



TOYOTA
YARiS

AIR CONDITIONING

ENGLISH

EUROPE

INSTALLATION MANUAL


INTRODUCTION


IMPORTANT NOTICE

This manual has been designed for technicians who are qualified and educated in the proper procedures of vehicle safety, handling and maintenance; experienced in installation of car air conditioning or who are able to carry out installation procedures when given instructions by an experienced technician in a supervisory capacity; and are certified to handling refrigerant.

1. Take special care to ensure that clearance between air conditioning components and other components such as brake parts, fuel system and electric wires as specified in this manual.
2. If a problem is found with the air conditioning system due to installation, refer back to the manual to correct the problem(s).
3. Vehicle and air conditioning kit components as well as installation procedures are subject to change without prior notice. Refer to the latest installation manual and service information. Any changes affecting the above items will be given in the form of a "Installation instructions for air conditioning (Supplement)" (issued by DENSO) or a service bulletin (issued by the manufacturer).

DEFINITION OF TERMS

 **WARNING** : Describes precautions that should be observed in order to prevent injury or death to the user during installation.

 **CAUTION** : Describes precautions that should be observed in order to prevent damage to the vehicle or its components, which may occur during installation if insufficient care is taken.

NOTE : Provides additional information that facilitates installation work.

FRONT, REAR : Shows the direction when viewed from the driver's seat.

LEFT, RIGHT

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1. GENERAL INFORMATION

1-1 PRECAUTIONS DURING INSTALLATION

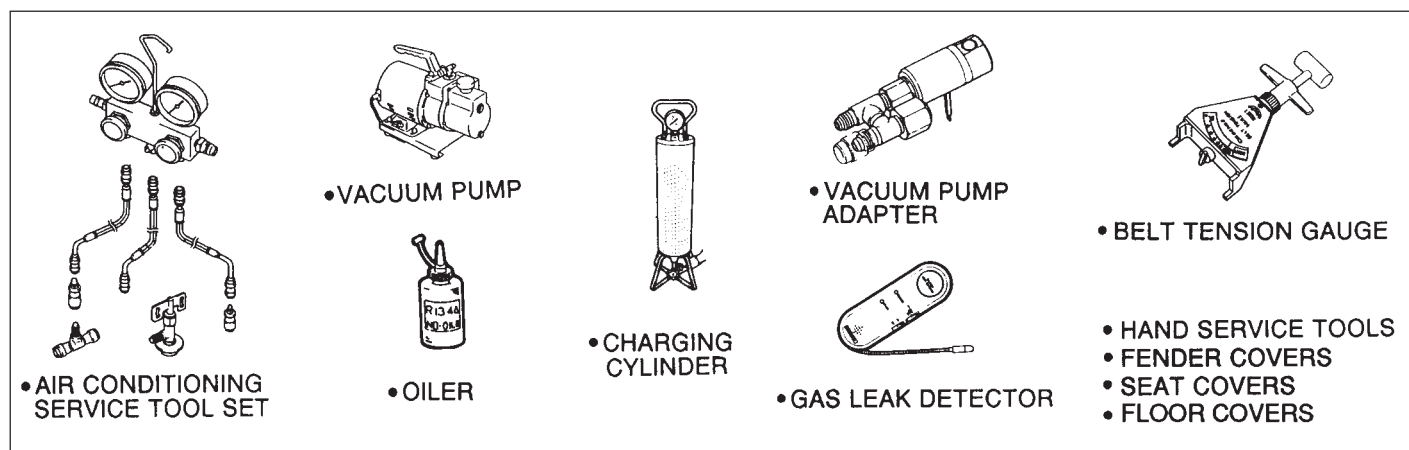
WARNING

1. The contents given in “**WARNING**” and “**CAUTION**” in this manual must be adhered to during installation. If they are ignored, not only the functions of the air conditioning are hindered, but also personal injury or damage to the vehicle may result. Always carry out the installation in accordance with the “**WARNING**” and “**CAUTION**” as noted.
2. Safety Precautions
 - (a) If installation is carried out by more than two persons, always pay attention to co-worker’s safety.
 - (b) When the engine is running, make sure that sufficient ventilation is provided.
 - (c) Take special care when working with heated, rotating, sliding, or moving parts, to prevent bodily injury.
 - (d) When raising the vehicle, refer to the appropriate manufacturer’s service manual.
 - (e) For heavy duty trucks, when tilting the cabin forward, refer to the service manual provided by the vehicle’s manufacturer to prevent damage or personal injury. Make sure the cabin is locked down after it has been tilted forward to prevent it from closing.

1-2 INSTALLATION PREPARATION

- (1) Prior to installing the air conditioning, check the following for damage or malfunctions.
 - (a) Internal and external trim and bodywork.
 - (b) Engine idle speed.
 - (c) Engine cooling system.
 - (d) All vehicle functions. (Headlights, indicators, horn, etc.)
- (2) Air Conditioning parts preparation
 - (a) Make sure that the correct kit has been selected for the installation.
 - (b) When unpacking the kit, lay out all parts in order of installation and check for missing or damaged parts.
 - (c) When installing the air conditioning, use fender covers, floor covers and seat covers for protection.

[INSTALLATION TOOLS]




1-3 TIGHTENING TORQUE

- (1) Where tightening torque is specified, always tighten there with the specified torque.
- (2) Where tightening torque is not specified, refer to the tightening torque table.
- (3) Bolts marked with ⑧ must be used for engine components, which are likely to be subject to heavy load. Never substitute the bolts marked ⑧ with other bolts.
- (4) Nuts must be fastened with the tightening torque specified for the related bolts.

[TIGHTENING TORQUE TABLE (GENERAL)]

[Unit : N•m]							
Diam. (mm)	Pitch (mm)	4T	5T	6T	7T	8T	10T
6	1.00	5.4± 1.0	6.4± 1.1	7.8± 1.4	10.8± 1.9	————	————
8	1.25	12.7± 2.5	15.7± 2.9	19.1± 3.4	25.5± 5.9	29.4± 5.9	38.2± 7.4
10	1.25	25.5± 4.9	32.4± 6.3	39.2± 7.8	52.0±10.2	60.8±11.8	78.5±15.6
12	1.25	47.1± 9.3	58.8±11.7	71.6±14.2	95.1±18.6	107.9±21.5	142.2±28.3
14	1.50	74.5±14.7	91.2±18.1	107.9±21.6	147.1±29.4	————	————
16	1.50	112.8±22.5	137.3±27.5	171.6±34.3	225.6±45.1	————	————
[Unit : kgf•cm]							
Diam. (mm)	Pitch (mm)	4T	5T	6T	7T	8T	10T
6	1.00	55± 10	65± 10	80± 15	110± 20	————	————
8	1.25	130± 25	160± 30	195± 35	260± 50	300± 60	390± 75
10	1.25	260± 50	330± 65	400± 80	530± 105	620± 120	800± 160
12	1.25	480± 95	600± 120	730± 145	970± 190	1100± 220	1450± 290
14	1.50	760± 150	930± 185	1100± 220	1500± 300	————	————
16	1.50	1150± 230	1400± 280	1750± 350	2300± 460	————	————
[Unit : ft•lbf]							
Diam. (mm)	Pitch (mm)	4T	5T	6T	7T	8T	10T
6	1.00	4.0± 0.7	4.7± 0.7	5.8± 1.0	7.9± 1.3	————	————
8	1.25	9.4± 1.8	11.5± 2.1	14.1± 2.4	18.7± 3.6	21.7± 4.3	28.1± 5.4
10	1.25	18.8± 3.6	23.8± 4.6	29.0± 5.7	38.2± 7.4	44.8± 8.6	56.7±11.4
12	1.25	37.4± 6.8	43.2± 8.5	52.8±10.4	69.9±13.6	79.6±15.7	104.5±20.7
14	1.50	54.7±10.8	67.0±13.2	79.3±15.8	108.1±21.6	————	————
16	1.50	82.9±16.5	100.9±20.2	126.0±25.2	165.7±33.1	————	————

[IDENTIFICATION OF BOLT STRENGTH (BOLT SIZES)]



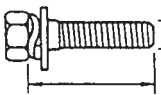
NO MARK = 4 T

4 = 4 T

6 = 6 T

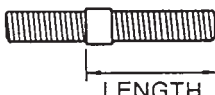
8 = 8 T

A NUMBER IS STAMPED OR EMBOSSED ON THE HEAD OF A BOLT.



NOMINAL DIAMETER (M)

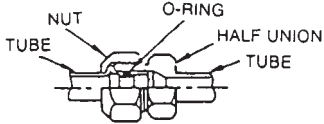
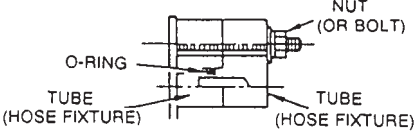
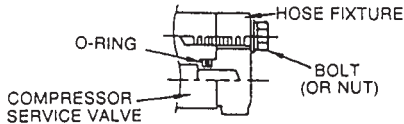
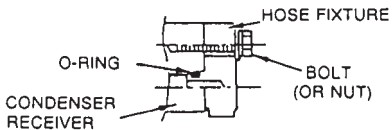
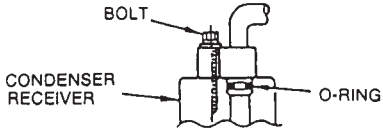
LENGTH UNDER BOLT HEAD (l)



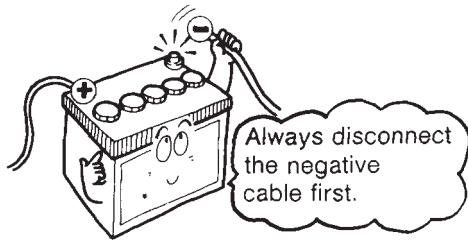
NOMINAL DIAMETER (M)

LENGTH (L)

[TIGHTENING TORQUE TABLE (FOR PIPES)]

STRUCTURE	TUBE SIZE	TIGHTENING TORQUE		
		N•m	kgf•cm	ft•lbf
<GENERAL PIPING (UNION TYPE)> 	1/4" $\phi 8$ 1/2" 5/8" OR 6/8"	7.8±1.0 13.7±1.0 22.5±2.0 32.3±2.0	80±10 140±10 230±20 330±20	5.8±0.7 9.8±1.0 16.2±1.7 23.4±1.7
<GENERAL PIPING (BOLT, NUT TYPE)> 	BOLT & NUT SIZE	N•m	kgf•cm	ft•lbf
<COMPRESSOR> 	M6	9.8±2.0	100±20	7.2±1.3
<CONDENSER (EXCLUDING MF TYPE) COOLING UNIT> 				
<CONDENSER (MF TYPE)> 		5.4±1.0	55±10	4.0±0.7

1-4 PRECAUTIONS FOR SAFETY INSTALLATION



- (1) Never carry out installation with battery cables connected.

NOTE

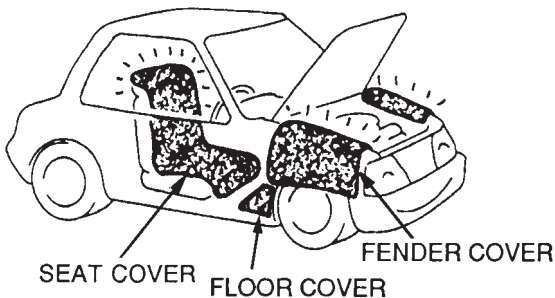
1. If installation is carried out with the power connected, a short-circuit may result.
2. Always disconnect the negative cable first.
3. When re-connecting the cables, make sure to connect the correct terminal of the battery with it.



- (2) Do not smoke or expose open flame near the vehicle during installation.

NOTE

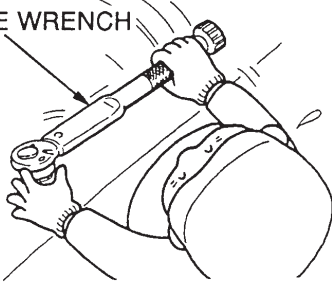
Pay special attention when working on the fuel system.



- (3) Use protective covers to avoid damage to the vehicle and the air conditioning parts.

- Seat cover
- Fender cover
- Floor cover

TORQUE WRENCH

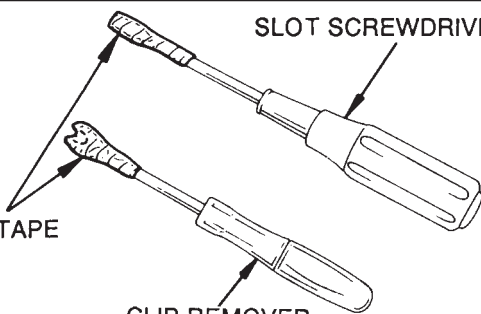


- (4) The bolt where specified must be torqued to proper specification. If torque is not specified, refer to TIGHTENING TORQUE TABLE on page 2.

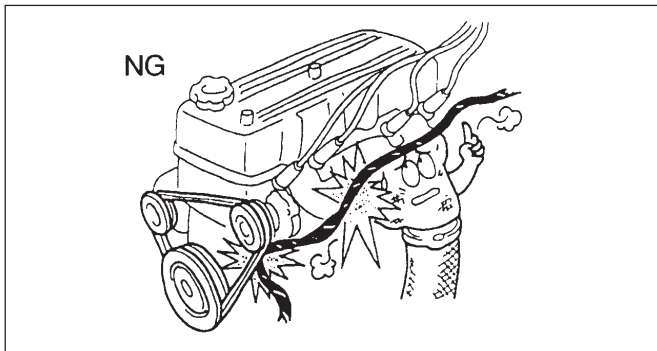
SLOT SCREWDRIVER

VINYL TAPE

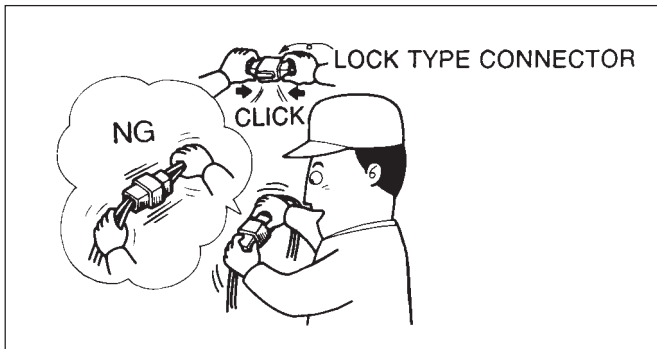
CLIP REMOVER



- (5) Take care not to scratch any part of the vehicle. Bind the tips of tools (clip remover, slot screwdriver etc.) with a piece of vinyl tape to prevent damage to parts of the vehicle.



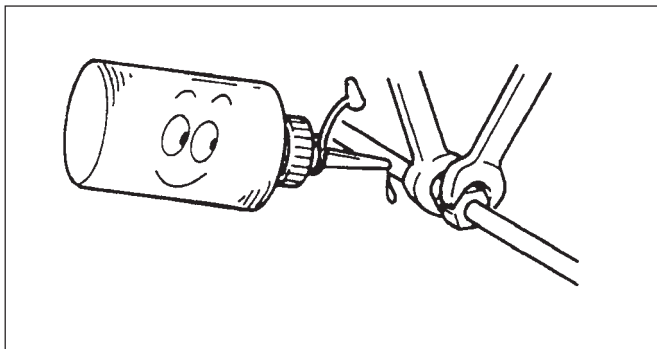
- (6) When installing the A/C harnesses, route properly avoiding interference with surrounding parts.



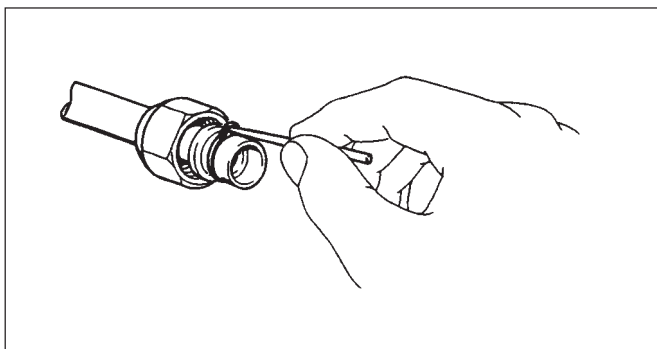
- (7) Do not pull on vehicle wires and/or wire harnesses. To uncouple electrical connectors, pull only on the connector itself so as not to damage.

NOTE

In the case of lock type connectors, make sure that the connectors are unlocked before disconnecting. When re-connecting the connectors, insert them until a clicking noise is heard. After they are connected, hold and pull them gently to check that they are connected properly.



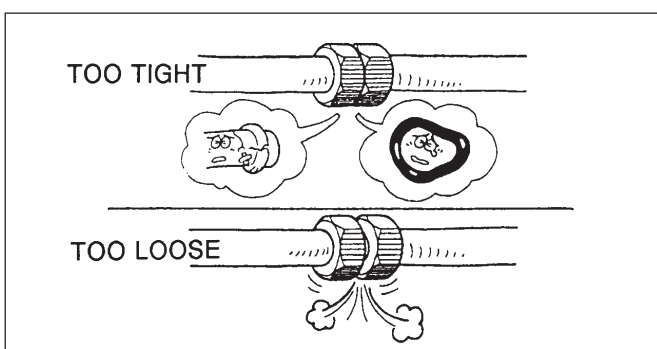
- (8) Before making any hose and tube connections, apply a few drops of compressor oil to the seat of O-ring to avoid refrigerant leakage.



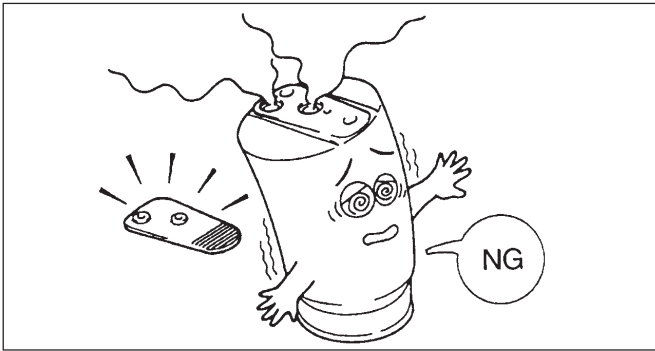
- (9) When removing an O-ring from a tube, use a wooden or nylon awl to prevent damaging the tube.

NOTE

Always replace the existing O-rings with new ones specified for refrigerant HFC-134a.



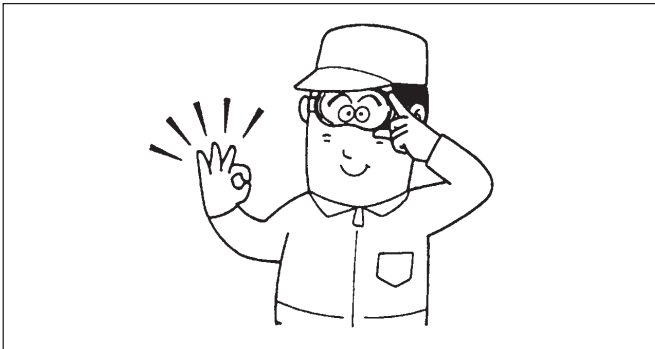
- (10) When tightening or loosening fittings, use two wrenches to prevent the tubes from twisting. After loosening the fittings, tighten them with specified torque.



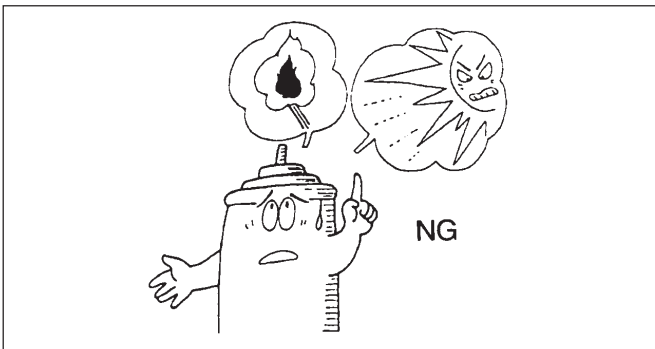
- (11) Do not remove protective caps from fittings until each component is ready for connection.

NOTE

If the receiver is left uncapped for a long time, the desiccant inside the receiver may absorb moisture, causing damage to the air conditioning.



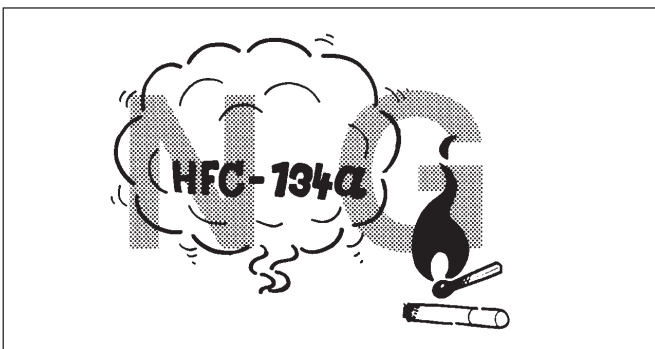
- (12) When handling refrigerant, always wear proper eye protection and do not allow it to come in contact with skin.



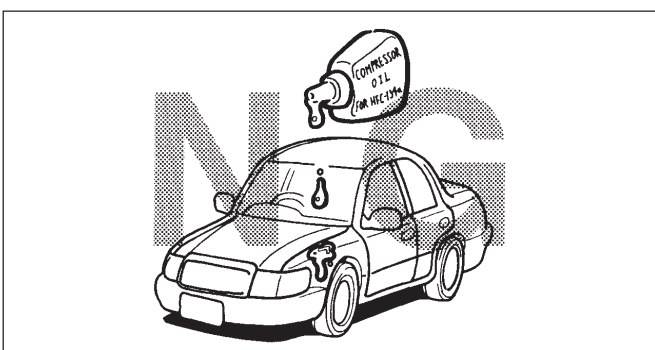
- (13) Always keep the refrigerant container (service drum) below 40°C (104 °F).

NOTE

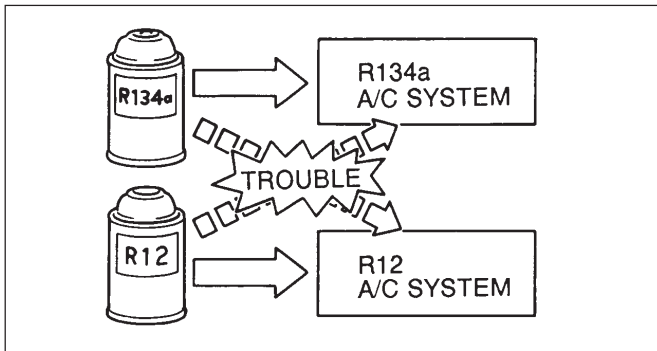
Do not store the refrigerant container in an area where it can be exposed to direct sunlight, near a source of fire, or an area such as the inside of a car (the trunk etc.), where the temperature may become high. Store the container in a dark place with low-humidity.



- (14) Do not expose refrigerant to an open flame.



- (15) Do not drop compressor oil (ND-OIL 8, 9) onto the vehicle surface. It causes the discoloration of the vehicle's body surface, or deterioration of the acrylic or ABS plastic components.



(16) Use the proper refrigerant HFC-134a (R134a).

NOTE

The very different characteristics of refrigerants HFC-134a (R134a) and CFC-12 (R12) have determined the design of their respective air conditioning systems. Under no circumstances allow CFC-12 (R12) to enter an HFC-134a (R134a) system, or vice versa, because serious damage could occur.

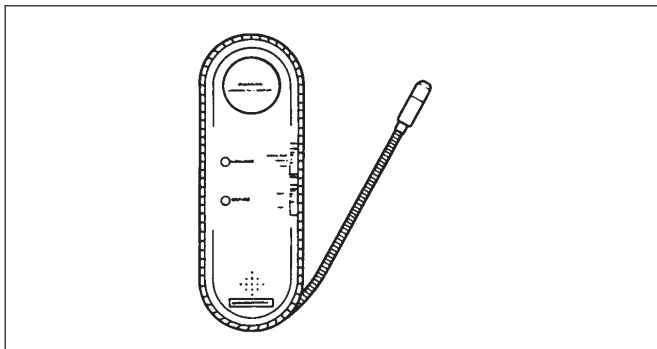


(17) Use the proper compressor oil.

NOTE

Compressor oil used in conventional CFC-12 (R12) air conditioning systems cannot be used in HFC-134a (R134a) air conditioning systems.

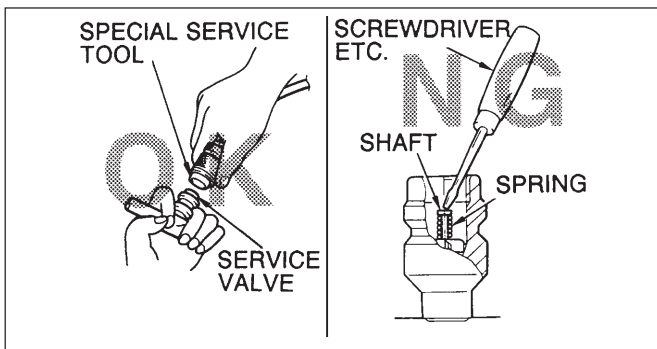
For a swash plate type compressor : ND-OIL 8
 For a through vane type compressor: ND-OIL 9
 For a scroll type compressor: ND-OIL 8



(18) Use an HFC-134a (R134a) gas leak detector.

NOTE

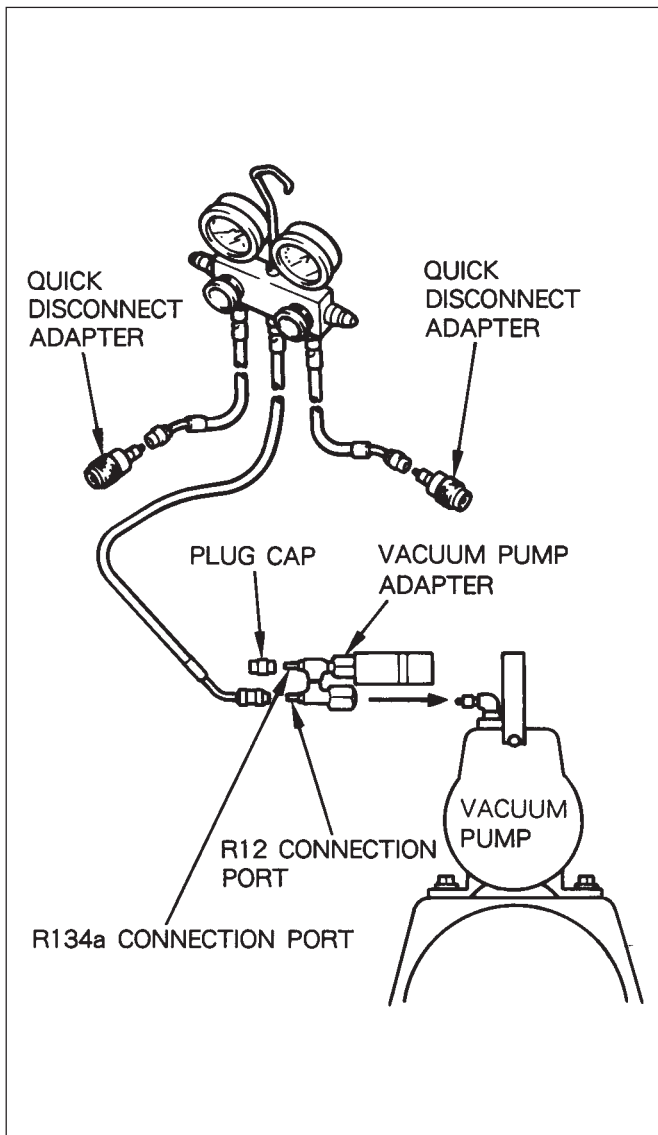
The CFC-12 (R12) leak detector is not sensitive enough to detect HFC-134a (R134a).



(19) When recovering refrigerant, use the necessary special service tools.

NOTE

1. Support the service valve by hand to prevent the tube from bending when connecting the charging hose.
2. Using a general tool like a screwdriver may cause refrigerant leak by damaging the service valves.



(20) Use manifold gauges for HFC-134a (R134a).

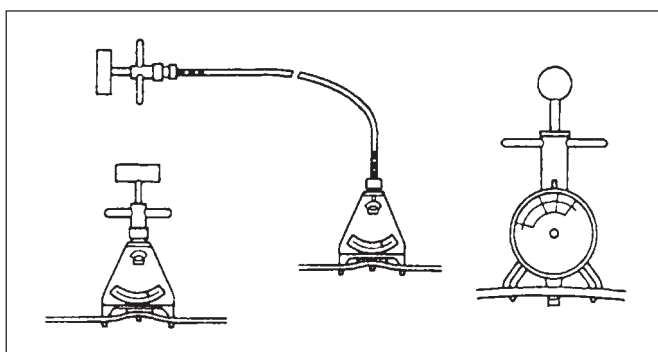
NOTE

1. Manifold gauges

Always use HFC-134a (R134a) dedicated manifold gauges to prevent CFC-12 (R12) and CFC-12 (R12) compressor oil contaminating the HFC-134a (R134a) system.

2. Vacuum pump adapter

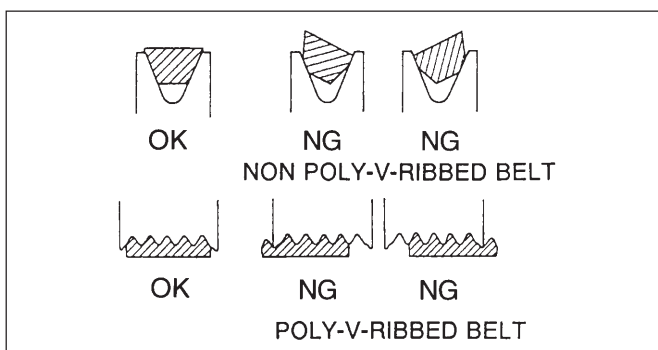
- (1) By connecting a vacuum pump adapter, the vacuum pump can be used for both HFC-134a (R134a) and CFC-12 (R12) air conditioning systems.
- (2) Be sure to turn off the manifold gauge valve immediately after evacuating the system, then switch off the vacuum pump. If this order is reversed, the line will be temporarily open to atmosphere.



(21) After installing the drive belt, check the belt tension using a belt tension gauge DENSO BTG-20 or BORROUGHS BT-33-73F.

NOTE

1. The belt tension must be measured between the specified pulleys as indicated in the installation manual.
2. A "New belt" refers to a belt which has been used for less than 5 minutes of operation.
A "Used belt" refers to a belt which has been used for more than 5 minutes of operation.
3. The drive belt requires accurate tension adjustment ; a slack belt is likely to cause the belt to whine, while excessive tension may result in damage to the bearings or the idle pulley bracket.
4. After installing the drive belt, make sure it is properly seated in the grooves of the pulley.

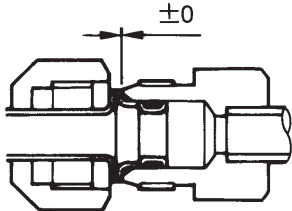
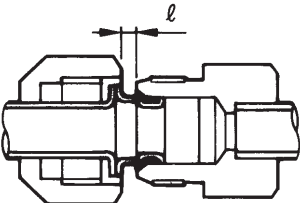
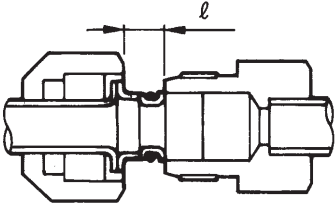
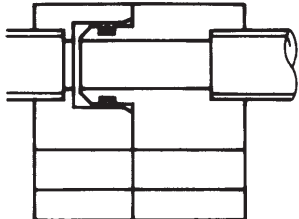
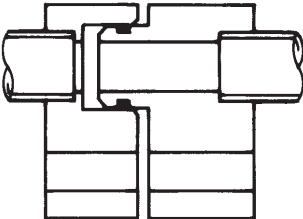
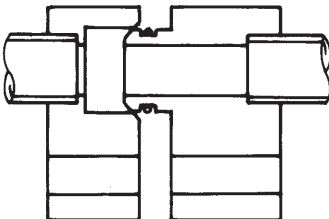


1-5 PIPE JOINT PRECAUTIONS

(1) Common to all pipe joints

- (a) When connecting pipes, after complete mating (pre-mating)(see the illustration below) tighten bolts or nuts.

Reason : Installation without complete mating often causes slanted installation, pinched O-rings, or scratches on seal surfaces.

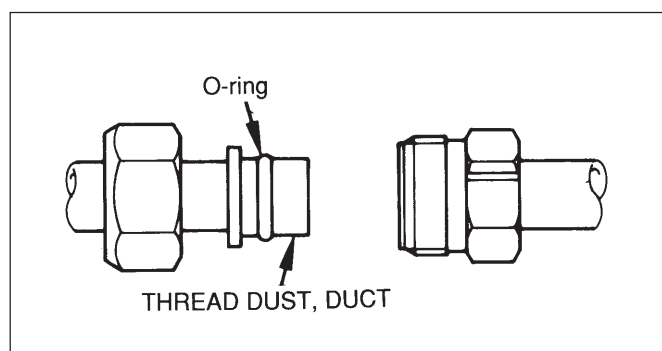
	Complete Mating (Insert a male part into a female part.)	Incomplete Mating	
Nut union			
Determination	OK	NG	NG
Block joint			
Determination	OK	NG	NG

ℓ : Incomplete joint (an opening)

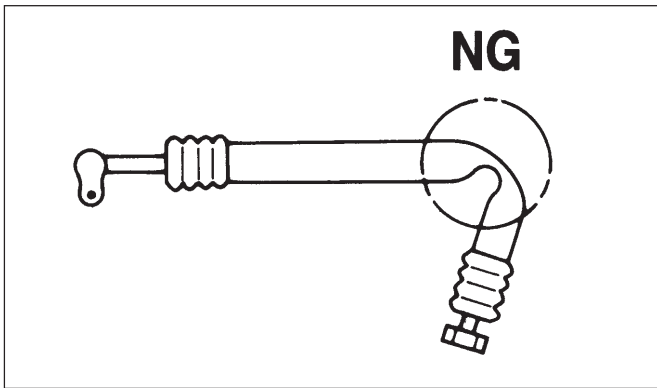
- (b) When it is difficult to install and mate joints completely, apply the specified compressor oil (*) to an O-ring before installing it. However, when resin (such as acrylic resin or ABS plastic) is in the area, beware of the possibility that oil causes environmental stress cracking to these resins. Be careful to prevent foreign materials from contaminating the oil.

(*) 10P-type, 7SB, scroll : ND8 TV-type : ND9

- (c) Check that an O-ring is installed correctly before mating joints.



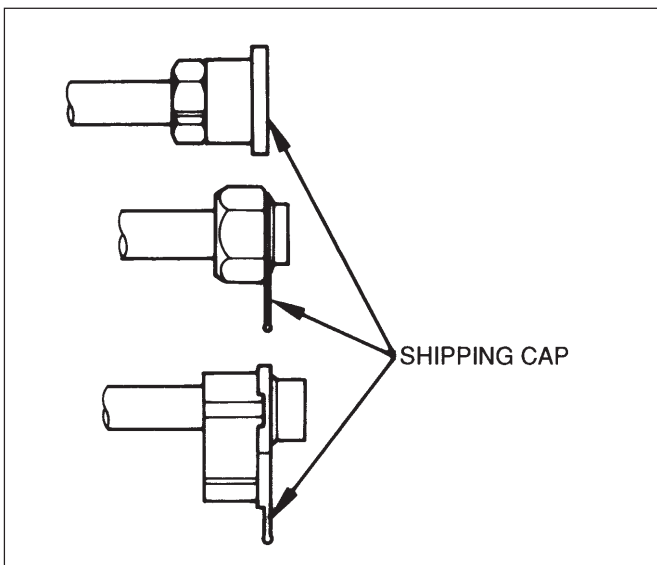
- (d) Check that no dust is on the O-ring mating parts.
Also do not touch O-rings with gloves on.



(e) Do not add excessive force to pipes. Do not deform pipes.

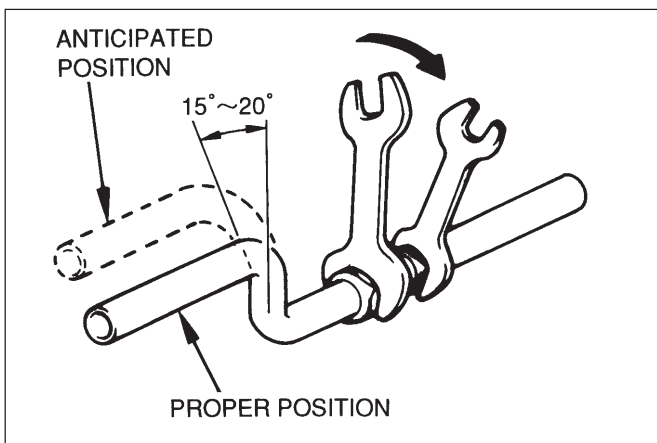
(f) Arrange hoses well. For example, it is not allowed to bend or twist engine mounted hoses.

Reason : Resin inside of hoses may be bent or scratched, and it may lower the permeation-proof function.



(g) Remove a shipping cap just before connecting pipes. To keep O-rings or O-ring seals from dust.

(h) Considering installation and vehicle parts deviations, confirm there is no interference between the pipes and vehicle parts. (Keep proper clearances.)



(2) <Nut union-type>

(a) Always assemble pipes using 2 wrenches.

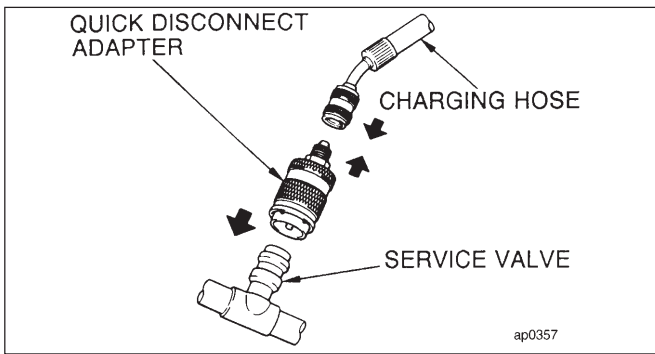
(b) Pipes will rotate from 15° to 20° clockwise when tightening, so anticipate the displacement caused by rotation, and then mount pipes.

(c) When finally tightening pipes, do not rotate the fixed side (the female side).

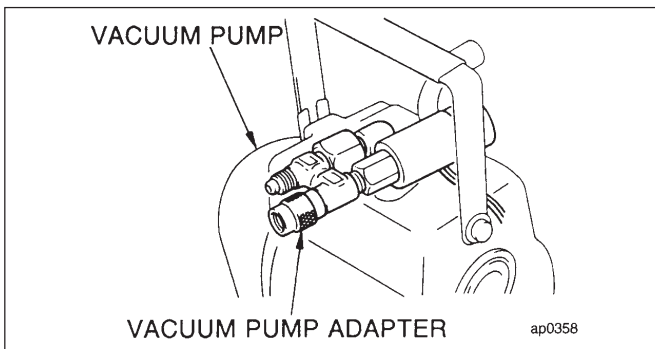
1-6 GENERAL PRECAUTIONS IN ASSEMBLY

- (1) Be careful to keep parts, service tools, mating parts of various service equipment (including O-rings) free from unspecified oil or dust.
- (2) Keep painted surfaces and resin materials (such as acrylic resin, ABS resin, or polycarbonate, etc.) free from refrigerant oil, both from the compressor and pipe joint areas (ND-8, ND-9, other oils).
- (3) Remove a receiver shipping cap only just before mounting (connecting pipes). Also mount a receiver last of all the A/C system parts, or at least assemble system parts while the receiver shipping cap is removed for only a short time (for 1 hour or less).

1-7 CHARGING REFRIGERANT (HFC-134a)



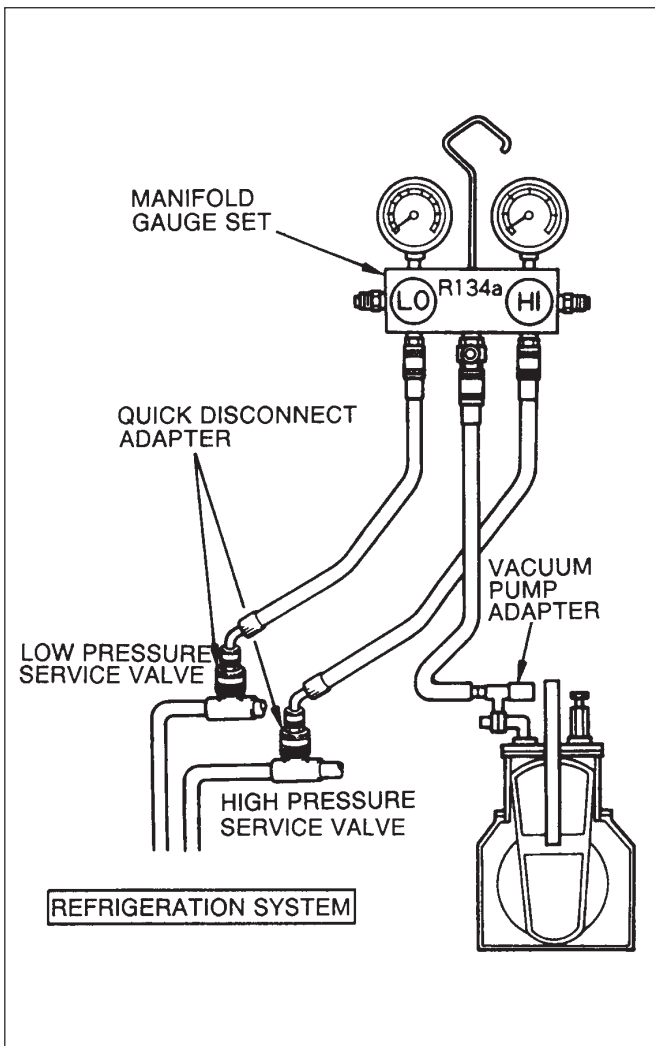
- (1) Connect the quick disconnect adapters to charging hoses.
- (2) Remove the caps from the service valves on the refrigerant line.
- (3) Install the manifold gauge set on service valves.
 - (a) Close both high and low pressure valves of manifold gauge set.
 - (b) Connect the quick disconnect adapters to the service valves.



- (4) Evacuate air in refrigeration system.
 - (a) Connect the vacuum pump adapter to the vacuum pump.

CAUTION

When connecting charging hose to A/C charging valve, do not use excessive force. Excessive force may damage charging valves and deform pipes.



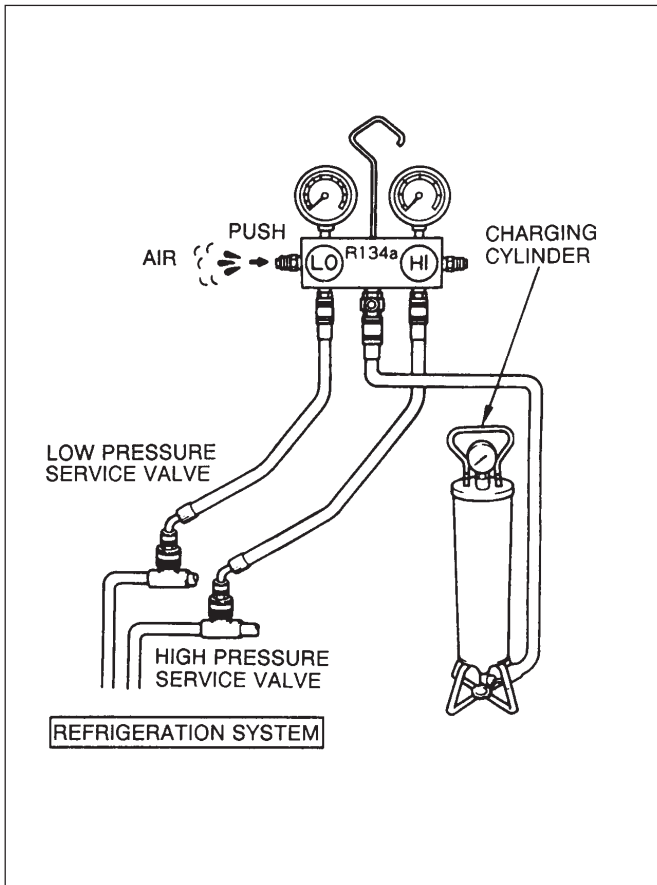
- (b) Connect the center hose of the manifold gauge set to the vacuum pump adapter.
- (c) Open both the high and low pressure valves and turn on the vacuum pump.
- (d) After ten minutes or more, check that the low pressure gauge indicates -0.1 Mpa (-750 mm Hg) or less.

NOTE

If the reading is not -0.1 Mpa (-750 mm Hg) or less, close both valves of manifold gauge set and stop vacuum pump.

Check the system for leaks and repair as necessary.

- (e) Close both valves and turn off the vacuum pump.
- (f) Leave the system in this condition for five minutes or longer and check that there is no change in the gauge indicator.



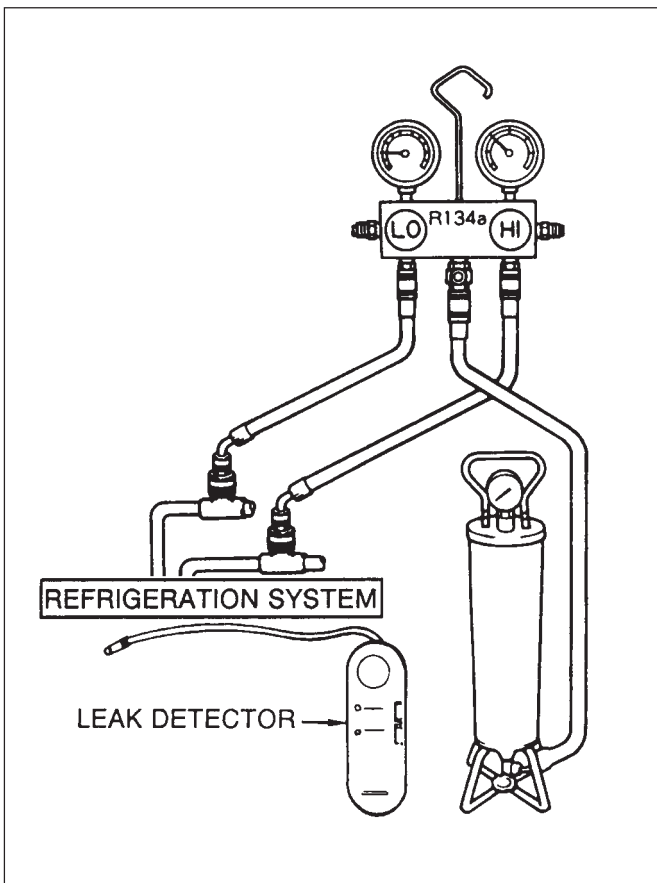
(5) Install charging cylinder.

- (a) Charge the proper amount of refrigerant into the charging cylinder.
- (b) Connect the center hose to the charging cylinder.

CAUTION

Do not open both high and low pressure valves of manifold gauge set at this time.

- (c) Open the valve of charging cylinder.
- (d) Press the valve core on the side of manifold gauge and expel the air inside of the center hose.

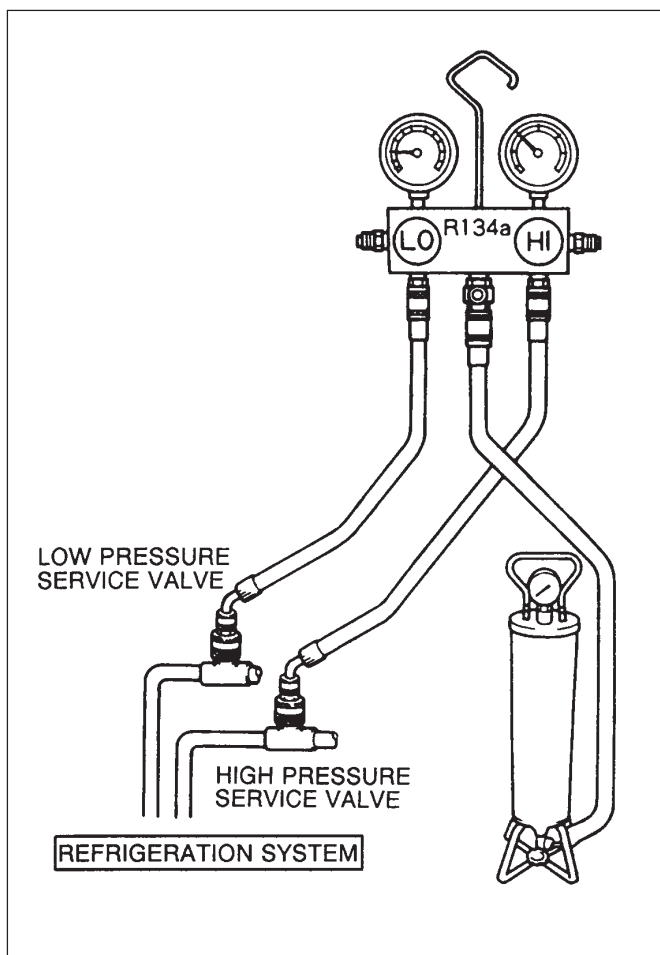


(6) Inspect the refrigeration cycle for leaks.

- (a) Open the high pressure valve and charge refrigerant.
- (b) When the low pressure gauge indicates 98 kPa (1kgf/ cm², 14 psi), close the high pressure valve.
- (c) Using the leak detector, check the cycle for leakage.
- (d) If leak is found, repair the faulty component or connection. And evacuate the air in refrigeration cycle.

CAUTION

Use refrigerant recovery/recycling machine to recover the refrigerant whenever replacing parts.



(7) Charge refrigerant into the refrigeration cycle.

⚠ CAUTION

1. Never run the engine when charging the cycle through the high pressure side.
2. Do not open the low pressure valve when the cycle is being charged with liquid refrigerant.

- (a) Open the high pressure valve fully.
- (b) Charge the specified amount of refrigerant, then close the high pressure valve.

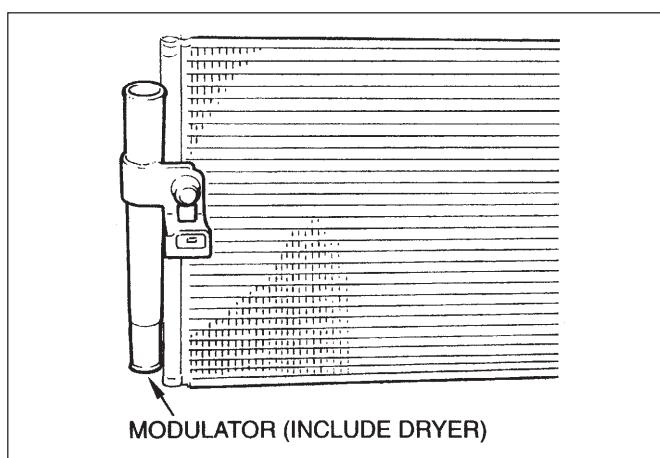
NOTE

A fully charged system is indicated by the sight glass being free of any bubbles.

- (8) Remove manifold gauge set from service valves.
 - (a) Close both valves of manifold gauge set.
 - (b) Disconnect quick disconnect adapters from service valves.
- (9) Install the caps to service valves on the refrigerant line.

⚠ CAUTION

1. After charging refrigerant, be sure to tighten the charging valve cap.
Recommended tightening torque specification: 0.25 N•m or more
2. If a valve cap is removed, dust or moisture enters, and the seal portion on the valve is corroded. This deteriorates sealing performance, leading to a possible refrigerant leak.

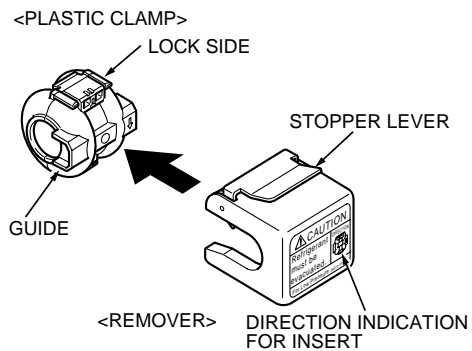


<A/C with Sub-cool condenser>

NOTE

The point which bubbles disappear is before charging a specified amount. Make sure to charge specified amount using a charging cylinder when charging a refrigerant.
(The refrigeration cycle with a sub-cool condenser does not come with a conventional receiver. The tank on the condenser side serves as the receiver.)

1-8 QUICK JOINT REMOVER INSTRUCTIONS (Equipped model only)



1. SETTING

Confirm the remover direction regarding to the direction indication.

CAUTION

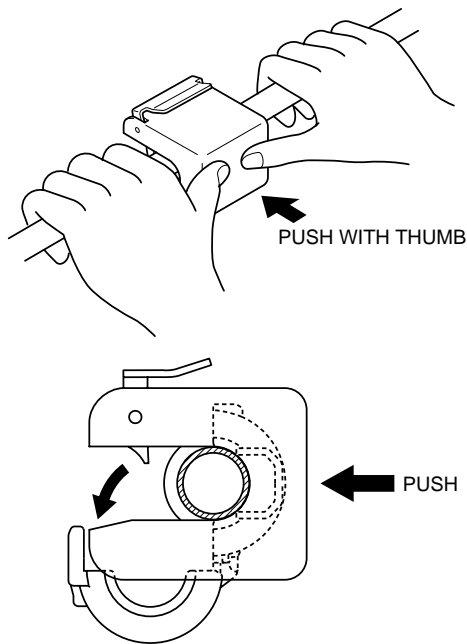
Refrigerant must be evacuated before using the remover.
Removing the plastic clamp filled with refrigerant may cause frostbite and eye blind.
Remover must be keep away from engine coolant and battery electrolyte.

2. RELEASING CLAMP LOCK

- (1) Attach the remover to the plastic clamp.
- (2) Push the remover with thumbs then the clamp lock becomes released.

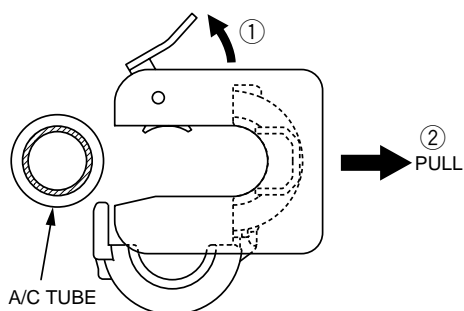
CAUTION

Do not apply over force to avoid the deformation of A/C tubes.



3. REMOVER PULL OUT

- (1) Pull the remover to separate the plastic clamp and tubes.
- (2) Operate the stopper lever and pull out the remover from A/C tubes.



4. CLAMP REMOVAL

Pull out the plastic clamp from the remover.

NOTE

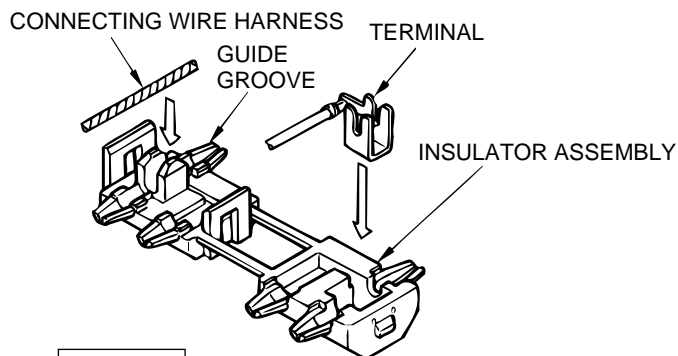
Do not bend the needles while removing the plastic clamp from remover.
Deformation of needles may cause the difficult operation for releasing the clamp lock.

■ Instruction of branch connector connection

- ① Set the wire harness to which you are connecting on the insulator assembly.

CAUTION

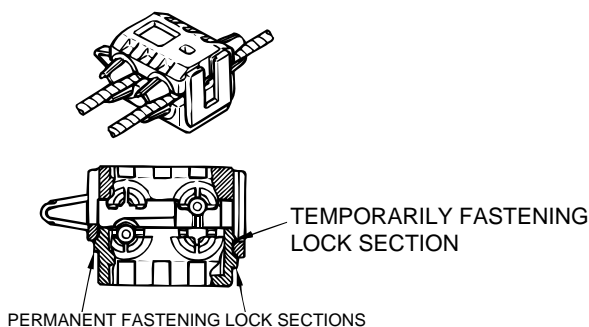
Put the press connection vehicle harness firmly into the guide groove.



CAUTION

The terminal is assembled on the insulator. In the unlikely event that it is out of place, since there is a press fitting hole on the terminal, push the terminal in the direction of the arrow until it is completely press fit.

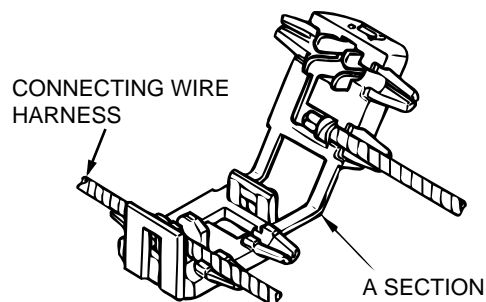
- ③ Temporarily fasten.



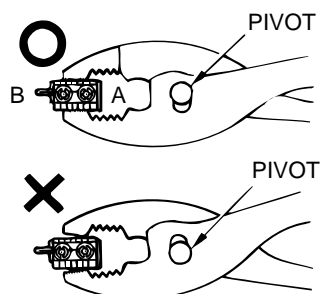
CAUTION

The temporary fastening lock is only on one side, so fasten with the top and bottom of the permanent fastening lock lined up.

- ② Fold the connector about the A section.



- ④ Hold the temporarily fastened connector with the entire tip surface of the pliers at the center of the connector so that force is applied uniformly to A and B.



CAUTION

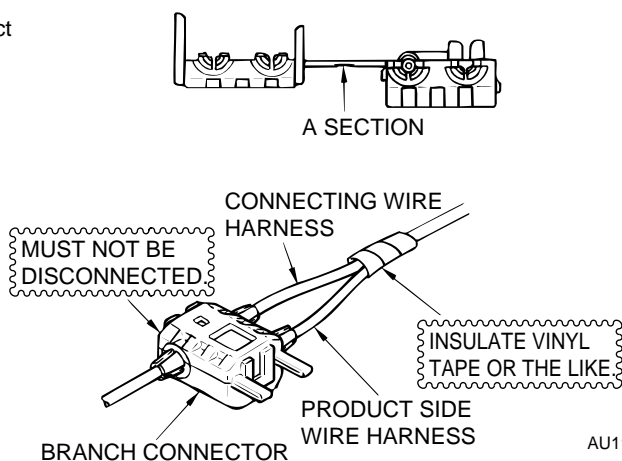
When holding the connector with the pliers, check the left and right lock click sound.

CAUTIONS FOR BRANCH CONNECTOR CONNECTIONS

- ① Even if the A section is broken, this does not affect performance, so use the connector as is.
- ② When removing the branch connector, with the connector still press connected to the other connecting wire harness, cut away the product side wire harness leaving about 30 mm, and insulate with vinyl tape or the like.

CAUTION

Do not reuse a used branch connector.



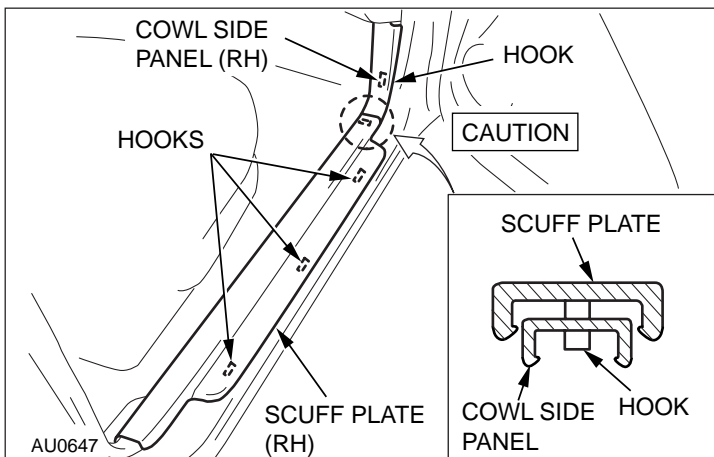
AU1130

2. INSTALLATION

⚠ CAUTION

1. Be sure to use the correct oil, refrigerant and charging/recovery equipment.
2. Before starting installation, read all "PRECAUTIONS FOR SAFETY INSTALLATION" thoroughly and follow the instructions described in it.
3. Before starting installation, remove the (-) terminal of the battery and ensure seat/floor covers are in position.
4. Take care not to scratch any parts of the vehicle.
5. Sort removed bolts and tapping screws into groups so that they can be reassembled correctly.

2-1 INSTALLATION INSIDE PASSENGER COMPARTMENT



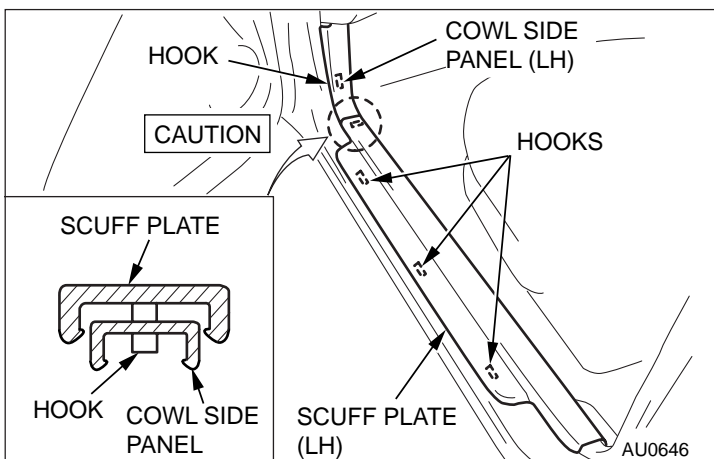
* Before installing the air conditioning, the following parts should be removed.

(1) REMOVAL OF PARTS ①

- (a) Scuff plate (RH)
- (b) Cowl side panel (RH)

⚠ CAUTION

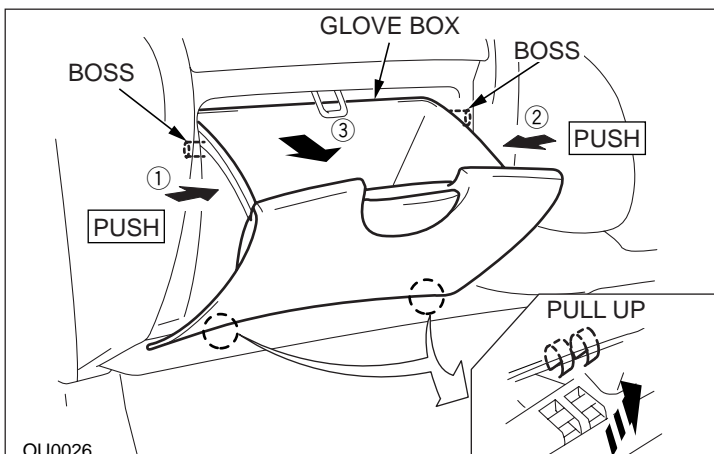
A hook is interconnected to the cowl side panel, therefore, be careful when removing to prevent damage.



- (c) Scuff plate (LH)
- (d) Cowl side panel (LH)

⚠ CAUTION

A hook is interconnected to the cowl side panel, therefore, be careful when removing to prevent damage.

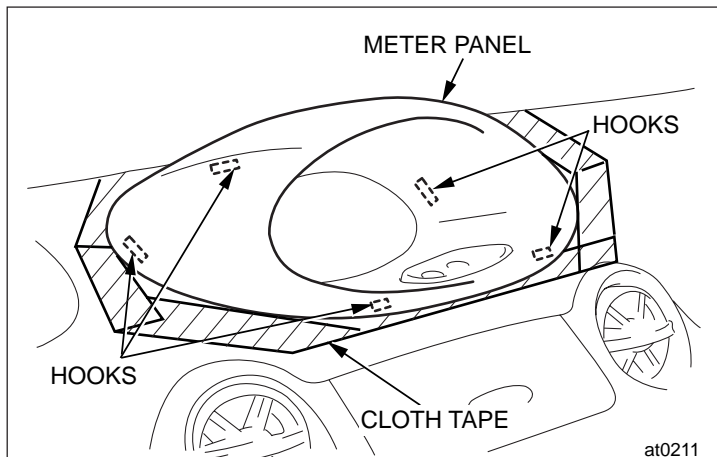


- (e) Glove box

NOTE

Remove the glove compartment in the following order.

- ① Press in the sides of the glove compartment.
- ② Bypass the bosses.
- ③ Lift.



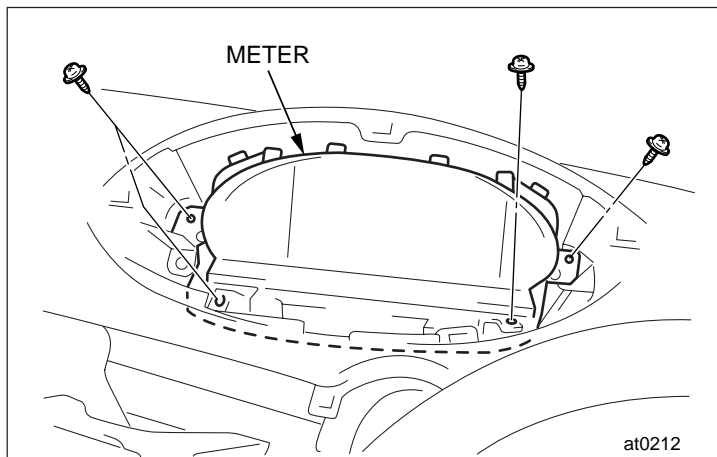
(f) Meter panel

CAUTION

Attach the cloth tape as shown, before removing the meter panel.

NOTE

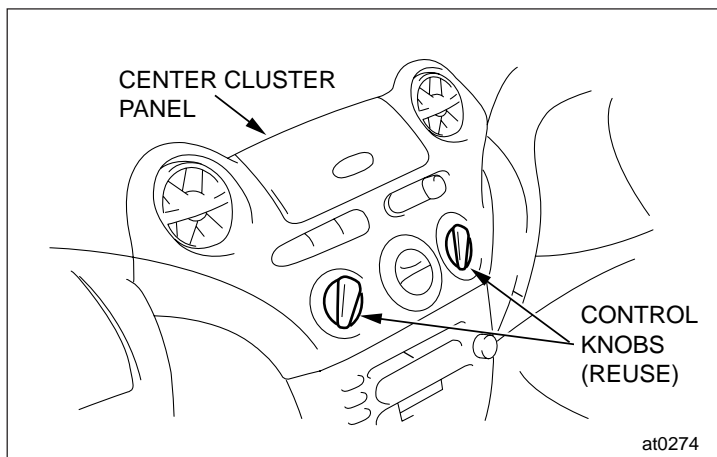
Disconnect the connector of the meter panel from the vehicle harness.



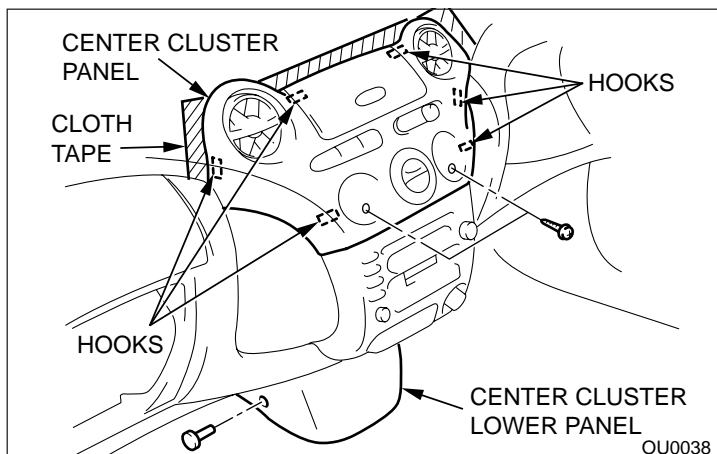
(g) Meter

NOTE

Disconnect the connector of the meter from the vehicle harness.



(h) Control knobs (reuse)



(i) Center cluster panel

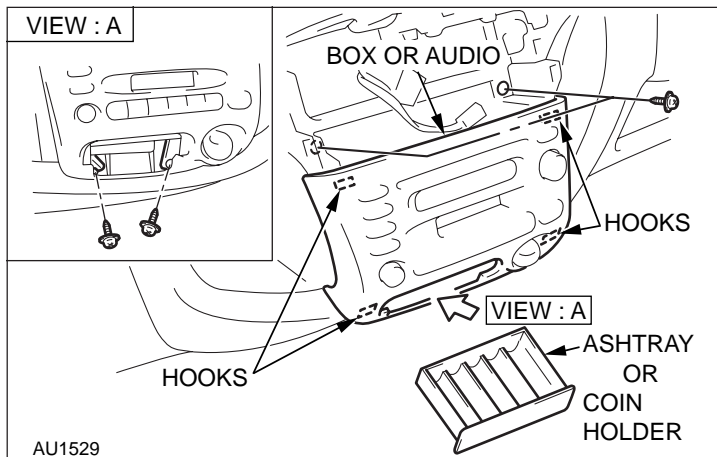
(j) Center cluster lower panel

CAUTION

Attach the cloth tape as shown, before removing the center cluster panel.

NOTE

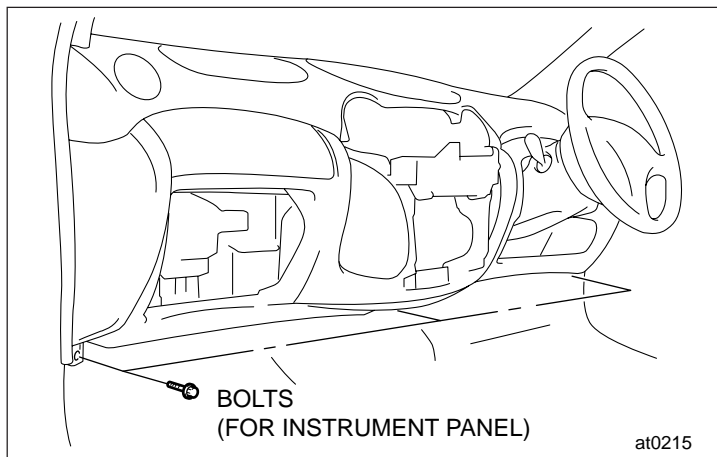
Disconnect the connector of the center cluster panel from the vehicle harness.



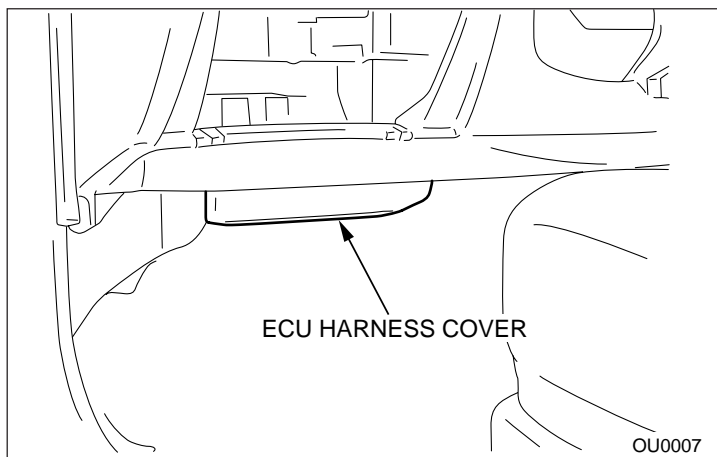
- (k) Ashtray or coin holder
- (l) Box or audio

NOTE

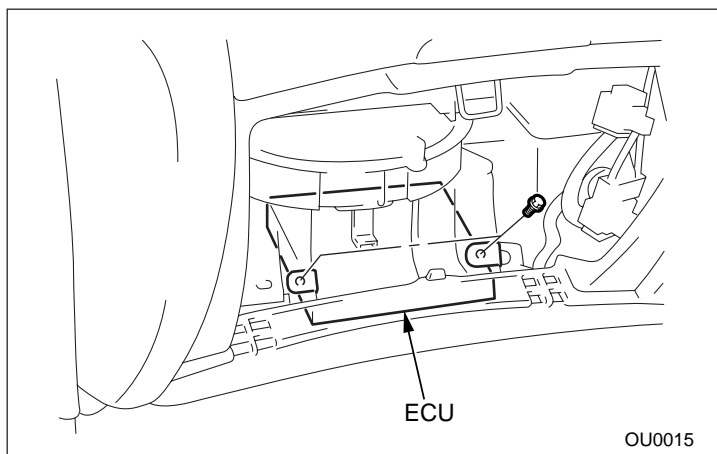
Disconnect the connector of the audio from the vehicle harness.



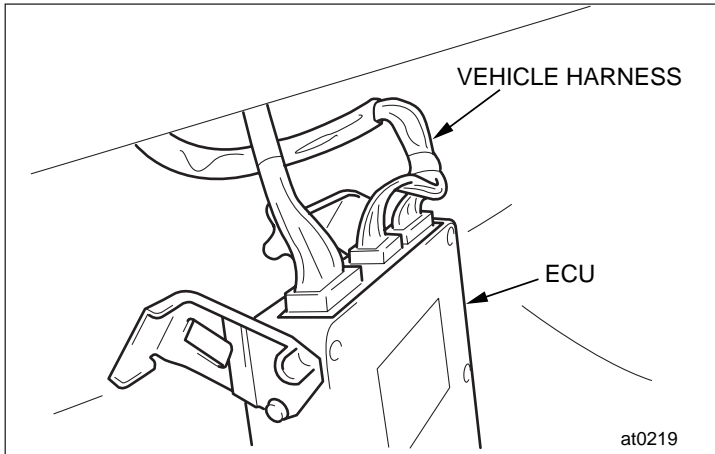
- (m) Three bolts (for instrument panel)



- (n) ECU harness cover



- (o) ECU



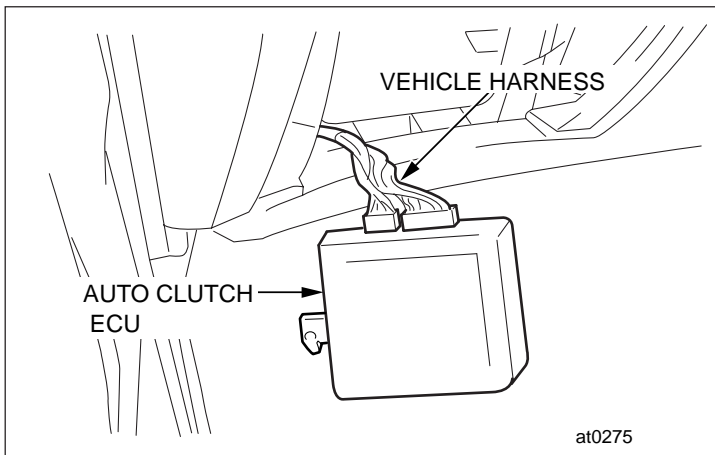
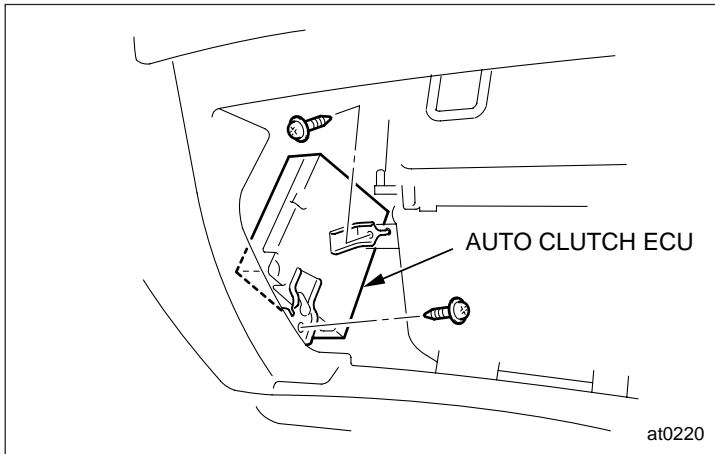
(p) Disconnect the vehicle harness from ECU.

CAUTION

Be careful when removing ECU to prevent damage.

■ **VEHICLE WITH TOYOTA FREE-TRONIC MODEL ONLY [(q)~(s)]**

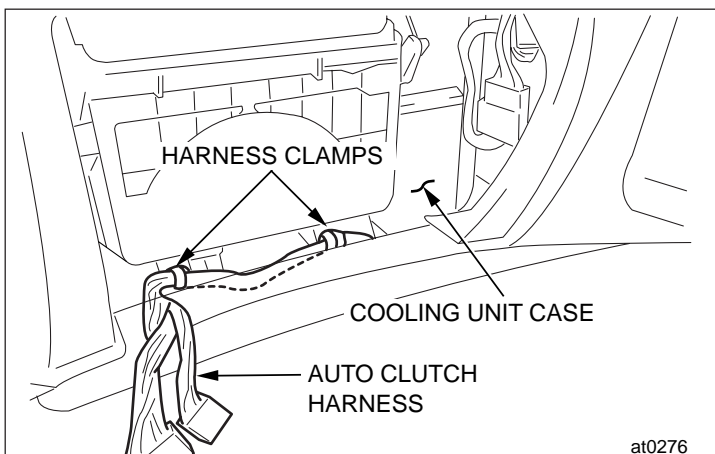
(q) Auto clutch ECU



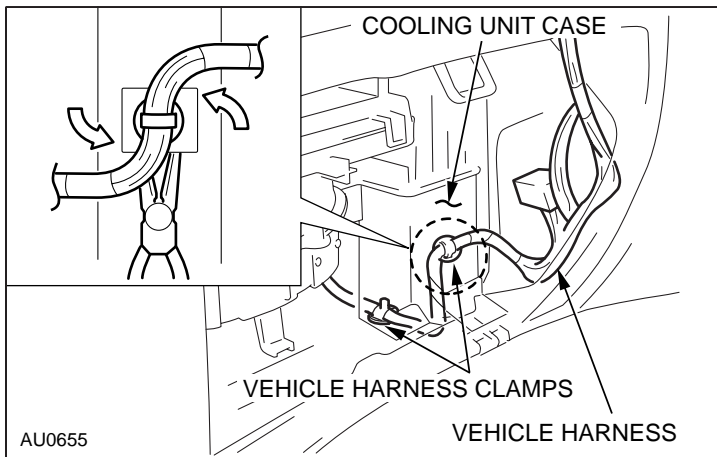
(r) Disconnect the vehicle harness from the auto clutch ECU.

CAUTION

Be careful when removing ECU to prevent damage.



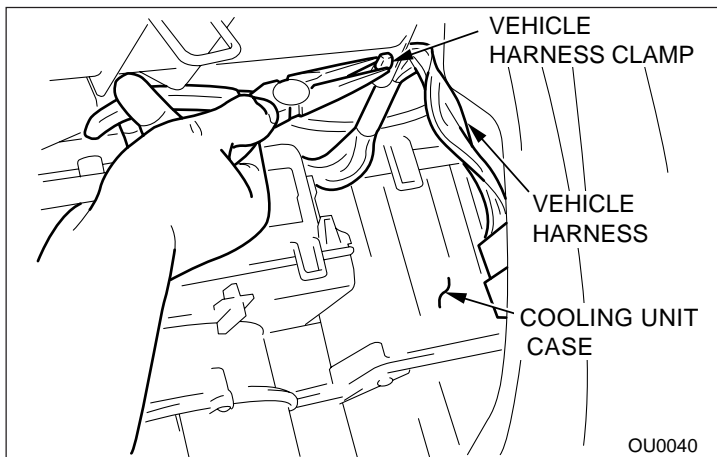
(s) Temporarily remove the auto clutch harness from the cooling unit case.



(t) Vehicle harness clamps

NOTE

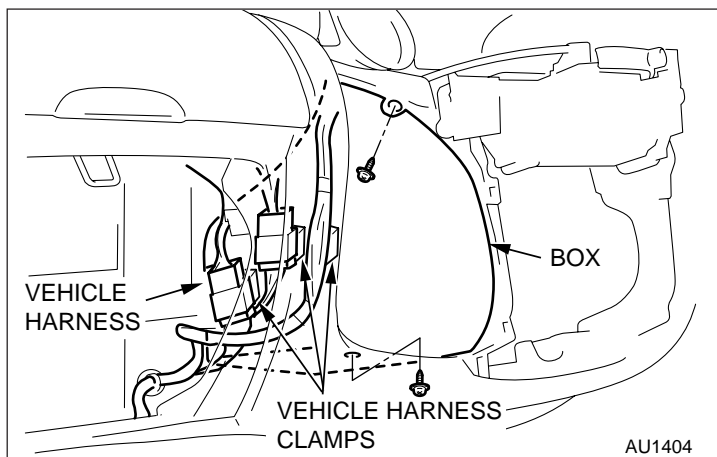
Rotate the clamp counter-clockwise once and remove the vehicle harness clamp.



(u) Vehicle harness clamp

CAUTION

Vehicle harness clamp must be removed with needle-nose pliers to prevent breakage of the clamp.



- (v) Box
- (w) Vehicle harness clamps

NOTE

Disconnect the connection of the vehicle harness, then temporarily remove the vehicle harness from the box.

CAUTION

1. The clamps for the vehicle harness must be removed with needle-nose pliers to prevent breakage of the clamps.
2. Moving the storage tray simplifies removal of the vehicle harness clamps. (Refer to the following illustrations)
3. Be careful when moving the small parts box to prevent damage to other vehicle parts.

NOTE 1

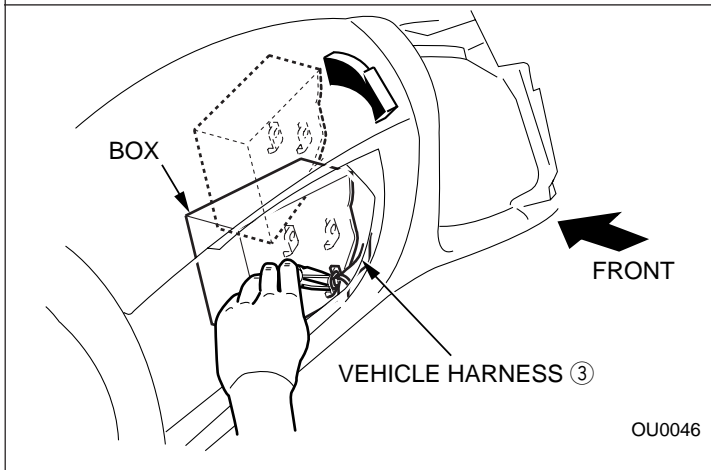
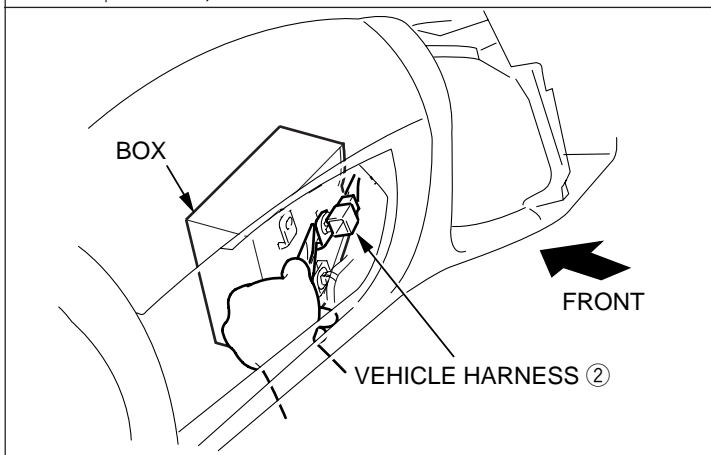
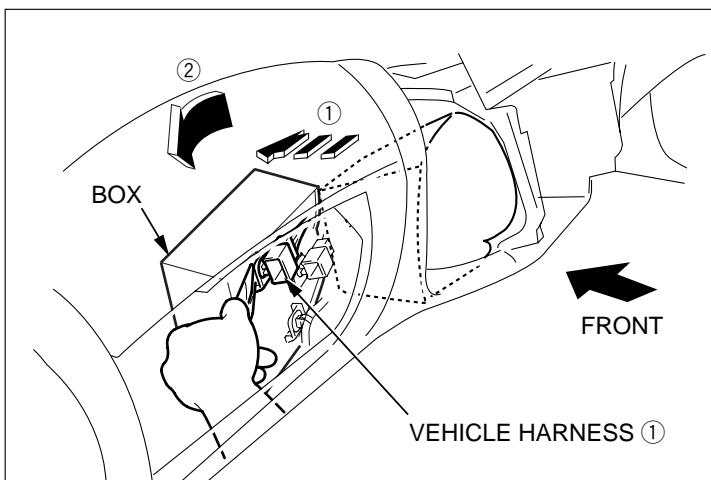
Press-in the box one time to the vehicle front in numerical order, insert the needle-nose pliers from the bottom, and remove the vehicle harness ① by tilting.

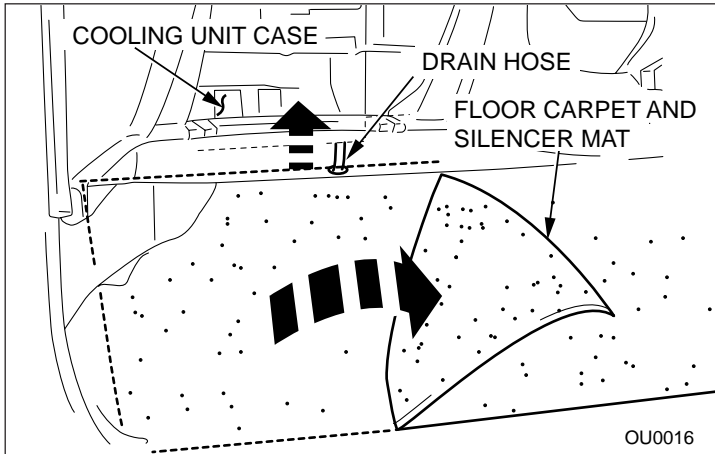
NOTE 2

Remove vehicle harness ② in the same position as NOTE 1.

NOTE 3

Tilt the box to the front, insert the needle-nose pliers from the side, and remove the vehicle harness ③.



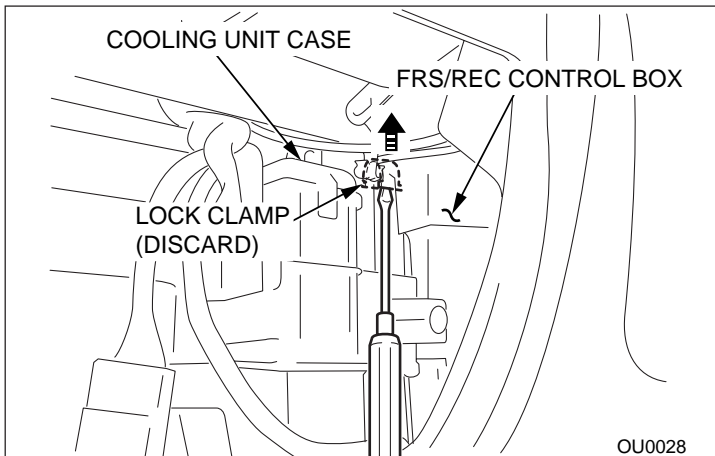


- (x) Temporarily pull the floor carpet and silencer mat down.

NOTE

The floor carpet and silencer mat must be removed as far as necessary. (To simplify removal of the cooling unit case)

- (y) Drain hose (pull up the vehicle hole.)

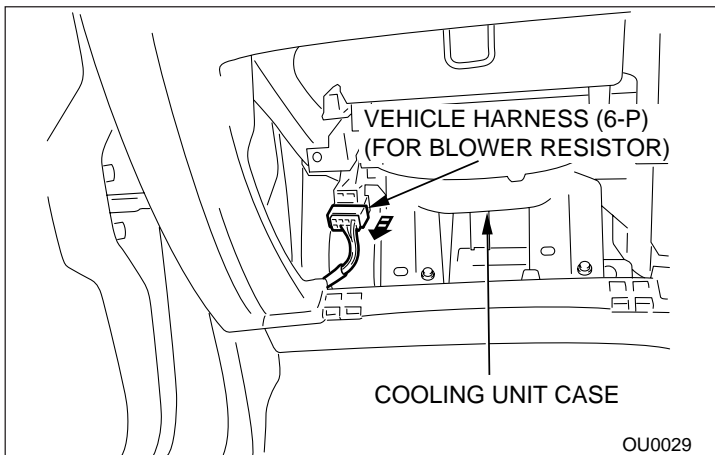


(2) REMOVAL OF PARTS ②

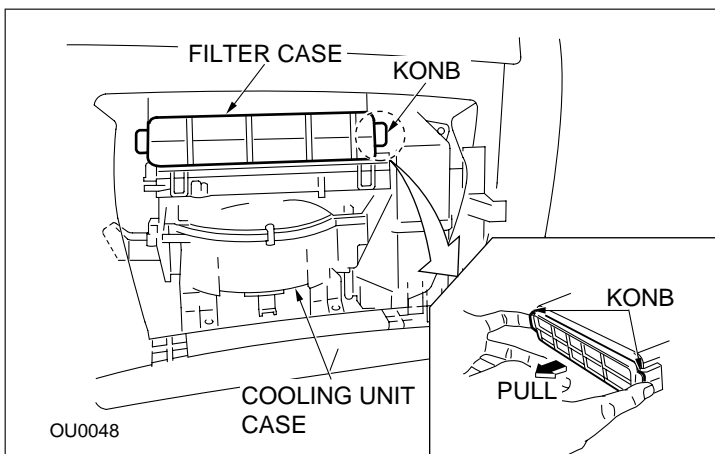
- (a) Remove and discard the lock clamp from connection part of the cooling unit case and FRS/REC control box.

NOTE

Push upward with a (-) screwdriver to remove the lock clamp.



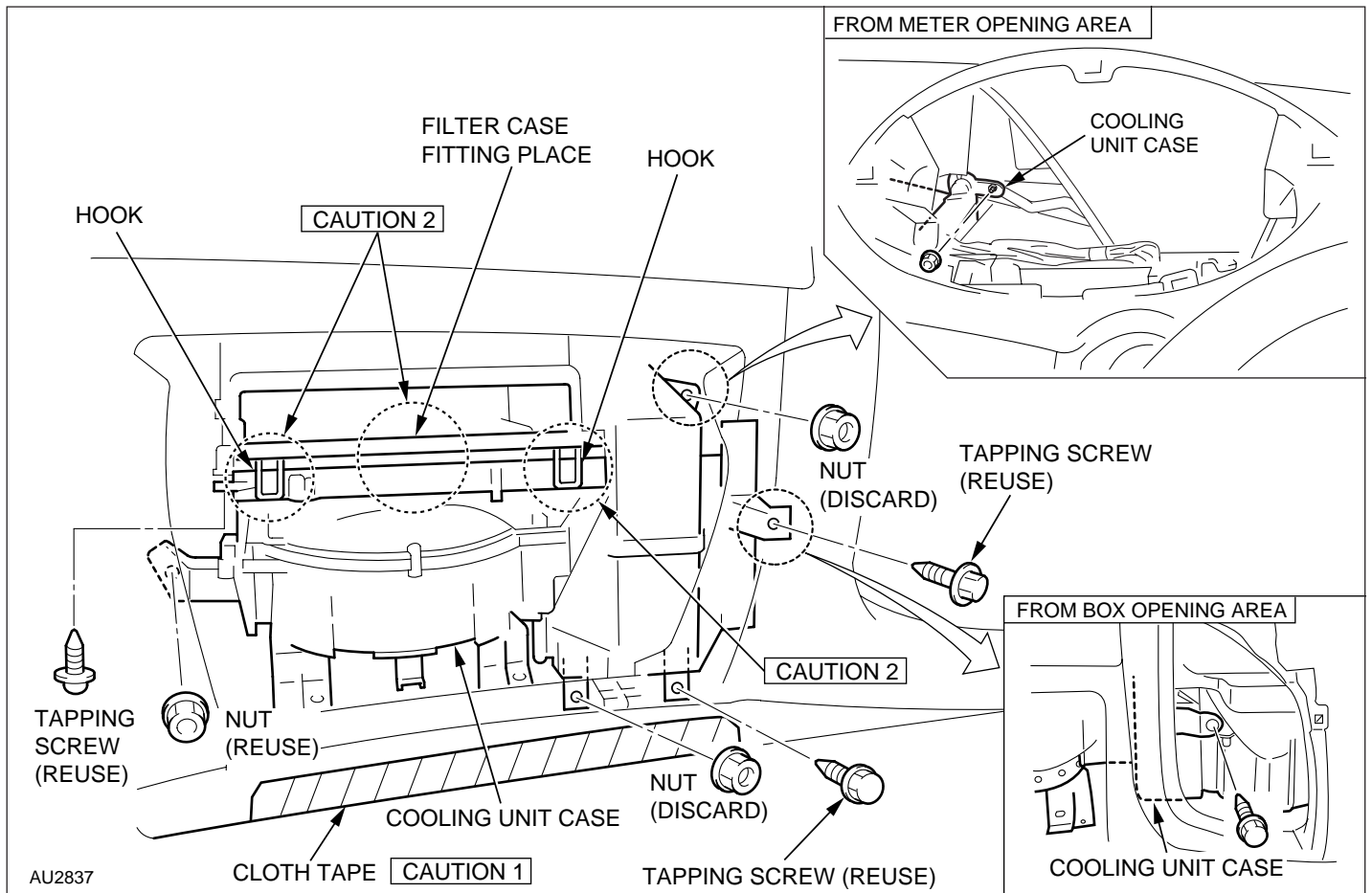
- (b) Vehicle harness for blower resistor connection (Remove the connection for the cooling unit case.)



- (c) Filter case

NOTE

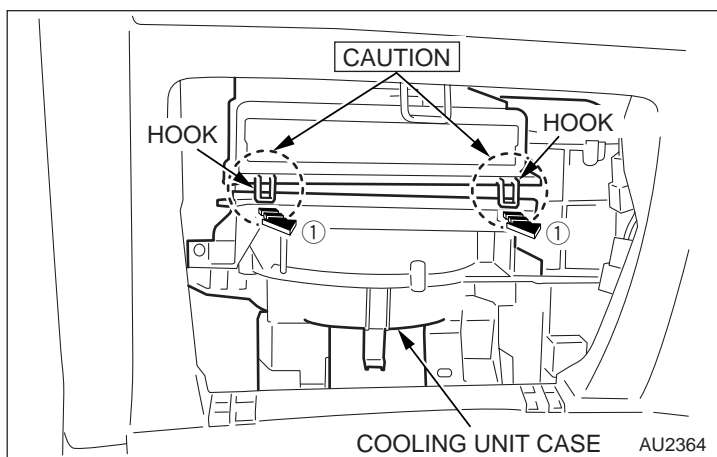
Hold the left and right knobs at both ends of the filter case at the same time, and pull out the knob to the front.



(d) Cooling unit case

CAUTION

1. Attach the cloth tape as shown, before removing the cooling unit case.
2. Follow the instructions specified in **NOTE** because the pawl of cooling unit case and the filter case installation portion are easily damaged.



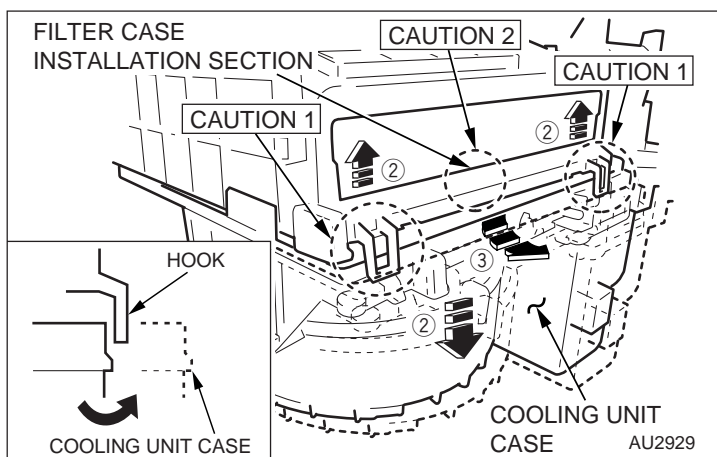
NOTE

Remove the cooling unit case in the following procedures.

- ① Remove the catch of pawl.

CAUTION

Unhook the catch of pawl and keep as it is.
(Do not pull the pawl forcibly because it is easily damaged.)



NOTE

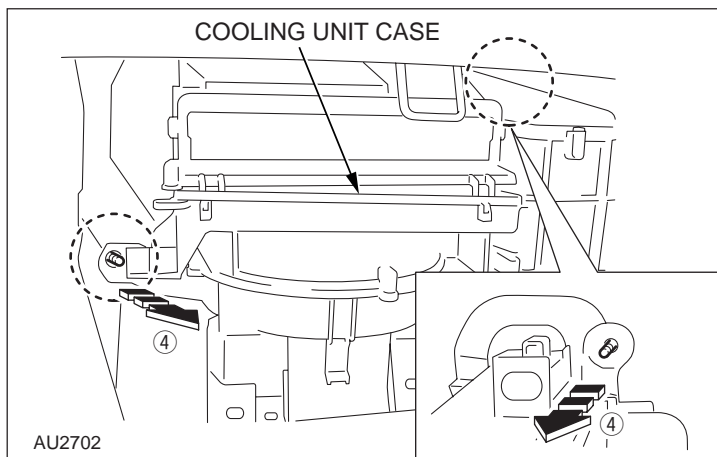
- ② Lift the filter case installation section upward so that the pawls do not interfere with the case and place the cooling unit case downward.
- ③ Pull the whole cooling unit case toward you through the pawls.

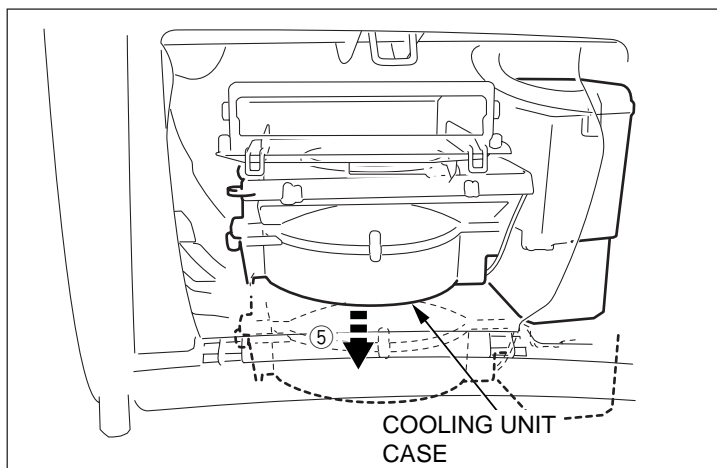
CAUTION

1. Move both the filter case installation section and cooling unit case slowly so that stress is not applied only to the pawl.
2. Never hold the middle part of filter case installation section with hands because it is easily damaged.

NOTE

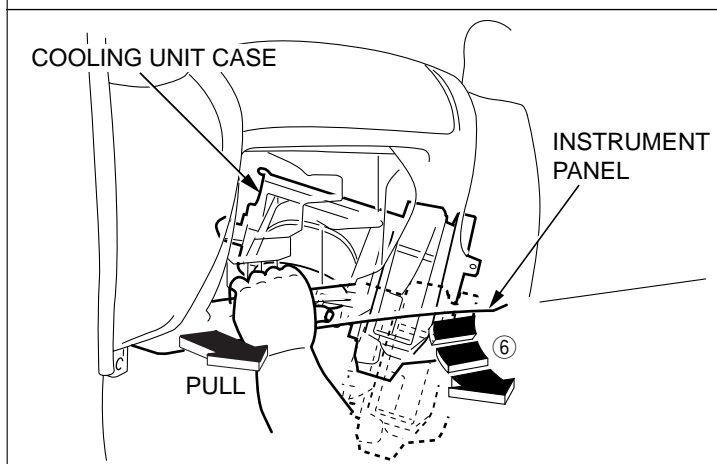
- ④ Pull out the cooling unit from the stud bolts.





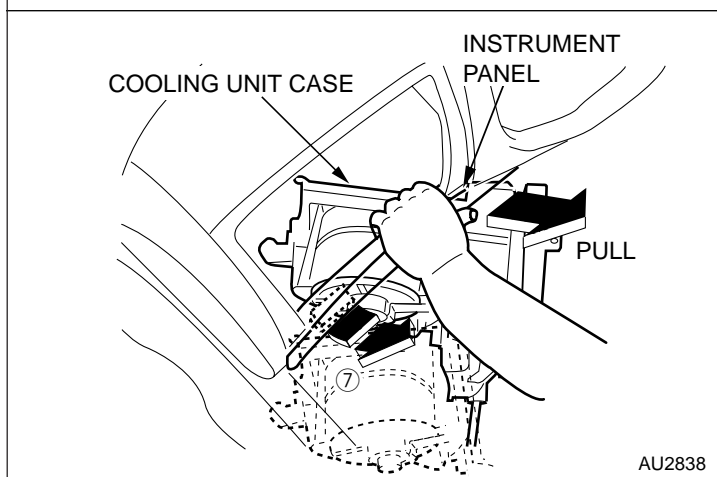
NOTE

- ⑤ Lower the cooling unit case midway and hold it.
(Do not lower all the way to the bottom.)



NOTE

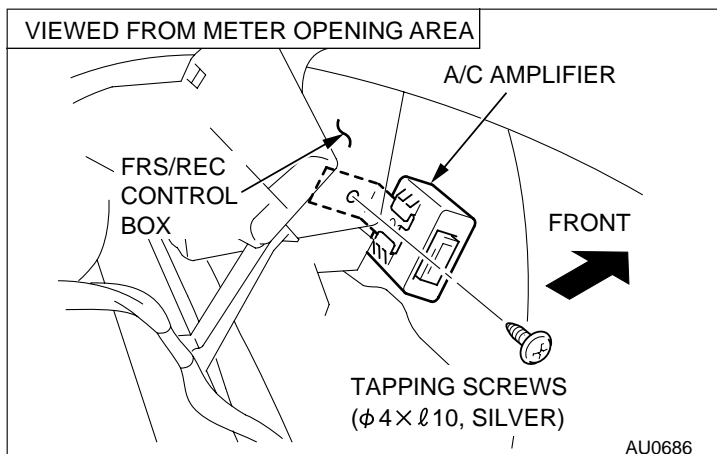
- ⑥ Take out the right side of the cooling unit case while pulling the instrument panel towards you.



NOTE

- ⑦ Then, pull out the left side of the cooling unit case while pulling the instrument panel towards you, and remove the unit.

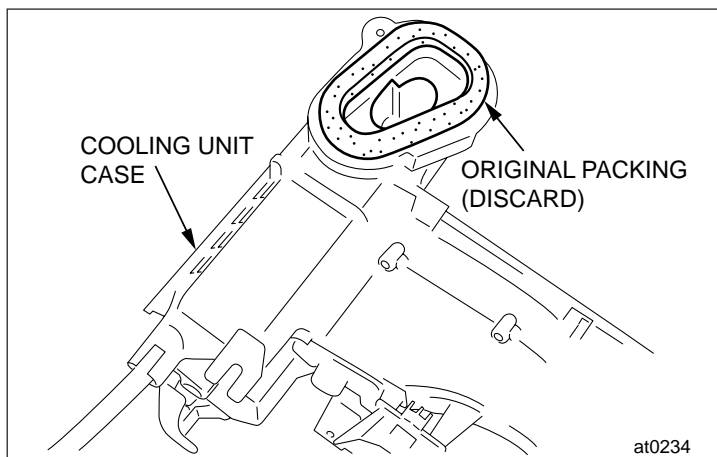
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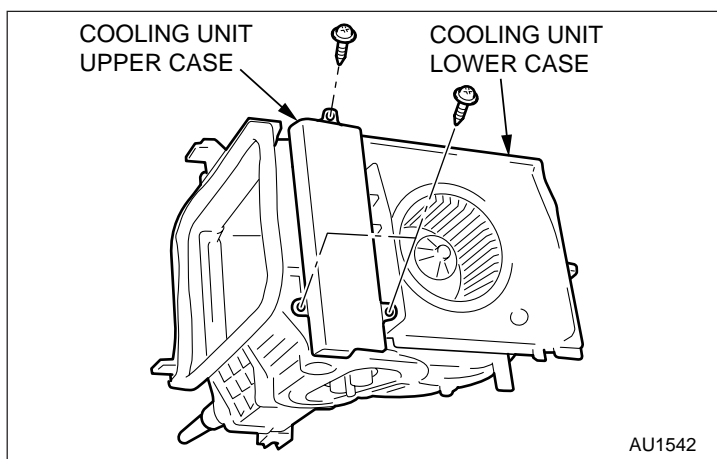
(3) AMPLIFIER

- (a) Install the A/C amplifier to the FRS/REC control box using a tapping screw.

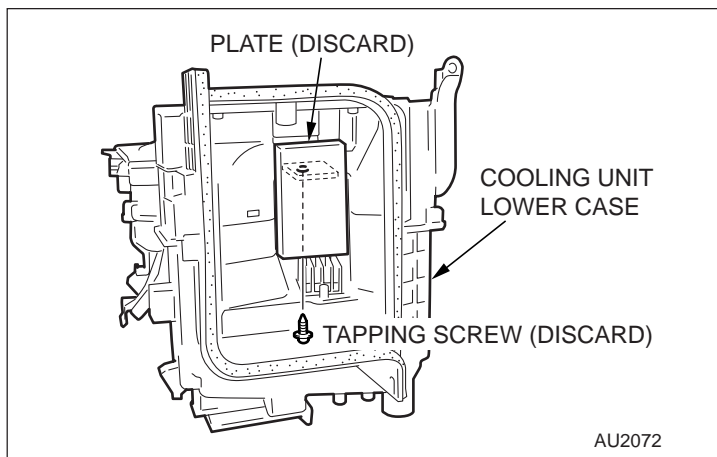


(4) COOLING UNIT

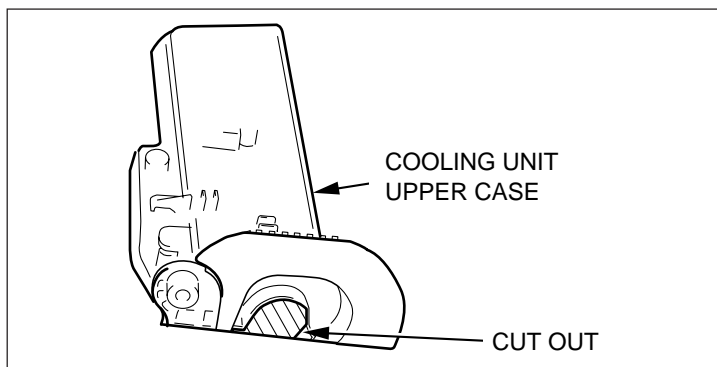
(a) Remove and discard the original packing from the cooling unit case.



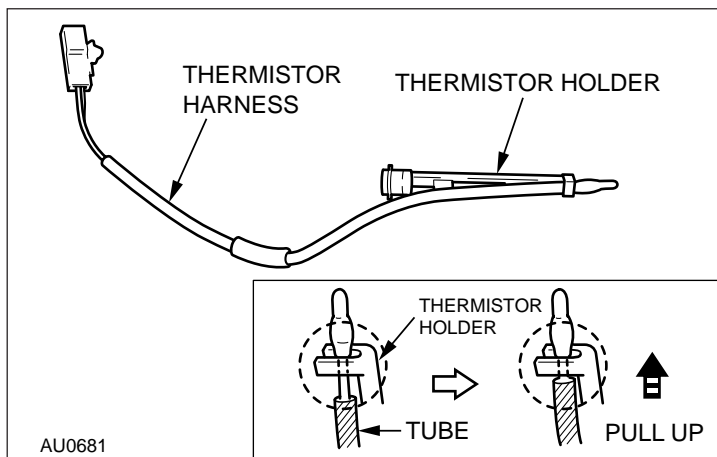
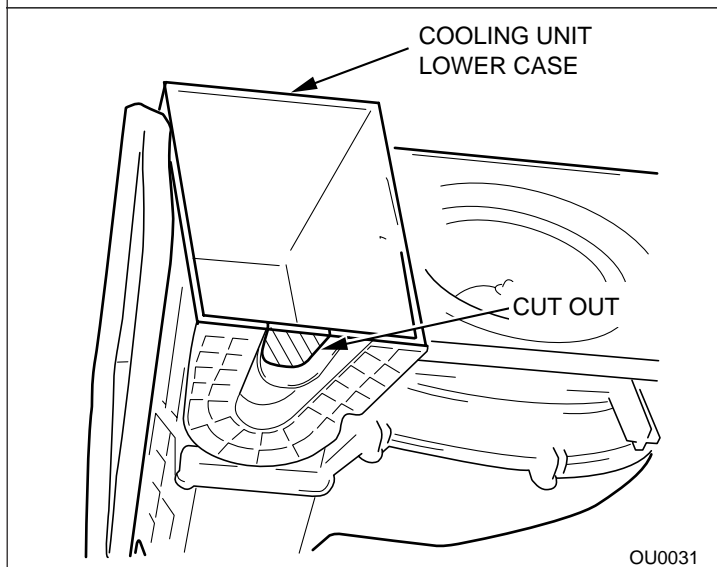
(b) Temporarily remove the cooling unit upper case from the cooling unit lower case.



(c) Remove and discard the plate from the cooling unit lower case.



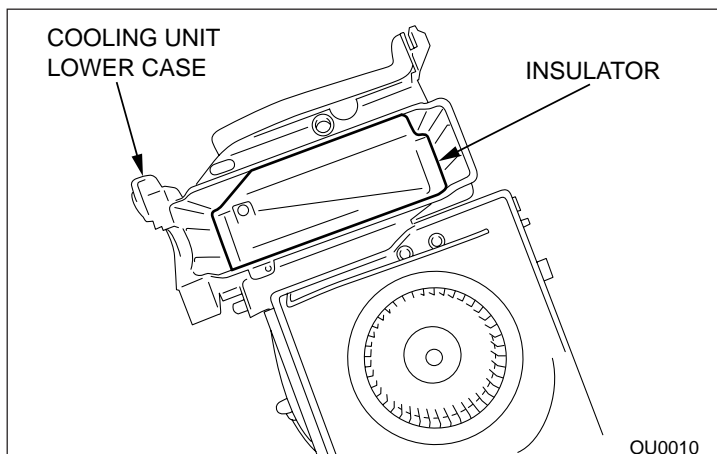
- (d) Cut the shaded portion shown in the illustration for the cooling unit upper case and cooling unit lower case.



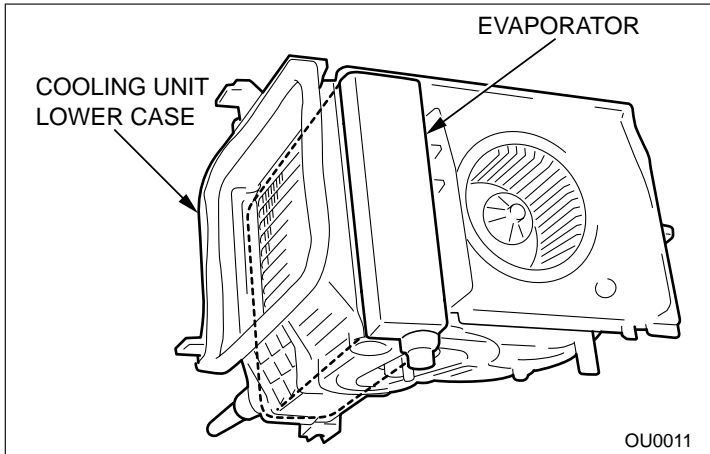
- (e) Assemble the thermistor harness to the thermistor holder.

NOTE

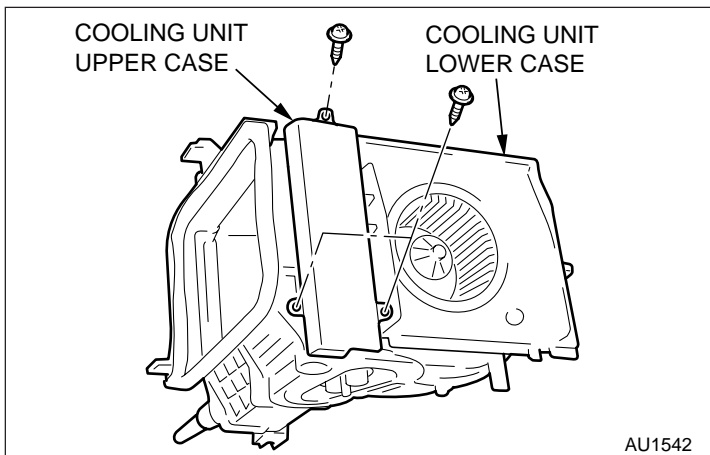
After the above is assembled, pull the tubing on the thermistor harness up to the thermistor holder.



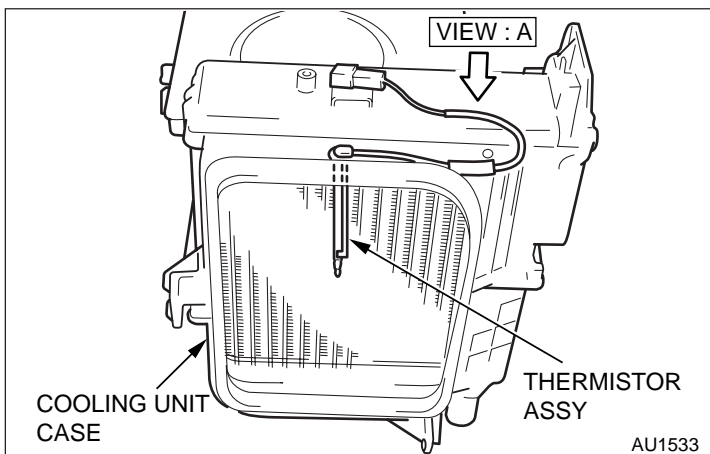
- (f) Install the insulator to the cooling unit lower case.



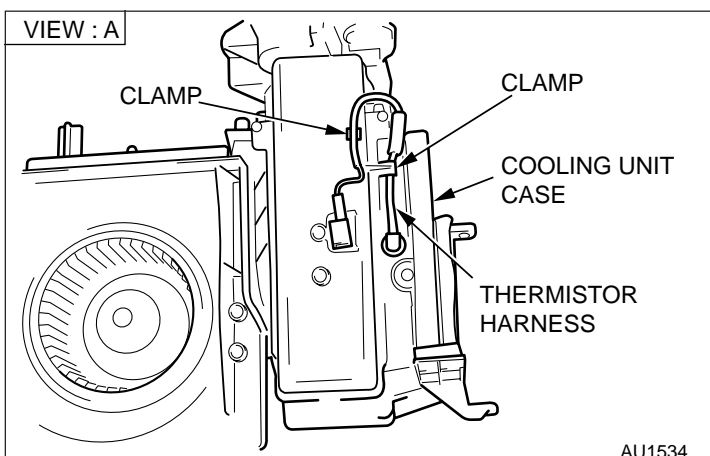
- (g) Install the evaporator to the cooling unit lower case.



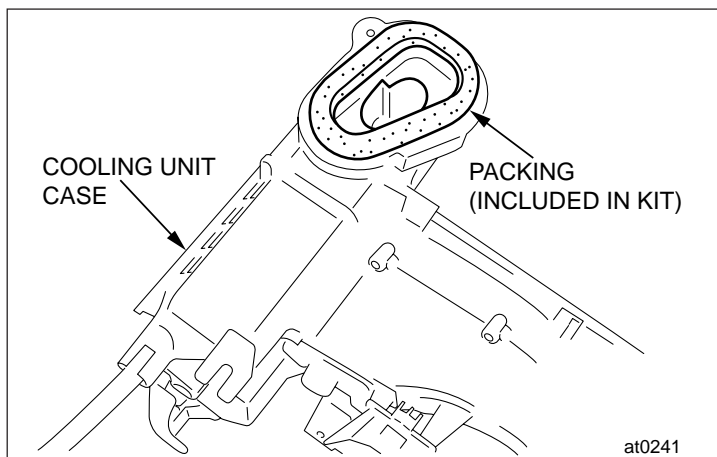
- (h) Reinstall the cooling unit upper case to the cooling unit lower case.



- (i) Install the thermistor assy to the cooling unit case.



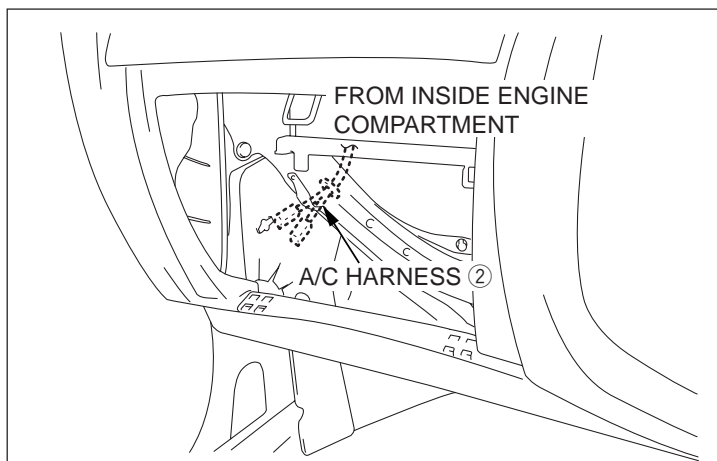
- (j) Secure the thermistor harness to the cooling unit case.



(k) Attach the packing on the cooling unit case.

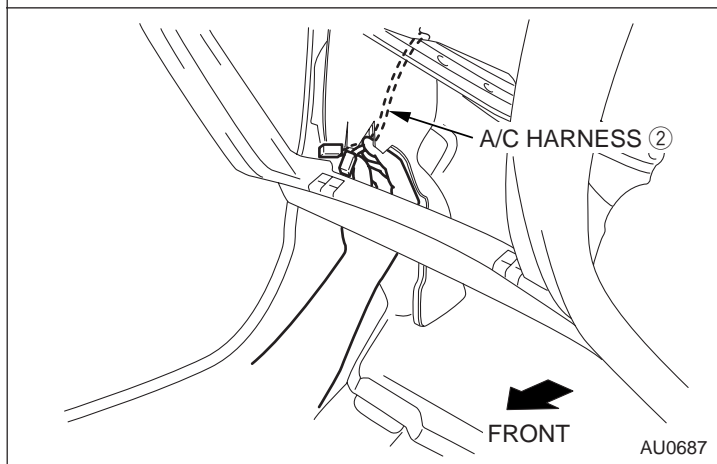
⚠ CAUTION

At this point, discontinue the work inside passenger compartment and move to the engine compartment (P46 ~ P64).



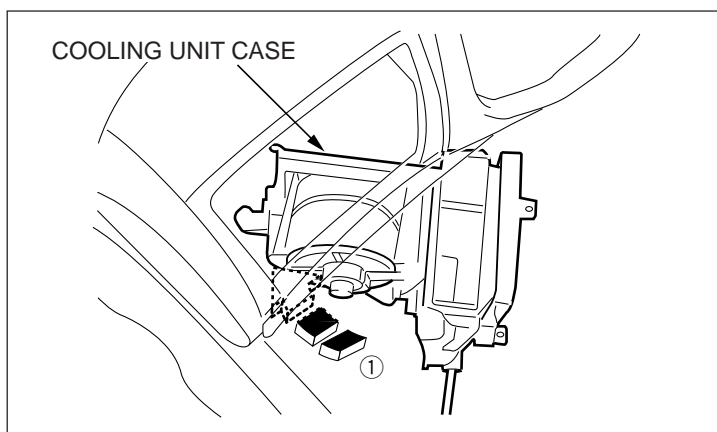
NOTE

Make sure the A/C harness ② is pulled out from the engine compartment.



NOTE

Pull out the A/C harness ② toward you.

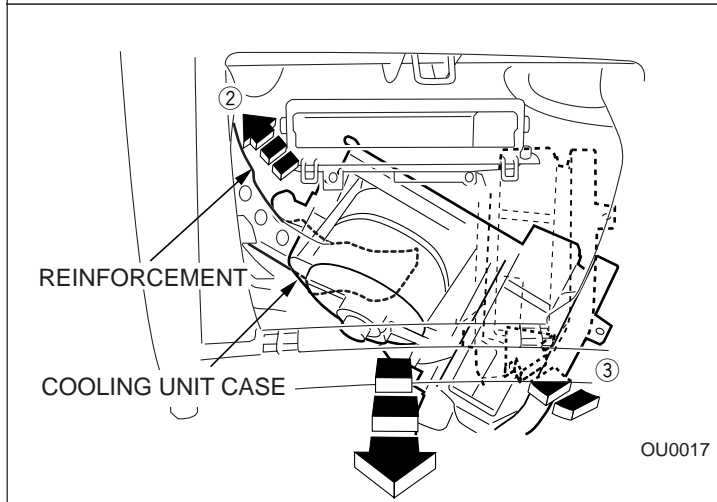


(5) REINSTALLATION OF THE COOLING UNIT

NOTE

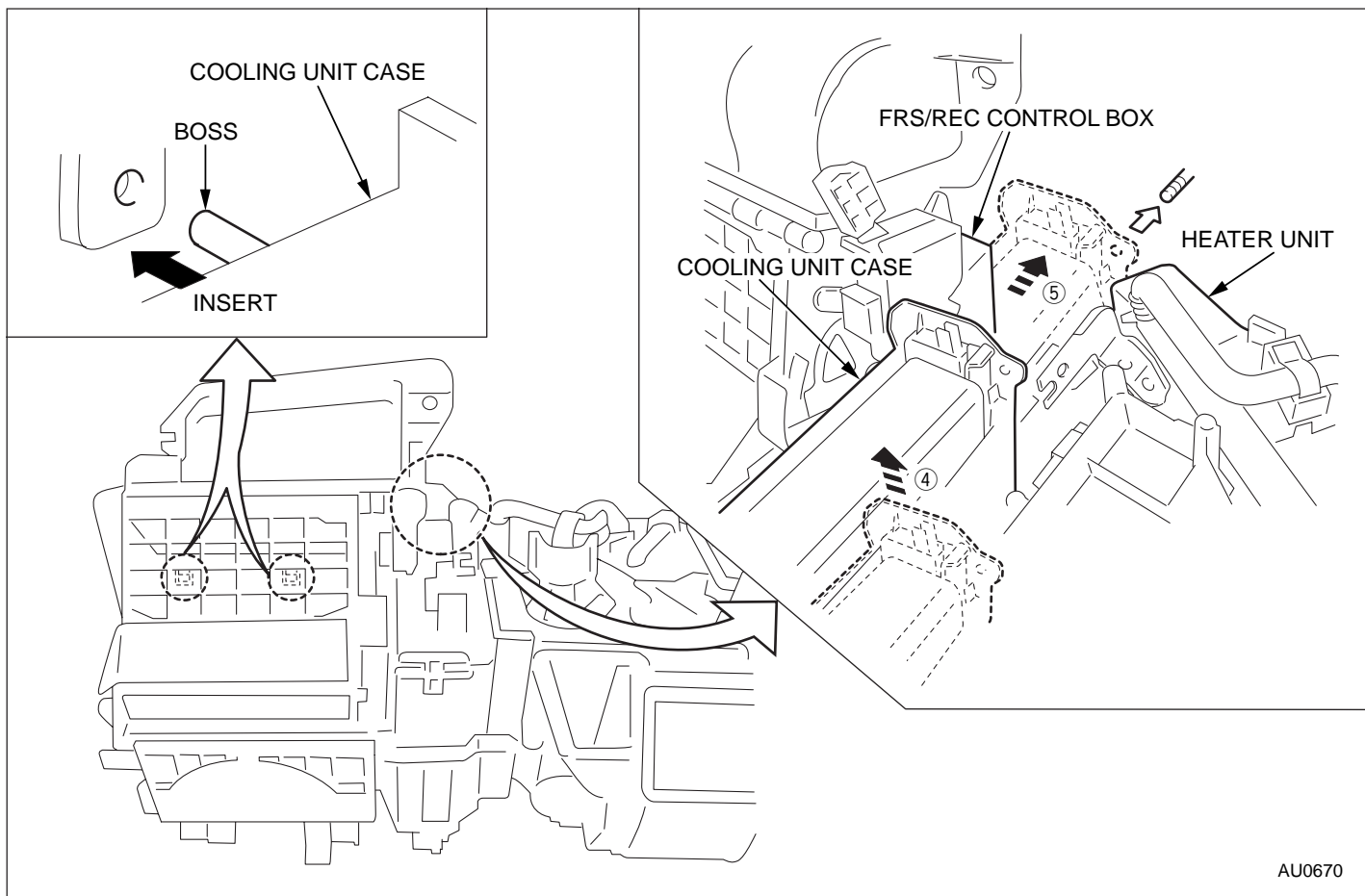
Use the following procedure to install the cooling unit case.

- ① Insert the left side of the cooling unit case in the instrument panel.



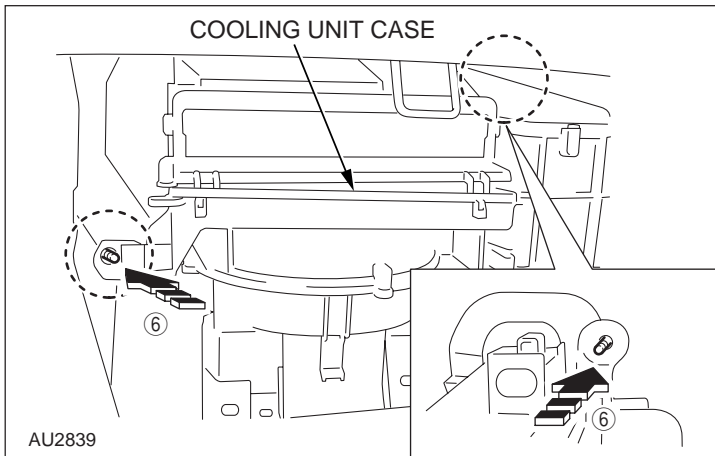
NOTE

- ② Slide the cooling unit case edge towards the reinforcement while pulling the instrument panel towards you.
- ③ Insert the right side of the cooling unit case in the instrument panel.



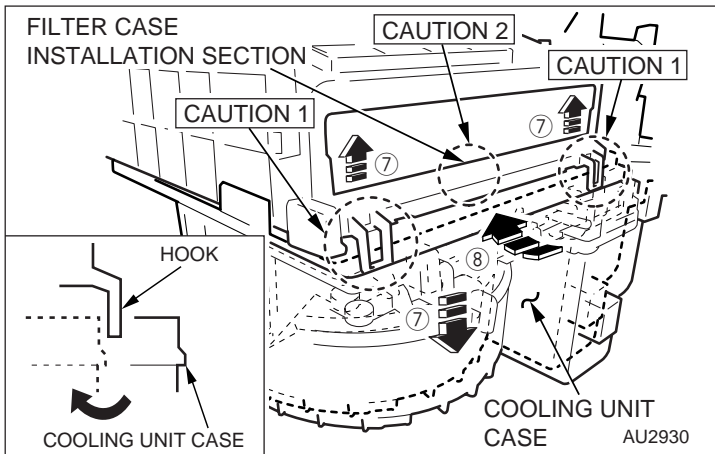
NOTE

- ④ With the cooling unit case pulled out to the front, lift upwards. (Lift so that the head portion of the cooling unit case is higher than the gap for the FRS/REC control box and heater unit.)
- ⑤ Push in towards the vehicle front, then the boss for the cooling unit case must be inside the hole for the FRS/REC control box. Align the hole in the cooling unit case with the stud bolt and insert.



NOTE

- ⑥ Put on the cooling unit case so that the stud bolts are inserted.



NOTE

- ⑦ Lift the filter case installation section upward so that the pawls do not interfere with the case and place the cooling unit case downward.
- ⑧ Push the whole cooling unit case behind through the pawls.

CAUTION

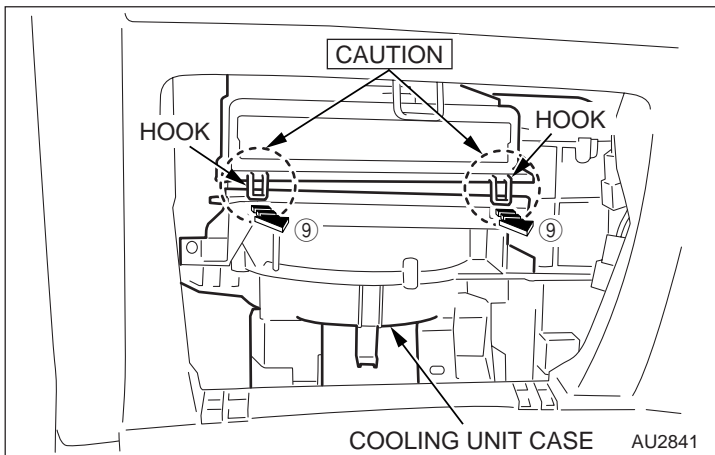
1. Move both the filter case installation section and cooling unit case slowly so that stress is not applied only to the pawl.
2. Never hold the middle part of filter case installation section with hands because it is easily damaged.

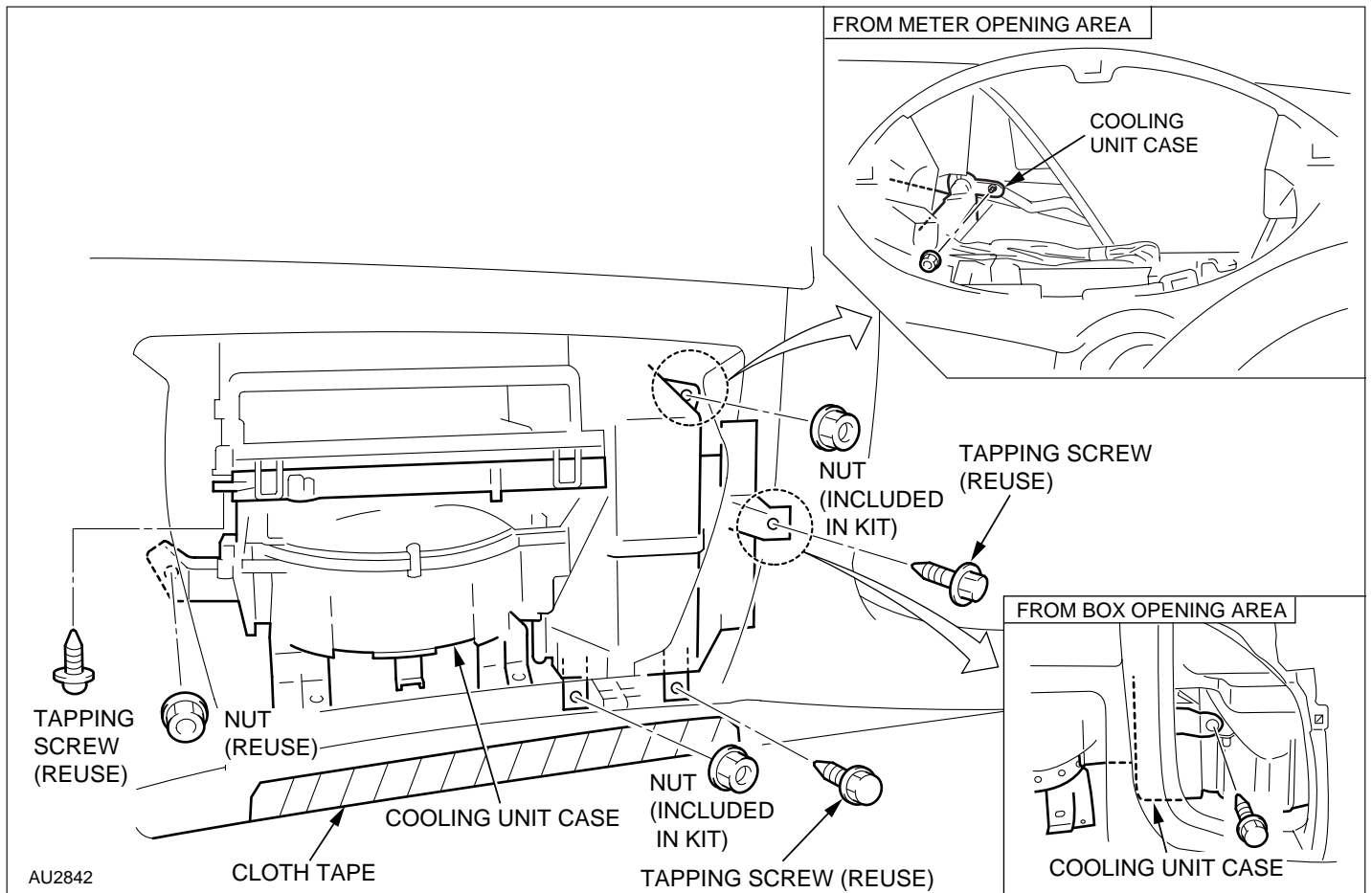
NOTE

- ⑨ Engage the pawl catch and fix it.

CAUTION

Engage the pawl catch only. (Do not pull the pawl forcibly because it is easily damaged.)



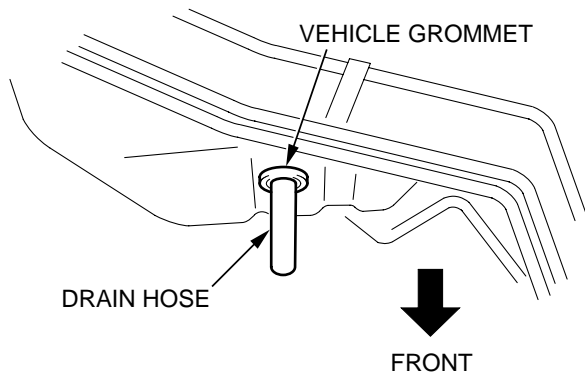


- (a) Reinstall the cooling unit case using three nuts and three tapping screws.

CAUTION

Be careful not to pinch the vehicle harness when reinstalling the cooling unit case.

VIEWS FROM ENGINE COMPARTMENT



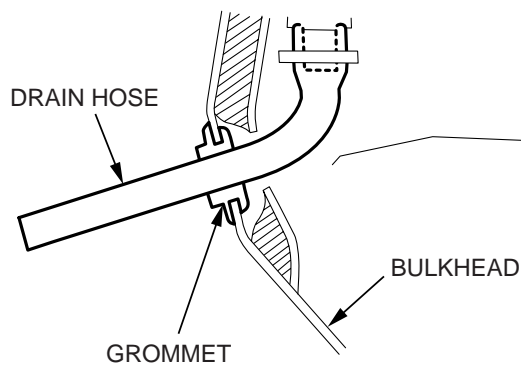
at0247

(6) DRAIN HOSE

- (a) Pass the drain hose through the vehicle grommet.

CAUTION

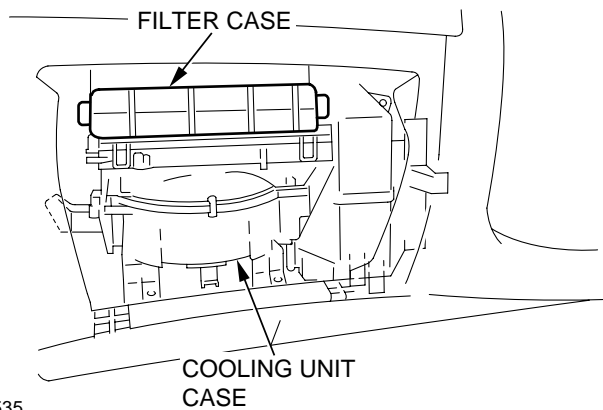
Take care not to bend the drain hose and make sure that the drain hose comes out from the bulkhead.



at0264

CAUTION

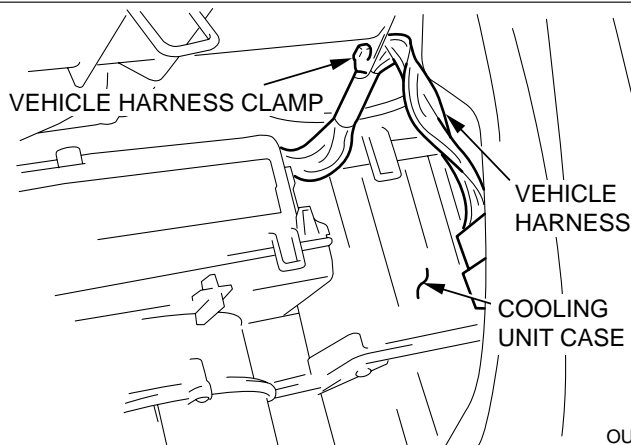
*Do not bend the drain hose.
Make sure the prepared grommet is installed correctly.*



AU1535

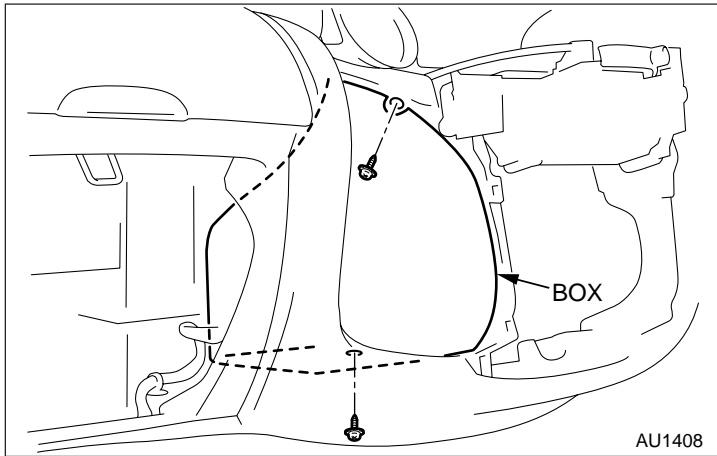
(7) REINSTALLATION OF ORIGINAL PARTS ①

- (a) Filter case

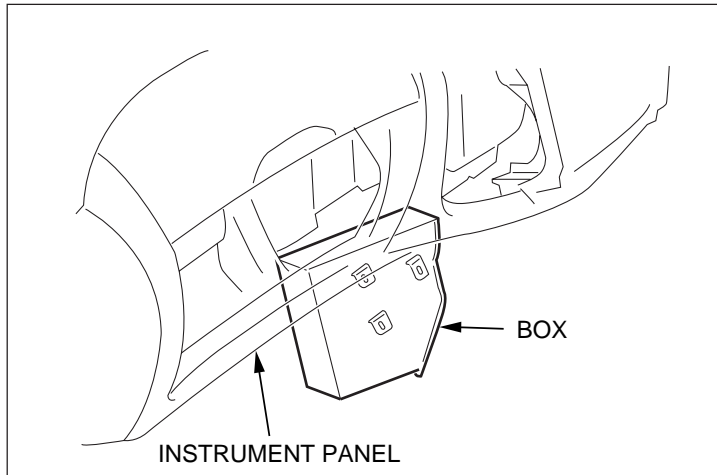


OU0041

- (b) Vehicle harness clamp



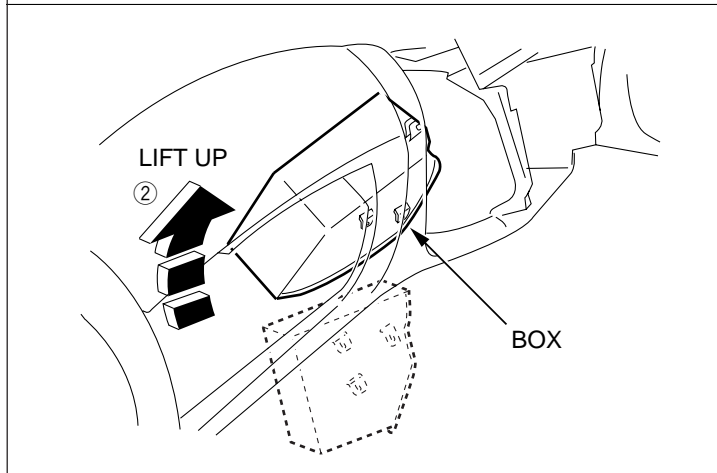
(c) Box



NOTE

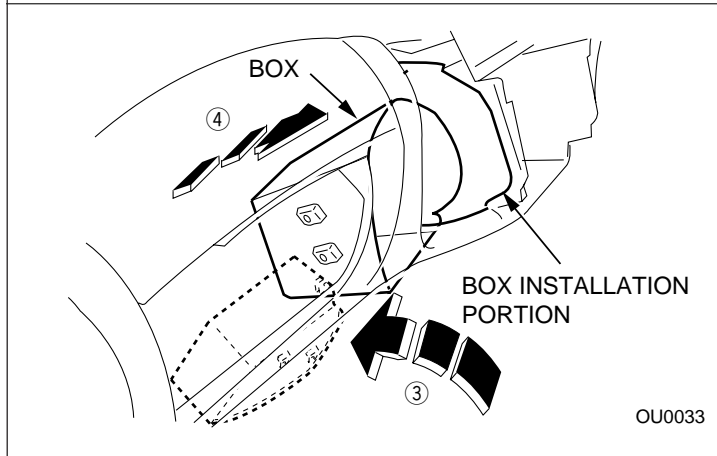
Install the box in the following order.

- ① *Face the vehicle harness installation portion for the box towards the front, and set as shown in the figure on the left.*



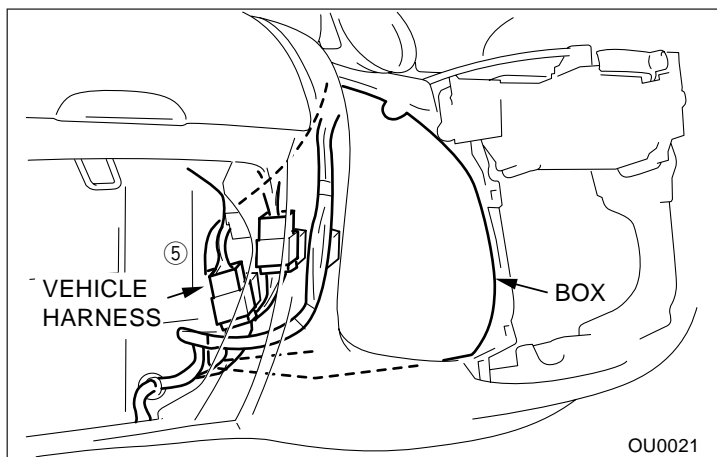
NOTE

- ② *Lift upwards while pulling the box to the front.*



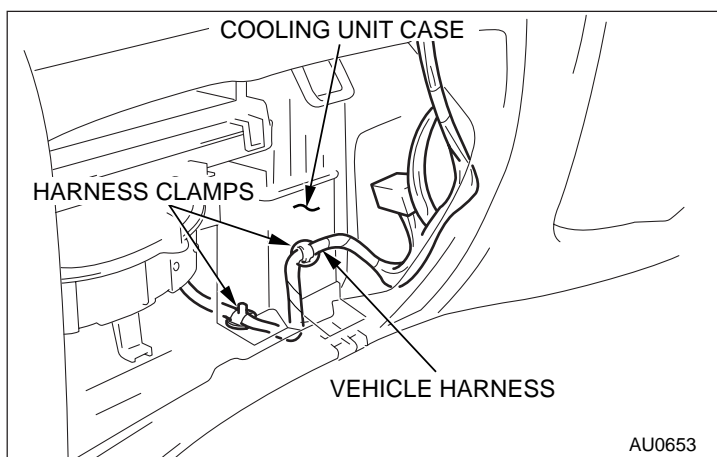
NOTE

- ③ *Rotate so that the box is facing the front in numerical order.*
- ④ *pull towards the box installation portion.*

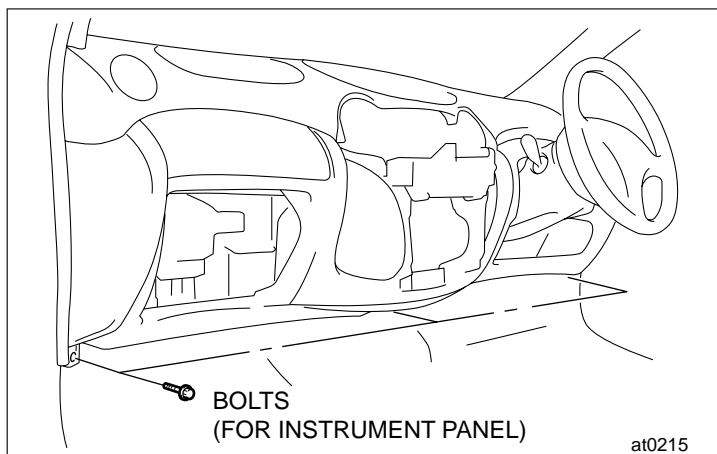


NOTE

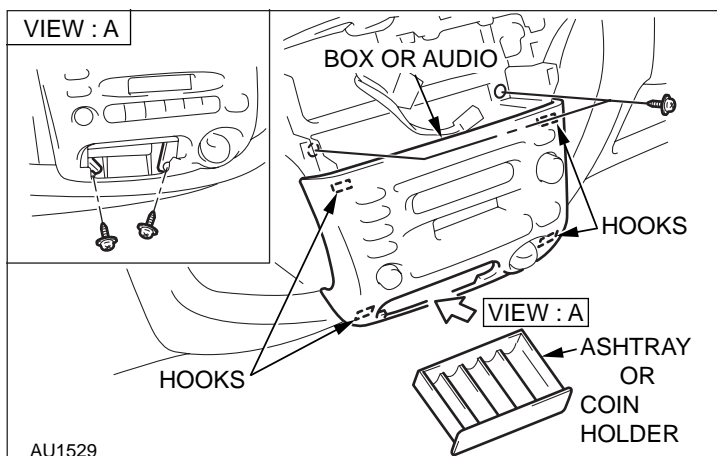
- ⑤ Reinstall the vehicle harness to the box and reconnect the connection of the vehicle harness.



- (d) Reinstall the vehicle harness to the cooling unit case.



- (e) Three bolts (for instrument panel)

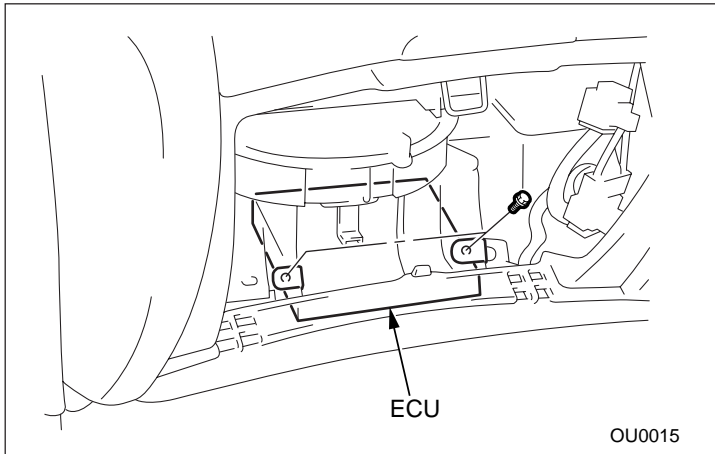


- (f) Box or audio

NOTE

Reconnect the connector of the audio to the vehicle harness.

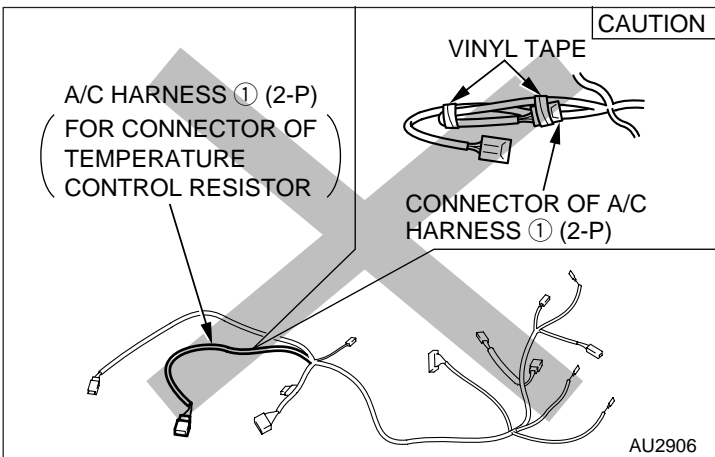
- (g) Ashtray or coin holder



(h) ECU

CAUTION

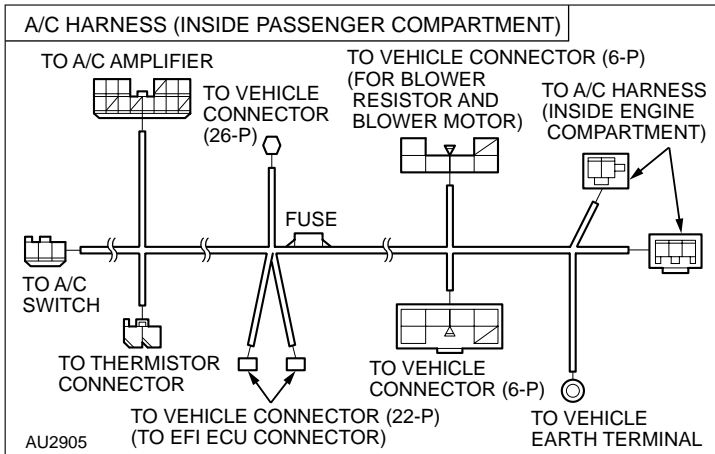
Must be inserted in the ECU hole for the cooling unit case.



(8) WIRING

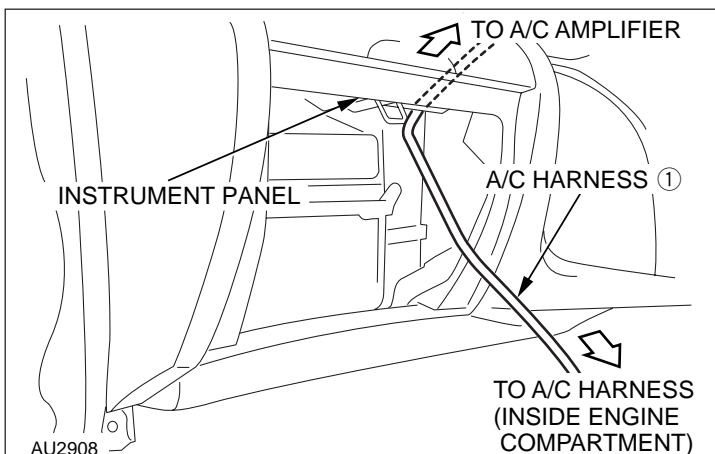
NOTE

For the kit after December in 1999, the same A/C harness is disused on the vehicles with and without heater. Instead, the special harness is respectively used for each type of vehicle. Therefore, discontinue tying the A/C harness with the connector having no connection with a tape.

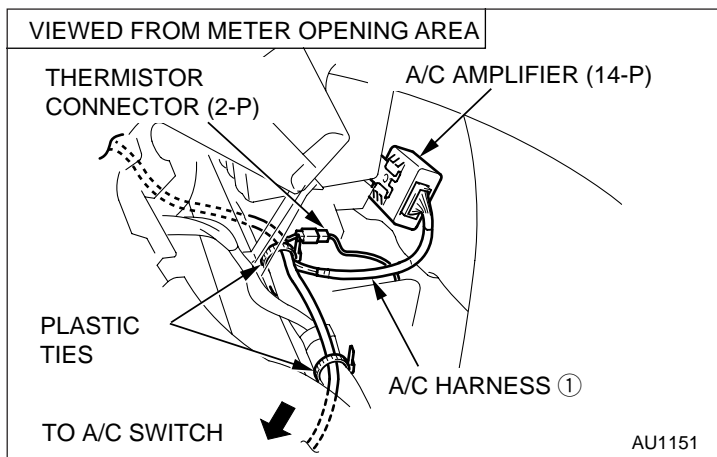


NOTE

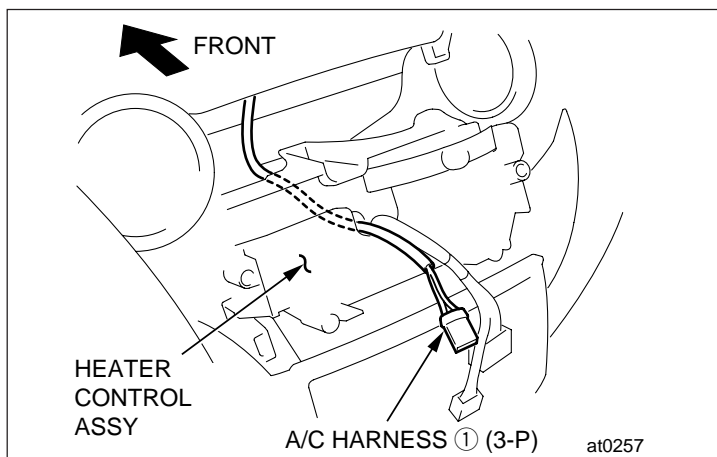
The figure shows the connections of A/C harness connector and terminal in the compartment.



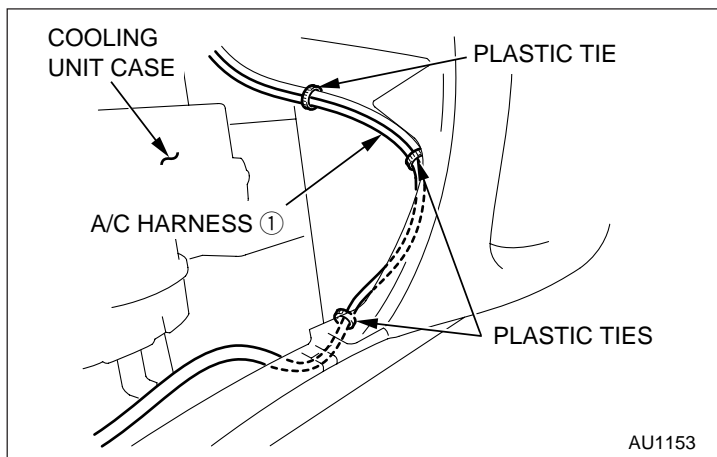
(a) Insert the A/C harness ① to inside of the instrument panel as shown in the left figure.



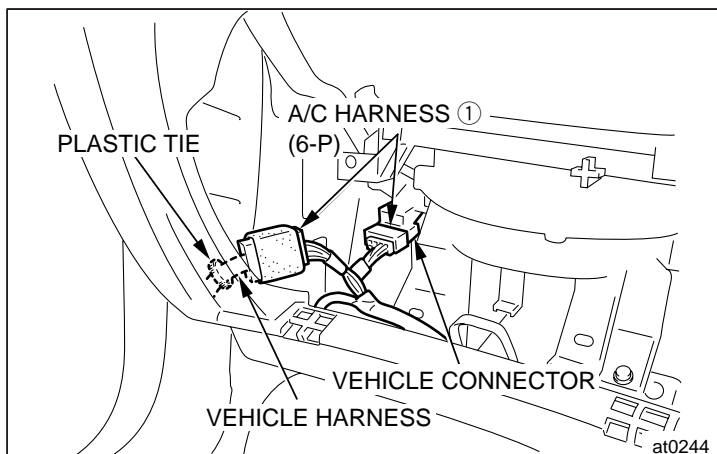
- (b) Connect the A/C harness ① to the thermistor connector.
- (c) Connect the A/C harness ① to the A/C amplifier.
- (d) Secure the A/C harness ① to the vehicle harness using two plastic ties.



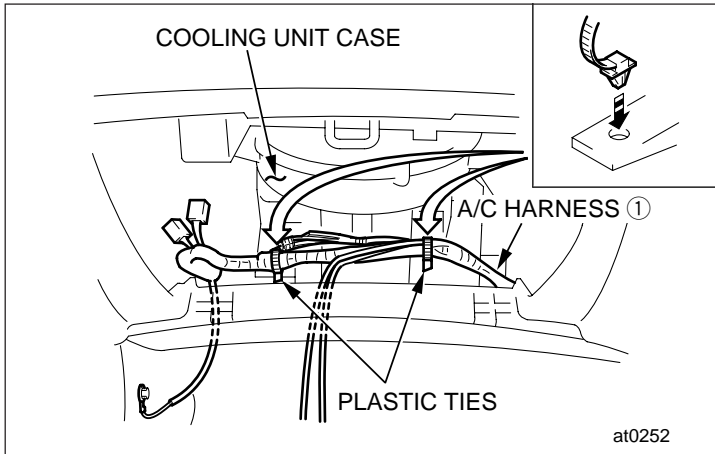
- (e) Pass the A/C harness ① through the hole of the heater control assy.



- (f) Secure the A/C harness ① to the vehicle harness using three plastic ties.

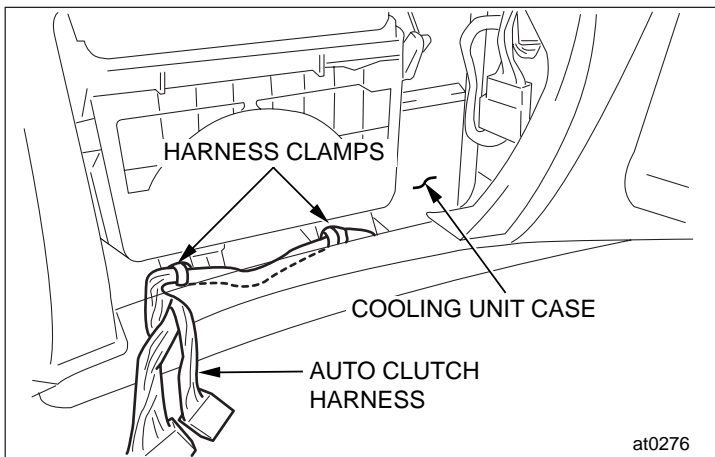


- (g) Connect the A/C harness ① to the vehicle harness and vehicle connector, then secure the vehicle harness using a plastic tie.



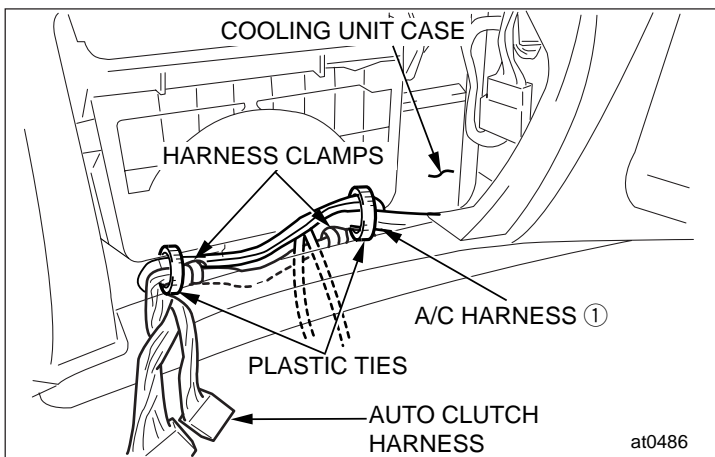
■ VEHICLE WITH M/T MODEL ONLY [(h)]

- (h) Secure the A/C harness ① to the cooling unit case using two plastic ties.

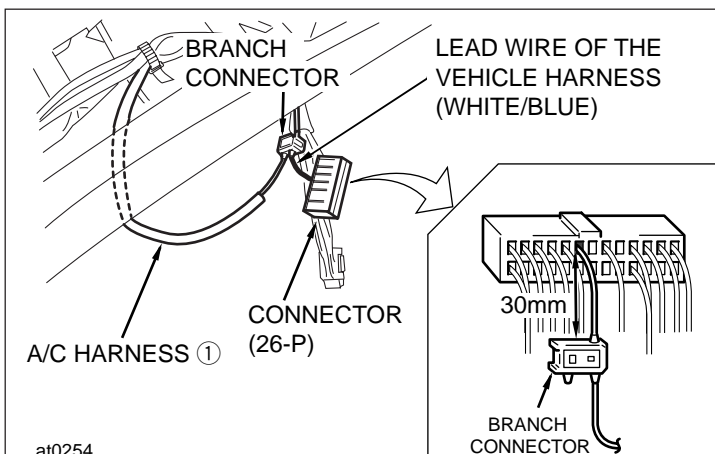


■ VEHICLE WITH TOYOTA FREE-TRONIC MODEL ONLY [(i)~(j)]

- (i) Reinstall the auto clutch harness to the cooling unit case.



- (j) Secure the A/C harness ① to auto clutch harness using two plastic ties.



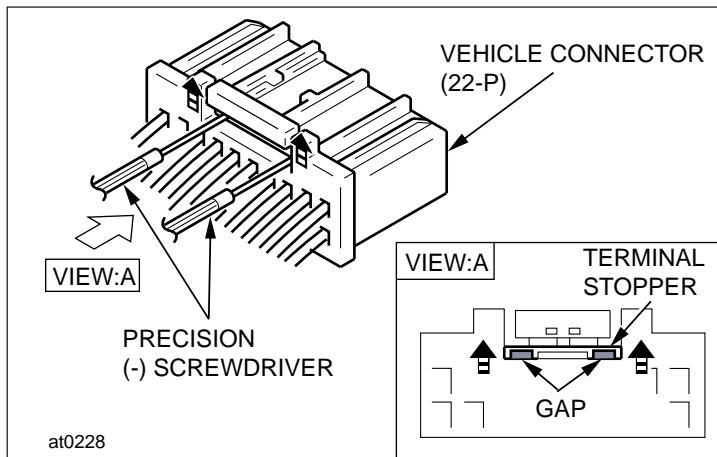
- (k) Connect the A/C harness ① to the lead wire (white/blue) of the vehicle harness using the branch connector.

⚠ CAUTION

Do not mistake the lead wire color.

NOTE

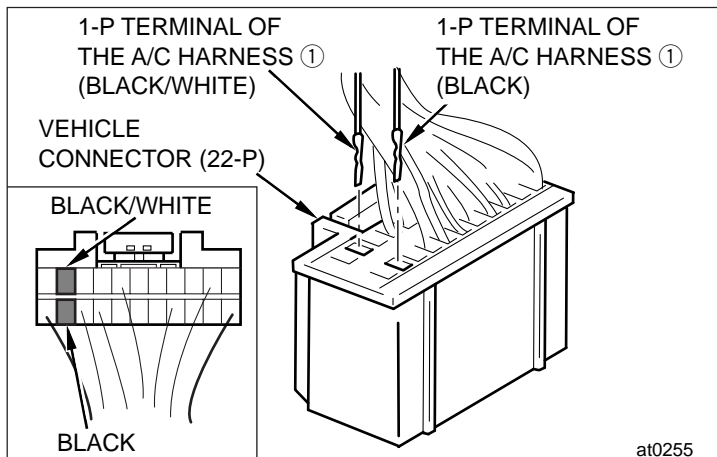
See the P.15 for the connection of the branch connector.



- (l) Lift the terminal stopper of the connector (22-P) with the precision (-) screwdriver.

NOTE

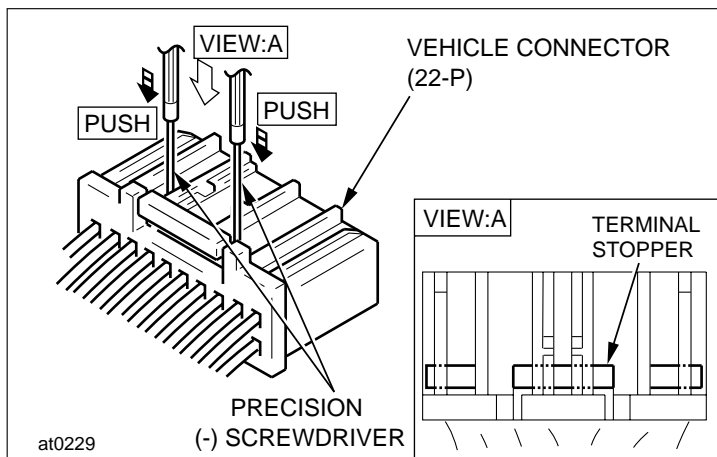
Insert the precision (-) screw driver to the gap for the terminal stopper, and lift the terminal stopper.



- (m) Insert the terminal of the A/C harness ① to the vehicle connector (22-P).

CAUTION

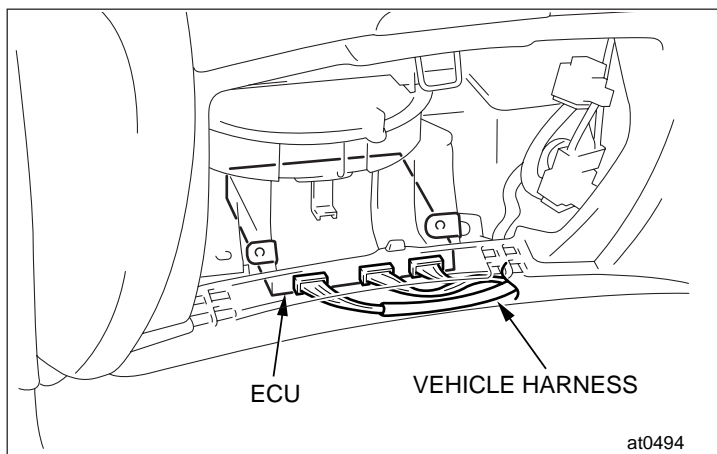
Check the wire colors before inserting the terminal of the A/C harness ① to the vehicle connector.



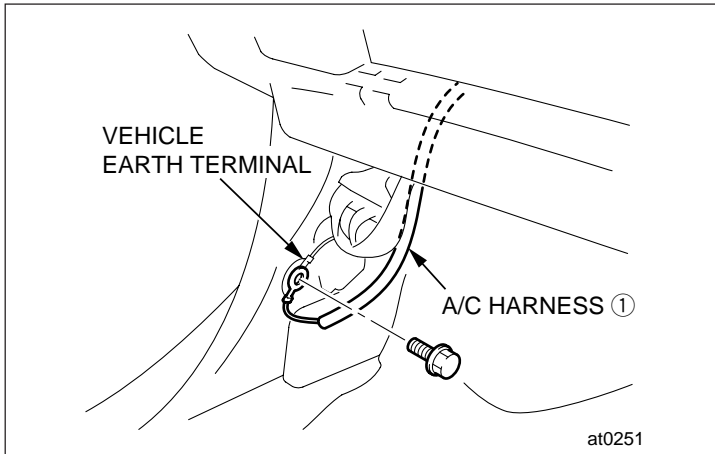
- (n) Restore the terminal stopper of the connector (22-P).

NOTE

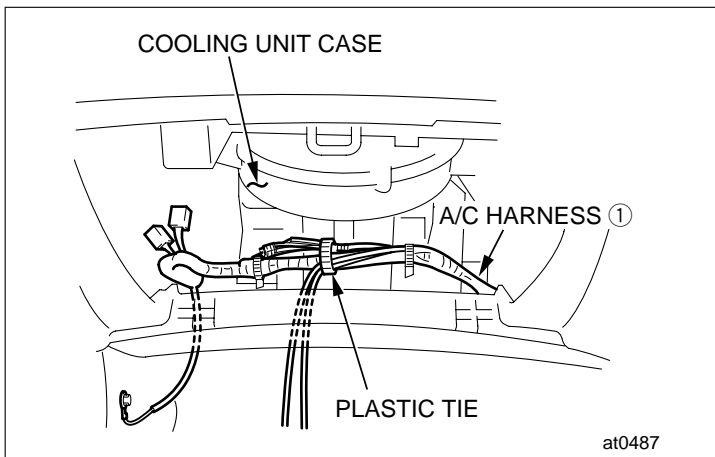
Check to see that the terminal is locked.



- (o) Reconnect the vehicle harness to ECU.

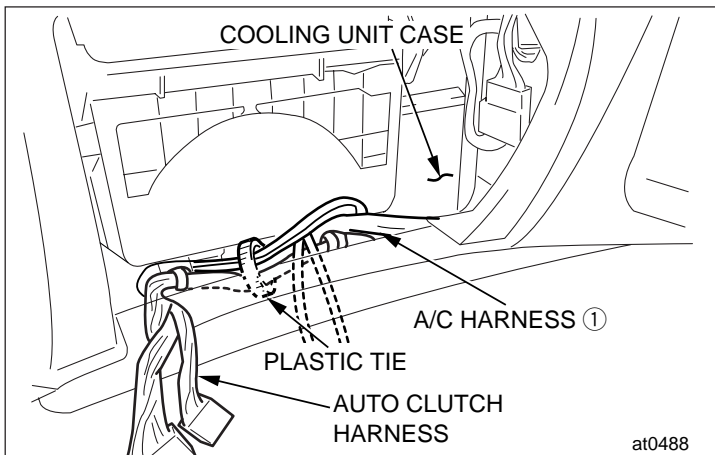


- (p) Install the A/C harness ① together with vehicle earth terminal.



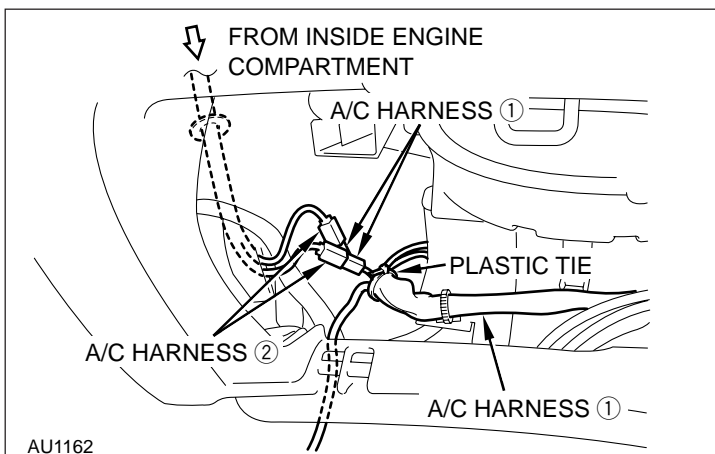
■ **VEHICLE WITH M/T MODEL ONLY [(q)]**

- (q) Secure the excess A/C harness ① to the vehicle harness, using a plastic tie.



■ **VEHICLE WITH TOYOTA FREE-TRONIC MODEL ONLY [(r)]**

- (r) Secure the excess A/C harness ① to the vehicle harness, using a plastic tie.



- (s) Connect the A/C harness ① to the A/C harness ②.

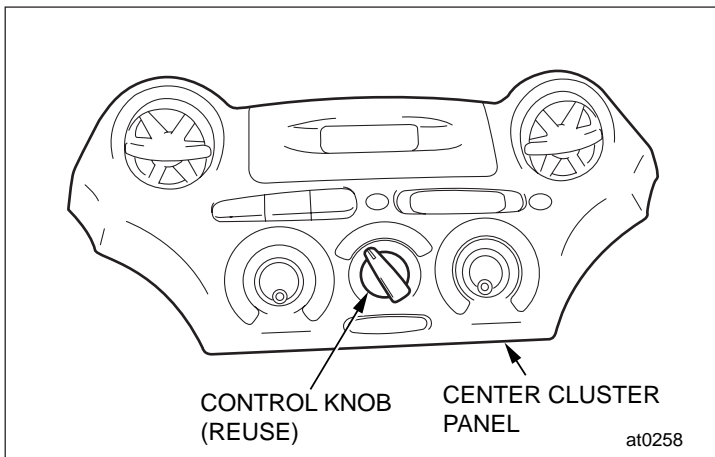
CAUTION

Make sure that the A/C harness ② pull out from the engine compartment.

- (t) Secure the A/C harness ① to the vehicle harness using a plastic tie.

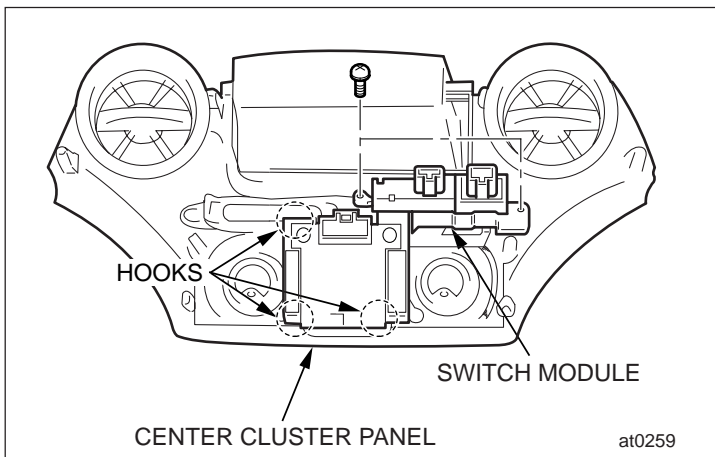
NOTE

Perform this work after laying out A/C harness ②.



(9) A/C SWITCH

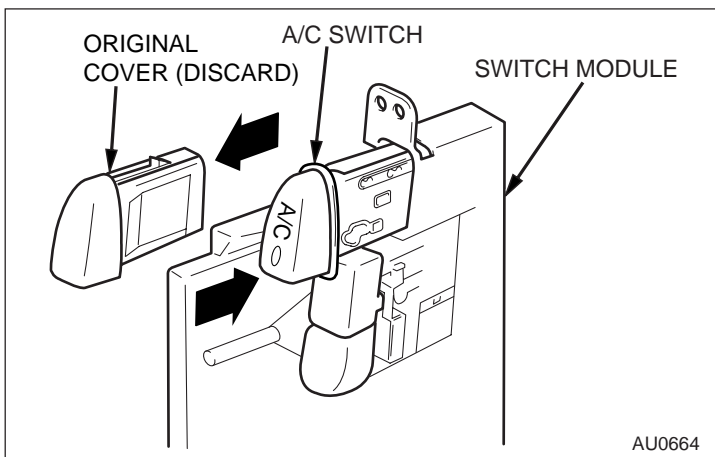
- (a) Temporarily remove the control knob from the center cluster panel.



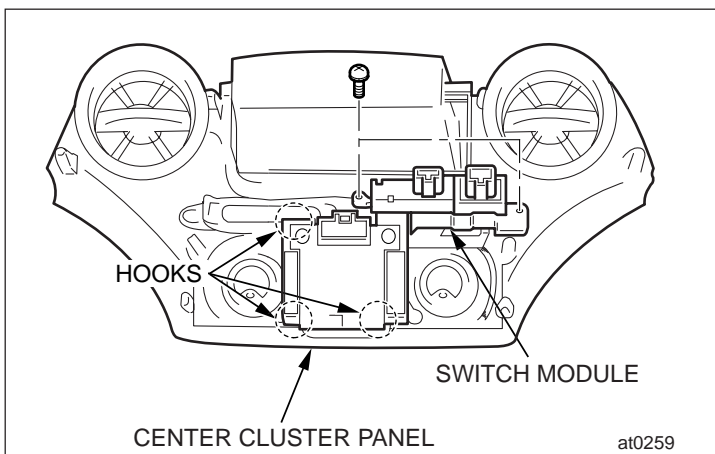
- (b) Temporarily remove the switch module from the center cluster panel.

CAUTION

Do not damage the hooks when removing the switch module.



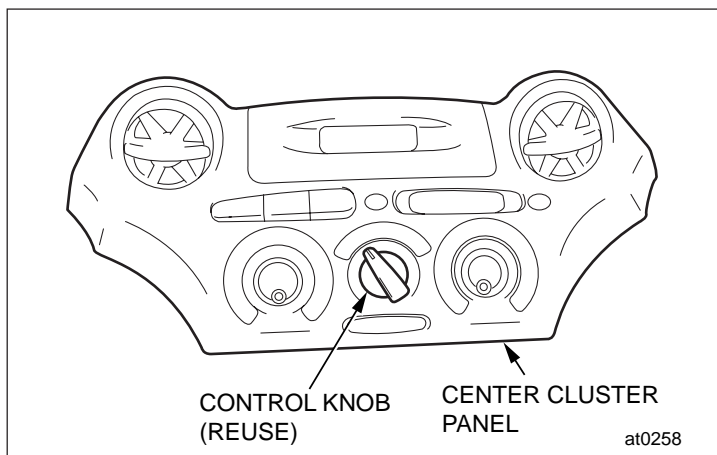
- (c) Remove and discard the original cover from the switch module.
(d) Assemble the A/C switch to the switch module.



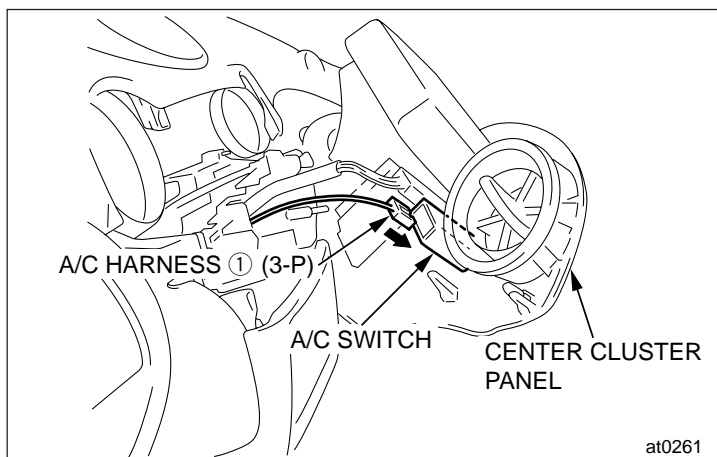
- (e) Reinstall the switch module to the center cluster panel.

CAUTION

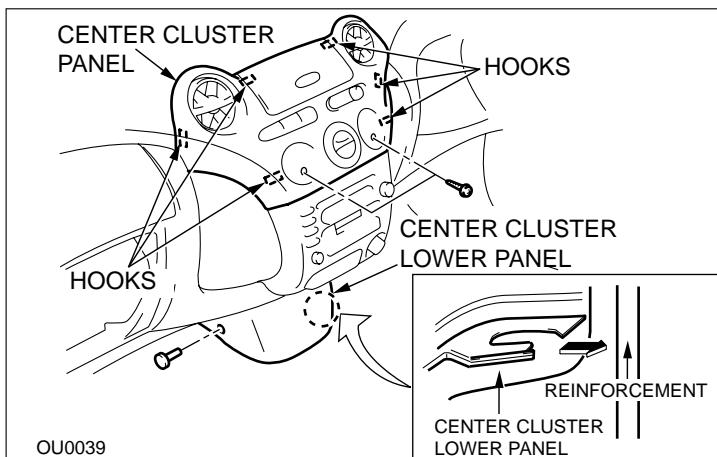
The hooks must be inserted when installing the switch module.



- (f) Reinstall the control knob (reuse) to the center cluster panel.



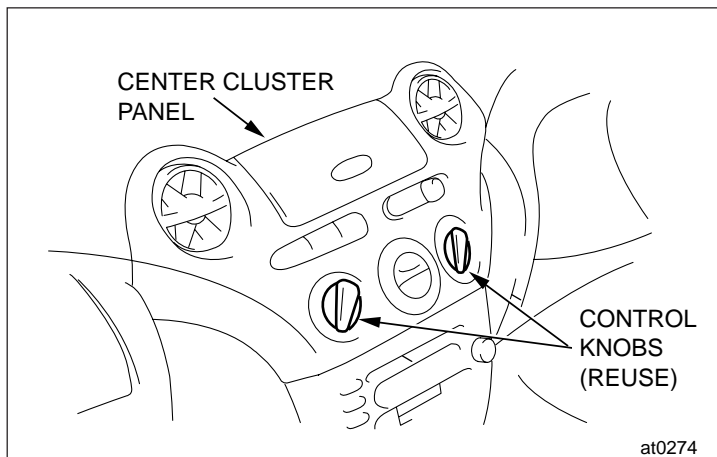
- (g) Connect the A/C harness ① to the A/C switch.



- (h) Reinstall the center cluster panel.
(i) Reinstall the center cluster lower panel.

NOTE

Insert the center cluster lower panel onto the reinforcement.

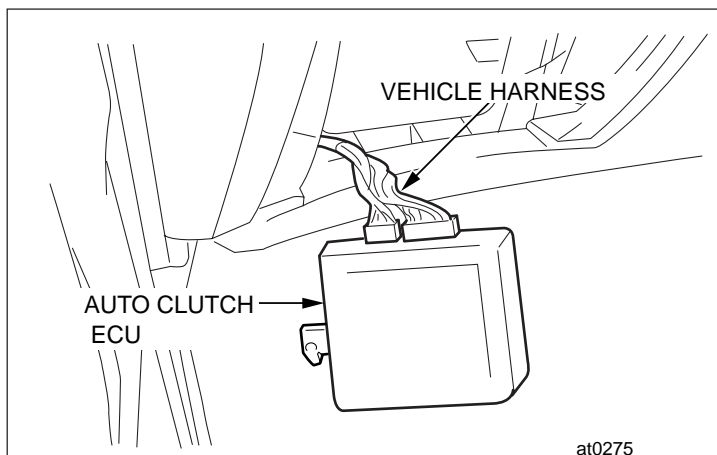


- (j) Reinstall two control knobs to the center cluster panel.

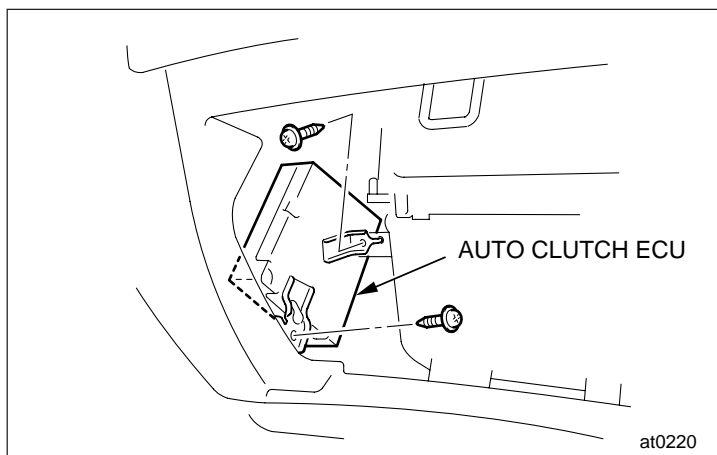
(10) REINSTALLATION OF ORIGINAL PARTS ②

■ VEHICLE WITH TOYOTA FREE-TRONIC MODEL ONLY [(a)~(b)]

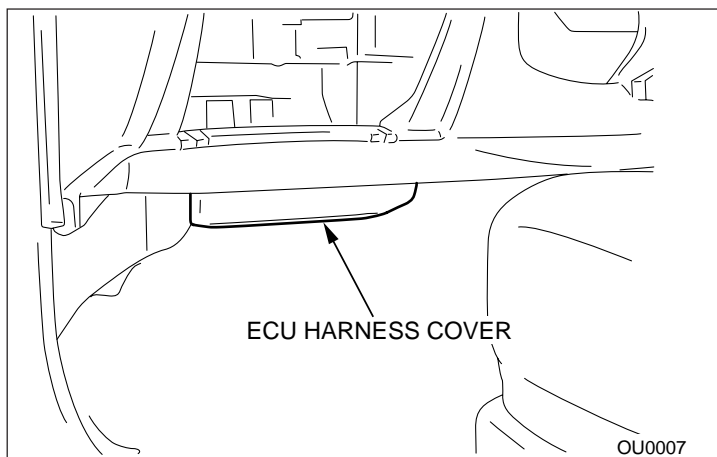
- (a) Reconnect the vehicle harness to auto clutch ECU.



- (b) Auto clutch ECU



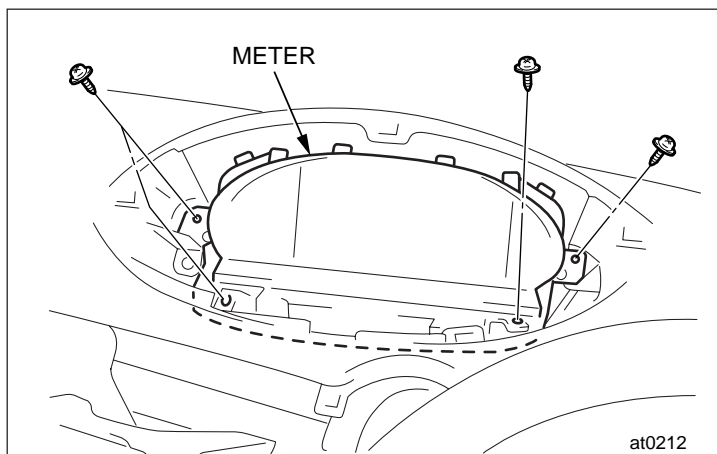
- (c) ECU harness cover

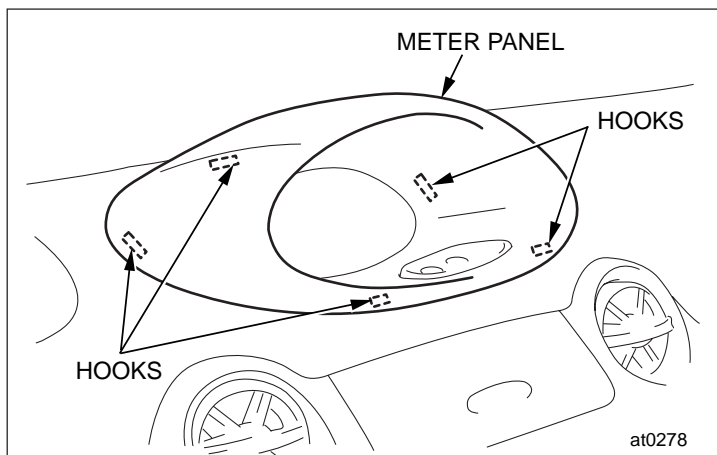


- (d) Meter

NOTE

Reconnect the connector of the meter to the vehicle harness.

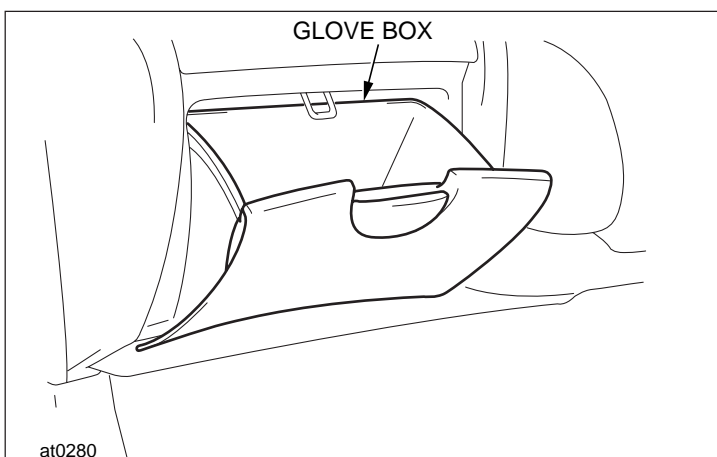




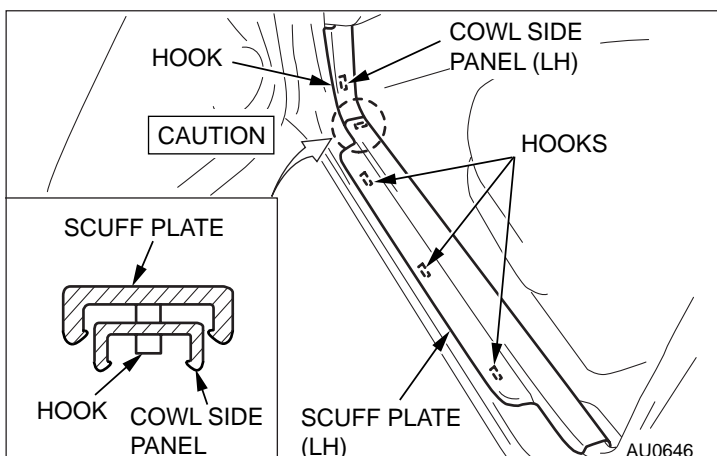
(e) Meter panel

NOTE

Reconnect the connector of the meter panel to the vehicle harness.



(f) Glove box

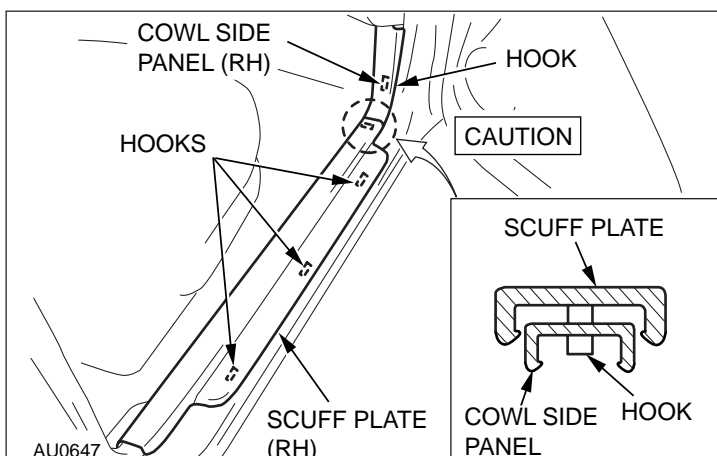


(g) Cowl side panel (LH)

(h) Scuff plate (LH)

CAUTION

Make sure the clips are engaged with the cowl side panel and scuff plate.



(i) Cowl side panel (RH)

(j) Scuff plate (RH)

CAUTION

Make sure the clips are engaged with the cowl side panel and scuff plate.