

## 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

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 conditioning 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 conditioning 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

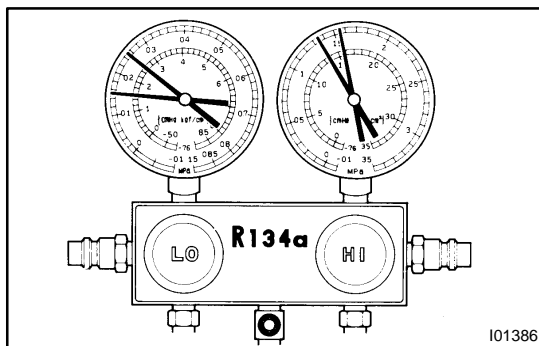
This is a method in which the trouble is located by using a manifold gauge set. Read the manifold gauge pressure when these conditions are established.

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:**

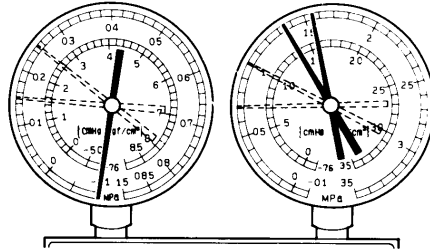
**0.15 - 0.25 MPa (1.5 - 2.5 kgf/cm<sup>2</sup>)**

**High pressure side:**

**1.37 - 1.57 MPa (14 - 16 kgf/cm<sup>2</sup>)**

(2) Moisture present in refrigeration system.

Condition : Periodically cools and then fails to cool

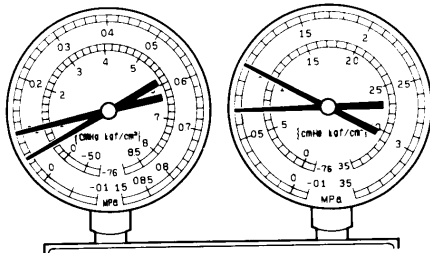


I01387

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, by normal state is restored after a time when the ice melts	<ul style="list-style-type: none"> <li>• Drier oversaturated state</li> <li>• Moisture in refrigeration system freezes at expansion valve orifice and blocks circulation of refrigerant</li> </ul>	<ol style="list-style-type: none"> <li>(1) Replace receiver</li> <li>(2) Remove moisture in cycle through repeatedly evacuating air</li> <li>(3) Charge proper amount of new refrigerant</li> </ol>

(3) Insufficient cooling

Condition: Insufficient cooling

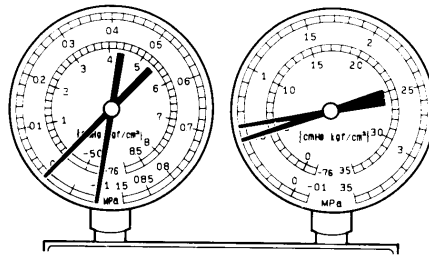


I01388

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure low on both low and high pressure sides</li> <li>• Bubbles seen in sight glass continuously</li> <li>• Insufficient cooling performance</li> </ul>	Gas leakage at some place in refrigeration system	<ul style="list-style-type: none"> <li>• Insufficient refrigerant in system</li> <li>• Refrigerant leaking</li> </ul>	<ol style="list-style-type: none"> <li>(1) Check for gas leakage with gas leak detector and repair if necessary</li> <li>(2) Charge proper amount of refrigerant</li> <li>(3) If indicated pressure value is near 0 when connected to gauge, create the vacuum after inspecting and repairing the location of the leak</li> </ol>

(4) Poor circulation of refrigerant

Condition: Insufficient cooling

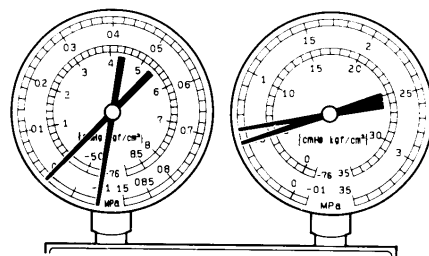


I01389

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure low in both low and high pressure sides</li> <li>• Frost on tube from receiver to unit</li> </ul>	Refrigerant flow obstructed by dirt in receiver	Receiver clogged	Replace receiver

(5) Refrigerant does not circulate

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

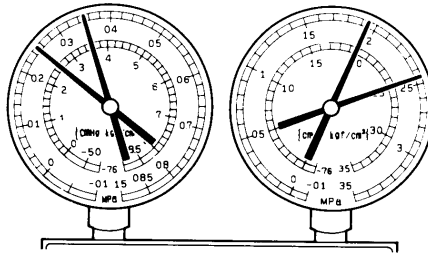


I01449

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Vacuum indicated on low pressure side, very low pressure indicated on high pressure side</li> <li>• Frost or dew seen on piping before and after receiver/ drier or expansion valve</li> </ul>	<ul style="list-style-type: none"> <li>• Refrigerant flow obstructed by moisture or dirt in refrigeration system</li> <li>• Refrigerant flow obstructed by gas leakage from expansion valve</li> </ul>	Refrigerant does not circulate	<ol style="list-style-type: none"> <li>(1) Check expansion valve</li> <li>(2) Clean out dirt in expansion valve by blowing with air</li> <li>(3) Replace receiver</li> <li>(4) Evacuate air and charge new refrigerant to proper amount</li> <li>(5) For gas leakage from expansion valve, replace expansion valve</li> </ol>

(6) Refrigerant overcharged or insufficient cooling of condenser

Condition: Insufficient cooling

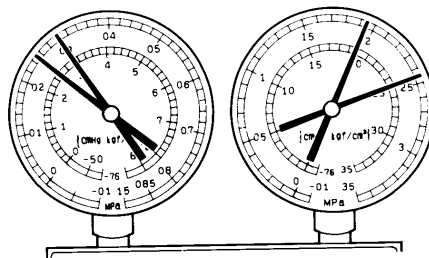


I01390

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure too high on both low and high pressure sides</li> <li>• No air bubbles seen through the sight glass even when the engine rpm is lowered</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to develop sufficient performance due to excessive refrigeration system</li> <li>• Insufficient cooling of condenser</li> </ul>	<ul style="list-style-type: none"> <li>• Excessive refrigerant in cycle → refrigerant over charged</li> <li>• Condenser cooling → condenser fins clogged or condenser fan faulty</li> </ul>	<ol style="list-style-type: none"> <li>(1) Clean condenser</li> <li>(2) Check condenser fan motor operation</li> <li>(3) If (1) and (2) are in normal state, check amount of refrigerant. Charge proper amount of refrigerant</li> </ol>

(7) Air present in refrigeration system

Condition: Insufficient cooling



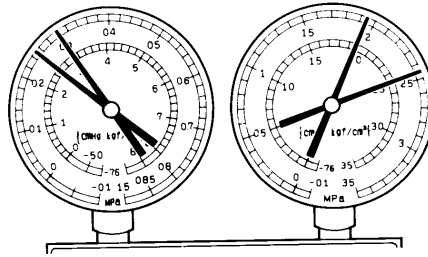
NOTE : These gauge indications are shown when the refrigeration system has been opened and the refrigerant charged without vacuum purging.

I01392

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure too high on both low and high pressure sides</li> <li>• The low pressure piping hot to touch</li> <li>• Bubbles seen in sight glass</li> </ul>	Air entered in refrigeration system	<ul style="list-style-type: none"> <li>• Air present in refrigeration system</li> <li>• Insufficient vacuum purging</li> </ul>	<ol style="list-style-type: none"> <li>(1) Check compressor oil to see if it is dirty or insufficient</li> <li>(2) Evacuate air and charge new refrigerant</li> </ol>

(8) Expansion valve improperly

Condition: Insufficient cooling

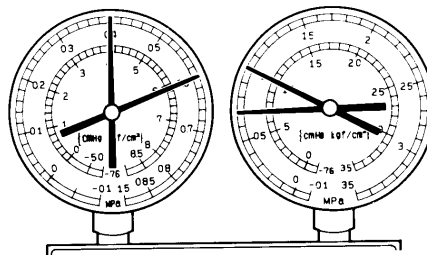


I01450

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure too high on both low and high pressure sides</li> <li>• Frost or large amount of dew on piping on low pressure side</li> </ul>	Trouble in expansion valve	<ul style="list-style-type: none"> <li>• Excessive refrigerant in low pressure piping</li> <li>• Expansion valve opened too wide</li> </ul>	Check expansion valve Replace if defective

(9) Defective compression compressor

Condition : Does not cool



I01393

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
<ul style="list-style-type: none"> <li>• Pressure too high on low and high pressure sides</li> <li>• Pressure too low on high pressure side</li> </ul>	Internal leak in compressor	<ul style="list-style-type: none"> <li>• Compression defective</li> <li>• Valve leaking or broken sliding parts</li> </ul>	Repair or replace compressor

**3. INSPECT IDLE-UP SPEED**

- (a) Warm up engine  
 (b) Inspect idle-up speed when the these conditions are established.

Test conditions:

- Blower speed control switch at "HI" position
- Temperature control dial at "COOL" position
- A/C switch ON
- Put gear shift in neutral

**2JZ-GE (M/T)**

Magnetic clutch condition	Idle-up speed
Not engaged	700 ± 50 rpm
Engaged	900 ± 50 rpm

If idle speed is not as specified, check the IAC valve and air intake system.

**2JZ-GE (A/T)**

Magnetic clutch condition	Idle-up speed
Not engaged	700 ± 50 rpm
Egagedn	800 ± 50 rpm

If idle speed is not as specified, check the IAC valve and air intake system.

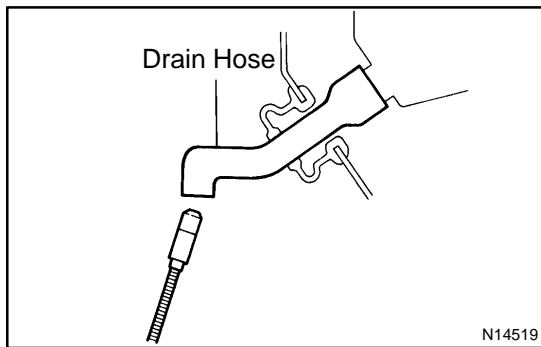
**2JZ-GTE**

magnetic clutch condition	Idle-up speed
Not engaged	650 ± 50 rpm
Engaged	800 ± 50 rpm

If idle speed is not as specified, check the IAC valve and air intake 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/ cm<sup>2</sup>, 57 - 85 psi)



- (b) Bring the gas leak detector close to the drain hose before performing the test.

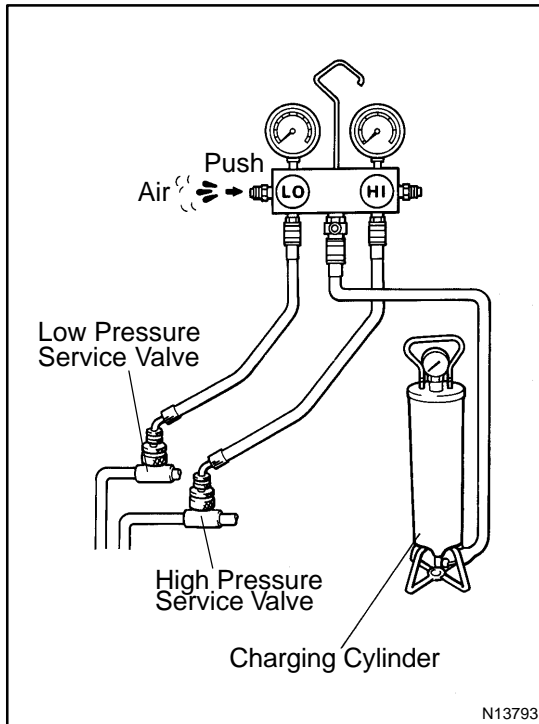
HINT:

- After the blower motor has stopped, leave the cooling unit 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 and perform the test.





## CHARGING

### 1. INSTALL CHARGING CYLINDER

#### HINT:

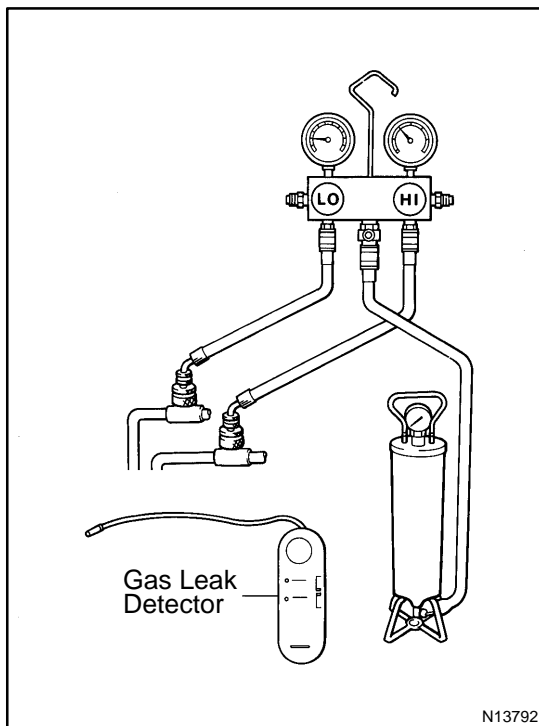
When handling the charging cylinder, always follow the directions given in the instruction manual.

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

#### CAUTION:

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

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

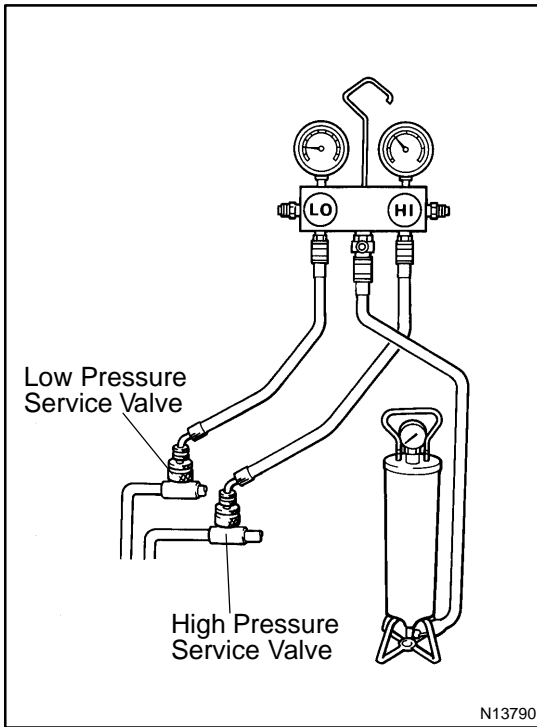


### 2. INSPECT REFRIGERATION SYSTEM FOR LEAKS

- (a) Open the high pressure hand valve and charge refrigerant.
- (b) When the low pressure gauge indicates 98 kPa (1 kgf/cm<sup>2</sup>, 14 psi) close the high pressure hand valve.
- (c) 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 REFRIGERANT SYSTEM

If there is no leak after refrigerant leak check, charge the proper amount of refrigerant into 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:

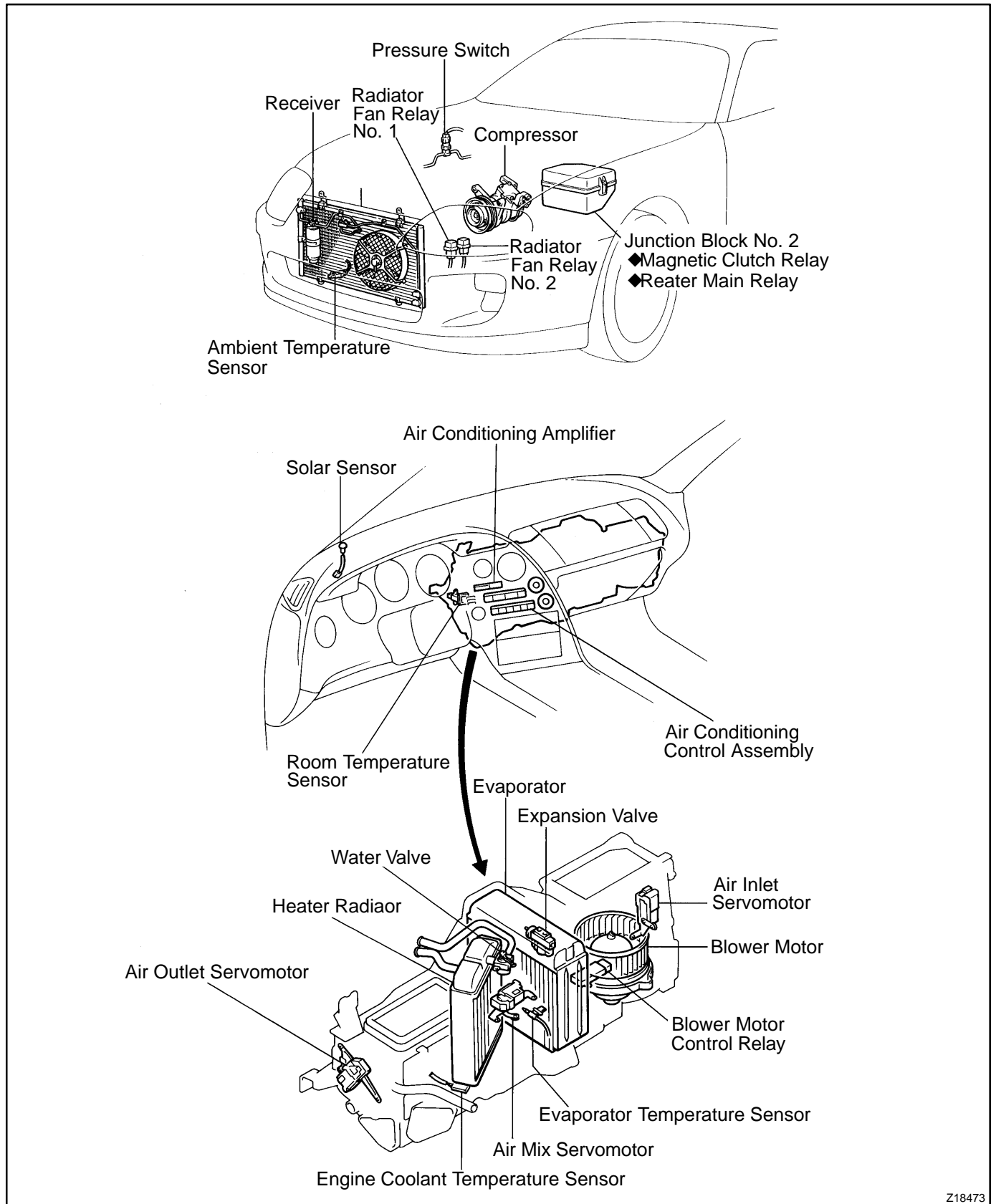
A fully charged system is indicated by the sight glass being free of any bubbles.

### 4. REMOVE MANIFOLD GAUGE SET

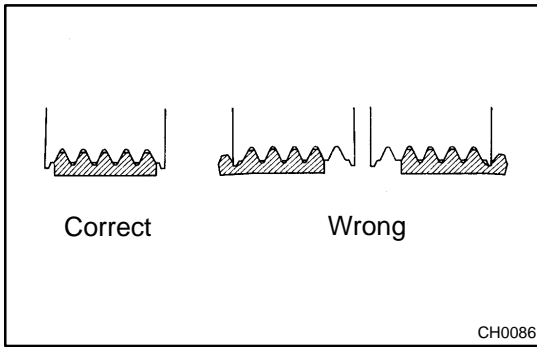
- (a) Close both hand valves of manifold gauge set.
- (b) Disconnect the quick disconnect adapters from the service valves.

### 5. INSTALL CAPS TO SERVICE VALVES ON REFRIGERANT LINES

# LOCATION



Z18473

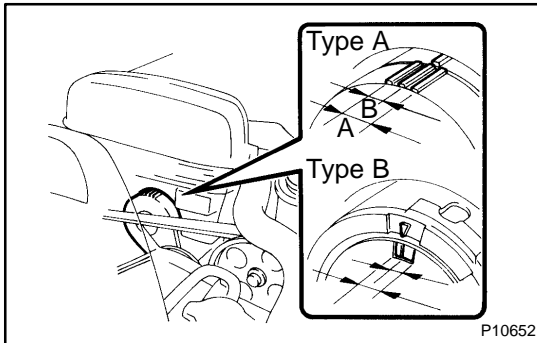


## DRIVE BELT ON-VEHICLE INSPECTION

AC003-01

### 1. INSPECT DRIVE BELT'S INSTALLATION CONDITION

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



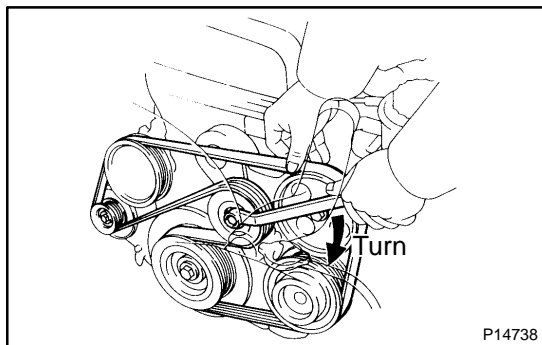
### 2. INSPECT DRIVE BELT TENTION

Check that the tension is within A range on the auto tensioner scale.

If the tension is not within the A range on the scale, replace the belt with a new one.

HINT:

When replacing the drive belt with a new one, the belt tension should be within the B range on the belt tensioner scale.

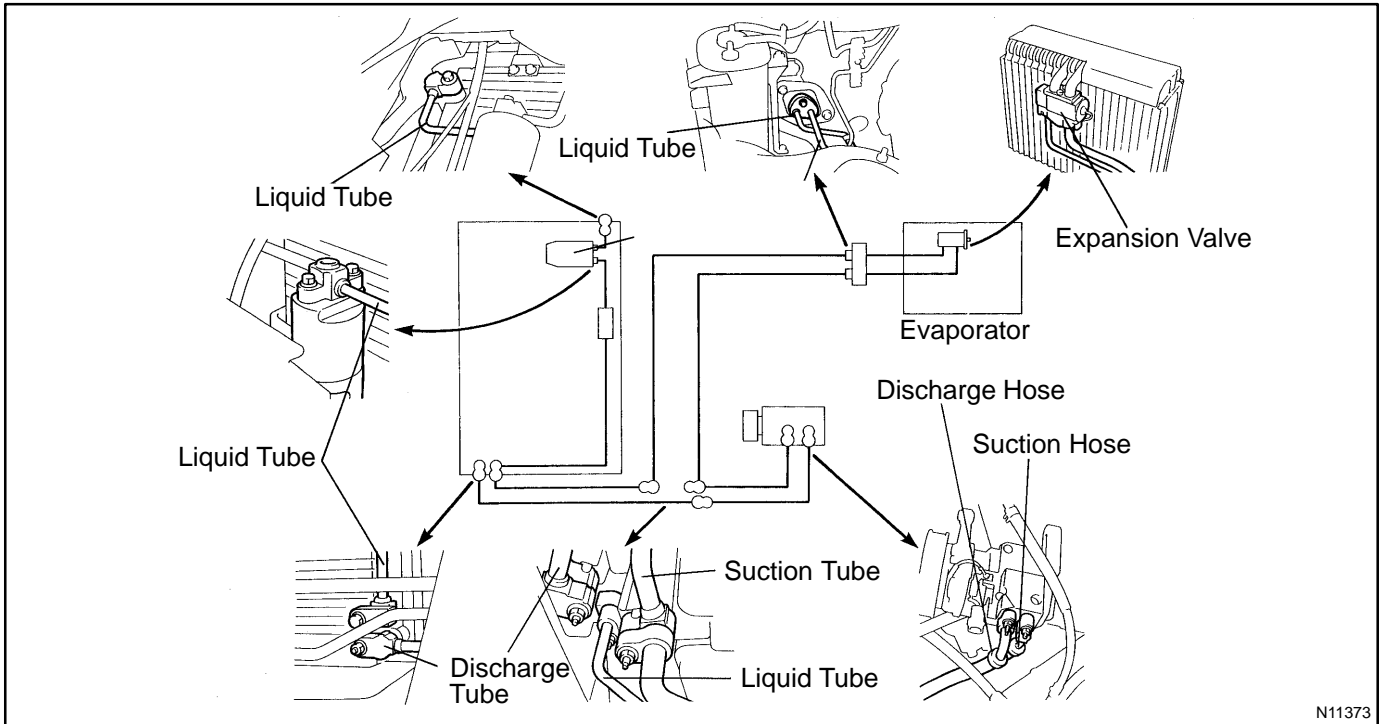


## REMOVAL

### REMOVE DRIVE BELT

Loosen the drive belt tension by turning the drive belt tensioner clockwise, and remove the drive belt.

# LOCATION



## 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 torqued.

Part tightened	N-m	kgf-cm	ft-lbf
Receiver x Liquid tube	5.4	55	48 in.-lbf
Condenser x Discharge hose	10	100	7
Condenser x Liquid tube	10	100	7
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
Evaporator x Expansion valve	5.4	55	48 in.-lbf
A/C unit x Liquid and suction tube	10	100	7
Discharge lines	10	100	7
Liquid lines	10	100	7
Suction lines	10	100	7

### 4. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT

Specified amount:  $700 \pm 50$  g ( $24.96 \pm 1.76$  oz.)

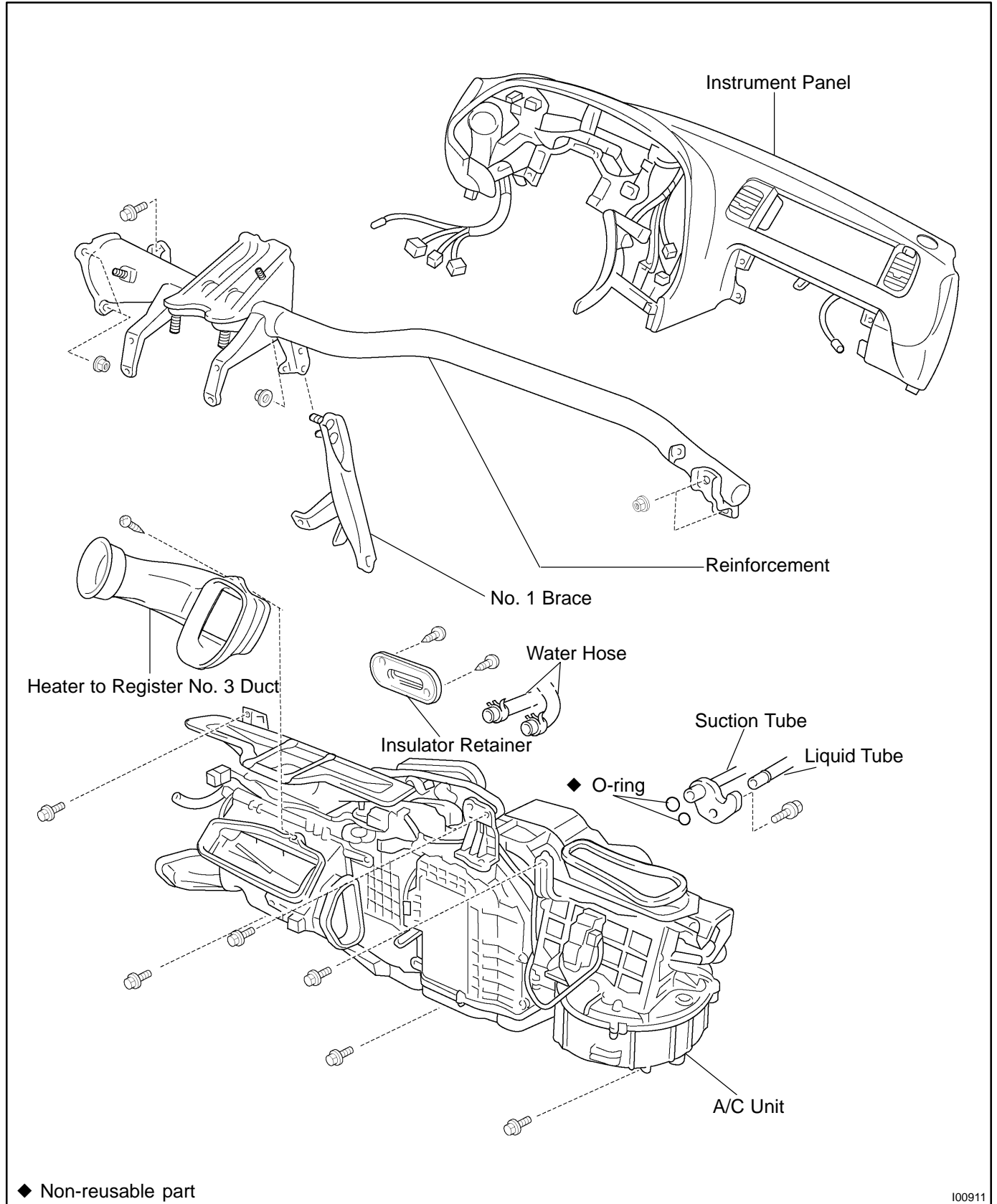
### 5. INSPECT FOR LEAKAGE OF REFRIGERANT

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

### 6. INSPECT AIR CONDITIONING OPERATION

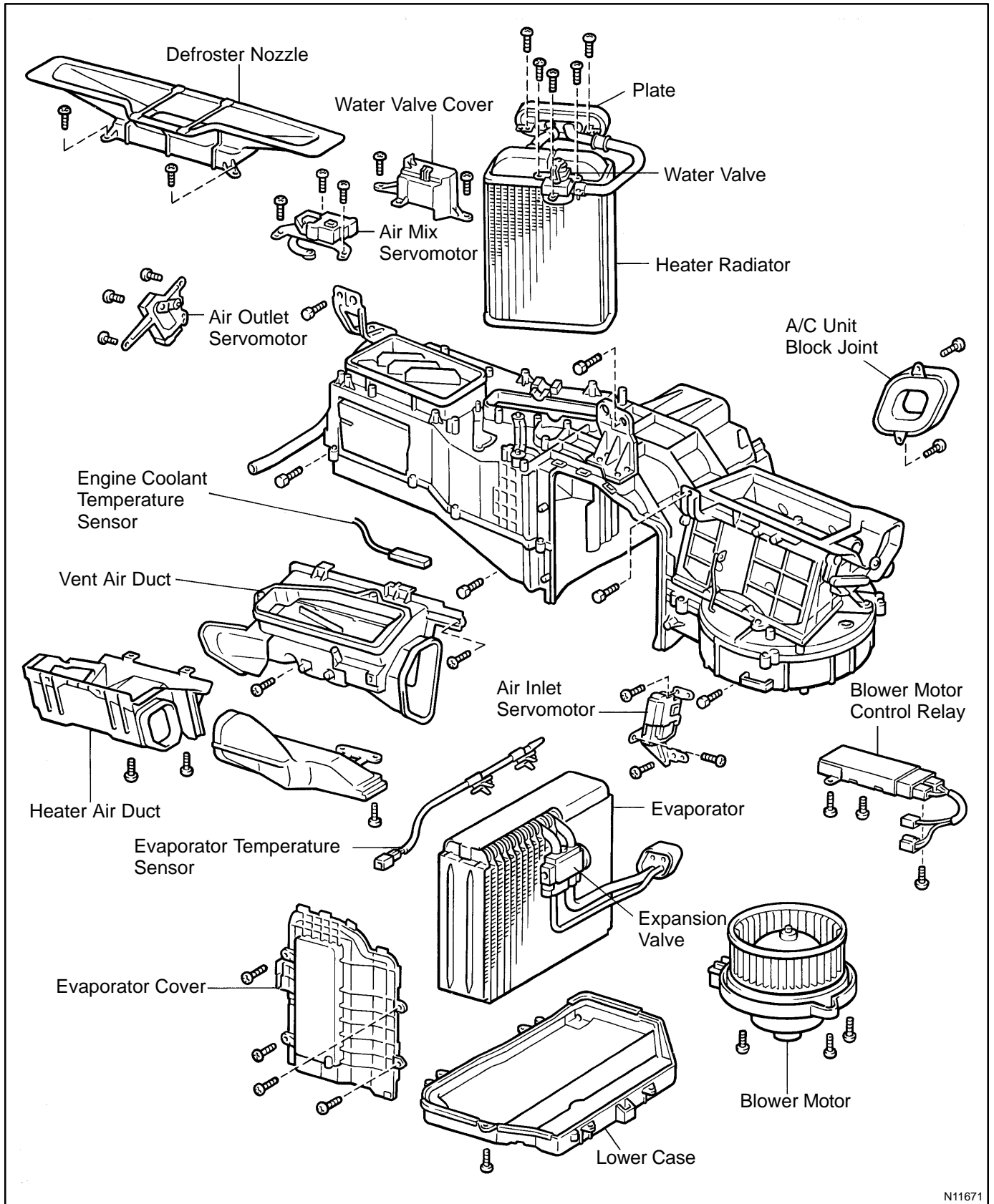
# AIR CONDITIONING UNIT COMPONENTS

AC00B-02



I00911





N11671

## REMOVAL

### 1. DISCHARGE REFRIGERANT FROM REFRIGERANT SYSTEM

HINT:

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

Evacuate air from refrigeration system.

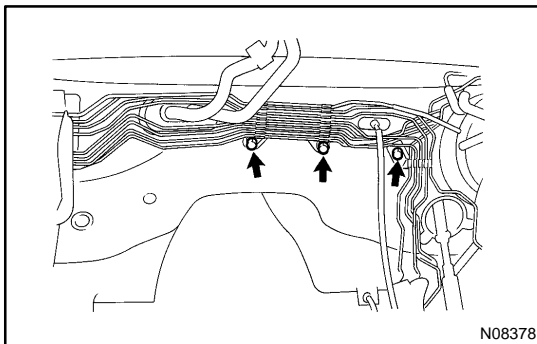
Charge system with the refrigerant and inspect for leakage of refrigerant.

**Specified amount: 700 ± 50 g (24.96 ± 1.76 oz.)**

### 2. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

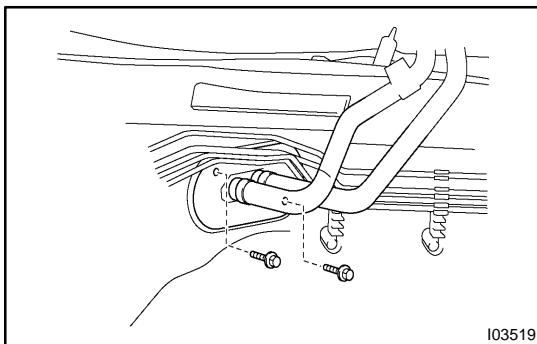
It is not necessary to drain out all coolant.



N08378

### 3. REMOVE THESE PARTS:

- (a) Engine wire harness bracket mounting bolt
- (b) Brake tube bracket mounting bolts



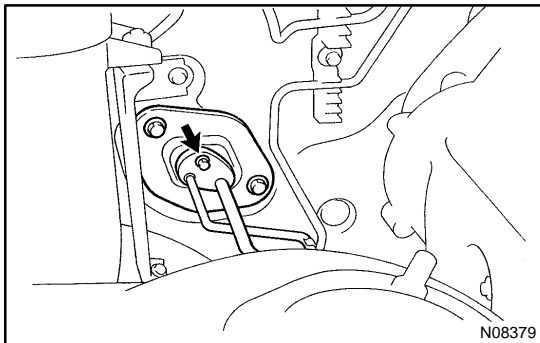
I03519

### 4. DISCONNECT WATER HOSE FROM HEATER RADIATOR PIPES

- (a) Using pliers, grip the claw of the hose clip and slide the clip along the hose.
- (b) Disconnect the water hoses from heater radiator pipes.

### 5. REMOVE INSULATOR RETAINER

Remove the 2 bolts and the insulator retainer.



## 6. REMOVE LIQUID TUBE AND SUCTION TUBE

- (a) Remove the ABS actuator.  
(See page [BR-70](#) )
- (b) Remove the bolt and slide the plate, then disconnect the both tubes.

**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:

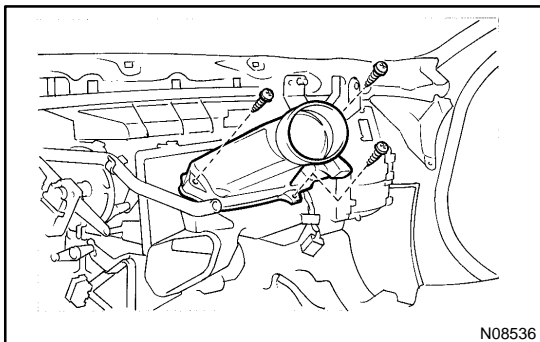
At the time of installation, please refer to the following item.  
Lubricate 2 new O-rings with compressor oil and install tubes.

## 7. REMOVE PLATE COVER

Remove the 2 bolts and the plate cover.

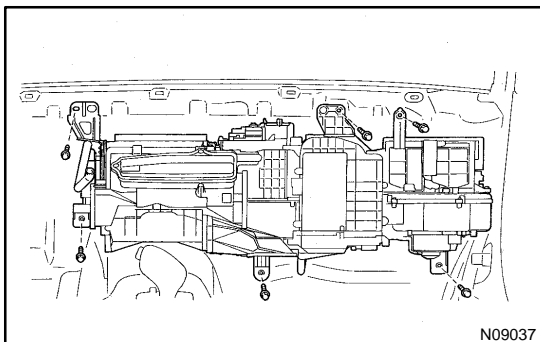
## 8. REMOVE INSTRUMENT PANEL AND REINFORCEMENT

(See page [BO-50](#) )



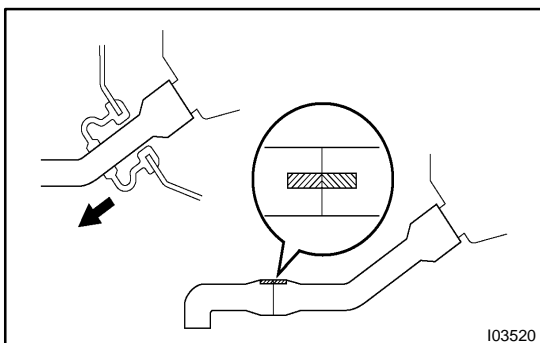
## 9. REMOVE HEATER TO REGISTER NO.3 DUCT

Remove the 3 screws and the heater to register No.3 duct.



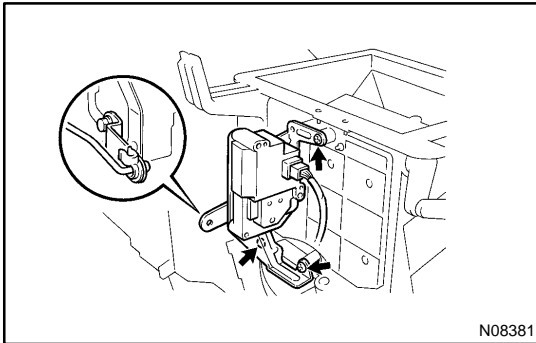
## 10. REMOVE A/C UNIT

- (a) Disconnect connectors from the A/C unit.
- (b) Remove the 6 bolts and the A/C unit.



### HINT:

At the time of installation, please refer to the following item.  
Pull the drain hose of the A/C unit forward until the yellow paint on the hose is visible in the engine compartment.  
Insert the drain hose into the engine compartment hose until the matchmarks are aligned.



## DISASSEMBLY

### 1. REMOVE AIR INLET SERVOMOTOR

- (a) Disconnect the connector.
- (b) Disconnect the control link.
- (c) Remove the 3 screws and the air inlet servomotor.

### 2. REMOVE BLOWER MOTOR CONTROL RELAY

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

### 3. REMOVE BLOWER MOTER

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

### 4. REMOVE EVAPORATOR

- (a) Remove the wire harness.
- (b) Remove the foot air duct.
- (c) Remove the A/C unit block joint.
- (d) Remove the 6 screws and down and the lower cover.
- (e) Remove the 4 screws and the evaporator cover.
- (f) Pull out the evaporator.

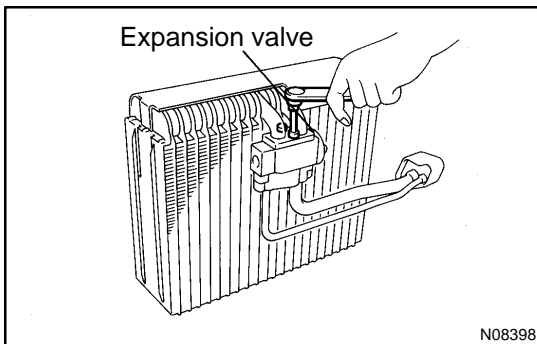
#### HINT:

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

**Add 40cc (1.4 fl.oz)**

**Compressor oil: ND-OIL 8 or equivalent**

- (g) Pull out the evaporator temp.sensor from the evaporator.

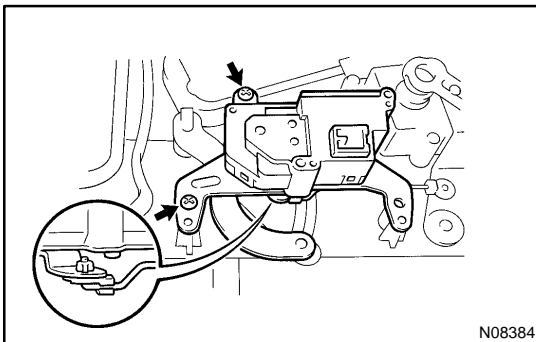


- (h) Using a hexagon wrench, remove the 2 bolts and separate the evaporator and expansion valve.

**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 tubes.



### 5. REMOVE AIR MIX SERVOMOTOR

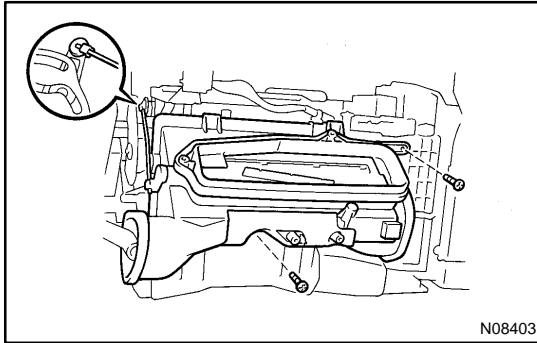
- (a) Remove the defroster duct.
- (b) Remove the 3 screws and the water valve cover.
- (c) Disconnect the connector.
- (d) Disconnect the control link.
- (e) Remove the screws and the air mix servomotor.

**6. REMOVE HEATER RADIATOR AND WATER VALVE**

- (a) Remove the 2 screws and the plate.
- (b) Remove the 2 screws and the clamp.
- (c) Remove the 3 screws.
- (d) Pull out the heater radiator with the water valve.
- (e) Remove the 2 screws and water valve from the heater radiator.

**7. REMOVE HEATER AIR DUCT**

Remove the 2 screws and the defroster air duct.

**8. REMOVE AIR VENT DUCT**

- (a) Disconnect the control link.
- (b) Remove the 2 screws and the vent air duct.

**9. REMOVE ENGINE COOLANT TEMPERATURE SENSOR**

- (a) Disconnect the connector.
- (b) After pulling off the clamp, pull out the sensor.

**10. REMOVE AIR OUTLET SERVOMOTOR**

- (a) Disconnect the connector.
- (b) Remove the 3 screws and the air outlet servomotor.

# COMPRESSOR AND MAGNETIC CLUTCH

AC00G-01

## ON-VEHICLE INSPECTION

### 1. INSPECT COMPRESSOR FOR METALLIC SOUND

Check there is abnormal metallic sound from the compressor when the A/C switch is ON.

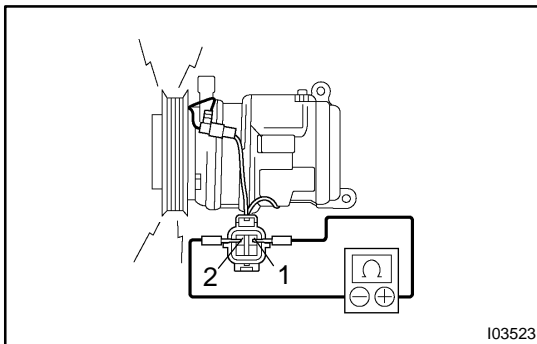
If abnormal metallic sound is heard, replace the compressor assembly.

### 2. INSPECT REFRIGERANT PRESSURE

(See page AC-3)

### 3. INSPECT VISUALLY FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check for leakage of refrigerant. If there is any leakage, replace the compressor assembly.



### 4. INSPECT COMPRESSOR LOCK SENSOR RESISTANCE

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

**Standard resistance:**

**160 - 210  $\Omega$  at 20°C (68°F)**

If resistance is not as specified, replace the sensor.

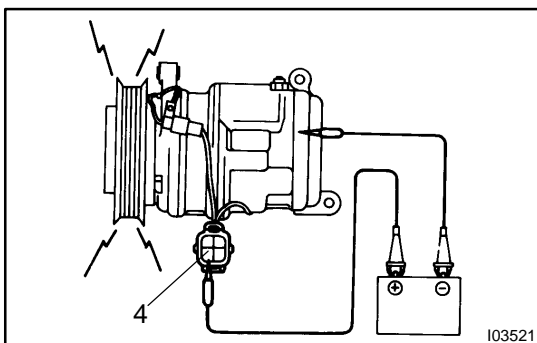
### 5. MAKE THESE VISUAL CHECKS:

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

### 6. 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.

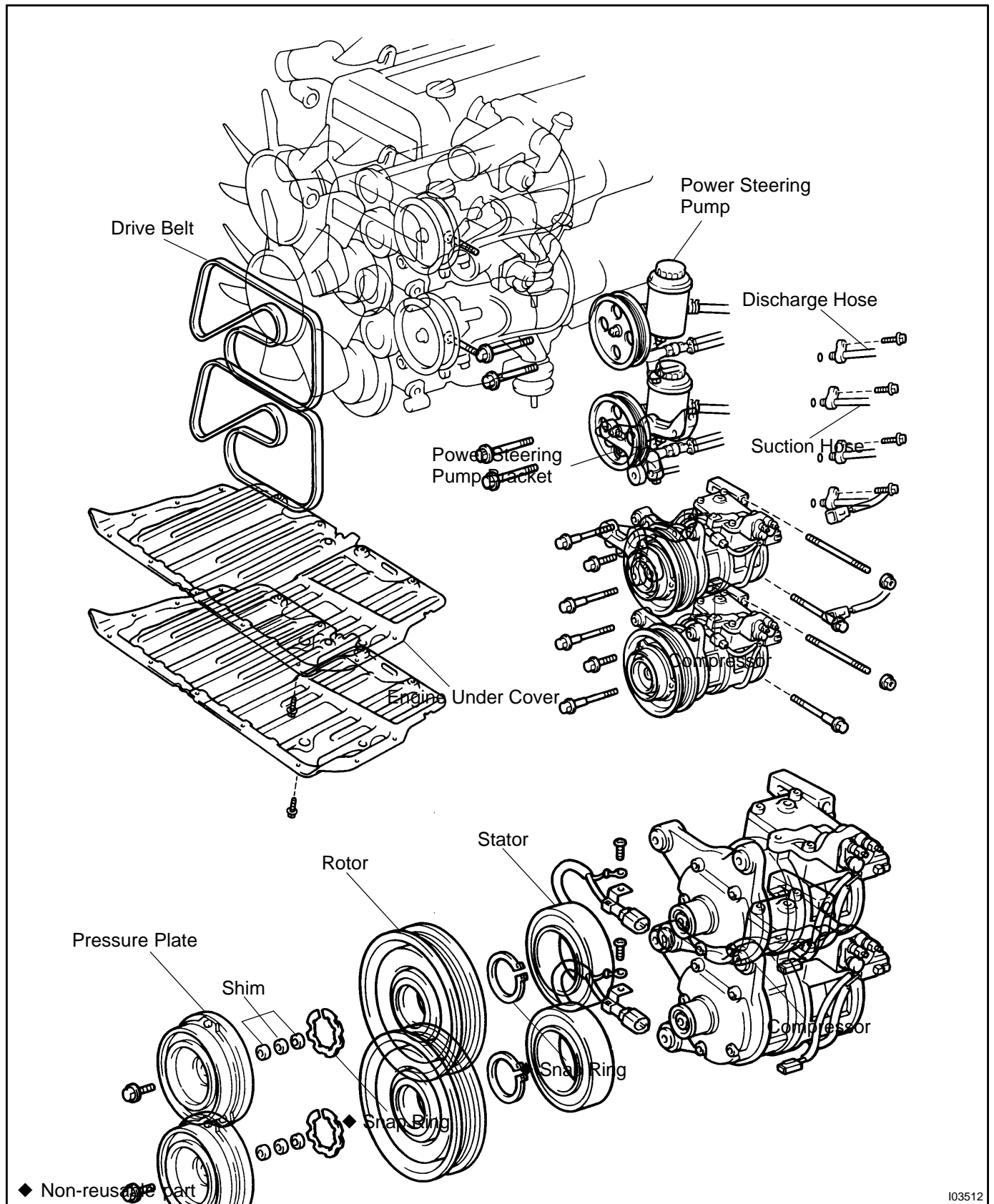


### 7. INSPECT MAGNETIC CLUTCH OPERATION

- (a) Disconnect the connector.
- (b) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to the body ground.
- (c) Check that the magnetic clutch energized.

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

# COMPONENTS

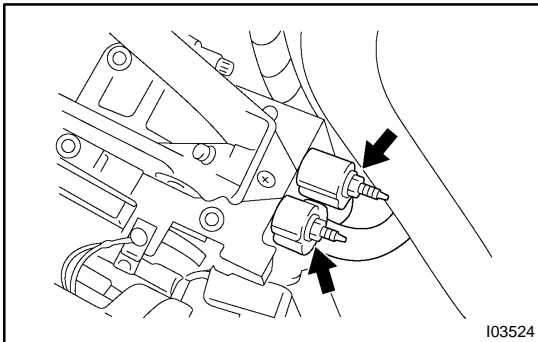


103512

103512

## REMOVAL

1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX. 10 MINUTES
2. STOP ENGINE
3. DISCONNECT NEGATIVE (-) TERMINAL CABLE FROM BATTERY
4. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM
5. REMOVE ENGINE UNDER COVER
6. REMOVE DRIVE BELT  
(See page [AC-16](#))

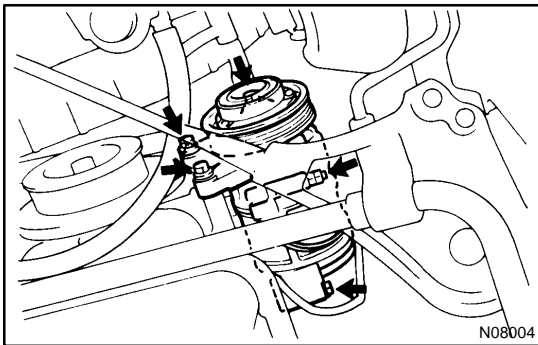


7. DISCONNECT DISCHARGE AND SUCTION HOSES FROM COMPRESSOR

Remove the 2 nuts and disconnect the both hoses.

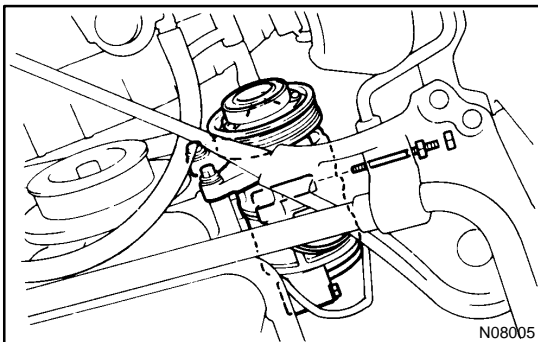
**NOTICE:**

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



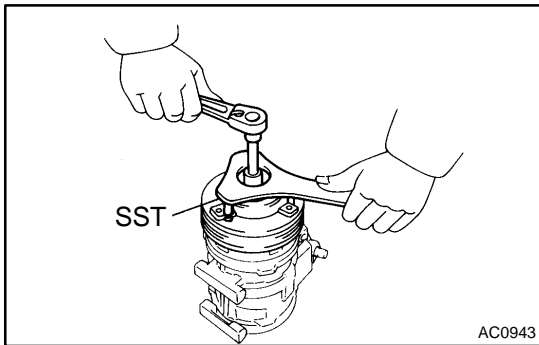
8. REMOVE COMPRESSOR

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



- (c) Using a torque socket (E10), remove the stud bolt and compressor.





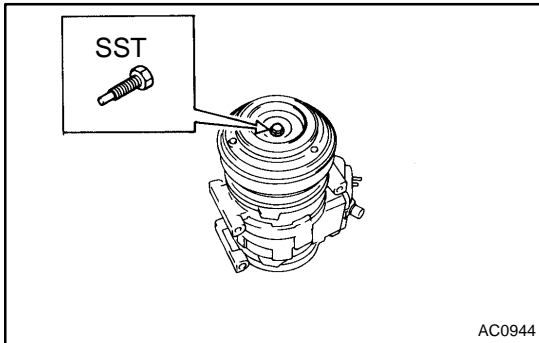
## DISASSEMBLY

### 1. REMOVE PRESSURE PLATE

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

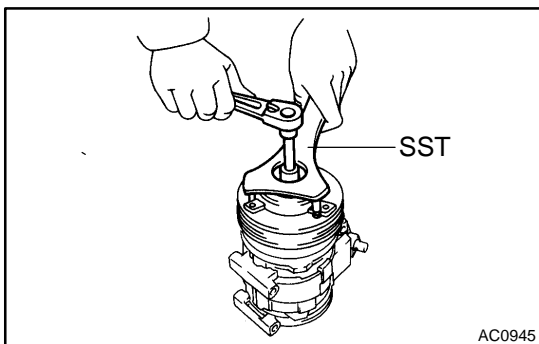
SST 07112-76060

**Torque: 14 N·m (140 kgf-cm, 10 ft-lbf)**



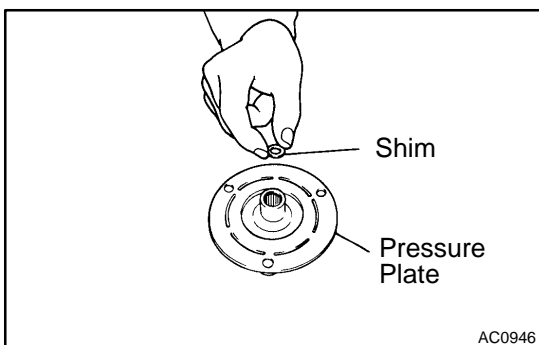
- (b) Install SST on the pressure plate.

SST 07112-66040

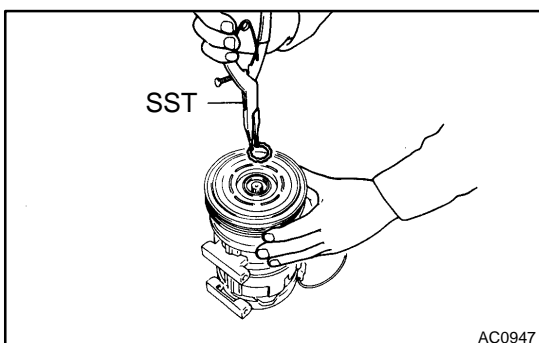


- (c) Using SST and socket wrench, remove the pressure plate.

SST 07112-66040, 07112-76060



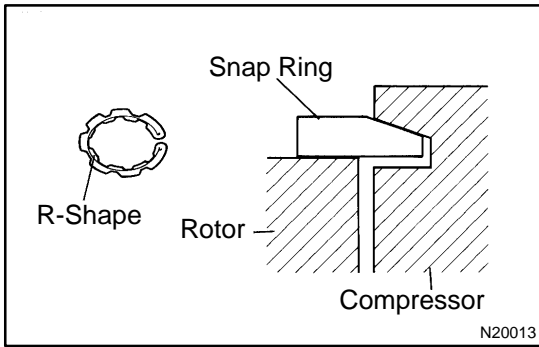
- (d) Remove the shims from the pressure plate.



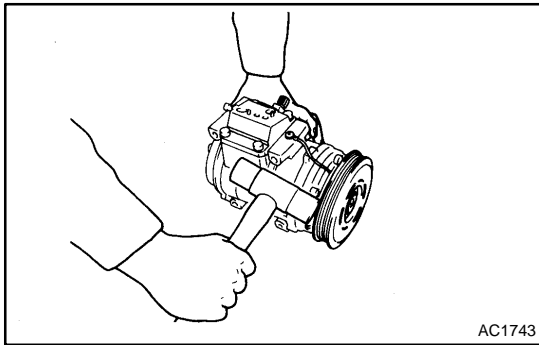
### 2. REMOVE ROTOR

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

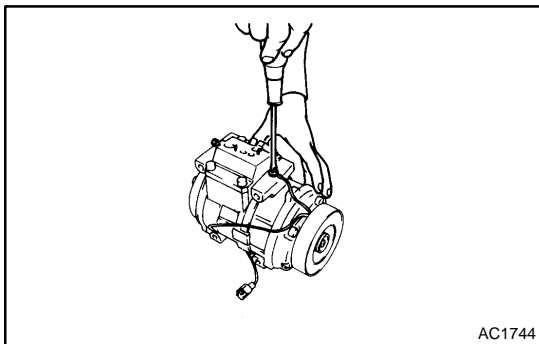
SST 07114-84020



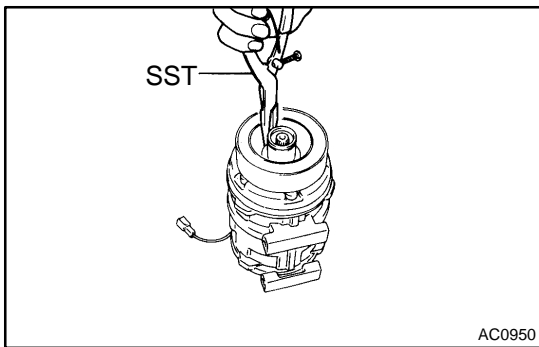
**NOTICE:**  
 At the time of reassembly, please refer to the following item.  
 The snap ring should be installed so that beveled side faces up.



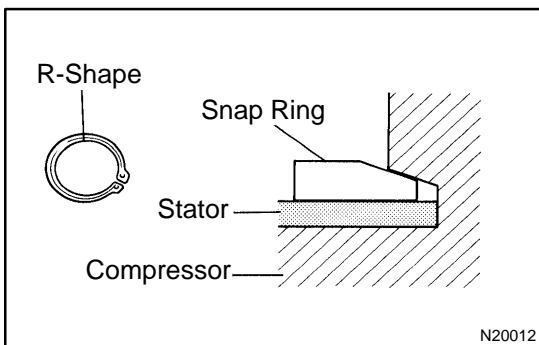
(b) Using a plastic hammer, tap the rotor off the shaft.  
**NOTICE:**  
 Be careful not to damage the pulley when tapping on the rotor.



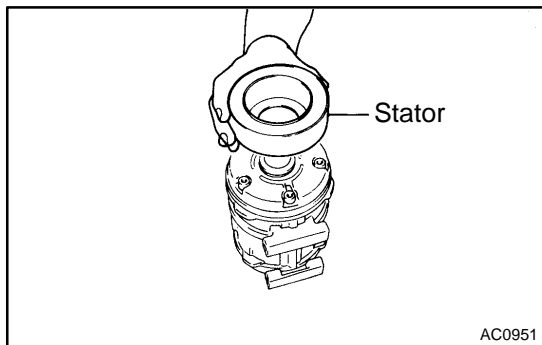
**3. REMOVE STATOR**  
 (a) Disconnect the stator lead wire from the compressor housing.



(b) Using SST, remove the snap ring.  
 SST 07114-84020



**NOTICE:**  
 At the time of reassembly, please refer to the following item.  
 The snap ring should be installed so that its beveled side faces up.



(c) Remove the stator.

## INSTALLATION

### 1. INSTALL COMPRESSOR

- (a) Install the stud bolt.  
**Torque: 26 N·m (265 kgf·cm, 19.2 ft·lbf)**
- (b) Install the compressor with 4 bolts and nut.  
**Torque: 52 N·m (530 kgf·cm, 38.3 ft·lbf)**
- (c) Connect the magnetic clutch connector.
- (d) Install the engine under cover.

### 2. CONNECT DISCHARGE AND SUCTION HOSES

Connect the both hoses with 2 bolts.

**Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)**

#### NOTICE:

**Hose should be connected immediately after the caps have been removed.**

#### HINT:

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

### 3. INSTALL POWER STEERING PUMP SET BOLTS

**Torque: 58 N·m (590 kgf·cm, 42 ft·lbf)**

### 4. INSTALL DRIVE BELT

(See page [AC-17](#) )

### 5. CONNECT NEGATIVE (-) TERMINAL CABLE TO BATTERY

### 6. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT

**Specified amount: 700 ± 50 g (24.96 ± 1.76 oz.)**

### 7. INSPECT FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check for leakage of refrigerant.  
If there is leakage, check the tightening torque at the joints.

### 8. INSPECT A/C OPERATION

## REMOVAL

### 1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

#### HINT:

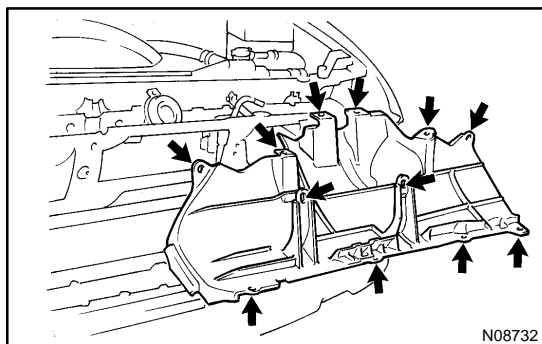
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

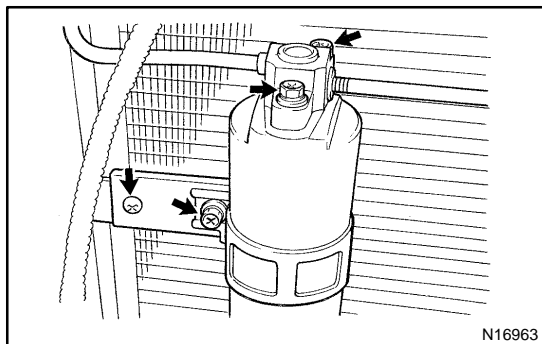
**Specified amount: 700 ± 50 g (24.96 ± 1.76 oz.)**

### 2. REMOVE FRONT BUMPER (See page [BO-4](#))



### 3. REMOVE RADIATOR SUPPORT UPPER SEAL

Remove the 12 clips and radiator support upper seal.



### 4. REMOVE LIQUID TUBES FROM RECEIVER

Remove the 2 bolts and both tubes from the receiver.

**Torque: 5.4 N·m (55 kgf·cm, 48 in.-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 2 new O-rings with compressor oil and install the tube.

### 5. REMOVE RECEIVER

Remove the holder bolt and pull the receiver downward from the receiver holder.

#### HINT:

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

If receiver is replaced, add compressor oil to receiver.

**Add 10 cc (0.34 fl.oz.)**

**Compressor oil: ND-OIL 8 or equivalent**

### 6. REMOVE RECEIVER HOLDER

Remove the screw and holder.

## REMOVAL

### 1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

#### HINT:

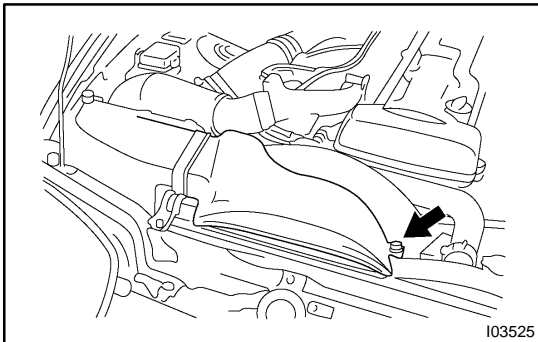
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

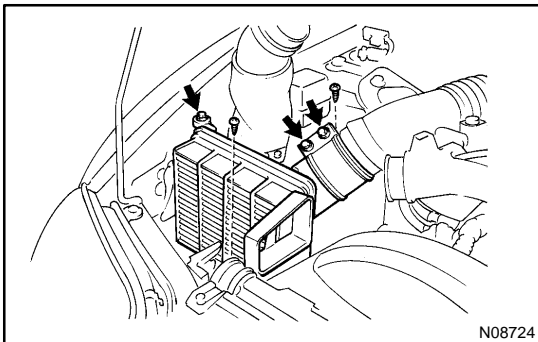
**Specified amount: 700 ± 50 g (24.96 ± 1.76 oz.)**

### 2. REMOVE BATTERY



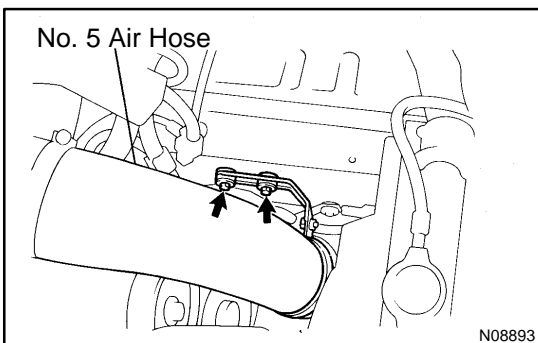
### 3. REMOVE AIR CLEANER DUCT

Remove the bolt and the air cleaner duct.



### 4. REMOVE AIR CLEANER

- (a) Remove the air cleaner cover.
- (b) Remove the air cleaner hose.
- (c) 2JZ-GTE Engine Models:  
Remove the No.1 air hose.
- (d) Remove the 3 bolts and screw.
- (e) Remove the air cleaner.

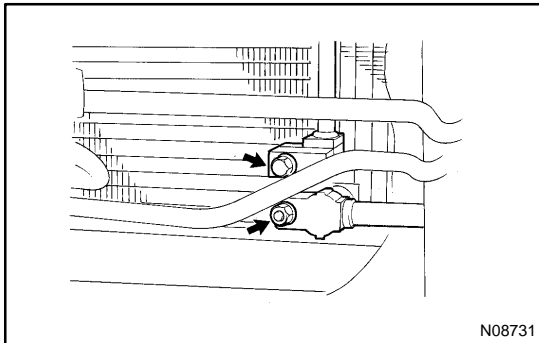


### 5. 2JZ-GTE Engine Models: REMOVE No.5 AIR HOSE CLAMP

- (a) Remove the 2 bolts and clamp.
- (b) Remove the air cleaner.

**6. REMOVE THESE PARTS:**

- (a) Front bumper (See page [BO-4](#) )
- (b) Radiator support upper seal (See page [AC-40](#) )
- (c) Receiver and holder (See page [AC-40](#) )

**7. DISCONNECT LIQUID TUBE AND DISCHARGE TUBES**

Remove the 3 bolts and disconnect the both tubes.

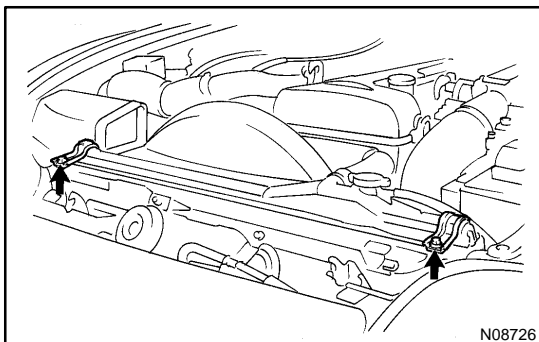
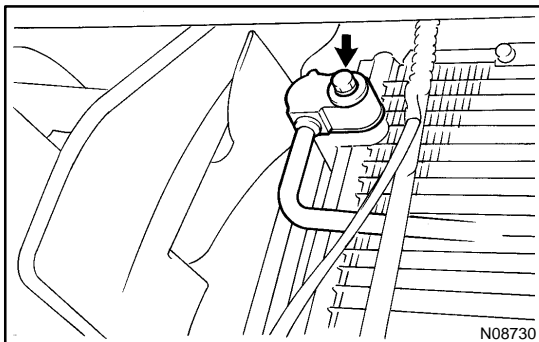
**Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)**

**NOTICE:**

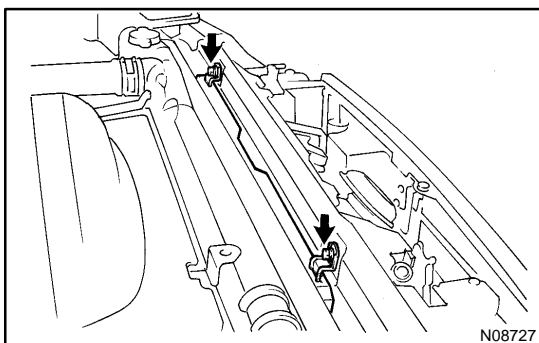
**Cap the open fittings immediately to keep moisture or dirt out of the system.**

**HINT:**

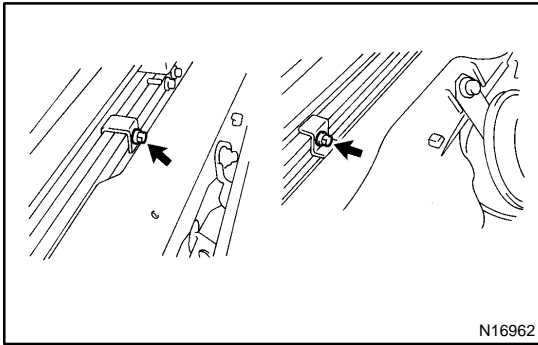
At the time of installation, please refer to the following item.  
Lubricate 3 new O-rings with compressor oil and install the tubes.

**8. REMOVE CONDENSER**

- (a) Remove the 2 radiator upper mountings.

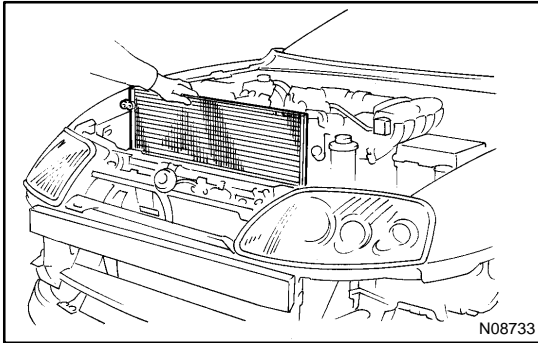


- (b) Push the radiator toward engine.
- (c) Remove the condenser upper mountings.



- (d) Push the condenser toward radiator and remove the liquid tube piping clamp.

**Torque: 4.1 N·m (42 kgf·cm, 36 in.-lbf)**



- (e) Push the condenser toward engine 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 condenser.

**Add 40 cc (1.4 fl.oz.)**

**Compressor oil: ND-OIL 8 or equivalent**



# EVAPORATOR REMOVAL

AC09S-02

## 1. DISCHARGE REFRIGERANT IN REFRIGERATION SYSTEM

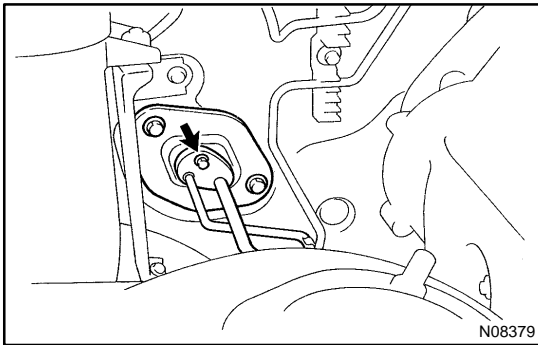
HINT:

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: 700 ± 50 g (24.96 ± 1.76 oz.)**

## 2. REMOVE ABS ACTUATOR (See page [BR-70](#))



## 3. DISCONNECT LIQUID TUBE AND SUCTION TUBE FROM A/C UNIT

**Torque: 10 N·m (100 kgf-cm, 7 ft-lbf)**

**NOTICE:**

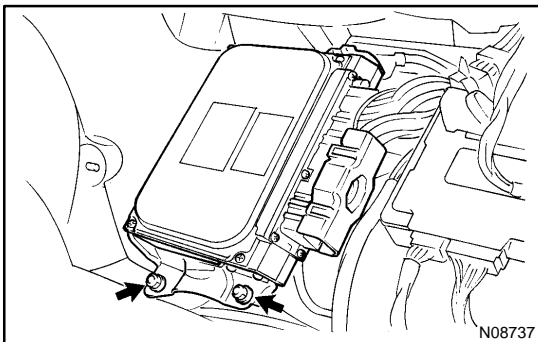
**Cap the open fittings immediately to keep moisture or dirt out of the system.**

HINT:

At the time of installation, please refer to the following item.  
Lubricate 2 new O-rings with compressor oil and install the tubes.

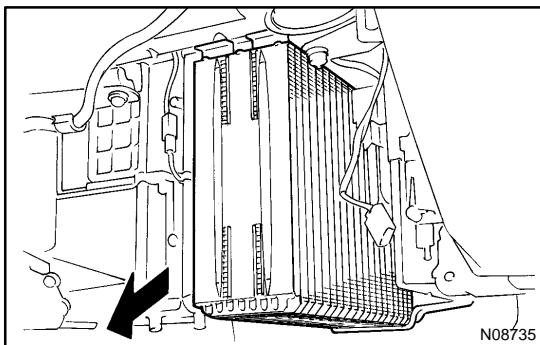
## 4. REMOVE THESE PARTS:

- (a) Glove compartment parts
- (b) Heater to register No.4 duct
- (c) Front door scuff plate RH
- (d) Floor carpet



## 5. REMOVE ECM

- (a) Slide the floor carpet backward.
- (b) Remove the 2 nuts and the ECM cover.
- (c) Disconnect the connector.
- (d) Remove the 2 nuts and the ECM.

**6. REMOVE EVAPORATOR**

- (a) Remove the 6 screws and the lower cover.
- (b) Remove the 4 screws and the evaporator cover.
- (c) Remove the evaporator.

**HINT:**

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

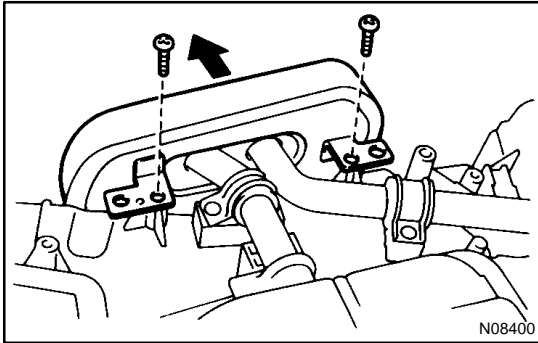
**Add 40 cc (1.4 fl.oz.)**

**Compressor oil: ND-OIL 8 or equivalent**

# HEATER RADIATOR REMOVAL

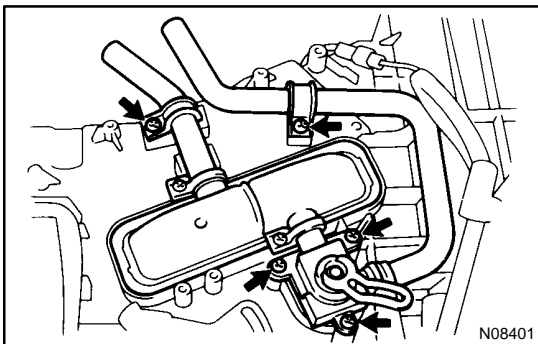
AC0QV-01

1. REMOVE AIR CONDITIONING UNIT  
(See page [AC-25](#))



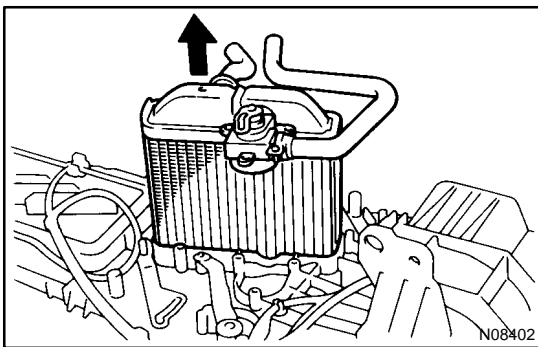
2. REMOVE HEATER RADIATOR AND WATER VALVE

- (a) Remove the 2 screws and the plate.

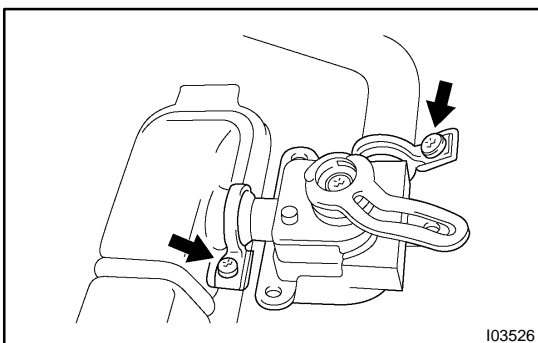


- (b) Remove the 2 screws and the clamp.

- (c) Remove the 3 screws.



- (d) Pull out the heater with the water valve.



- (e) Remove the 2 screws and water valve from the heater radiator.

## EXPANSION VALVE

AC00Y-01

### ON-VEHICLE INSPECTION

1. CHECK QUANTITY OF GAS DURING REFRIGERATION CYCLE
2. SET ON MANIFOLD GAUGE SET  
(See page [AC-18](#))
3. RUN ENGINE
  - (a) Run the engine at 1,500 rpm for at least 5 minutes.
  - (b) Then check that the high pressure reading is 1.37 - 1.57 MPa (14 - 16 kgf/cm<sup>2</sup>, 199 - 228 psi).

#### 4. CHECK EXPANSION VALVE

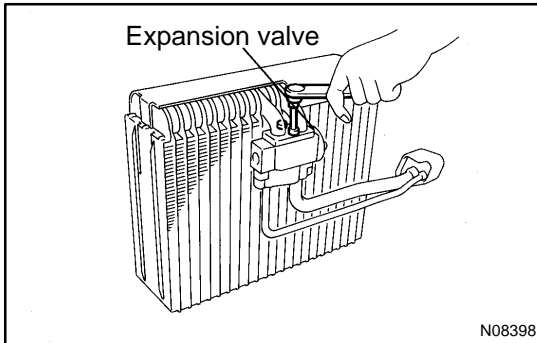
If the expansion valve is faulty, the low pressure reading will drop to 0 kPa (0 kgf/cm<sup>2</sup>, 0 psi).

#### HINT:

When the low pressure drops to 0 kPa (0 kgf/cm<sup>2</sup>, 0 psi), check the receiver's IN and OUT sides for no temperature difference.

## REMOVAL

1. REMOVE EVAPORATOR  
(See page [AC-47](#))



2. 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 installation, please refer to the following item.  
Lubricate 4 new O-rings with compressor oil and install the tubes.

## WATER VALVE REMOVAL

ACOR1-01

### 1. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not to drain out all coolant.

### 2. REMOVE INSTRUMENT PANEL

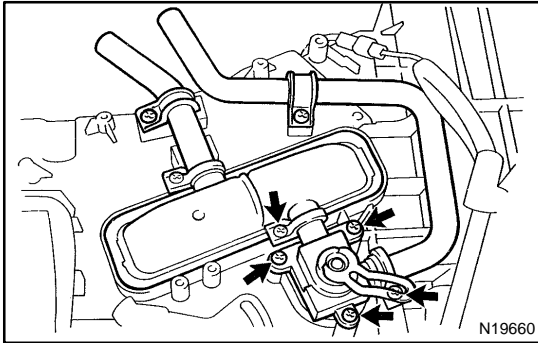
(See page [BO-54](#))

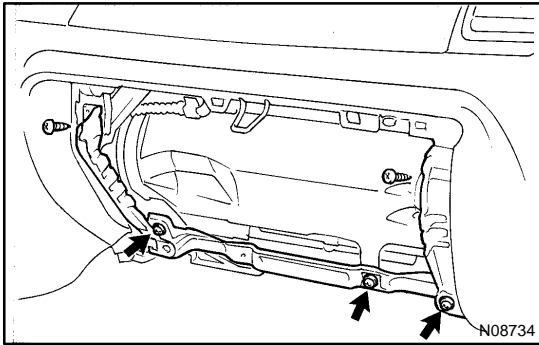
### 3. REMOVE AIR MIX SERVOMOTOR

(See page [AC-65](#))

### 4. REMOVE WATER VALVE

Remove the 5 screws and water valve.



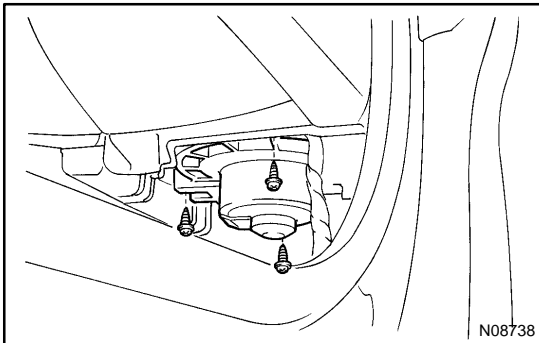


## BLOWER MOTOR REMOVAL

AC0R3-01

### 1. REMOVE THESE PARTS:

- (a) Glove compartment parts  
(See page [BO-54](#) )
- (b) Heater to register No.4 duct
- (c) Front door scuff plate RH
- (d) ECM cover



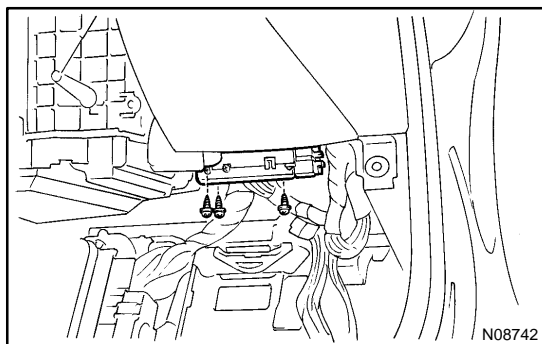
### 2. REMOVE BLOWER MOTOR

- (a) Slide the floor carpet backward.
- (b) Disconnect the connector.
- (c) Remove the 3 screws and the blower motor.

# BLOWER MOTOR CONTROL RELAY REMOVAL

AC0R6-01

1. REMOVE BLOWER MOTOR  
(See page [AC-59](#))



2. REMOVE BLOWER MOTOR CONTROL RELAY
  - (a) Disconnect the connector.
  - (b) Remove the 3 screws and the blower motor control relay.

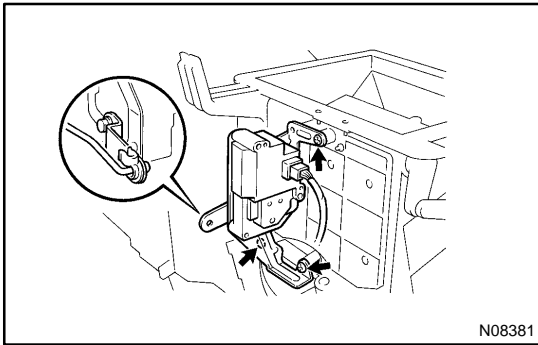


# SERVOMOTOR REMOVAL

AC0R9-01

## 1. REMOVE AIR INLET SERVOMOTOR

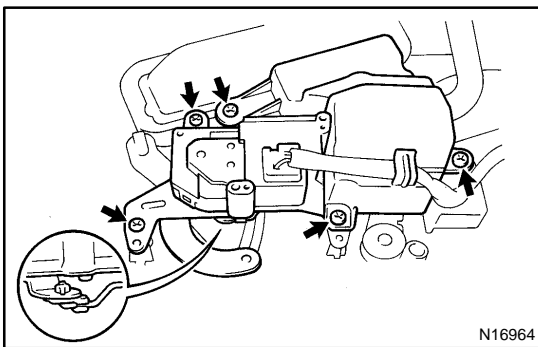
- (a) Remove instrument panel.  
(See page [BO-54](#) )



- (b) Remove air inlet servomotor.
- (1) Disconnect the connector.
  - (2) Disconnect the control link.
  - (3) Remove the 3 screws and the air inlet servomotor.

## 2. REMOVE AIR MIX SERVOMOTOR

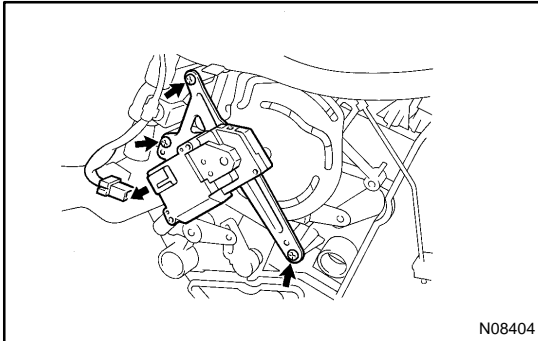
- (a) Remove instrument panel.  
(See page [BO-54](#) )



- (b) Remove air mix servomotor.
- (1) Remove the defroster duct.
  - (2) Remove the 3 screws and the water valve cover.
  - (3) Disconnect the connector.
  - (4) Remove the 3 screws and the servomotor then disconnect the control link.

**3. REMOVE AIR OUTLET SERVOMOTOR**

- (a) Remove instrument panel.  
(See page [BO-54](#) )



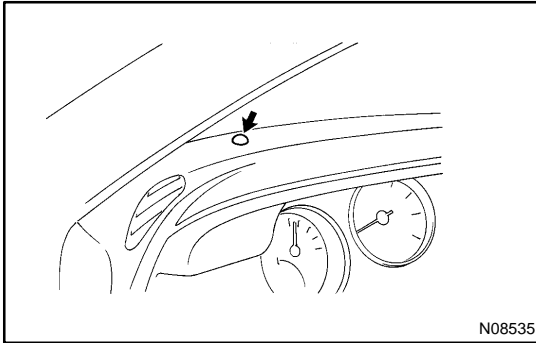
- (b) Remove air outlet servomotor.  
(1) Disconnect the connector.  
(2) Remove the 3 screws and the air outlet servomotor.

# SENSOR REMOVAL

ACORC-01

## 1. REMOVE SOLAR SENSOR

- (a) Remove instrument panel.  
(See page [BO-54](#) )

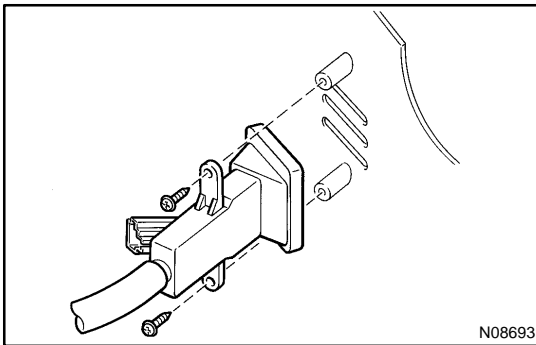


N08535

- (b) Remove solar sensor.  
Disconnect the connector pull the solar sensor upward from instrument panel.

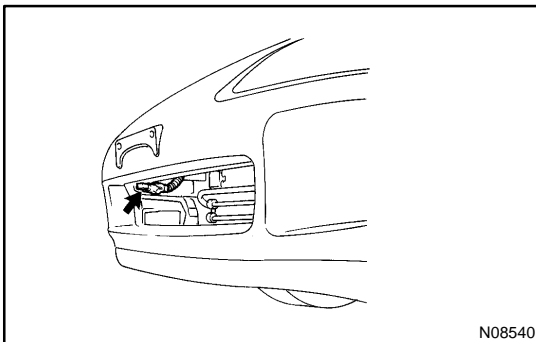
## 2. REMOVE ROOM TEMPERATURE SENSOR

- (a) Remove center cluster panel.  
(See page [BO-50](#) )



N08693

- (b) Remove room temperature sensor.  
(1) Disconnect the connector.  
(2) Remove the aspirator hose.  
(3) Remove the 2 screws and the room temperature sensor.



N08540

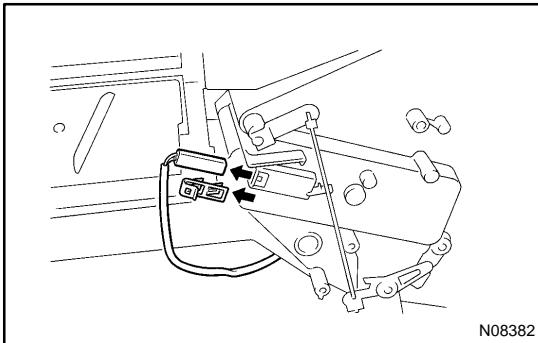
## 3. REMOVE AMBIENT TEMPERATURE SENSOR

Remove ambient temperature sensor.

- (1) Remove the ambient temperature sensor from the bumper reinforcement.  
(2) Disconnect the connector.

**4. REMOVE ENGINE COOLANT TEMPERATURE SENSOR**

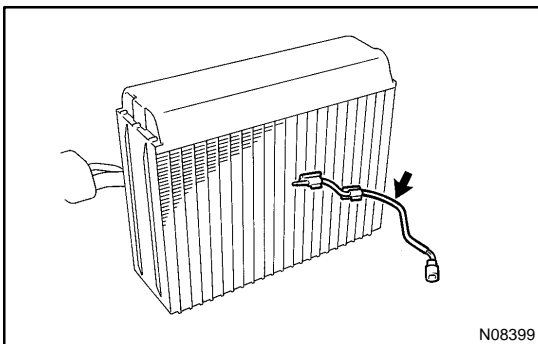
- (a) Remove air conditioning unit.  
(See page [AC-25](#) )



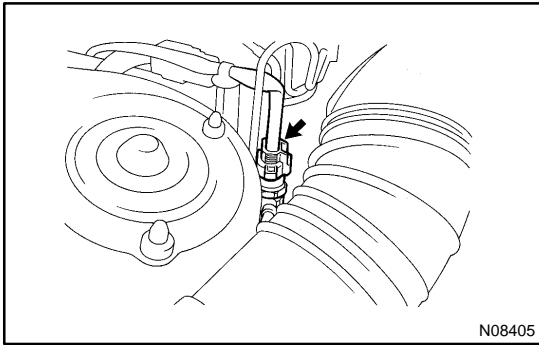
- (b) Remove engine coolant temperature sensor.  
(1) Disconnect the connector.  
(2) After pulling off the clamp, pull out the sensor.

**5. REMOVE EVAPORATOR TEMPERATURE SENSOR**

- (a) Remove evaporator.  
(See page [AC-47](#) )



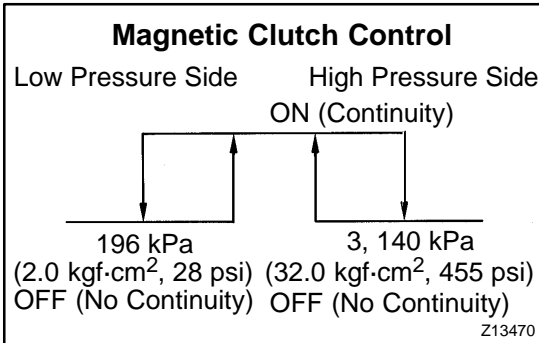
- (b) Remove evaporator temperature sensor.  
Pull out the evaporator temperature sensor from the evaporator.



# PRESSURE SWITCH ON-VEHICLE INSPECTION

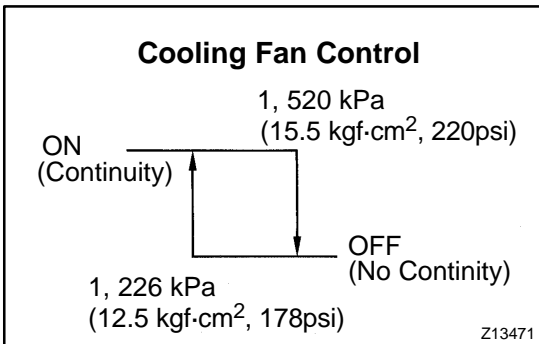
ACORF-02

1. SET ON MANIFOLD GAUGE SET  
(See page AC-18)
2. DISCONNECT CONNECTOR FROM PRESSURE SWITCH
3. RUN ENGINE AT APPROX. 2,000 RPM



4. **Magnetic Clutch Control:**  
**INSPECT PRESSURE SWITCH OPERATION ( ): 2JZ-GTE**
  - (a) Connect the positive (+) lead from the ohmmeter to terminal 4 (1) and the negative (-) lead to terminal 1 (2).
  - (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. **2JZ-GTE Engine Models:**  
**Condenser 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. DISCONNECT REFRIGERANT FROM REFRIGERATION SYSTEM

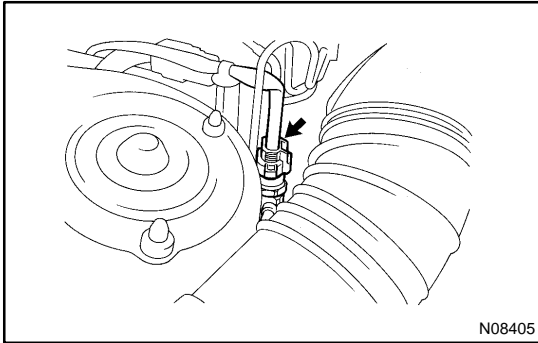
#### HINT:

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: 700 ± 50 g (24.69 ± 1.76 oz.)**



### 2. REMOVE PRESSURE SWITCH FROM LIQUID TUBE

Disconnect the connector and remove the pressure switch.

**Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)**

#### HINT:

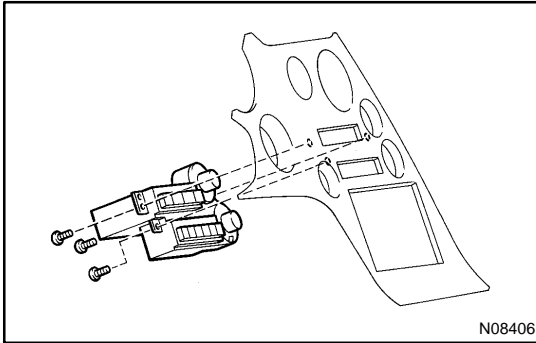
- ◆ Lock the switch mounted on the tube with an open end wrench, being careful not to deform the tube and remove the switch.
- ◆ At the time of installation, please refer to the following item.

Lubricate a new O-ring with the compressor oil and install the switch.

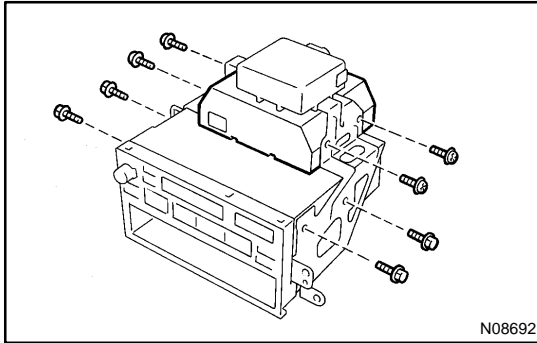
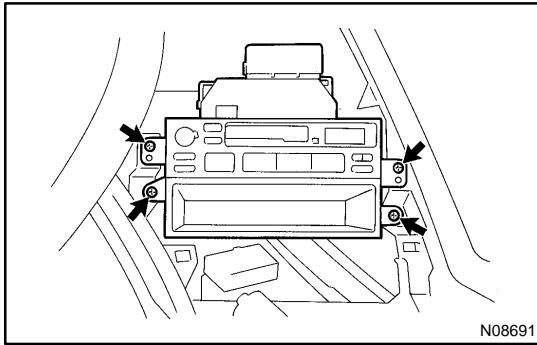
# AIR CONDITIONING CONTROL ASSEMBLY REMOVAL

AC0RK-01

1. REMOVE CENTER CLUSTER PANEL  
(See page [BO-50](#))



2. REMOVE AIR CONDITIONING CONTROL ASSEMBLY
  - (a) Disconnect the connector.
  - (b) Remove the 3 screws and air conditioning control assembly.

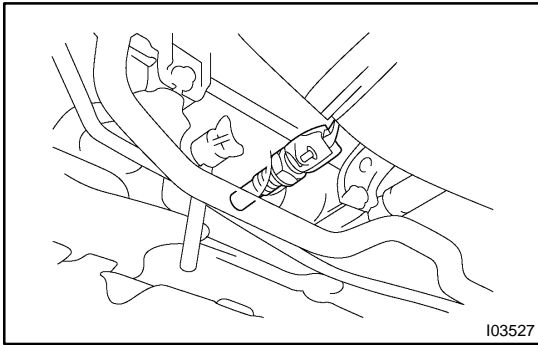


## AIR CONDITIONING AMPLIFIER REMOVAL

ACORN-01

1. REMOVE CENTER CLUSTER PANEL  
(See page [BO-50](#))
2. REMOVE RADIO WITH AIR CONDITIONING AMPLIFIER
  - (a) Remove the 4 screws and radio with the air conditioning amplifier.
  - (b) Disconnect the connectors.
3. REMOVE AIR CONDITIONING AMPLIFIER FROM RADIO
  - (a) Remove the 4 screws and the 4 bolts.
  - (b) Remove the air conditioning amplifier from radio.





## ENGINE COOLANT TEMPERATURE (ECT) SWITCH REMOVAL

ACORQ-01

1. REMOVE ENGINE UNDER COVER
2. DRAIN ENGINE COOLANT

HINT:

It is not necessary to drain out all coolant.

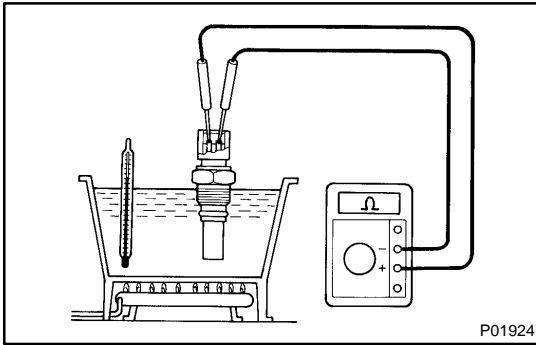
3. REMOVE SWITCH

- (a) Disconnect the connector.
- (b) Remove the switch.

**Torque: 7.4 N·m (75 kgf·cm, 65 in.-lbf)**

HINT:

At the time of installation, please refer to the following item.  
Lubricate a new O-ring with soapy water and install the switch.



## INSPECTION

### INSPECT ECT SWITCH CONTINUITY

- (a) Using an ohmmeter, check the no continuity exists between the terminals when the coolant temperature is above 100°C (212°F).

If there is continuity, replace the switch.

- (b) Using an ohmmeter, check the continuity exists between the terminals when the coolant temperature is below 91°C (196°F).

If there is no continuity, replace the switch.