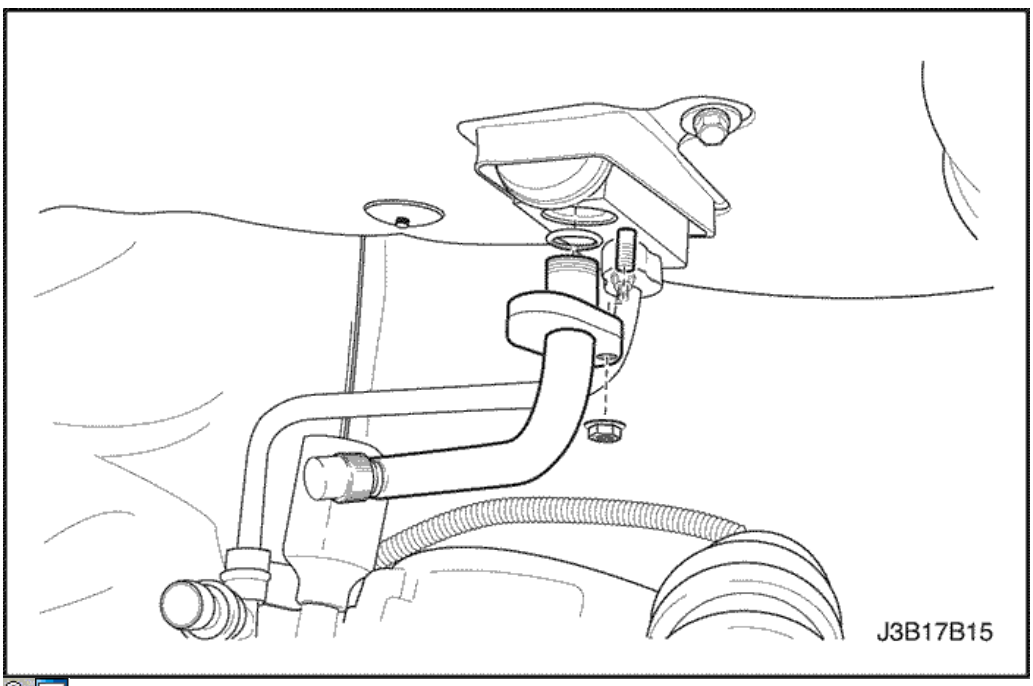
Tighten
Tighten the suction hose support clamp-to-longitudinal member bolt to 8 N•m (71 lb-in).



4. Install the suction hose support clamp-to-engine bracket.

Tighten
(1.4 DOHC, 1.6 DOHC, DIESEL only)
Tighten the suction hose support clamp-to-engine bracket bolt to 8 N•m (71 lb-in).

Tighten
(1.8 DOHC, 2.0 DOHC only)
Tighten the suction hose support clamp-to-engine bracket bolt to 14 N•m (10 lb-ft).

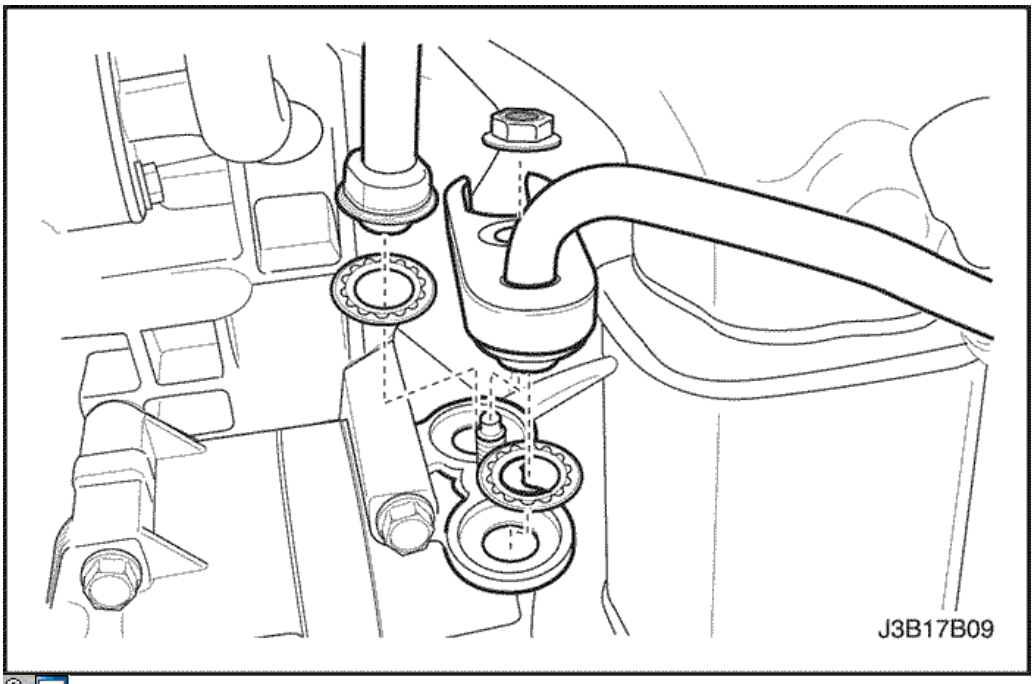


5. Install the suction hose block-to-expansion valve retaining nut at the fire wall.

Tighten
Tighten the suction hose block-to-expansion valve retaining nut to 14 N•m (10 lb-ft).

6. Connect the electrical connector at the pressure transducer.
7. Install the air cleaner housing bolts and the air filter housing assembly.

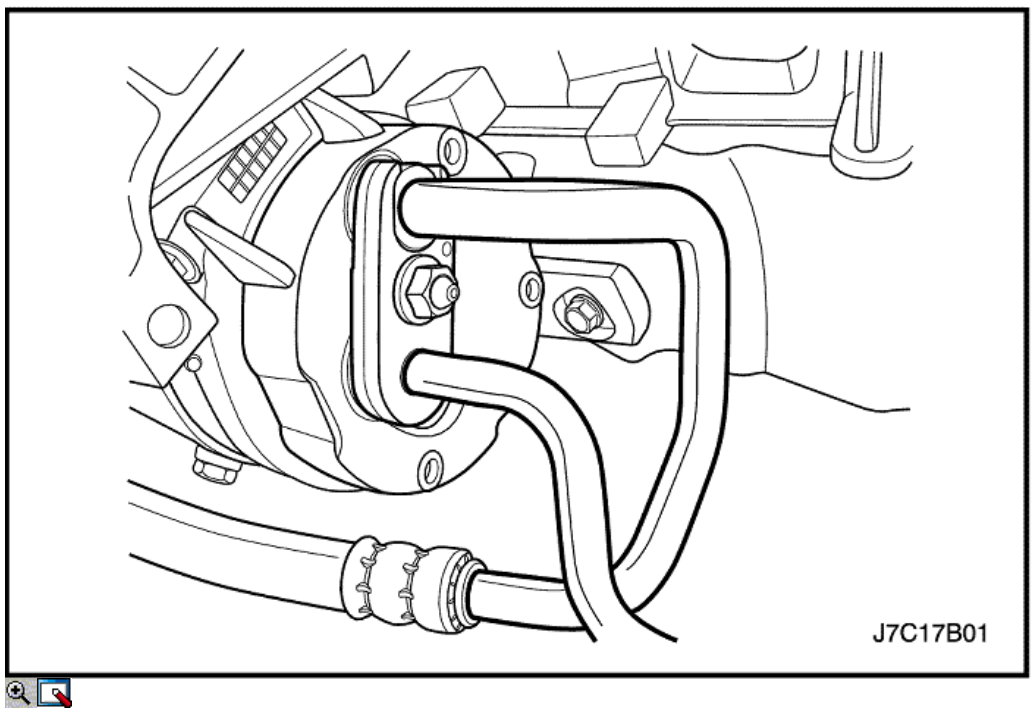
8. Connect the negative battery cable.
9. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.



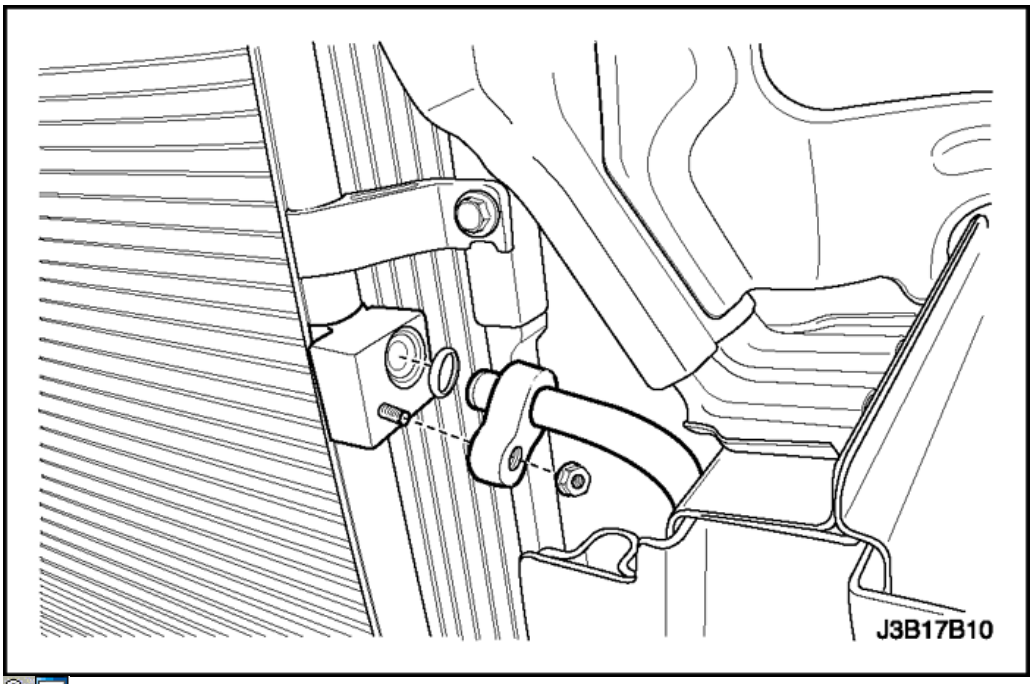
A/C Discharge Hose-Compressor to Condenser

Removal Procedure

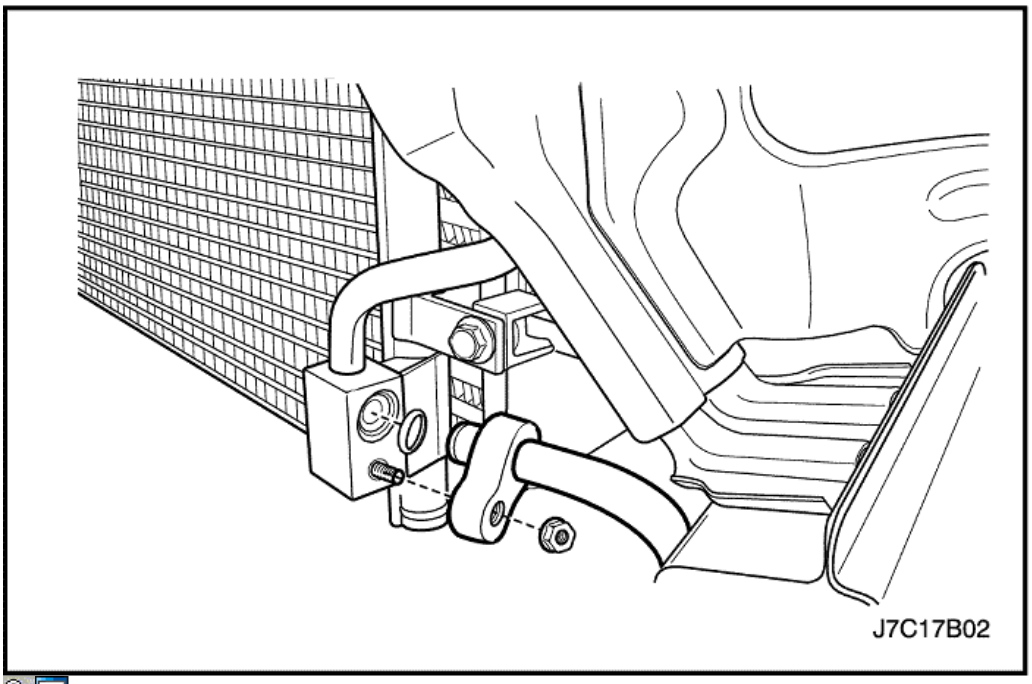
1. Disconnect the negative battery cable.
2. Recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the nut at the discharge hose block connected to compressor.



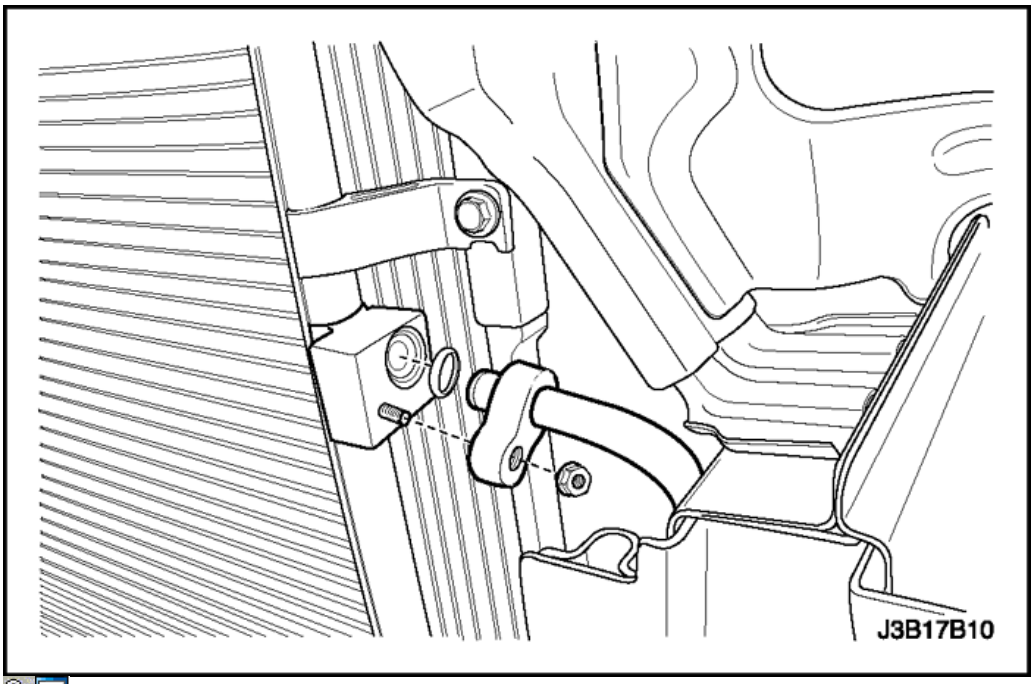
Notice : For diesel engine, refer to this picture.



4. Remove the headlamp housing at the left-hand side. Refer to *Section 9B, Lighting Systems.*
5. Remove the nut at the condenser connecting block.
6. Remove the refrigerant discharge hose.



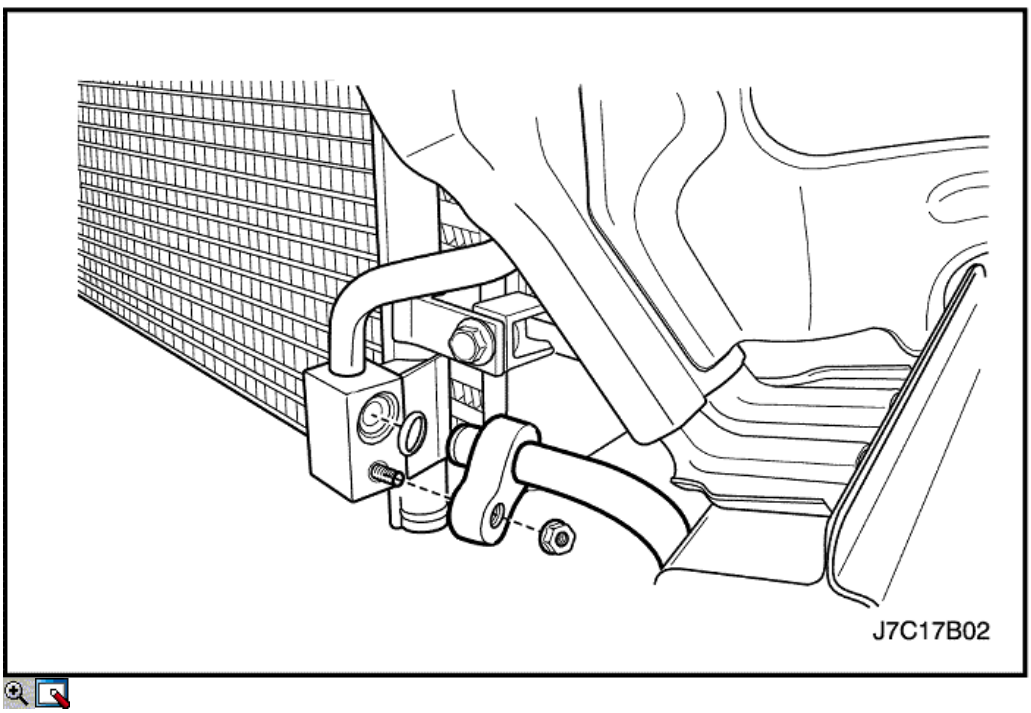
Notice : For diesel engine, refer to this picture.



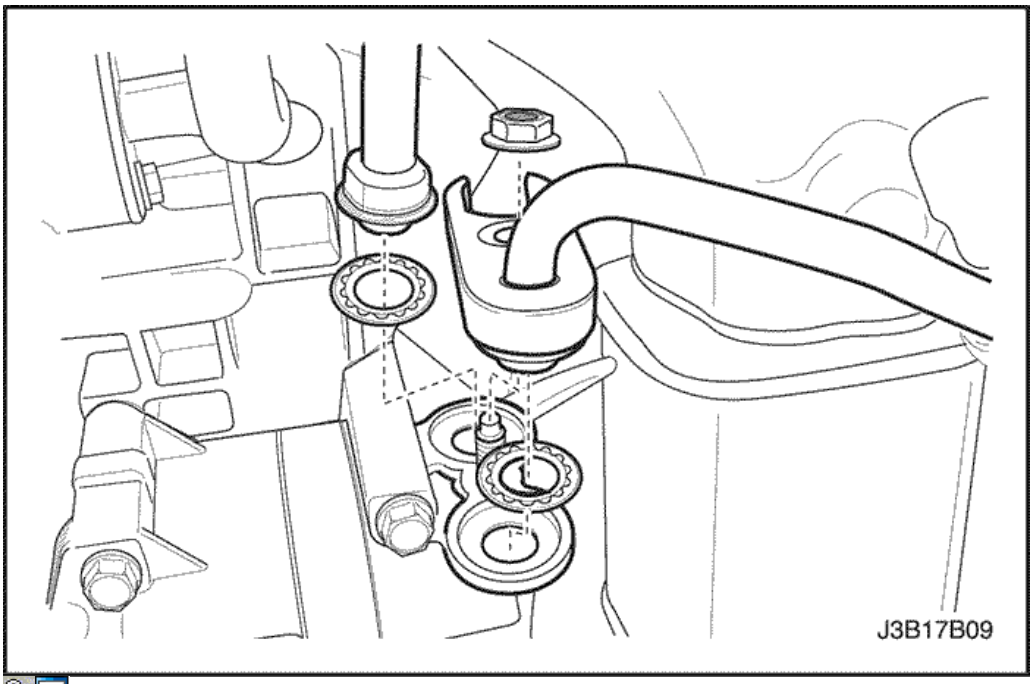
Installation Procedure

1. Install new sealing washers at the compressor connecting block end and a new O-ring at the condenser connecting block end.
2. Position the hose into the vehicle, and install the nut at the condenser connecting block.

Tighten
Tighten the refrigerant discharge hose block-to-condenser retaining nut to 16 N•m (12 lb-ft).



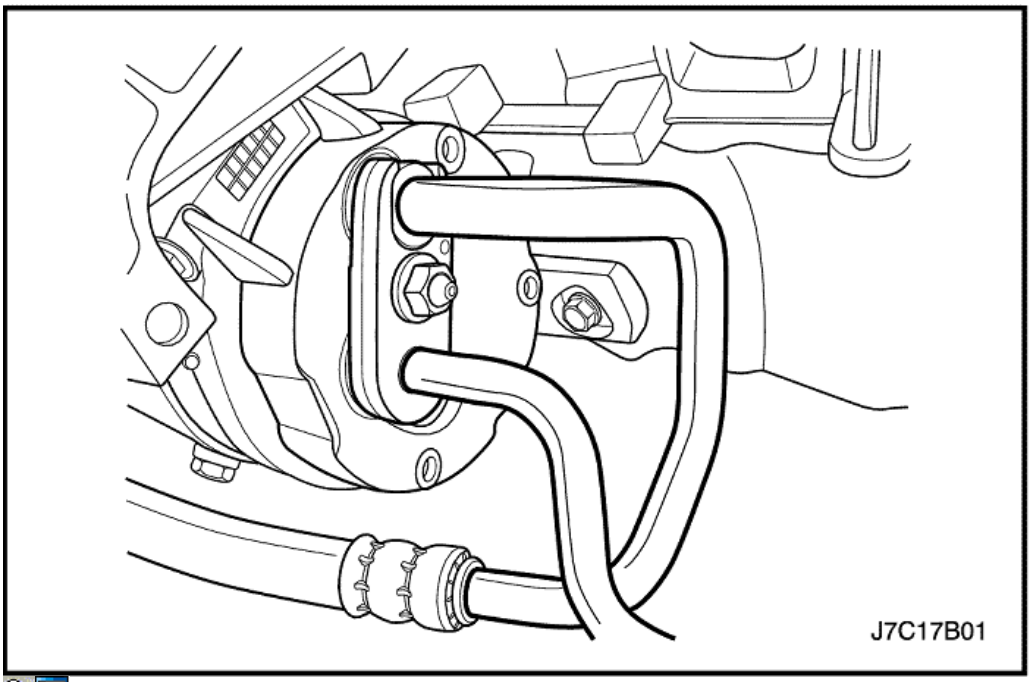
Notice : For diesel engine, refer to this picture.



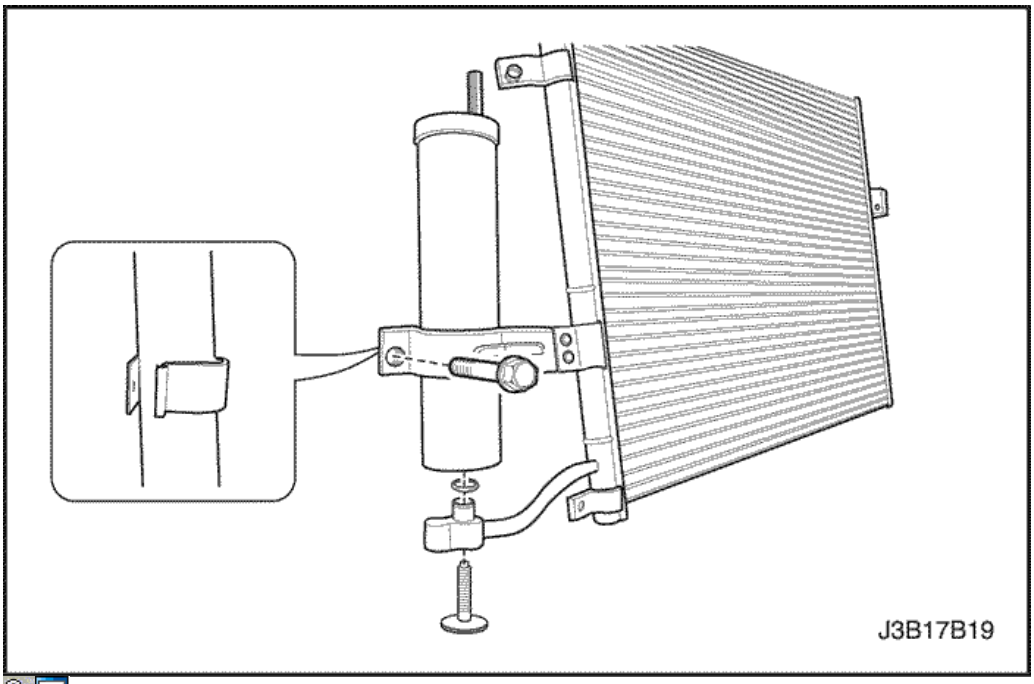
3. Make the hose connecting the connecting block to the compressor, and install the retaining nut.

   Tighten
   Tighten the refrigerant discharge hose block-to-compressor retaining nut to 33 N•m (24 lb-ft).

4. Connect the negative battery cable.
5. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.



Notice : For diesel engine, refer to this picture.



Receiver-Dryer

Removal Procedure

1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the condenser. Refer to *"Condenser"* in this section.
4. Remove the receiver-dryer-to-condenser pipe block bolt.
5. Loosen the bolt that secures the receiver-dryer band clamp.

   Notice : Hold the receiver-dryer-to-condenser pipe to support it so that the pipe is not damaged while being removed from the receiver-dryer.

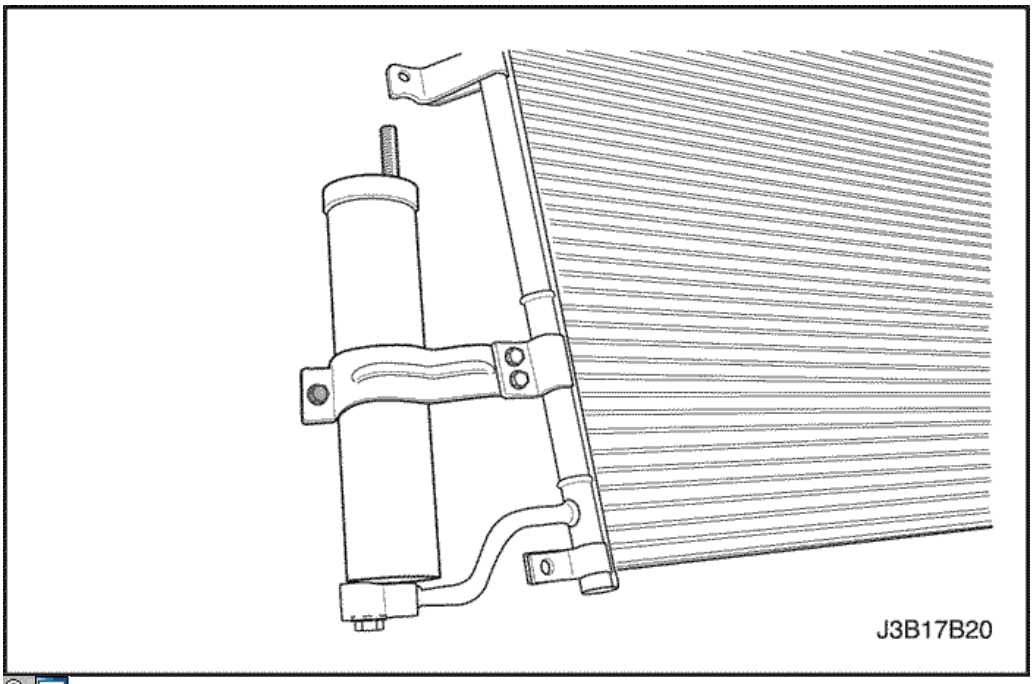
6. Remove the receiver-dryer by sliding it up and out of the band clamp.
7. Cap all open connections to prevent contamination.
8. Drain the oil from the receiver-dryer into a graduated container. Record the amount of oil drained.
9. Discard the used oil.

Installation Procedure

Important : Do not uncap the new receiver-dryer until just prior to installation.

1. Add the new oil to the new receiver-dryer. Use the exact amount of oil that you drained from the old receiver-dryer.
2. Install new O-rings onto the two pipes that connect to the receiver-dryer.
3. Install the receiver-dryer into the band clamp. Support the receiver-dryer-to-condenser pipe while pushing the receiver-dryer downward until the pipe is fully installed.
4. Tighten the bolt on the band clamp.

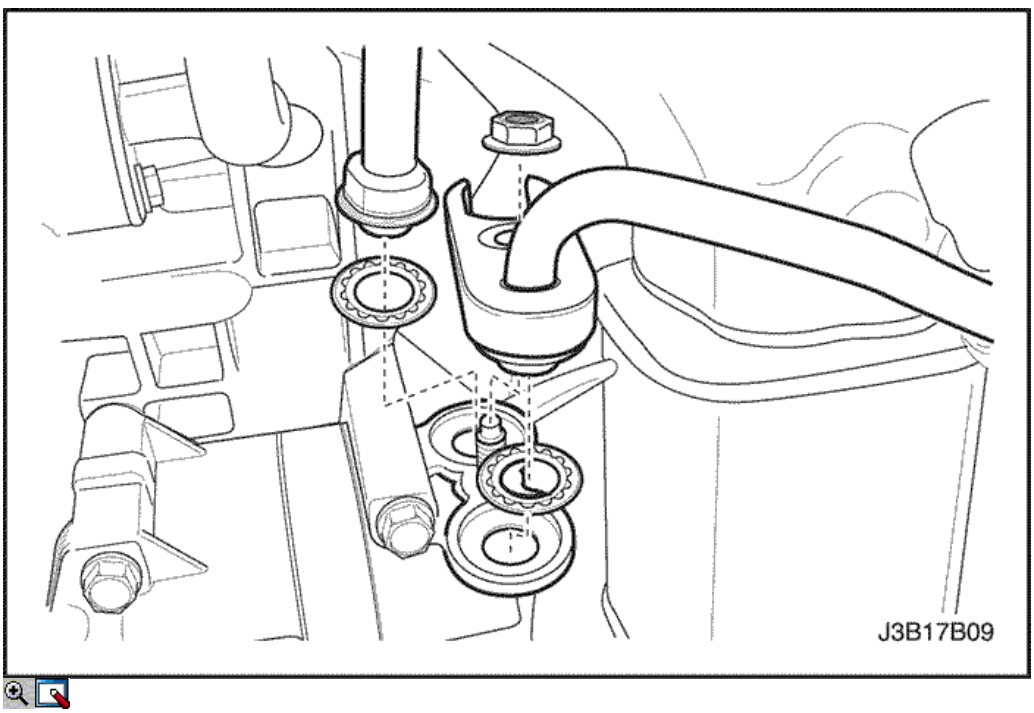
   Tighten
   Tighten the band clamp bolt to 5 N•m (44 lb-in).



5. Install the receiver dryer-to-condenser pipe block bolt.

   Tighten
   Tighten the receiver-dryer-to-condenser pipe block bolt to 5 N•m (44 lb-in).

6. Install the condenser. Refer to *"Condenser"* in this section.
7. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.

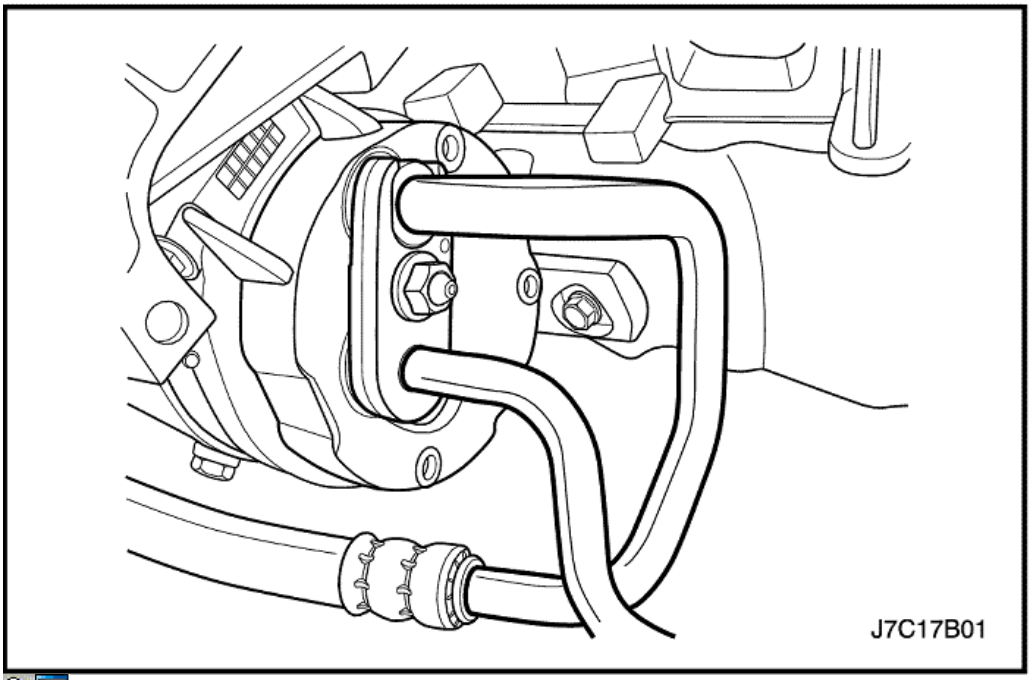


Compressor

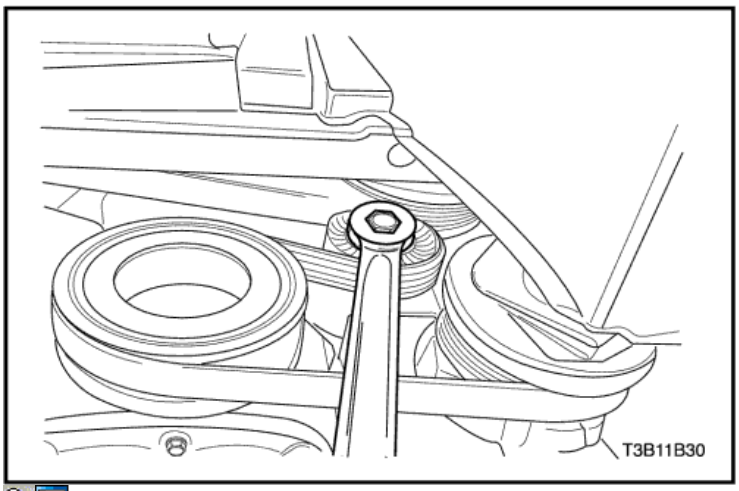
Removal Procedure

1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the discharge hose mounting nut.

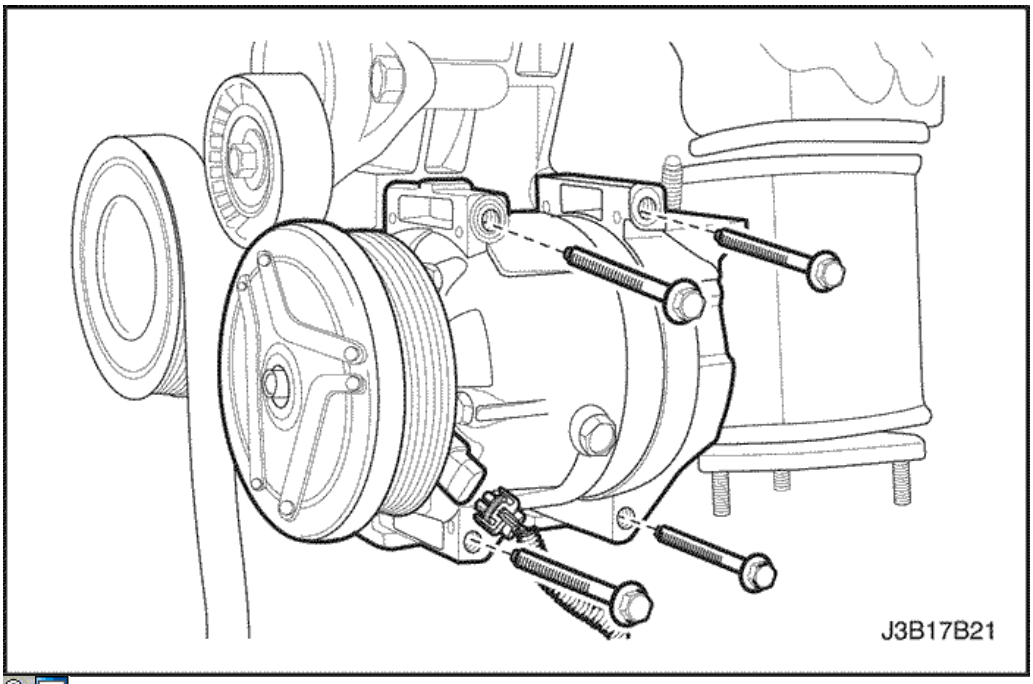
4. Lift the discharge hose mounting block and the suction hose from the compressor.



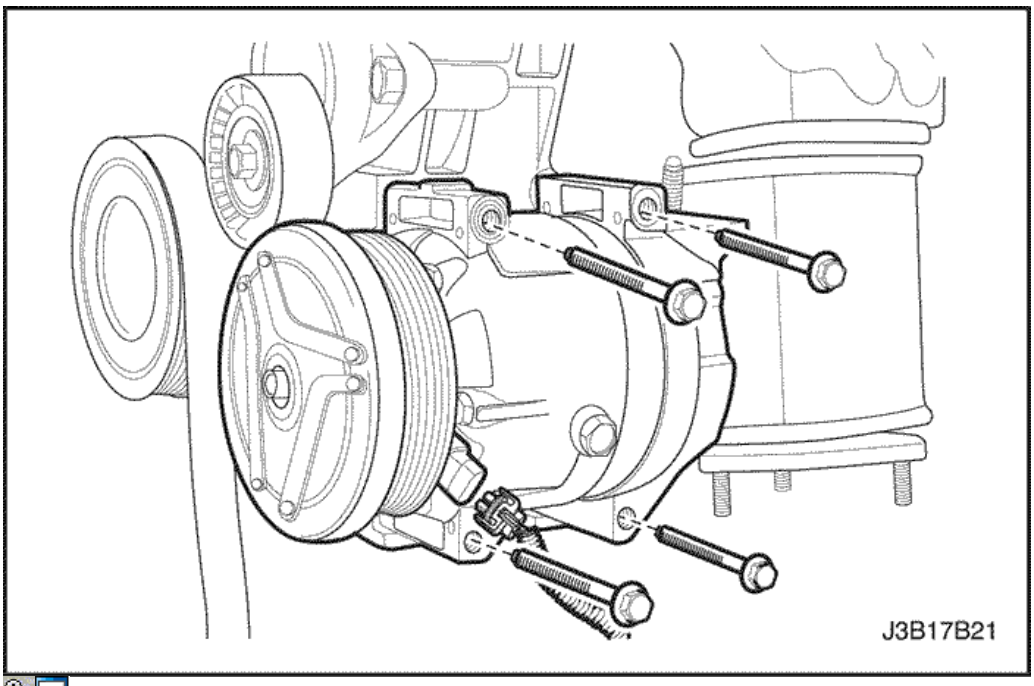
Notice : For diesel engine, refer to this picture.



5. Raise and suitably support the vehicle.
6. Remove the engine under cover. Refer to *Section 9N, Frame and Underbody.*
7. Remove the accessory drive belt. For diesel engine, refer to *Section 1B, Engine Mechanical - 2.0 Diesel.*



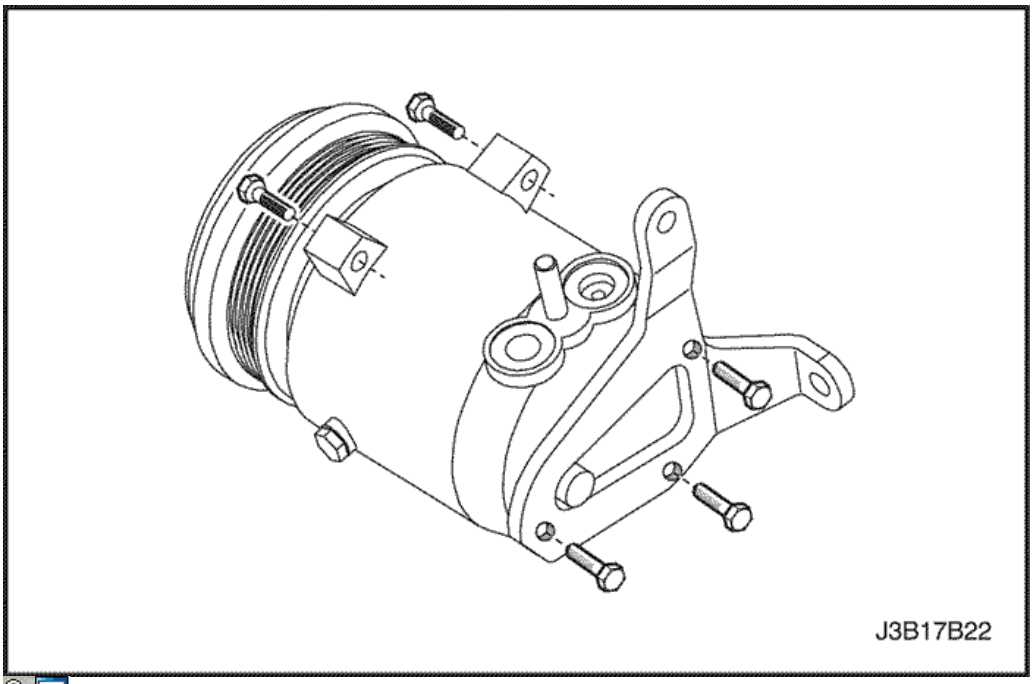
8. Disconnect the electrical connector at the compressor.
9. Remove the compressor-to-bracket bolts. (1.4 DOHC shown, others similar)
10. Remove the compressor.
11. Drain the oil from the compressor into a container. Measure the amount of the oil that is drained. Then discard the used oil.



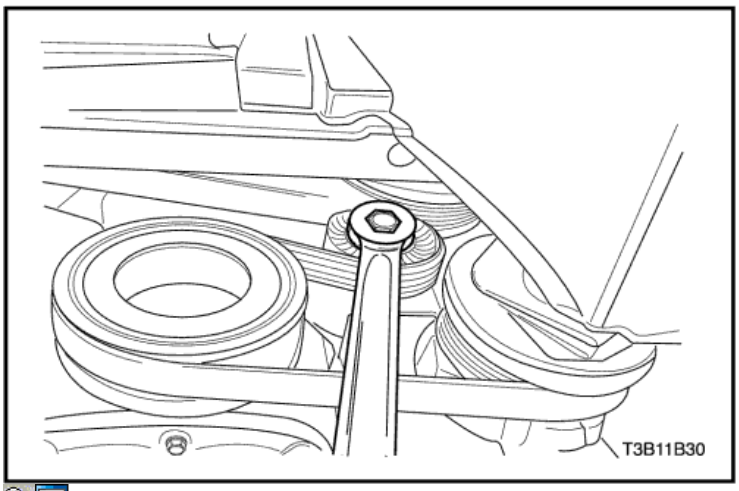
Installation Procedure

1. Add oil to the new compressor. Use the exact amount of oil that you drained from the old compressor.
2. Install the compressor.
3. Install the compressor-to-bracket mounting bolts.

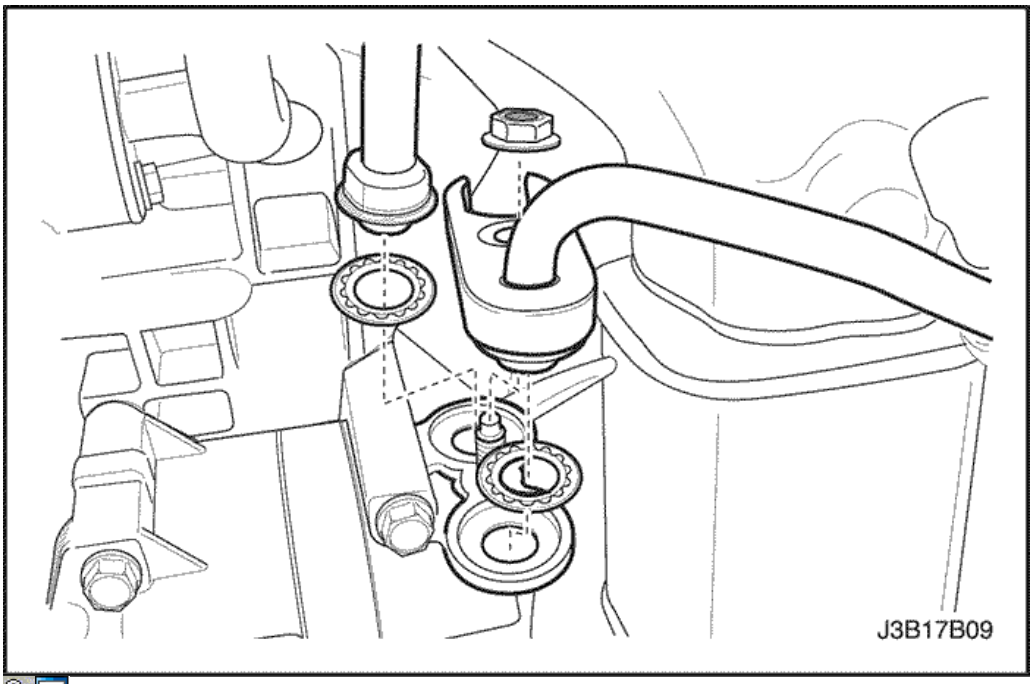
Tighten
(1.4 DOHC, 1.6 DOHC, DIESEL only)
Tighten the compressor-to-bracket mounting bolts to 27 N•m (20 lb-ft).



Tighten
(1.8 DOHC, 2.0 DOHC only)
Tighten the front compressor-to-bracket mounting bolts to 35 N•m (26 lb-ft).
Tighten the rear compressor-to-bracket mounting bolts to 20 N•m (15 lb-ft).



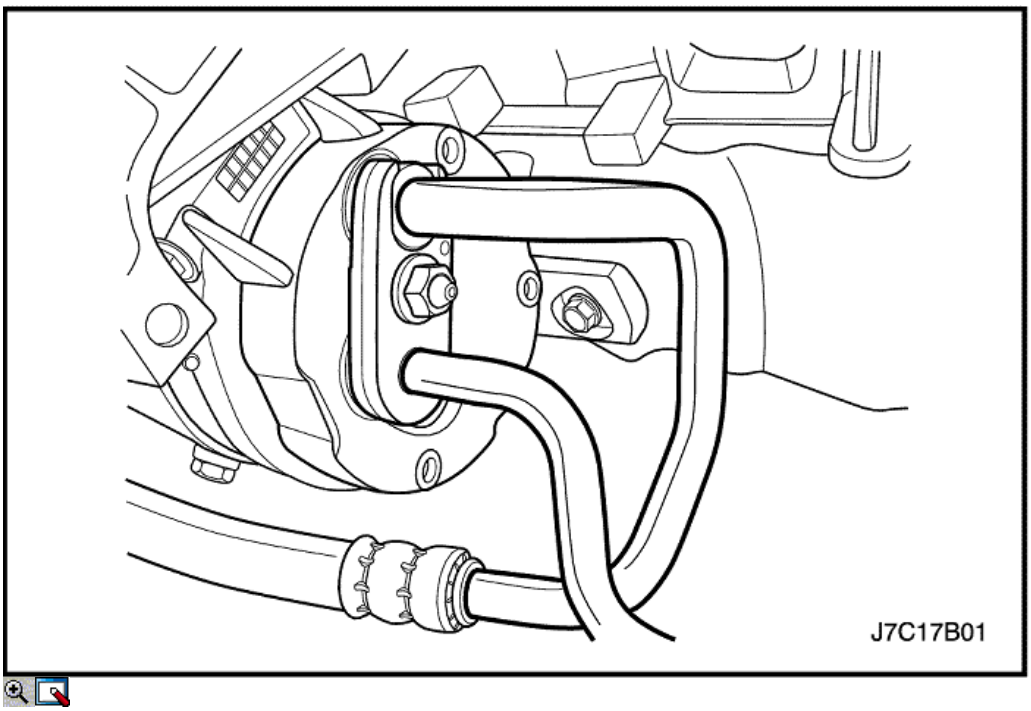
4. Install new sealing washers to the suction hose and the discharge hose mounting.
5. Connect the electrical connector at the compressor.
6. Install the accessory drive belt. For diesel engine, refer to *Section 1B, Engine Mechanical - 2.0 DIESEL.*
7. Install the engine under cover. Refer to *Section 9N, Frame and Underbody.*
8. Lower the vehicle.



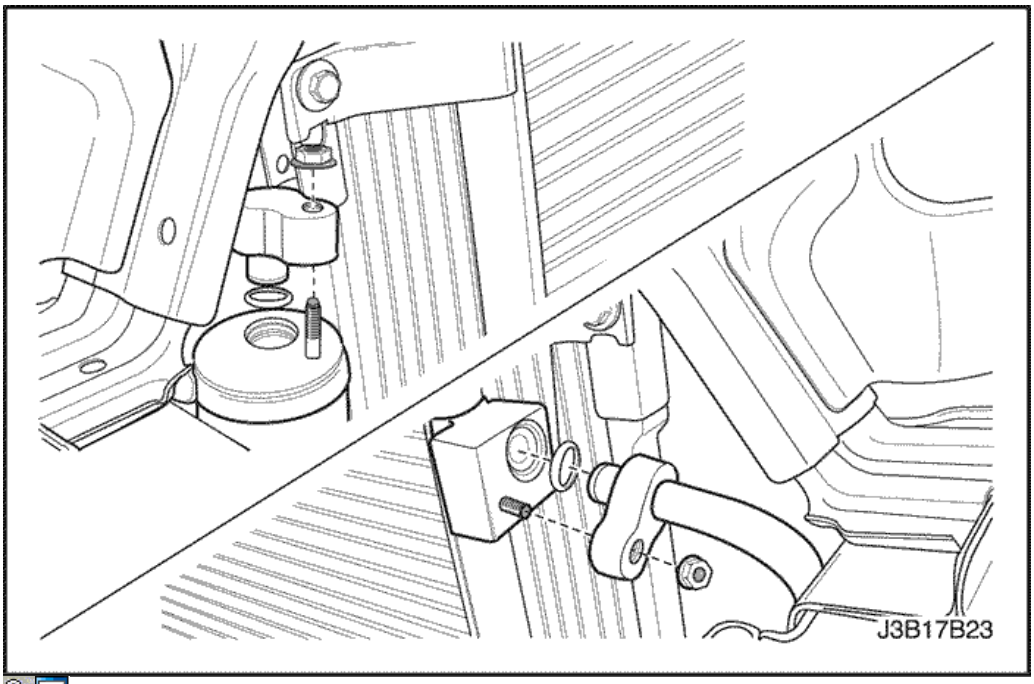
9. Place the suction hose into its cavity in the compressor and install the discharge hose mounting block to clamp it into place. Hold this all together while tightening the retaining nut.

   Tighten
   Tighten the refrigerant discharge hose block-to-compressor retaining nut to 33 N•m (24 lb-ft).

10. Connect the negative battery cable.
11. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and ChargingProcedures for A/C System"in this section.



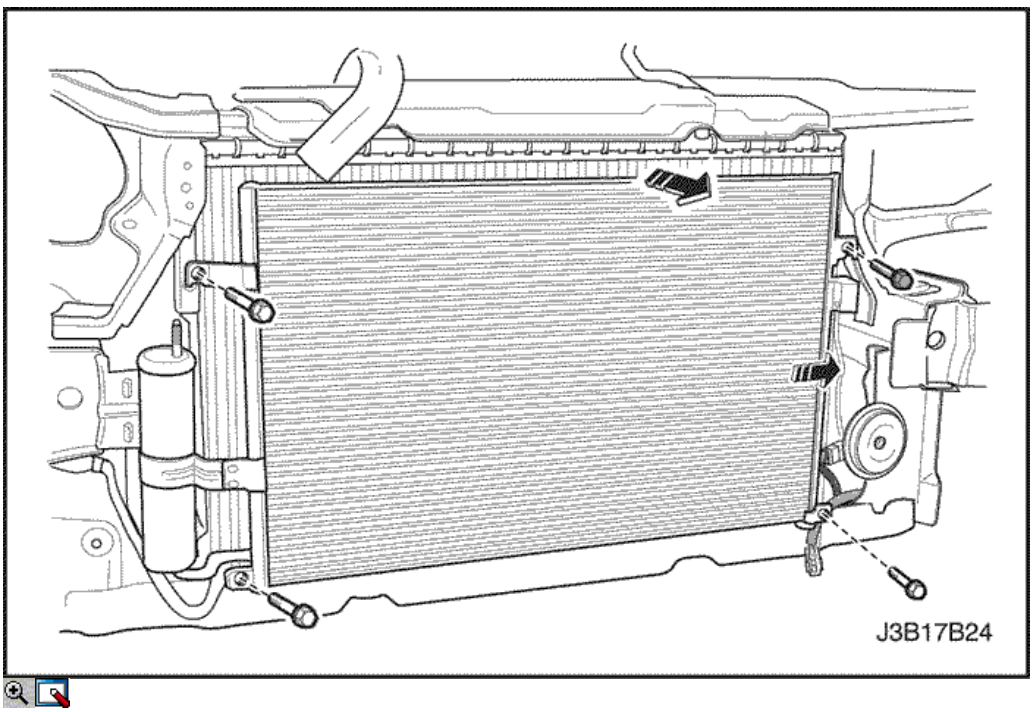
Notice : For diesel engine, refer to this picture.



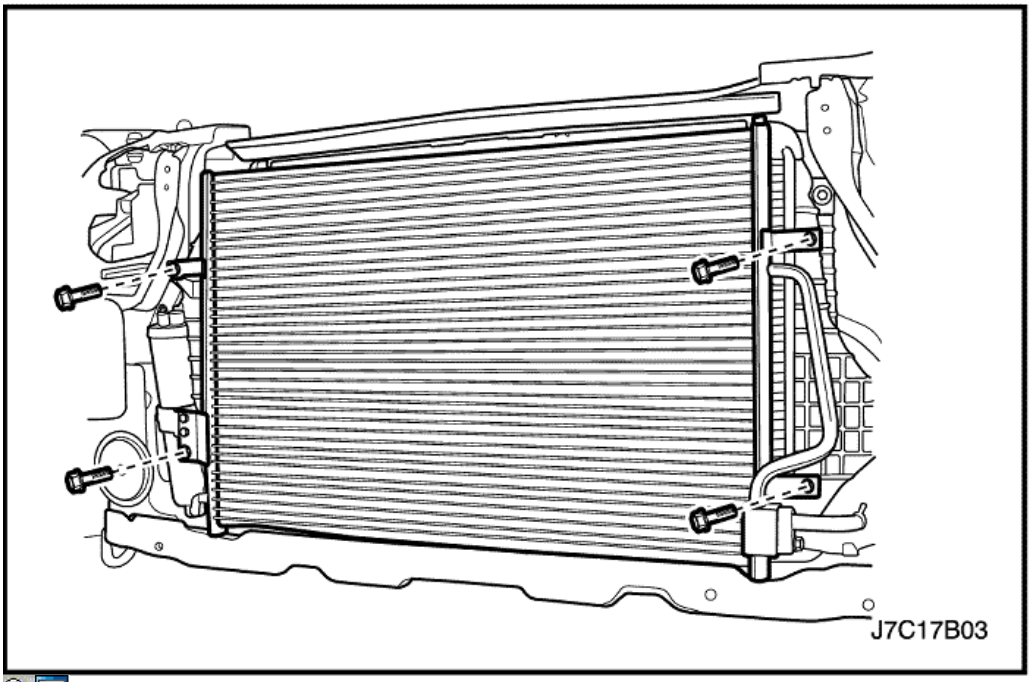
Condenser

Removal Procedure

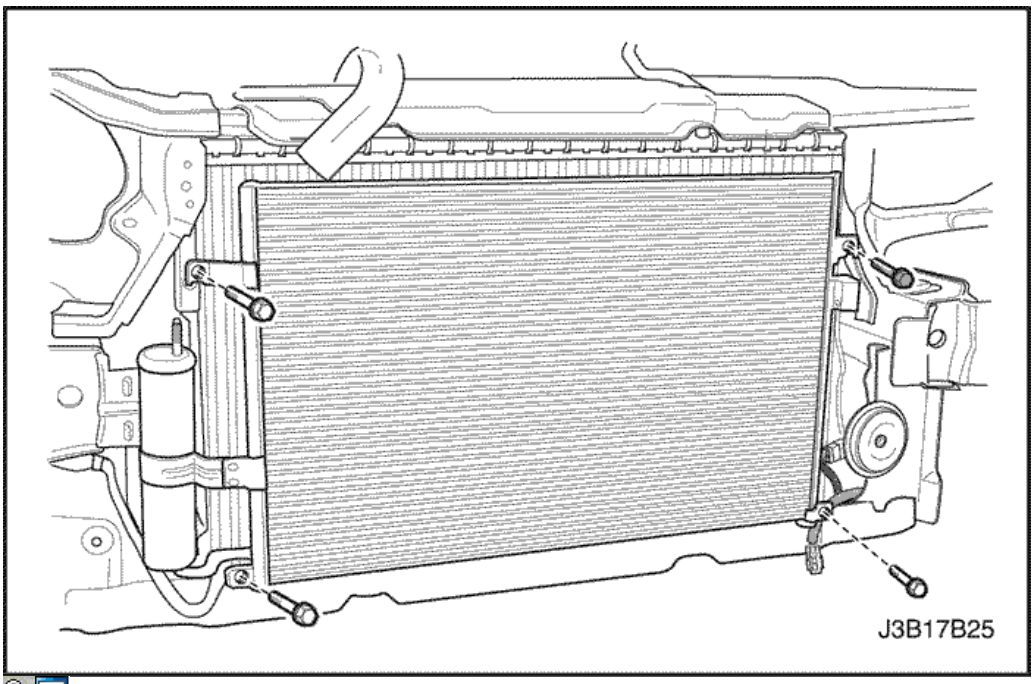
1. Disconnect the negative battery cable.
2. Discharge and recover the refrigerant. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
3. Remove the front bumper. Refer to *Section 90, Bumpers and Fascias.*
4. Remove the discharge hose block-to-condenser retaining nut.
5. Remove the discharge hose from the condenser.
6. Remove the liquid pipe block-to-receiver-dryer retaining nut.
7. Remove the liquid pipe from the receiver-dryer.



8. Remove the condenser mount bolts.
9. Remove the condenser.
10. Cap all the open lines and the fittings to prevent contamination.



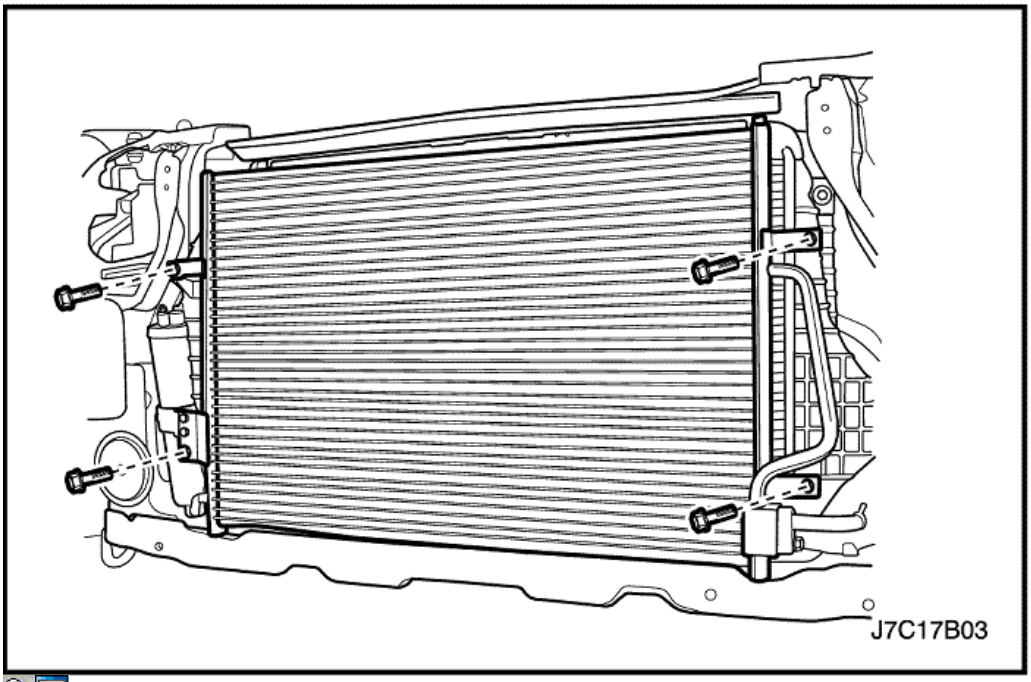
Notice : For diesel engine, refer to this picture.



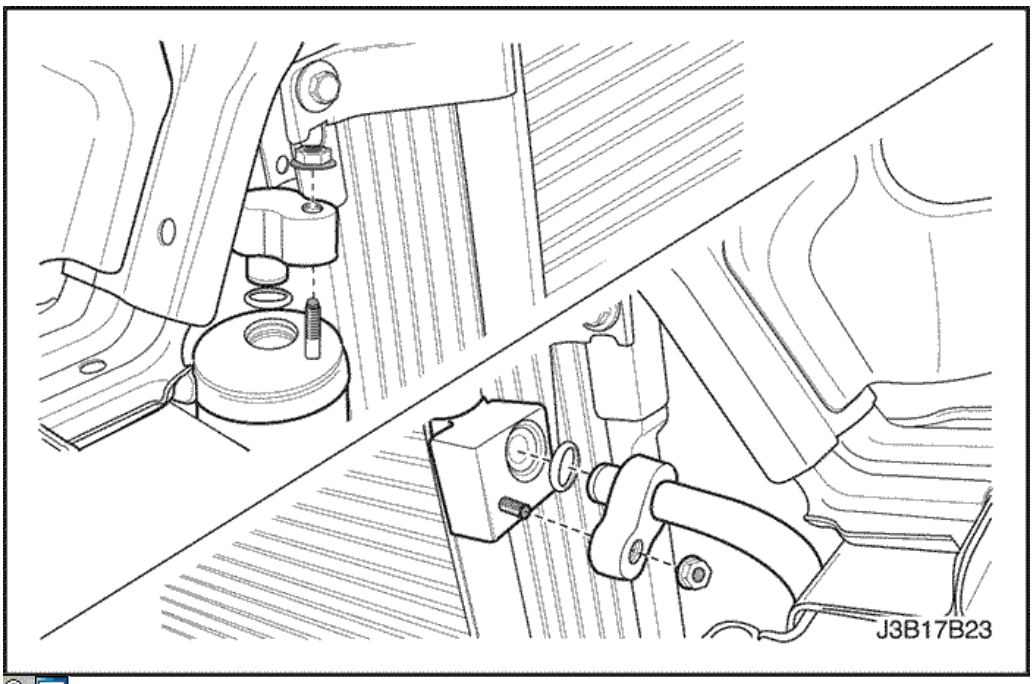
Installation Procedure

1. Position the condenser into the vehicle.
2. Install the condenser mount bolts.

Tighten
Tighten the condenser mount bolts to 4 N•m (35 lb-in).



Notice : For diesel engine, refer to this picture.



3. Install a new O-ring onto the high-pressure pipe mounting block fitting on the receiver-dryer.
4. Install the liquid pipe into the receiver-dryer.
5. Install the liquid pipe block-to-receiver-dryer retaining nut.

   Tighten
   Tighten the liquid pipe block-to-receiver-dryer retaining nut to 14 N•m (10 lb-ft).

6. Install a new O-ring onto the discharge hose connecting block fitting.
7. Install the discharge hose fitting into the condenser.
8. Install the discharge hose connecting block-to-condenser retaining nut at the condenser connecting block.

   Tighten
   Tighten the refrigerant discharge hose block-to-condenser retaining nut to 16 N•m (12 lb-ft).

9. Install the front bumper. Refer to *Section 90, Bumpers and Fascias.*

10. Connect the negative battery cable.
11. Evacuate and recharge the A/C system. Refer to "Discharging, Adding Oil, Evacuating, and Charging Procedures for A/C System" in this section.
12. Operate the HVAC control to verify the proper function of the heating and cooling systems.