



INSTALLATION INSTRUCTIONS

Accessory

AIR CONDITIONER

Application

2005 INSIGHT

Publications No.

All 28737

Issue Date

FEB 2005

What's New

The A/C kits and instructions for the 2005 Insight are carryovers from 2004 with no changes. Kit number 80000-S3Y-A02 is for U.S. vehicles, and kit number 80000-S3Y-C02 is for Canada vehicles.

TOOLS AND SUPPLIES REQUIRED

- Clip remover
- Open-end wrench set
- Screwdrivers
- Socket wrench set
- Torque wrench
- Belt tension gauge
- Refrigerant oil (R12 mineral oil or R134a PAG oil)
- Fender covers, floor mats, and seat covers
- HFC-134a refrigerant recovery/recycling/charging station
- Gloves
- Eye protection (face shield, safety goggles, etc.)
- Electronic leak detector

- **Use only HFC-134a in this system;** do not use CFC 12 (Freon); do not install parts designed for use in a CFC system.
- **Use a charging station.** A/C charging stations and refrigerant recovery/recycling stations minimize the release of CFCs and HFCs into the atmosphere. Use them for all A/C charging and service work according to their manufacturers' instructions.
- **Do not overcharge.** This system requires only the amount of HFC-134a refrigerant shown below. If you overcharge the system, the engine and the A/C could malfunction.

500 to 550 grams
0.50 to 0.55 kilograms
1.1 to 1.2 pounds
17.6 to 19.4 ounces

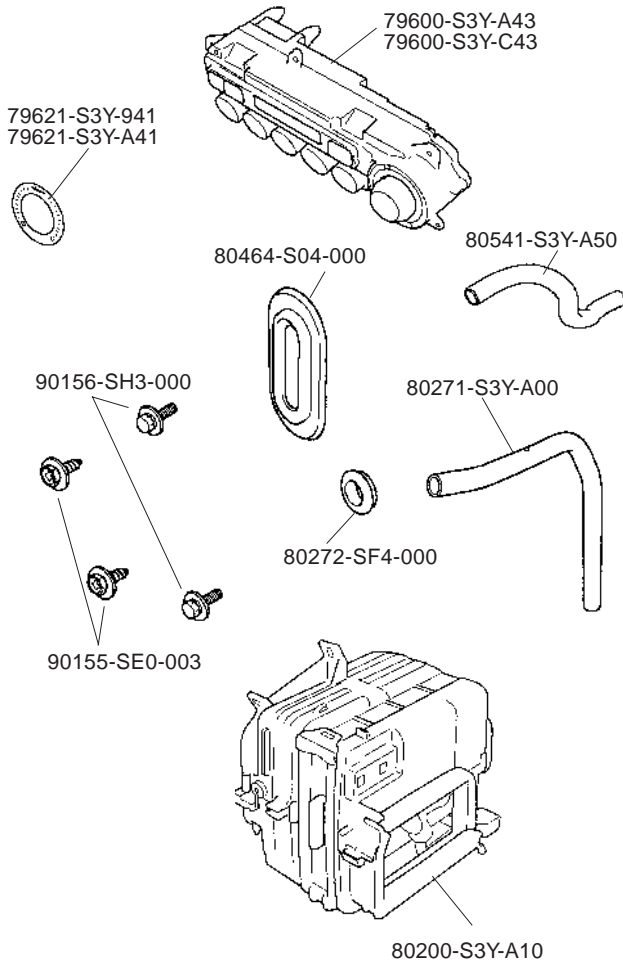
INSTALLATION

Customer Information: The information in this installation instruction is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely add equipment to your vehicle. These procedures should not be attempted by "do-it-yourselfers."

NOTE:

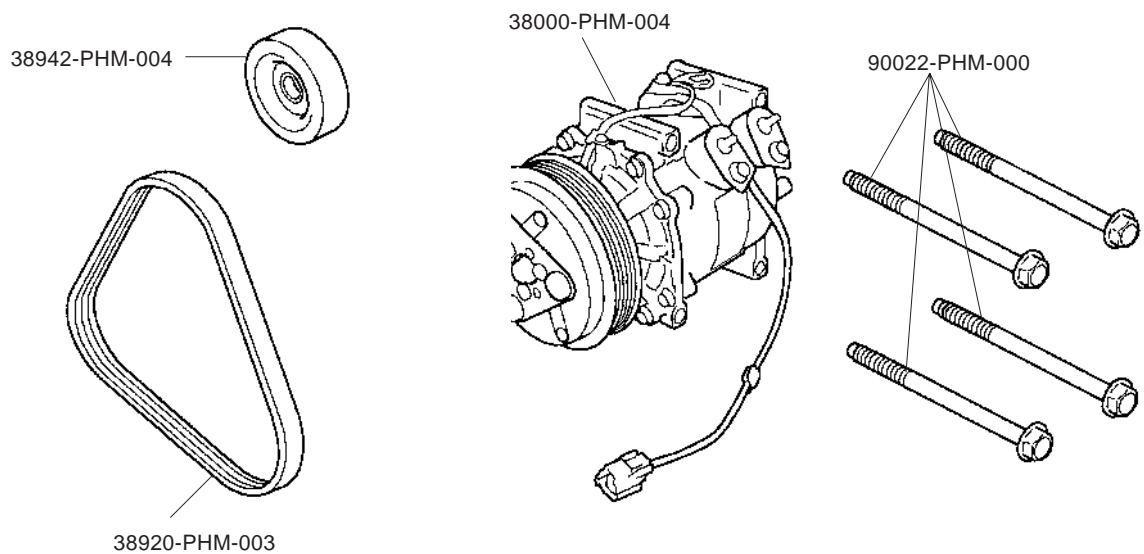
- **Make sure you install the correct part.** Use the illustrations on pages 2 and 3 as a guide to check the parts before you install them.
- **Don't remove plugs and caps from fittings until the parts are ready to install.** This will keep out moisture and dirt that could cause wear and damage.
- **Before you connect any line or hose, check and lube its O-ring.** Make sure the O-ring is there (on the fitting), put a few drops of refrigerant oil on the O-ring, then connect the fitting.
- You may use any type of refrigerant oil to lubricate O-rings and fittings.
- If you add or replace refrigerant oil in the system, use *only* this PAG oil: Sanden SP-10, P/N 38897-P13-A01.
- **Route and secure the lines and hoses properly;** maintain clearance between them and surrounding parts.
- **Before you connect each connector, check its terminals.** Make sure they aren't bent or out of place.

Group A

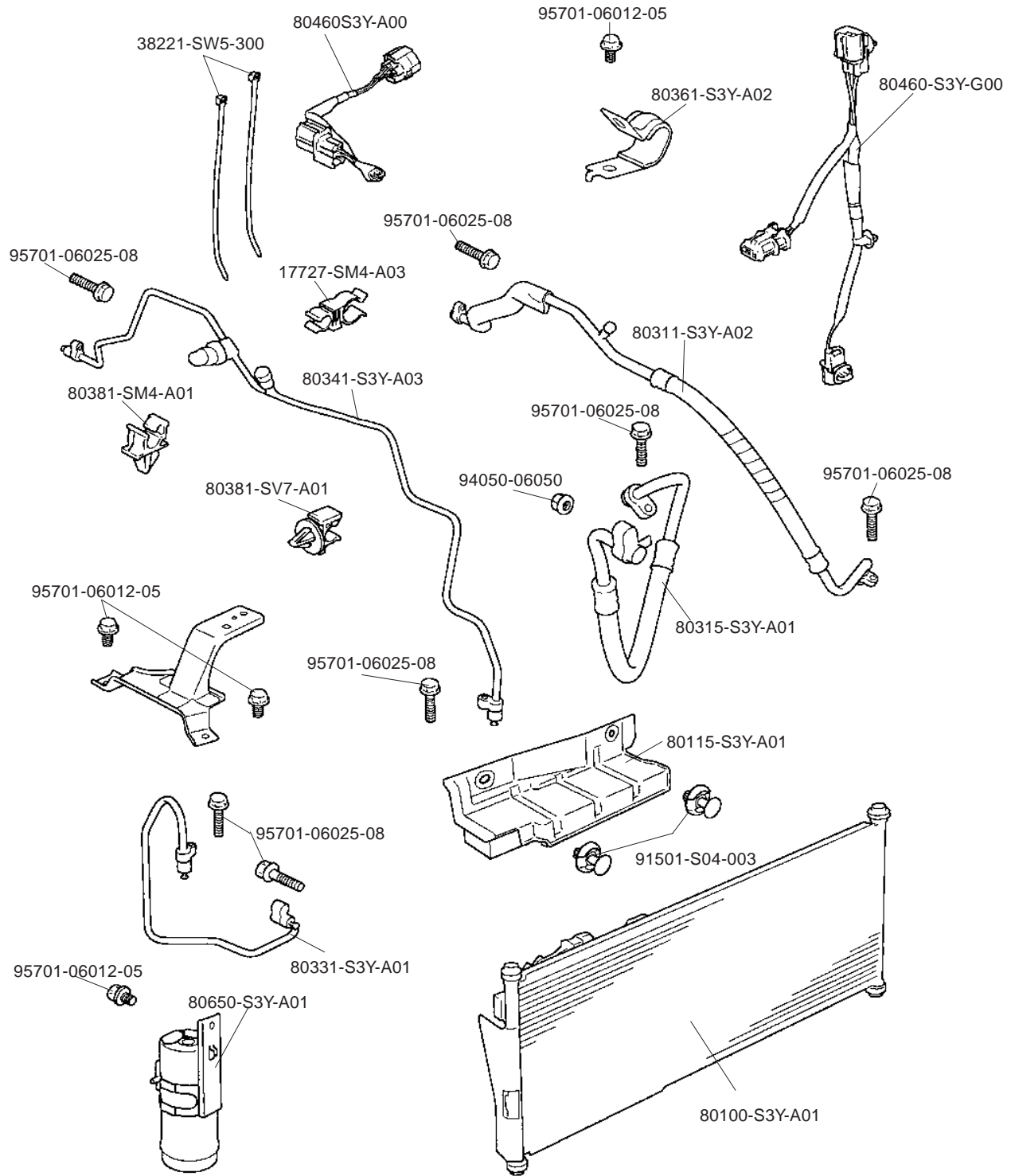


GROUP PART	P/N	QUANTITY 80000-S04-	
		A02 (USA)	C02 (Canada)
A Automatic climate control unit F	79600-3SY-A43	1	-
Automatic climate control unit C	79600-3SY-C43	-	1
Temperature ring F	79621-3SY-A41	1	-
Temperature ring C	79621-3SY-941	-	1
Evaporator	80200-3SY-A10	1	1
Drain hose	80271-3SY-A00	1	1
Drain hose grommet	80272-SF4-000	1	1
Evaporator grommet	80541-S3Y-A50	1	1
Aspirator tube	80541-S3Y-A50	1	1
Self-tapping screws (6 x 20 mm)	90155-SE0-003	2	2
Washer-bolts (6 x 24 mm)	90156-SH3-000	2	2
B Compressor	38800-PHM-004	1	1
Compressor belt	38920-PHM-003	1	1
Idler pulley	38942-PHM-004	1	1
Flange Bolts (8 x 110 mm)	90022-PHM-000	4	4
C Hose clamp	17727-SM4-003	1	1
Wire tie	38221-SW5-300	2	2
Condenser assembly	80100-S3Y-A01	1	1
Condenser shroud	80115-S3Y-A01	1	1
Suction hose	80311-S3Y-A02	1	1
Discharge hose	80315-S3Y-A01	1	1
Condenser line	80331-S3Y-A02	1	1
Receiver line	80341-S3Y-A02	1	1
Receiver-dryer	80350-S3Y-A01	1	1
Suction hose clamp	80361-S3Y-A00	1	1
Line bracket	80362-S3Y-A00	1	1
Receiver line clamp	80381-SV7-A01	1	1
Receiver line clip	80387-SM4-A01	1	1
Wire harness A	80460-S3Y-A00	1	1
Wire harness B	80460-S3Y-G00	1	1
Condenser shroud clips	91501-S04-003	2	2
Flange nut (6 mm)	94050-06050	1	1
Flange bolt (6 x 12 mm)	95701-06012-05	4	4
Flange bolt (6 x 25 mm)	95701-06025-08	7	7
D Power relay (4P)	39794-S0K-A01	2	2
Power relay (5P)	39794-S10-003	1	1
Information label (USA)	80050-SR3-H00	1	-
Information label (Canada)	80500-SP0-000	-	1
A/C identification label	8005X-S3Y-A02	1	1

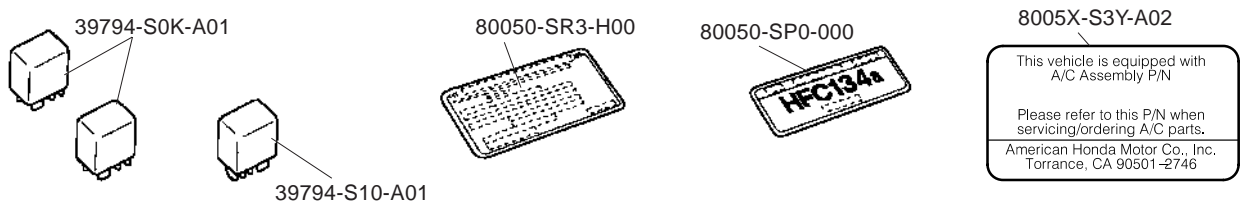
Group B



Group C

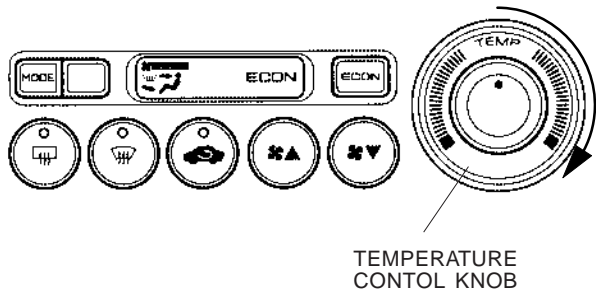


Group D

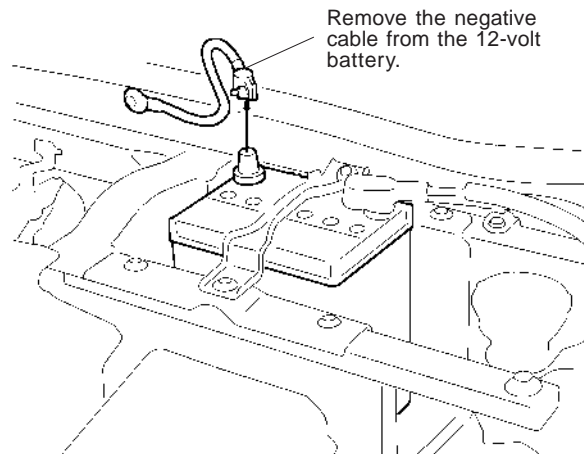


1. Move the air mix doors out of the way.

Turn the ignition switch ON (II), then turn the temperature control knob all the way to "HOT". Wait about 10 seconds, then turn the ignition switch off.



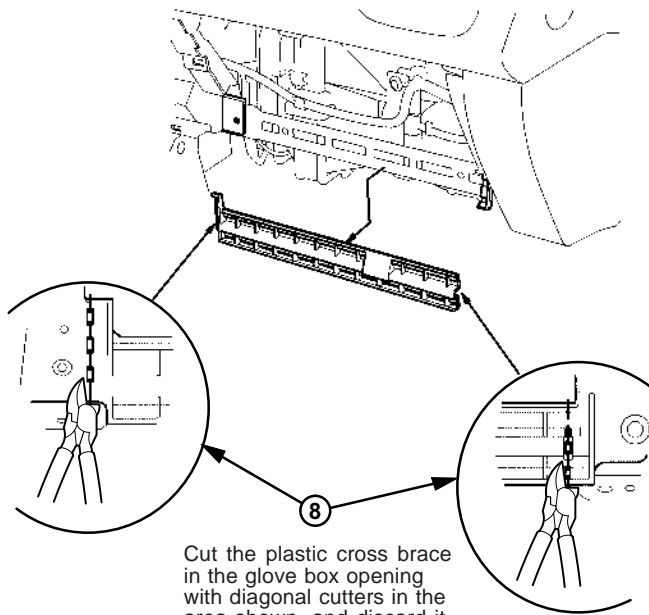
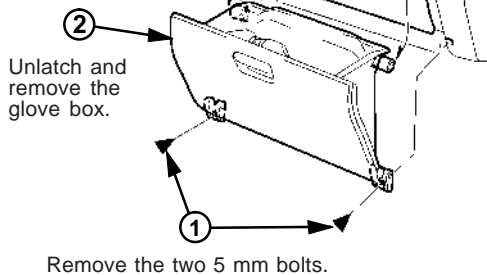
2. Write down the customer's radio station presets, then disconnect the 12-volt battery.



3. Prepare to install the evaporator.

► : M5 bolts

Torque: 9 N·m
(6.3 lb-ft)

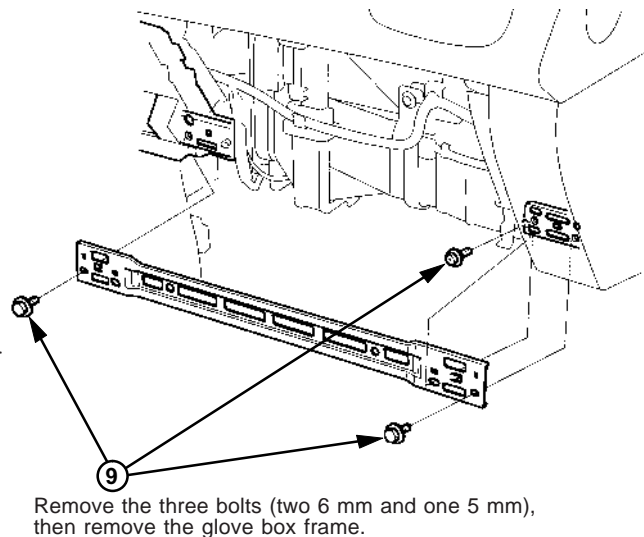
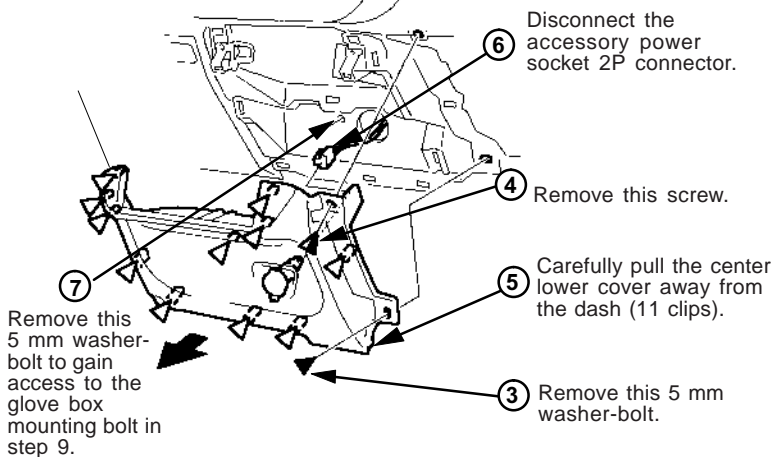


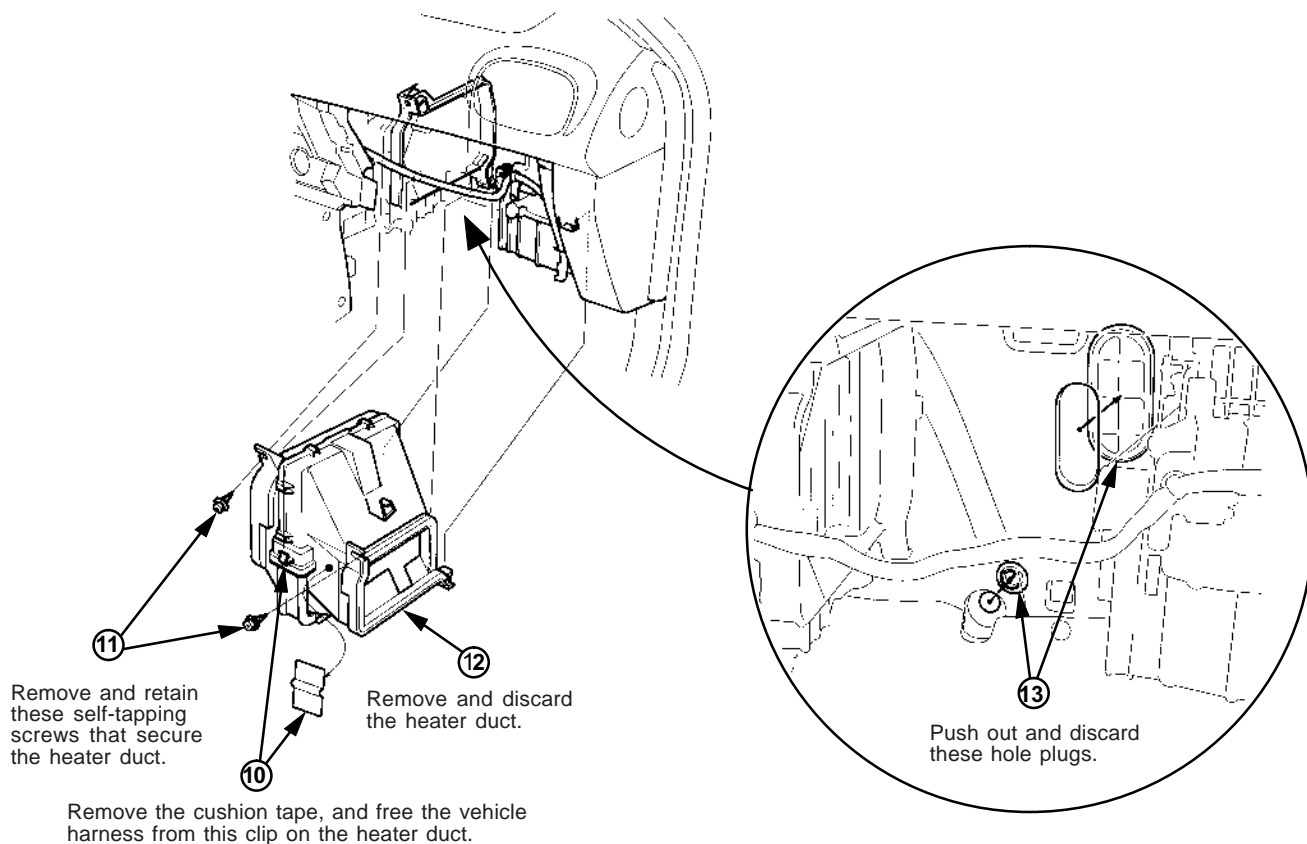
► : M5 bolts

Torque: 9 N·m
(6.3 lb-ft)

► : Screw

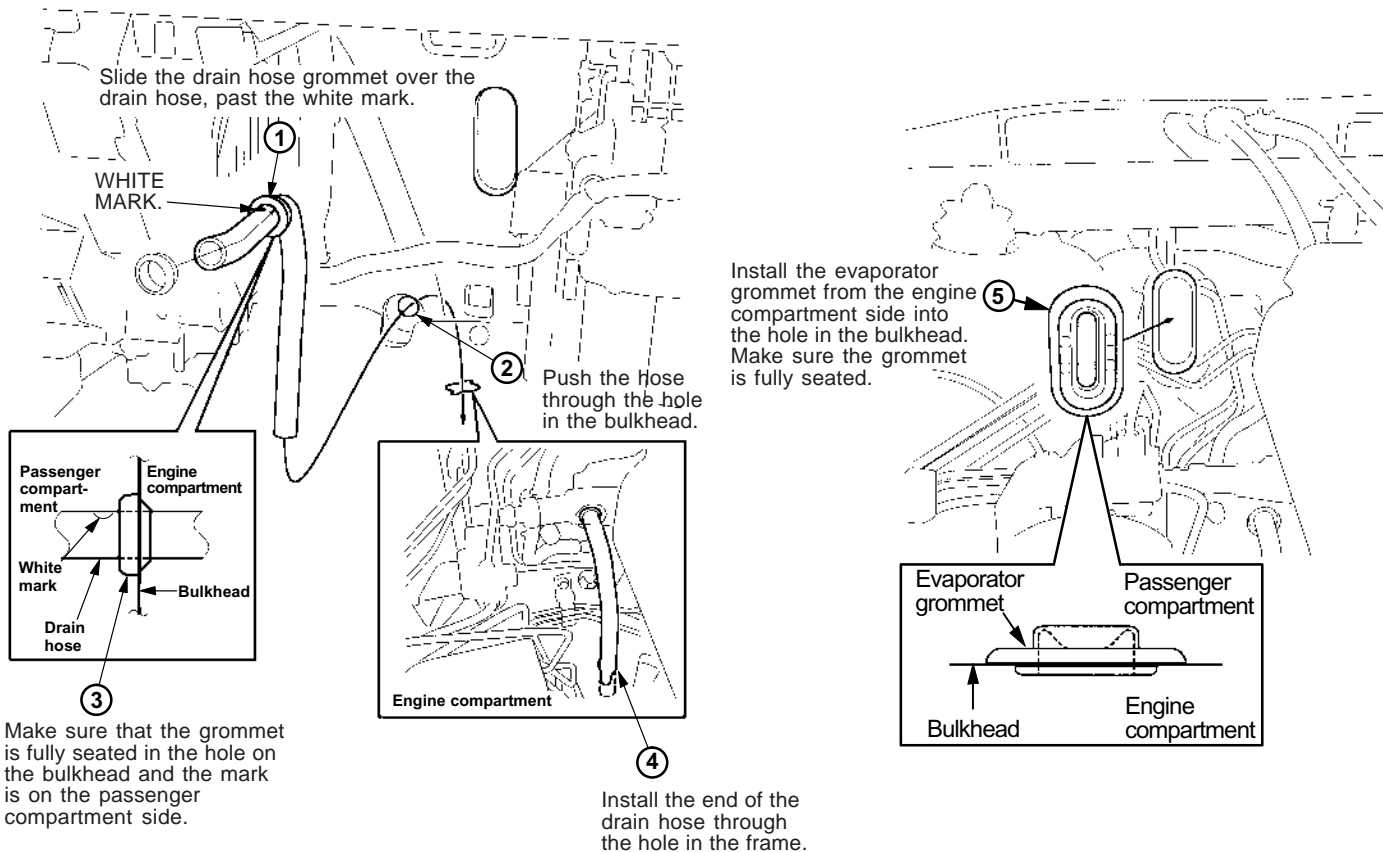
► : Clips





Get Parts group A.

4. Install the evaporator.



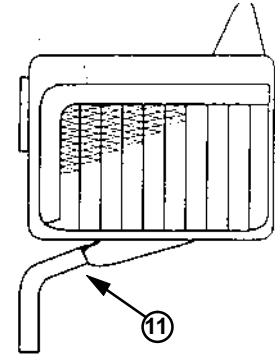
Remove the tape to free the thermometer connector from the vehicle harness.

Install this 6 x 24 mm washer-bolt (90156-SH3-000), then torque it and the bolt in step 6 to 10 N·m (7 lb-ft).

Plug the connector into the thermostat, then secure the vehicle harness into the clip on the evaporator.

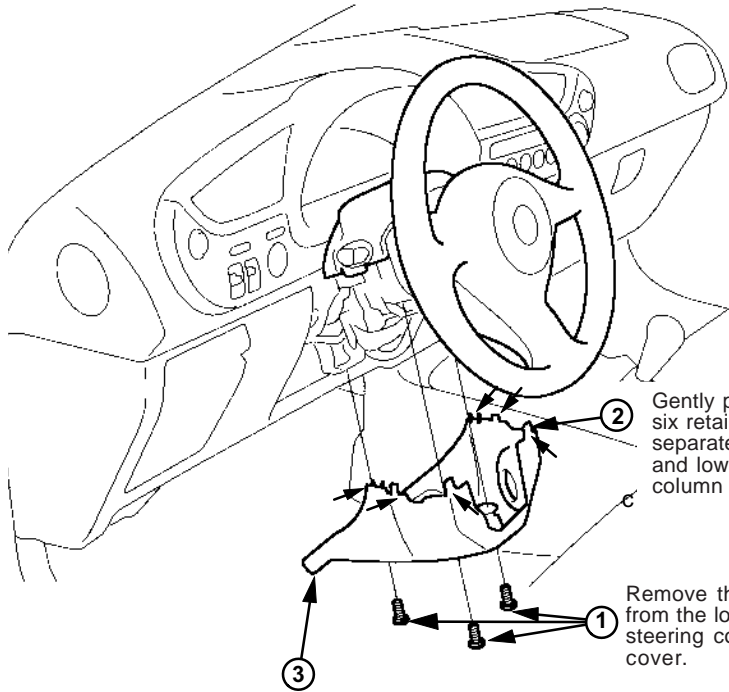
Install two self-tapping screws (90155-SE0-003) and the two self-tapping screws from the original heater duct.

Hold the evaporator in position and loosely install this 6 x 24 mm washer-bolt (90156-SH3*000).



Push the hose all the way onto the evaporator. Do not apply any oil or grease on the hose.

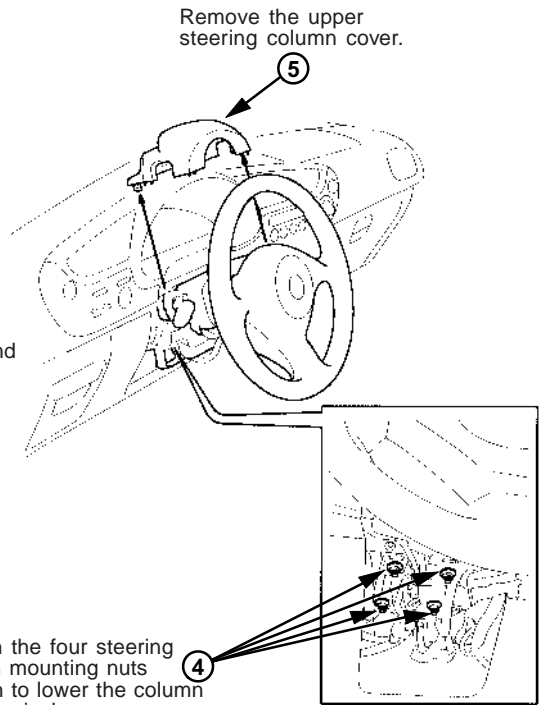
5. Remove the heater control unit.



Remove the lower steering column cover.

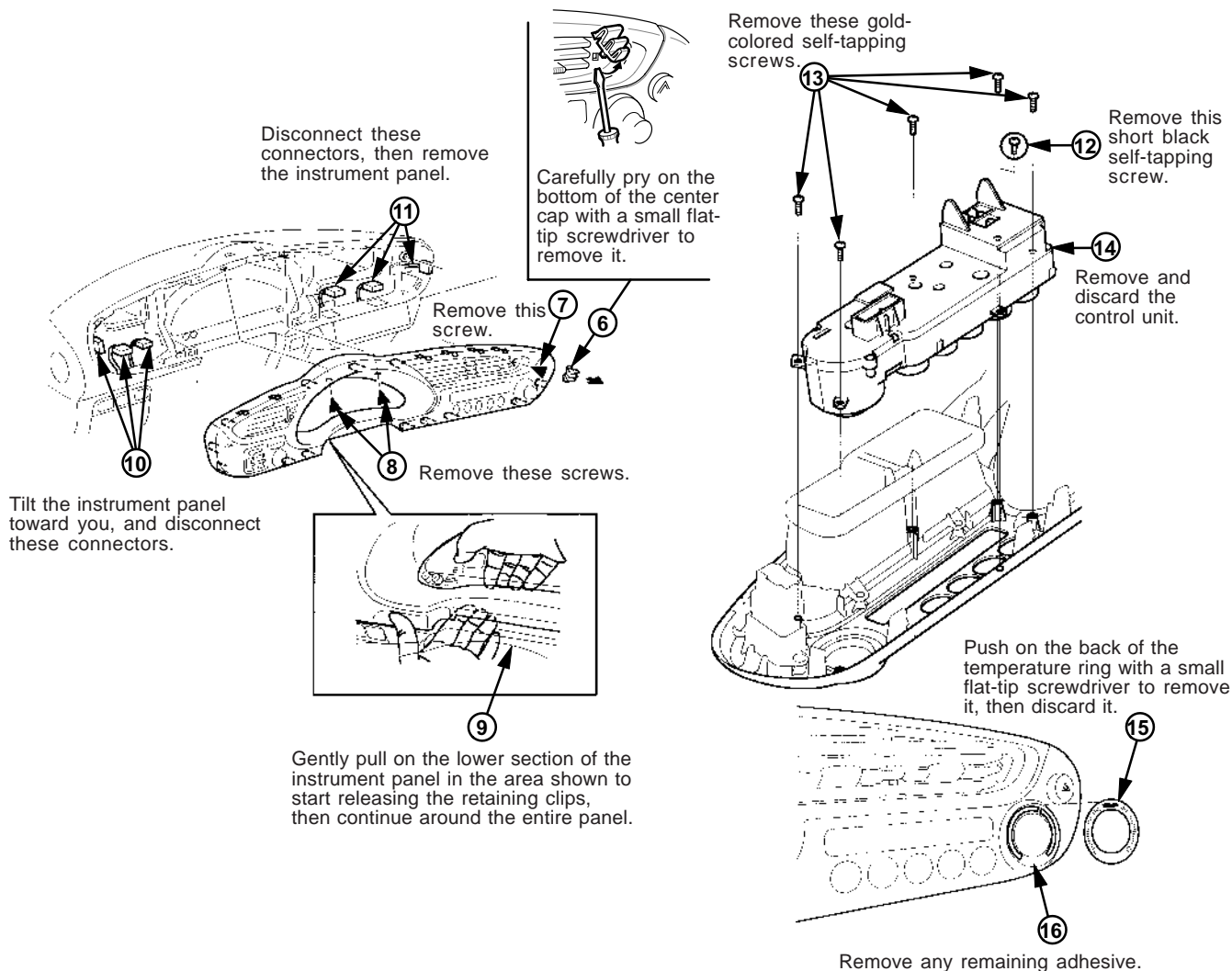
Gently push on the six retaining tabs, and separate the upper and lower steering column covers.

Remove the screws from the lower steering column cover.

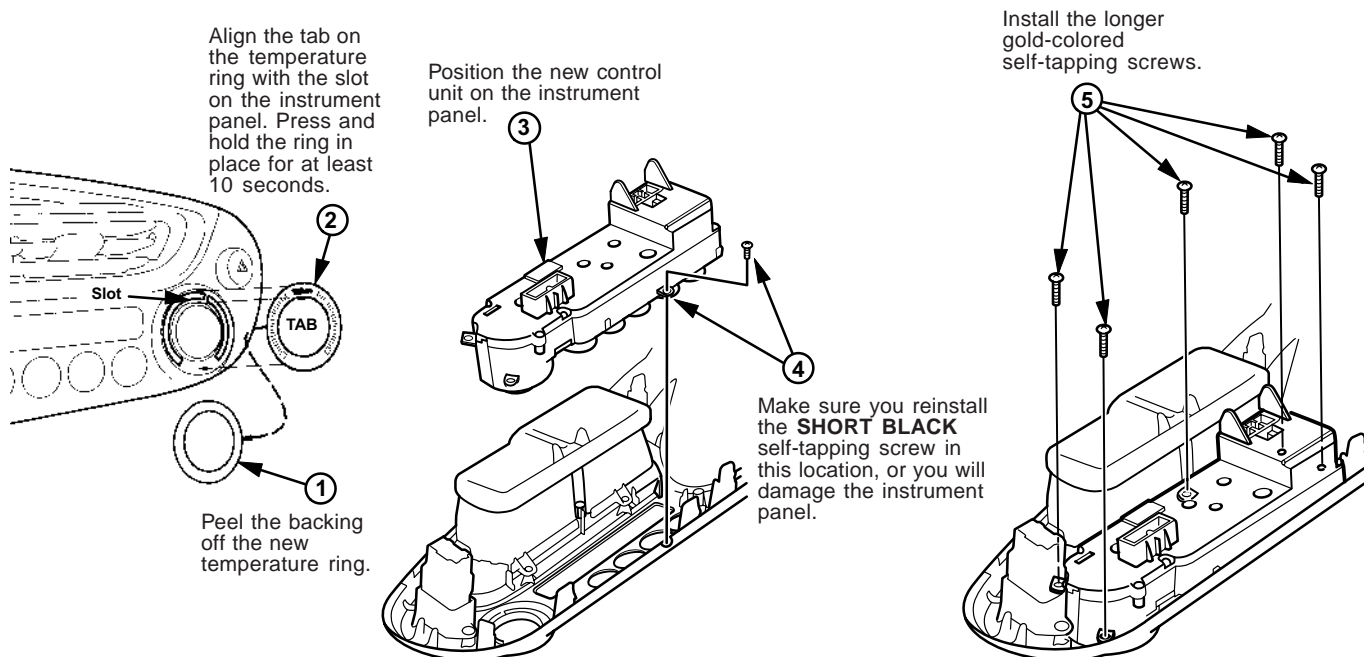


Remove the upper steering column cover.

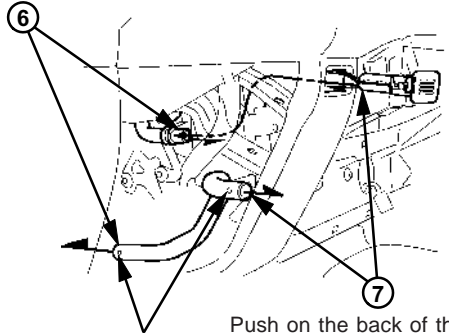
Loosen the four steering column mounting nuts enough to lower the column about an inch.



6. Install the climate control unit.



Connect the aspirator tube to the aspirator with the white marks toward the steering column.



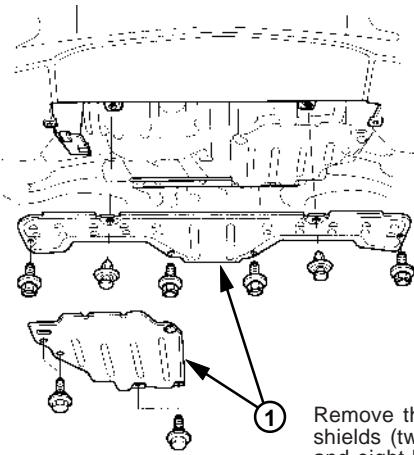
WHITE MARKS

Push on the back of the in-car temperature sensor, and pull it out of the dashboard; then connect the aspirator tube to it, and reinstall the sensor.

7. Reinstall these parts:

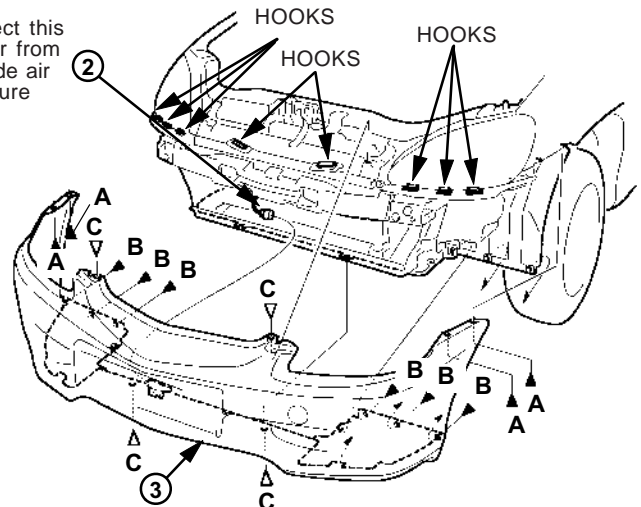
- Instrument panel
- Upper steering column cover
- Steering column nuts; torque them to 13 N·m (9.4 lb-ft).
- Lower steering column cover
- Glove box frame
- Center lower cover
- Glove box

8. Prepare the engine compartment for installing the rest of the A/C kit.

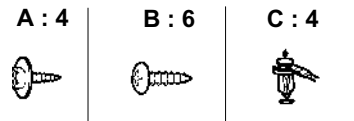


Remove the splash shields (two clips and eight bolts).

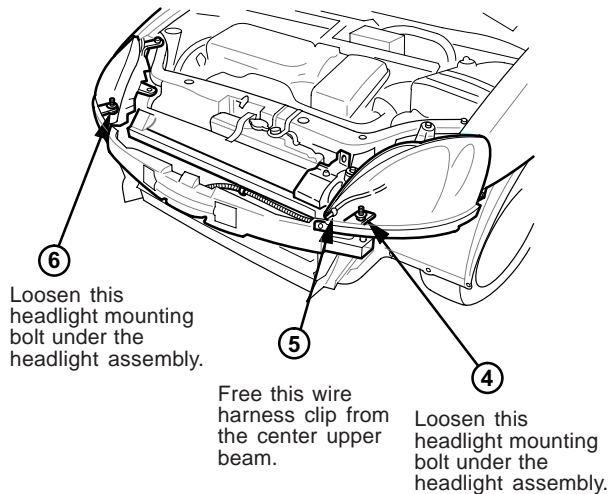
Disconnect this connector from the outside air temperature sensor.



Remove the attaching hardware, then carefully remove the bumper.



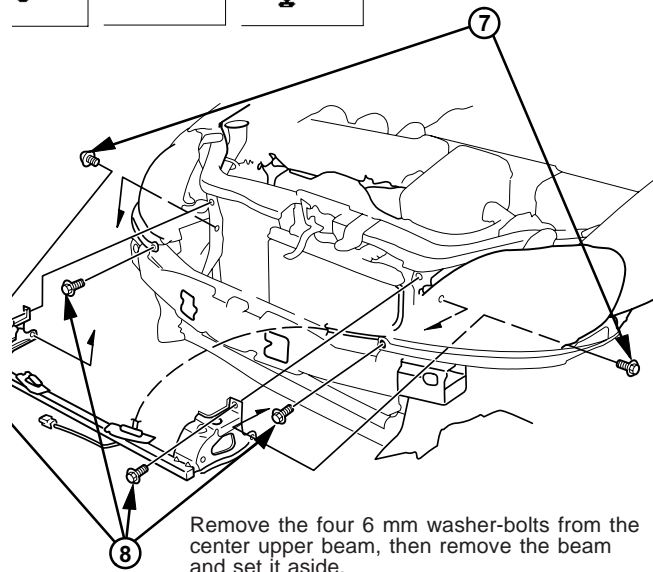
Remove these two 6 mm washer-bolts from the center upper beam. Access the bolts from under the headlight assemblies.



Loosen this headlight mounting bolt under the headlight assembly.

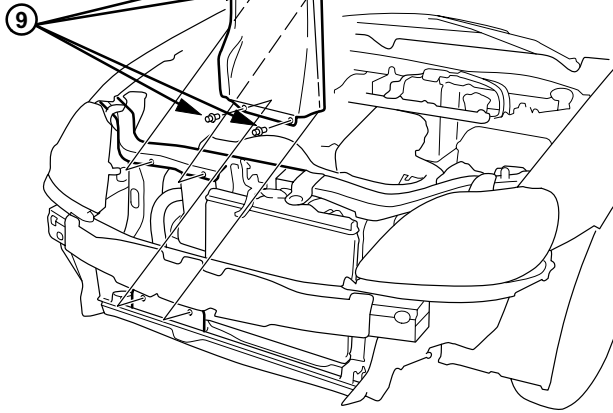
Free this wire harness clip from the center upper beam.

Loosen this headlight mounting bolt under the headlight assembly.



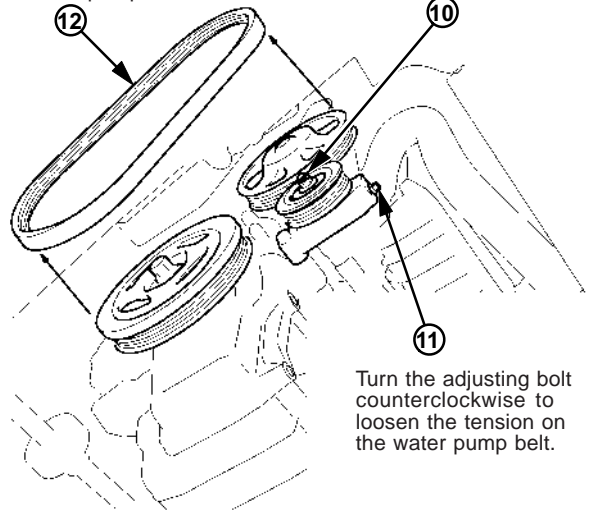
Remove the four 6 mm washer-bolts from the center upper beam, then remove the beam and set it aside.

Remove and discard the four clips and the condenser hole cover.



Remove and discard the water pump belt.

Loosen this nut on the idler pulley.



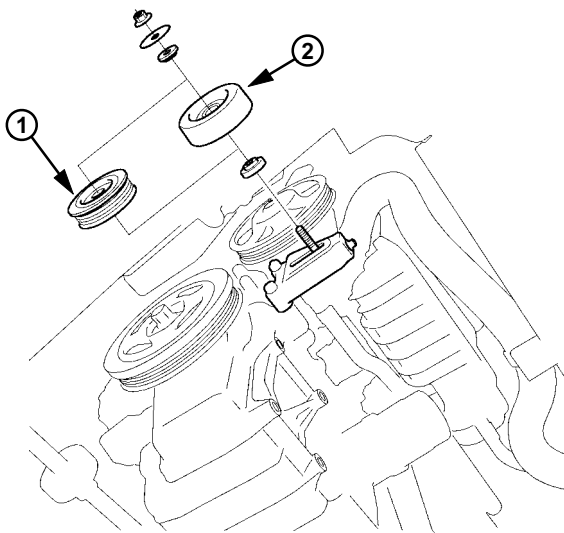
Turn the adjusting bolt counterclockwise to loosen the tension on the water pump belt.

Get parts group B.

9. Install the compressor

Remove and discard this pulley.

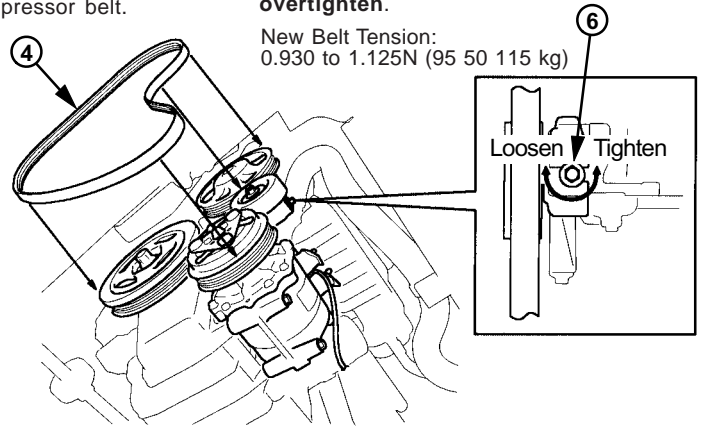
Install the new pulley with the spacers, washer, and nut from the original pulley. Install the nut finger-tight.



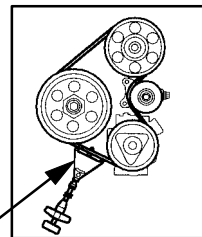
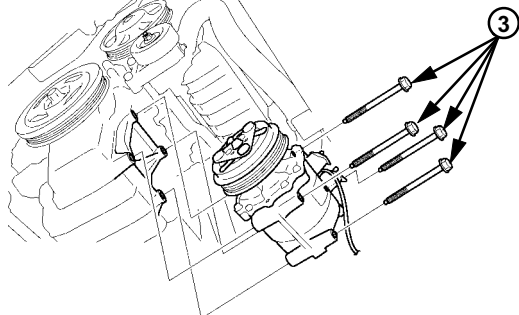
Install the compressor belt.

Turn the adjusting bolt, and keep checking the gauge until the belt tension is correct. **Do not overtighten.**

New Belt Tension:
0.930 to 1.125N (95 50 115 kg)



Install the compressor on the engine block using 8 x 110 mm flange bolts (90022-PHM-000). Torque the bolts to 22 N·m (16 lb-ft).



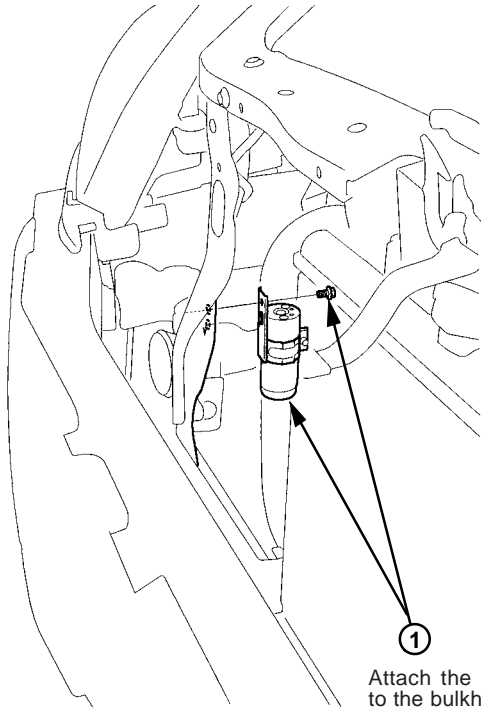
Fit this belt tension gauge (07JGG-001010A) onto the belt. **Do not use any gauge other than this one.**

Torque this nut to 22 N·m (16 lb-ft), and check the belt tension.

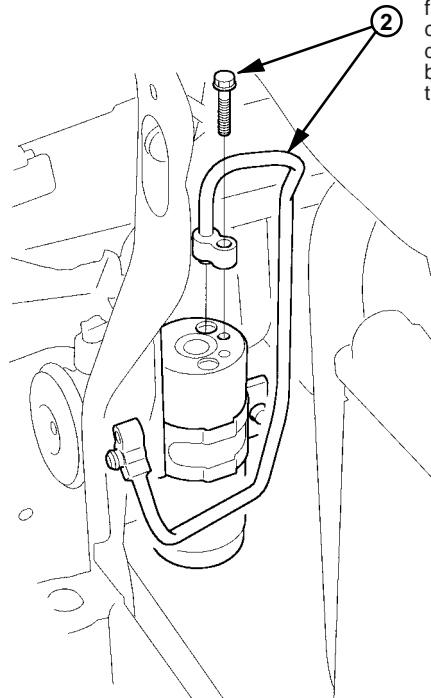


Get parts group C.

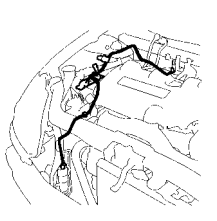
10. Install the A/C lines.



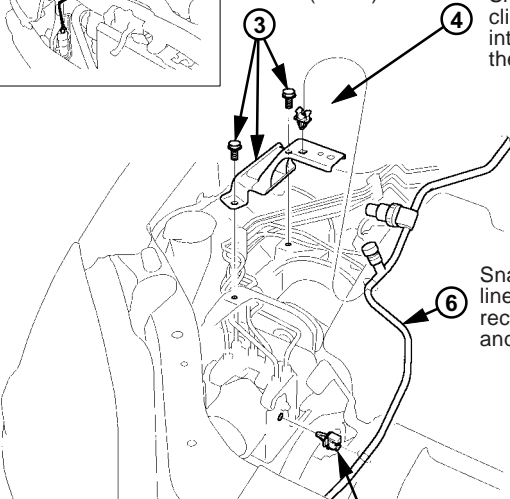
Attach the receiver-dryer to the bulkhead with a 6 x 12 mm flange bolt (95701-06012-05). Torque the bolts to 10 N·m (7 lb-ft).



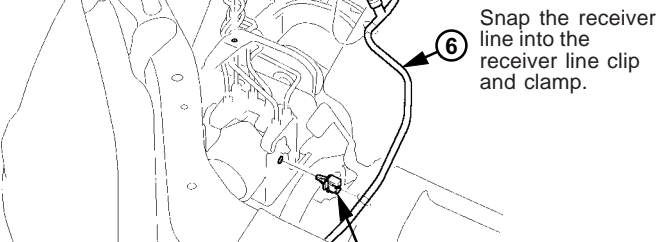
Apply the refrigerant oil to it's fitting, then connect the condenser line to the receiver-dryer with a 6 x 25 mm flange bolt (95701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).



Install the line bracket with two 6 x 12 mm flange bolts (95701-06012-05). Torque the bolts to 10 N·m (7 lb-ft).



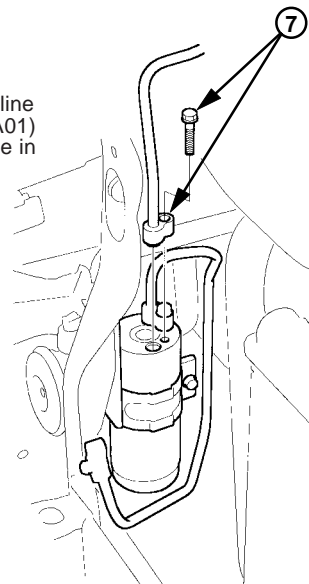
Snap the receiver line clip (80387-SM4-A01) into the square hole in the line bracket.



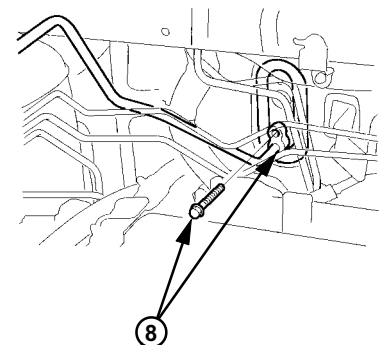
Snap the receiver line into the receiver line clip and clamp.



Snap the receiver line clamp (80381-SV7-A01) into the hole in the ABS modulator bracket.



Apply the refrigerant oil to it's fitting, then connect the receiver line to the receiver-dryer line with a 6 x 25 mm flange bolt (95701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).

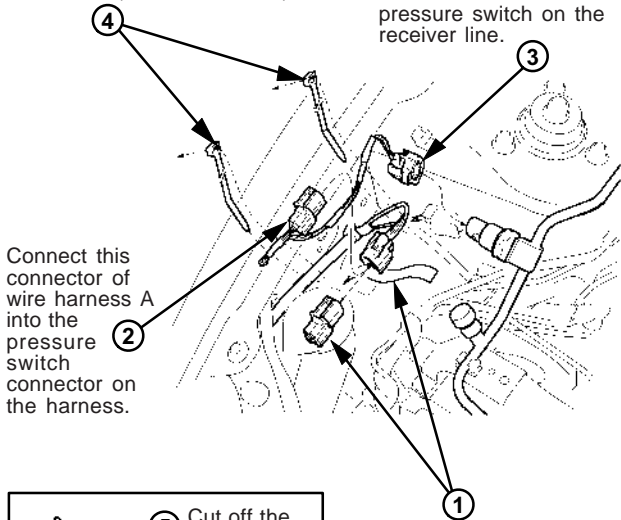


Apply the refrigerant oil to it's fitting, then connect the receiver line to the evaporator with a 6 x 25 mm flange bolt (95701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).

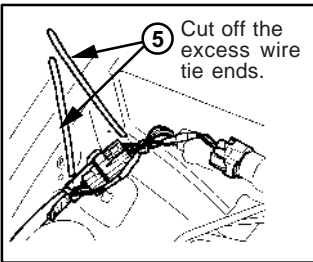
11. Install wire harness A.

Secure the wire harness A to the vehicle harness with two wire ties (38221-SW5-300).

Connect this connector of wire harness A into the pressure switch on the receiver line.



Connect this connector of wire harness A into the pressure switch connector on the harness.

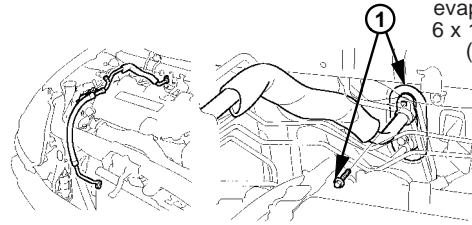


5 Cut off the excess wire tie ends.

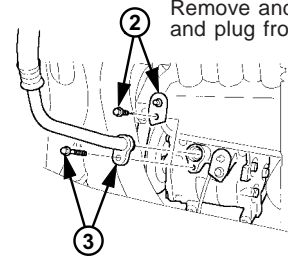
Remove the blue tape to free the pressure switch connector from the vehicle harness, then remove and discard the connector cap.

12. Install the suction and discharge hoses.

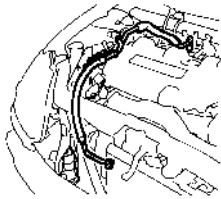
Apply the refrigerant oil to its fitting, then connect the suction hose to the evaporator with a 6 x 12 mm flange bolt (95701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).



2 Remove and discard this bolt and plug from the compressor.



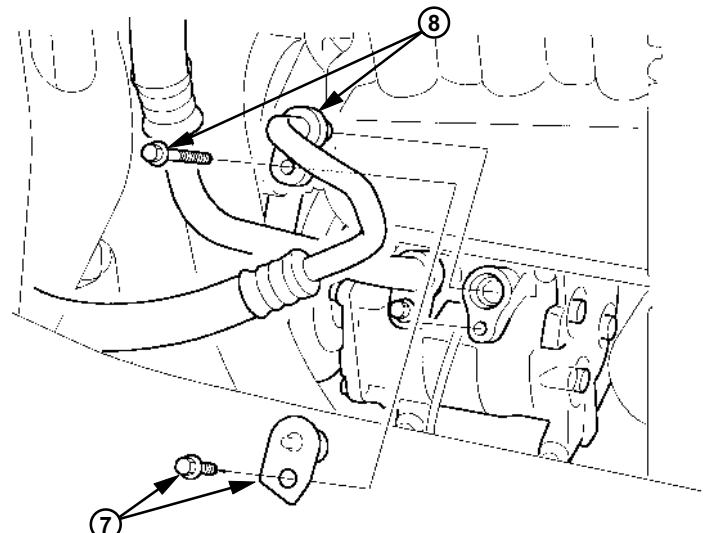
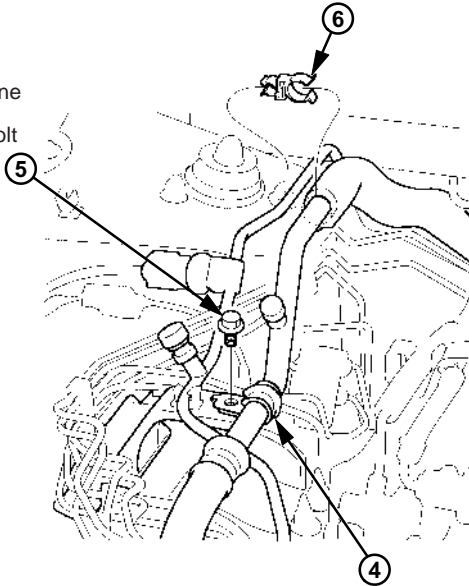
Apply refrigerant oil to its fitting, then connect the suction line to the compressor with a 6 x 25 mm flange bolt (65701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).



Insert the hose clamp (17727-SM4-003) between the suction hose and the receiver line.

Apply refrigerant oil to its fitting, then connect the discharge hose to the compressor with a 6 x 25 mm flange bolt (65701-06025-08). Torque the bolt to 10 N·m (7 lb-ft).

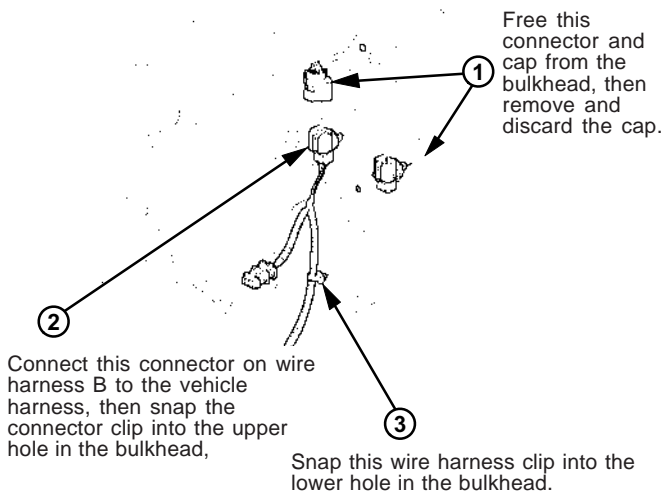
Secure the suction hose clamp to the line bracket with a 6 x 12 mm flange bolt (95701-06012-05). Torque the bolt to 10 N·m (7 lb-ft).



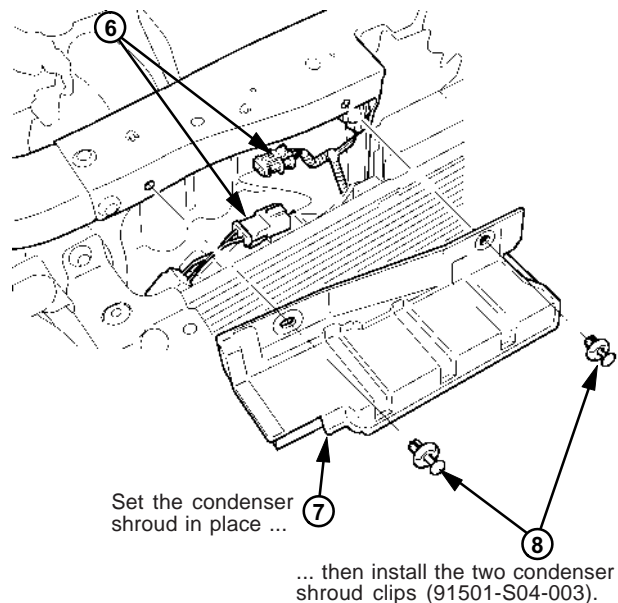
Install the suction hose clamp (80361-S3Y-A00) over the suction line.

Remove and discard this bolt and plug from the compressor.

13. Install wire harness B.

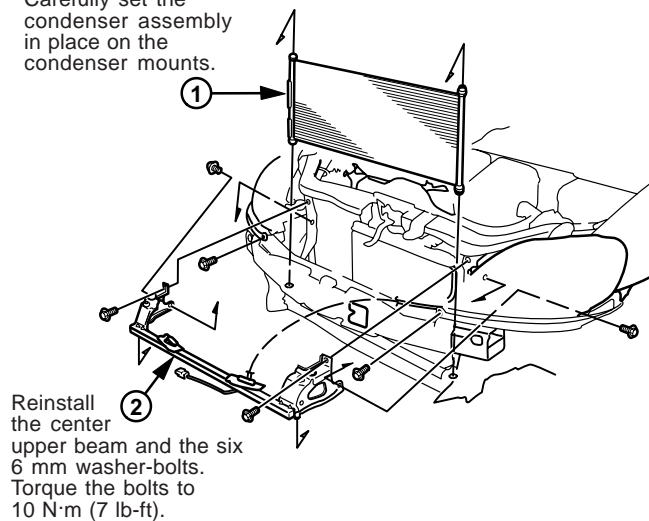


Connect this connector B to the condenser fan connector.

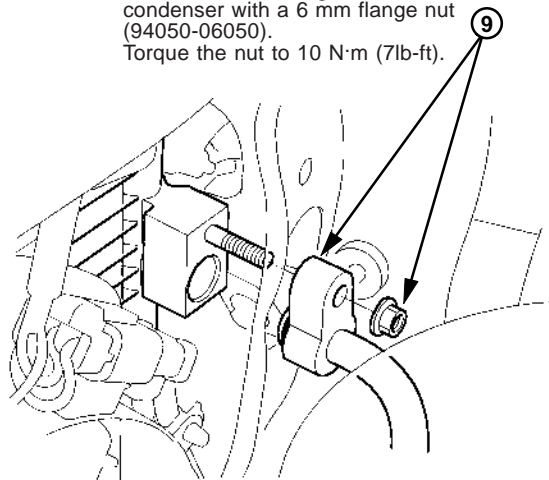


14. Install the condenser.

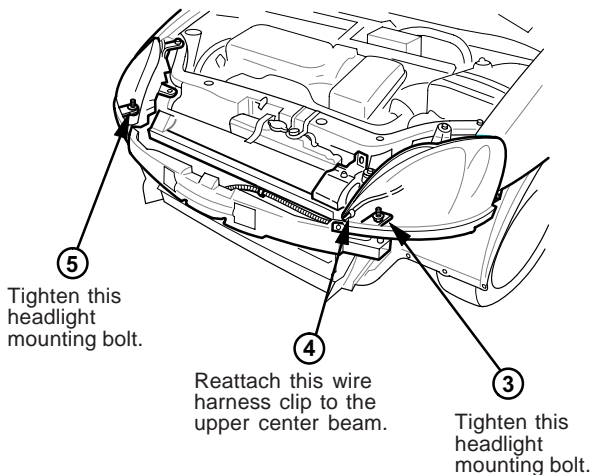
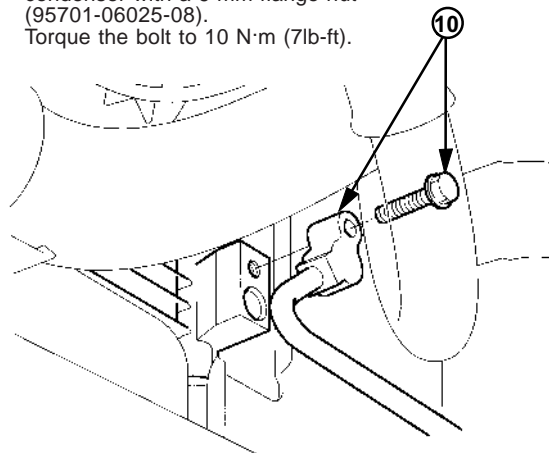
Carefully set the condenser assembly in place on the condenser mounts.

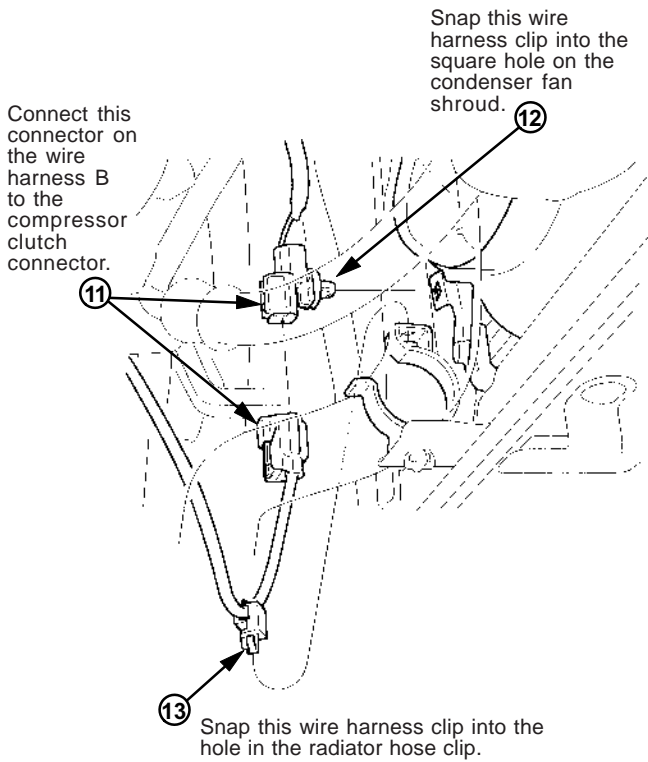


Apply refrigerant oil to it's fitting, then connect the discharge hose to the condenser with a 6 mm flange nut (94050-06050). Torque the nut to 10 N·m (7lb-ft).

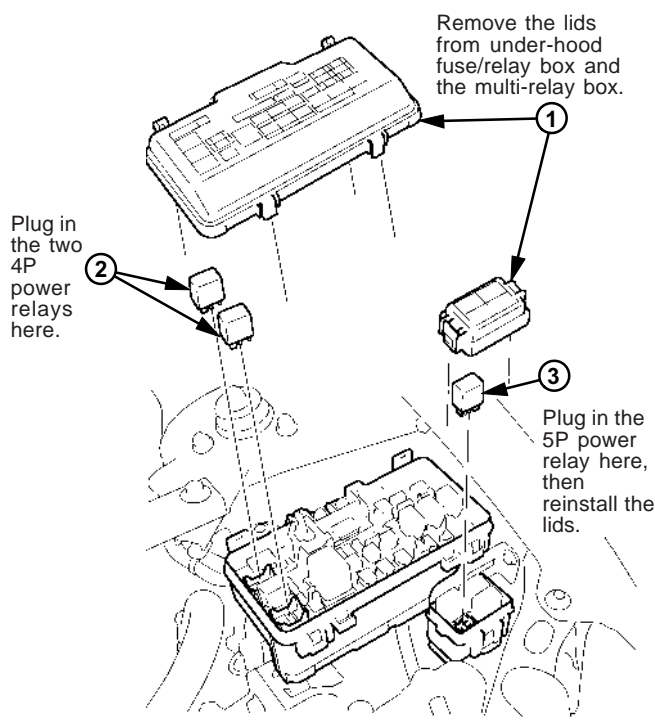


Apply refrigerant oil to it's fitting, then connect the condenser line hose to the condenser with a 6 mm flange nut (95701-06025-08). Torque the bolt to 10 N·m (7lb-ft).

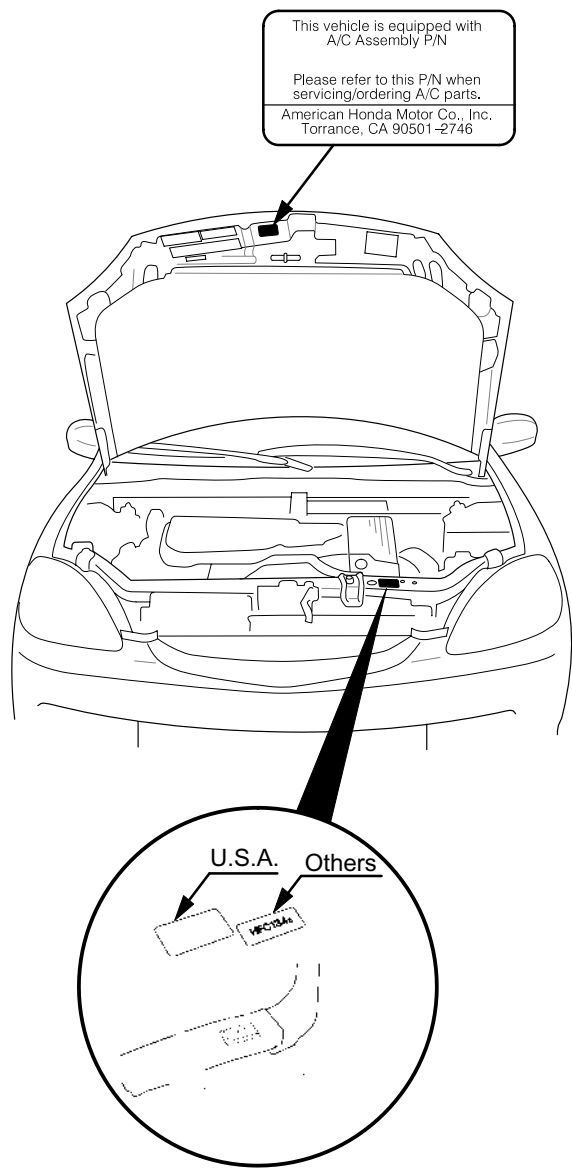




Get parts group D.
15. Install the power relays.



16. Attach the labels in the locations shown.



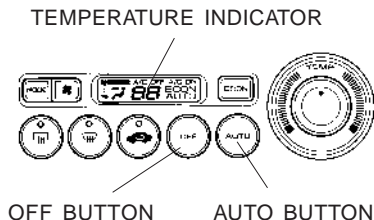
17. Reinstall the remaining parts:

- Reinstall the front bumper; torque the mounting bolts to 10 N·m (17 lb-ft).
 - Reconnect the outside air temperature sensor 2P connector.
- NOTE:** If the outside air temperature sensor 2P connector is not properly connected, the auto idle stop function will not work correctly.
- Reconnect the negative cable to the 12-volt battery.

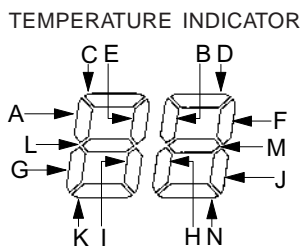
18. Run the climate control unit self-diagnosis function.

NOTE: If you did not reconnect the outside air temperature sensor 2P connector, you will get a DTC indicator light C (open in the outside air temperature sensor circuit) when you run the self-diagnosis function, and *the auto idle stop function will not work correctly.*

Turn the ignition switch ON (II). Press the AUTO button and then the OFF button, and then hold them both down for 1 minute.



If there is any abnormality in the system, the temperature indicator lights up the segment (A through N) corresponding to the error. The temperature indicator then alternates every second between displaying "88" (all segments lit) and the Diagnostic Trouble Code (DTC) segment (A through N).



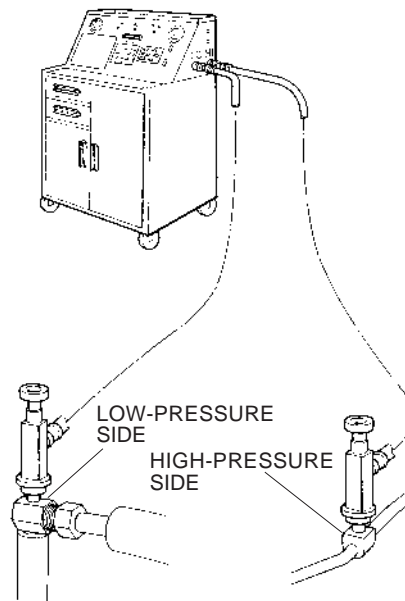
To determine the meaning of the DTC, refer to section 21 of the 2000-2004 Insight Service Manual. If the system is OK, none of the segments will light up.

19. Evacuate the system.

HFC-134a and compressor oil used in the A/C system are highly moisture-absorbent. After installing the system, make sure you evacuate it for at least 15 minutes.

NOTE:

- If low pressure does not reach more than 700 mm Hg (27 in-hg) in 15 minutes, there is probably a leak in the system. Partially charge the system, and check for leaks (see step 21, Check for leaks).
- If the system is left open, the desiccant in the receiver tank will become saturated with moisture, requiring longer evacuation time.



20. Charge the system.

- This system requires only the amount of HFC-134a refrigerant shown below. If you overcharge the system, the engine and the A/C will malfunction. **Do not overcharge!** Select the appropriate units of measure for your refrigerant charging station.

500 to 550 grams
0.50 to 0.55 kilograms
1.1 to 1.2 pounds
17.6 to 19.4 ounces

- Do not add oil to the compressor; a new compressor already contains enough oil for the entire A/C system. If you are replacing compressor oil that has leaked out of the system, use only **Sanden SP-10 oil**.
- Using the wrong oil, or mixing different types of oil, would result in abnormal compressor noise or seizure, or shortened compressor service life. These conditions are **not covered by warranty policy**.

21. Check for Leaks

When checking for leaks, follow these guidelines:

- Make sure you use a leak detector designed for A/C systems that use HFC-134a.
- To avoid false readings, do not use a tester designed to detect Freon (CFC-12).
- Because HFC-134a is heavier than air, always check 360° around all fittings.
- If you lose or damage an O-ring during the A/C installation, make sure your order the correct replacement part listed here:

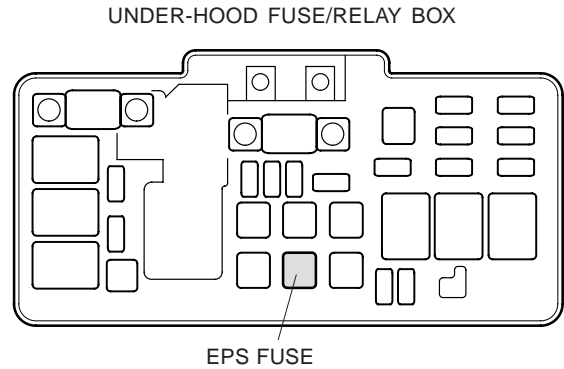
PART NAME	PART NUMBER	APPLICATION
O-ring, 8 mm	80873-ST7-000	Condenser Line Receiver Lines
O-ring, 5/8	80871-ST7-000	Suction Hose
O-ring, 1/2	80872-ST7-000	Discharge Hose and Line

22. Performance test the A/C system.

Refer to Service Bulletin 96-012, Air Conditioning System Performance Test, found in ACCESSORIES.

23. Reinitialize the IMA battery level gauge.

To reinitialize the battery level gauge, remove the EPS fuse from the under-hood fuse/relay box, start the engine, and hold the engine at 3,500 RPM until the battery level shows at least half full or more. When the battery level gauge is half full or more, turn off the engine, reinstall the EPS fuse, and reinstall the lid on the under-hood fuse/relay box.



24. Check the A/C compressor belt tension, and readjust it to the used belt tension as needed.

- Attach the belt tension gauge to the A/C compressor belt.
- Loosen the idler pulley nut.
- Turn the adjusting bolt to obtain the proper belt tension.
Used Belt Tension:
390 to 450N (40 to 50 kg)
- Torque the idler pulley to 22 N·m (7 lb-ft).

25. Reinstall the splash shield.

Torque the mounting bolts to 10 N·m (7 lb-ft).

Circuit Diagram

