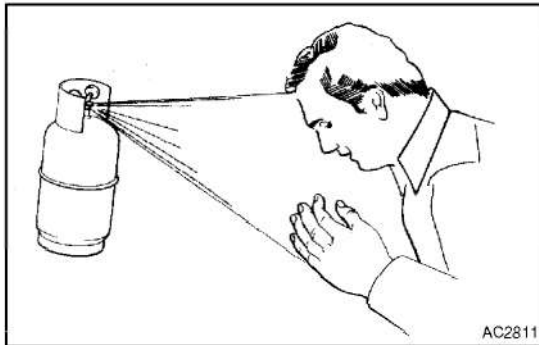

AIR CONDITIONING

AIR CONDITIONING SYSTEM	AC-1
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AIR CONDITIONING SYSTEM PRECAUTION

AC19U-01

1. DO NOT HANDLE REFRIGERANT IN AN ENCLOSED AREA OR WEAR EYE PROTECTION
2. ALWAYS WEAR EYE PROTECTION



3. BE CAREFUL NOT TO GET LIQUID REFRIGERANT IN YOUR EYES OR ON YOUR SKIN

If liquid refrigerant gets in your eyes or on your skin.

- (a) Wash the area with lots of cool water.

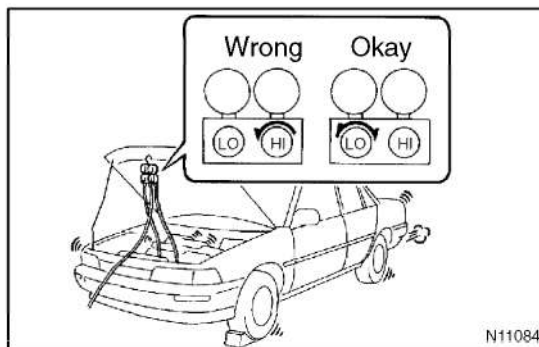
CAUTION:

Do not rub your eyes or skin.

- (b) Apply clean petroleum jelly to the skin.
- (c) Go immediately to a physician or hospital for professional treatment.

4. NEVER HEAT CONTAINER OR EXPOSE IT TO NAKED FLAME

5. BE CAREFUL NOT TO DROP CONTAINER AND NOT TO APPLY PHYSICAL SHOCKS TO IT



6. DO NOT OPERATE COMPRESSOR WITHOUT ENOUGH REFRIGERANT IN REFRIGERATION SYSTEM

If there is not enough refrigerant in the refrigerant system oil lubrication will be insufficient and compressor burnout may occur, so that care to avoid this, necessary care should be taken.

7. DO NOT OPEN PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATE

If the high pressure valve is opened, refrigerant flows in the reverse direction and could cause the charging cylinder to rupture, so open and close the only low pressure valve.

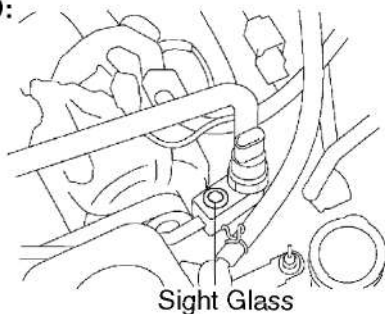
8. BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT

If refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy, engine overheating etc.

9. SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The AVENSIS/ CORONA are equipped with an SRS (Supplemental Restraint System) such as the driver and front passenger airbag. Failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deploy during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary notices in the RS section.

LHD:



I03551

ON-VEHICLE INSPECTION

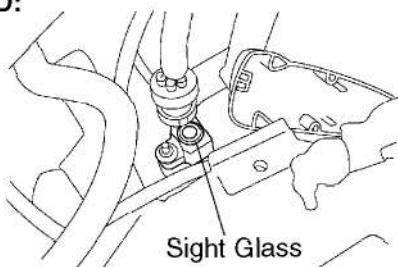
1. INSPECT REFRIGERANT VOLUME

Observe the sight glass on the liquid tube.

Test conditions:

- Running engine at 1,500 rpm
- Blower speed control switch at "HI" position
- A/C switch ON
- Temperature control dial at "COOL" position
- Fully open the doors

RHD:



I03563

Item	Symptom	Amount of refrigerant	Remedy
1	Bubbles present in sight glass	Insufficient*	(1) Check for gas leakage with gas leak detector and repair if necessary (2) Add refrigerant until bubbles disappear
2	No bubbles present in sight glass	None, sufficient or too much	Refer item 3 and 4
3	No temperature difference between compressor inlet and outlet	Empty or nearly empty	(1) Check for gas leakage with gas leak detector and repair if necessary (2) Add refrigerant until bubbles disappear
4	Temperature between compressor inlet and outlet is noticeably different	Correct or too much	Refer to items 5 and 6
5	Immediately after air conditioner is turned off, refrigerant in sight glass stays clear	Too much	(1) Discharge refrigerant (2) Evacuate air and charge proper amount of purified refrigerant
6	When air conditioner is turned off, refrigerant foams and then stays clear	Correct	—

*: Bubbles in the sight glass with ambient temperatures higher than usual can be considered normal if cooling is sufficient.

2. INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET

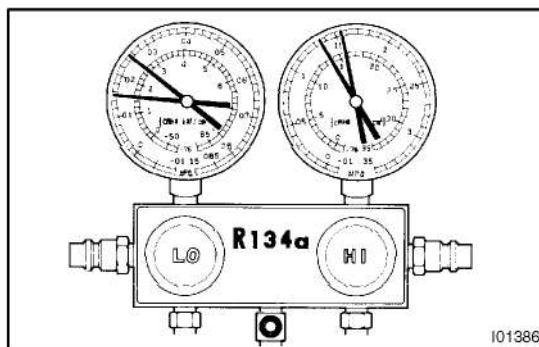
This is a method in which the trouble is located by using a manifold gauge set. Read the manifold gauge pressure when these conditions are established.

Test conditions:

- Temperature at the air inlet with the switch set at RECIRC is 30 – 35 °C (86 – 95 °F)
- Engine running at 1500 rpm
- Blower speed control switch at "HI" position
- Temperature control dial on "COOL" position

HINT:

It should be noted that the gauge indications may vary slightly due to ambient temperature conditions.



(1) Normally functioning refrigeration system.

Gauge reading:

Low pressure side:

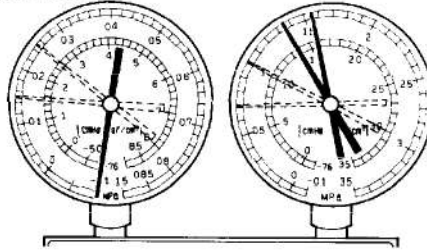
0.15 – 0.25 MPa (1.5 – 2.5 kgf/cm²)

High pressure side:

1.37 – 1.57 MPa (14 – 16 kgf/cm²)

(2) Moisture present in refrigeration system.

Condition : Periodically cools and then fails to cool

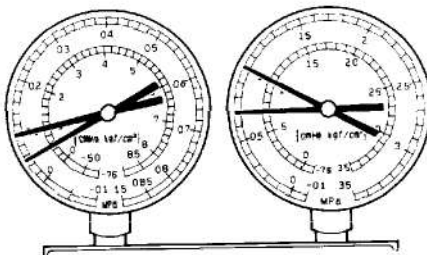


I01387

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
During operation, pressure on low pressure side sometimes become a vacuum and sometime normal	Moisture entered in refrigeration system freezes at expansion valve orifice and temporarily stops cycle, but normal state is restored after a time when the ice melts	• Drier in oversaturated state • Moisture in refrigeration system freezes at expansion valve orifice and blocks circulation of refrigerant	(1) Replace condenser (2) Remove moisture in cycle through repeatedly evacuating air (3) Charge proper amount of new refrigerant

(3) Insufficient cooling

Condition: Insufficient cooling

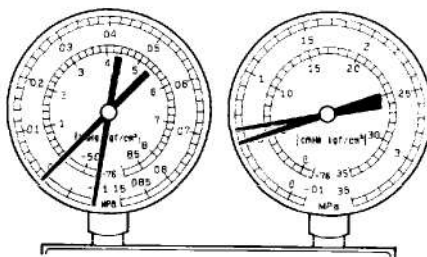


I01388

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure low on both low and high pressure sides • Bubbles seen in sight glass continuously • Insufficient cooling performance	Gas leakage at some place in refrigeration system	• Insufficient refrigerant in system • Refrigerant leaking	(1) Check for gas leakage with gas leak detector and repair if necessary (2) Charge proper amount of refrigerant (3) If indicated pressure value is near 0 when connected to gauge, create the vacuum after inspecting and repairing the location of the leak

(4) Poor circulation of refrigerant

Condition: Insufficient cooling

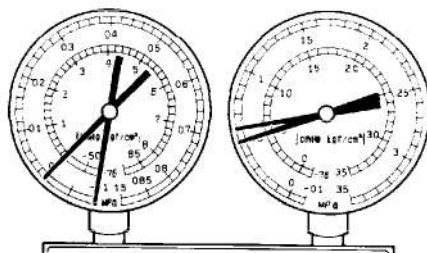


I01389

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure low in both low and high pressure sides • Frost on tube from condenser to unit	Refrigerant flow obstructed by dirt in condenser	Condenser clogged	Replace condenser

(5) Refrigerant does not circulate

Condition: Does not cool (Cools from time to time in some cases)

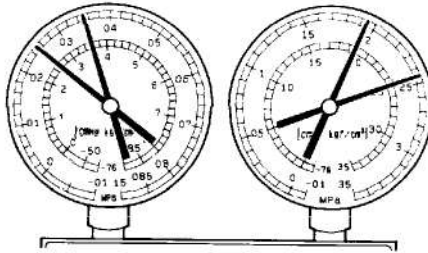


I01449

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Vacuum indicated on low pressure side, very low pressure indicated on high pressure side • Frost or dew seen on piping before and after receiver/ drier or expansion valve	• Refrigerant flow obstructed by moisture or dirt in refrigeration system • Refrigerant flow obstructed by gas leakage from expansion valve	Refrigerant does not circulate	(1) Check expansion valve (2) Clean out dirt in expansion valve by blowing with air (3) Replace condenser (4) Evacuate air and charge new refrigerant to proper amount (5) For gas leakage from expansion valve, replace expansion valve

(6) Refrigerant overcharged or insufficient cooling of condenser

Condition: Insufficient cooling

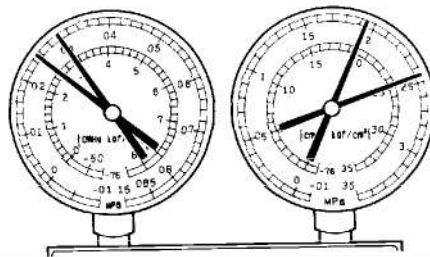


I01390

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure too high on both low and high pressure sides • No air bubbles seen through the sight glass even when the engine rpm is lowered	• Unable to develop sufficient performance due to excessive refrigeration system • Insufficient cooling of condenser	• Excessive refrigerant in cycle → refrigerant over charged • Condenser cooling → condenser fins clogged or condenser fan faulty	(1) Clean condenser (2) Check condenser fan motor operation (3) If (1) and (2) are in normal state, check amount of refrigerant Charge proper amount of refrigerant

(7) Air present in refrigeration system

Condition: Insufficient cooling



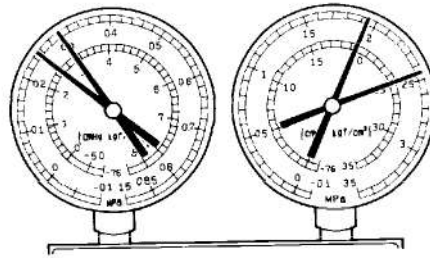
NOTE : These gauge indications are shown when the refrigeration system has been opened and the refrigerant charged without vacuum purging.

I01392

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure too high on both low and high pressure sides • The low pressure piping hot to touch • Bubbles seen in sight glass	Air entered in refrigeration system	• Air present in refrigeration system • Insufficient vacuum purging	(1) Check compressor oil to see if it is dirty or insufficient (2) Evacuate air and charge new refrigerant

(8) Expansion valve improperly

Condition: Insufficient cooling

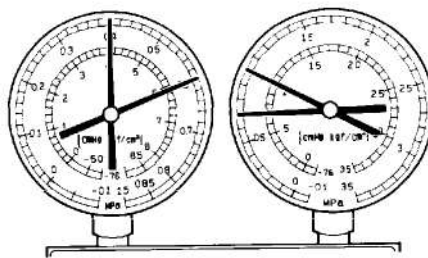


I01450

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure too high on both low and high pressure sides • Frost or large amount of dew on piping on low pressure side	Trouble in expansion valve	• Excessive refrigerant in low pressure piping • Expansion valve opened too wide	Check expansion valve Replace if defective

(9) Defective compression compressor

Condition : Does not cool



I01393

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure too high on low and high pressure sides • Pressure too low on high pressure side	Internal leak in compressor	• Compression defective • Valve leaking or broken sliding parts	Repair or replace compressor

3. 4A-FE, 7A-FE and 3S-FE Engine; INSPECT IDLE-UP SPEED

- (a) Warm up engine
- (b) Perform the these conditions:
 - Idle speed set correctly
 - Put gear shift in neutral
 - Steering wheel at straight ahead
 - Blower speed control switch at "HI" position
 - Temperature control dial at "COOL" position
 - A/C switch ON
 - Put gear shift in neutral
- (c) Check the engine rpm increase when magnetic clutch is engaged.

If idle speed is not as specified, check the idle speed control system.

4. INSPECT FOR LEAKAGE OF REFRIGERANT

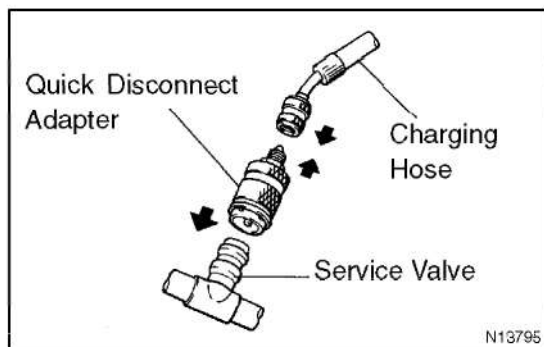
- (a) Perform in these conditions.
 - Stop engine
 - Secure good ventilation (If the gas leak detector may not react to volatile gases which are not refrigerant, such as evaporated gasoline and exhaust gas)
 - Repeat the test 2 or 3 times
 - Make sure that there is some refrigerant remaining in the refrigeration system.
When compressor is OFF: approx. 392 – 588 kPa (4 – 6 kgf/cm², 57 –85 psi)
- (b) Bring the gas leak detector close to the drain hose before performing the test.

HINT:

- After the blower motor has stopped, leave the cooling for more than 15 minutes.
- Expose the gas leak detector sensor under the drain hose.
- When bring the gas leak detector close to the drain hose, make sure that the gas leak detector does not react to the volatile gases.

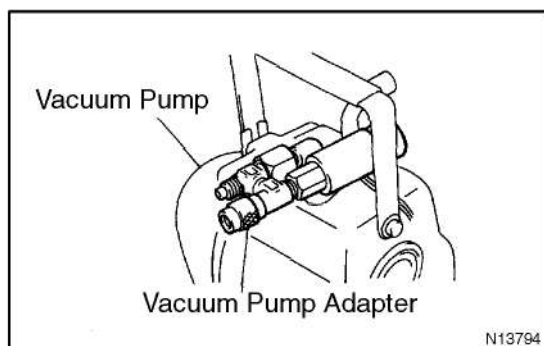
If such reaction is unavoidable, the vehicle must be lifted up.

- (c) If gas leak is not detected on the drain hose, remove the blower resistor from the cooling unit. Then insert the gas leak detector sensor into the unit and perform the test.
- (d) Disconnect the connector and leave the pressure switch for approx. 20 minutes. Then bring the gas leak detector close to the pressure switch and perform the test.
- (e) Bring the gas leak detector close to the refrigerant lines.

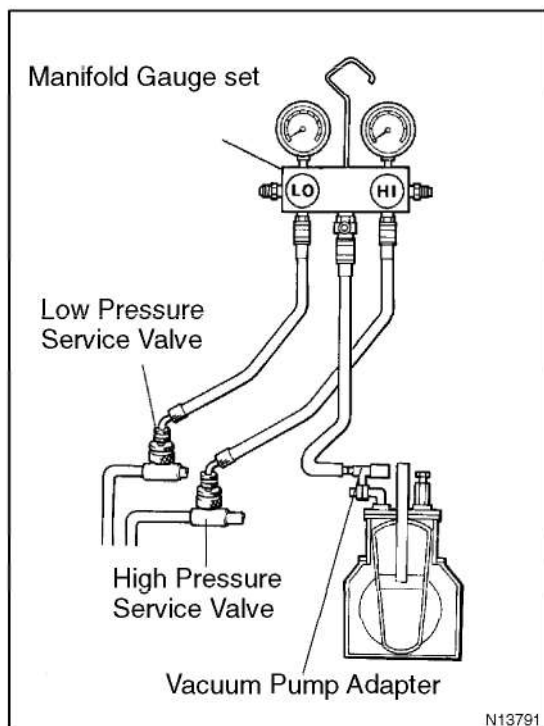


EVACUATING

1. **CONNECT QUICK DISCONNECT ADAPTER TO CHARGING HOSES**
2. **REMOVE CAPS FROM SERVICE VALVES ON REFRIGERANT LINES**
3. **SET ON MANIFOLD GAUGE SET**
 - (a) Close both hand valves of manifold gauge set.
 - (b) Connect the quick disconnect adapters to the service valves.



4. **EVACUATE AIR FROM REFRIGERATION SYSTEM**
 - (a) Connect the vacuum pump adapter to the vacuum pump.

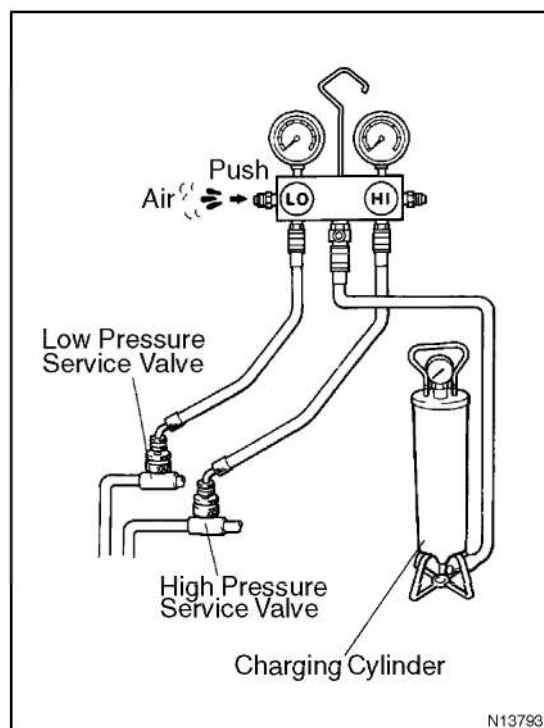


- (b) Connect the center hose of the manifold gauge set to the vacuum pump adapter.
 - (c) Open both the high and low hand valves and run the vacuum pump.
 - (d) After 10 minutes or more, check that the low pressure gauge indicates 750 mmHg (30 in. Hg) or more.

HINT:

If the reading is 750 mmHg (30 in. Hg) or more, close both hand valves of manifold gauge set and stop the vacuum pump. Check the system for leaks and repair if necessary.

- (e) Close both the high and low hand valves and stop the vacuum pump.
 - (f) Leave the system in this condition for 5 minutes or more and check that there is no gauge indicator.



CHARGING

1. INSTALL CHARGING CYLINDER

HINT:

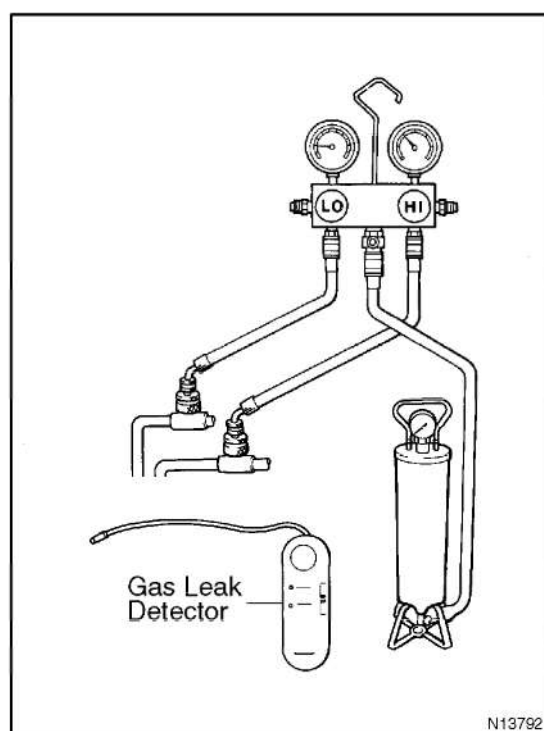
When handling the charging cylinder, always follow the directions given in the instruction manual.

- Charge the proper amount of refrigerant into the charging cylinder.
- Connect the center hose to the charging cylinder.

CAUTION:

Do not open both high and low hand valves of manifold gauge set.

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

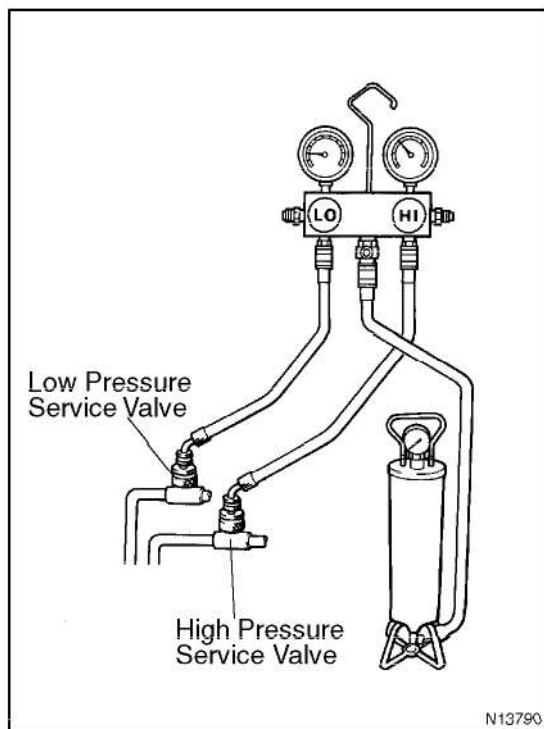


2. INSPECT REFRIGERATION SYSTEM FOR LEAKS

- Open the high pressure hand valve and charge refrigerant.
- When the low pressure gauge indicates 98 kPa (1 kgf/cm², 14 psi) close the high pressure hand valve.
- Using a gas leak detector, check the system for leakage. If leak is found, repair the faulty component or connection.

CAUTION:

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



3. CHARGE REFRIGERANT INTO REFRIGERATION SYSTEM

If there is no leak after refrigerant leak check charge, the proper amount of refrigerant in to refrigeration system.

CAUTION:

- **Never run the engine when charging the system through the high pressure side.**
 - **Do not open the low pressure hand valve when the system is being charged with liquid refrigerant.**
- (a) Open the high pressure hand valve fully.
 - (b) Charge specified amount of refrigerant, then close the high pressure hand valve.

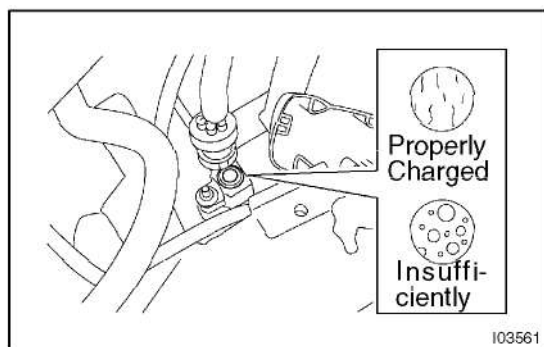
HINT:

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

- (c) Charge partially refrigeration system with refrigerant.
 - (1) Set vehicle in these conditions:
 - Running engine at 1,500 rpm
 - Blower speed control set at "HI"
 - Temperature control set at "MAX. COOL"
 - Air inlet control set at "RECIRC"
 - Fully open doors (Sliding roof : closed)
 - Operate electric cooling fans.
 (Short in pressure switch connector terminals 2 and 3)
 - (2) Open the low pressure hand valve.

CAUTION:

Do not open the high pressure hand valve.



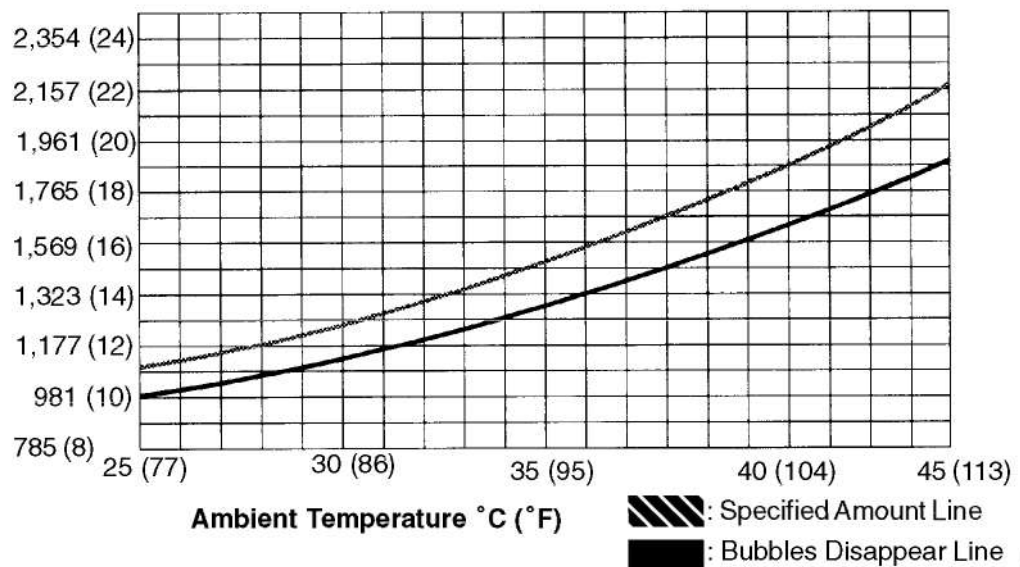
- (3) Charge refrigerant until bubbles disappear and check the pressure on the gauge through the sight glass.

- (4) Add the refrigerant gradually until the pressure reaches to of point of intersection with ambient temperature and the specified amount in the chart and check the pressure rise up.
- (5) Stop adding the refrigerant when the pressure of the specified amount has been reached.

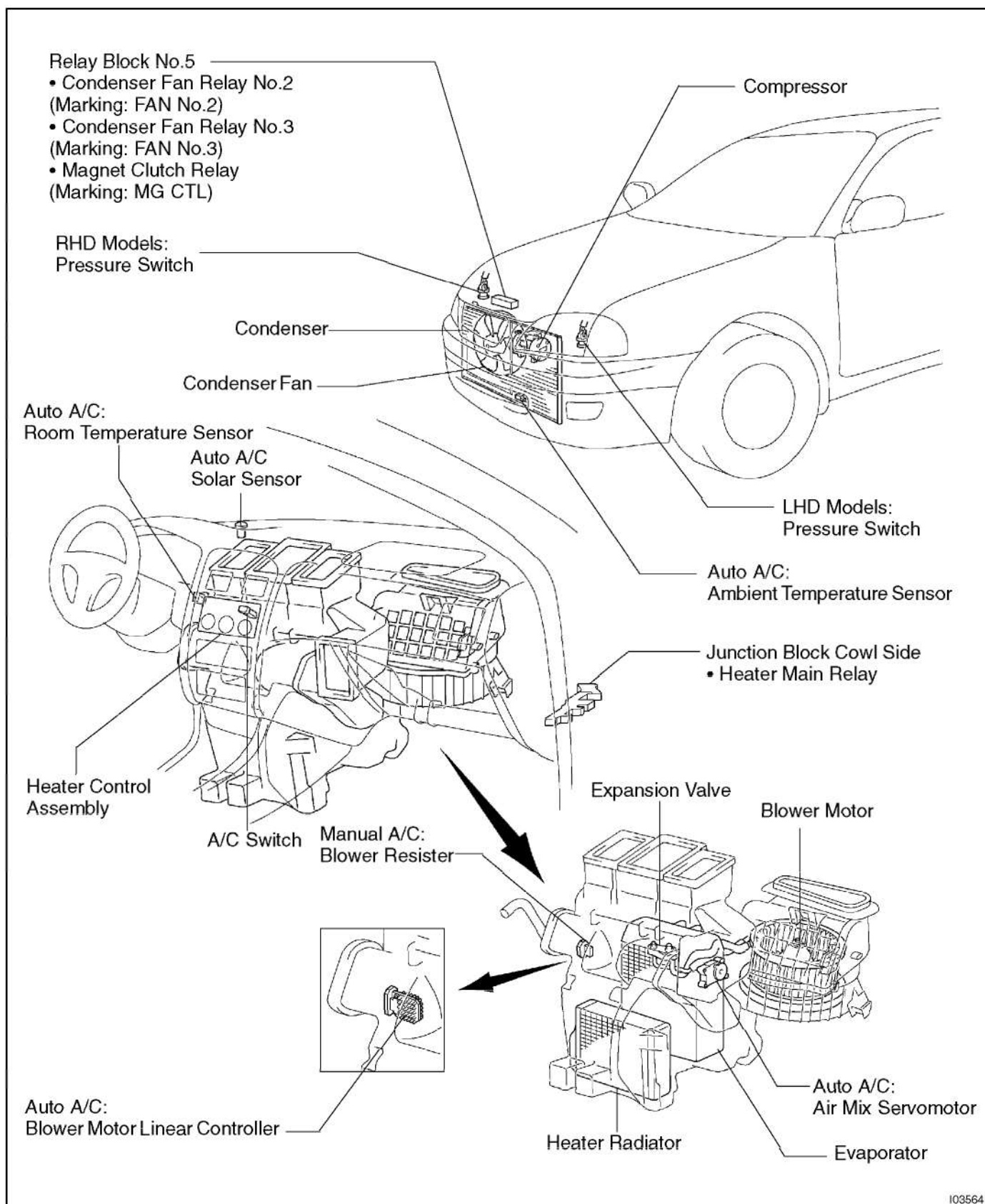
HINT:

- In the case that the refrigerant has been charged excessively, draw out the refrigerant until the pressure returns to the specified amount.
- When the ambient temperature is 25°C (77°F) below, a compressor might be OFF due the mechanism of the system. When checking the pressure based o this chart, check it at the ambient temperature of 25°C (77°F) above.

High Pressure Side Pressure
KPa (kgf/cm²)



LOCATION



TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

AC19Z-01

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Manual A/C:

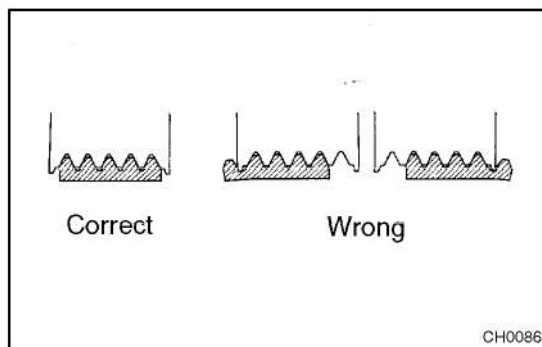
Symptom	Suspect Area	See page
No blower operation	1. HTR Fuse 2. Heater main relay 3. Blower motor 4. Blower resistor 5. Blower speed control switch 6. Wire harness	– AC-89 AC-71 AC-74 AC-108 –
No blower control	1. Blower motor 2. Blower resistor 3. Blower speed control switch 4. Wire harness	AC-71 AC-74 AC-108 –
No air temperature control	1. Engine coolant volume 2. Heater control assembly	– AC-104
No compressor operation	1. Refrigerant volume 2. A.C Fuse 3. Magnetic clutch 4. Except 4A and 7A-FE: Compressor lock sensor 5. Compressor 6. Pressure switch 7. Heater main relay 8. Blower speed control switch 9. A/C switch 10. A/C amplifier 11. Evaporator temp. sensor 12. Wire harness	AC-3 – AC-42 AC-42 AC-42 AC-86 AC-89 AC-108 AC-102 AC-96 AC-84 –
No cool air comes out	1. Refrigerant volume 2. Refrigerant pressure 3. Drive belt 4. Magnetic clutch 5. Pressure switch 6. Evaporator temp. sensor 7. A/C switch 8. A/C amplifier 9. Heater control assembly 10. Wire harness	AC-3 AC-3 AC-18 AC-42 AC-86 AC-84 AC-102 AC-96 AC-104 –
No engine idle-up when A/C switch ON	1. A/C amplifier 2. Idle control system 3. Wire harness	AC-96 – –
No air inlet control	1. Heater control assembly	AC-104
No mode control	1. Heater control assembly	AC-104
Blinking of A/C indicator	1. Compressor 2. Drive belt 3. Compressor lock sensor 4. A/C amplifier	AC-42 AC-18 AC-42 AC-96
Brightness does not change when light control switch is turned	1. Headlight and taillight system 2. A/C switch	BE-23 AC-102

Auto A/C:

Symptom	Suspect Area	See page
Whole functions of A/C system do not operate	1. A.C Fuse 2. A/C amplifier	– AC-96
No blower operation	1. Heater main relay 2. Blower motor 3. Blower motor linear controller 4. A/C amplifier 5. Heater control assembly 6. Wire harness	AC-89 AC-71 AC-77 AC-96 AC-108 –
No blower control	1. Blower motor 2. Blower motor linear controller 3. A/C amplifier 4. Heater control assembly 5. Wire harness	AC-71 AC-77 AC-96 AC-108 –
Insufficient air out	1. Blower motor	AC-71
No cool air comes out	1. Refrigerant volume 2. Drive belt 3. Refrigerant pressure 4. Compressor lock sensor 5. Compressor 6. Pressure switch 7. Air mix servomotor 8. Room temp. sensor 9. Ambient temp. sensor 10. Heater control assembly 11. A/C amplifier 12. Wire harness	AC-3 AC-18 AC-3 AC-42 AC-42 AC-86 AC-80 AC-84 AC-84 AC-108 AC-96 –
No warm air comes out	1. Engine coolant volume 2. Air mix servomotor 3. Ambient temp. sensor 4. Room temp. sensor 5. A/C amplifier 6. Heater control assembly 7. Heater radiator	– AC-80 AC-84 AC-84 AC-96 AC-108 AC-65
Out put air is warmer or cooler than the set temperature or response is slow	1. Refrigerant volume 2. Engine coolant volume 3. Drive belt 4. Refrigerant pressure 5. Condenser fan 6. Ambient temp. sensor 7. Evaporator temp. sensor 8. Solar sensor 9. Air mix servomotor 10. Compressor 11. Condenser 12. Evaporator 13. Heater radiator 14. Expansion valve 15. A/C amplifier 16. Heater control assembly 17. Wire harness	AC-3 – AC-18 AC-3 AC-90 AC-84 AC-84 AC-84 AC-80 AC-42 AC-58 AC-62 AC-65 AC-67 AC-96 AC-108 –
No temperature control	1. Air mix servomotor 2. Heater control assembly 3. A/C amplifier	AC-80 AC-108 AC-96
No air inlet control	1. Heater control assembly	AC-104

AIR CONDITIONING – TROUBLESHOOTING

No mode control	1. Heater control assembly	AC-104
No engine idle-up when A/C switch ON	1. A/C amplifier 2. Idle control system 3. Wire harness	AC-96 – –
Set temperature value does not match up with operation of temperature control switch	1. Heater control assembly 2. A/C amplifier	AC-108 AC-96
Blinking of A/C indicator	1. Compressor 2. Drive belt 3. Compressor lock sensor 4. A/C amplifier	AC-42 AC-18 AC-42 AC-96
Brightness does not change when light control switch is turned	1. Headlight and taillight system 2. A/C switch	BE-23 AC-102

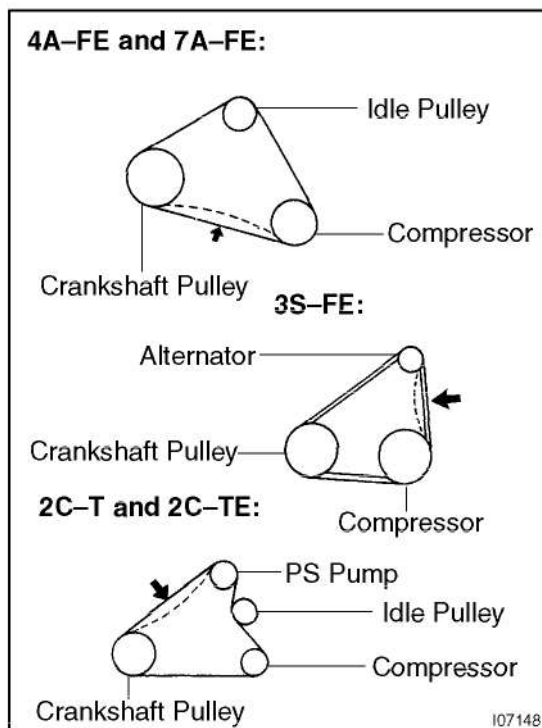


DRIVE BELT ON-VEHICLE INSPECTION

AC1A0-01

1. INSPECT DRIVE BELT INSTALLATION CONDITION

Check that the drive belt fits properly in the ribbed grooves.



2. INSPECT DRIVE BELT DEFLECTION

Using a belt tension gauge, apply load of 98 N (10 kgf, 22 lbf) and measure drive belt deflection.

Drive belt deflection:

4A-FE and 7A-FE Engine Models:

New belt: 6.0 – 7.0 mm (0.24 – 0.28 in.)

Used belt: 8.5 – 9.5 mm (0.33 – 0.37 in.)

3S-FE Engine Models:

New belt: 6.0 – 9.0 mm (0.24 – 0.35 in.)

Used belt: 9.0 – 11.0 mm (0.35 – 0.43 in.)

2C-T and 2C-TE Engine Models:

New belt: 11.0 – 13.0 mm (0.43 – 0.51 in.)

Used belt: 15.0 – 18.0 mm (0.59 – 0.71 in.)

HINT:

- "New belt" refers to a belt which has been used less than 5 minutes on the running engine.
- "Used belt" refer to a belt which has been on a running engine for 5 minutes or more.
- After installing the drive belt, check that it fits properly in the ribbed grooves.

3. INSPECT DRIVE BELT TENSION

Using a belt tension gauge, check the drive belt tension.

Drive belt tension:

4A-FE and 7A-FE Engine Models:

New belt: 520 – 755 N (53 – 77 kgf)

Used belt: 196 – 392 N (20 – 40 kgf)

3S-FE Engine Models:

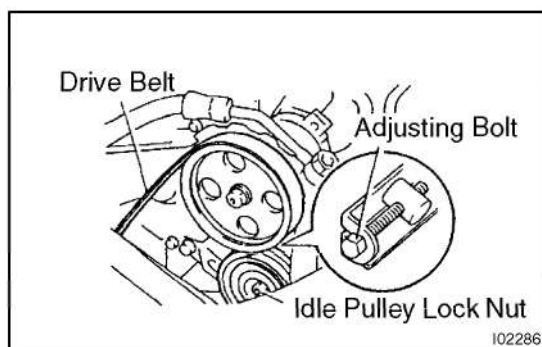
New belt: 618 – 853 N (63 – 87 kgf)

Used belt: 441 – 539 N (45 – 55 kgf)

2C-T and 2C-TE Engine Models:

New belt: 520 – 755 N (53 – 77 kgf)

Used belt: 196 – 392 N (20 – 40 kgf)

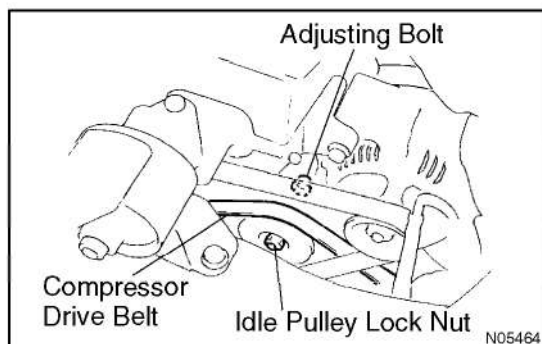


REMOVAL

1. 2C-T and 2C-TE Engine Models:

REMOVE DRIVE BELT

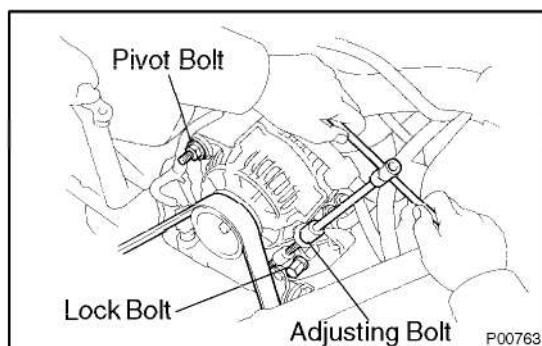
- (a) Loosen the idle pulley lock nut.
- (b) Loosen the drive belt tension by adjusting bolt and remove the drive belt.



2. 4A-FE and 7A-FE Engine Models:

REMOVE DRIVE BELT

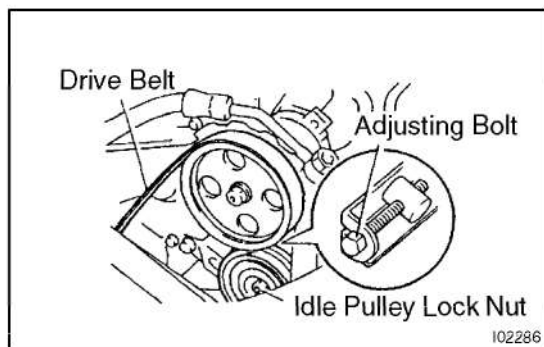
- (a) Loosen the idle pulley lock nut.
- (b) Remove the alternator drive belt.
- (c) Loosen the drive belt tension by adjusting bolt and remove the drive belt.



3. 3S-FE Engine Models:

REMOVE DRIVE BELT

- (a) Loosen the pivot bolt and lock bolt.
- (b) Remove the drive belt.



INSTALLATION

1. 2C-T and 2C-TE Engine Models:

INSTALL DRIVE BELT

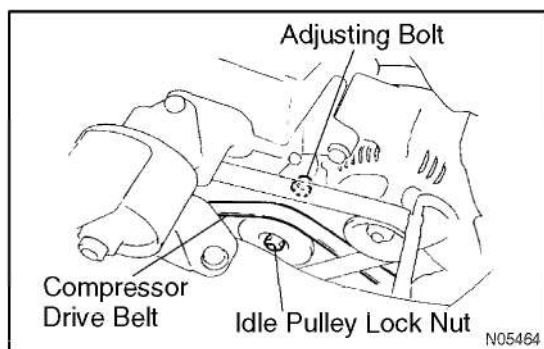
- (a) Tighten the idle pulley lock nut temporarily.
- (b) Install the drive belt.
- (c) Using an adjusting bolt, adjust drive belt tension.

Drive belt tension:

New belt: 520 – 755 N (53 – 77 kgf)

Used belt: 196 – 392 N (20 – 40 kgf)

- (d) Tighten the idle pulley lock nut at regular torque.
- Torque:** 39 N·m (390 kgf·cm, 29 ft·lbf)



2. 4A-FE and 7A-FE Engine Models:

INSTALL DRIVE BELT

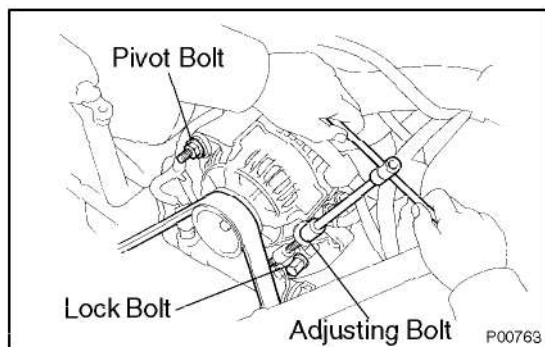
- (a) Tighten the idle pulley lock nut temporarily.
- (b) Install the drive belt.
- (c) Using an adjusting bolt, adjust drive belt tension.

Drive belt tension:

New belt: 520 – 755 N (53 – 77 kgf)

Used belt: 196 – 392 N (20 – 40 kgf)

- (d) Tighten the idle pulley lock nut at regular torque.
- Torque:** 39 N·m (390 kgf·cm, 29 ft·lbf)

**3. 3S-FE Engine Models:****INSTALL DRIVE BELT**

- (a) Install the drive belt.
- (b) Using a adjusting bolt, adjust drive belt tension.

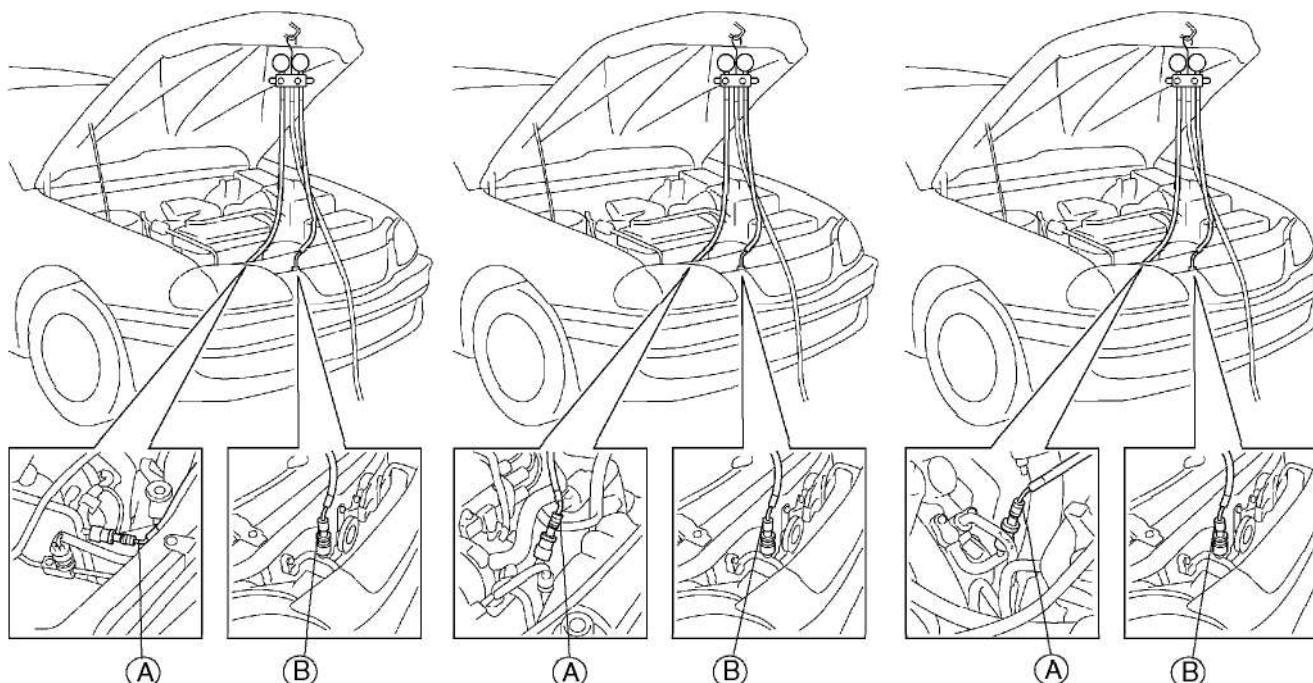
Drive belt tension:**New belt: 618 – 853 N (63 – 87 kgf)****Used belt: 441 – 539 N (45 – 55 kgf)**

- (c) Tighten the lock bolt and pivot bolt.

Torque:**Lock bolt: 18 N·m (184 kgf·cm, 13 ft·lbf)****Pivot bolt: 52 N·m (530 kgf·cm, 38 ft·lbf)**

MANIFOLD GAUGE SET SET ON

AC1A3-01

4A-FE and 7A-FE Engine Models: 2C-T and 2C-TE Engine Models:**3S-FE Engine Models:**

(A) : Low Pressure Charging Hose
(B) : High Pressure Charging Hose

103552

1. CONNECT CHARGE HOSE TO MANIFOLD GAUGE SET

Tighten the nuts by hand.

CAUTION:

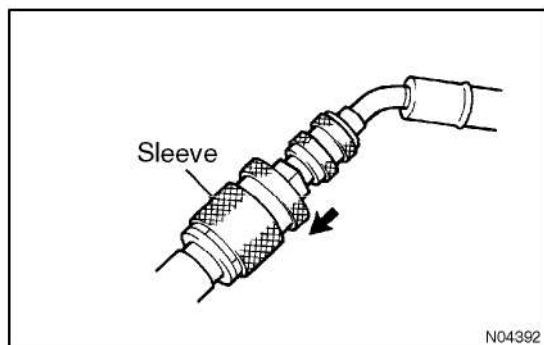
Do not connect the wrong hoses.

2. CONNECT QUICK DISCONNECT ADAPTERS TO CHARGING HOSES

Tighten the nuts by hand.

3. CLOSE BOTH HAND VALVES OF MANIFOLD GAUGE SET

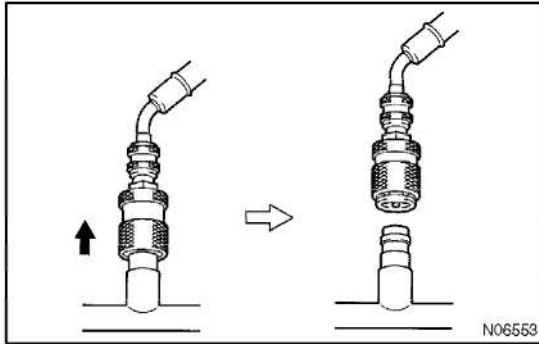
4. REMOVE CAPS FROM SERVICE VALVE ON REFRIGERANT LINE



5. CONNECT QUICK DISCONNECT ADAPTER TO SERVICE VALVES

HINT:

Push the quick disconnect adapter onto the service valve, slide, then slide the sleeve of the quick disconnect adapter downward to lock it.



SET OFF

1. CLOSE BOTH HAND VALVES OF MANIFOLD GAUGE SET
2. DISCONNECT QUICK DISCONNECT ADAPTERS FROM SERVICE VALVES ON REFRIGERANT LINE

HINT:

Slide the sleeve of the quick disconnect adapter upward to unlock the adapter and remove it from the service valve.

3. INSTALL CAPS TO SERVICE VALVES ON REFRIGERANT LINE

REFRIGERANT LINE

AC1A6-01

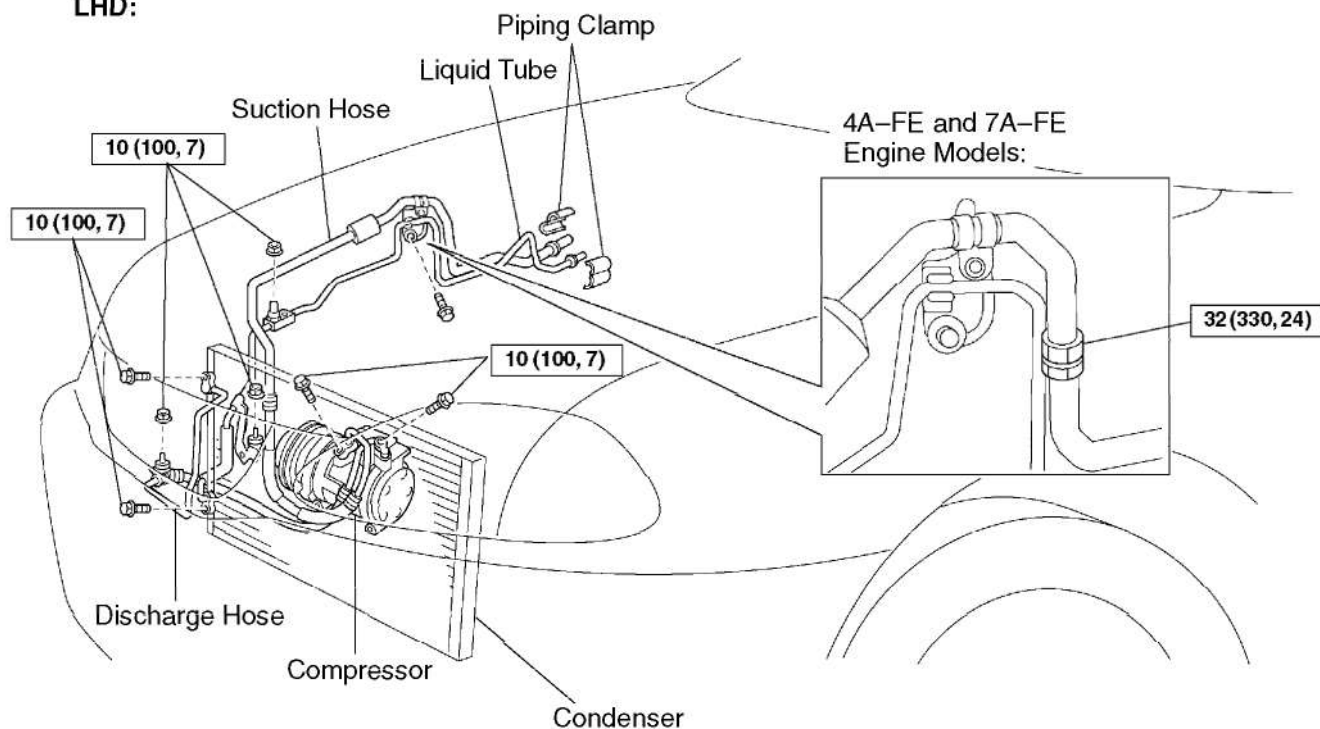
ON-VEHICLE INSPECTION

1. INSPECTION HOSE AND TUBE CONNECTIONS FOR LOOSENESS
2. INSPECT HOSES AND TUBES FOR LEAKAGE

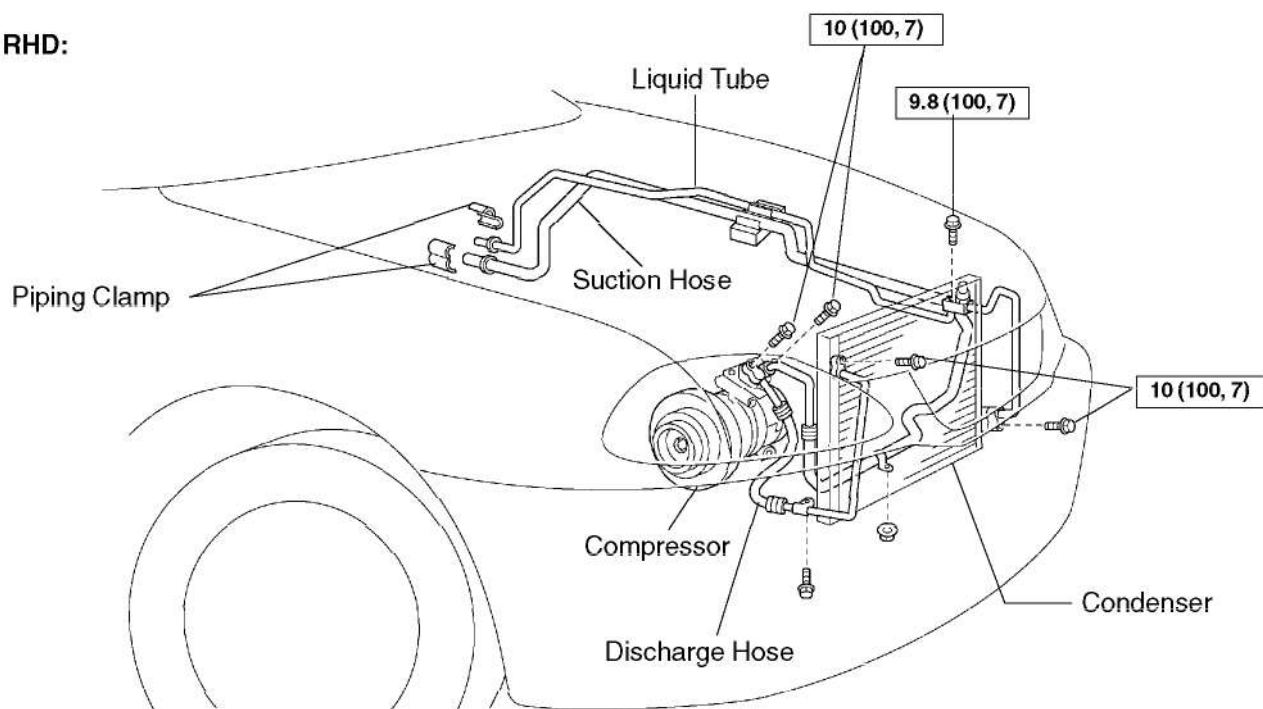
Using a gas leak detector, check for leakage of refrigerant.

COMPONENTS

LHD:



RHD:

I05373
I05372

N·m (kgf·cm, ft·lbf) : Specified torque

I05868

REPLACEMENT

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

2. REPLACE FAULTY TUBE OR HOSE

NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

3. TIGHTEN JOINT OF BOLT OR NUT AT SPECIFIED TORQUE

NOTICE:

Connections should not be torqued tighter than the specified torque.

Parttightened	N·m	kgf·cm	ft·lbf
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
Condenser x Discharge hose	10	100	7
Condenser x Liquid tube	10	100	7
Liquid line (Block joint)	10	100	7
Suction line (Piping joint)	32	330	24

4. EVACUATE AIR FROM REFRIGERATION SYSTEM AND CHARGE SYSTEM WITH REFRIGERANT

Specified amount: 450 ± 50 g (15.87 ± 1.76 oz.)

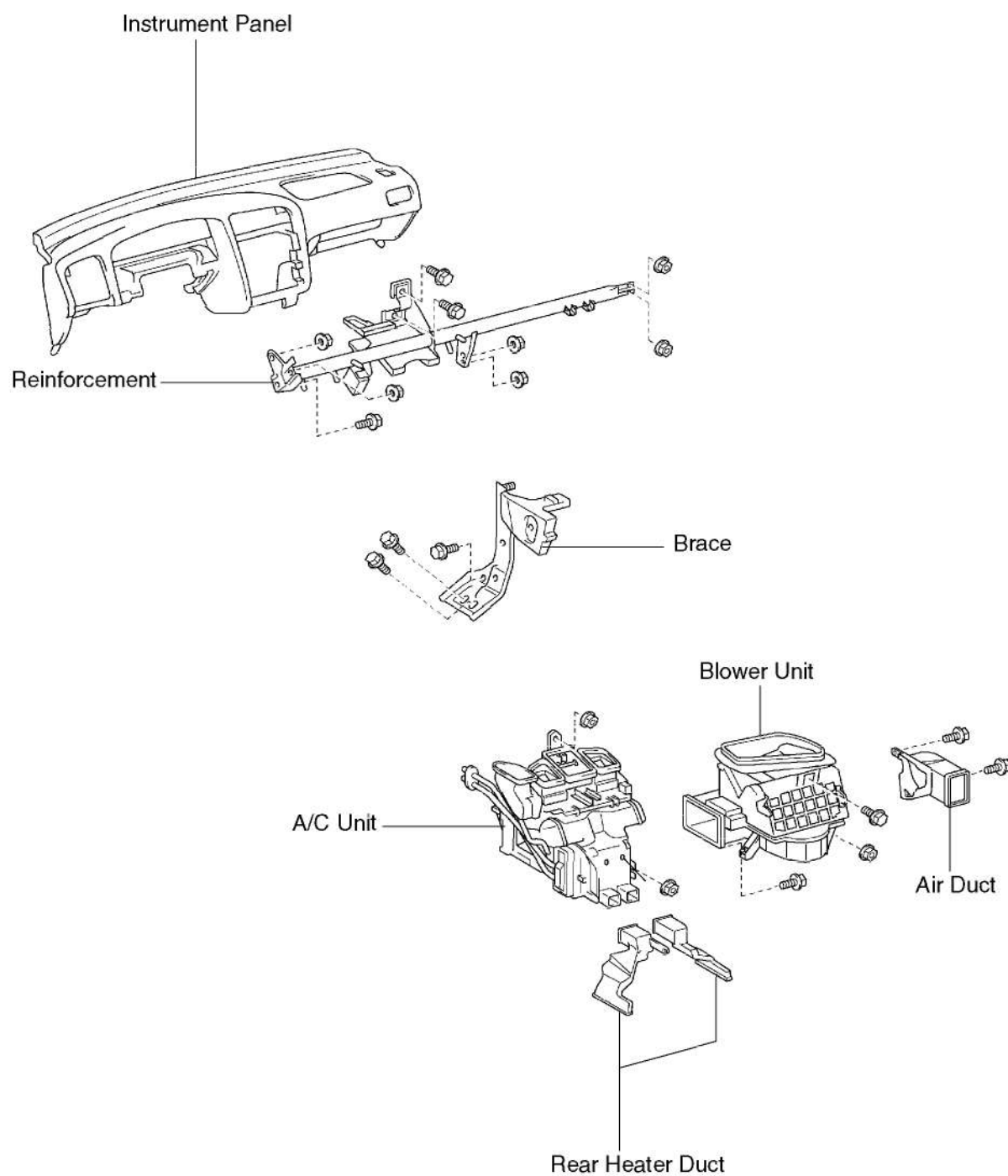
5. INSPECT FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check for leakage of refrigerant.

6. INSPECT AIR CONDITIONING OPERATION

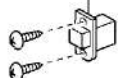
AIR CONDITIONING UNIT COMPONENTS

AC1AB-01



105336

Manual A/C:
Blower Resistor



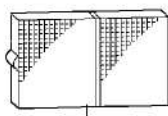
Air Duct



Auto A/C:
Blower Motor Linear
Controller

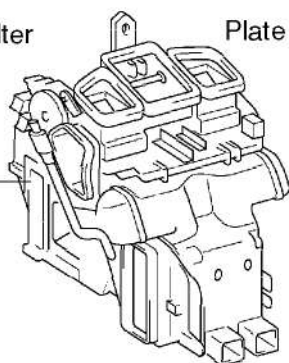


Air Refiner Filter



Filter Cover

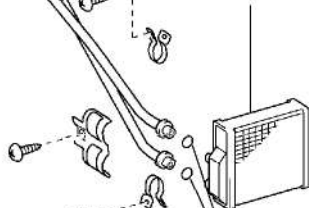
A/C Unit Case



Heater Radiator Pipe

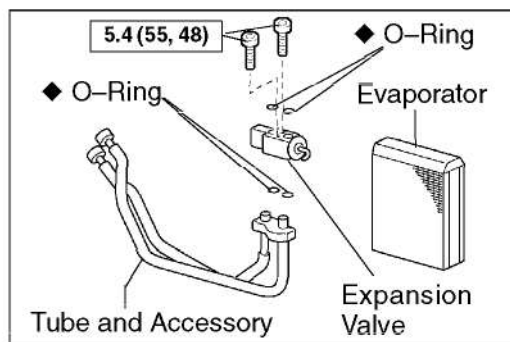


Heater Radiator



◆ O-Ring

RHD Models:



5.4 (55, 48)

Evaporator

Plate

5.4 (55, 48)

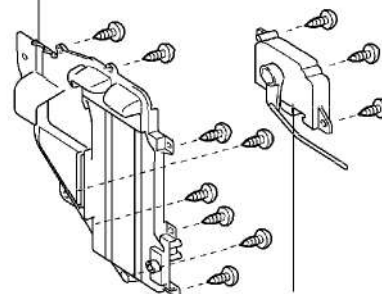
Expansion
Valve

◆ O-Ring

◆ O-Ring

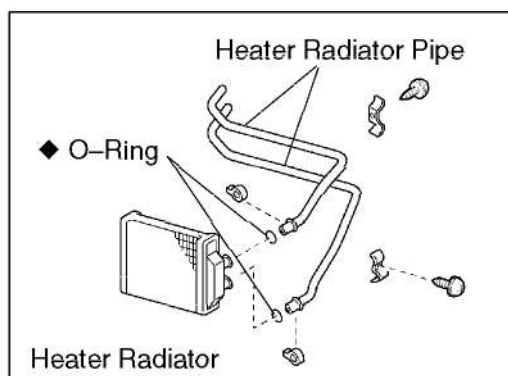
Tube and Accessory

Evaporator Cover



Auto A/C Only:
Air Mix Servomotor

RHD Models:



N·m (kgf·cm, in·lbf) : Specified torque

◆ Non-reusable part

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

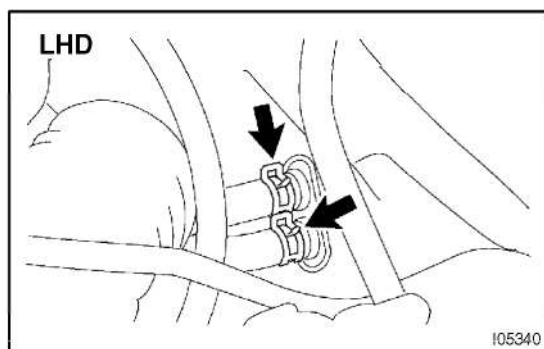
Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 450 ± 50 g (15.87 ± 1.76 oz.)

2. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not necessary to drain out all the coolant.



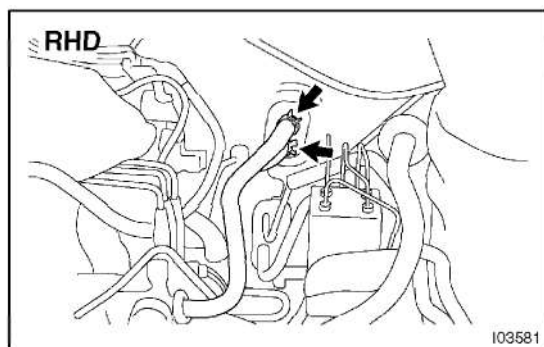
3. DISCONNECT WATER HOSES FROM HEATER RADIATOR PIPES

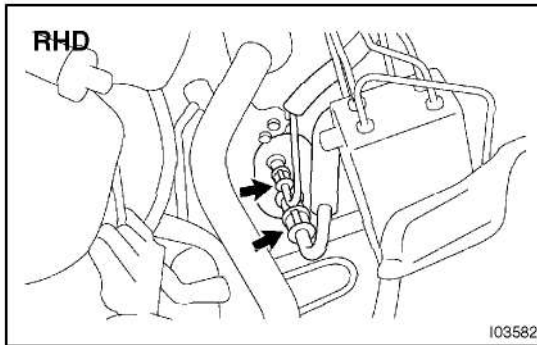
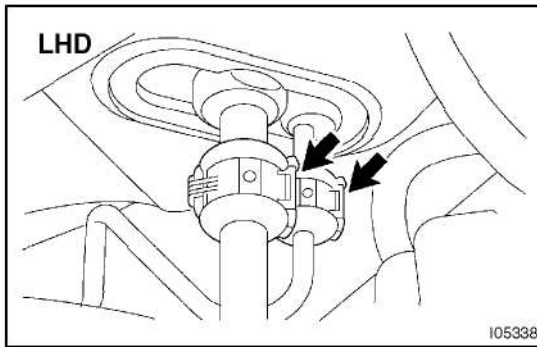
- Using pliers, grip the claw of the hose clip and slide the hose clip along the hose.
- Disconnect the water hoses.
- Remove the pipe grommet.

HINT:

At the time of installation, please refer to the following item.

Push the water hose on to the heater radiator pipe as far as the pipe grommet and install the hose clip.

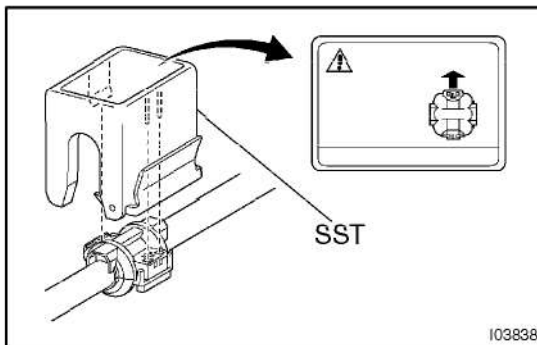




4. DISCONNECT LIQUID AND SUCTION TUBES

- (a) Using SST, remove the piping clamps.

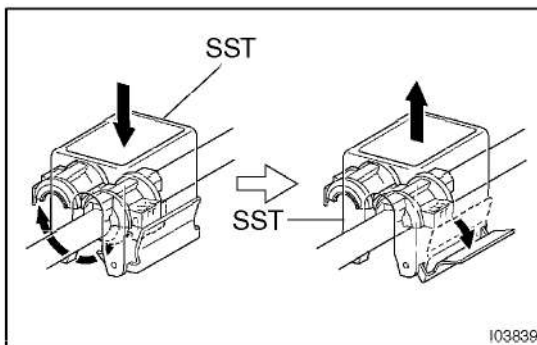
SST 09870-00025 (Liquid tube)
09870-00015 (Suction tube)



- (1) Insert SST to piping clamps.

HINT:

Confirm the direction of the piping clamp claw and SST using the illustration showing on the caution label.



- (2) Push down SST and release the clamp lock.

NOTICE:

Be careful not to deform the tubes, when pushing SST.

- (3) Pull SST slightly and push the release lever, then remove piping clamp with SST.
(4) Remove the piping clamp from SST.

- (b) Disconnect the both tubes.

NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

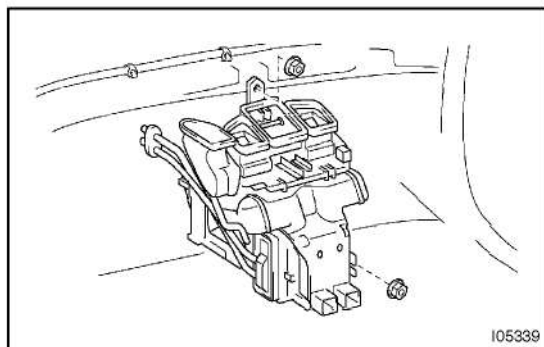
HINT:

At the time of installation, please refer to the following item.

- Lubricate 4 new O-rings with compressor oil install them to the tubes.
- After connection, check the fitting for claw of the piping clamp.

5. REMOVE THESE PARTS:

- (a) Blower unit
(See page AC-38)
- (b) Instrument panel and reinforcement
(See page BO-113)

**6. REMOVE A/C UNIT**

- (a) Slide the floor carpet backward.
- (b) Remove the screw and 2 rear heater ducts.
- (c) Remove the 2 nuts and A/C unit.

DISASSEMBLY

1. REMOVE HEATER RADIATOR

- (a) Remove the heater core cover.
- (b) LHD Models:
Remove the 3 screws and 2 clamps.
- (c) RHD Models:
Remove the 2 screws and 2 clamps.
- (d) Pullout the heater radiator with 2 heater radiator pipes.

2. REMOVE HEATER RADIATOR PIPES

- (a) Remove the 2 screws, 2 clamps and 2 heater radiator pipes.
- (b) Remove the 2 O-rings from heater radiator pipes.

HINT:

Do not reuse the 2 O-rings.

3. Manual A/C:

REMOVE BLOWER RESISTOR

Remove the 2 screws and blower resistor.

4. Auto A/C:

REMOVE BLOWER MOTOR LINEAR CONTROLLER

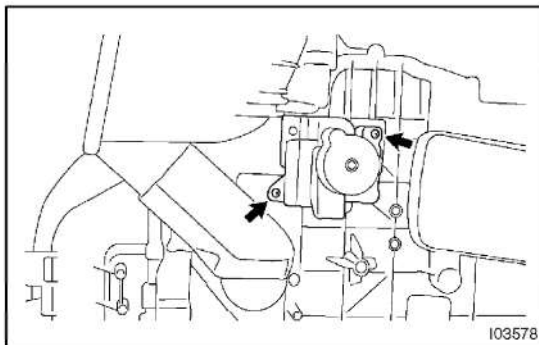
Remove the 2 screws and controller.

5. REMOVE AIR REFINER FILTER

- (a) Remove the filter cover.
- (b) Pull out the filter.

6. REMOVE THESE PARTS:

- (a) 2 air ducts
- (b) Drain hose
- (c) Mode control cable



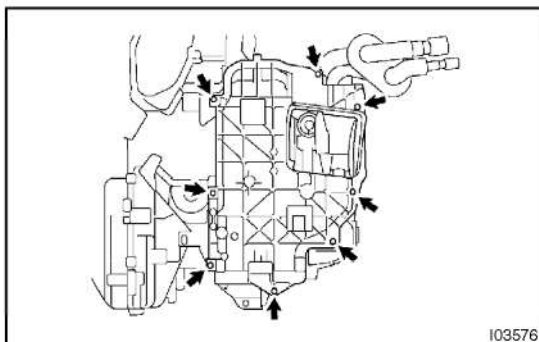
7. Auto A/C Only:

REMOVE AIR MIX SERVOMOTOR

- (a) Disconnect the control link.
- (b) Remove the 2 screws and servomotor.

8. REMOVE EVAPORATOR TEMPERATURE SENSOR

- (a) Disconnect the connector clamp.
- (b) Using a screwdriver, pull out the sensor.



9. REMOVE EVAPORATOR

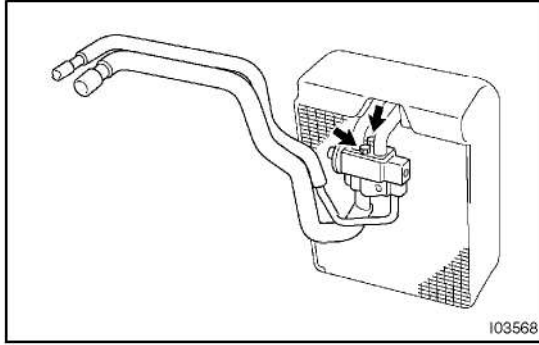
- (a) Remove the 8 screws and evaporator cover.
- (b) Pull out the evaporator.
- (c) Release the 4 claws and remove the plate.

HINT:

At the time of reassembly, please refer to the following item.
If evaporator is replaced, add compressor oil to evaporator.

Add 40 cc (1.4 fl.oz.)

Compressor oil: ND-OIL 8 or equivalent

**10. REMOVE EXPANSION VALVE**

Using a hexagon wrench, remove the 2 bolts and separate the evaporator and expansion valve.

Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)

HINT:

At the time of reassembly, please refer to the following item.
Lubricate 4 new O-rings with compressor oil and install the valve.

REASSEMBLY

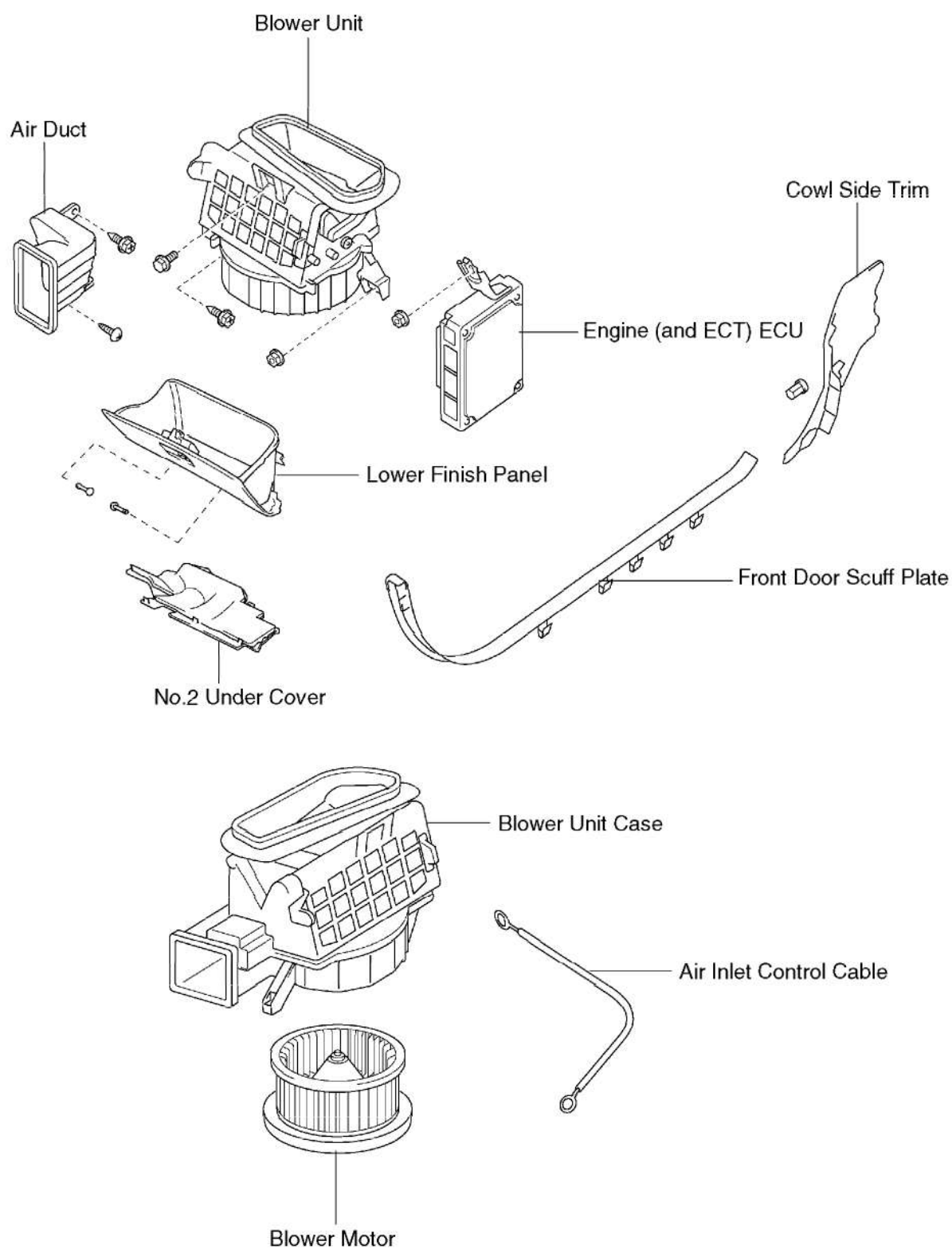
Reassembly is in the reverse order of disassembly (See page AC-33).

INSTALLATION

Installation is in the reverse order of removal (See page AC-30).

BLOWER UNIT COMPONENTS

AC1AD-01

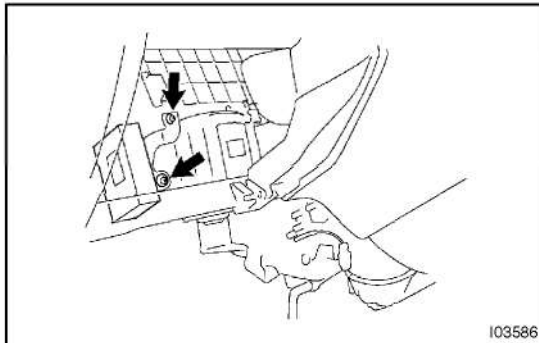


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REMOVAL

1. REMOVE THESE PARTS:

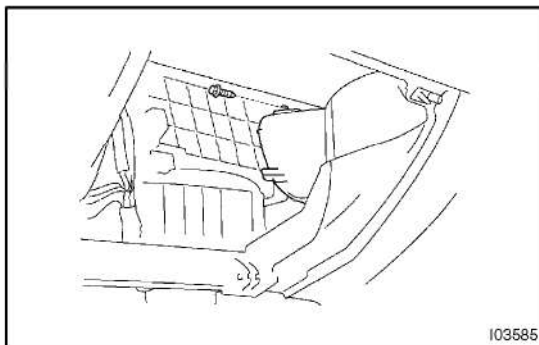
- (a) Front door scuff plate on passenger side
- (b) Cowl side trim on passenger side
- (c) No.2 under cover
- (d) Lower finish panel
(See page BO-113)
- (e) Engine (and ECT) ECU



2. RHD Models Only:

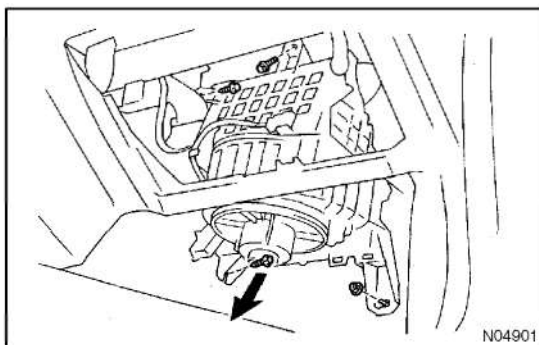
REMOVE TVSS ECU

- (a) Disconnect the connector.
- (b) Remove the 2 screws and ECU.



3. REMOVE AIR DUCT

Remove the 2 screws and duct.



4. REMOVE BLOWER UNIT

- (a) Disconnect the connectors.
- (b) Remove the bolt, screw and nut.
- (c) Disconnect the air inlet control cable.
- (d) Remove the blower unit.

DISASSEMBLY

1. Manual A/C Models:

REMOVE A/C AMPLIFIER

Release the 2 claws and amplifier.

2. **REMOVE BLOWER MOTOR**

Remove the 3 screws and blower motor.

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC-39).

INSTALLATION

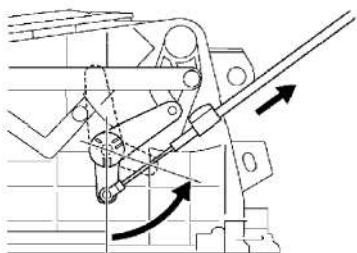
Installation is in the reverse order of removal
(See page AC-38).

1. AFTER INSTALLATION, CHECK AIR INLET CONTROL LEVER OPERATION

Move the lever left and then check that there the lever is click on operation, check there is not recoil of lever.

If operation is not as specified, proceed to next step.

LHD Models:



103588

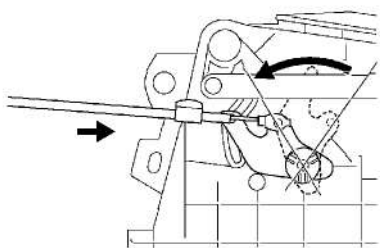
2. ADJUST AIR INLET CONTROL CABLE

- Set air inlet control lever to "RECIRC" position.
- Set the air inlet link to "RECIRC" position and connect the cable and lock the clamp.

HINT:

- LHD Models:**
Lock the clamp during lightly pulling the outer cable in the direction, as shown in the illustration by an arrow.
- RHD Models:**
Lock the clamp during lightly pushing the outer cable in the direction, as shown in the illustration by an arrow.

RHD Models:



103587

COMPRESSOR AND MAGNETIC CLUTCH

AC1A1-01

ON-VEHICLE INSPECTION

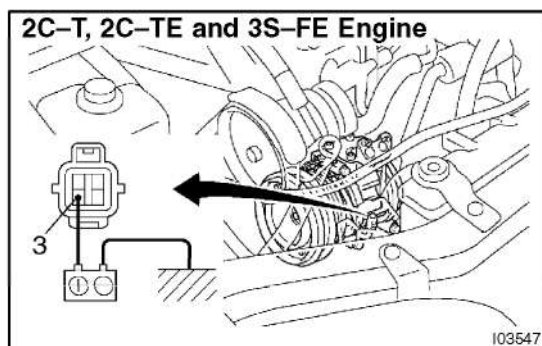
1. MAKE THESE VISUAL CHECKS:

- (a) Leakage of grease from the clutch bearing
- (b) Signs of oil on the pressure plate or rotor

2. INSPECT MAGNETIC CLUTCH BEARING FOR NOISE

- (a) Start engine.
- (b) Check for abnormal noise from the compressor when the A/C switch is OFF.

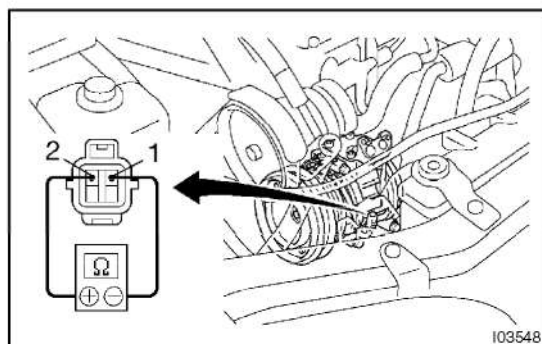
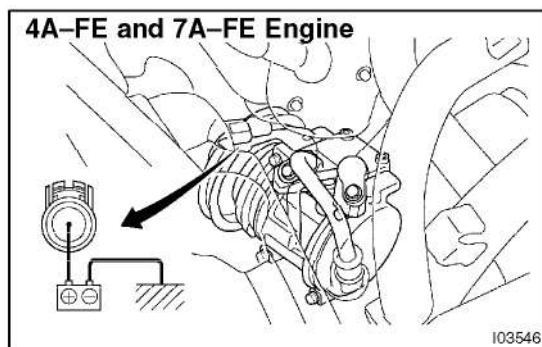
If abnormal noise is being emitted, replace the magnetic clutch.



3. INSPECT MAGNETIC CLUTCH OPERATION

- (a) Disconnect the connector.
- (b) Connect the positive (+) lead from the battery to the terminal on the magnetic clutch connector and the negative (-) lead to the body ground.
- (c) Check that the magnetic clutch is energized.

If operation is not as specified, replace the magnetic clutch.



4. 2C-T, 2C-TE and 3S-FE Engine Models:

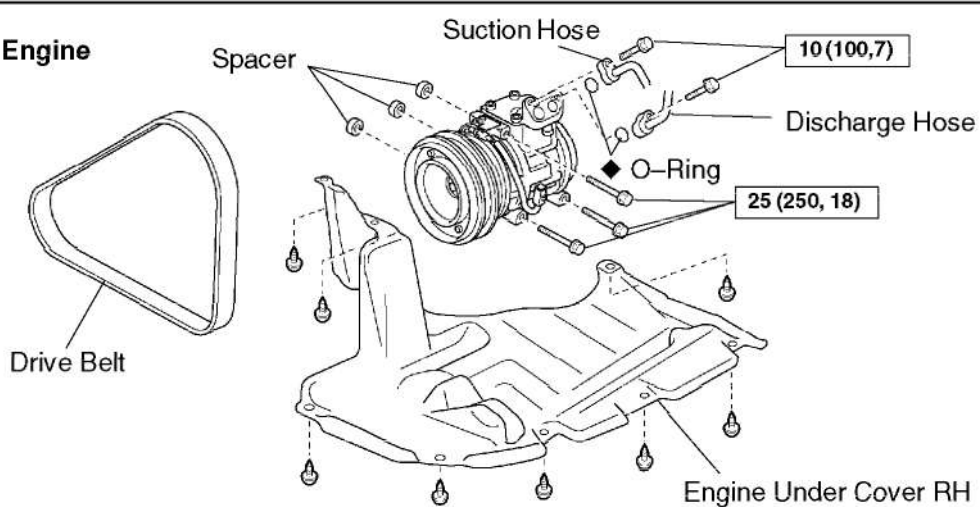
INSPECT COMPRESSOR LOCK SENSOR RESISTANCE

- (a) Disconnect the connector.
- (b) Measure resistance between terminals 1 and 2.

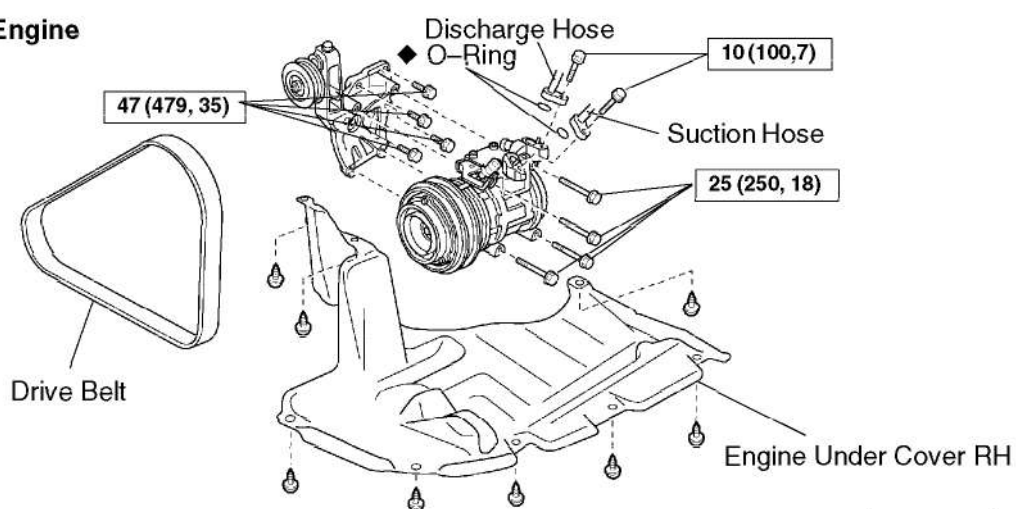
Standard resistance: 65 – 125 Ω at 20 °C (68 °F)

COMPONENTS

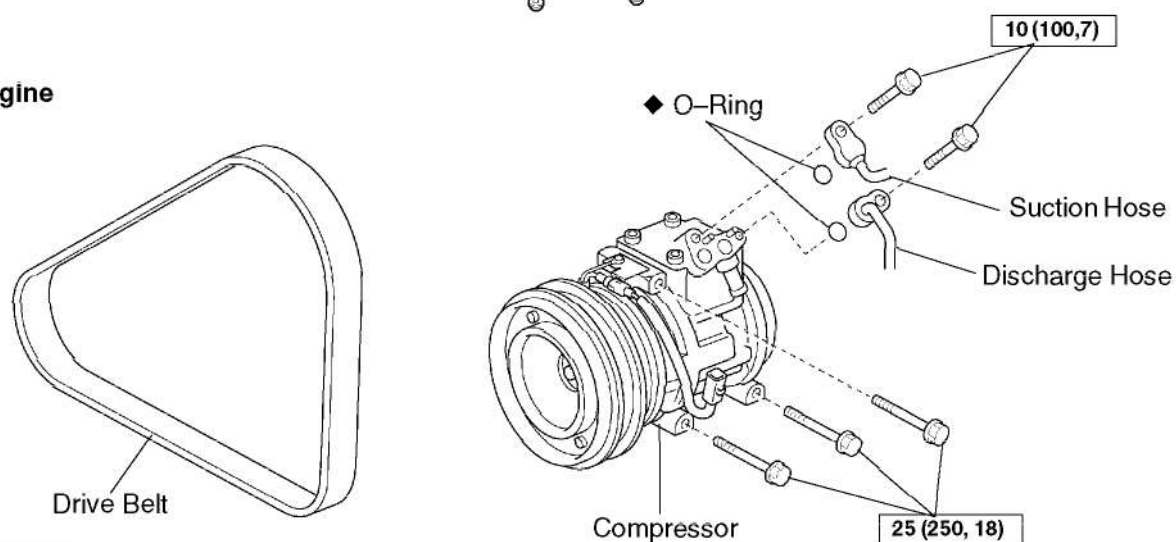
2C-TE and 2C-TE Engine



4A-FE and 7A-FE Engine



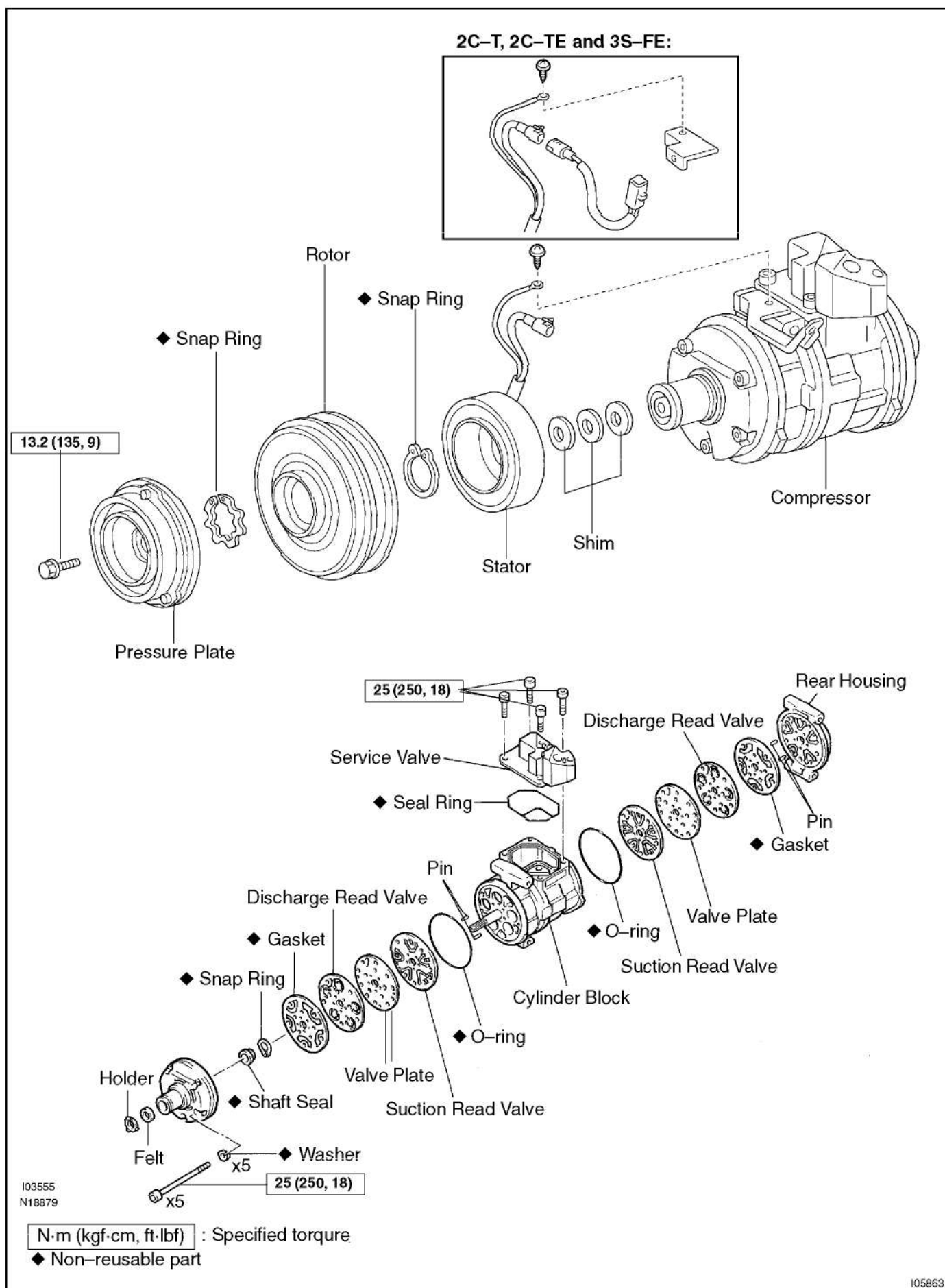
3S-FE Engine



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103558
103560

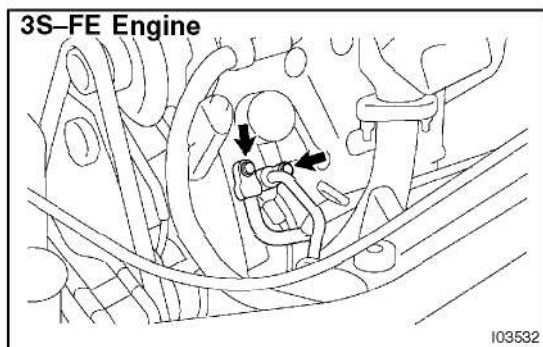
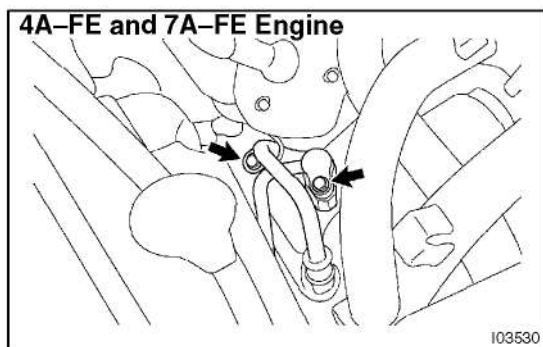
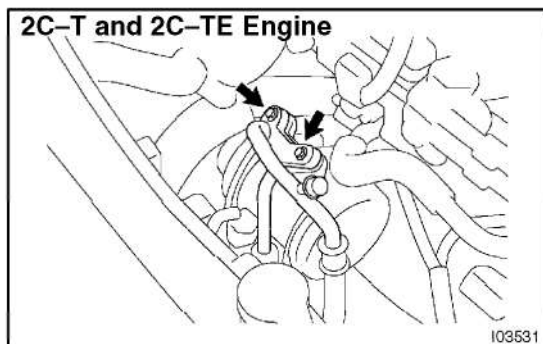
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part



REMOVAL

1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX. 10 MINUTES WITH A/C ON
2. STOP ENGINE
3. DISCONNECT NEGATIVE (-) TERMINAL CABLE FROM BATTERY
4. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM
5. 2C-T, 2C-TE, 4A-FE and 7A-FE Engine Models:
REMOVE ENGINE UNDER COVER RH
6. REMOVE DRIVE BELT
(See page AC-19)

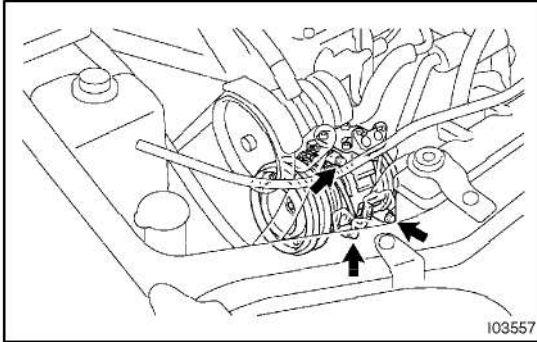


7. DISCONNECT DISCHARGE AND SUCTION HOSES

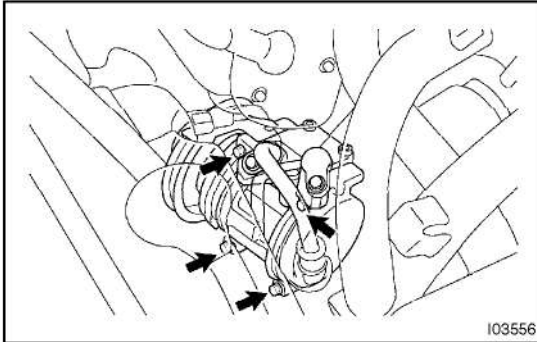
Remove the 2 bolts and disconnect the both hoses.

NOTICE:

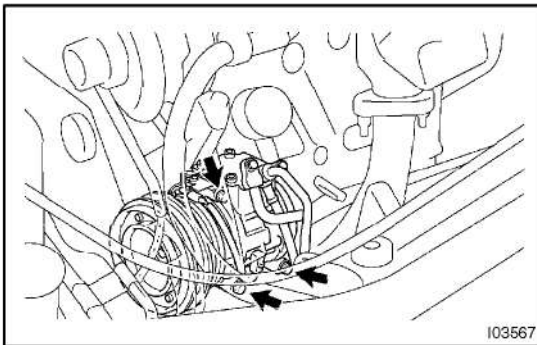
Cap the open fittings immediately to keep moisture or dirt out of the system.

**8. 2C-T and 2C-TE Engine Models:****REMOVE COMPRESSOR**

- (a) Disconnect the connector.
- (b) Remove the 3 bolts and compressor.

**9. 4A-FE and 7A-FE Engine Models:****REMOVE COMPRESSOR**

- (a) Disconnect the connector.
- (b) Remove the 4 bolts and compressor.

**10. 3S-FE Engine Models:****REMOVE COMPRESSOR**

- (a) Disconnect the connector.
- (b) Remove the 3 bolts, compressor and spacer.



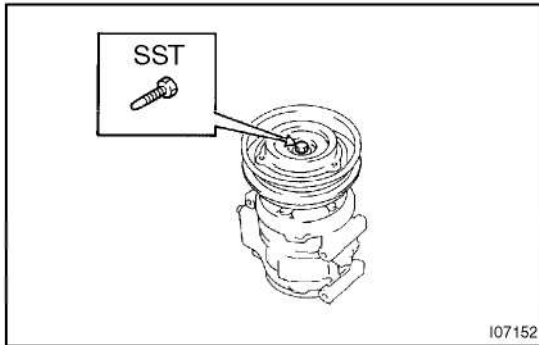
DISASSEMBLY

1. DISASSEMBLE MAGNETIC CLUTCH

(a) Remove the pressure plate.

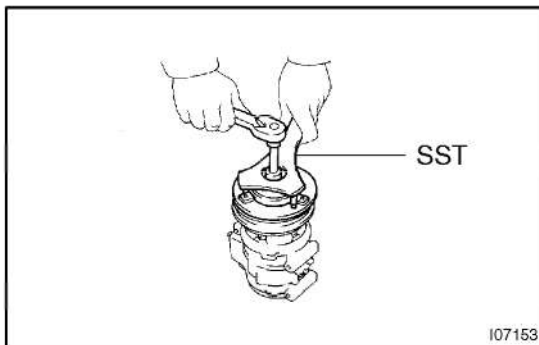
- (1) Using a SST and socket wrench, remove the shaft bolt.

SST 07112-76060



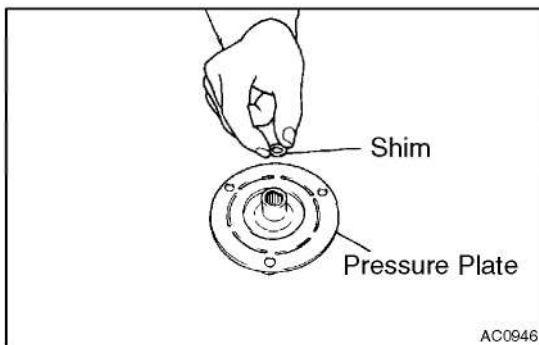
- (2) Install a SST on the pressure plate.

SST 07112-66040

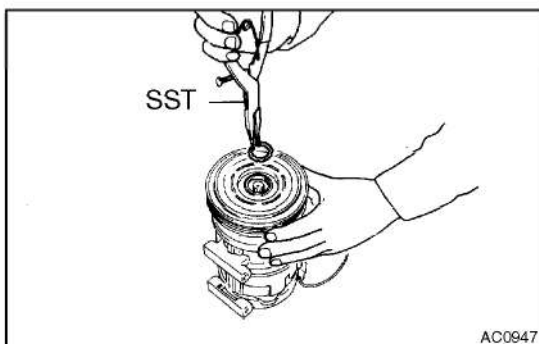


- (3) Using a SST and socket wrench, remove the pressure plate.

SST 07112-66040, 07112-76060



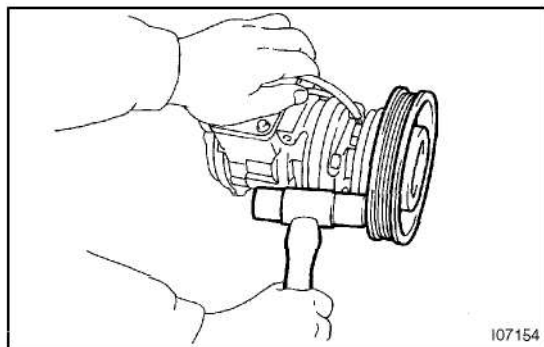
- (4) Remove the shims from the pressure plate.



(b) Remove the rotor.

- (1) Using a SST remove the snap ring.

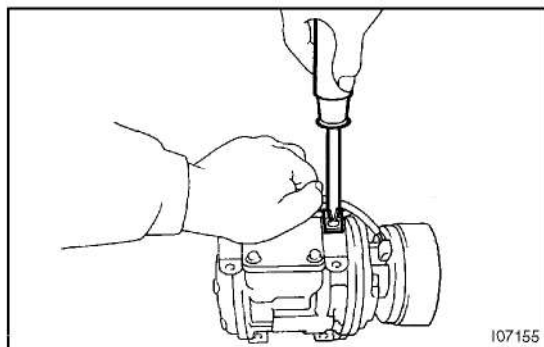
SST 07114-08402



- (2) Using a plastic hammer, tap the rotor off the shaft.

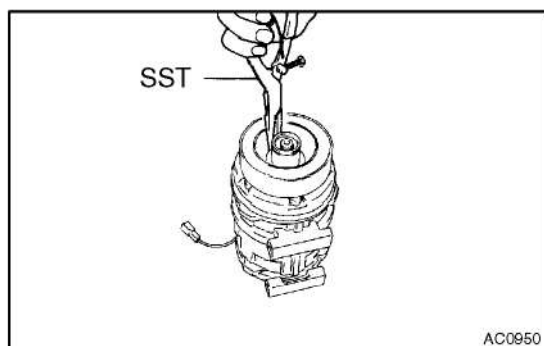
NOTICE:

Be careful not to damage the pulley when tapping on the rotor.



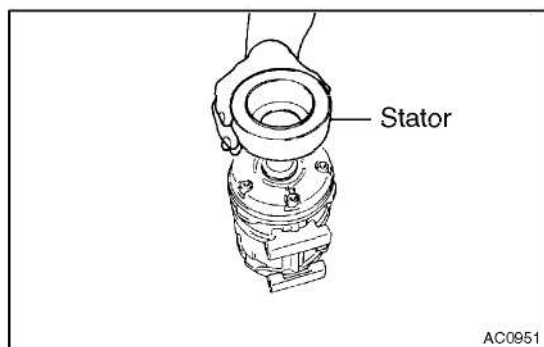
- (c) Remove the stator.

- (1) Disconnect the stator lead wire from the compressor housing.

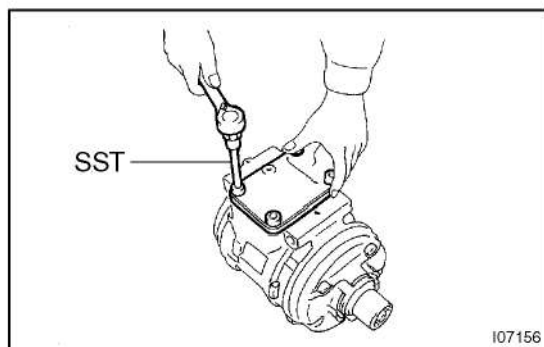


- (2) Using a SST, remove the snap ring.

SST 07114-84020



- (3) Remove the stator.



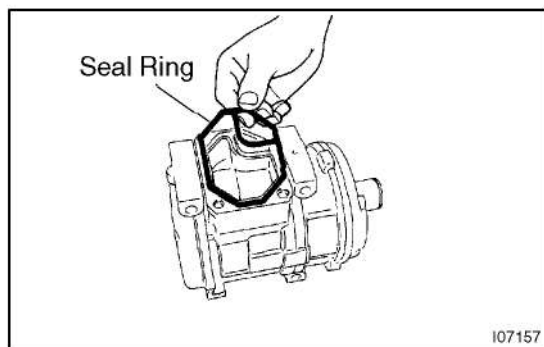
2. DISASSEMBLE COMPRESSOR

- (a) Remove the service valve.

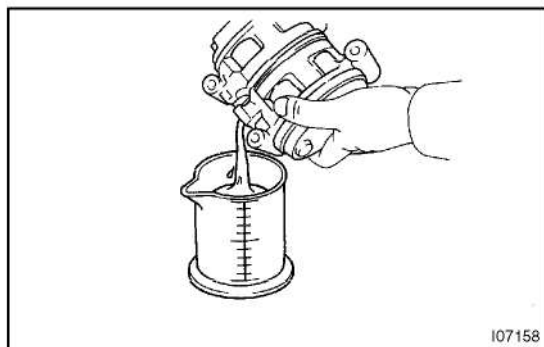
- (1) Disconnect the connector.

- (2) Using SST, remove the 4 bolts and service valve.

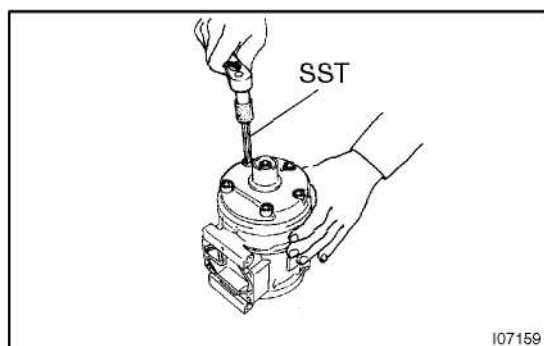
SST 07110-61050



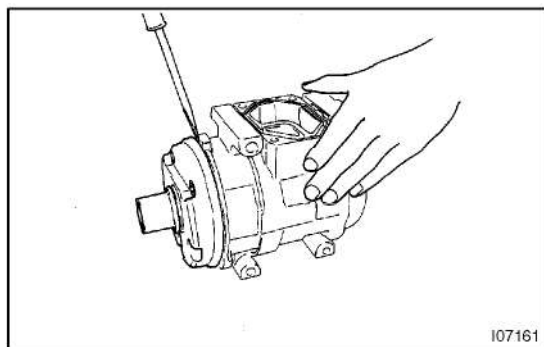
- (3) Remove the seal ring from the cylinder block.
- (4) Discard the seal ring.



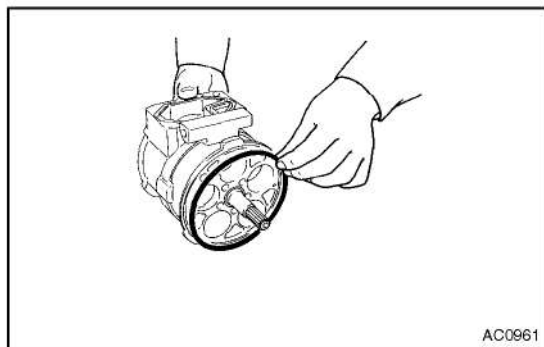
- (b) Drain compressor oil into measuring flask.
Measure the quantity of drained oil because the same amount should be replaced later.



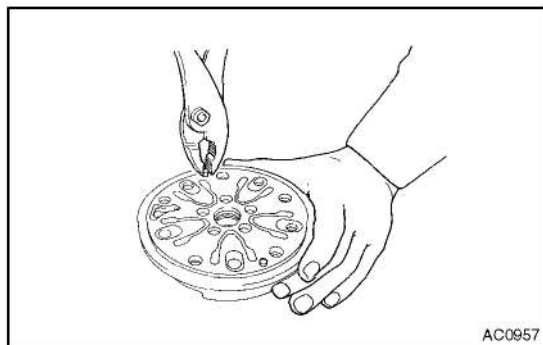
- (c) Remove front housing.
(1) Using SST, remove the 5 through bolts and 5 washers.
SST 07110-61050



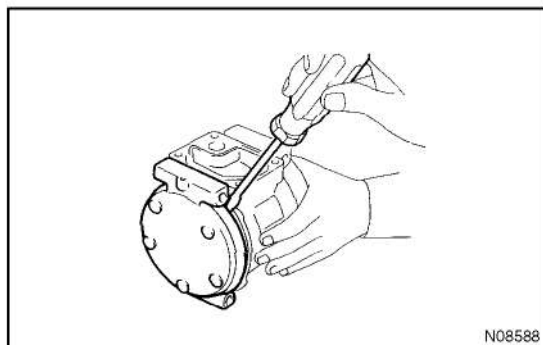
- (2) Using a screwdriver, remove the front housing.
NOTICE:
Be careful not to scratch the sealing surface of the front housing.



- (3) Remove a O-ring.
- (4) Discard a O-ring.



- (d) Remove the 2 pins.
Using pliers, pull out 2 pins from front housing.
- (e) Remove these parts from front housing:
 - (1) Suction reed valve
 - (2) Front valve plate
 - (3) Discharge reed valve
 - (4) Gasket

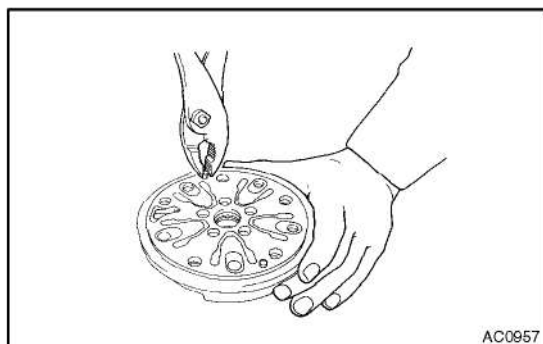


- (f) Remove the rear housing.
 - (1) Using a screwdriver, remove the rear housing.

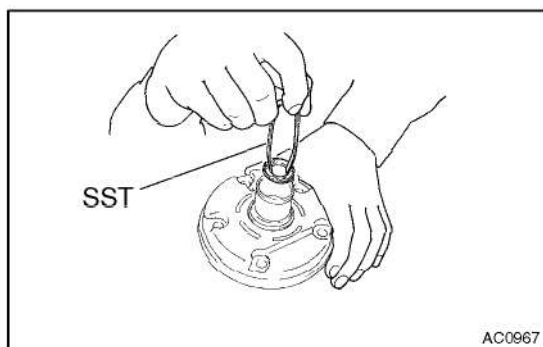
NOTICE:

Be careful not to scratch the sealing surface of the rear housing.

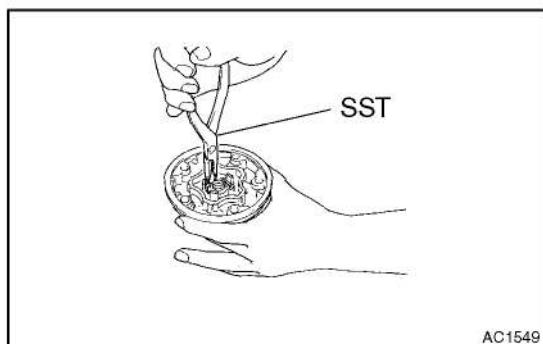
- (2) Remove a O-ring.
- (3) Discard a O-ring.



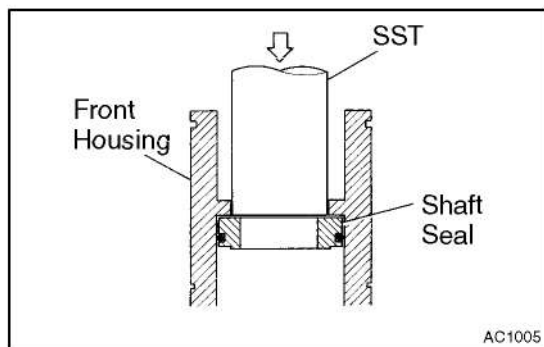
- (g) Remove the 2 pins.
Using pliers, pull out 2 pins from rear housing.
- (h) Remove these parts from rear housing:
 - (1) Suction reed valve
 - (2) Rear valve plate
 - (3) Discharge reed valve
 - (4) Gasket



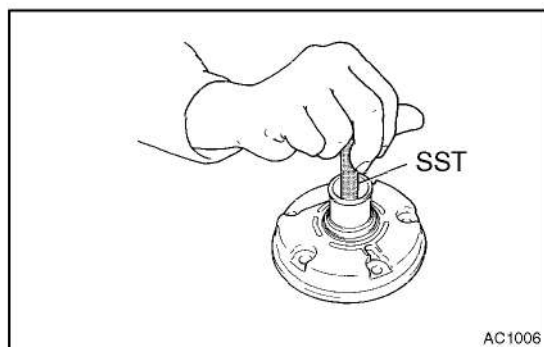
- (i) Remove the felt.
 - (1) Set SST on the shaft.
SST 07112-15020
 - (2) Pull out the felt with felt holder of front housing.



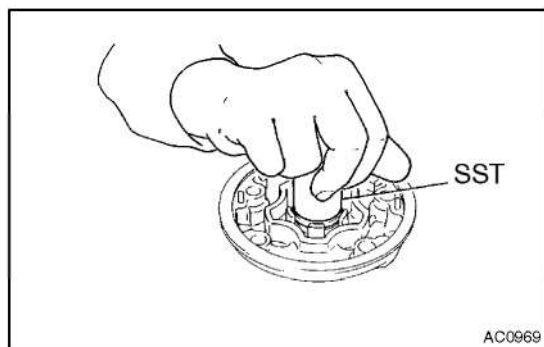
- (j) Remove the shaft seal.
 - (1) Using SST, remove the snap ring.
SST 07114-87010



- (2) Set SST on the shaft seal.
SST 07112-87030



- (3) Using SST, put the shaft seal out of the front housing.
SST 07112-85030
(4) Remove the O-ring from the shaft seal.
(5) Discard the O-ring.



REASSEMBLY

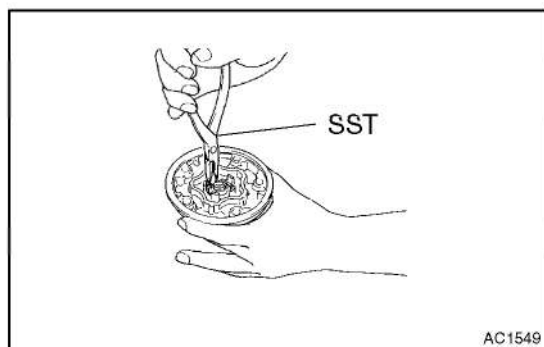
1. ASSEMBLE COMPRESSOR

- (a) Install new shaft seal.
- (1) Fit the shaft seal onto SST, and install the shaft seal into the front housing.

SST 07112-85020

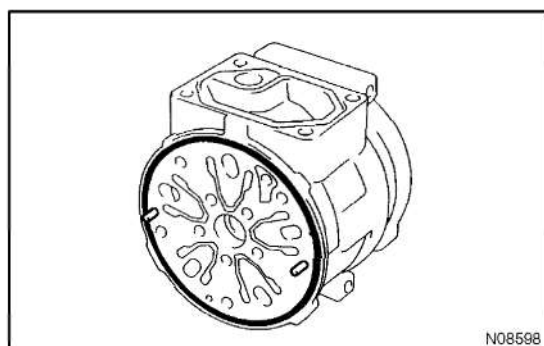
HINT:

Clean up the surface of the shaft seal with compressor oil.

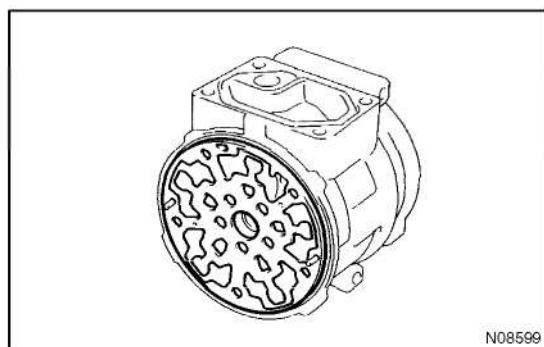


- (2) Using SST, install the snap ring.

SST 07114-84010



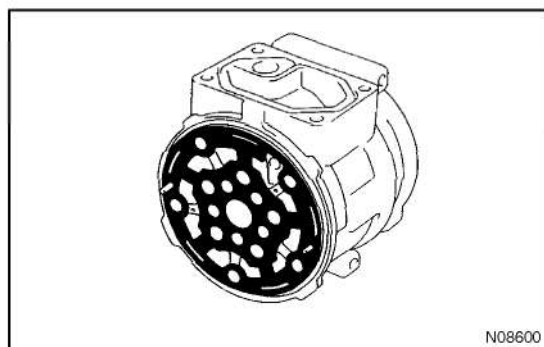
- (b) Install rear housing on cylinder block.
- (1) Install 2 pins on cylinder block.
- (2) Lubricate a new O-ring with compressor oil and install the O-ring on cylinder block.
- (3) Install the suction reed valve over the pins on the cylinder.



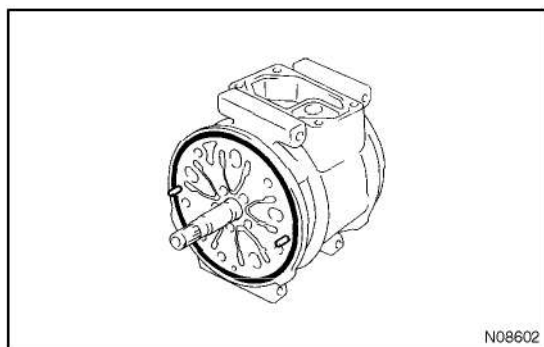
- (4) Install the rear valve plate together with the discharge valve over the pins on the cylinder block.

HINT:

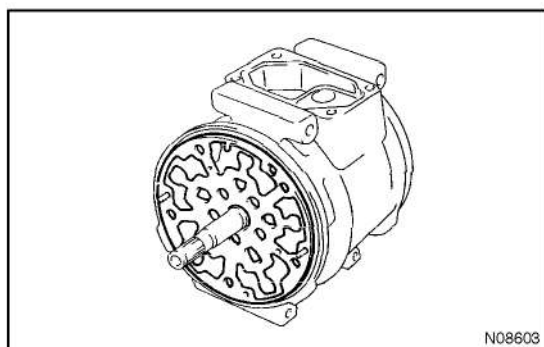
The rear valve plate is marked with an "R".



- (5) Lubricate a new gasket with compressor oil and install the gasket on the valve plate.
- (6) Install the rear housing on cylinder block.



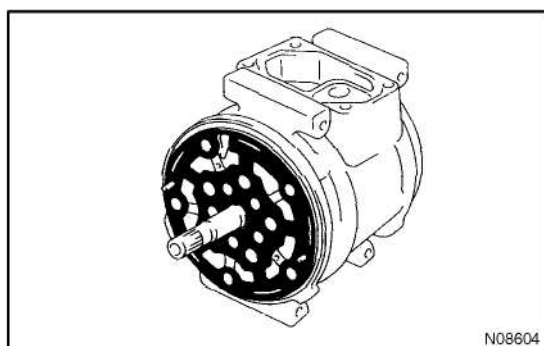
- (c) Install the front housing on cylinder block.
- (1) Install the 2 pins on cylinder block.
 - (2) Lubricate a new O-ring with compressor oil and install the O-ring on cylinder block.
 - (3) Install the front suction reed valve over the pins on the cylinder block.



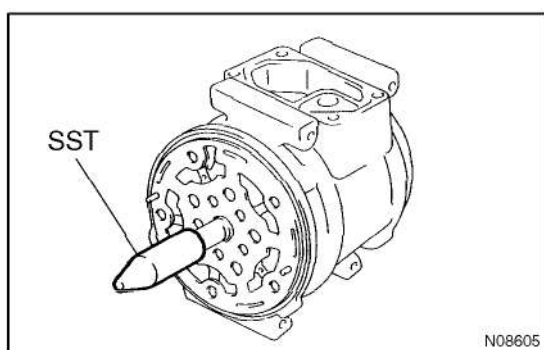
- (4) Install the valve plate together with the discharge reed valve over the pins on the cylinder block.

HINT:

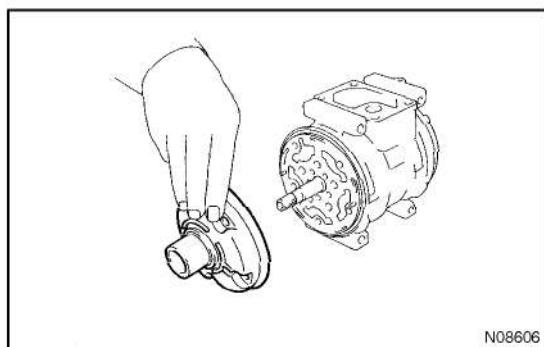
The front valve plate is marked with an "F".



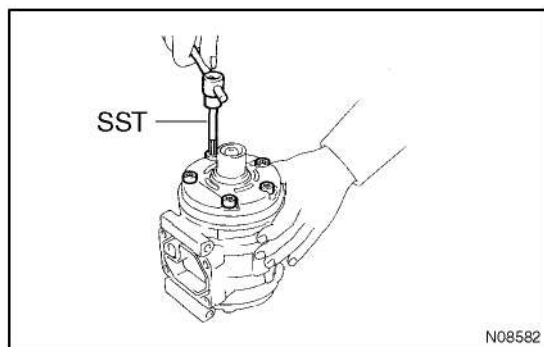
- (5) Lubricate a new gasket with compressor oil and install the gasket on the valve plate.



- (6) Set SST on the shaft to protect the lip seal.



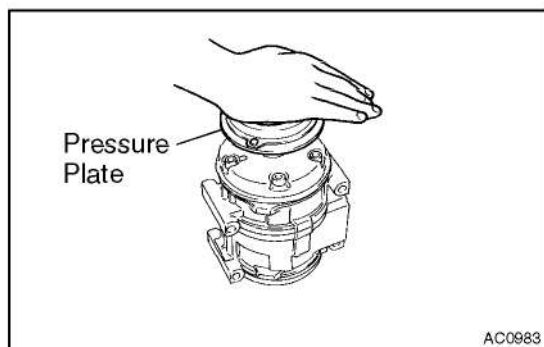
- (7) Install the front housing on the cylinder block.
- (8) Remove SST from the shaft.



- (9) Using SST and torque wrench, gradually tighten the 5 through bolts 2 or 3 times.

SST 07110-61050

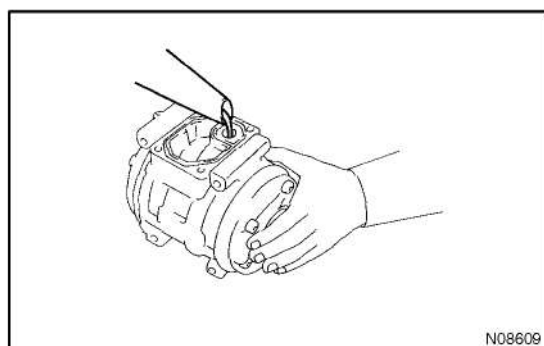
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)



- (d) Install the felt.

(1) Set the felt with felt holder to front housing.

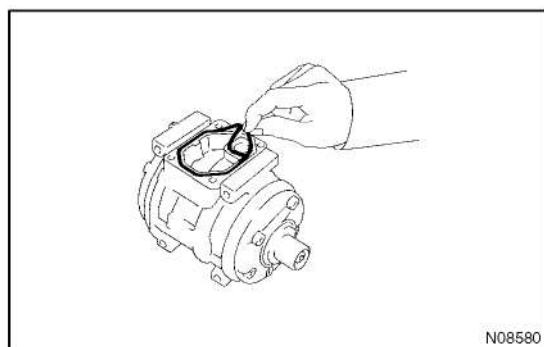
(2) Using pressure plate of magnetic clutch, install the felt.



- (e) Pour compressor oil into compressor.

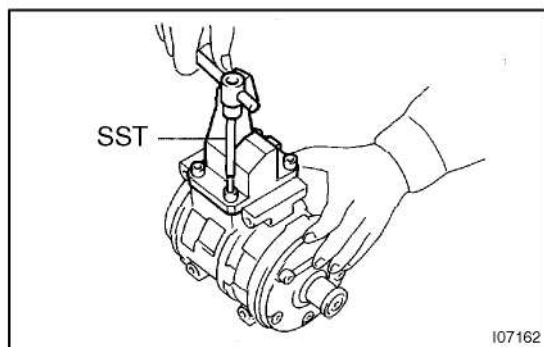
Add the same quantity of oil as is removed, plus 20 cc (0.68 fl.oz.) into the compressor.

Compressor oil: ND-OIL 8 or equivalent.



- (f) Install the service valve.

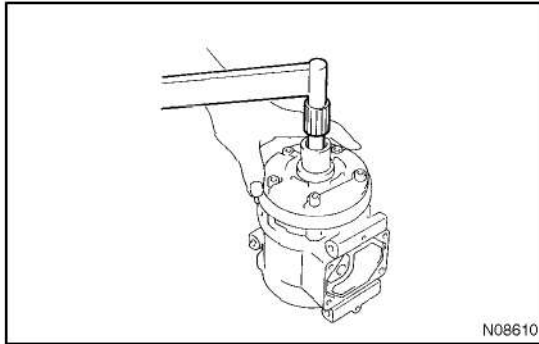
(1) Lubricate a new seal ring with compressor oil and install the seal ring on cylinder block.



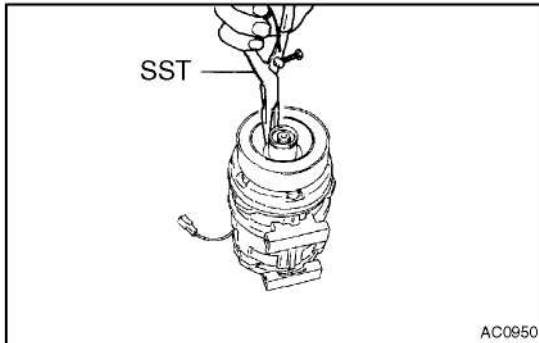
(2) Using SST and torque wrench, install the service valve with the 4 bolts.

Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(3) Connect the connector.

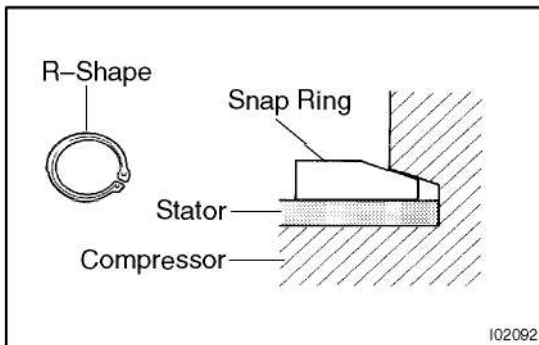


- (g) Check shaft starting torque.
Torque: 2.9 N·m (30 kgf·cm, 26 in.·lbf)



2. ASSEMBLE MAGNETIC CLUTCH

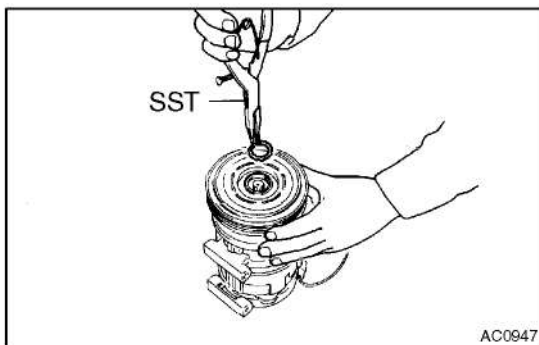
- (a) Install the stator.
 (1) Install the stator on compressor.
 (2) Using SST, install the new snap ring.
 SST 07114-84020



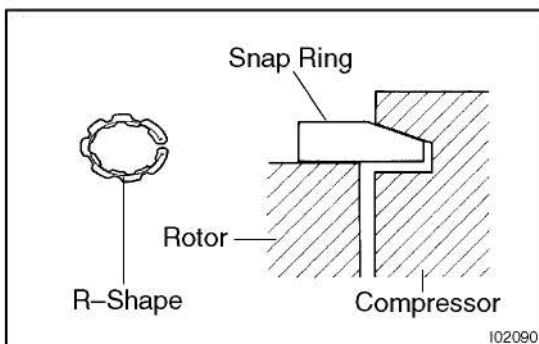
NOTICE:

The snap ring should be installed so that its beveled faces up.

- (3) Connect the stator lead wire to the compressor.

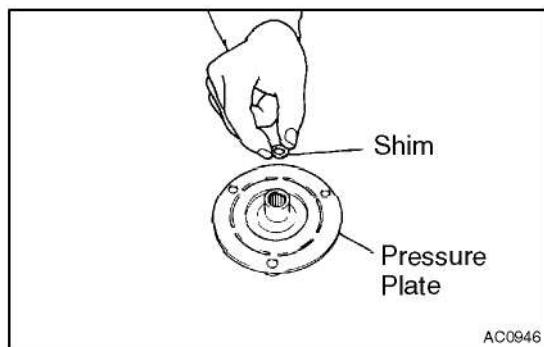


- (b) Install the rotor.
 (1) Install the rotor on compressor.
 (2) Using SST, install the new snap ring.
 SST 07114-84020

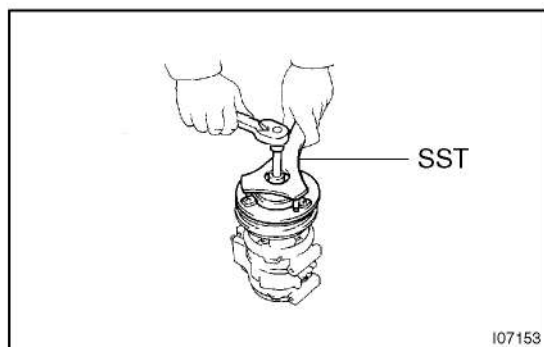


NOTICE:

The snap ring should be installed so that beveled side faces up.



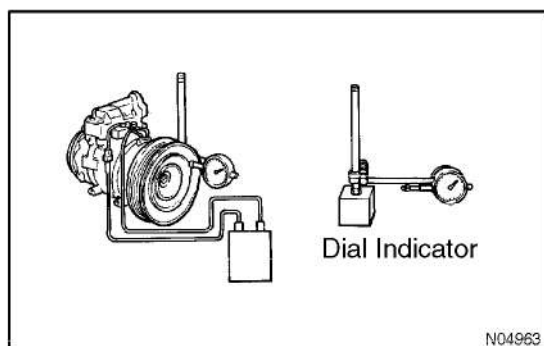
- (c) Install the pressure plate.
 (1) Install the shims to pressure plate.



- (2) Install the pressure plate on the rotor.
 (3) Using SST and a torque wrench, install the shaft bolt.

Torque: 13.2 N·m (135 kgf·cm, 9 ft·lbf)

SST 07112-76060



3. INSPECT MAGNETIC CLUTCH CLEARANCE

- (a) Set the dial indicator to the pressure plate of the magnetic clutch.
 (b) Connect the magnetic clutch lead wire to the positive (+) terminal of the battery.
 (c) Check the clearance between the pressure plate and rotor when connecting the negative (-) terminal to the battery.

Standard clearance:

0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

If the clearance is not within the standard clearance, adjust the clearance using shims to obtain the standard clearance.

Shim thickness:

0.1 mm (0.004 in.)

0.3 mm (0.012 in.)

0.5 mm (0.020 in.)

INSTALLATION

1. 2C-T and 2C-TE Engine Models:

INSTALL COMPRESSOR

- (a) Install the compressor with 3 bolts.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
- (b) Connect the connector.

2. 4A-FE and 7A-FE Engine Models:

INSTALL COMPRESSOR

- (a) Install the compressor with 4 bolts.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
- (b) Connect the connector.

3. 3S-FE Engine Models:

INSTALL COMPRESSOR

- (a) Install the compressor with 3 bolts and spacer.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
- (b) Connect the connector.

4. CONNECT DISCHARGE AND SUCTION HOSES

Connect the both hoses with the 2 bolts.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

CAUTION:

Hoses should be connected immediately after the caps have removed.

HINT:

Lubricate 2 new O-rings with compressor oil and install the hoses.

5. INSTALL AND CHECK DRIVE BELT

(See page AC-20, AC-18)

6. 2C-T, 2C-TE, 4A-FE and 7A-FE Engine Models:

INSTALL ENGINE UNDER COVER RH

7. CONNECT NEGATIVE (-) TERMINAL CABLE TO BATTERY

8. EVACUATE IR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT

Specified amount: 450 ± 50 g (15.87 ± 1.76 oz.)

9. INSPECT FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check the tightening torque at the joints.

10. INSPECT A/C OPERATION

CONDENSER

AC1AC-01

ON-VEHICLE INSPECTION

1. INSPECT CONDENSER FINS FOR BLOCKAGE OR DAMAGE

- If the fins are clogged, wash them with water and dry with compressed air.

NOTICE:

Be careful not to damage the fins.

- If the fins are bent, straighten them with a screwdriver or pliers.

2. INSPECT CONDENSER AND FITTING FOR LEAKAGE

Using a gas leak detector, check for leakage.

If there is leakage, check the tightening torque at the joints.

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

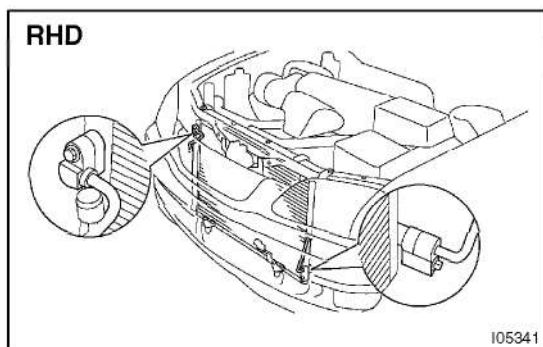
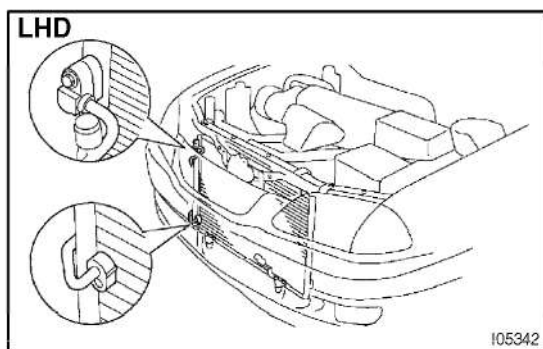
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 450 ± 50 g (15.87 ± 1.76 oz.)

2. REMOVE 2 RADIATOR UPPER SUPPORTS



3. DISCONNECT DISCHARGE HOSE AND LIQUID TUBE

Remove the 2 bolts and disconnect the hose and tube.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

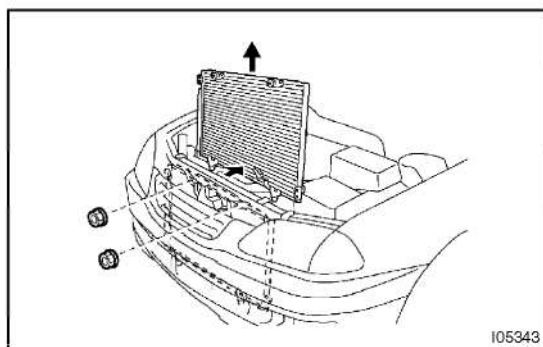
NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

HINT:

At the time of installation, please refer to the following item.

Lubricate a new O-ring with compressor oil and install them to the tube.



4. REMOVE CONDENSER

- Remove the 2 nuts from condenser upper mountings.
- Push the radiator toward the engine.
- Push the condenser toward the radiator and pull it upward.

HINT:

At the time of installation, please refer to the following item.

If condenser is replaced, add compressor oil to the compressor.

Add 40 – 50 cc (1.4 – 1.7 fl.oz.)

Compressor oil : ND-OIL 8 or equivalent

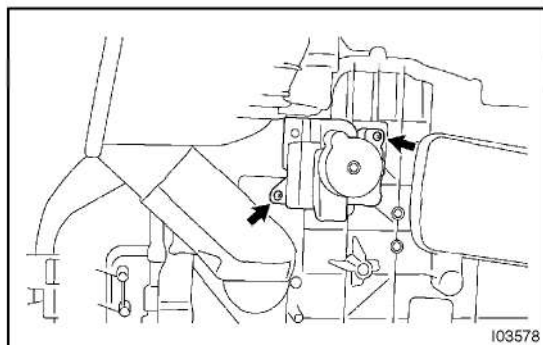
INSTALLATION

Installation is in the reverse order of removal (See page AC-59)

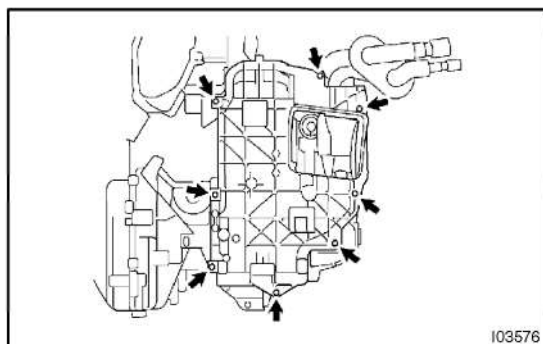
EVAPORATOR REMOVAL

AC1AR-01

1. REMOVE A/C UNIT
(See page AC-30)



2. REMOVE AIR MIX SERVOMOTOR
Remove the 2 screws and servomotor.



3. REMOVE EVAPORATOR
 - (a) Pull out the thermistor.
 - (b) Remove the 8 screws and evaporator cover.
 - (c) Pull out the evaporator.

HINT:

At the time of installation, please refer to the following item.
If evaporator is replaced add compressor oil to evaporator.

Add 40 cc (1.4 fl.oz.)

Compressor oil : ND-OIL 8 or equivalent

INSPECTION

1. CHECK EVAPORATOR FINS FOR BLOCKAGE

If the fins are clogged, clean them with compressor air.

NOTICE:

Never use water to clean the evaporator.

2. CHECK FITTINGS FOR CRACKS OR SCRATCHES

If necessary, repair or replace.

INSTALLATION

Installation is in the reverse order of removal (See page AC-61).

HEATER RADIATOR REMOVAL

AC1AU-01

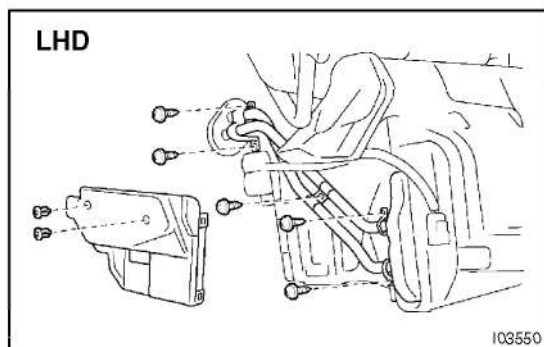
1. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not necessary to drain out all the coolant.

2. SLIDE FLOOR CARPET

Remove the 2 screws and slide the floor carpet.



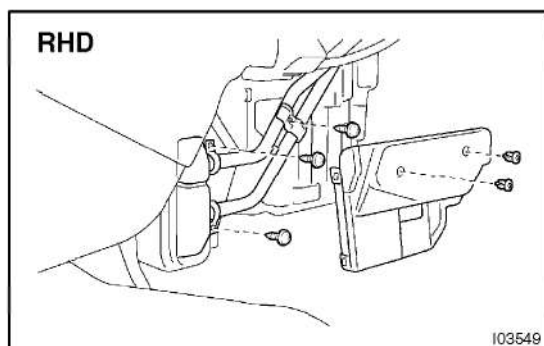
3. REMOVE HEATER RADIATOR

- (a) Remove the 2 clips and plate.
- (b) Remove the screw and piping clamp.
- (c) Remove the 2 screws, 2 clamps and 2 heater radiator pipes from the heater radiator.
- (d) Remove 2 O-rings from heater radiator pipes.

HINT:

At the time of installation, please refer to the following item.
Do not reuse 2 O-rings.

- (e) Pull out the heater radiator.



INSPECTION

INSPECT FINS FOR BLOCKAGE

If the fins are clogged, clean them with compressor air.

INSTALLATION

Installation is in the reverse order of removal (See page AC-64).

EXPANSION VALVE

AC1AX-01

ON-VEHICLE INSPECTION

1. CHECK QUANTITY OF GAS DURING REFRIGERANT CYCLE
2. SET ON MANIFOLD GAUGE SET
(See page AC-22)

3. RUN ENGINE

Run engine at 1,500 rpm for at least 5 minutes.

Then check that the high pressure reading is 1.37 – 1.57 MPa (14 – 16 kgf/cm², 199 – 228 psi).

4. CHECK EXPANSION VALVE

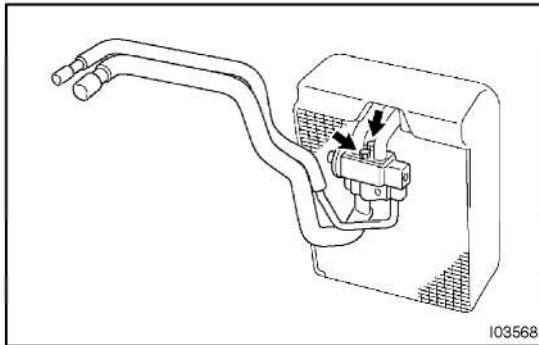
If the expansion valve is faulty, the low pressure reading will drop to 0 kPa (0 kgf/cm², 0 psi), otherwise it is OK.

HINT:

When the low pressure drops to 0 kPa (0 kgf/cm², 0 psi), check the receiver's IN and OUT sides for no temperature difference.

REMOVAL

1. REMOVE EVAPORATOR
(See page AC-61)



2. REMOVE EXPANSION VALVE

Using a hexagon wrench, remove the 2 bolts and separate the expansion valve, evaporator, liquid and suction tubes.

Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)

HINT:

At the time of installation, please refer to the following item.
Lubricate 4 new O-rings compressor oil and install the tubes and valve.

INSTALLATION

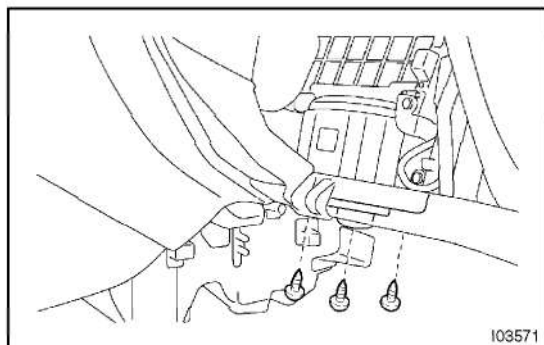
Installation is in the reverse order of removal (See page AC-68).

BLOWER MOTOR REMOVAL

AC1B3-01

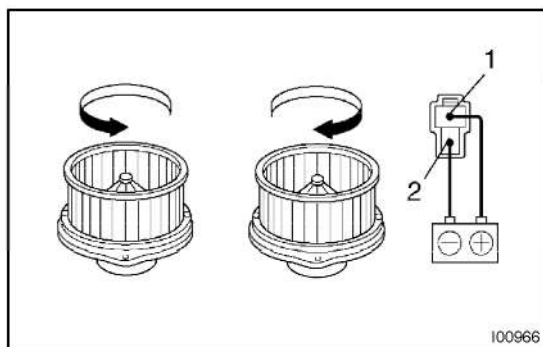
1. REMOVE THESE PARTS:

- (a) No.1 under cover
(See page BO-113)
- (b) Lower finish panel
(See page BO-113)



2. REMOVE MOTOR

- (a) Disconnect the connector.
- (b) Remove the 3 screws and the motor.



INSPECTION

INSPECT BLOWER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, then check that the motor operates smoothly.

If operation is not as specified, replace the blower motor.

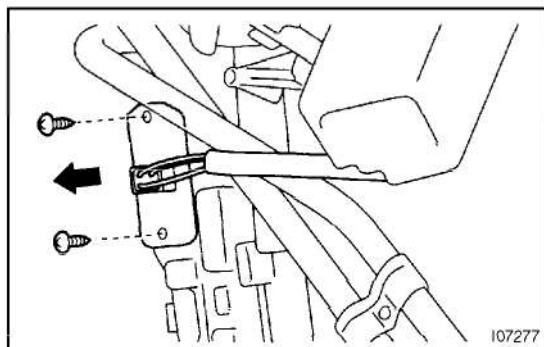
INSTALLATION

Installation is in the reverse order of removal (See page AC-70).

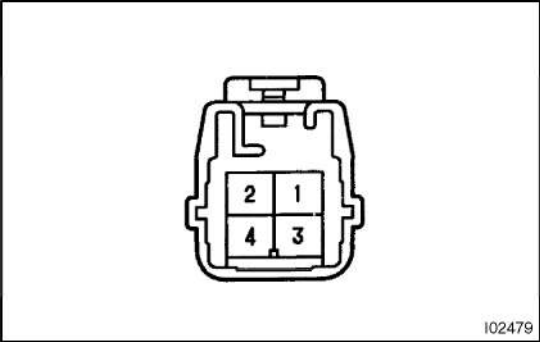
BLOWER RESISTOR REMOVAL

AC1BS-01

1. REMOVE LOWER FINISH PANEL
(See page BO-113)



2. REMOVE BLOWER RESISTOR
 - (a) Disconnect the connector.
 - (b) Remove the 2 screws and blower resistor.



INSPECTION
INSPECT BLOWER RESISTOR RESISTANCE

Tester connection	Condition	Specified condition
1 – 3	Constant	Approx. 2.0 Ω
2 – 3	Constant	Approx. 0.8 Ω
2 – 4	Constant	Approx. 0.4 Ω

If resistance is not as specified, replace the blower resistor.

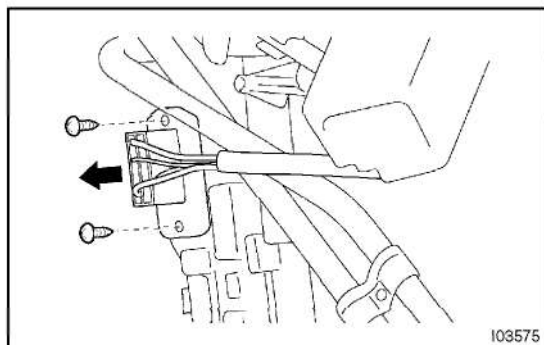
INSTALLATION

Installation is in the reverse order of removal (See page AC-73).

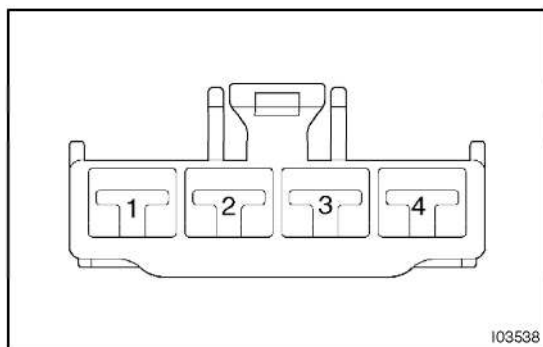
BLOWER MOTOR LINEAR CONTROLLER REMOVAL

AC1B6-01

1. REMOVE LOWER FINISH PANEL
(See page BO-113)



2. REMOVE CONTROLLER
 - (a) Disconnect the connector.
 - (b) Remove the 2 screws and the controller.



INSPECTION

INSPECT BLOWER LINEAR CONTROLLER CIRCUIT

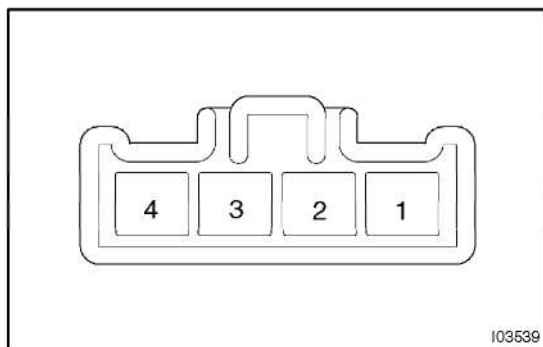
- (a) Disconnect the connector from the relay and inspect the connector on wire harness side, as shown in the chart below.

Test condition:

- Ignition switch ON

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity
3 – Ground	Constant	Battery voltage

If the circuit is as specified, try to replace the controller with a new one. If the circuit is not as specified, inspect the connected to other parts.



- (b) Connect the connector to the relay and inspect the wire harness connector from the back side, as shown in the chart below.

Test condition:

- Ignition switch ON

Tester connection	Condition	Specified condition
4 – Ground	Constant	Battery voltage

If the circuit is as specified, try to replace the controller with a new one. If the circuit is not as specified, inspect the connected to other parts.

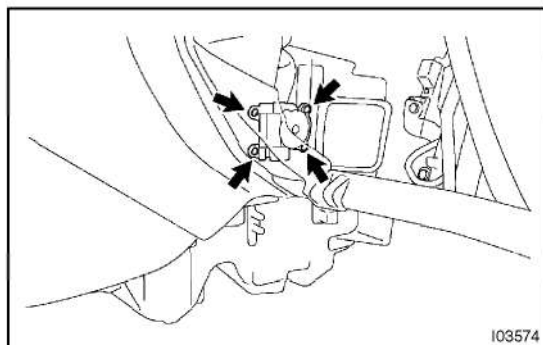
INSTALLATION

Installation is in the reverse order of removal (See page AC-76).

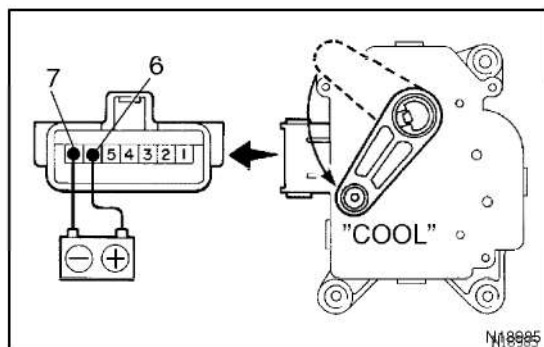
AIR MIX SERVOMOTOR REMOVAL

AC1B9-01

1. REMOVE BLOWER UNIT
(See page AC-38)



2. REMOVE SERVOMOTOR
 - (a) Disconnect the connector.
 - (b) Remove the 4 screws and servomotor.

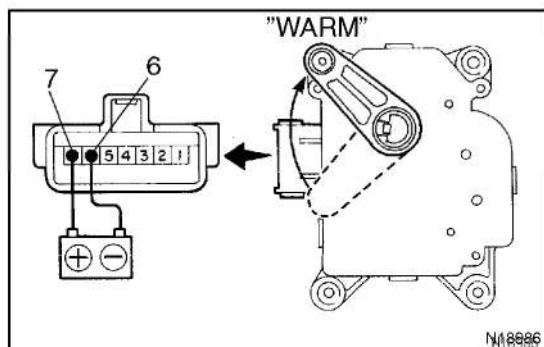


INSPECTION

1. INSPECT SERVOMOTOR OPERATION

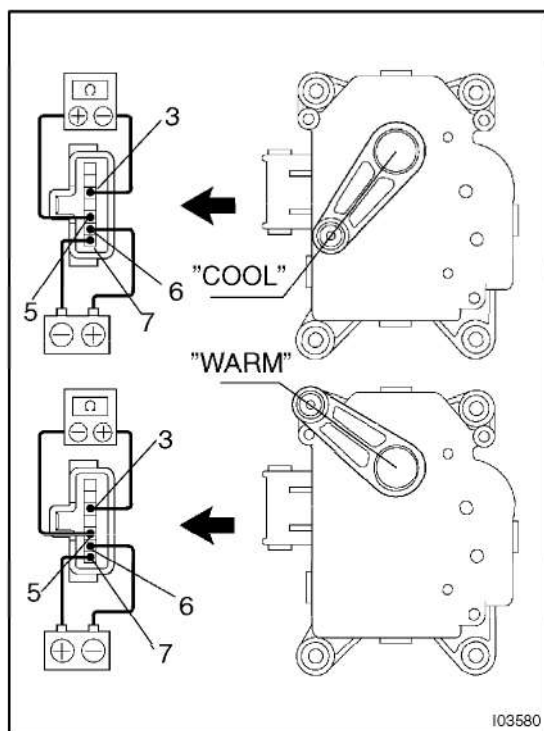
- (a) Connect the positive (+) lead from the battery to terminal 6 and negative (-) lead to terminal 7 and check that arm turns to "COOL" side smoothly.

If operation is not as specified, replace the servomotor.



- (b) Connect the positive (+) lead from the battery to terminal 7 and the negative (-) lead to terminal 6 and check that the arm turns to "WARM" side smoothly.

If operation is not as specified, replace the servomotor.



2. INSPECT POSITION SENSOR RESISTANCE

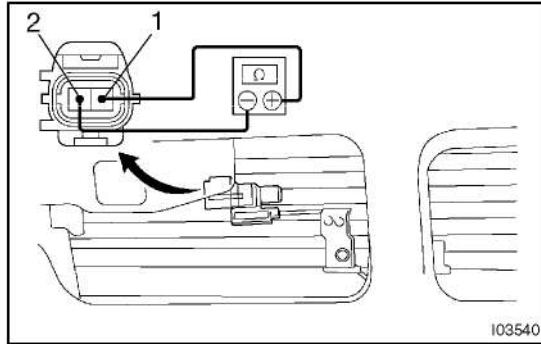
Measure resistance between terminals at servomotor arm each position as shown in the chart.

Tester connection	Condition	Specified condition
1-3	Constant	4.2-7.8 k Ω
3-5	Arm position at "COOL"	0.76-1.4 k Ω
3-5	Arm position at "WARM"	3.4-6.4 k Ω

If resistance is not as specified, replace the servomotor.

INSTALLATION

Installation is in the reverse order of removal (See page AC-79).



SENSOR ON-VEHICLE INSPECTION

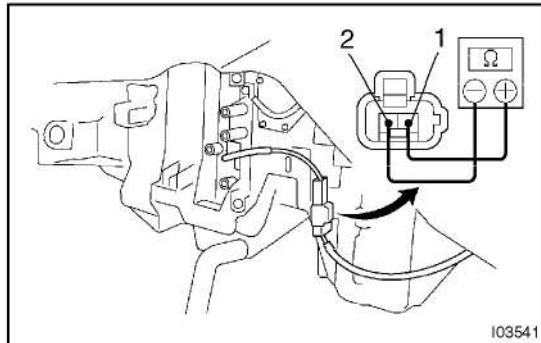
AC18Q-01

1. INSPECT AMBIENT TEMP. SENSOR RESISTANCE

- (a) Disconnect the connector.
- (b) Measure resistance between terminals.

Standard resistance: $1,700 \pm 85 \Omega$ at 25°C (77°F)

If resistance is not as specified, replace the relay.

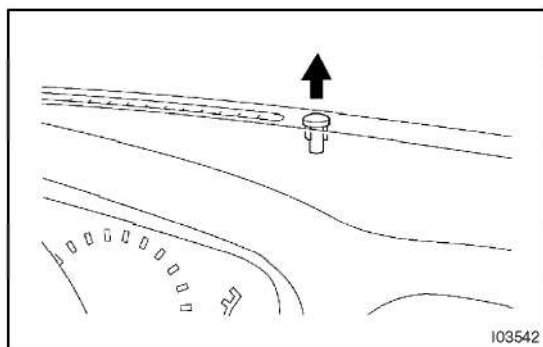


2. INSPECT EVAPORATOR TEMP. SENSOR

- (a) Disconnect the connector.
- (b) Measure resistance between terminals.

Standard resistance: $1,500 \Omega$ at 25°C (77°F)

If resistance is not as specified, replace the sensor.



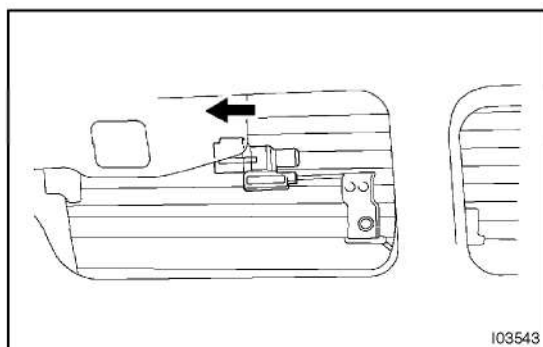
REMOVAL

1. REMOVE SOLAR SENSOR

Using a screwdriver, pull out the sensor, then disconnect the connector.

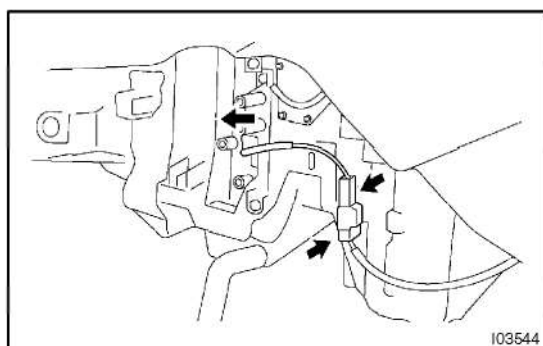
HINT:

Tape the screwdriver tip before use.



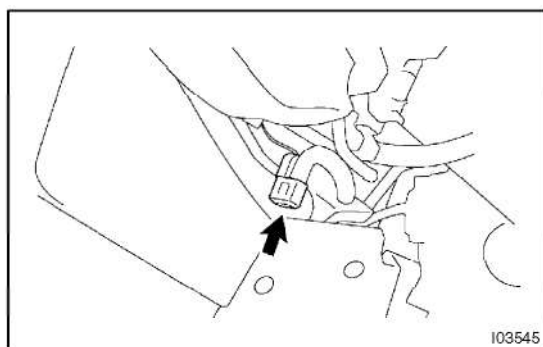
2. REMOVE AMBIENT TEMPERATURE SENSOR

- (a) Disconnect the connector.
- (b) Release the claw and pull out the sensor from the condenser.



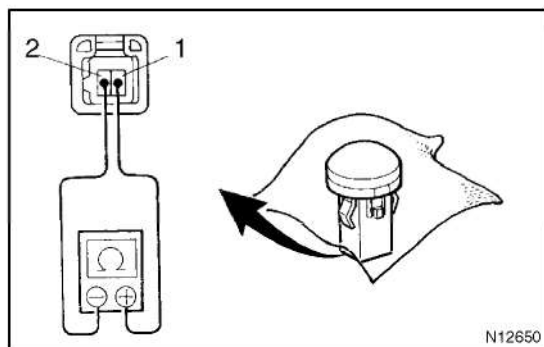
3. REMOVE EVAPORATOR TEMP. SENSOR

- (a) Disconnect the connector.
- (b) Disconnect the sensor connector.
- (c) Pull out the sensor.



4. REMOVE ROOM TEMP. SENSOR

- (a) Remove the instrument panel lower finish panel RH set screws.
- (b) Disconnect the connector.
- (c) Pry loose the sensor claw.
- (d) Disconnect the aspirator hose.

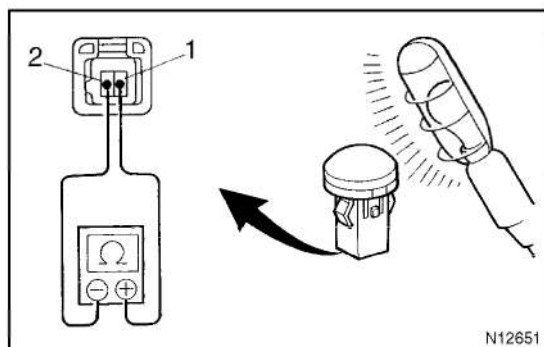


INSPECTION

1. INSPECT SOLAR SENSOR CONTINUITY

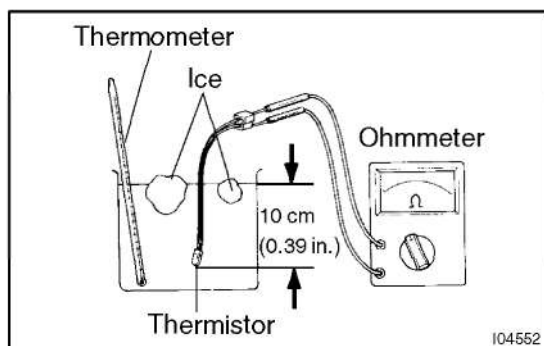
- (a) Cover the sensor by a cloth, check that the no continuity exists between terminals.

If continuity is not as specified, replace the sensor.



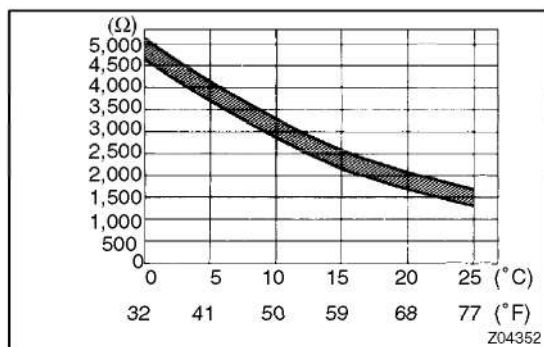
- (b) Remove the cloth from the sensor and subject the sensor to electric light, check that continuity exists between terminals.

If continuity is not as specified, replace the sensor.



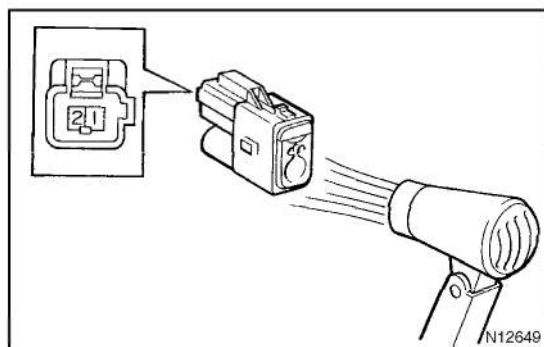
2. INSPECT EVAPORATOR TEMP. SENSOR RESISTANCE

- (a) Place the sensor in cold water. While changing the temperature of the water, measure resistance at the connector and at the same time, measure temperature of the water with a thermometer.



- (b) Compare the 2 readings on the chart.

If resistance value is not as specified, replace the sensor.



3. INSPECT ROOM TEMP. SENSOR RESISTANCE

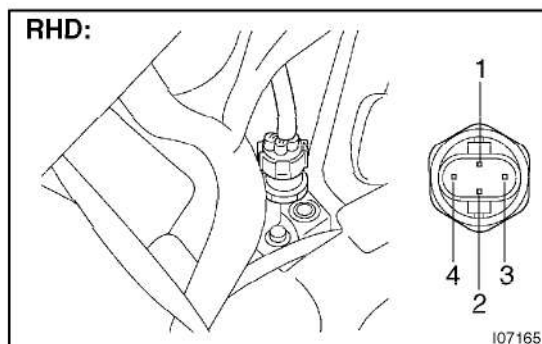
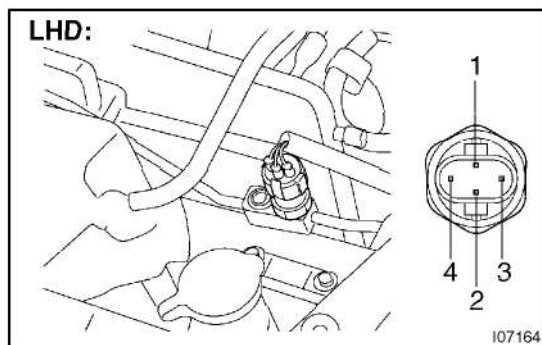
Measure resistance between terminals.

Standard resistance: $1,700 \pm 85 \Omega$ at 25°C (77°F)

If resistance is not as specified, replace the sensor.

INSTALLATION

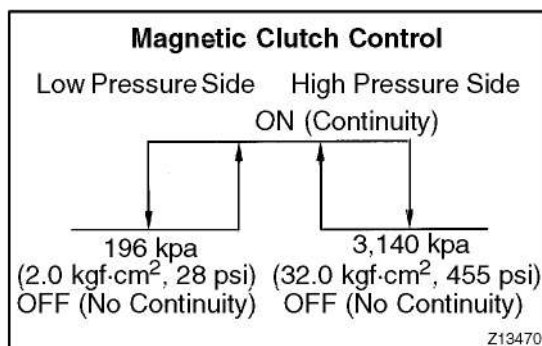
Installation is in the reverse order of removal (See page AC-83).



PRESSURE SWITCH ON-VEHICLE INSPECTION

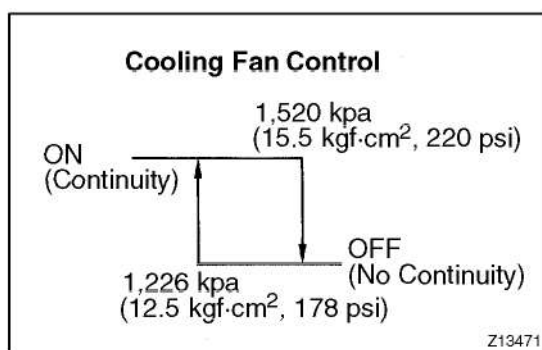
AC1B3-01

1. SET ON MANIFOLD GAUGE SET
(See page AC-22)
2. DISCONNECT CONNECTOR FROM PRESSURE SWITCH
3. RUN ENGINE AT APPROX. 1,500 RPM



4. **Magnetic Clutch Control:**
INSPECT PRESSURE SWITCH OPERATION
 - (a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (-) lead to terminal 1.
 - (b) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.



5. **Cooling Fan Control:**
INSPECT PRESSURE SWITCH OPERATION
 - (a) Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (-) lead to terminal 3.
 - (b) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.
6. STOP ENGINE AND SET OFF MANIFOLD GAUGE SET
7. CONNECT CONNECTOR TO PRESSURE SWITCH

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERANT SYSTEM

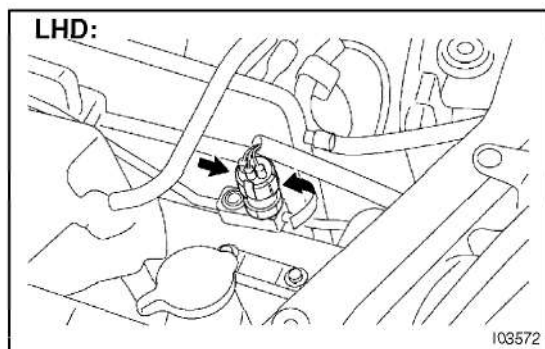
HINT:

At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 450 ± 50 g (15.87 ± 1.76 oz.)



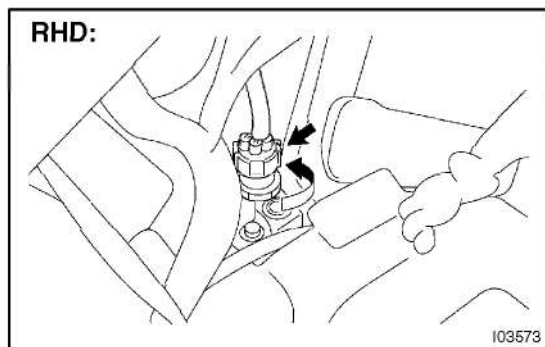
2. REMOVE PRESSURE SWITCH

- Disconnect the connector.
- Remove the pressure switch from the liquid tube.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

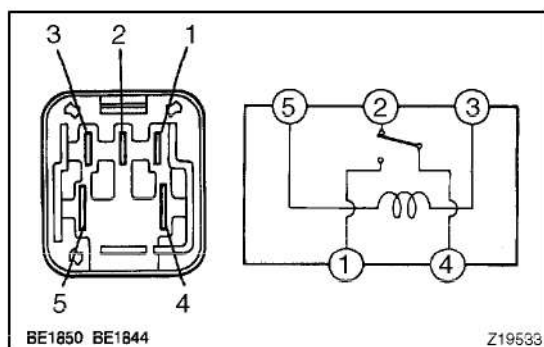
HINT:

- Lock the switch mount on the tube with an open end wrench, being careful not to deform the tube, and remove the switch.
- At the time of installation, please refer to the following item.
Lubricate a new O-ring with the compressor oil and then to the switch.



INSTALLATION

Installation is in the reverse order of removal (See page AC-87).



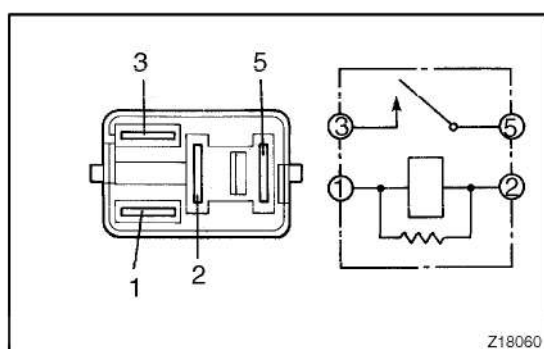
RELAY INSPECTION

AC1C3-01

1. INSPECT HEATER MAIN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	2 - 4 3 - 5	Continuity
Apply B+ between terminals 3 and 5.	1 - 2	Continuity

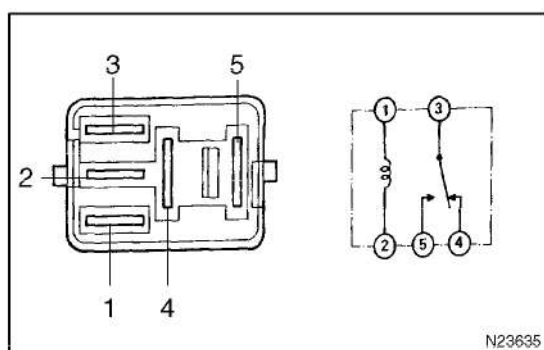
If continuity is not as specified, replace the relay.



2. INSPECT MAGNETIC CLUTCH RELAY (Marking: MG CLT) CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.



3. INSPECT No.2 COOLING FAN RELAY (Marking: FAN NO.2) CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2 3 - 4	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

4. INSPECT No.3 COOLING FAN RELAY (Marking: FAN NO.3) CONTINUITY

Check the relay in the same way as for "MAGNETIC CLUTCH RELAY".

CONDENSER FAN ON-VEHICLE INSPECTION

AC1BJ-01

1. INSPECT CONDENSER FAN OPERATION

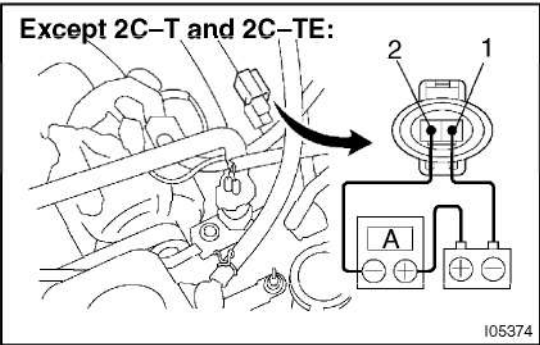
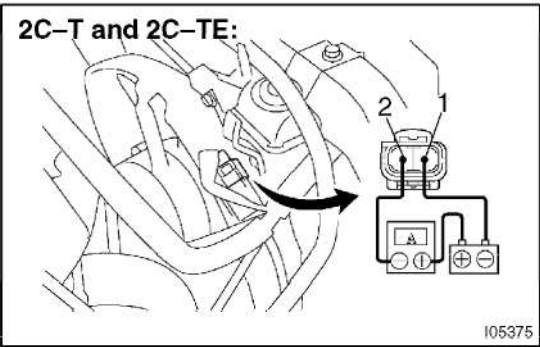
Inspect the fan operation, as shown in the chart below.

Test conditions:

- Ignition switch ON
- Blower speed control dial at "HI" position
- Temperature control dial at "COOL" position
- Set on manifold gauge set
- A/C switch ON

Condition	Fan operation (Fan speed)
Engine coolant temperature 91 °C (196 °F) or below	Not rotate
Engine coolant temperature 100 °C (212 °F) or above	Rotate
Refrigerant pressure is less than 1,520 kPa (15.5 kgf/cm ² , 220 psi)	Rotate (Low speed)
Refrigerant pressure is 1,520 kPa (15.5 kgf/cm ² , 220 psi) or above	Rotate (High speed)

If operation is not as specified, proceed to the next inspection.



2. INSPECT CONDENSER FAN MOTOR OPERATION

- Disconnect the connector.
- Connect battery and ammeter to fan connector, as shown in the illustration.
- Check that the fan rotates smoothly and then check that the reading on the ammeter.

Specified amperage:

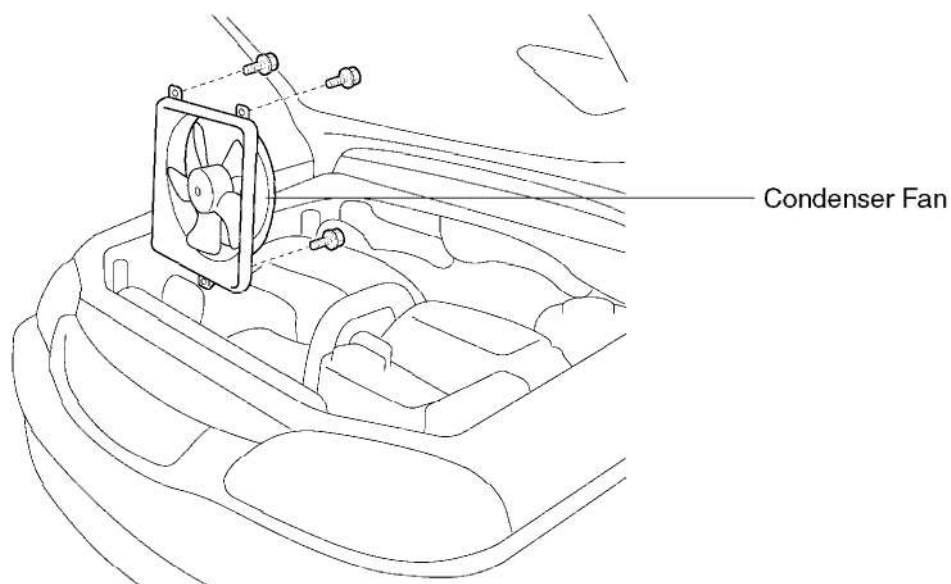
2C-T and 2C-TE: 9.5 ± 1.5 A at 20 °C (68 °F)

4A-FE and 7A-FE: 6.7 ± 1.5A at 20 °C (68 °F)

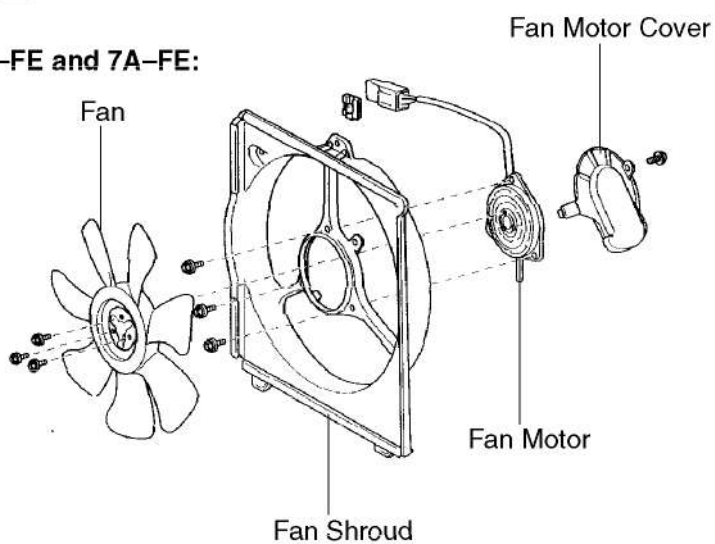
3S-FE: 6.0 ± 1.8 A at 20 °C (68 °F)

- If operation is not as specified, replace the fan motor.
- If operation is as specified, check the pressure switch, cooling fan relays and engine coolant temp. switch.

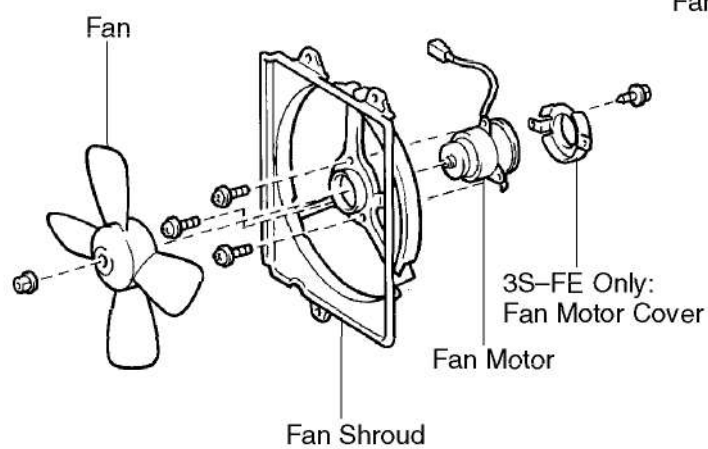
COMPONENTS



4A-FE and 7A-FE:

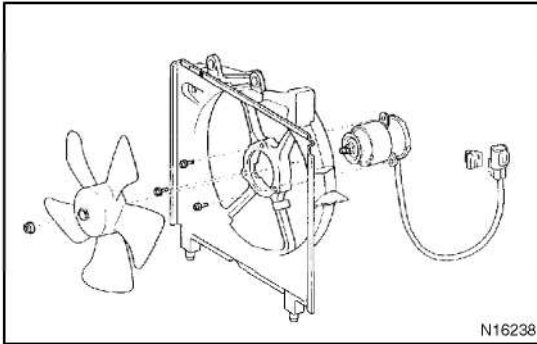


2C-T, 2C-TE and 3S-FE:



REMOVAL

1. DISCONNECT NO.5 RELAY BLOCK FROM RADIATOR
2. REMOVE CONDENSER FAN
 - (a) Disconnect the connector.
 - (b) Remove the 3 bolts and fan.

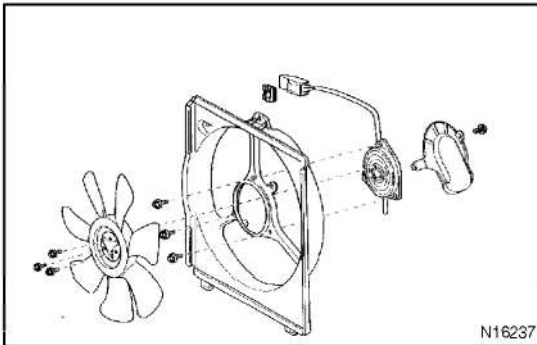


DISASSEMBLY

1. 2C-T and 2C-TE Engine:

DISASSEMBLE CONDENSER FAN

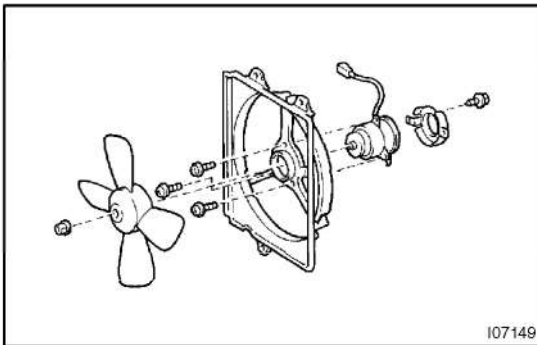
- (a) Remove the fan.
Remove the nut and fan.
- (b) Remove the fan motor.
 - (1) Disconnect the 3 wire harness clamps.
 - (2) Remove the 3 screws and fan motor.



2. 4A-FE and 7A-FE Engine:

DISASSEMBLE CONDENSER FAN

- (a) Remove the fan.
Remove the 3 screws and fan.
- (b) Remove the fan motor cover.
Remove the 3 screws and cover.
- (c) Remove the 3 screws and fan motor.



3. 3S-FE Engine:

DISASSEMBLE CONDENSER FAN

- (a) Remove the fan.
Remove the nut and fan.
- (b) Remove fan motor cover.
Remove the 2 bolts and cover.
- (c) Remove the fan motor.
 - (1) Disconnect the 2 wire harness clamps.
 - (2) Remove the 3 screws and fan motor.

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC-93).

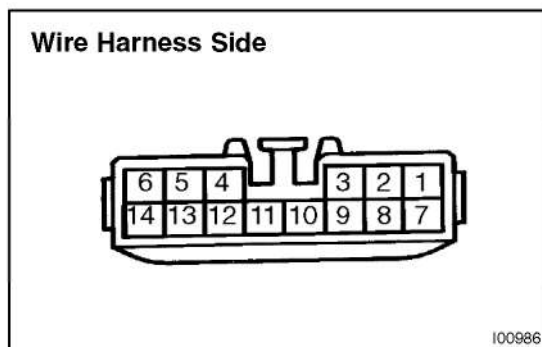
INSTALLATION

Installation is in the reverse order of removal (See page AC-92).

AIR CONDITIONER AMPLIFIER ON-VEHICLE INSPECTION

AC1C2-01

1. REMOVE LOWER FINISH PANEL
(See page BO-113)



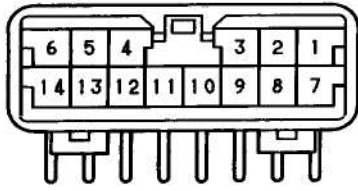
2. **Manual A/C:**
INSPECT A/C AMPLIFIER CIRCUIT
 - (a) Disconnect the connector from amplifier and inspect the connector on wire harness side, as shown in the chart.
Test conditions:
 - Turn ignition switch to ON
 - Blower speed control switch at "HI" position

Tester connection	Condition	Specified condition
5 – Ground	Constant	Continuity
9 – 3	Constant	Continuity
3 – 13	Evaporator temperature at 25 °C (77 °F)	1.5 kΩ
*14 – 13	Constant	65 – 125 kΩ
8 – Ground	A/C switch ON	Battery voltage
	A/C switch OFF	No voltage
10 – Ground	A/C switch ON	Below 4.0 V
	A/C switch OFF	No voltage

*: 2C-T, 2C-TE and 3S-FE Engine Only

If the circuit is not as specified, inspect the circuit connected to other parts.

From Back Side



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- (b) Connect the connector to amplifier and inspect the wire harness side connector from the back side, as shown in the chart.

Test conditions:

- Running engine at idle speed
- Blower speed control dial at "HI" position
- Temperature control dial at "MAX COOL" position
- A/C switch ON
- Set on manifold gauge set

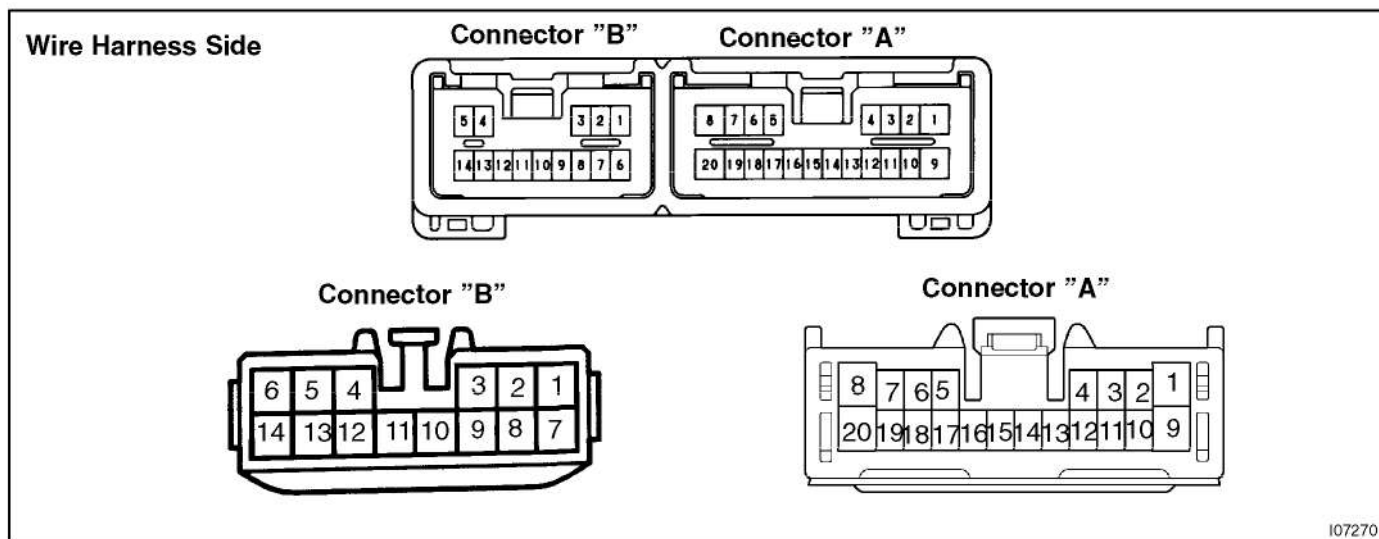
Tester connection	Condition	Specified condition
2 – Ground	Refrigerant pressure 196 – 3,140 kPa	Battery voltage
	Refrigerant pressure less than 196 kPa or more than 3,140 kPa	No voltage
1 – Ground	Constant	No voltage
	Engine speed at idle–up speed	Below 1.0 V
6 – Ground	Magnetic clutch is engaged	Below 2.0 V
	Engine coolant temperature at above 83 °C (181 °F) or refrigerant pressure at 1,520 kPa or more	Below 1.0 V
7 – Ground	Magnetic clutch is not engaged	Below 1.0 V
	Magnetic clutch is engaged	No voltage
*4 – Ground	Constant	Pulse signal out put Below 2.0 V ↔ 8.0V
11 – Ground	Engine coolant temperature at above 83 °C (181 °F) or refrigerant pressure at 1,520 kPa or more	Below 1.0 V
	Engine coolant temperature at above 93 °C (199 °F) or refrigerant pressure at less than 1,520 kPa	Battery voltage
12 – Ground	Magnetic clutch is engaged	Below 2.0 V
	Magnetic clutch is not engaged	Battery voltage

*: 2C–T, 2C–TE and 3S–FE Engine Only

3. Auto A/C:**INSPECT A/C AMPLIFIER CIRCUIT**

- (a) Disconnect the connector from the amplifier and inspect the connector on wire harness side, as shown in the chart
- Test conditions:

- Turn ignition switch to ON
- Blower speed control switch at "HI" position



Tester connection	Condition	Specified condition
A13 – A8	Turn mode control dial to "FOOT" position	Continuity
A14 – A8	Turn mode control dial to "DEF" position	Continuity
A16 – A15	Cover solar sensor with a cloth	No continuity
	Subject to electric light	Continuity
A17 – A8	Room temperature at 25 °C (77 °F)	1.7 kΩ
A18 – A8	Ambient temperature at 25 °C (77 °F)	1.7 kΩ
A4 – A8	Constant	65 – 125 Ω at 25 °C (77 °F)
A1 – Ground	Turn ignition switch to ON	Battery voltage
	Turn ignition switch to OFF	No voltage
B9 – Ground	A/C switch ON	Battery voltage
	A/C switch OFF	No voltage
B10 – Ground	A/C switch ON	Below 4.0 V
	A/C switch OFF	No voltage

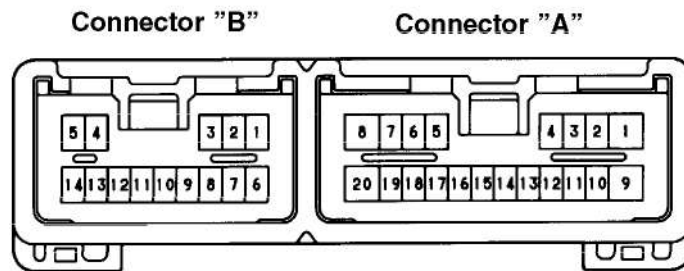
If the circuit is not as specified, inspect the circuit connected to other parts.

- (b) Connect the connector to amplifier and inspect the wire harness side connector from the back side, as shown in the chart.

Test conditions:

- Running engine at idle speed
- Blower speed control dial at "HI" position
- Temperature control dial at "MAX COOL" position
- A/C switch ON
- Set on manifold gauge set

From Back Side

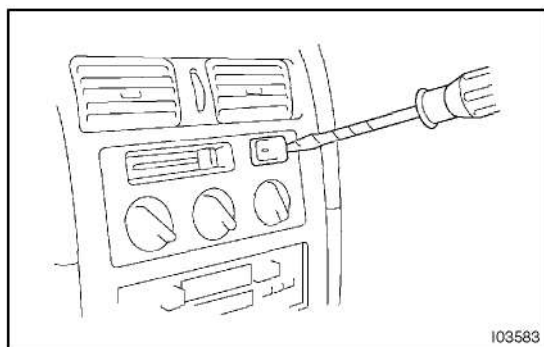


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Tester connection	Condition	Specified condition
A2 – Ground	Constant	Pulse signal out put Below 1.0 V ↔ Battery voltage
A5 – Ground	Turn blower switch to "OFF" position	No voltage
	Turn blower switch to "AUTO" position	1.8 V
	Turn blower switch to "LO" position	2.6 V
	Turn blower switch to "M1" position	3.4 V
	Turn blower switch to "M2" position	4.2 V
	Turn blower switch to "HI" position	5.0 V
A6 – Ground	Turn temperature control dial to 32 °C (90 °F)	Below 0.3 V
	Turn temperature control dial to 25 °C (77 °F)	2.5 V
	Turn temperature control dial to 18 °C (64 °F)	Above 4.7 V
B4 – Ground	Turn temperature control dial to "MAX. COOL"	4.0 V
B5 – Ground	Turn temperature control dial to "MAX. WARM"	1.0 V
A15 – Ground	Constant	5.0 V
B2 – Ground	Blower motor operates	Below 1.0 V
	Blower motor does not operate	Battery voltage
B4 – Ground	Turn temperature control dial to "MAX COOL"	Battery voltage
	Turn temperature control dial to "MAX WARM"	Below 1.0 V
B5 – Ground	Turn temperature control dial to "MAX WARM"	Battery voltage
	Turn temperature control dial to "MAX COOL"	Below 1.0 V
B7 – Ground	Magnetic clutch is engaged	Battery voltage
	Magnetic clutch is not engaged	Battery voltage
B8 – Ground	Refrigerant pressure 196 – 3,140 kPa	Battery voltage
	Refrigerant pressure less than 196 kPa or more than 3,140 kPa	No voltage
B11 – Ground	Magnetic clutch is engaged	Below 1.0 V
	Magnetic clutch is not engaged	No voltage

B12 – Ground	Magnetic clutch is engaged	Below 1.0 V
	Magnetic clutch is not engaged	Battery voltage
B13 – Ground	Engine coolant temperature at above 83 °C (181 °F) or refrigerant pressure at 1,520 kPa or more	Below 1.0 V
	Engine coolant temperature at above 93 °C (199 °F) or refrigerant pressure at less than 1,520 kPa	Battery voltage
B14 – Ground	Magnetic clutch is engaged	Below 2.0 V
	Engine coolant temperature at above 83 °C (181 °F) or refrigerant pressure at 1,520 kPa or more	Battery voltage

If the circuit is not as specified, inspect the circuit connected to other parts. If the circuits is as specified, try to replace the amplifier with a new one.



AIR CONDITIONER SWITCH REMOVAL

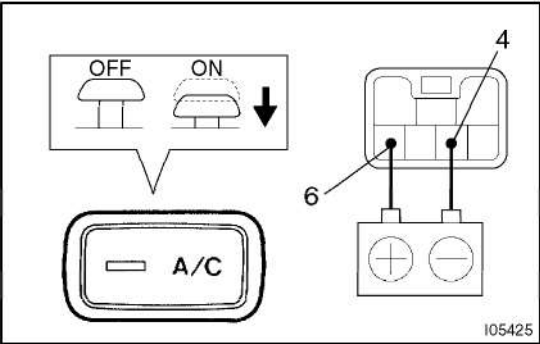
AC1BP-01

REMOVE A/C SWITCH

Using a screwdriver, pull out the switch.

HINT:

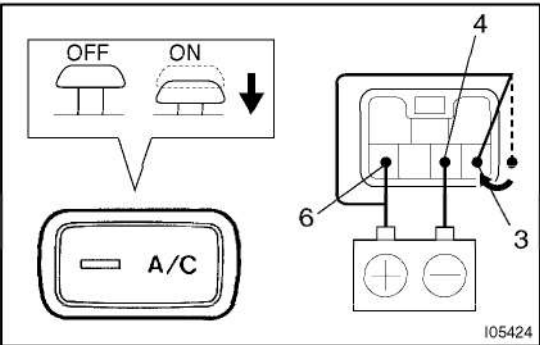
Tape the screwdriver tip before use.



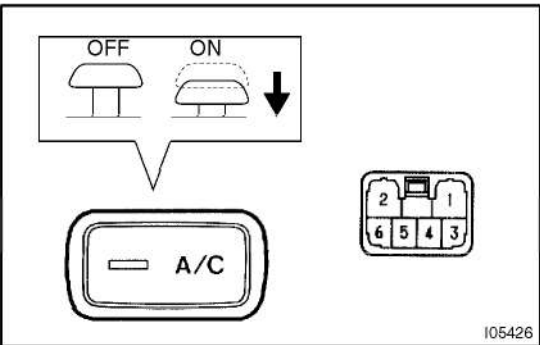
INSPECTION

1. INSPECT A/C INDICATOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 6 and negative (-) lead to terminal 4 and check that the indicator lights up, when A/C switch ON.



- (b) Connect the positive (+) lead from the battery to terminal 3 and check that the indicator dims.
If operations are as specified, replace the A/C switch.



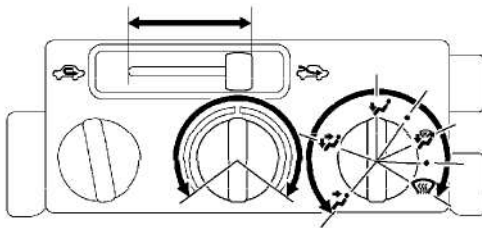
2. INSPECT A/C SWITCH CONTINUITY

Condition/ Circuit	Testerconnection	Specifiedcondition
OFF	–	No continuity
ON	5 – 6	Continuity
Illuminationcircuit	3 – 1	Continuity

If continuity is not as specified, replace the A/C switch.

INSTALLATION

Installation is in the reverse order of removal (See page AC-101).

Manual A/C:

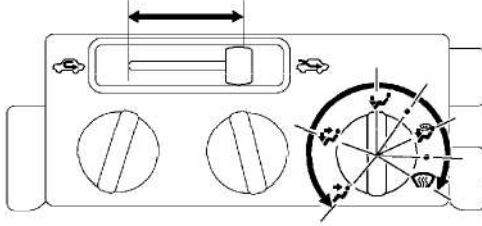
I03857

HEATER CONTROL ASSEMBLY ON-VEHICLE INSPECTION

AC1BS-01

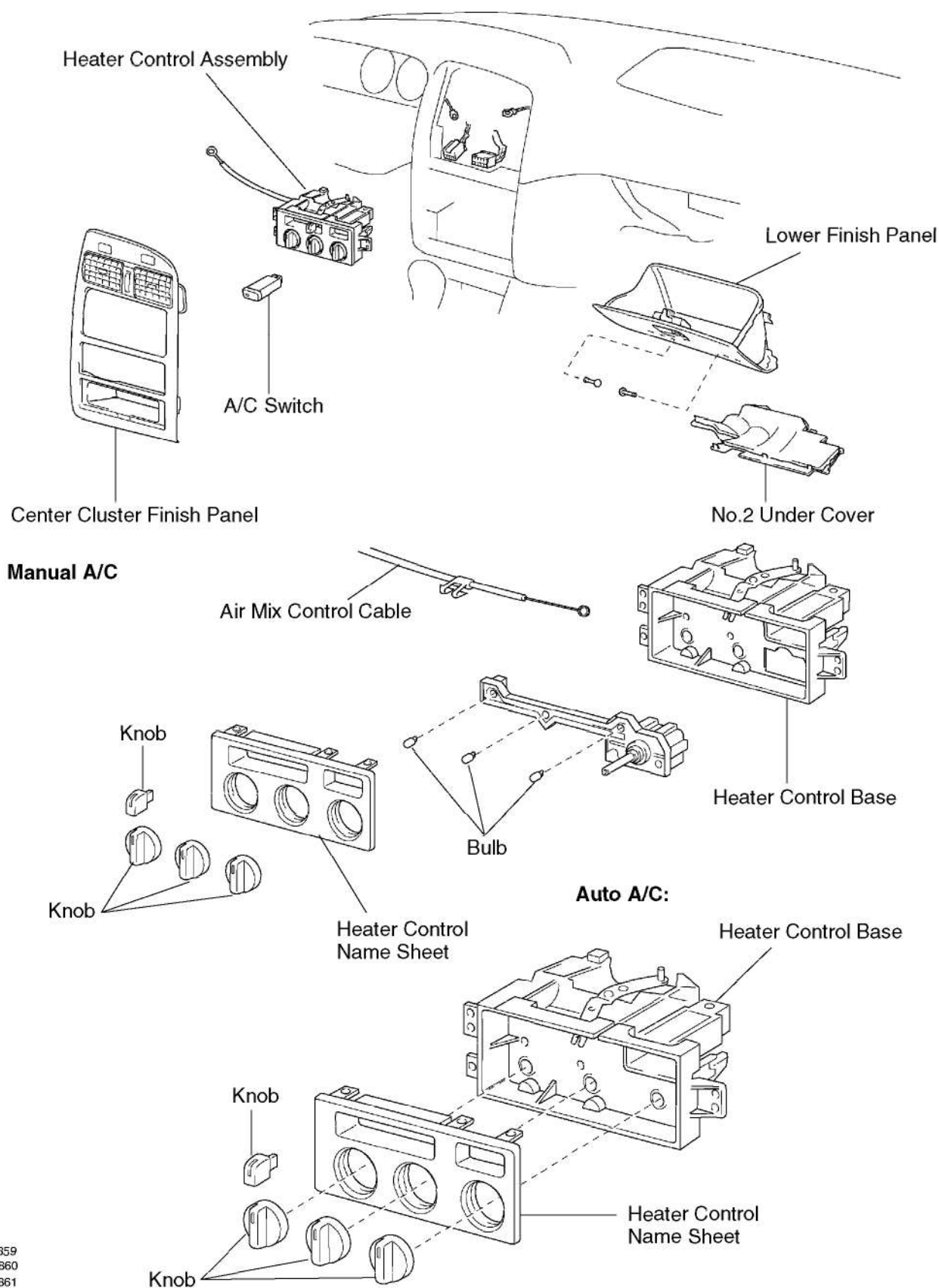
Turn the control lever and dials left and right then check that click sound can be heard and recoil is felt.

If click sound can be heard or recoil is felt, adjust the control cable or check control cable and heater control assembly.

Auto A/C:

I03858

COMPONENTS



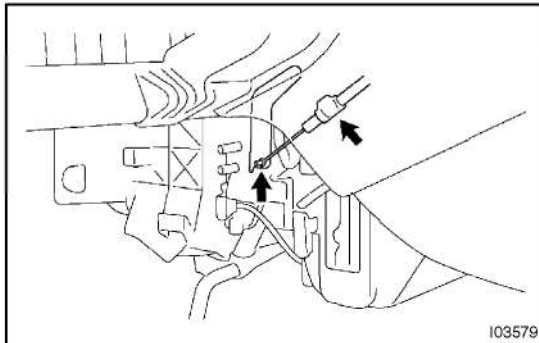
103859
103860
103861

105864

REMOVAL

1. REMOVE THESE PARTS:

- (a) A/C switch
(See page AC-101)
- (b) Manual A/C Models Only:
Lower finish panel
- (c) No.2 under cover
- (d) Center cluster finish panel
(See page BO-113)

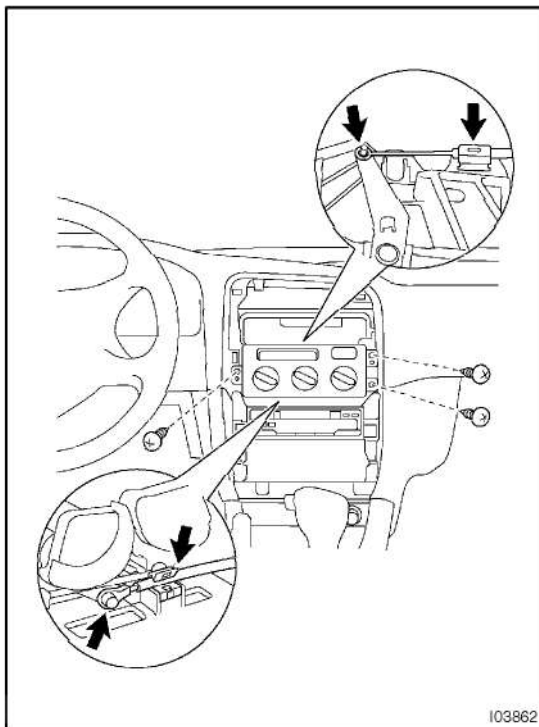


2. Manual A/C Models only:

DISCONNECT AIR MIX CONTROL CABLE

HINT:

At the time of installation, please refer to the following item.
After installation, check the heater control dial operation.



3. REMOVE HEATER CONTROL ASSEMBLY

Remove the 3 screws and pull out the heater control assembly, then disconnect the connector and heater control cables.

DISASSEMBLY

1. REMOVE HEATER CONTROL KNOBS

- (a) Cover the control knob with cloth.
- (b) Using pliers, pull out control knobs.

2. REMOVE HEATER CONTROL NAME SHEET

Using a screwdriver, release the 4 claws and remove the plate.

HINT:

Tape the screwdriver tip before use.

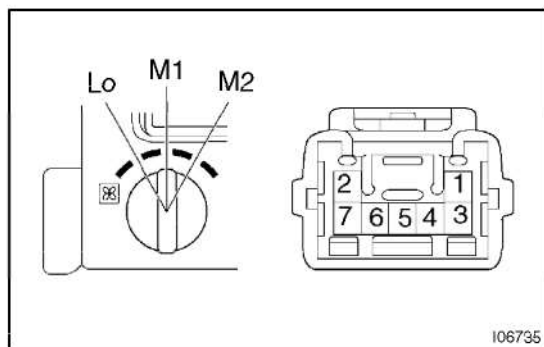
3. Manual A/C Only:

REMOVE HEATER BLOWER SWITCH

Using a screwdriver, release the 2 claws and remove the switch.

HINT:

Tape the screwdriver, tip before use.



INSPECTION

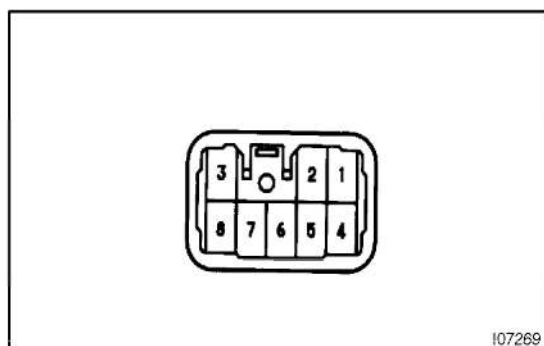
1. Manual A/C:

INSPECT HEATER BLOWER SWITCH OPERATION

Check the continuity between terminals at each position as shown in the chart.

Position / Circuit	Tester connection	Specified condition
OFF	—	No continuity
LO	3 – 6	Continuity
M1	3 – 6 – 7	Continuity
M2	3 – 5 – 6	Continuity
HI	3 – 4 – 6	Continuity
Illumination circuit	1 – 2	Continuity

If continuity is not as specified, replace the heater blower switch or bulb.

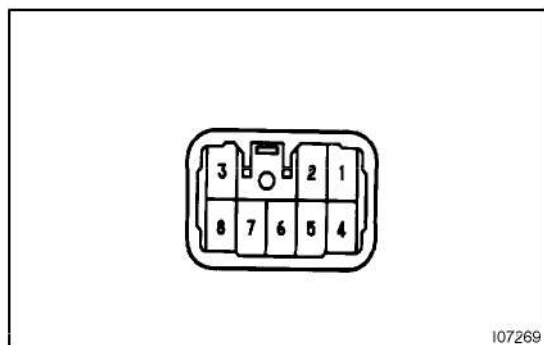


2. AUTO A/C:

INSPECT TEMPERATURE CONTROL SWITCH OPERATION

- Check that the resistance between terminals 8 and 3 is approx. 3.0 kΩ.
- Connect the positive (+) lead from the three 1.5 V dry cell batteries to terminal 8 and negative (–) lead to terminal 3.
- Connect the positive (+) lead from the tester to terminal 7 and negative (–) lead to terminal 3.
- Gradually turn the switch from "WARM" side to "COOL" side and check that the voltage increase from 0.3 – 4.5V.

If operation is not as specified, replace the heater control base.



107269

3. Auto A/C: INSPECT BLOWER SPEED CONTROL SWITCH OPERATION

- Check that the resistance between terminals 8 and 3 is approx. 3.0 k Ω .
- Connect the positive (+) lead from the three 1.5 V dry cell batteries to terminal 8 and negative (–) lead to terminal 3.
- Connect the positive (+) lead from the tester to terminal 4 and negative (–) lead to terminal 3, then check that the voltage at each switch position, as shown in the chart below.

Switch position	Specified condition
OFF	No voltage
AUTO	Approx. 1.3 V
LO	Approx. 2.1 V
M1	Approx. 2.9 V
M2	Approx. 3.7 V
HI	Approx. 4.5 V

If operation is not as specified, replace the heater control base.

4. Auto A/C: INSPECT MODE CONTROL DIAL

Check the continuity exists between terminals while turn the mode control dial at each position, as shown in the chart.

Dial position	Tester connection
FOOT	5 – 3
DEF	6 – 3

If operation is not as specified, replace the heater control base.

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC-107).

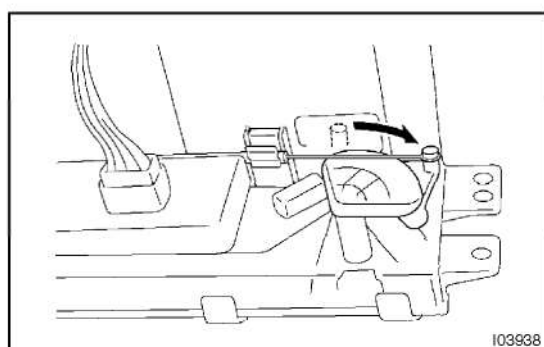
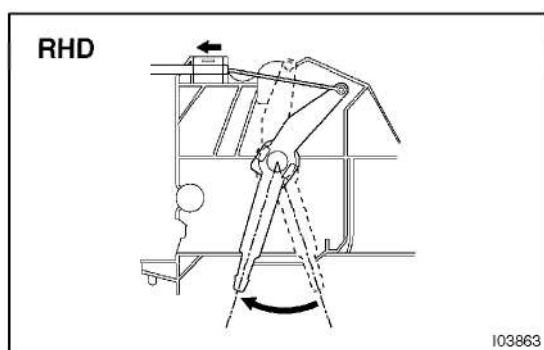
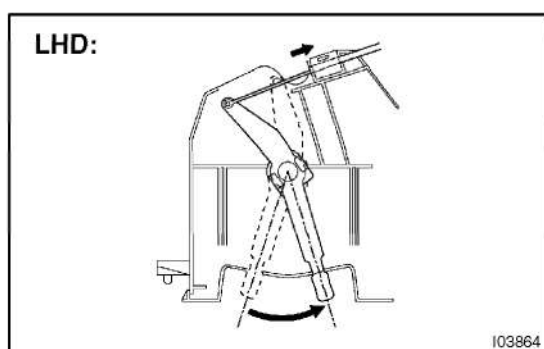
INSTALLATION

1. INSTALL HEATER CONTROL ASSEMBLY

(a) Connect the heater control cables.

(1) Set heater control lever and dials in these conditions:

- LHD Models:
Air inlet control lever in "RECIRC" position
- RHD Models:
Air inlet control lever in "FRESH" position
- Manual A/C Only:
Temperature control dial in "FACE" position



(2) Connect the air inlet control cable.

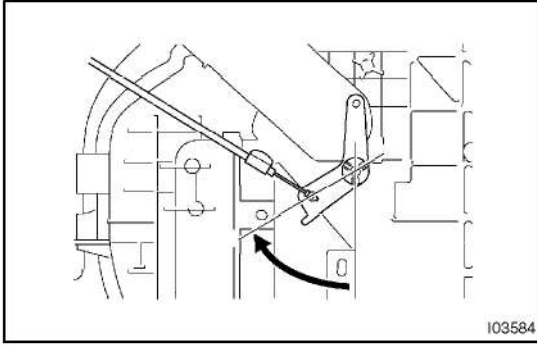
HINT:

- Lock the clamp during lightly pulling the outer cable in the direction, as shown in the illustration by an arrow.
- Align the marking on outer cable and lock clamp, when connecting outer cable.

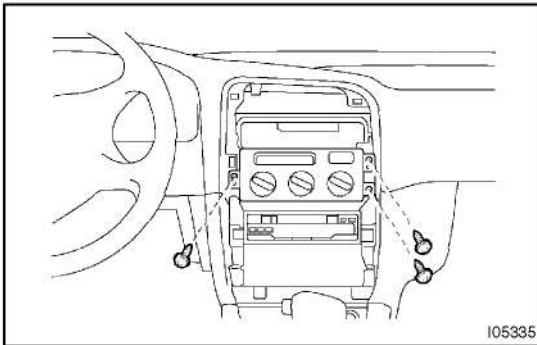
(3) Connect the mode control cable.

HINT:

- Lock the clamp during lightly pulling the outer cable in the direction, as shown in the illustration by an arrow.
- Align the marking on outer cable and lock clamp, when connecting outer cable.



- (4) Manual A/C Only:
Connect the air mix control cable.
Turn the fully the air mix link hold up and connect the outer cable.
- (5) After connection, check that there is click on operation and there is not recoil of heater control lever and dials.

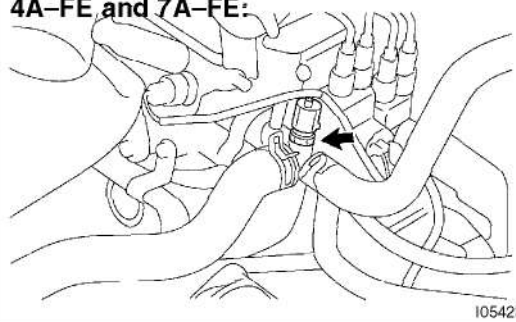


- (b) Connect the connector and install the heater control assembly with 3 screws.

2. INSTALL THESE PARTS:

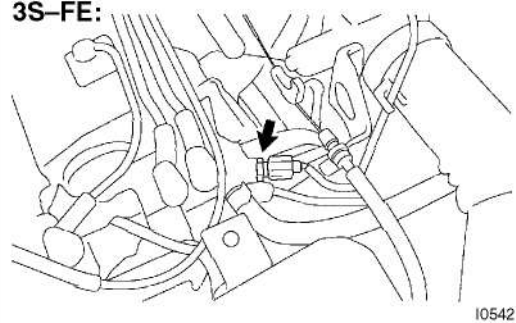
- (a) Center cluster finish panel
- (b) Lower finish panel
- (c) No.2 under cover.
(See page BO-117)
- (d) A/C Switch

4A-FE and 7A-FE:



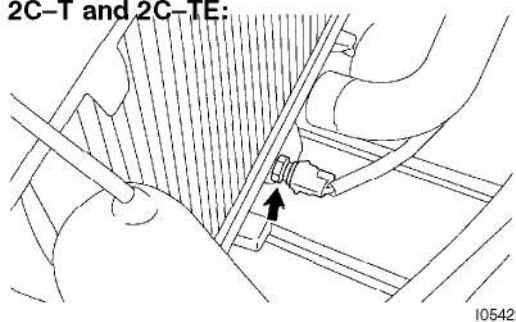
I05423

3S-FE:



I05421

2C-T and 2C-TE:



I05422

WATER TEMPERATURE SWITCH INSPECTION

AC1C1-01

1. REMOVE WATER TEMPERATURE SWITCH

- (a) Drain engine coolant.
- (b) Disconnect the connector.
- (c) Remove the water temperature switch.

2. INSPECT WATER TEMPERATURE SWITCH OPERATION

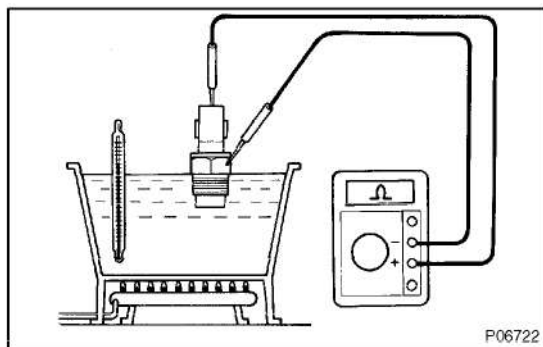
- (a) Using an ohmmeter, check that no continuity exists between terminal and body ground when the coolant temperature is above 93 °C (199 °F).

If continuity exists, replace the switch.

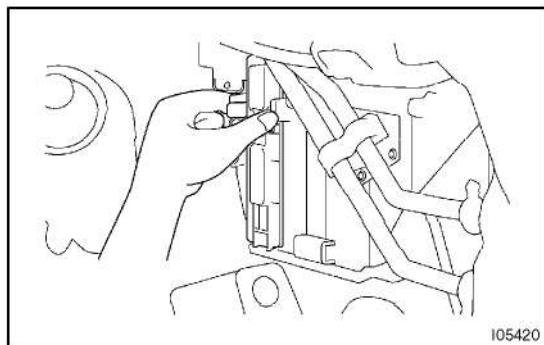
- (b) Using an ohmmeter, check that the continuity exists between terminals when the coolant temperature is above 83 °C (181 °F).

If no continuity exists, replace the switch.

3. INSTALL WATER TEMPERATURE SWITCH



P06722

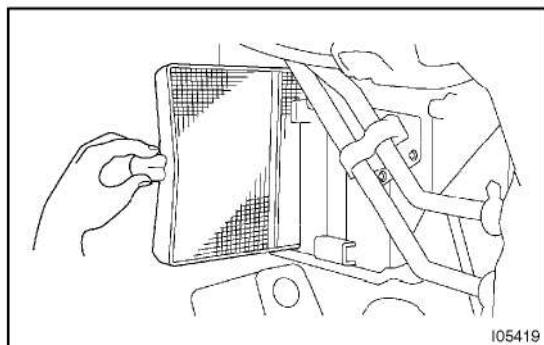


AIR REFINER FILTER REMOVAL

AC1BZ-01

REMOVE AIR REFINER FILTER

(a) Remove the filter cover.



(b) Pull out the filter.

INSTALLATION

Installation is in the reverse order of removal (See page AC-114).