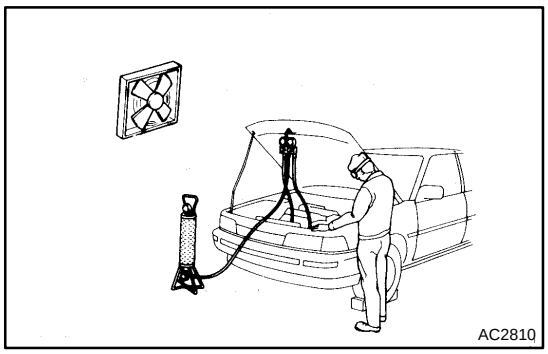

AC2810

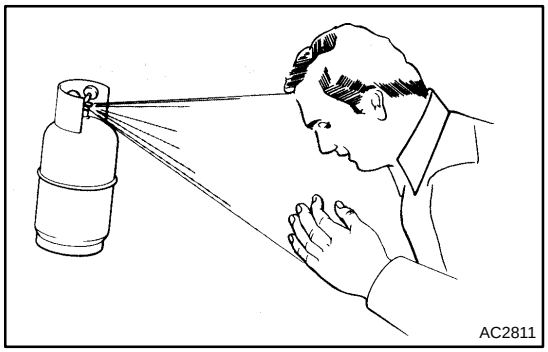
AIR CONDITIONING SYSTEM

AC09C–01

PRECAUTION

1. DO NOT HANDLE REFRIGERANT IN AN ENCLOSED AREA OR NEAR AN OPEN FLAME

2. ALWAYS WEAR EYE PROTECTION


AC2811

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:

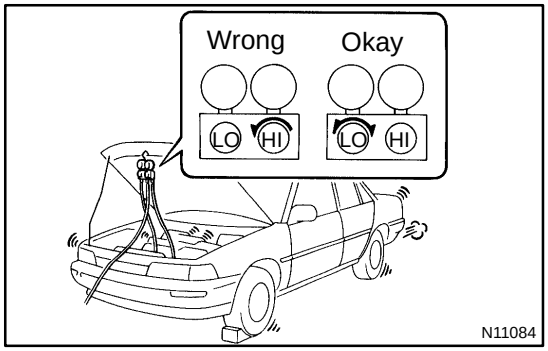
Do not rub your eyes or skin.

(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 APPL PHYSICAL SHOCKS TO IT



N11084

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

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

7. DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATING

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.

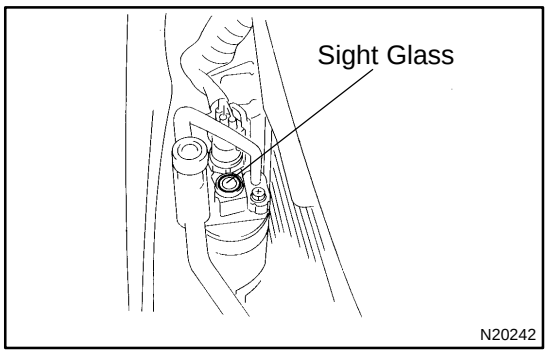
8. BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT

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

9. SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The Lexus ES300 is equipped an SRS (Supplemental Restraint System) such as the driver and passenger air bag. Failure to carry out service operations the correct sequence could cause the SRS to unexpectedly deployed during servicing, possibly leading to a serious accident. Further, if a mistake is made in servicing the SRS, it is possible the SRS may fail to operate when required. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the following item carefully, then follow the correct procedure described in the repair manual.

AC2SY–01



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 set at ”HI”
- A/C switch ON
- Temperature control set at ”MAX. COOL”
- Fully open 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 i sight glass	None, sufficient or too much	Refer to 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 new refrigerant
6	When air conditioning is turned off, refrigerant foams and then stays clear	Correct	–

HINT:

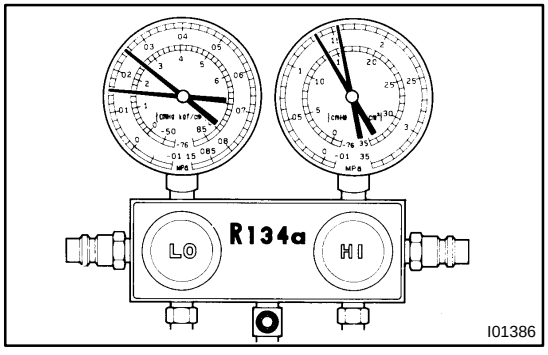
*: Bubbles in the sight glass with ambient temperatures higher than usual can be considered normal if cooling is sufficient.

2. INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET

This is a method in witch the trouble is located by using a manifold gauge set. Read the manifold gauge pressure when the 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 1,500 rpm
- Blower speed control set at ”HI”
- Temperature control set at ”MAX COOL”



(1) Normally functioning refrigeration system

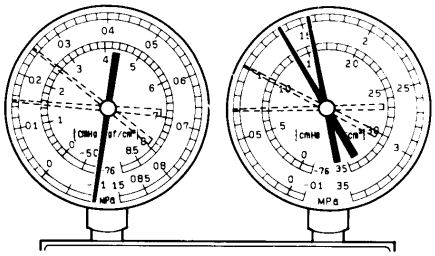
Gauge reading:

Low pressure side: 0.15 – 0.25 MPa (1.5 – 2.5 kgf/cm^2)

High pressure side: 0.15 – 0.25 MPa (1.5 – 2.5 kgf/cm^2)

(2) Moisture present in refrigeration system.

Condition: Periodically cools and then fails to cool

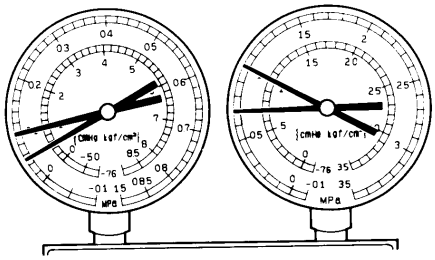


I01387

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 receiver (2) Remove moisture in cycle through repeatedly evacuating air (3) Charge proper amount of new refrigerant

(3) Insufficient cooling

Condition: Insufficient cooling

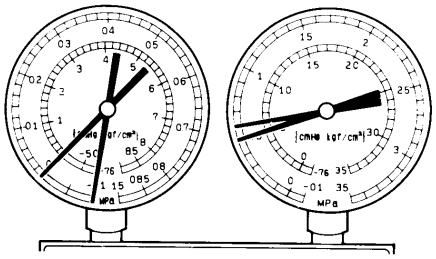


I01388

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

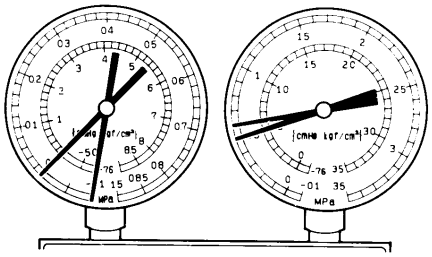


I01389

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• Pressure low in both low and high pressure sides • Frost on tube from receiver to unit	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)

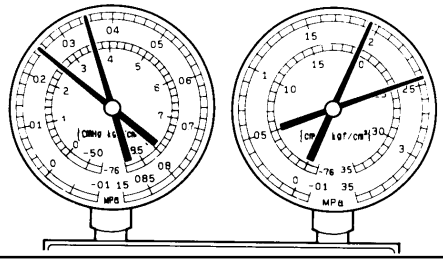


I01449

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
• 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 receiver (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

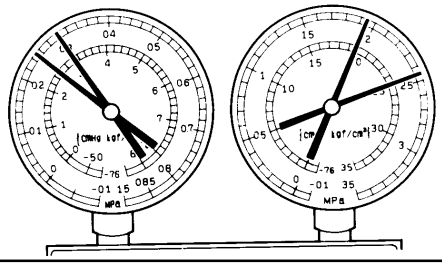


I01390

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 of 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



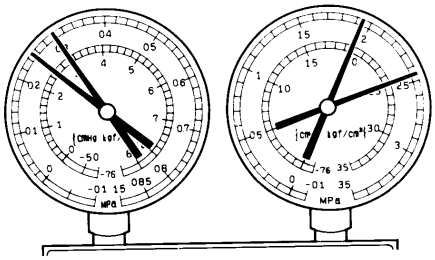
NOTE : These gauge indications are shown when the refrigeration system has been opened and the refrigerant charged without vacuum purging.

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

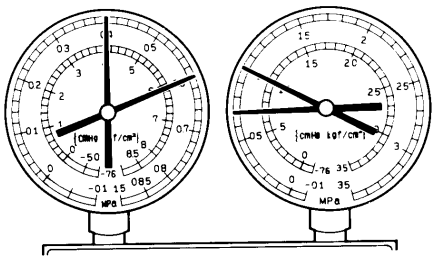


I01450

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. INSPECT IDLE–UP SPEED

(a) Warm up engine

(b) Inspect idle–up speed when the these conditions are established.

Test conditions:

- Blower speed control set at ”HI”
- Temperature control set at ”MAX COOL”
- A/C switch ON
- Put gear shift in neutral

Magnetic clutch condition	Idle speed
Magnetic clutch not engaged	700 ± 50 rpm
Magnetic clutch engaged	700 ± 50 rpm

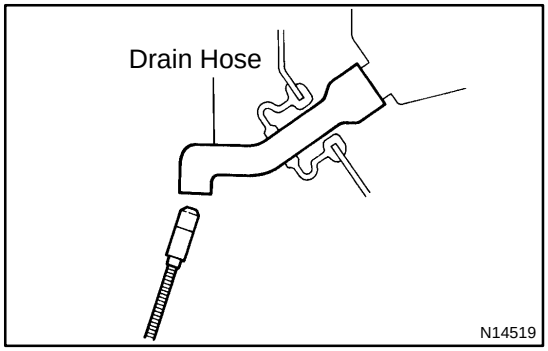
If idle speed is not as specified, check IAC valve and air intake system.

4. INSPECT FOR LEAKAGE OF REFRIGERANT

(a) Perform under these conditions:

- Stop engine
- Secure good ventilation (If not, the gas leak detector may react to volatile gases which are not refrigerant, such as evaporated gasoline or 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^2, 57 – 85 psi)



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

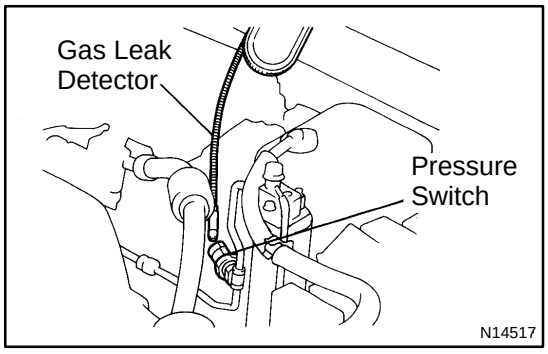
HINT:

- After the blower motor is stopped, leave the A/C unit for more than 15 minutes.
- Expose the gas leak detector sensor the under the drain hose.
- When bring the gas leak detector close to the drain hose, make sure that the gas leak detector does not reach to the volatile gases.

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

(c) If gas leak is not detected through the drain hose, remove the blower linear controller from the A/C 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.



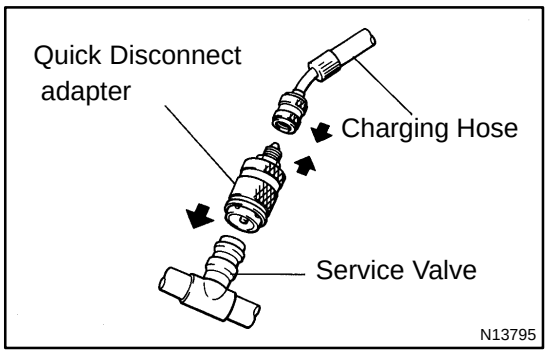
(e) Bring the gas leak detector close to the refrigerant lines and perform the test.

HINT:

Make sure that there is no dirt on joints.

AC09E–01

EVACUATING



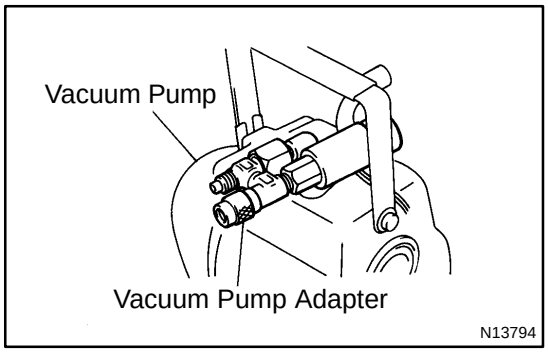
1. CONNECT QUICK DISCONNECT ADAPTER TO CHARGING HOSES

2. REMOVE CAPS FROM SERVICE VALVES ON REFRIGERANT LINES

3. SET ON MANIFOLD GAUGE SET

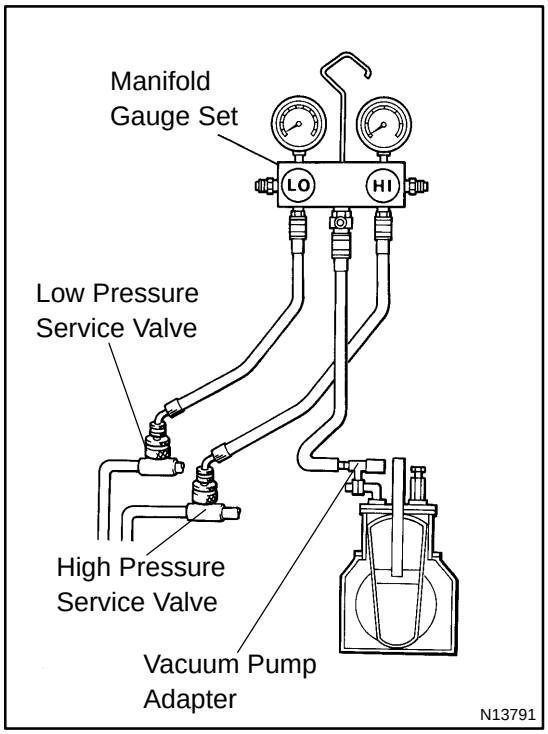
(a) Close both hand valves of manifold gauge set.

(b) Connect the quick disconnect adapter 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:

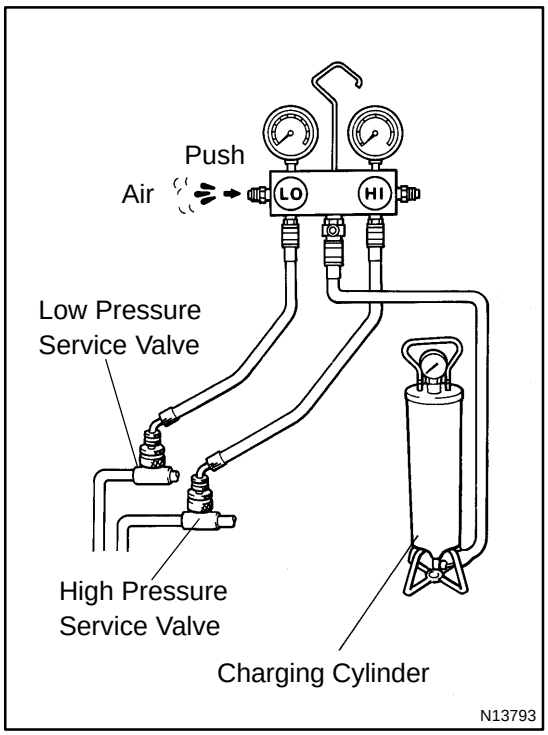
If the reading is not 750 mmHg (30 in.Hg) or more, close both hand valves of manifold gauge set and stop the vacuum pump. Check the system for leaks and repair as necessary.

(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.

AC09F–01

CHARGING



1. INSTALL CHARGING CYLINDER

HINT:

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

(a) Charge proper amount of refrigerant into the charging cylinder.

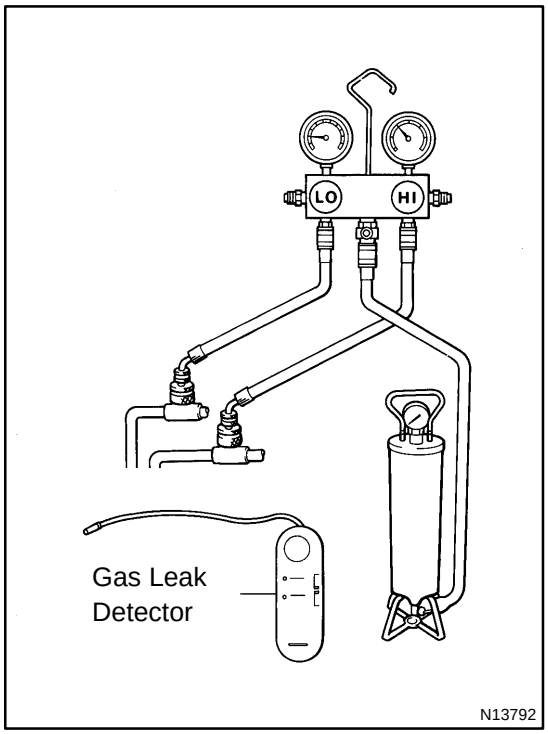
(b) Connect the center hose to the charging cylinder.

CAUTION:

Do not open both high and low pressure 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.

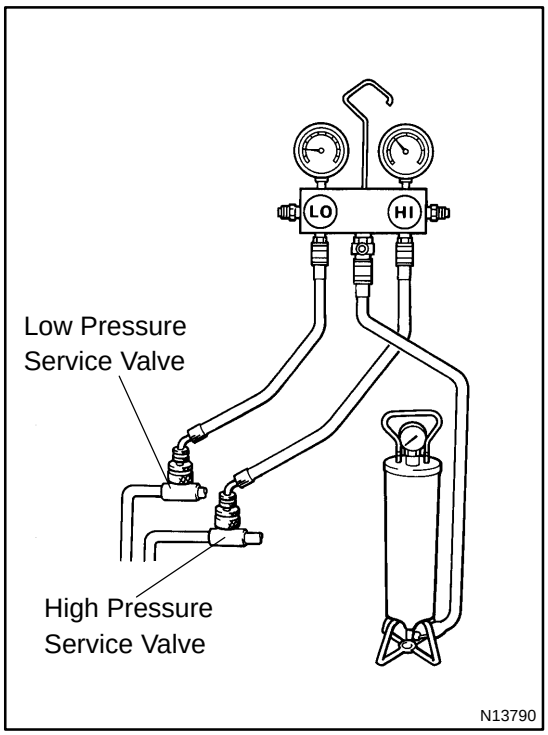
(b) When the low pressure gauge indicates 98 kPa (1 kgf/cm^2, 14 psi), close the high pressure hand valve.

(c) Using a gas leak detector, check the system for leakage.

(d) 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 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 and 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.

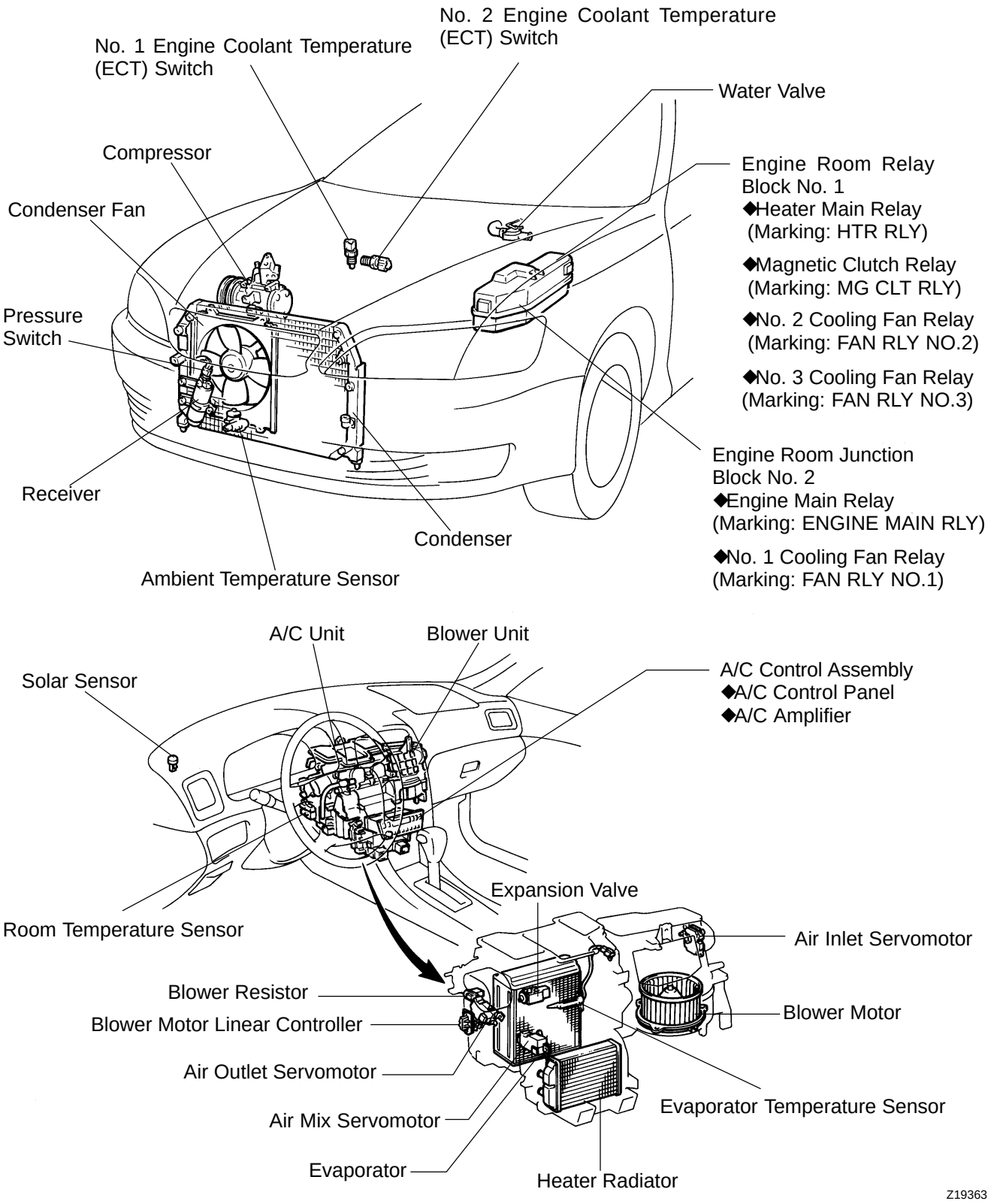
4. SET OFF MANIFOLD GAUGE SET

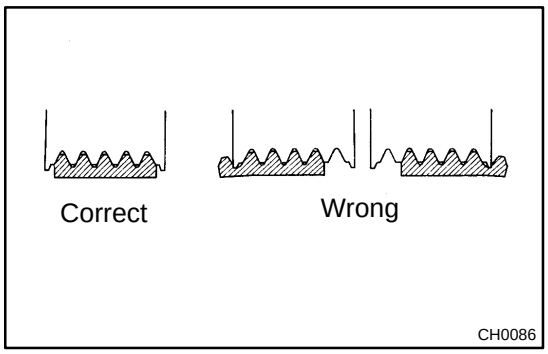
(a) Close both hand valves of manifold gauge set.

(b) Disconnect the quick disconnect adapters from the service valve.

5. INSTALL CAPS TO SERVICE VALVES ON REFRIGERANT LINES

LOCATION


No. 2 Engine Coolant Temperature (ECT) Switch
No. 1 Engine Coolant Temperature (ECT) Switch
Water Valve
Compressor
Engine Room Relay Block No. 1
◆Heater Main Relay (Marking: HTR RLY)
◆Magnetic Clutch Relay (Marking: MG CLT RLY)
◆No. 2 Cooling Fan Relay (Marking: FAN RLY NO.2)
◆No. 3 Cooling Fan Relay (Marking: FAN RLY NO.3)
Condenser Fan
Pressure Switch
Engine Room Junction Block No. 2
◆Engine Main Relay (Marking: ENGINE MAIN RLY)
◆No. 1 Cooling Fan Relay (Marking: FAN RLY NO.1)
Receiver
Condenser
Ambient Temperature Sensor
A/C Unit
Blower Unit
Solar Sensor
A/C Control Assembly
◆A/C Control Panel
◆A/C Amplifier
Expansion Valve
Room Temperature Sensor
Air Inlet Servomotor
Blower Resistor
Blower Motor
Blower Motor Linear Controller
Air Outlet Servomotor
Evaporator Temperature Sensor
Air Mix Servomotor
Evaporator
Heater Radiator
Z19363



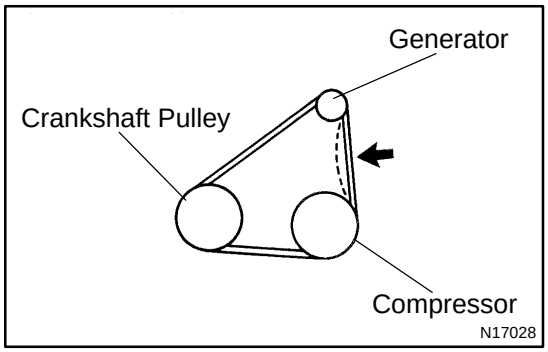
DRIVE BELT

AC09H–01

ON–VEHICLE INSPECTION

1. INSPECT DRIVE BELT'S INSTALLATION CONDITION

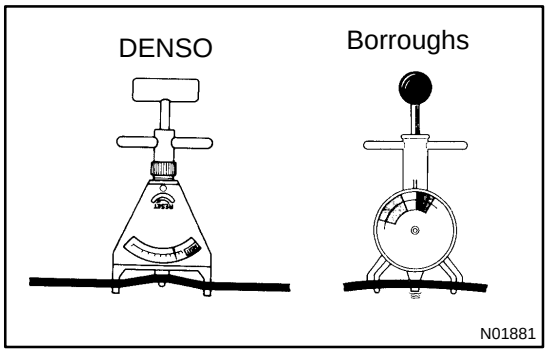
Check that the drive belt fits properly in the ribbed grooves.



2. INSPECT DRIVE BELT TENSION

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

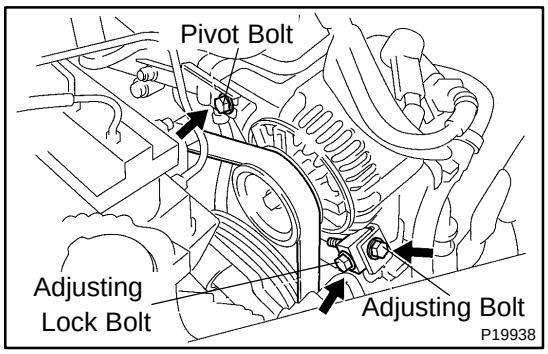
Drive belt tension:
New belt: 165 ± 26 lbf
Used belt: 110 ± 11 lbf



HINT:

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

AC09I–01



REMOVAL

REMOVE DRIVE BELT

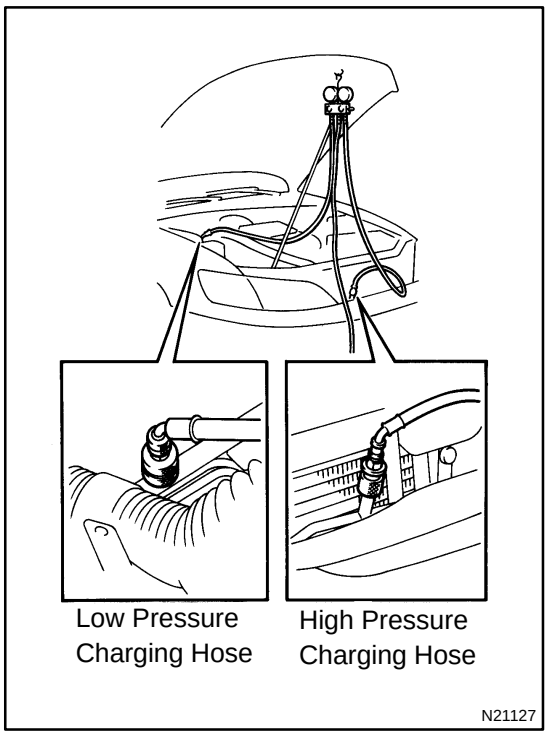
(a) Loosen the pivot bolt and adjusting lock bolt.
Torque:
Pivot bolt: 56 N·m (570 kgf·cm, 41 ft·lbf)
Adjusting lock bolt: 18 N·m (185 kgf·cm, 13 ft·lbf)

(b) Loosen the belt tension by adjusting bolt and remove the drive belt.

AC09J–02

INSTALLATION

Installation is in the reverse order of removal (See page AC–14).



MANIFOLD GAUGE SET

AC09K–01

SET ON

1. CONNECT CHARGING HOSES TO MANIFOLD GAUGE SET

Tighten the nuts by hand.

CAUTION:

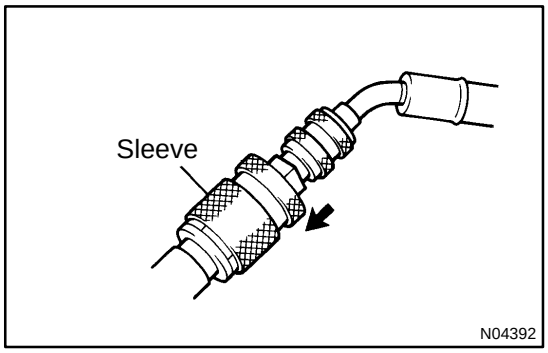
Do not connect the wrong hoses.

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 VALVES ON REFRIGERANT LINE

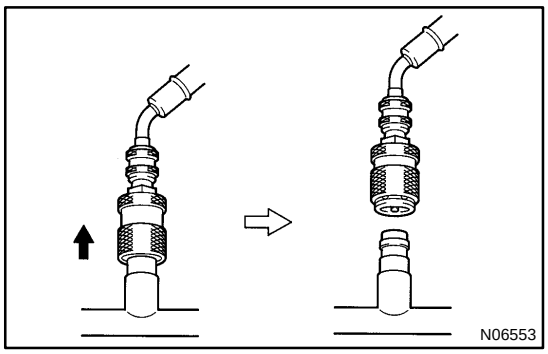


5. CONNECT QUICK DISCONNECT ADAPTERS TO SERVICE VALVES

HINT:

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

AC09L–01



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

AC09M–01

ON–VEHICLE INSPECTION

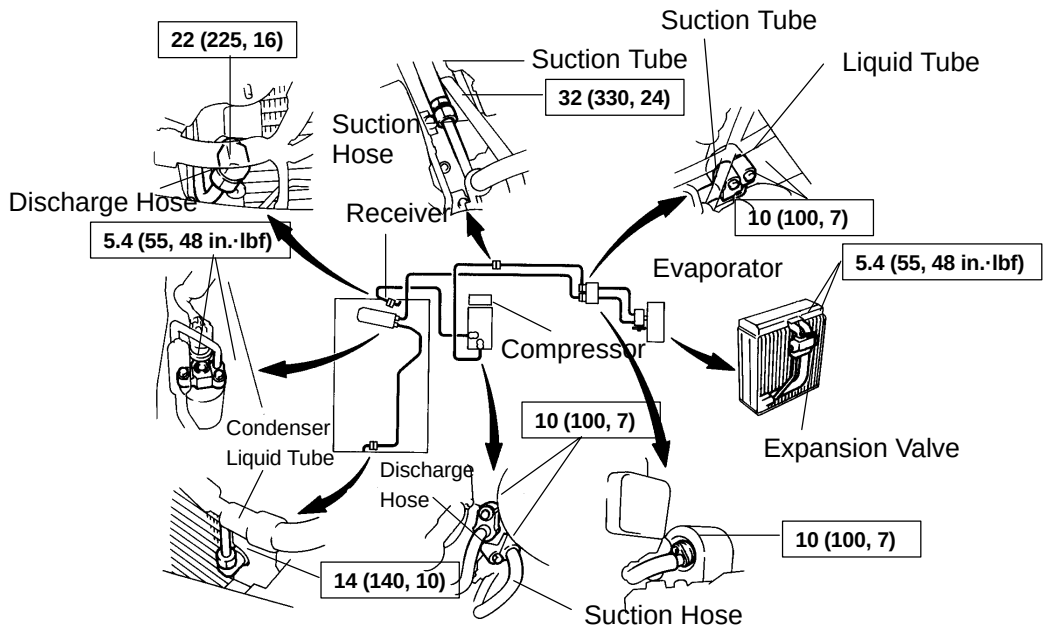
1. INSPECTION HOSE AND TUBE CONNECTIONS FOR LOOSENESS

2. INSPECT HOSES AND TUBES FOR LEAKAGE

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

AC09N–02

LOCATION



AC09O–02

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 TO 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	22	225	16
Condenser x Liquid tube	14	140	10
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
A/C unit x Liquid and Suction tube	10	100	7
Evaporator x Expansion valve	5.4	55	48 in.·lbf
Liquid line (Block joint)	10	100	7
Suction line (Block joint)	10	100	7
Suction line (Piping joint)	32	330	24

4. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT

Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)

5. INSPECT FOR LEAKAGE OF REFRIGERANT

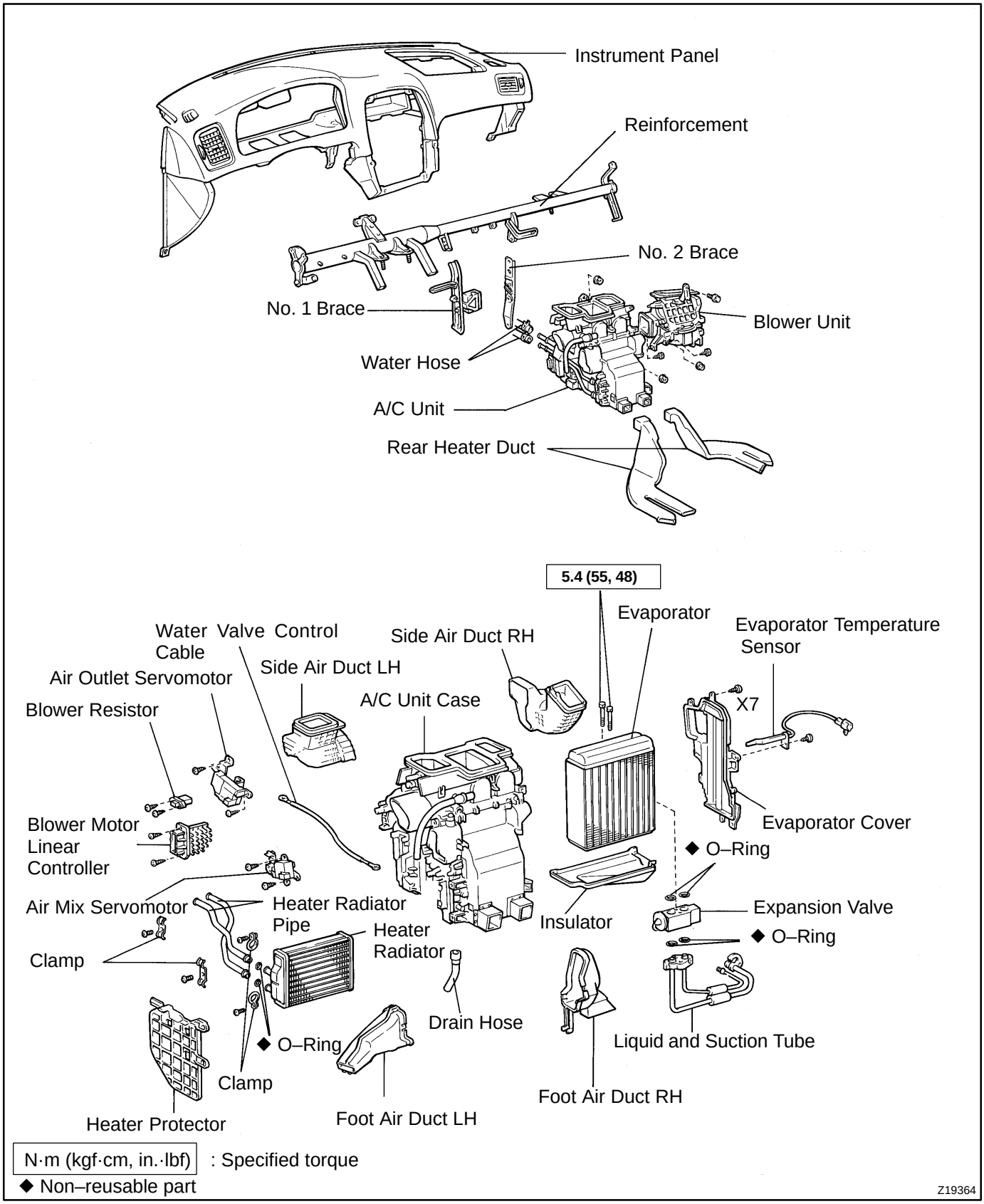
Using a gas leak detector, check for leakage of refrigerant.

6. INSPECT AIR CONDITIONING OPERATION

AIR CONDITIONING UNIT

AC09P–03

COMPONENTS



AC09Q–01

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

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

Evacuate air from refrigeration system.

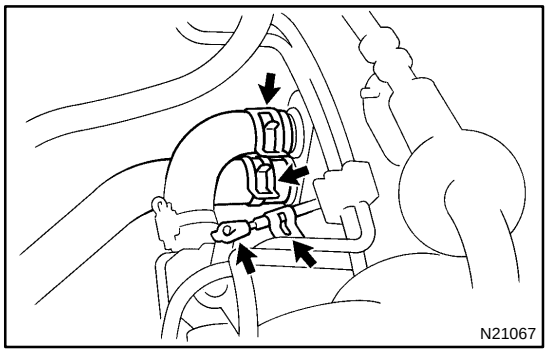
Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)

2. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not necessary to drain out all the coolant.



3. DISCONNECT WATER VALVE CONTROL CABLE FROM WATER VALVE

HINT:

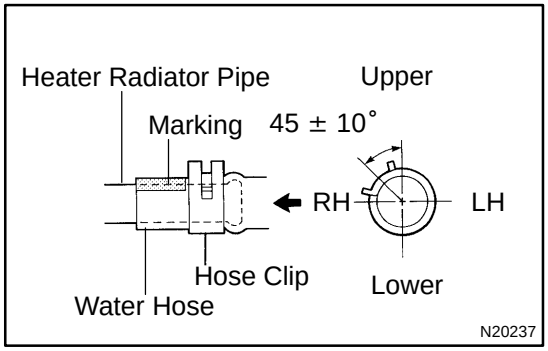
At the in time of the installation, please refer to the following item.

For installing the control cable, refer to ”INSTALLATION” of ”WATER VALVE” on page AC–60.

4. DISCONNECT WATER HOSES FROM HEATER RADIATOR PIPES

(a) Using pliers, grip the claw of the hose clip and slide the hose clip along the hose.

(b) Disconnect the water hoses.



HINT:

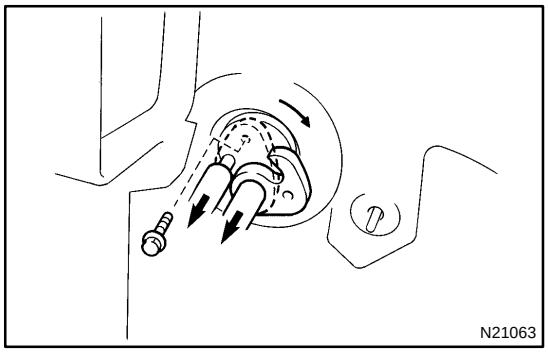
At the time of the installation, please refer to the following items.

- Push the water hose onto the heater radiator pipe as far as the pipe grommet and install the hose clip.
- Install the hose clip in a position, as shown in the illustration.

5. REMOVE THESE PARTS:

(a) Blower unit (See page AC–29)

(b) Instrument panel and reinforcement (See page BO–82)



6. DISCONNECT LIQUID AND SUCTION TUBES

Remove the bolt and slide the plate, then disconnect both tubes.

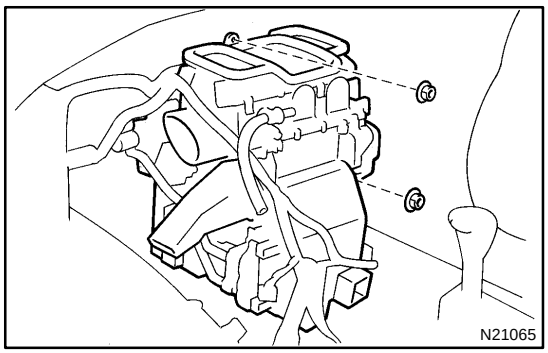
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

NOTICE:

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

HINT:

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



7. REMOVE A/C UNIT

(a) Slide the floor carpet backward.

(b) Remove the rear heater ducts.

(c) Disconnect the connectors.

(d) Remove the 2 nuts and A/C unit.

AC09R–01

DISASSEMBLY

1. REMOVE THESE PARTS:

(a) Side air ducts LH, RH

(b) Foot air ducts LH, RH

2. REMOVE EVAPORATOR TEMP. SENSOR

Remove the screw and pull out the sensor.

3. REMOVE EVAPORATOR

(a) Remove the 6 screws and evaporator cover.

HINT:

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

Do not reuse the evaporator cover.

(b) Pull out the evaporator.

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

4. 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.

5. REMOVE AIR MIX SERVOMOTOR

(a) Remove the 3 screws and servomotor.

(b) Remove the water valve control cable from the servomotor.

6. REMOVE AIR OUTLET SERVOMOTOR

Remove the 2 screws and servomotor.

7. REMOVE HEATER RADIATOR

(a) Release the 3 claws and remove the heater protector.

(b) Remove the 2 screws and 2 clamps, then pull out the heater radiator.

(c) Remove the 2 screws, 2 clamps and heater radiator pipes from the heater radiator.

8. REMOVE BLOWER RESISTOR

(a) Disconnect the connector.

(b) Remove the 2 screws and blower resistor.

9. REMOVE BLOWER MOTOR LINEAR CONTROLLER

(a) Disconnect the connector.

(b) Remove the 2 screws and blower motor linear controller.

10. REMOVE WIRE HARNESS

Release the claw and remove the wire harness.

AC09T–01

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC–25).

AC09S–01

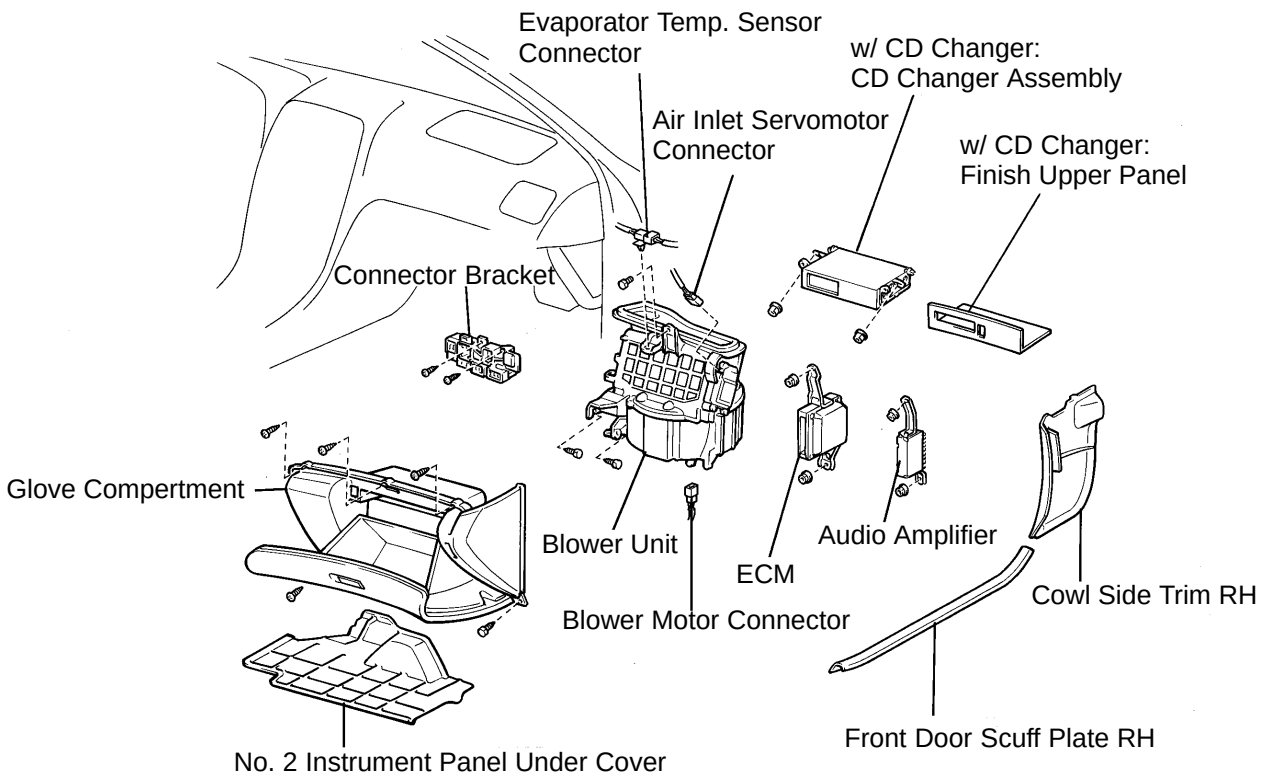
INSTALLATION

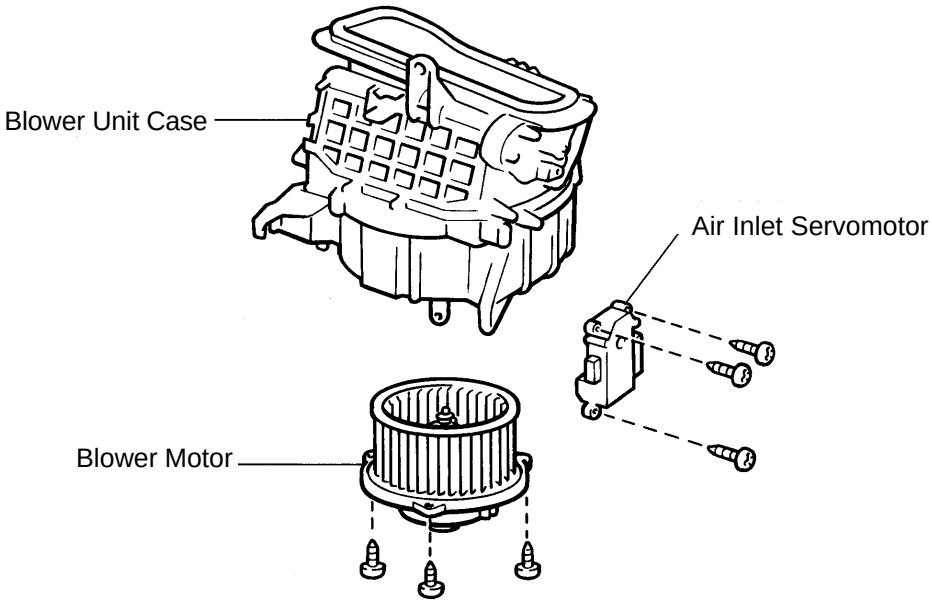
Installation is in the reverse order of removal (See page AC–23).

BLOWER UNIT

COMPONENTS

AC09U–02





Z19365

AC09V–02

REMOVAL

1. REMOVE THESE PARTS:

(a) Cowl side trim RH
(b) Front door scuff plate RH
(c) No.2 instrument panel under cover
(d) Glove Compartment
(e) w/ CD Changer:
Finish upper panel
(f) w/ CD Changer:
CD change assembly
(g) Audio amplifier
(h) ECM

2. REMOVE CONNECTOR BRACKET SET SCREWS

3. REMOVE BLOWER UNIT

(a) Disconnect the connectors from blower unit.
(b) Disconnect the wire harness clamps.
(c) Disconnect the evaporator temp. sensor connector clamp.
(d) Remove the 2 screws, bolt and nut, then remove the blower unit.

AC09W–01

DISASSEMBLY

1. REMOVE BLOWER MOTOR

Remove the 3 screws and blower motor.

2. REMOVE AIR INLET SERVOMOTOR

Remove the 3 screws and servomotor.

AC09X–02

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC–30).

AC09Y–02

INSTALLATION

Installation is in the reverse order of removal (See page AC–29).

COMPRESSOR AND MAGNETIC CLUTCH

AC09Z–01

ON–VEHICLE INSPECTION

1. INSPECT COMPRESSOR FOR METALLIC SOUND

(a) Start the engine.

(b) Check if there is metallic sound from the compressor when the A/C switch is on.

If metallic sound is heard, replace the compressor assembly.

2. INSPECT REFRIGERANT PRESSURE

(See page AC–3)

3. INSPECT VISUALLY FOR LEAKAGE OF REFRIGERANT FROM SAFETY SEAL

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

If there is any leakage, replace the compressor assembly.

4. INSPECT COMPRESSOR LOCK SENSOR

(See page DI–552)

5. MAKE THESE VISUAL CHECKS:

(a) Leakage of grease from the clutch bearing.

(b) Signs of oil on the pressure plate or rotor.

If necessary, repair or replace.

6. INSPECT MAGNETIC CLUTCH BEARING FOR NOISE

(a) Start the engine.

(b) Check for abnormal noise from near the compressor when the A/C switch is OFF.

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

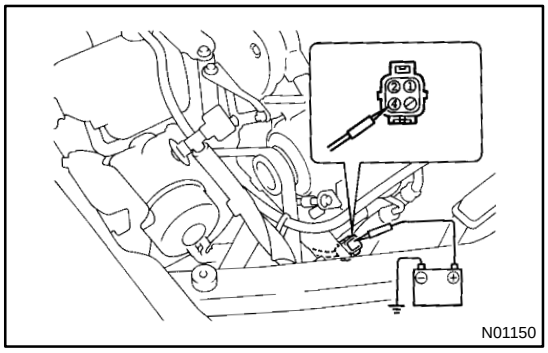
7. INSPECT MAGNETIC CLUTCH

(a) Disconnect the connector from the magnetic clutch.

(b) Connect the positive (+) lead from the battery to the terminal 4 and the negative (–) lead to the body ground.

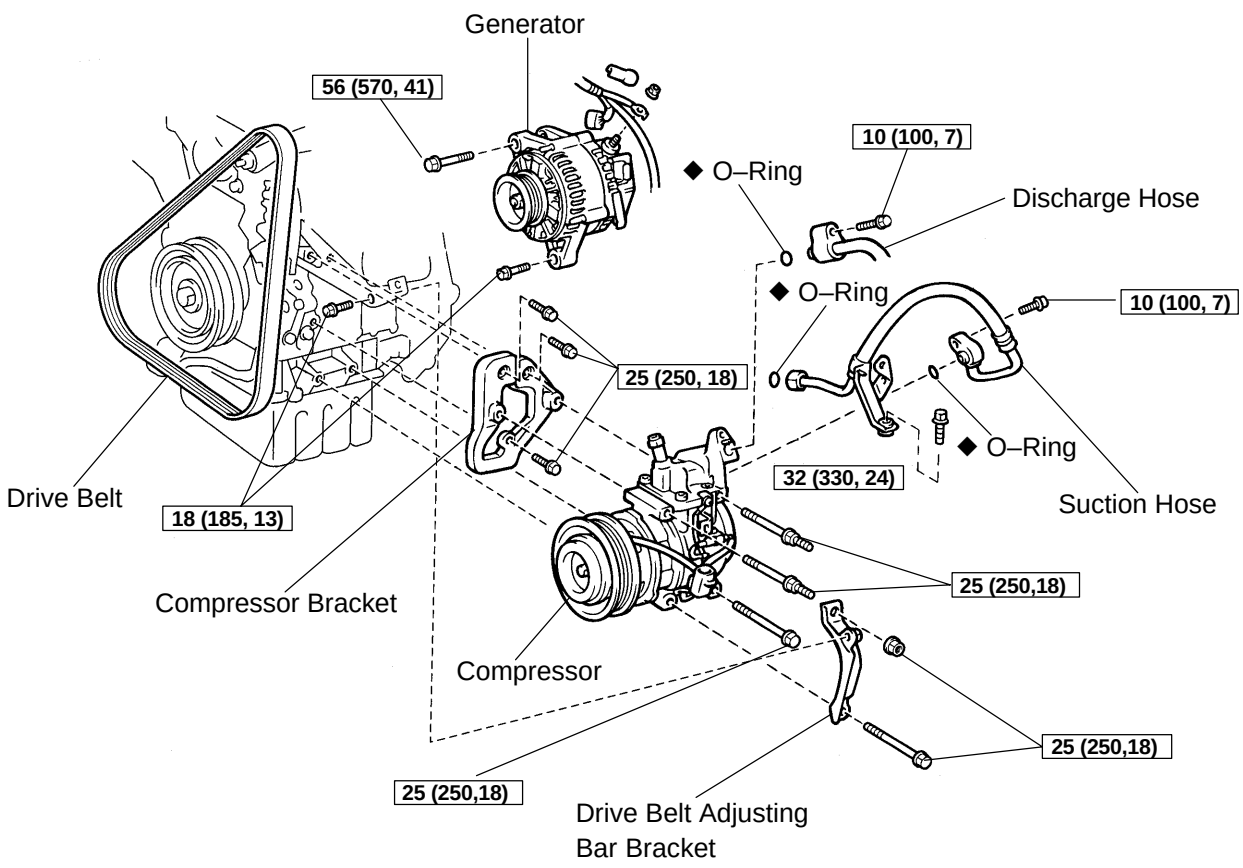
(c) Check that the magnetic clutch is energized.

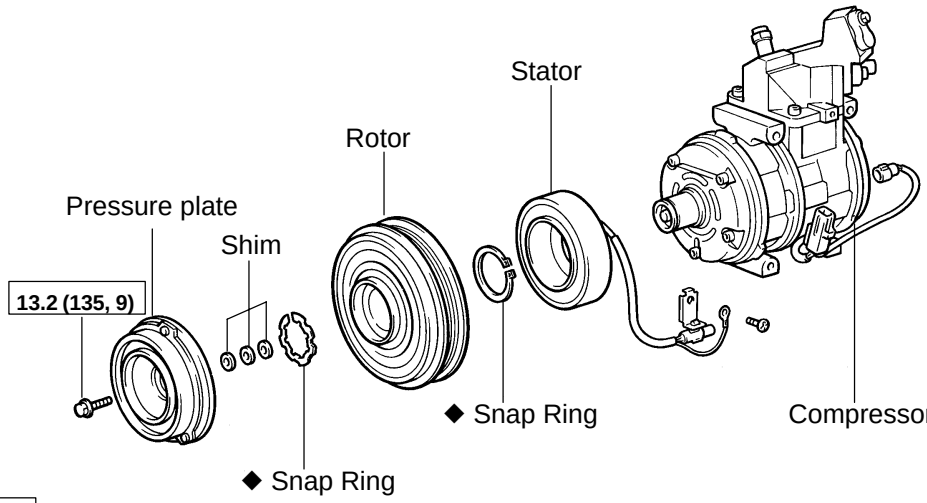
If operation is not as specified, replace the magnetic clutch.



AC0A0–01

COMPONENTS





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

◆ Non–reusable part

I01448

AC0A1–01

REMOVAL

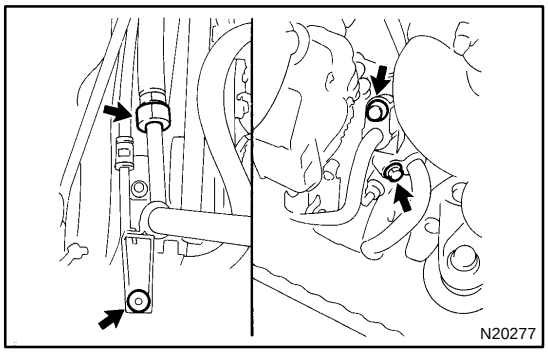
1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX.10 MINUTES

2. STOP ENGINE

3. DISCONNECT NEGATIVE (–) TERMINAL CABLE FROM BATTERY

4. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

5. REMOVE DRIVE BELT
(See page AC–15)


N20277

6. REMOVE SUCTION HOSE

(a) Remove the suction hose clamping bolt.

(b) Disconnect the wire harness clamp.

(c) Loosen the nut and bolts and remove the suction hose.

NOTICE:

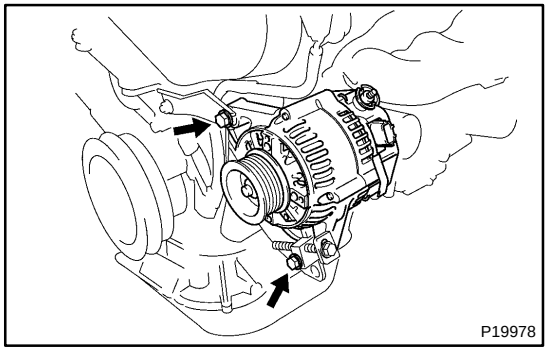
Cap the open fittings immediately to keep moisture or dirt out of the system.

7. DISCONNECT DISCHARGE HOSE

Remove the bolt and disconnect the hose.

NOTICE:

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


P19978

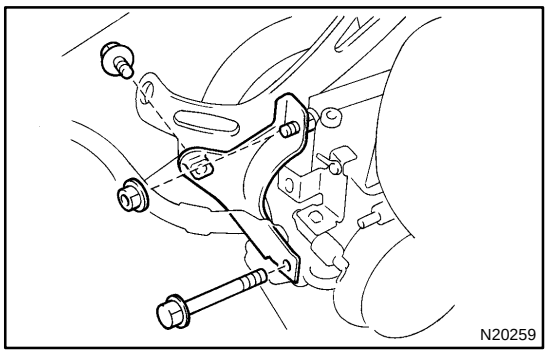
8. REMOVE GENERATOR

(a) Disconnect the generator connector.

(b) Remove the nut, and disconnect the generator wire.

(c) Disconnect the wire harness from the clip.

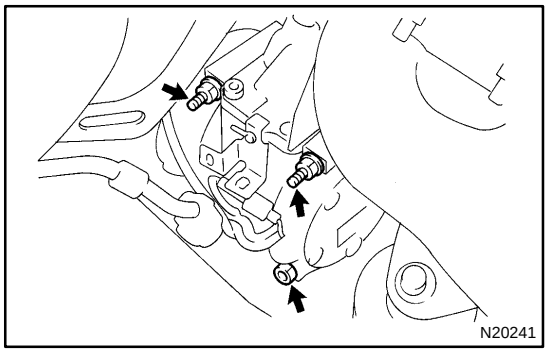
(d) Remove the pivot bolt, plate washer, adjusting lock bolt and generator.



9. REMOVE COMPRESSOR

(a) Disconnect the connector.

(b) Remove the 2 bolts, nut and generator drive belt adjusting bar bracket.

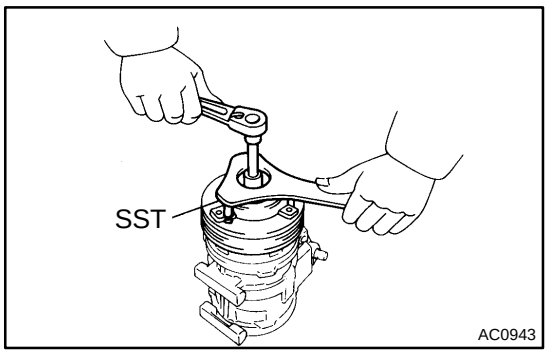


(c) Remove the 3 bolts and compressor.

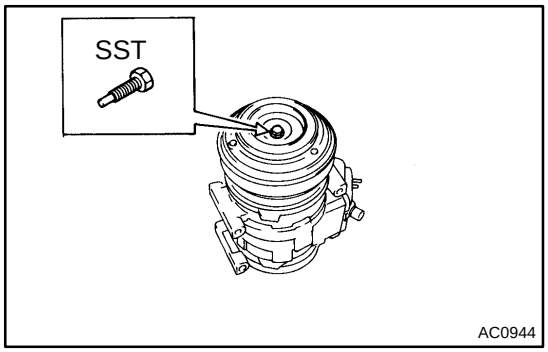
AC0A2–03

DISASSEMBLY

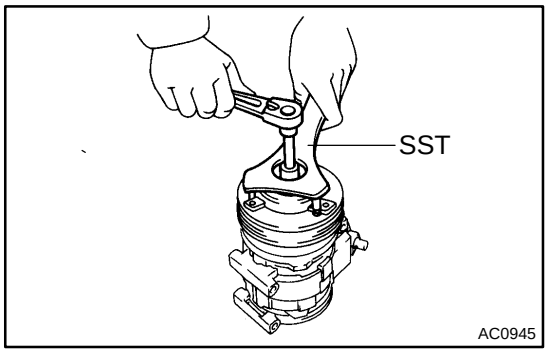
1. REMOVE PRESSURE PLATE



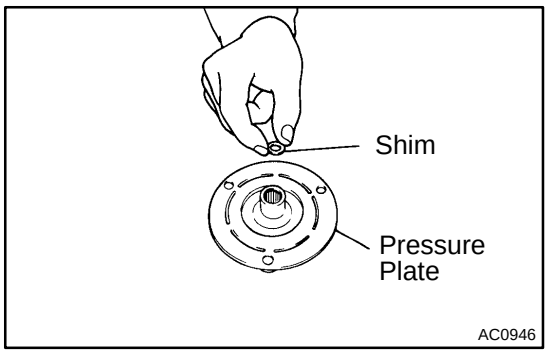
(a) Using SST and a socket wrench, remove the shaft bolt.
Torque: 13.2 N·m (135 kgf·cm, 9 ft·lbf)
SST 07112–76060



(b) Install SST on the pressure palate.
SST 07112–66040

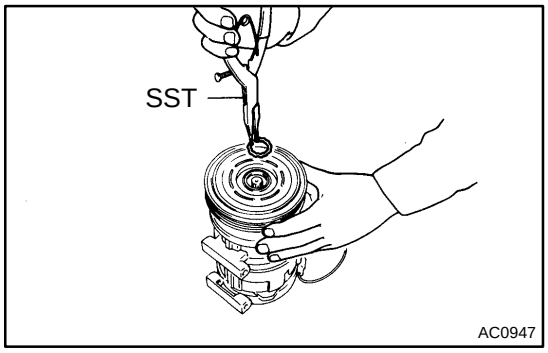


(c) Using SST and socket wrench, remove the pressure plate.
SST 07112–76060

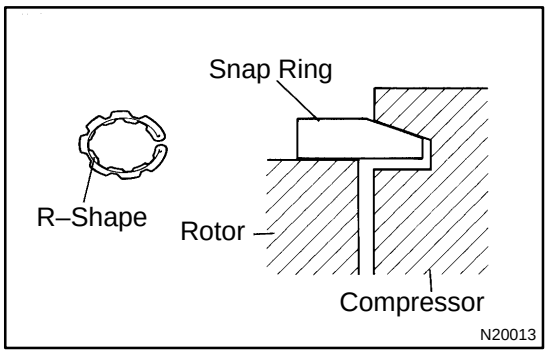


(d) Remove the shims from the pressure palate.

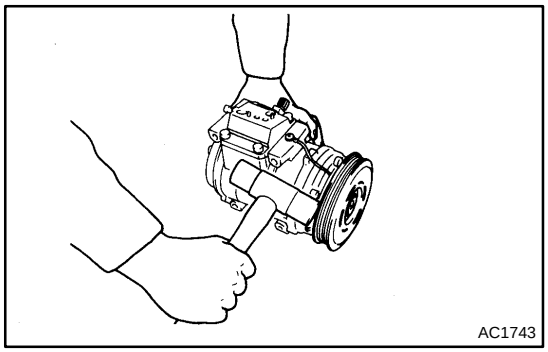
2. REMOVE ROTOR



(a) Using SST, remove the snap ring.
SST 07114–84020

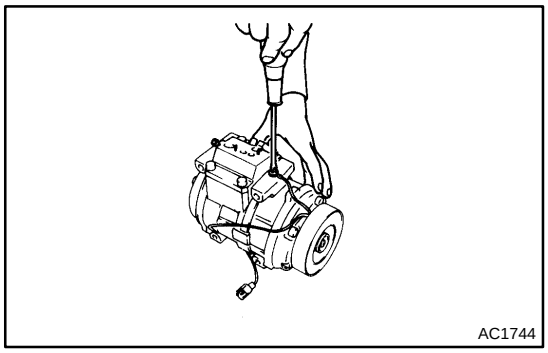


NOTICE:
At the time of reassembly, please refer to the following item.
The snap ring should be installed so that beveled side faces up.



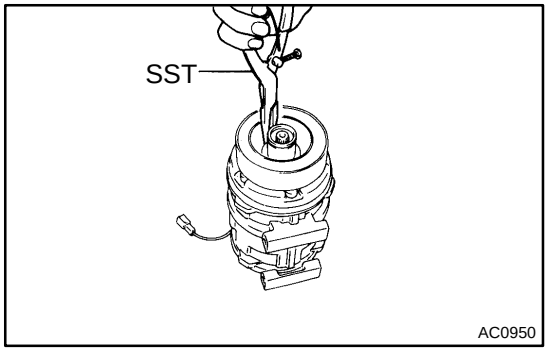
(b) Using a plastic hammer, tap the rotor off the shaft.

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

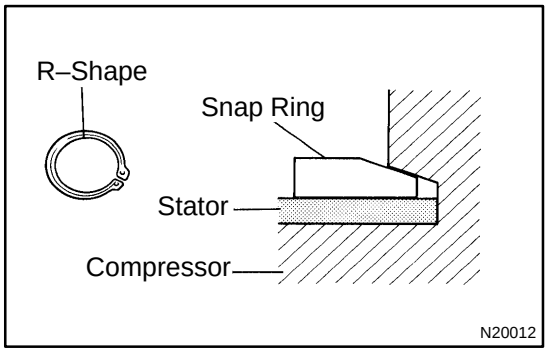


3. REMOVE STATOR

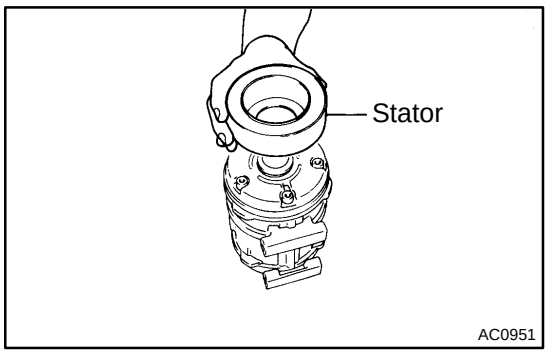
(a) Disconnect the stator lead wire from the compressor housing.



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

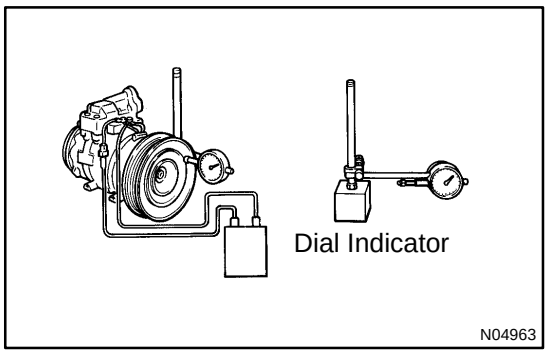


NOTICE:
At the time of reassembly, please refer to the following item.
The snap ring should be installed so that its beveled side faces up.



(c) Remove the stator.

AC0A3–03



REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC–37).

CHECK CLEARANCE OF MAGNETIC CLUTCH

HINT:

After reassembly, check the 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 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.

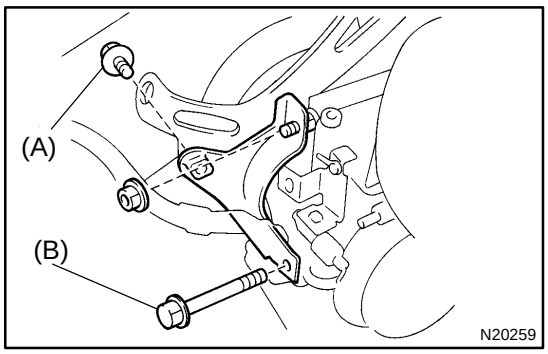
Shim thickness:

0.1 mm (0.004 in.)

0.3 mm (0.012 in.)

0.5 mm (0.020in.)

AC0A4–03



INSTALLATION

1. INSTALL COMPRESSOR

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

(b) Install the generator drive belt adjusting bar bracket with 2 bolts and a nut.
Torque:
Bolt (A): 18 N·m (185 kgf·cm, 13 ft·lbf)
Bolt (B): 25 N·m (250 kgf·cm, 18 ft·lbf)
Nut: 25 N·m (250 kgf·cm, 18 ft·lbf)

2. INSTALL GENERATOR

(a) Mount generator on the generator bracket with the pivot bolt and adjusting lock bolt. Do not tighten the bolts yet.

(b) Connect the generator connector.

(c) Connect the generator wire with the nut.

3. CONNECT DISCHARGE HOSE
Torque:10 N·m (100 kgf·cm, 7 ft·lbf)

NOTICE:
Hoses should be connected immediately after the caps have been removed.

HINT:
Lubricate a new O–ring with compressor oil and install the tube.

4. INSTALL SUCTION HOSE

(a) Install the suction hose and tighten the bolt and nut.
Torque:
Piping joint: 32 N·m (330 kgf·cm, 24 ft·lbf)
Block joint: 10 N·m (100 kgf·cm, 7 ft·lbf)

HINT:
Lubricate 2 new O–rings with the compressor oil and install the hose.

(b) Install the suction hose clamping bolt.

(c) Connect the wire harness clamp.

5. INSTALL DRIVE BELT
(See page AC–16)

6. INSPECT DRIVE BELT
(See page AC–14)

7. CONNECT NEGATIVE (–) TERMINAL CABLE TO BATTERY

8. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT
Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)

9. 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.

10. INSPECT A/C OPERATION

RECEIVER

AC0A7–01

ON–VEHICLE INSPECTION

INSPECT FITTINGS FOR LEAKAGE

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

AC0A6–01

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

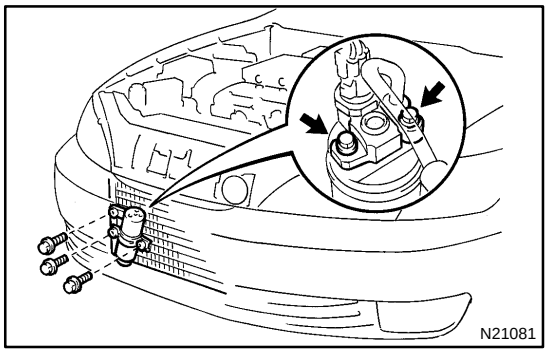
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)

2. REMOVE RADIATOR UPPER SUPPORT SEAL



3. DISCONNECT 2 LIQUID TUBES FROM RECEIVER

Remove the 2 bolts and both tubes.

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 tubes.

4. REMOVE RECEIVER

(a) Remove the holder bolt and pull out receiver downward.

HINT:

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

If receiver is replaced, add compressor oil to receiver.

Add 20 cc (0.71 fl.oz.)

Compressor oil: ND–OIL 8 or equivalent

(b) Remove the 2 bolts and holder.

AC0A5–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–43).

CONDENSER

AC0A8–01

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 FITTINGS FOR LEAKAGE

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

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

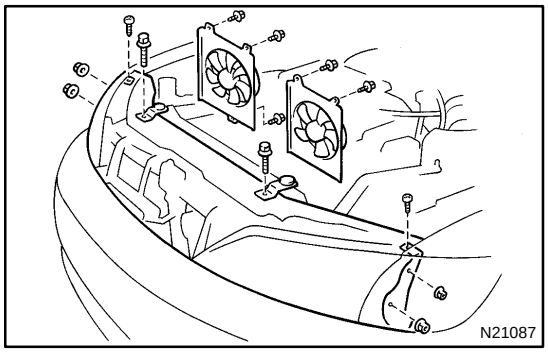
AC0A9–02

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

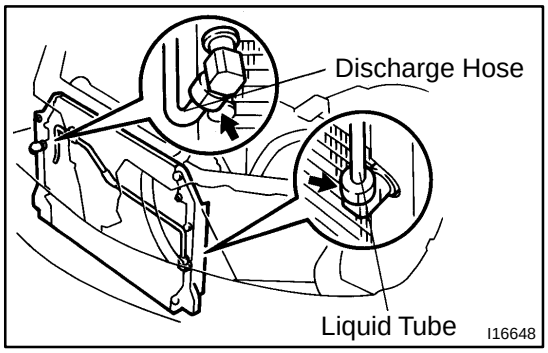
HINT:
At the time of installation, please refer to the following item.
Evacuate air from refrigeration system.
Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)



2. REMOVE THESE PARTS:

(a) Radiator upper support seal
(b) Receiver and holder
(See page AC–43)
(c) Radiator upper support
(d) Clearance lights
(e) Headlights
(f) Radiator fan and condenser fan



3. DISCONNECT DISCHARGE HOSE

Loosen the nut and disconnect the discharge hose.

Torque: 22 N·m (225 kgf·cm, 16 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 the tube.

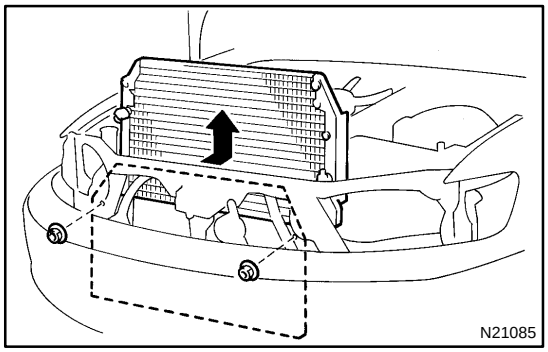
4. REMOVE LIQUID TUBE

Loosen the nut and remove the liquid tube.

Torque: 14 N·m (140 kgf·cm, 10 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 the tube.



5. REMOVE CONDENSER

(a) Remove the 2 nuts from condenser upper mountings.
(b) Push the radiator toward the engine.
(c) 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

AC0AA–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–46).

EVAPORATOR

AC0AB–02

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

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

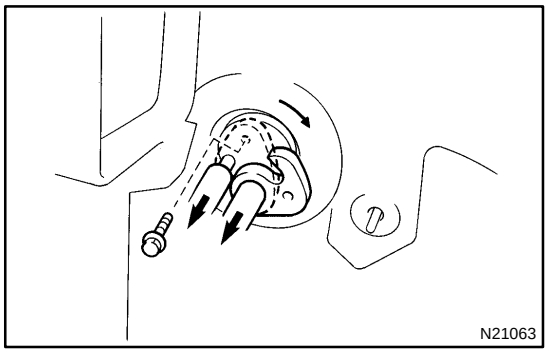
Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 800 ± 50 g (28.22 ± 1.76 oz.)

2. REMOVE BLOWER UNIT

(See page AC–29)



3. DISCONNECT LIQUID AND SUCTION TUBE

Remove the bolt and slide the plate, then disconnect both tubes.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

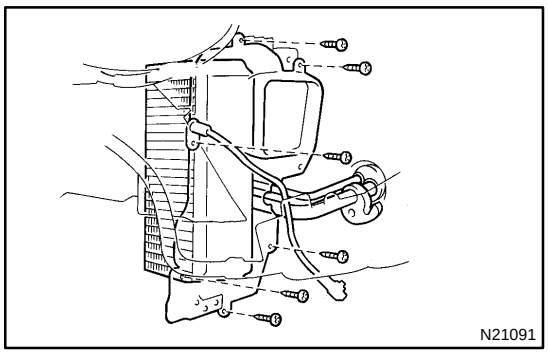
NOTICE:

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 the tubes.


N21091

4. REMOVE EVAPORATOR

(a) Disconnect the connector.

(b) Remove the screw and pull out the evaporator temp. sensor.

(c) Remove the 5 screws and evaporator cover.

HINT:

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

Do not reuse the evaporator cover.

(d) 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

AC0AD–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–48).

HEATER RADIATOR

AC0AE–01

REMOVAL

1. DRAIN ENGINE COOLANT FROM RADIATOR

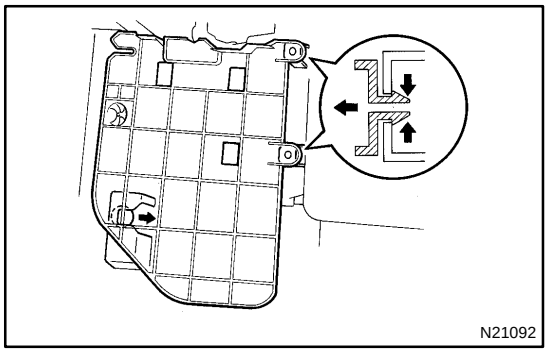
HINT:

It is not necessary to drain out all coolant.

2. REMOVE THESE PARTS:

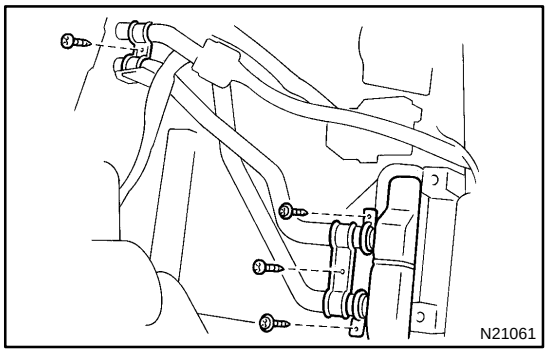
(a) No.1 lower panel

(b) Lower panel LH



3. REMOVE HEATER RADIATOR

(a) Release the 3 claws and remove the heater protector.



(b) Remove 2 screws and 2 clamps.

(c) Remove the 2 screws and 2 clips, then disconnect the heater radiator pipes from 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.

AC0AF–01

INSPECTION

INSPECT FINS FOR BLOCKAGE

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

AC0AG–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–52).

EXPANSION VALVE

AC0AH–01

ON–VEHICLE INSPECTION

1. CHECK QUANTITY OF GAS IN REFRIGERATION CYCLE

2. SET ON MANIFOLD GAUGE SET

(See page AC–17)

3. RUN ENGINE

Run the 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/cm^2, 199 –228 psi).

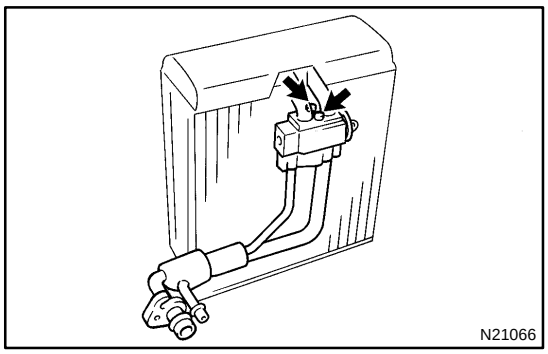
4. CHECK EXPANSION VALVE

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

HINT:

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

AC0AI–02



REMOVAL

1. REMOVE EVAPORATOR
(See page AC–48)

2. REMOVE EXPANSION VALVE

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

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 tube and valve.

AC0AJ–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–56).

WATER VALVE

AC0AK–01

ON–VEHICLE INSPECTION

1. WARM UP ENGINE

2. DISCONNECT WATER VALVE CONTROL CABLE

3. INSPECT WATER VALVE OPERATION

(a) Check that warm air blown out when the water valve lever is moved to ”WARM” position.

(b) Check that cool air blown out when the water valve is moved to the ”COOL” position.

If operation is not as specified, replace the water valve.

4. CONNECT WATER VALVE CONTROL CABLE

HINT:

After connection, adjust the control cable.

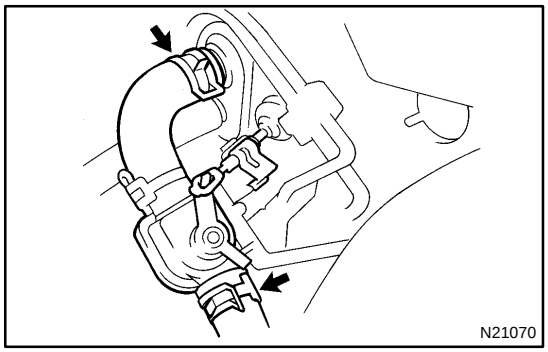
AC0AL–02

REMOVAL

1. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

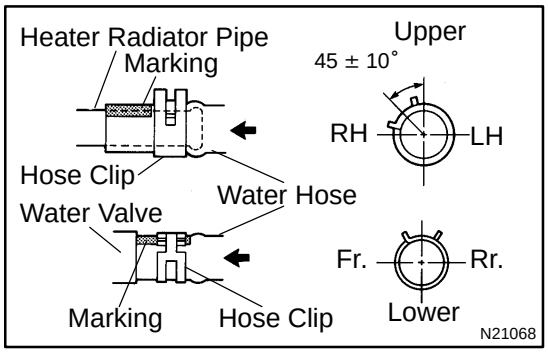
It is not necessary to drain out all the coolant.



2. DISCONNECT WATER HOSES FROM WATER VALVE AND HEATER RADIATOR PIPE

(a) Using pliers, grip the claws of the hose clip and slide the hose clip along the hose.

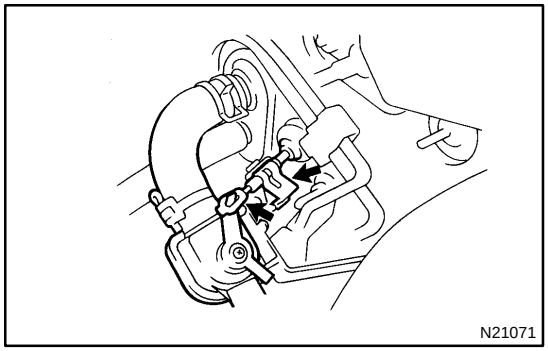
(b) Disconnect the water hose.



HINT:

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

- Push the water hose onto the heater radiator pipe as far as the pipe grommet.
- Install the hose clip in a position, as shown in the illustration.

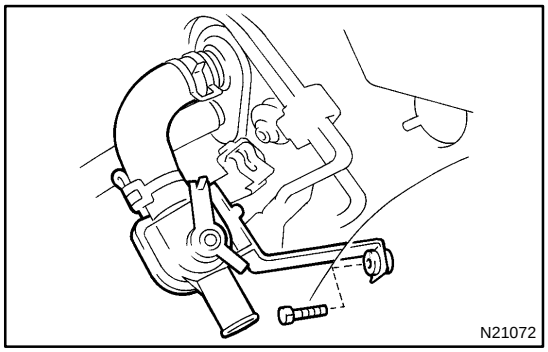


3. DISCONNECT WATER VALVE CONTROL CABLE FROM WATER VALVE

HINT:

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

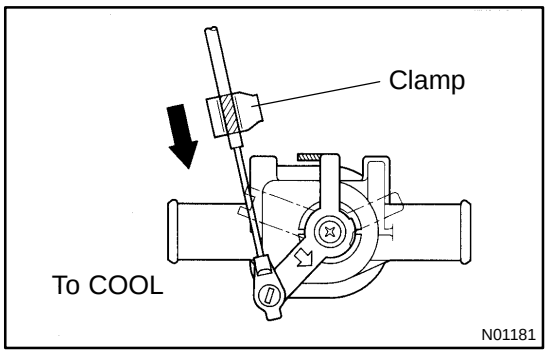
For installing the control cable, refer to ”INSTALLATION”.



4. REMOVE WATER VALVE

Remove the bolt and water valve.

AC0AM–02



INSTALLATION

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

HINT:

After installation, adjust water valve control cable.

ADJUST WATER VALVE CONTROL CABLE

(a) Turn ignition switch to ON.

(b) Set temperature control switch at ”COOL”.

(c) Set the water valve control lever on the ”COOL” position and install the control cable and lock the clamp.

HINT:

Lock the clamp while lightly pushing the outer cable in the direction shown by arrow.

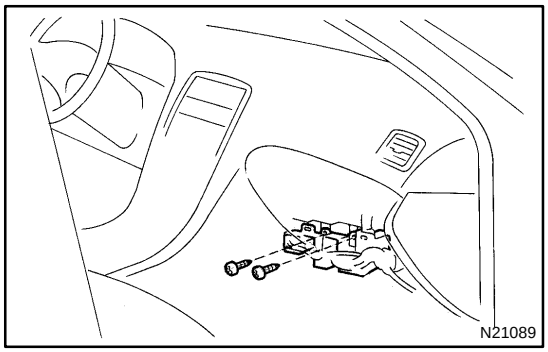
BLOWER MOTOR

AC0AN–02

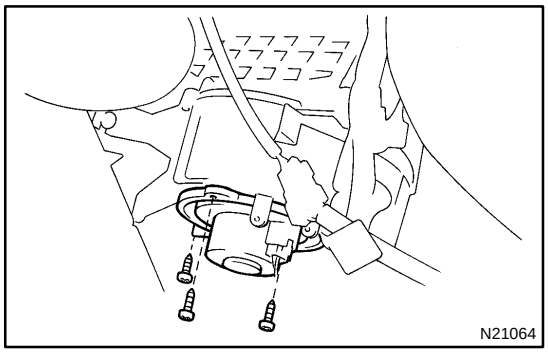
REMOVAL

1. REMOVE THESE PARTS:

(a) Cowl side trim RH
(b) Front door scuff plate RH
(c) No. 2 instrument panel under cover



2. REMOVE 2 CONNECTOR BRACKET SET SCREWS



3. REMOVE BLOWER MOTOR

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

AC0AO–02

INSPECTION

INSPECT BLOWER MOTOR CIRCUIT

(See page DI–583)

AC0AP–01

INSTALLATION

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

BLOWER RESISTOR

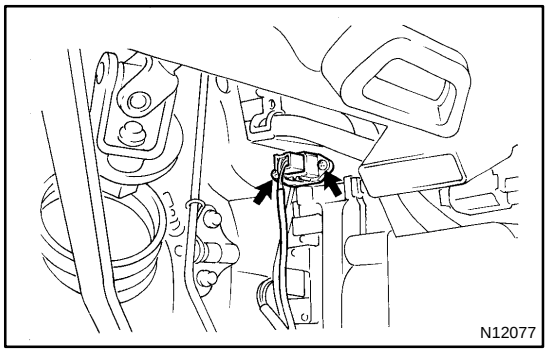
AC0AQ–02

REMOVAL

1. REMOVE THESE PARTS:

(a) No. 1 instrument lower panel

(b) Instrument lower panel LH

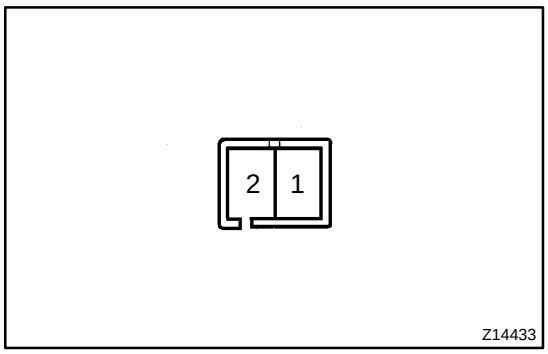


2. REMOVE BLOWER RESISTOR

(a) Disconnect the connector.

(b) Remove the 2 screws and blower resistor.

AC2SZ–01



INSPECTION

INSPECT BLOWER RESISTOR RESISTANCE

Measure resistance between terminals.

Standard resistance:

1.8 – 2.2 Ω

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

AC0AS–01

INSTALLATION

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

BLOWER MOTOR LINEAR CONTROLLER

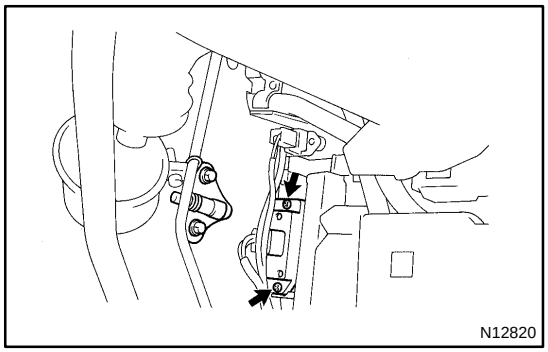
AC0AT–02

REMOVAL

1. REMOVE THESE PARTS:

(a) No. 1 instrument lower panel

(b) Instrument lower panel LH



2. REMOVE BLOWER MOTOR LINEAR CONTROLLER

(a) Disconnect the connector.

(b) Remove the 2 screws and controller.

AC0AU–02

INSPECTION

INSPECT BLOWER MOTOR LINEAR CONTROLLER CIRCUIT

(See page DI–583)

AC0AV–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–67).

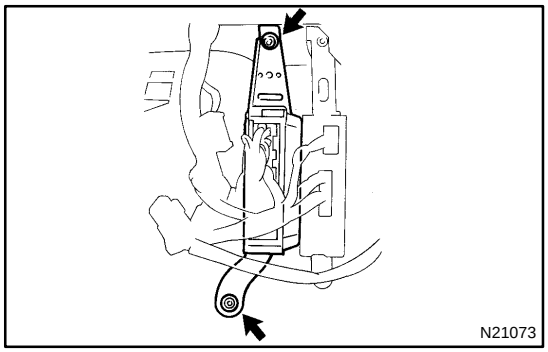
AIR INLET SERVOMOTOR

AC0AW–02

REMOVAL

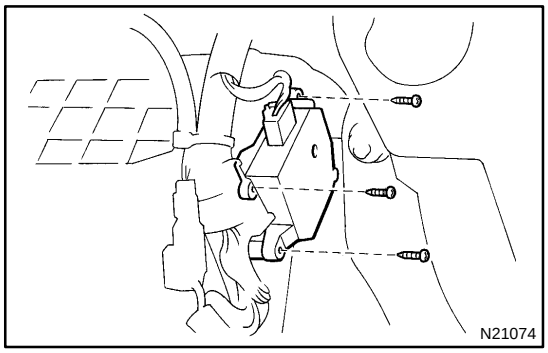
1. REMOVE THESE PARTS:

(a) Cowl side trim RH
(b) Front door scuff plate RH
(c) No. 2 instrument panel under cover
(d) Glove compartment



2. REMOVE ECM

(a) Disconnect the connectors.
(b) Remove the 2 nuts and ECM.



3. REMOVE AIR INLET SERVOMOTOR

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

AC0AX–01

INSPECTION

1. **INSPECT AIR INLET SERVOMOTOR CIRCUIT**
   (See page DI–566)
2. **INSPECT AIR INLET DAMPER POSITION SENSOR CIRCUIT**
   (See page DI–560)

AC0AY–01

INSTALLATION

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

AIR MIX SERVOMOTOR

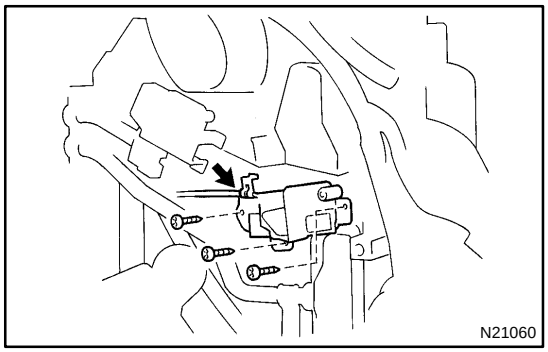
AC0AZ–02

REMOVAL

1. REMOVE THESE PARTS:

(a) No. 1 instrument lower panel

(b) Instrument lower panel LH



2. REMOVE AIR MIX SERVOMOTOR

(a) Disconnect the connector.

(b) Remove the 3 screws and servomotor, then disconnect the control cable.

AC0B0–01

INSPECTION

1. **INSPECT AIR MIX SERVOMOTOR CIRCUIT**
   (See page DI–563)
2. **INSPECT AIR MIX DAMPER POSITION SENSOR CIRCUIT**
   (See page DI–557)

AC0B1–01

INSTALLATION

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

AIR OUTLET SERVOMOTOR

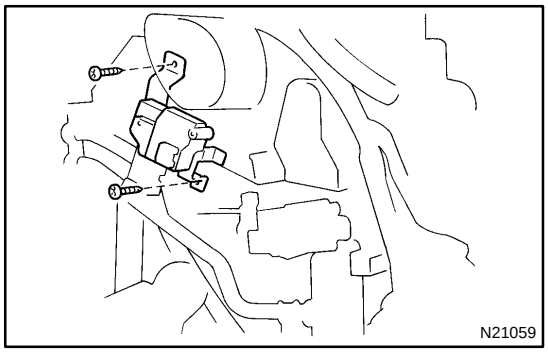
AC0B2–02

REMOVAL

1. REMOVE THESE PARTS:

(a) No. 1 instrument lower panel

(b) Instrument lower panel LH



2. REMOVE AIR OUTLET SERVOMOTOR

(a) Disconnect the connector.

(b) Remove the 2 screws and servomotor.

AC0B3–02

INSPECTION

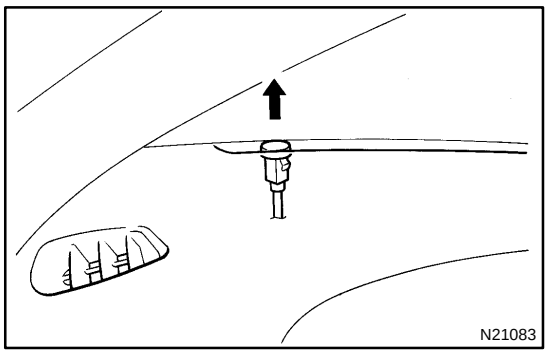
INSPECT AIR OUTLET SERVOMOTOR CIRCUIT

(See page DI–574)

AC0B4–01

INSTALLATION

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



SOLAR SENSOR

AC0B5–01

REMOVAL

REMOVE SOLAR SENSOR

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

HINT:

Tape the screwdriver tip before use.

AC0B6–01

INSPECTION

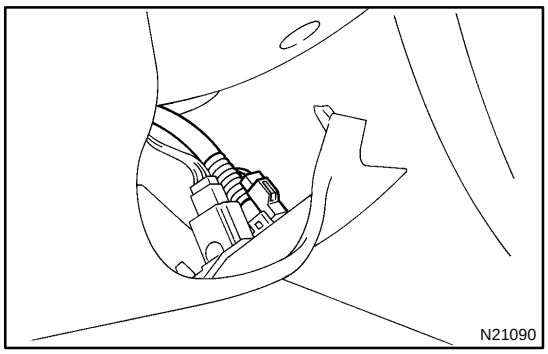
INSPECT SOLAR SENSOR CIRCUIT

(See page DI–549)

AC0B7–01

INSTALLATION

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



ROOM TEMPERATURE SENSOR

AC0B8–02

REMOVAL

REMOVE ROOM TEMP. SENSOR

(a) Remove the No. 1 instrument lower panel set screws.
(b) Disconnect the aspirator hose.
(c) Disconnect the connector.
(d) Release the 2 claws and pull out the sensor from No. 1 instrument lower panel.

AC0B9–01

INSPECTION

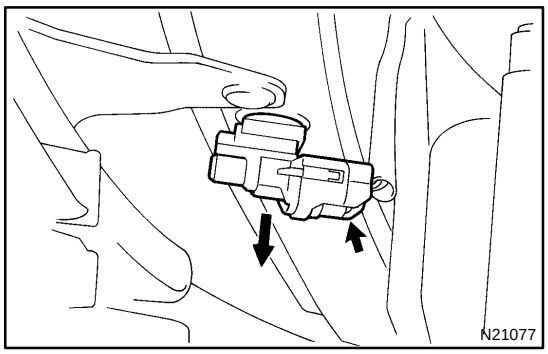
INSPECT ROOM TEMP. SENSOR CIRCUIT

(See page DI–537)

AC0BA–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–82).



AMBIENT TEMPERATURE SENSOR

AC0BE–01

REMOVAL

REMOVE AMBIENT TEMPERATURE SENSOR

(a) Disconnect the connector.
(b) Pull out the sensor from bumper reinforcement.

AC0BF–01

INSPECTION

INSPECT AMBIENT TEMPERATURE SENSOR CIRCUIT

(See page DI–540)

AC0BG–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–85).

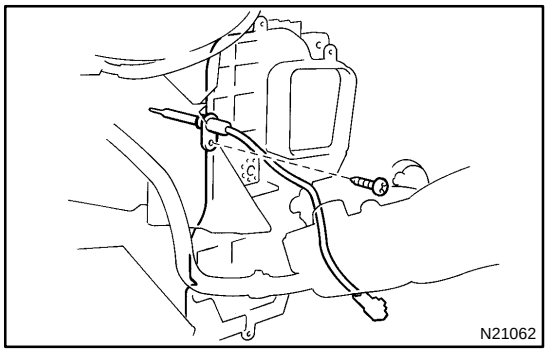
EVAPORATOR TEMPERATURE SENSOR

AC0BB–02

REMOVAL

1. REMOVE THESE PARTS:

(a) Cowl side trim RH
(b) Front door scuff plate RH
(c) No. 2 instrument panel under cover
(d) Glove compartment
(e) w/ CD Changer:
Finish upper panel
(f) w/ CD Changer:
CD changer assembly
(g) Audio amplifier
(h) ECM
(i) Blower unit (See page AC–29)



2. REMOVE EVAPORATOR TEMP. SENSOR

(a) Disconnect the connector.
(b) Remove the screw and pull out the sensor.

AC0BC–01

INSPECTION

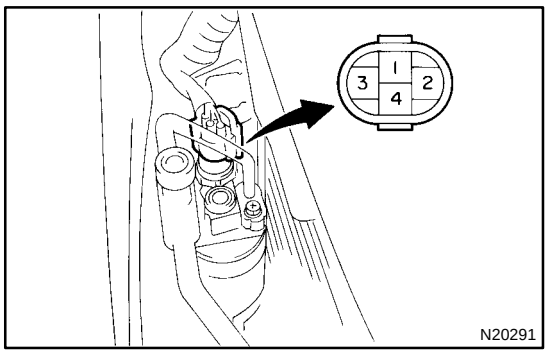
INSPECT EVAPORATOR TEMP. SENSOR CIRCUIT

(See page DI–543)

AC0BD–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–88).

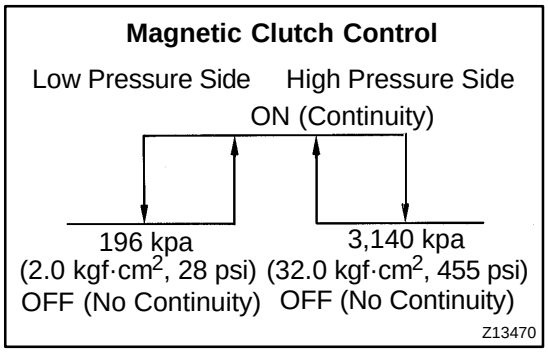


PRESSURE SWITCH

AC0BH–01

ON–VEHICLE INSPECTION

1. **SET ON MANIFOLD GAUGE SET**
   (See page AC–17)
2. **DISCONNECT CONNECTOR FROM PRESSURE SWITCH**
3. **RUN ENGINE AT APPROX. 1,500 RPM**

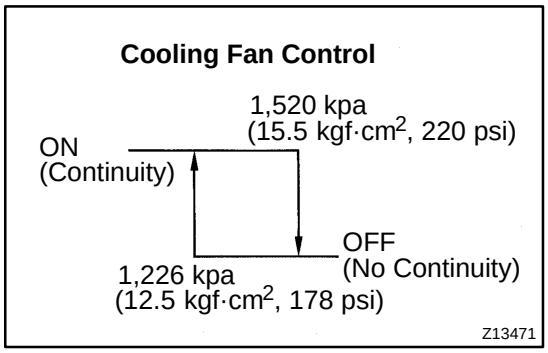


4. **Magnetic Clutch Control:**
   INSPECT PRESSURE SWITCH OPERATION

(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**

AC0BI–01

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

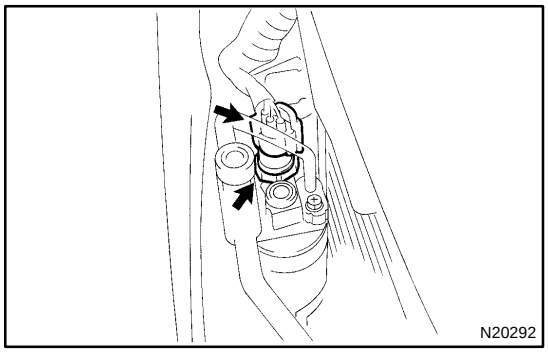
HINT:

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: 800 ± 50 g (28.22 ± 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)

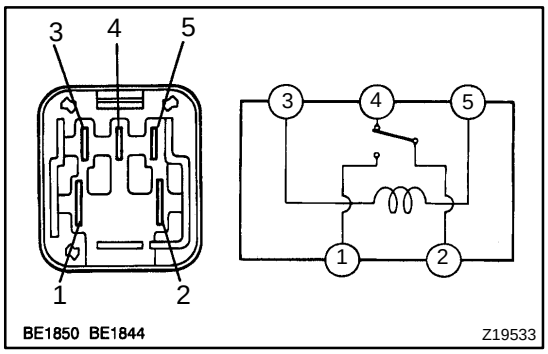
HINT:

- Lock the switch 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 compressor oil and install the switch.

AC0BJ–01

INSTALLATION

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



RELAY

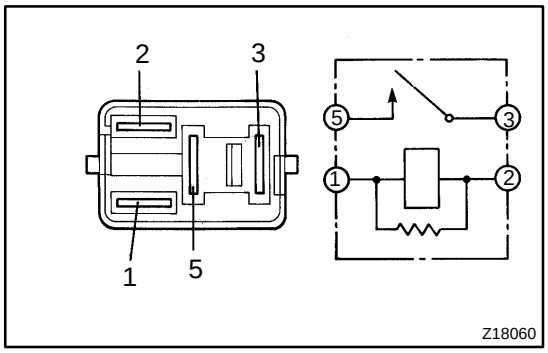
INSPECTION

AC2T0–01

1. INSPECT HEATER MAIN RELAY (Marking: HTR RLY) CONTINUITY

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

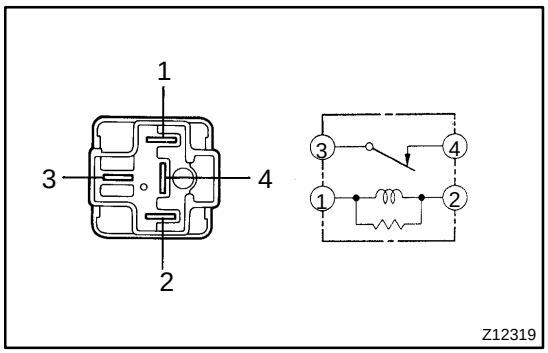
If continuity is not as specified, replace the relay.



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

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

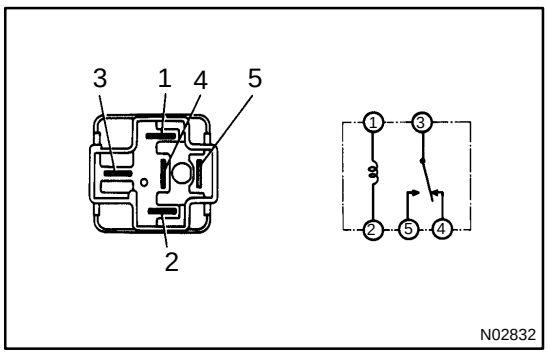
If continuity is not as specified, replace the relay.



3. INSPECT No.1 COOLING FAN RELAY (Marking: FAN RLY NO.1) CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 2 3 – 4	Continuity
Apply B+ between terminals 1 and 2.	3 – 4	No continuity

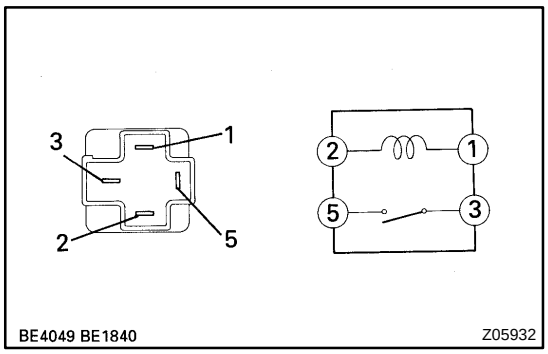
If continuity is not as specified, replace the relay.



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

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

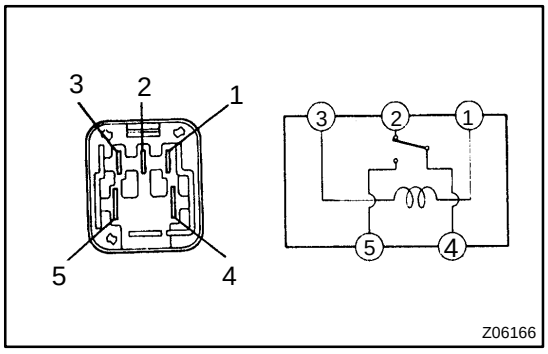
If continuity is not as specified, replace the relay



5. INSPECT No.3 COOLING FAN RELAY (Marking: FAN RLY NO.3) 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.



6. INSPECT ENGINE MAIN RELAY (Marking: ENGINE MAIN RLY) CONTINUITY

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

If continuity is not as specified, replace the relay.

CONDENSER FAN

AC0BL–01

ON–VEHICLE INSPECTION

1. INSPECT CONDENSER FAN OPERATION

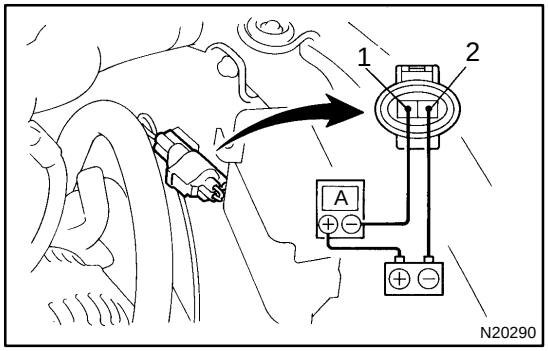
Inspect the fan operation, as shown in the chart below.

Test conditions:

- Ignition switch ON
- Blower speed control switch position ”HI”
- Temperature control dial at ”MAX. COOL”
- Install on manifold gauge set”
- A/C switch ON

Condition	Fan operation
Engine coolant temperature 83 ˚C (181 ˚F) or below	Not rotate
Engine coolant temperature 98 ˚C (208 ˚F) or above	Rotate
Refrigerant pressure is less than 1,520 kPa (15.5 kgf/cm^2, 220 psi)	Not rotate
Refrigerant pressure is 1,520 kPa (15.5 kgf/cm^2, 220 psi) or above	Rotate

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



2. INSPECT CONDENSER FAN MOTOR OPERATION

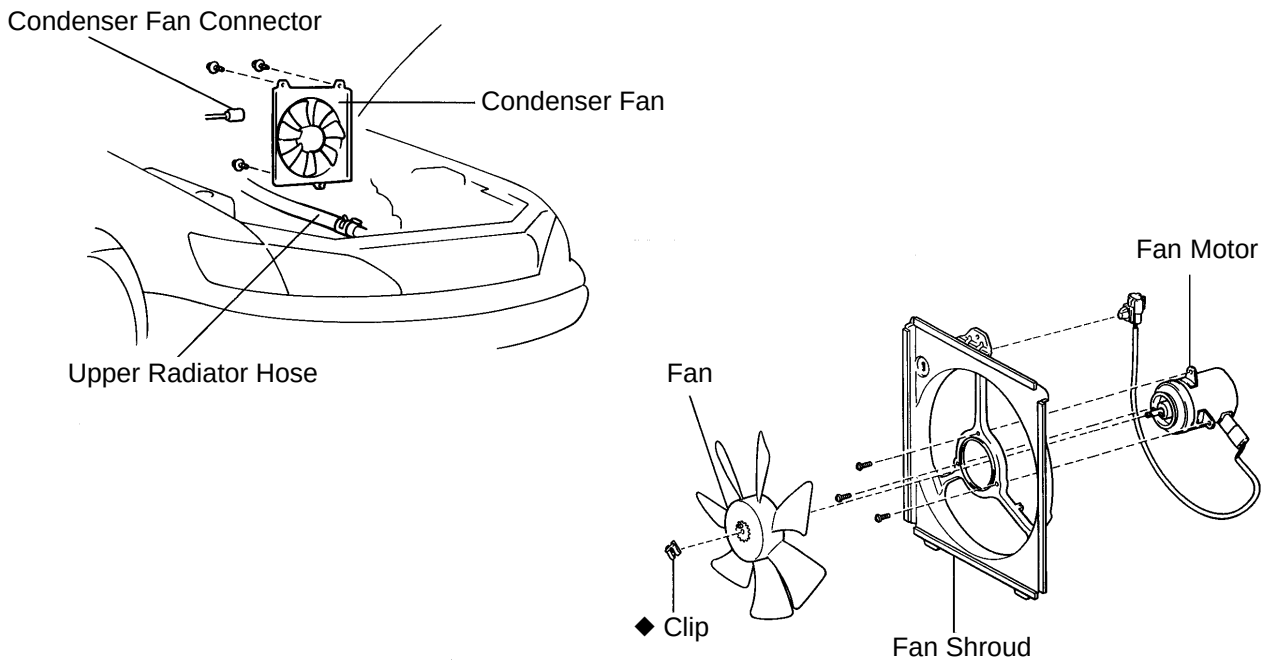
(a) Disconnect the fan connector.
(b) Connect battery and ammeter.
(c) Check that the fan rotates smoothly, and then check that the reading on the ammeter.

Specified amperage: 10.1 ± 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.

AC0BM–01

COMPONENTS



◆ Non–reusable part

Z19368

AC0BN–01

REMOVAL

1. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not necessary to drain out all the coolant.

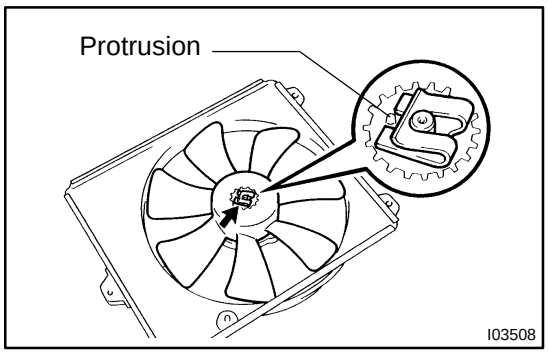
2. DISCONNECT UPPER RADIATOR HOSE FROM RADIATOR

3. REMOVE CONDENSER FAN

(a) Disconnect the connector.

(b) Remove the 3 bolts and fan.

AC0BO–01



DISASSEMBLY

1. REMOVE FAN

Remove the clip and fan.

NOTICE:

When removing the clip and fan, do not apply too much force to the motor shaft. And do not scratch the motor shaft.

HINT:

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

Install a new clip from the side opposite the protrusion on the fan.

2. REMOVE FAN MOTOR

(a) Disconnect the lead wire from the fan shroud.

(b) Remove the 3 screws and fan motor.

AC0BP–01

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC–99).

AC0BQ–01

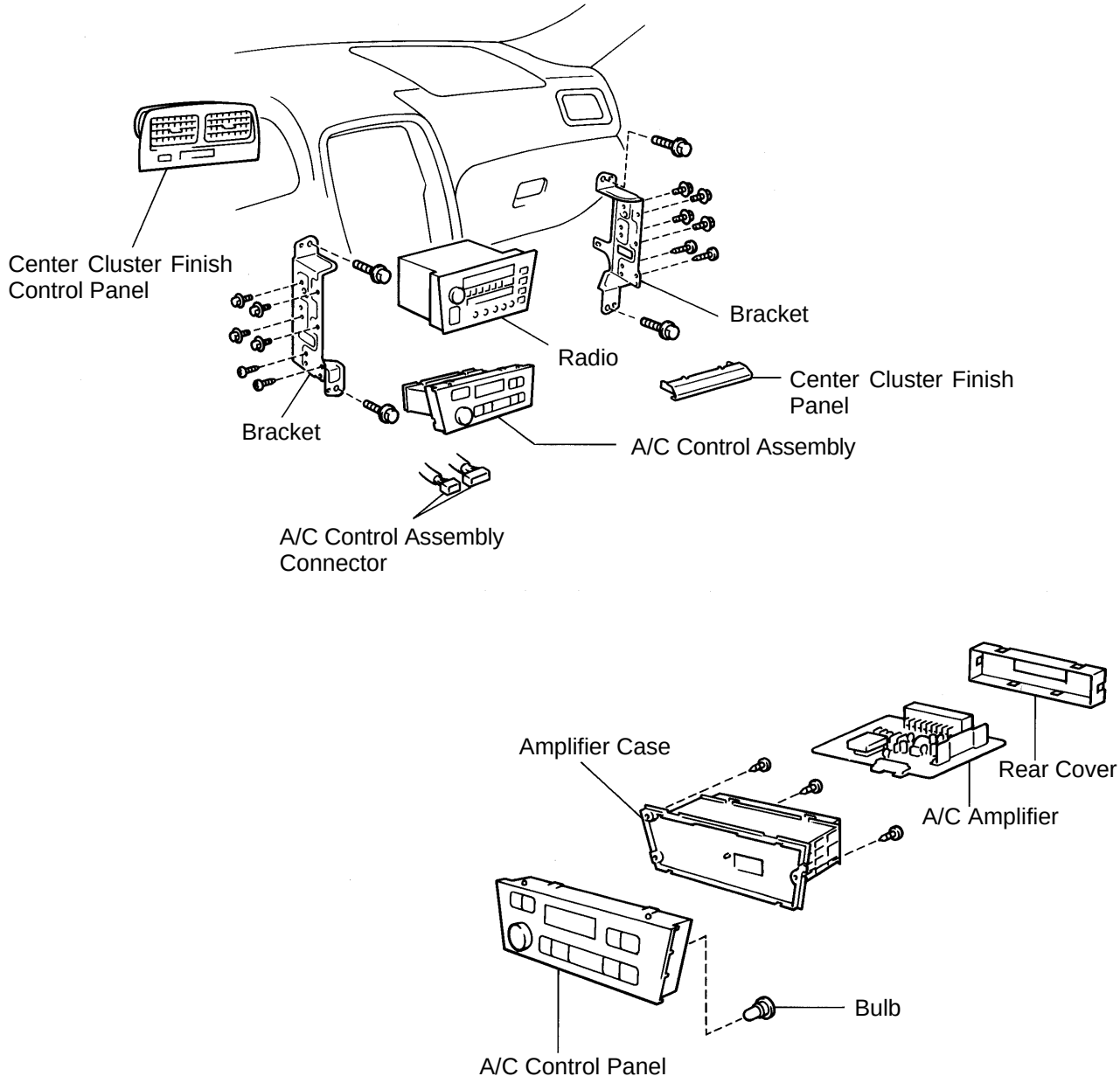
INSTALLATION

Installation is in the reverse order of removal (See page AC–98).

AIR CONDITIONING CONTROL ASSEMBLY

AC0BR–02

COMPONENTS



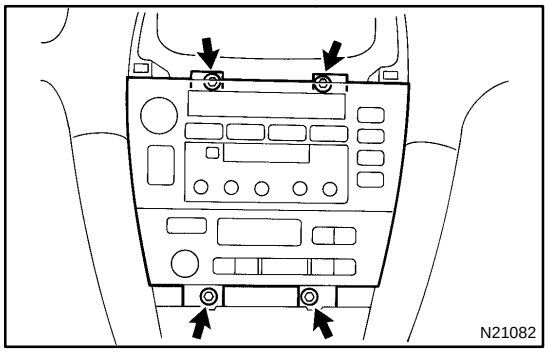
AC0BS–01

REMOVAL

1. REMOVE THESE PARTS:

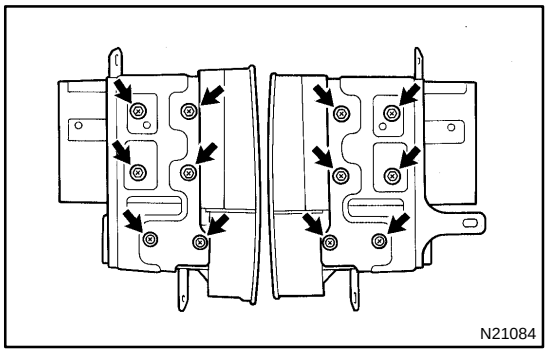
(a) End cluster finish panel

(b) Center cluster finish panel



2. REMOVE A/C CONTROL ASSEMBLY

(a) Remove the 4 bolts and pull out the A/C control assembly with radio, then disconnect the connectors.

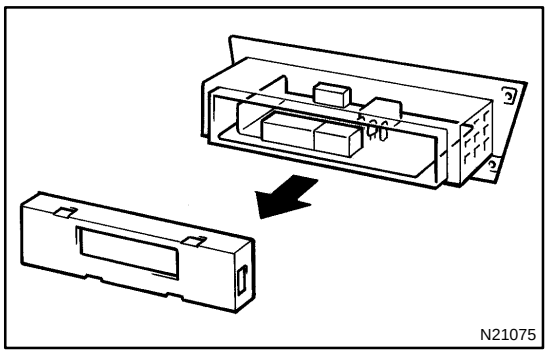


(b) Remove the 8 bolts, 4 screws and bracket.

(c) Remove the A/C control assembly from the radio.

AC0BT–01

DISASSEMBLY



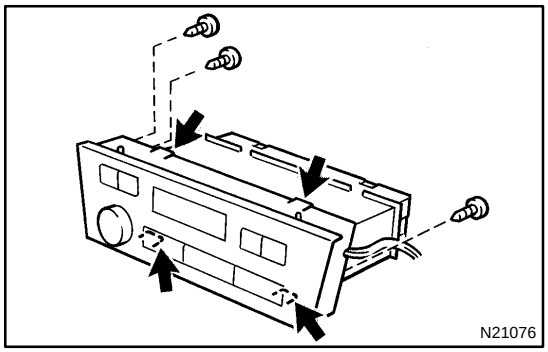
1. REMOVE A/C AMPLIFIER

(a) Release the 4 claws and remove the rear cover.

(b) Pull out the A/C amplifier backward.

HINT:

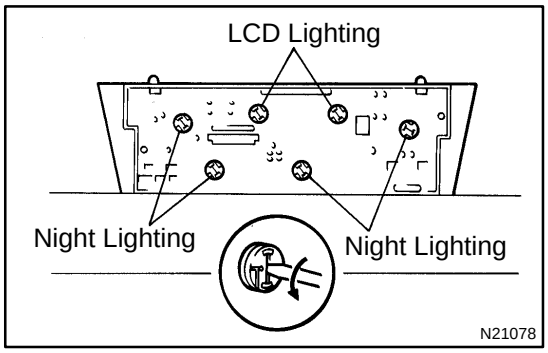
Hold the supply parts A/C amplifier using the electrostatic prevention bag it comes packed in.



2. SEPARATE A/C CONTROL PANEL AND A/C AMPLIFIER CASE

(a) Remove the 3 screws.

(b) Release the 4 claws, then separate the A/C control panel and A/C amplifier case.



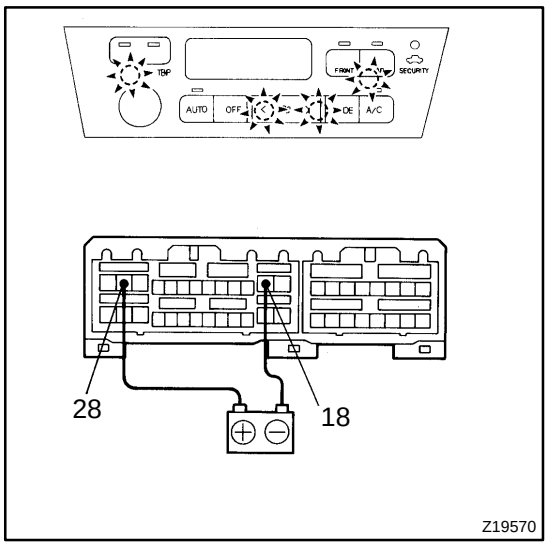
3. REMOVE BULB

Using a screwdriver, turn the bulb to left and pull out the bulb.

AC0BU–02

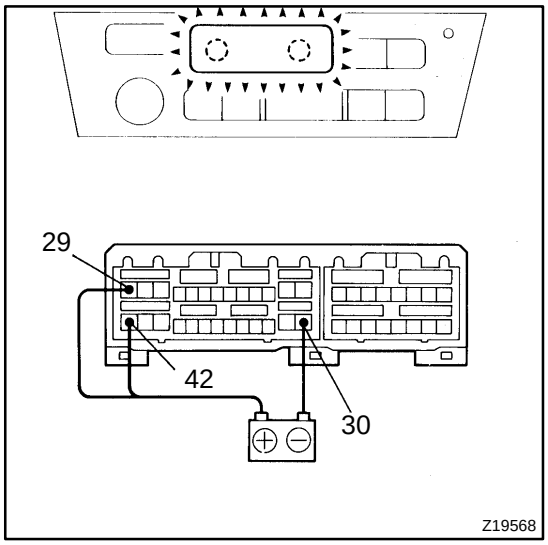
INSPECTION

1. INSPECT NIGHT LIGHTING

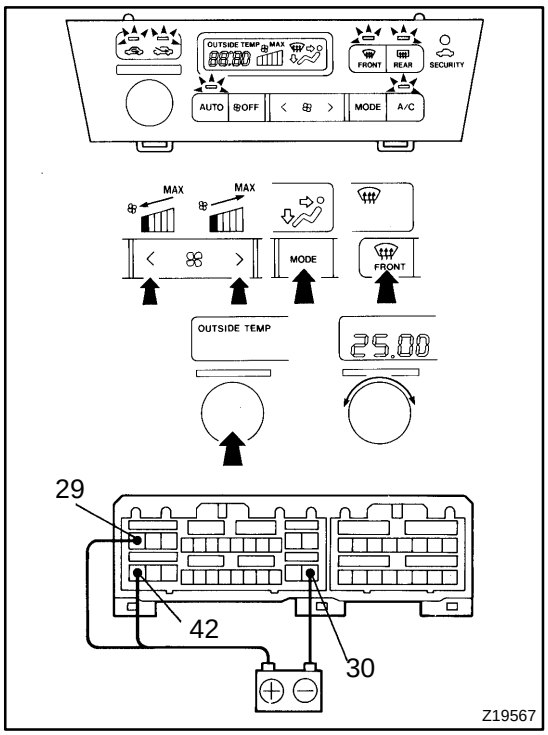


Connect the positive (+) lead from the battery to terminal 28 and the negative (–) lead to terminal 18, then check that the illumination lights up.
If there is bulb not light up, replace the bulb only.
If all bulb does not light up, replace the A/C control panel.

2. INSPECT LCD LIGHTING



Connect the positive (+) lead from the battery to terminal 29, 42 and the negative (–) lead to terminal 30, then check that the illumination lights up.
If there is bulb not light up, replace the replace the bulb only.
If the 2 bulbs do not light up, try replace the bulb with a new one
If the bulbs do not light up, replace the A/C control panel.

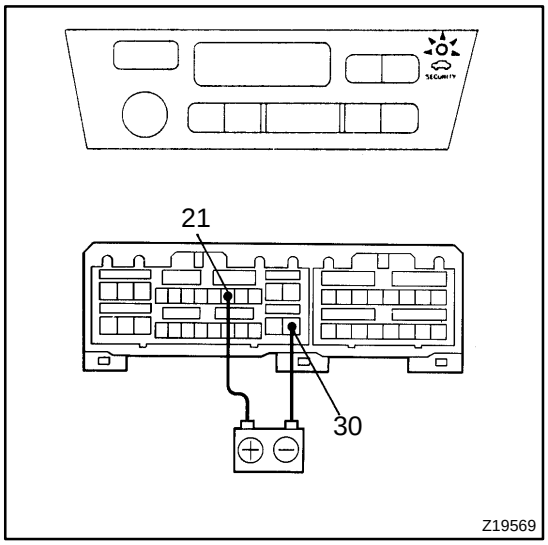


3. INSPECT SWITCH OPERATION

(a) Connect the positive (+) lead from the battery to terminal 29, 42 and the negative (–) lead to terminal 30.

(b) Operate the switches and check that the indicator and LCD indication change, as shown in the illustration.

If operation is not as specified, replace the A/C control panel.



4. INSPECT SECURITY INDICATOR

Connect the positive (+) lead from the battery to terminal 21 and negative (–) lead to terminal 30, then check that the indicator light up.

If operation is not as specified, replace the A/C control panel.

5. INSPECT A/C CONTROL ASSEMBLY CIRCUIT (See page DI–526)

AC0BV–01

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC–104).

AC0BW–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–103).

ENGINE COOLANT TEMPERATURE (ECT) SWITCH

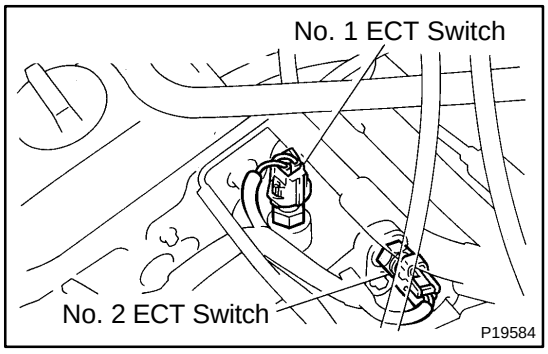
AC0BX–02

REMOVAL

1. DRAIN ENGINE COOLANT FROM RADIATOR

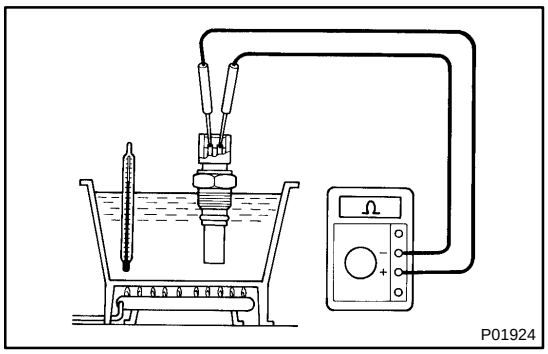
HINT:

It is not necessary to drain out all the coolant.



2. REMOVE ECT SWITCHES

AC0BY–01



INSPECTION

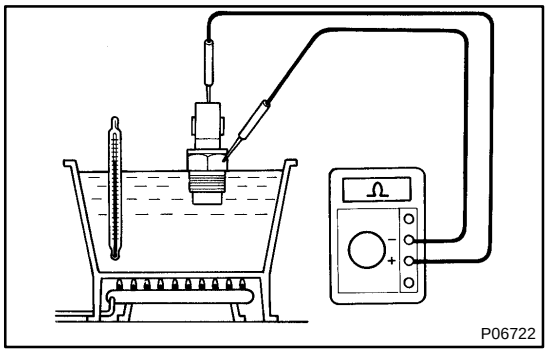
1. INSPECT No. 1 SWITCH CONTINUITY

(a) Using an ohmmeter, check that no continuity exists between the terminals when the coolant temperature is above 98˚C (208˚F).

If continuity exists, replace the switch.

(b) Using an ohmmeter, check that continuity exists between the terminals when the coolant temperature is below 88˚C (190˚F).

If no continuity exists, replace the switch.



2. INSPECT No. 2 SWITCH CONTINUITY

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

If continuity exists, replace the switch.

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

If no continuity exists, replace the switch.

AC0BZ–01

INSTALLATION

Installation is in the reverse order of removal (See page AC–109).