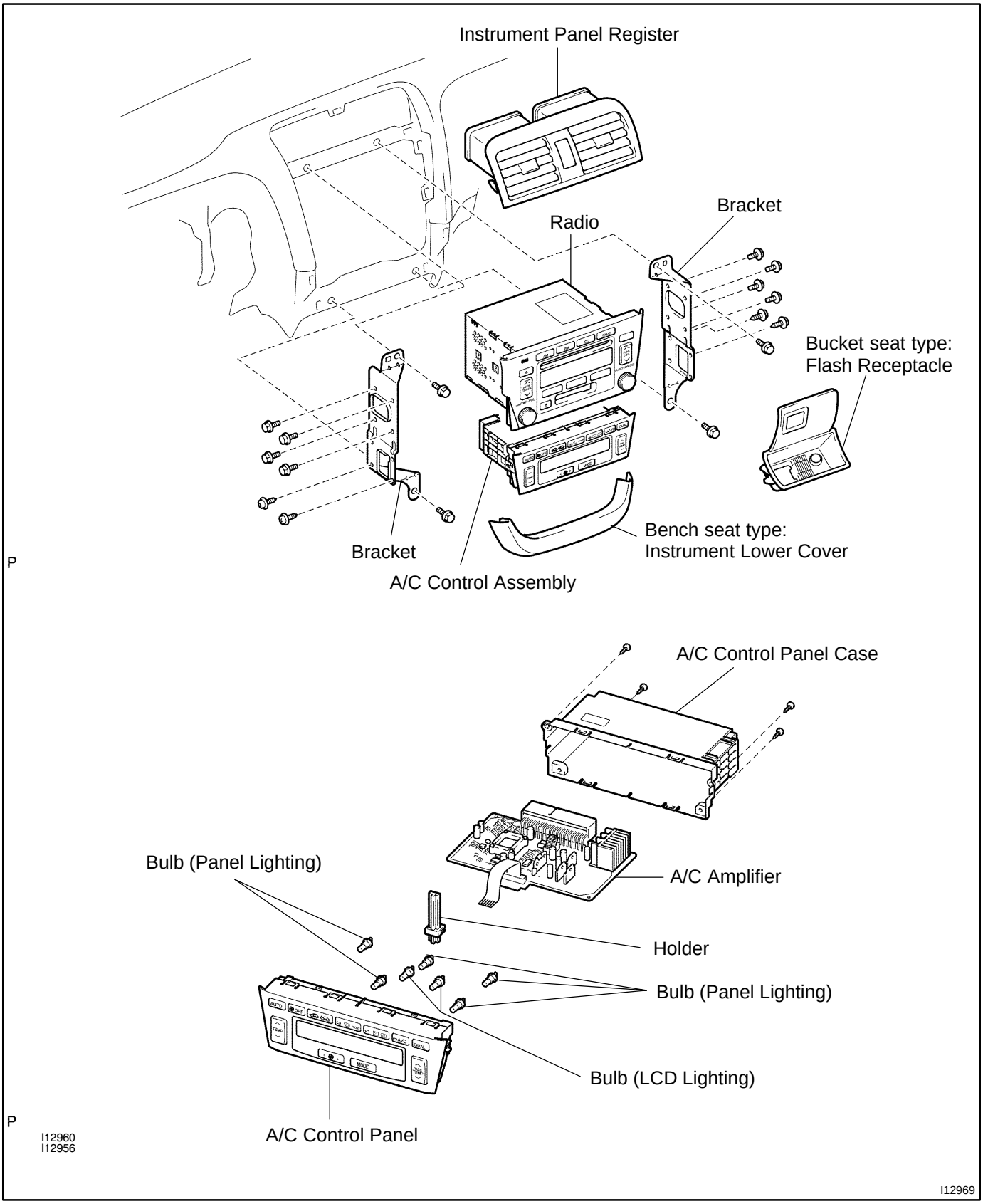
AIR CONDITIONING CONTROL ASSEMBLY (Auto A/C)

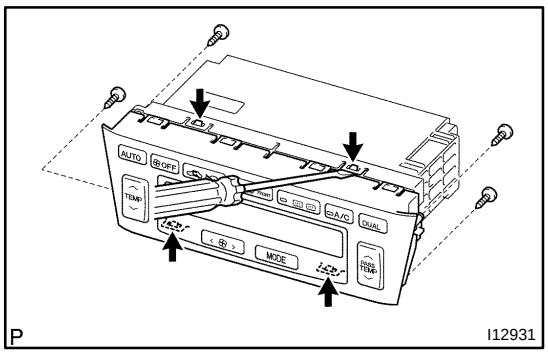
AC2GH-01

COMPONENTS



AC2GI-01

DISASSEMBLY



P I12931

1. REMOVE A/C CONTROL PANEL

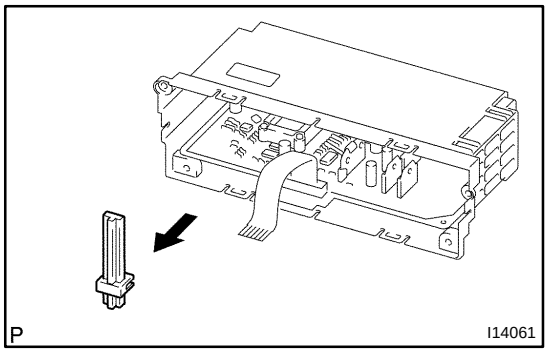
(a) Remove the 4 screws.

(b) Using a screwdriver, release the 4 claws.

HINT:

Tape the screwdriver tip before use.

(c) Unlock the connector's lock and pull out the flat harness from the A/C control panel.

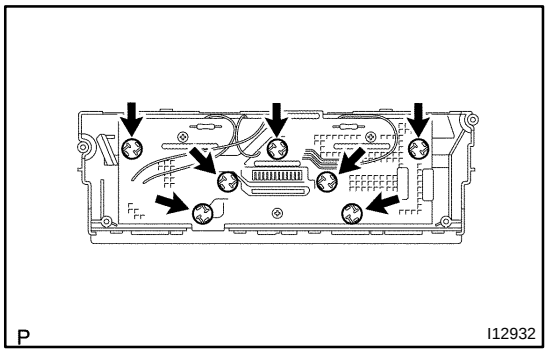


P I14061

2. REMOVE A/C AMPLIFIER

(a) Release the 2 claws and remove the holder.

(b) Hold the connector of amplifier and pull out the amplifier.

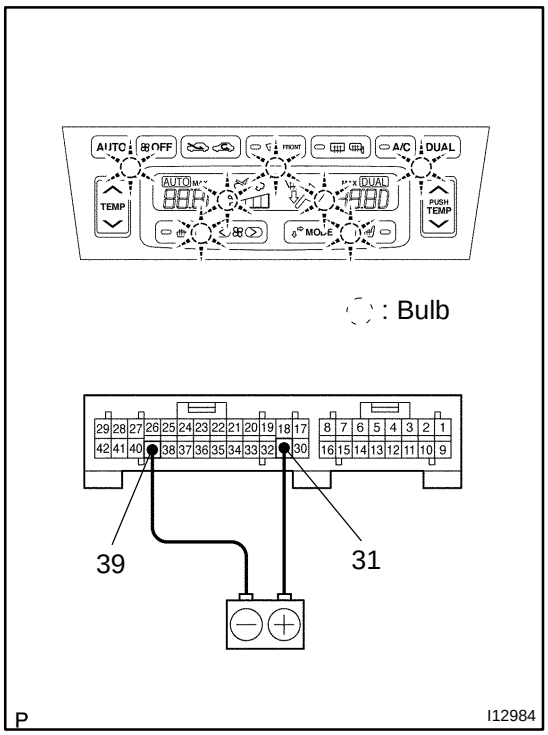


P I12932

3. REMOVE BULB

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

AC2GJ-01



INSPECTION

1. INSPECT ILLUMINATION OPERATION

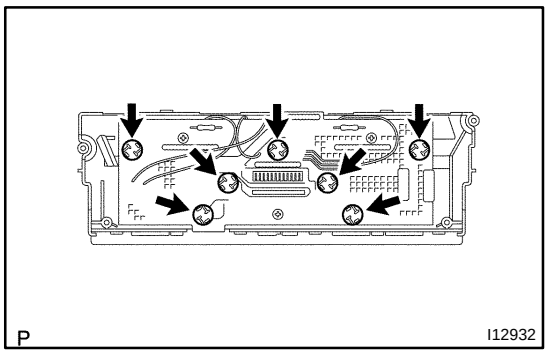
Connect the positive (+) lead from the battery to terminal 31 and the negative (-) lead to terminal 39, then check that the illumination lights up.

If there is bulb not light up, replace the bulb only. If all bulbs do not light up, replace the A/C control panel.

2. INSPECT A/C CONTROL AMPLIFIER CIRCUIT

(See page DI-759)

AC2GK-01



REASSEMBLY

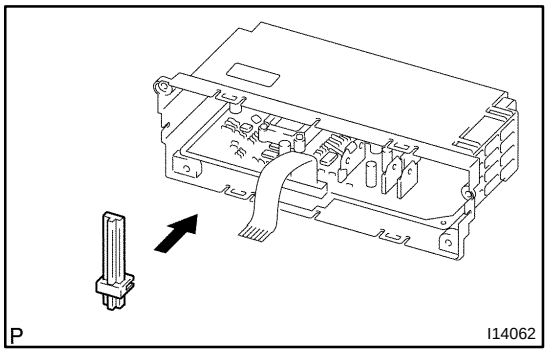
1. INSTALL BULB

(a) Install the bulb to the A/C control panel.

(b) Using a screwdriver, turn the bulb to the right and lock the bulb.

2. INSTALL A/C AMPLIFIER

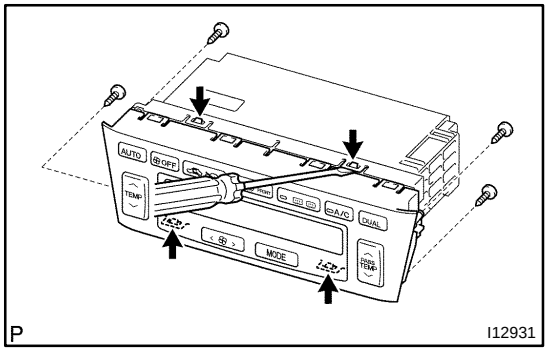
(a) Hold the connector of supply parts amplifier and pull out the amplifier from electrostatic prevention bag.



(b) Hold the connector of amplifier and install the amplifier to the A/C control panel case.

(c) Install the holder.

(d) Check the fitting for connector of amplifier.



3. INSTALL A/C CONTROL PANEL

(a) Unlock the connector's lock and push into the flat cable.

(b) INstall the A/C control panel.

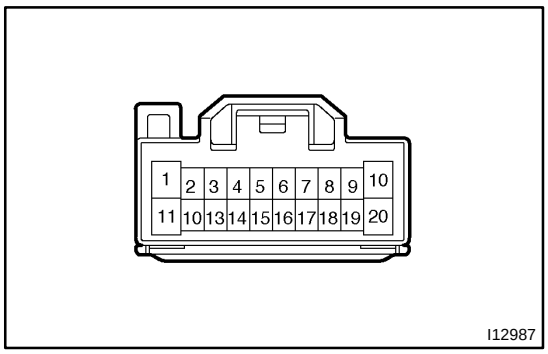
(c) Check the fitting for 4 claws.

(d) INstall the 4 screws.

AC10F-02

INSTALLATION

Installation is in the reverse order of removal (See page AC-78).



AIR CONDITIONING AMPLIFIER (Manual A/C)

AC2GL-01

ON-VEHICLE INSPECTION

INSPECT A/C AMPLIFIER CIRCUIT

(a) Remove the multi display with connectors still connected.

(b) Inspect wire harness side connector from the back side, as shown in the chart below.

Test conditions:

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

Tester connection	Condition	Specified condition
1 - Ground	Refrigerant pressure at 196 - 3,140 kPa	Below 1.0 V
	Refrigerant pressure less than 196 kPa or more than 3,140 kPa	Battery positive voltage
2 - Ground	Constant	Pulse generation
5 - Ground	A/C switch ON	Battery positive voltage
7 - Ground	Evaporator temperature at 25 °C (77 °F)	Approx. 1.5 kΩ
8 - Ground	A/C switch ON	Battery positive voltage
	A/C switch OFF	Below 1.0 V
9 - Ground	A/C switch ON	Below 2.0 V
	A/C switch OFF	No voltage
10 - Ground	Constant	Battery positive voltage
	Engine speed at idle-up speed	Below 1.0 V
11 - Ground	A/C switch OFF	Battery positive voltage
	A/C switch ON	Below 0.7 V
11 - Ground	Magnetic clutch is engaged	Below 1.0 V
	Magnetic clutch is not engaged	Battery positive voltage

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

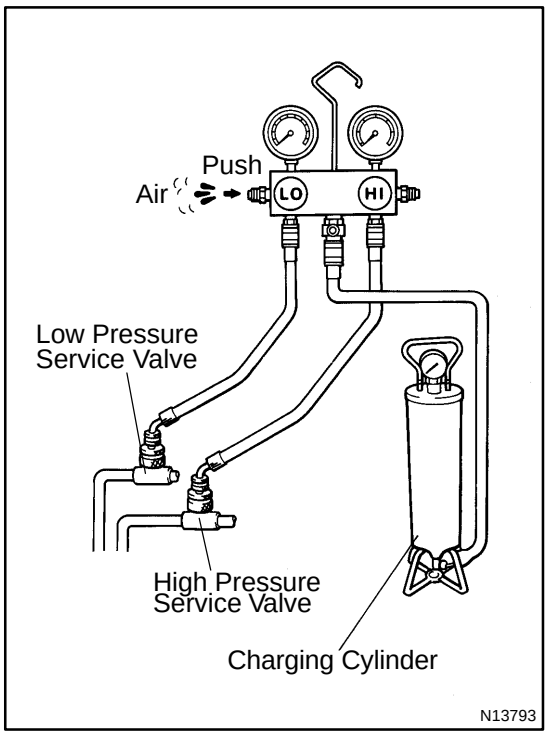
AC2GM-01

REMOVAL

REMOVE MULTI DISPLAY (Built into the A/C amplifier) (See page BO-90)

AC20C-02

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.

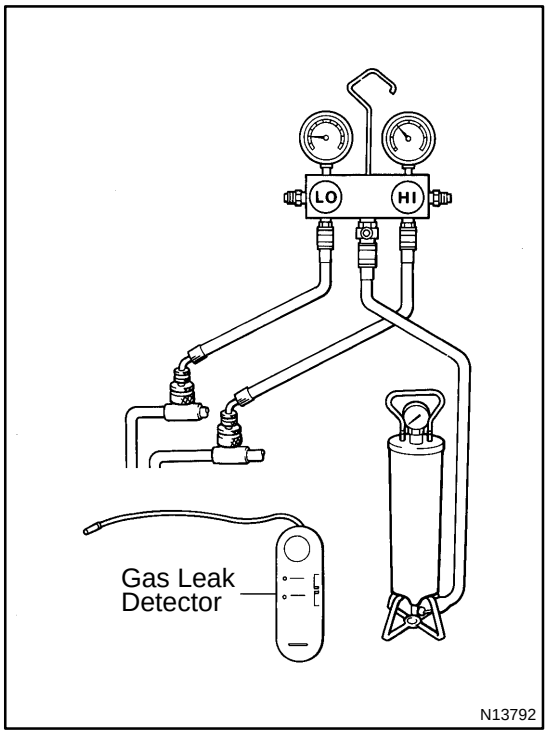
(b) Connect the center hose to the charging cylinder.

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.

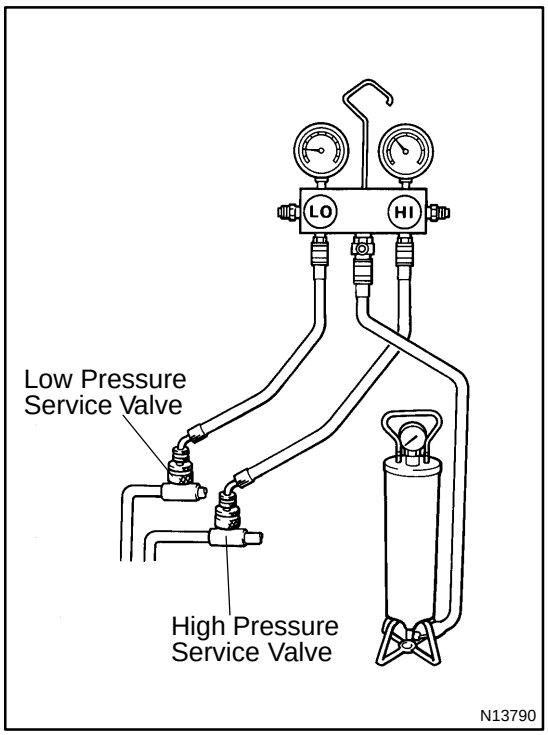
(b) When the low pressure gauge indicates 98 kPa (1 kgf/cm^2, 14 psi) close the high pressure hand valve.

(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 a valve when the system is being charged with liquid refrigerant.**

(a) Open the high pressure hand valve fully.

(b) Charge specified amount of refrigerant, then close the high pressure hand valve.

HINT:

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

(c) Charge partially refrigeration system with refrigerant.

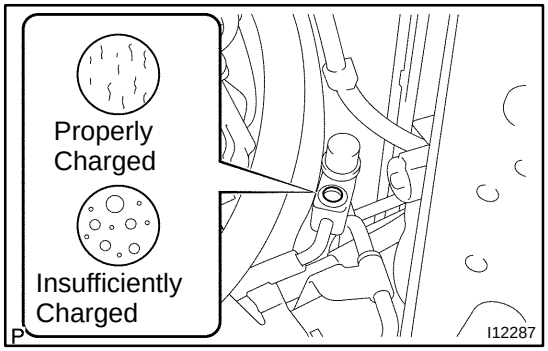
(1) Set vehicle in these conditions:

- Running engine at 1,500 rpm
- Blower speed control set at ”HI”
- Temperature control set at ”MAX. COOL”
- Air inlet control set at ”RECIRC”
- Fully open doors (Sliding roof: closed)

(2) Open the low pressure hand valve.

CAUTION:

Do not open the high pressure hand valve.

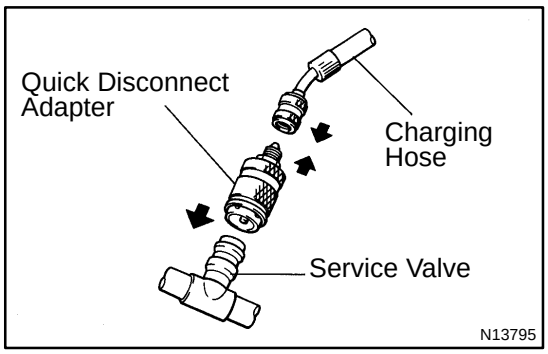


(d) Charge refrigerant until bubbles disappear and check the pressure on the gauge through the sight glass.

(e) Replenishment to be 100 ± 50 g after bubbles disapper.

AC0YC-02

EVACUATING



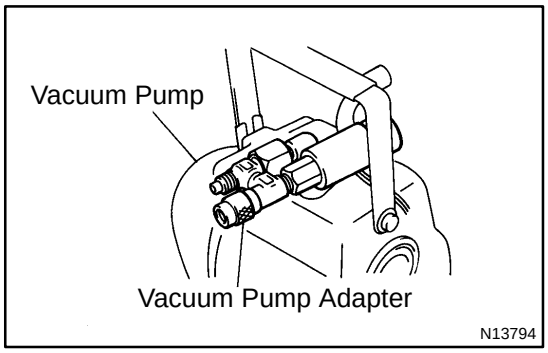
1. CONNECT QUICK DISCONNECT ADAPTER TO CHARGING HOSES

2. REMOVE CAPS FROM SERVICE VALVES ON REFRIGERANT LINES

3. SET ON MANIFOLD GAUGE SET

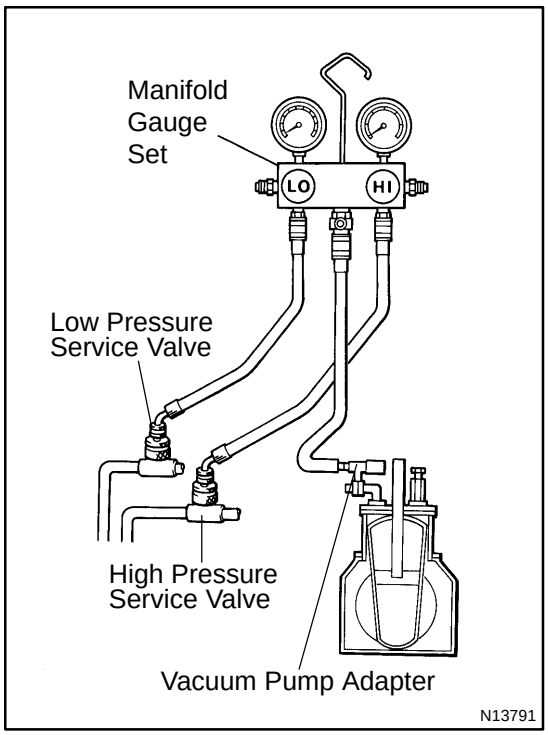
(a) Close both hand valves of manifold gauge set.

(b) Connect the quick disconnect adapters to the service valves.



4. EVACUATE AIR FROM REFRIGERATION SYSTEM

(a) Connect the vacuum pump adapter to the vacuum pump.



(b) Connect the center hose of the manifold gauge set to the vacuum pump adapter.

(c) Open both the high and low hand valves and run the vacuum pump.

(d) After 10 minutes or more, check that the low pressure gauge indicates 750 mmHg (30 in. Hg) or more.

HINT:

If the reading is 750 mmHg (30 in. Hg) or more, close both hand valves of manifold gauge set and stop the vacuum pump.

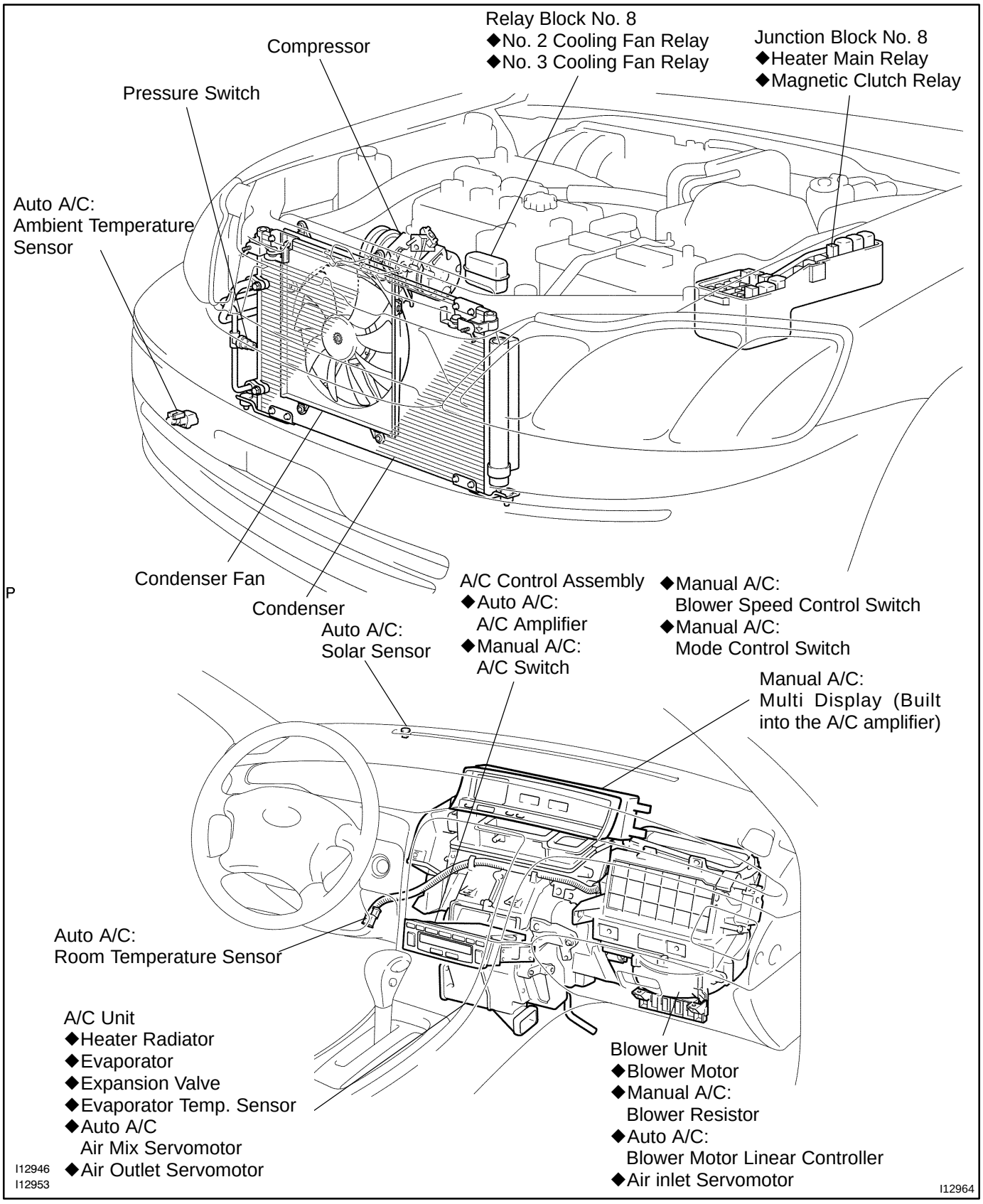
Check the system for leaks and repair if necessary.

(e) Close both the high and low hand valves and stop the vacuum pump.

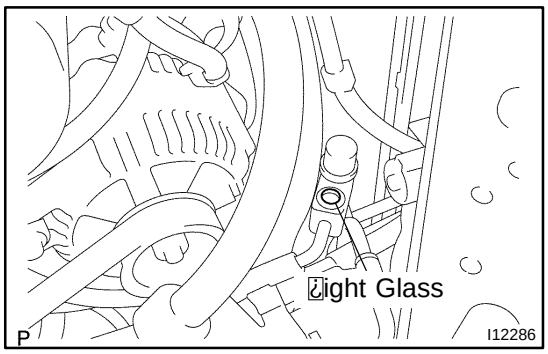
(f) Leave the system in this condition for 5 minutes or more and check that there is no gauge indicator.

AC0YE-02

LOCATION



AC0YB-02



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

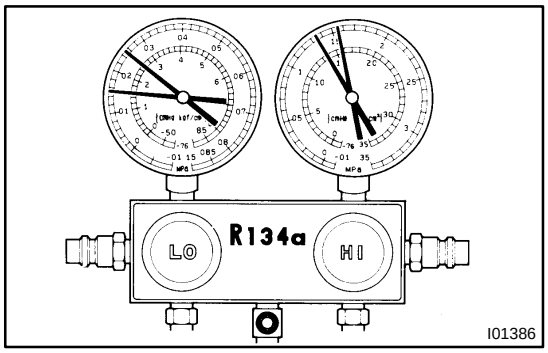
This is a method in which the trouble is located by using a manifold gauge set. Read the manifold gauge pressure when the these conditions are established.

Test conditions:

Temperature at the air inlet with the switch set at RECIRC is 30 - 35 ˚C (86 - 95 ˚F)
Engine running at 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:

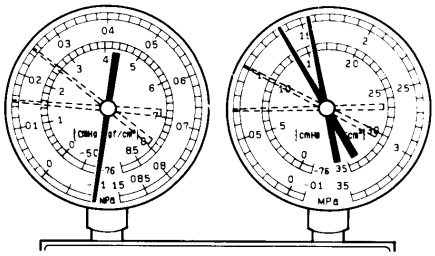
0.15 - 0.25 MPa (1.5 - 2.5 kgf/cm^2)

High pressure side:

1.37 - 1.57 MPa (14 - 16 kgf/cm$^{2)}$

(2) Moisture present in refrigeration system.

Condition: Periodically cools and then fails to cool

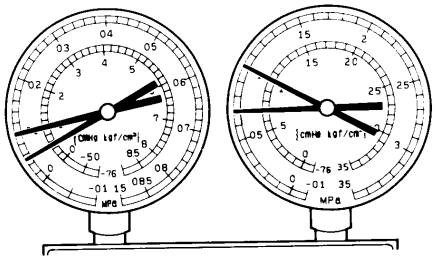


I01387

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, by normal state is restored after a time when the ice melts	Drier oversaturated state Moisture in refrigeration system freezes at expansion valve orifice and blocks circulation of refrigerant	(1) Replace condenser (2) Remove moisture in cycle through repeatedly evacuating air (3) Charge proper amount of new refrigerant

(3) Insufficient cooling

Condition: Insufficient cooling

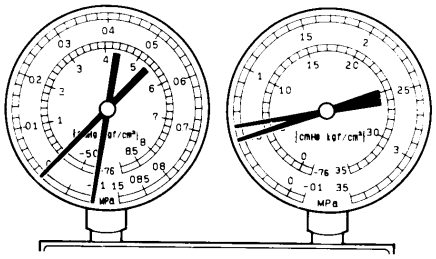


I01388

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

(4) Poor circulation of refrigerant

Condition: Insufficient cooling

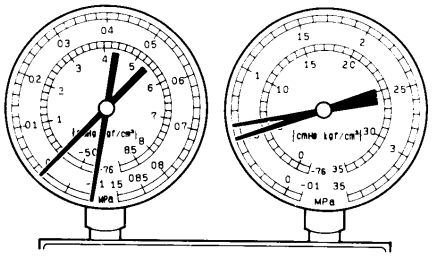


I01389

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

(5) Refrigerant does not circulate

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

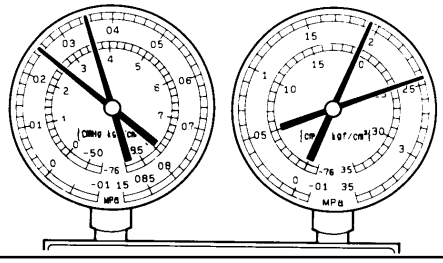


I01449

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

(6) Refrigerant overcharged or insufficient cooling of condenser

Condition: Insufficient cooling

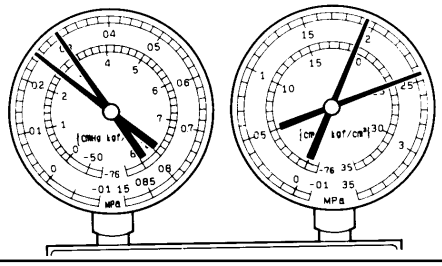


I01390

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
Pressure too high on both low and high pressure sides No air bubbles seen through the sight glass even when the engine rpm is lowered	Unable to develop sufficient performance due to excessive refrigeration system Insufficient cooling of condenser	Excessive refrigerant in cycle → refrigerant over charged Condenser cooling → condenser fins clogged 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



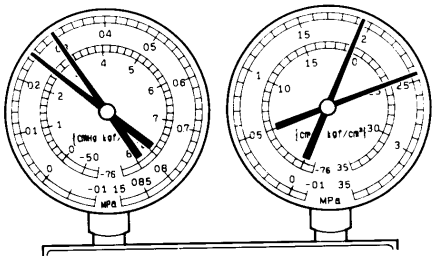
NOTE : These gauge indications are shown when the refrigeration system has been opened and the refrigerant charged without vacuum purging.

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

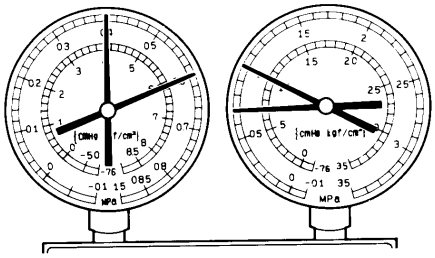


I01450

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 FOR LEAKAGE OF REFRIGERANT

(a) Perform in these conditions:

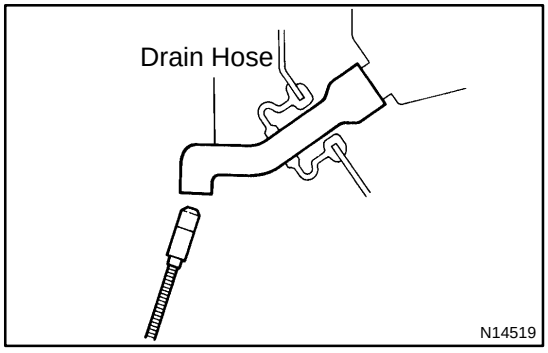
Stop engine.

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^2, 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.

4. INSPECT IDLE-UP SPEED

(a) Warm up engine.

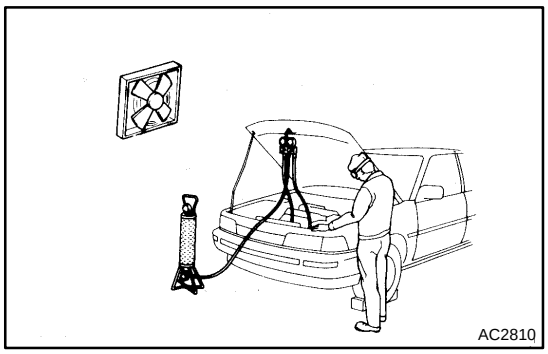
(b) Inspect idle-up speed when the these conditions are established.

Test conditions:

Idle speed set correctly.
Steering wheel straight ahead
Blower speed control switch at HI
A/C switch ON
Steering wheel straight ahead

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 the IAC valve and idle control system (See page SF-43 ,DI-102).


AC2810

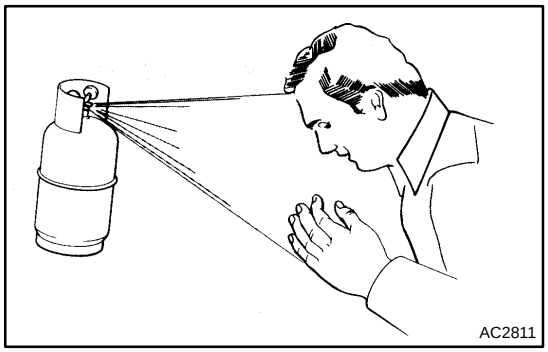
AIR CONDITIONING SYSTEM

AC0Y9-02

PRECAUTION

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

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:

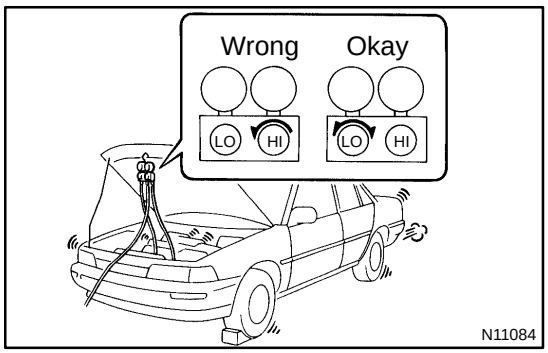
Do not rub your eyes or skin.

(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 APPLY PHYSICAL SHOCKS TO IT



N11084

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

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

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

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

8. BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT

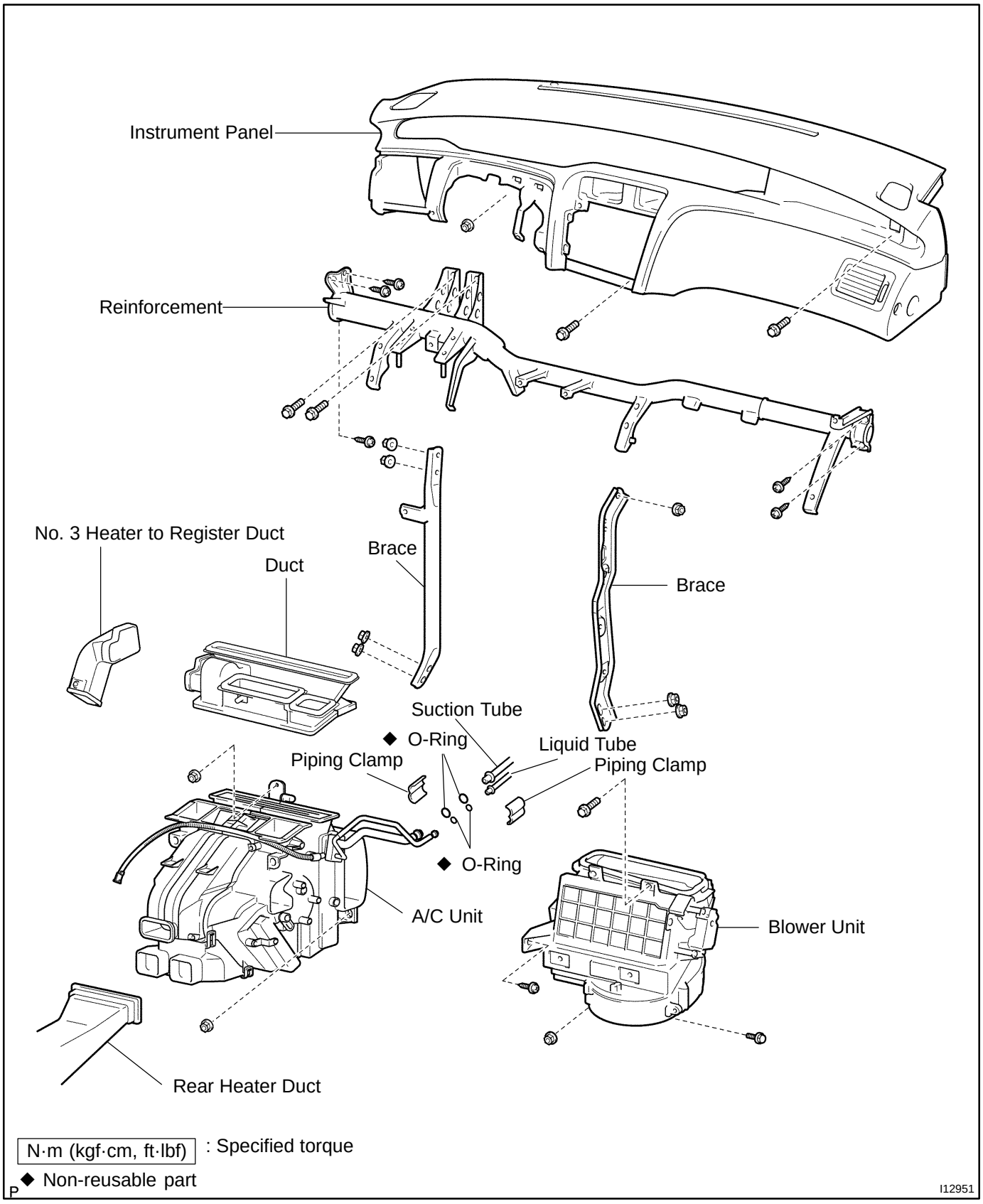
If refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy, engine overheating etc.

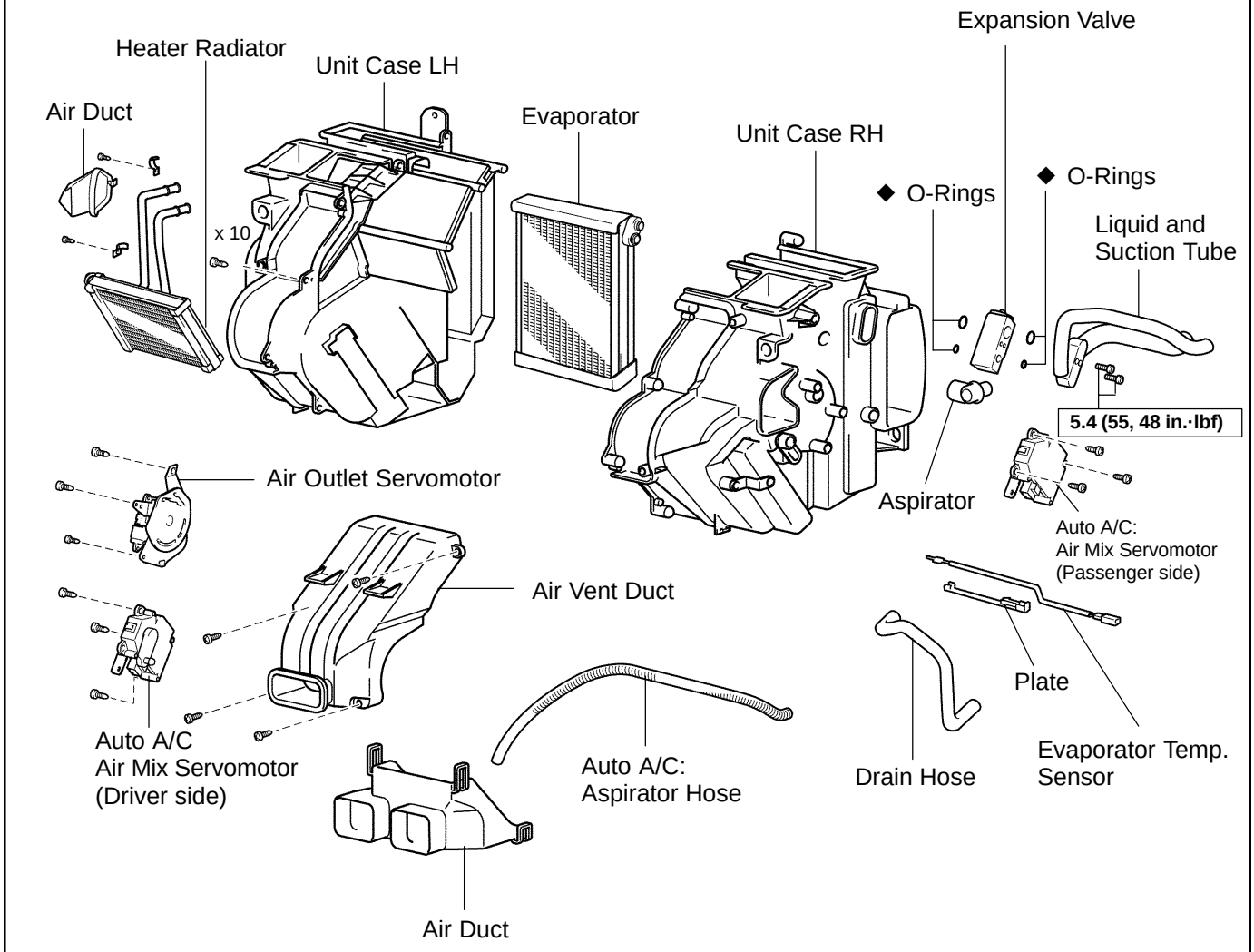
9. SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

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

AC2FY-01

COMPONENTS





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

◆ Non-reusable part

P

I12952

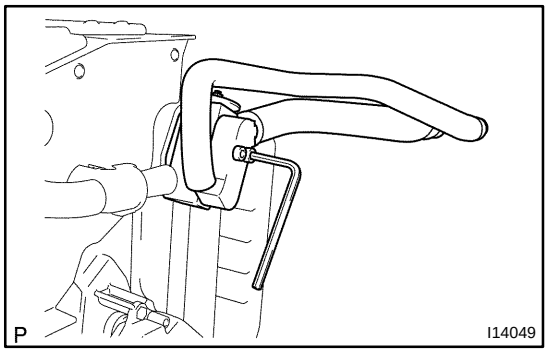
AC2HX-01

DISASSEMBLY

1. REMOVE AIR VENT DUCT

2. REMOVE EVAPORATOR TEMP. SENSOR

Pull out the sensor.



3. REMOVE EXPANSION VALVE

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

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 them to the valve.

4. Auto A/C only:
REMOVE BLOWER MOTOR LINEAR CONTROLLER

Remove the 2 screws and controller.

5. REMOVE BLOWER RESISTOR

Remove the 2 screws and blower resistor.

6. Auto A/C only:
REMOVE AIR MIX SERVOMOTOR (Driver side)

Remove the 3 screws and servomotor.

7. Auto A/C only:
REMOVE AIR MIX SERVOMOTOR (Passenger side)

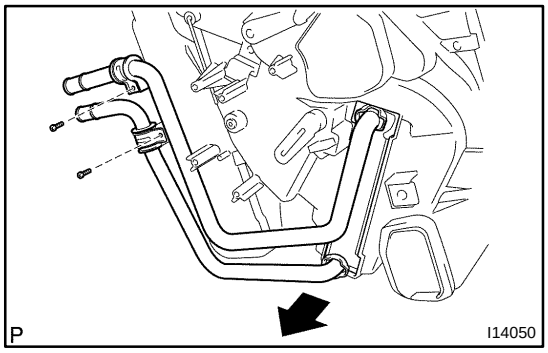
Remove the 3 screws and servomotor.

8. REMOVE AIR OUTLET SERVOMOTOR

Remove the 3 screws and servomotor.

9. REMOVE ASPIRATOR

Remove the screw and aspirator.



10. REMOVE HEATER RADIATOR

(a) Remove the air duct.
(b) Remove the 2 screws and 2 clamps.
(c) Pull out the heater radiator.

11. REMOVE EVAPORATOR

(a) Remove the 10 screws and separate the A/C unit case.

(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

AC2G0-01

INSPECTION

1. CHECK EVAPORATOR FINS FOR BLOCKAGE

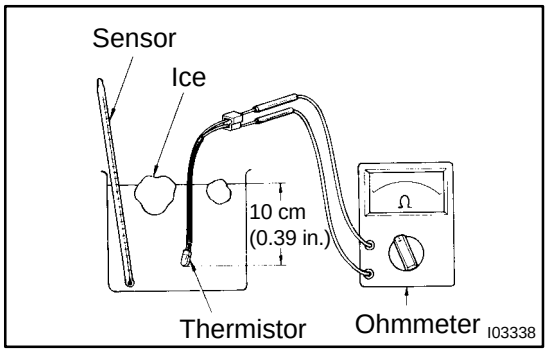
If the fins are clogged, clean them with compressed air.

NOTICE:

Never use water to clean the evaporator.

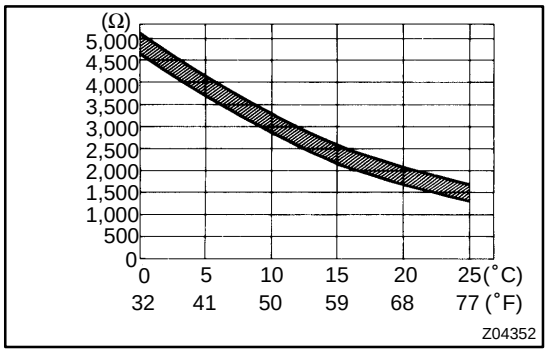
2. CHECK FITTINGS FOR CRACKS OR SCRATCHES

Repair as necessary.



3. INSPECT EVAPORATOR TEMPERATURE SENSOR

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



(b) Compare the 2 readings on the chart.

If resistance is not as specified, replace the thermistor.

AC0YR-02

INSTALLATION

Installation is in the reverse order of removal (See page AC-28).

AIR CONDITIONING UNIT

AC2FX-01

ON-VEHICLE INSPECTION

INSPECT FOR LEAKAGE OF REFRIGERANT

(a) Remove the glove compartment door (See page BO-90).
(b) Remove the blower resister.
(c) Using a gas leak detector, check for leakage of refrigerant.

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

AC2HI-01

REASSEMBLY

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

AC2KB-01

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

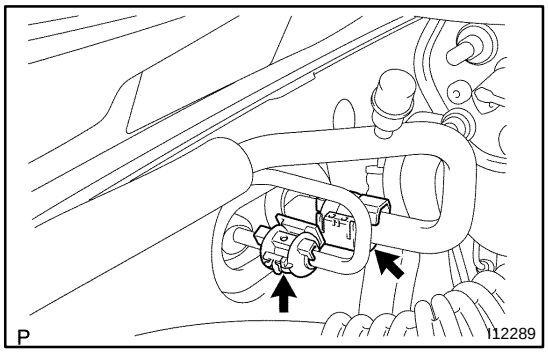
At the time of installation, please refer to the following item.
Evacuate air from refrigeration system.
Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 600 ± 50 g (21.16 ± 1.76 oz.)

2. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

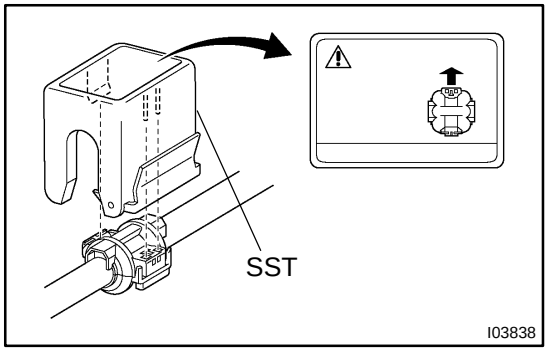
It is not necessary to drain out all coolant.



3. DISCONNECT LIQUID AND SUCTION TUBES

(a) Using SST, remove the 2 piping clamps.

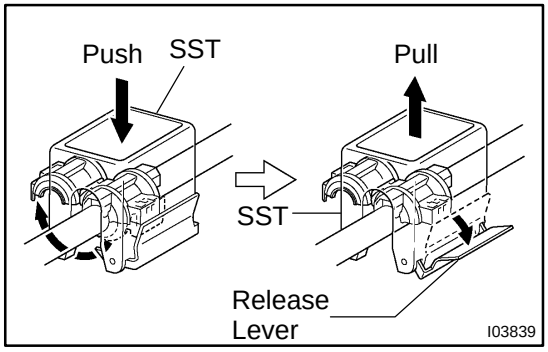
SST 09870-00015 (Suction tube)
09870-00025 (Liquid tube)



(1) Insert SST to piping clamp.

HINT:

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



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

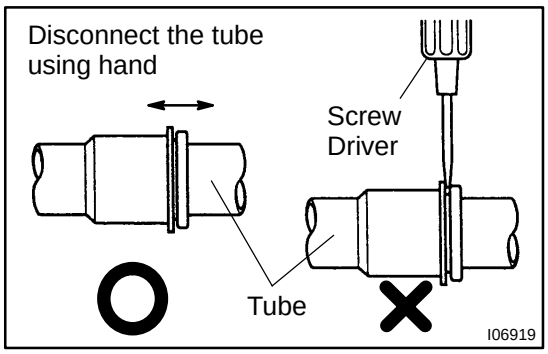
NOTICE:

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

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

(4) Remove the piping clamp from SST.

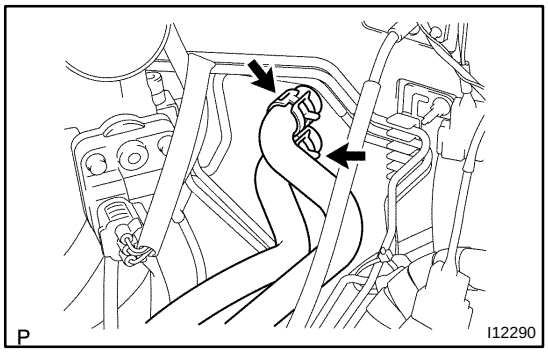
(b) Disconnect the both tubes.



NOTICE:

- **Do not use tools like screwdriver to remove the tube.**
- **Cap the open fittings immediately to keep moisture or dirt out of the system.**

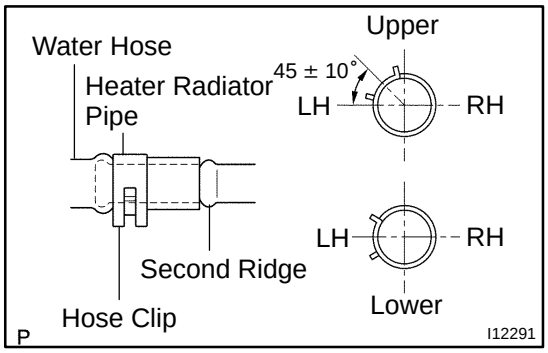
4. REMOVE INSTRUMENT PANEL AND REINFORCEMENT (See page BO-90)



5. 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.

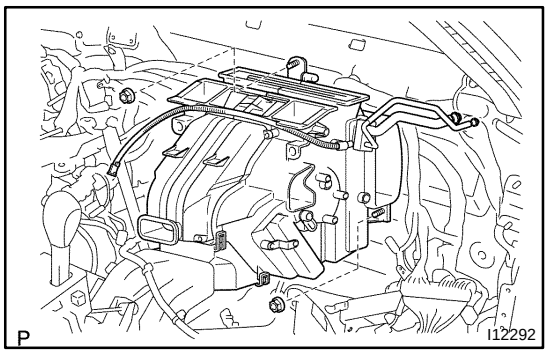


HINT:

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

Push the water hose onto the heater radiator pipe as far as second ridge on the pipe and install the hose clip.

6. REMOVE BLOWER UNIT (See page AC-37)

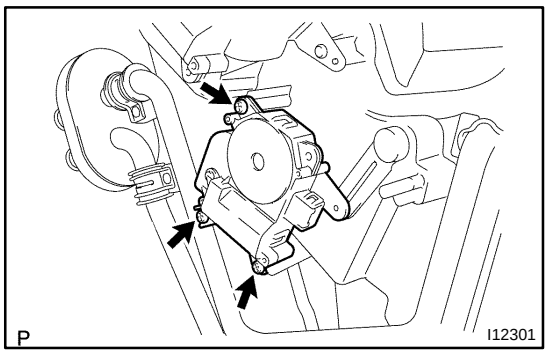


7. REMOVE A/C UNIT

(a) Remove the duct.

(b) Disconnect the connectors.

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



AIR MIX SERVOMOTOR (Auto A/C)

AC2GB-01

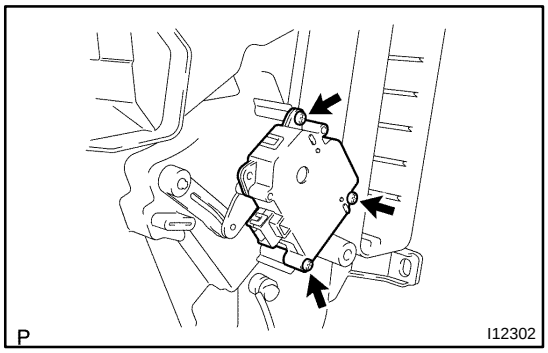
INSPECTION

1. Drive side:
REMOVE AIR MIX SERVOMOTOR

(a) Remove the lower No. 1 panel.
(b) Remove the lower LH panel insert.
(c) Disconnect the connector.
(d) Remove the 3 screws and the servomotor.

2. INSPECT AIR MIX DAMPER POSITION SENSOR CIRCUIT (See page DI-796)

3. INSPECT AIR MIX CONTROL SERVOMOTOR CIRCUIT (See page DI-799)



4. Passenger side:
REMOVE AIR MIX SERVOMOTOR

(a) Remove the blower unit (See page AC-37).
(b) Disconnect the connector.
(c) Remove the 3 screws and the servomotor.

5. INSPECT AIR MIX DAMPER POSITION SENSOR CIRCUIT (See page DI-787)

6. INSPECT AIR MIX CONTROL SERVOMOTOR CIRCUIT (See page DI-799)

7. Driver side:
INSTALL AIR MIX SERVOMOTOR

(a) Install the servomotor with the 3 screws.
(b) Connect the connector.
(c) Install the lower LH panel insert.
(d) Install the lower No. 1 panel.

8. Passenger side:
INSTALL AIR MIX SERVOMOTOR

(a) Install the servomotor with the 3 screws.
(b) Connect the connector.
(c) Install the blower unit (See page AC-37).

AIR OUTLET SERVOMOTOR

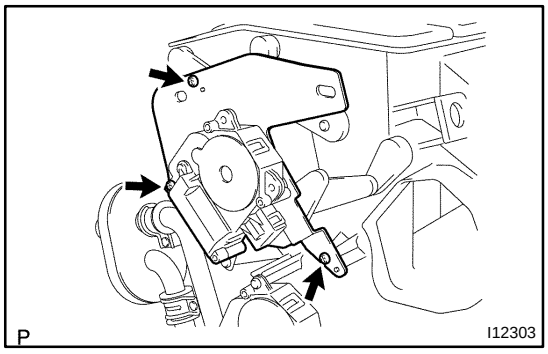
AC2GC-01

INSPECTION

1. REMOVE AIR OUTLET SERVOMOTOR

(a) Remove the instrument panel (See page BO-90).

(b) Disconnect the connector.



(c) Remove the 3 screws and servomotor.

2. INSPECT AIR OUTLET DAMPER POSITION SENSOR CIRCUIT (See page DI-793)

3. INSPECT AIR OUTLET DAMPER CONTROL SERVOMOTOR CIRCUIT (See page DI-808)

4. INSTALL AIR OUTLET SERVOMOTOR

(a) Install the 3 screws with the 3 screws.

(b) Connect the connector.

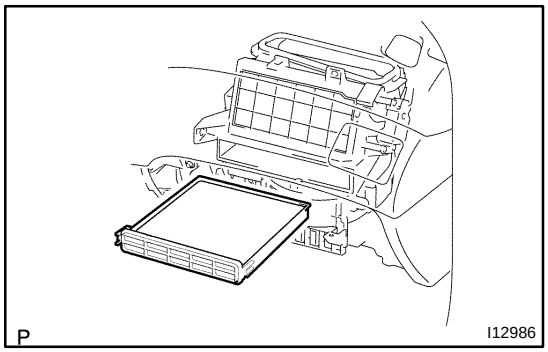
(c) Install the instrument panel (See page BO-97).

AIR REFINER FILTER

AC2GS-01

REPLACEMENT

1. REMOVE GLOVE COMPARTMENT PARTS
(See page BO-90)



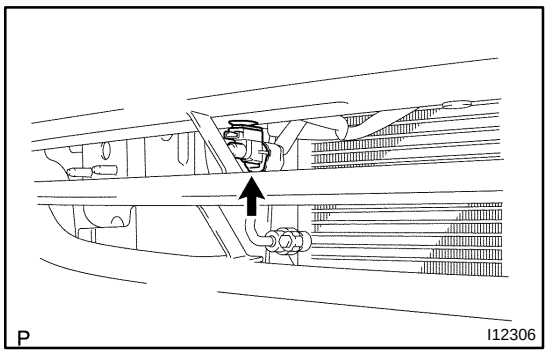
2. REMOVE AIR REFINER FILTER

(a) Remove the filter cover.
(b) Pull out the filter.
(c) Remove the filter from the frame.

3. INSTALL AIR REFINER FILTER

(a) Install the filter to the frame.
(b) Install the filter.
(c) Install the filter cover.

4. INSTALL GLOVE COMPARTMENT PARTS
(See page BO-97)



AMBIENT TEMPERATURE SENSOR

AC2GF-01

INSPECTION

1. REMOVE AMBIENT TEMPERATURE SENSOR

(a) Disconnect the connector.

(b) Remove the sensor.

2. INSPECT AMBIENT TEMPERATURE SENSOR CIRCUIT (See page DI-766)

3. INSTALL AMBIENT TEMPERATURE SENSOR

(a) Install the sensor.

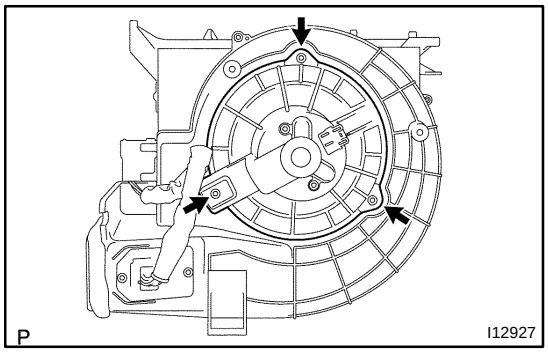
(b) Connect the connector.

BLOWER MOTOR

AC2G8-01

INSPECTION

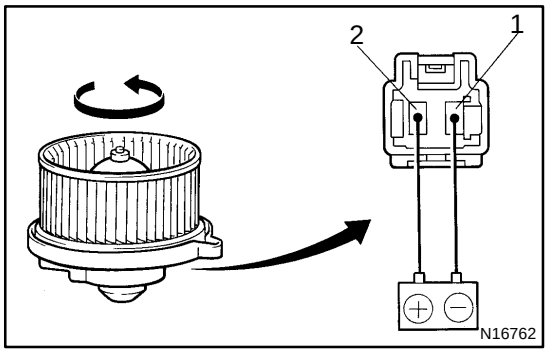
1. REMOVE GLOVE COMPARTMENT PARTS
(See page BO-90)



2. REMOVE BLOWER MOTOR

(a) Disconnect the connector.

(b) Remove the 3 screws and blower motor.



3. INSPECT BLOWER MOTOR OPERATION

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

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

4. INSTALL BLOWER MOTOR

(a) Install the blower motor with the 3 screws.

(b) Connect the connector.

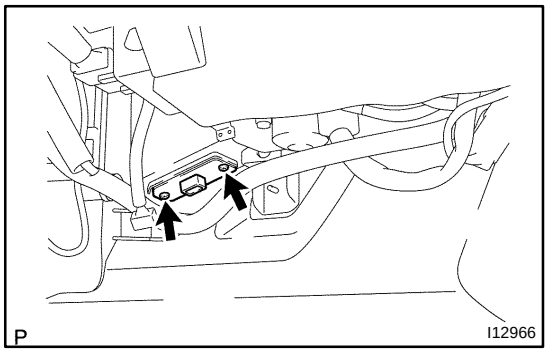
5. INSTALL GLOVE COMPARTMENT PARTS
(See page BO-97)

BLOWER RESISTOR (Manual A/C)

AC2G9-01

INSPECTION

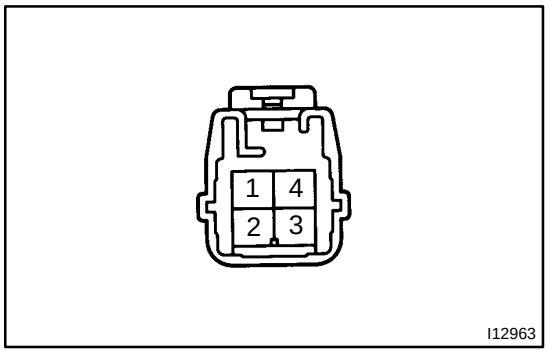
1. REMOVE GLOVE COMPARTMENT PARTS
(See page BO-90)



2. REMOVE BLOWER RESISTOR

(a) Disconnect the connector.

(b) Remove the 2 screws and blower resistor.



3. INSPECT BLOWER RESISTOR RESISTANCE

Measure resistance between terminals, as shown in the chart below.

Tester connection	Condition	Specified condition
1 - 3	Constant	Approx. 0.42 Ω
1 - 4	Constant	Approx. 1.42 Ω
2 - 4	Constant	Approx. 2.24 Ω

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

4. INSTALL BLOWER RESISTOR

(a) Install the blower resistor with the 2 screws.

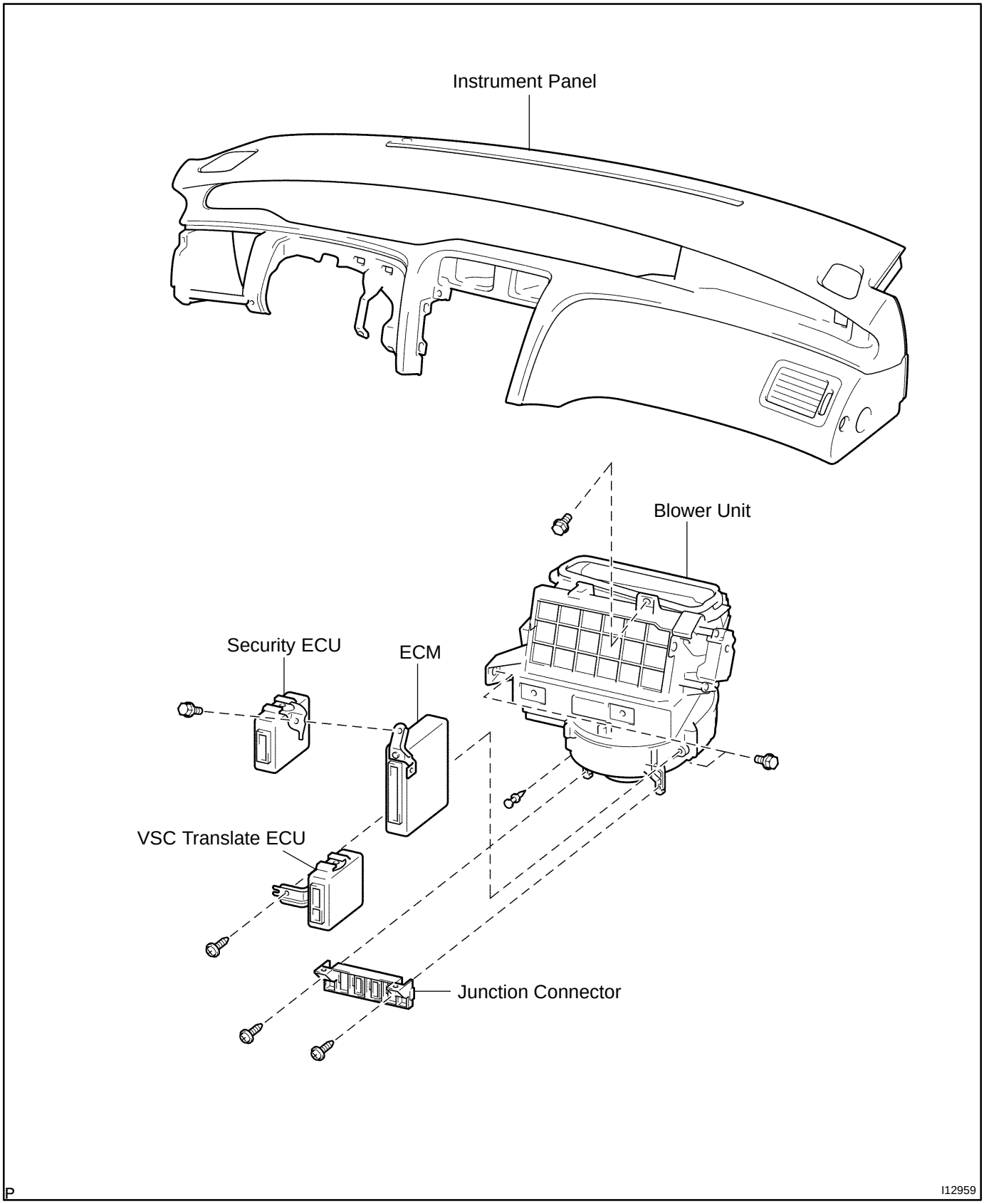
(b) Connect the connector.

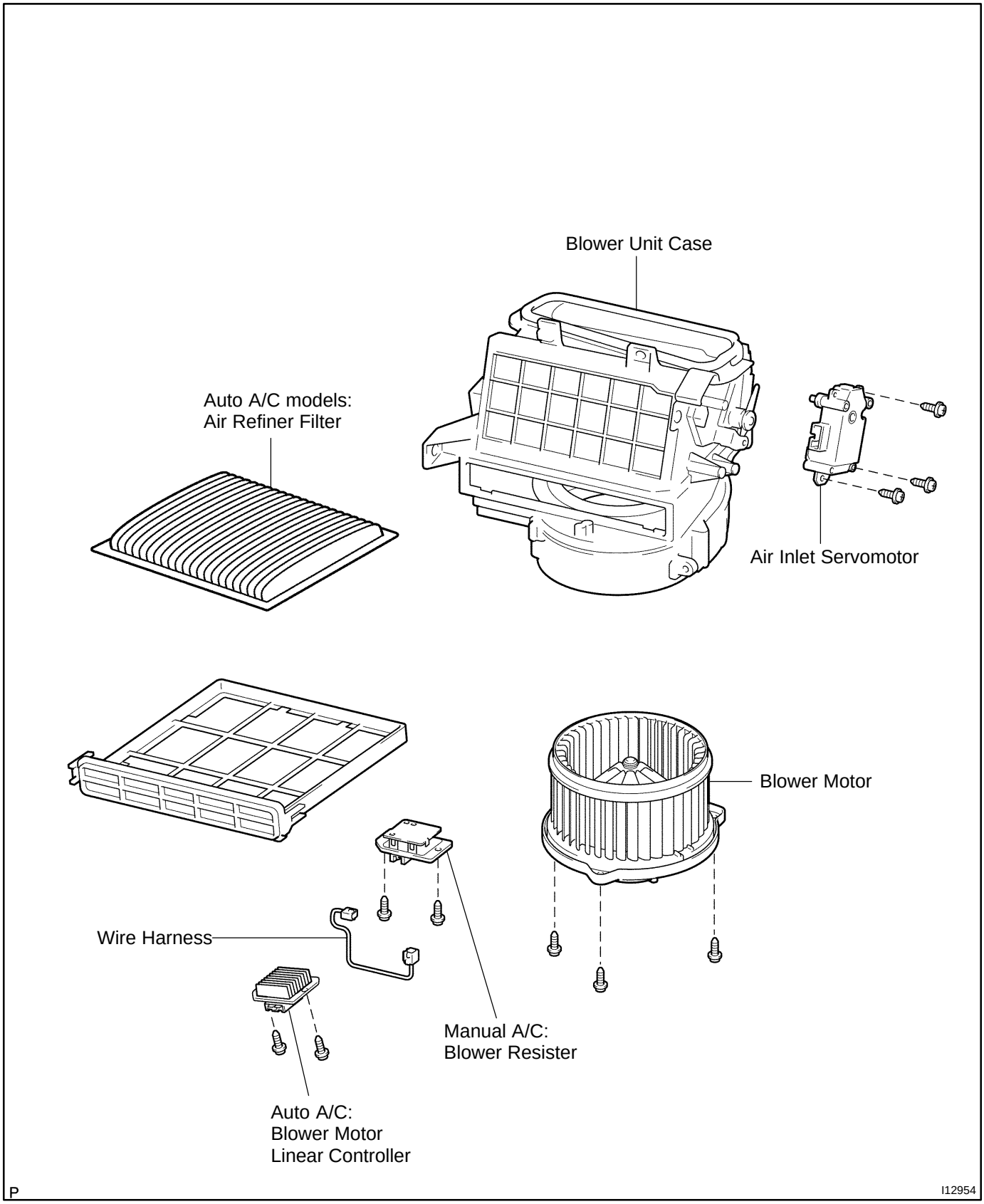
5. INSTALL GLOVE COMPARTMENT PARTS
(See page BO-97)

BLOWER UNIT

COMPONENTS

AC2G1-01



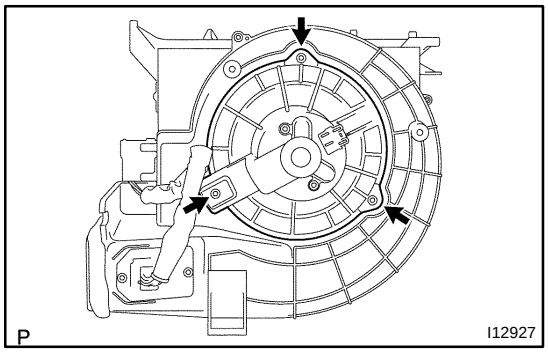

Blower Unit Case
Auto A/C models:
Air Refiner Filter
Air Inlet Servomotor
Blower Motor
Wire Harness
Manual A/C:
Blower Resister
Auto A/C:
Blower Motor
Linear Controller
P
I12954

AC2G2-01

DISASSEMBLY

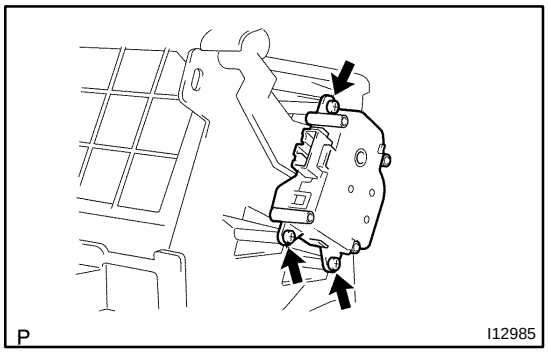
1. REMOVE AIR REFINER FILTER

(a) Release the 2 claws and remove the cover.
(b) Pull out the air refiner filter.
(c) Remove the filter from filter case.



2. REMOVE BLOWER MOTOR

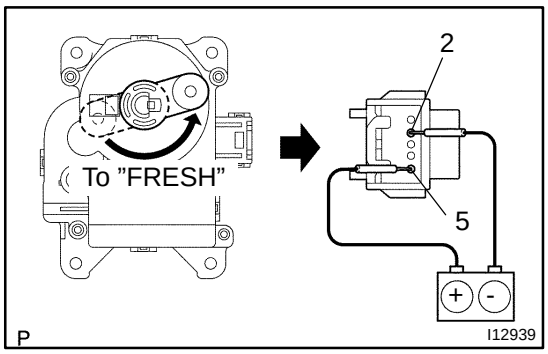
Remove the 3 screws and motor.

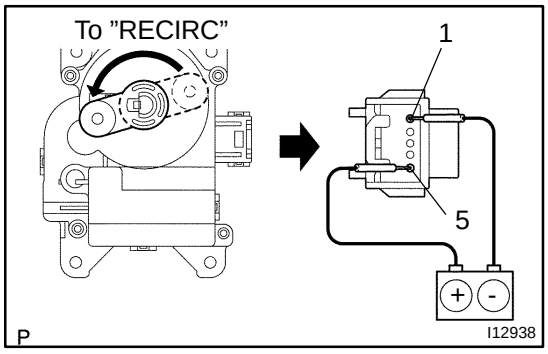


3. REMOVE AIR INLET SERVOMOTOR

Remove the 3 screws and servomotor.

AC2G3-01





INSPECTION

1. Manual A/C:

INSPECT AIR INLET SERVOMOTOR

Inspect the servomotor operation.

(1) Connect the positive (+) lead from the battery to terminal 5 and negative (-) lead to terminal 2.

(2) Check the motor arm rotates counterclockwise and arm stops on the ”FRESH” position.

(3) Connect the positive (+) lead from the battery to terminal 5 and negative (-) lead to terminal 1.

(4) Check the motor arm rotates counterclockwise and arm stops on the ”RECIRC” position.

If operations are not as specified, replace the servomotor.

2. Auto A/C:

INSPECT AIR INLET DAMPER POSITION SENSOR CIRCUIT (See page DI-790)

3. Auto A/C:

INSPECT AIR INLET CONTROL SERVOMOTOR CIRCUIT (See page DI-802)

AC0YW-02

INSTALLATION

Installation is in the reverse order of removal (See page AC-37).

AC0YV-02

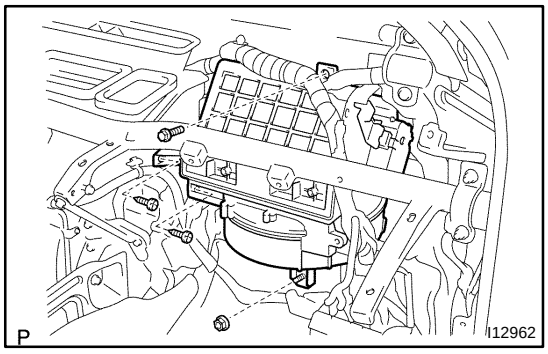
REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC-38).

AC0YT-03

REMOVAL

1. **REMOVE INSTRUMENT PANEL (See page BO-90)**
2. **REMOVE SECURITY ECU**
3. **REMOVE TRANSLATE ECU**
4. **REMOVE ECM**



5. **REMOVE BLOWER UNIT**

(a) Remove the 2 connector bracket set screws.

(b) Disconnect the connectors.

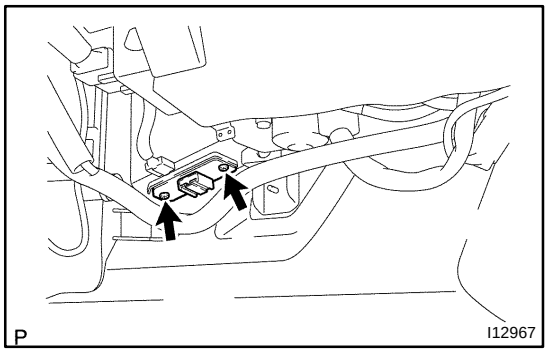
(c) Remove the bolt, nut, 2 screws and blower unit.

BLOWER MOTOR LINEAR CONTROLLER (Auto A/C)

AC2GA-01

INSPECTION

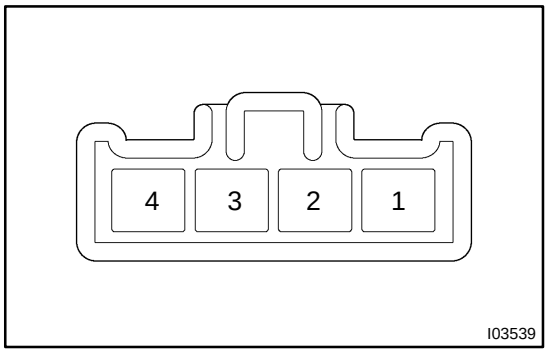
1. REMOVE GLOVE COMPARTMENT PARTS
(See page BO-90)



2. REMOVE BLOWER MOTOR LINEAR CONTROLLER

(a) Disconnect the connector.

(b) Remove the 2 screws and controller.



3. INSPECT BLOWER MOTOR LINEAR CONTROLLER CIRCUIT

Connect the connector to the controller and inspect the wire harness side connector from the back side, as shown in the chart.

Test conditions:

- Turn ignition switch to ON
- Operate blower motor

Tester connection	Condition	Specified conditions
1 - Ground	Constant	Continuity
2 - Ground	Constant	Battery positive voltage
2 - Ground	Turn ignition switch to LOCK or ACC	No voltage

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

4. INSTALL BLOWER MOTOR LINEAR CONTROLLER

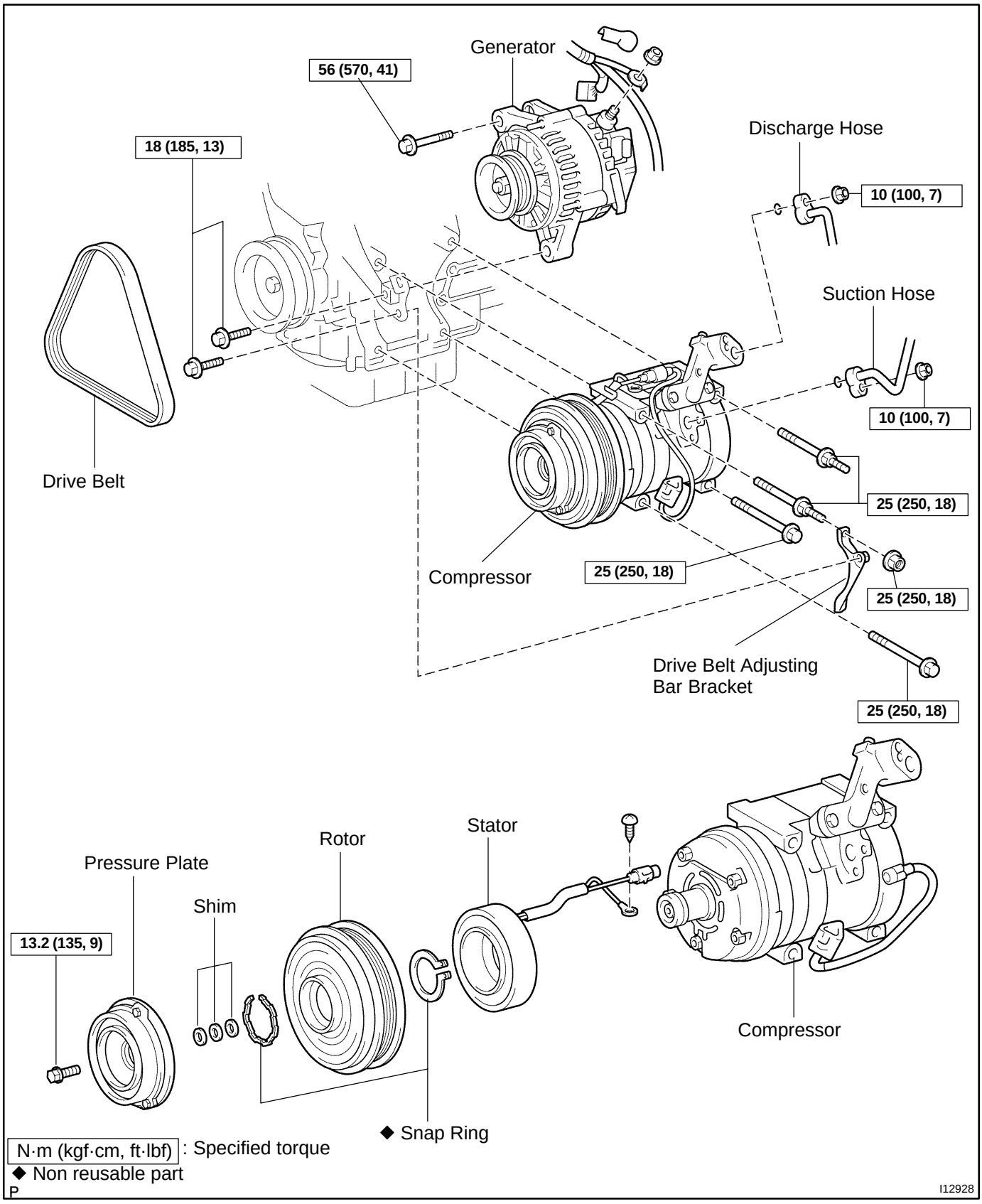
(a) Install the blower motor linear controller with the 2 screws.

(b) Connect the connector.

5. INSTALL GLOVE COMPARTMENT PARTS
(See page BO-97)

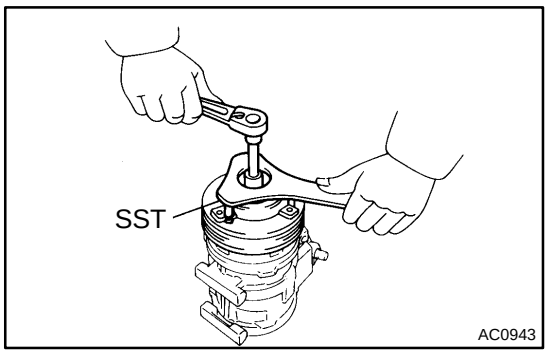
AC1N0-02

COMPONENTS



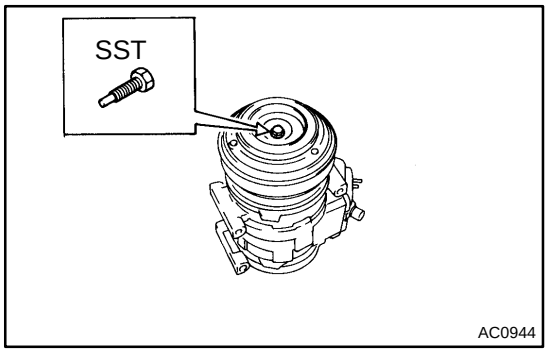
AC1N2-04

DISASSEMBLY

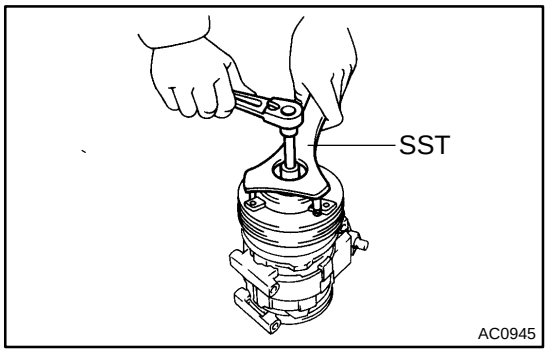


1. REMOVE PRESSURE PLATE

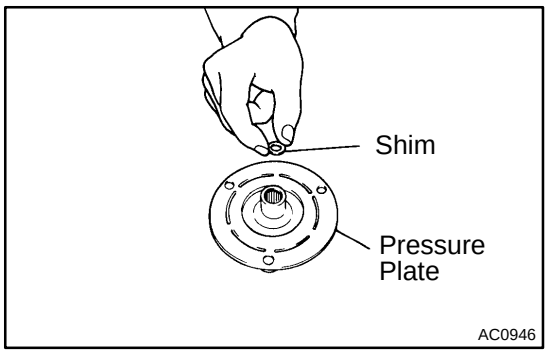
(a) Using SST and a socket wrench, remove the shaft bolt.
SST 07112-76060
Torque: 13.2 N·m (135 kgf·cm, 9 ft·lbf)



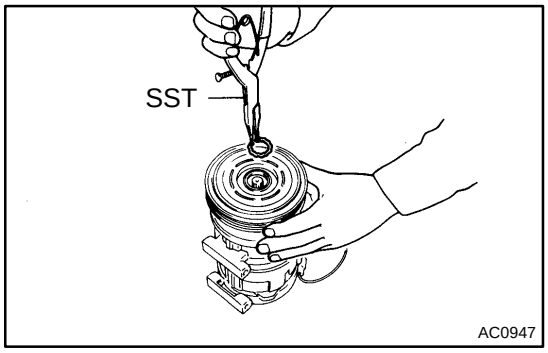
(b) IInstall SST on the pressure plate.
SST 07112-66040



(c) Using SST and socket wrench, remove the pressure plate.
SST 07112-76060, 07112-66040

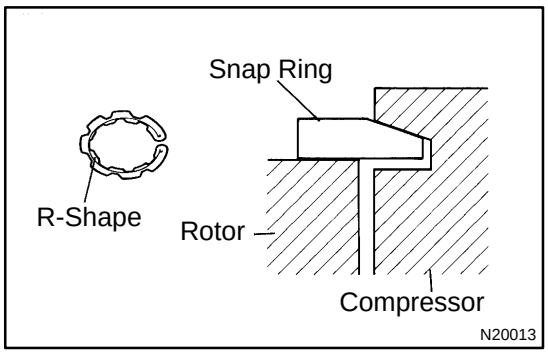


(d) Remove the shims from the pressure plate.

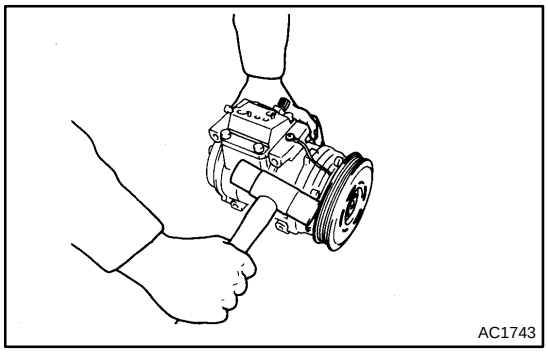


2. REMOVE ROTOR

(a) Using SST, remove the snap ring.
SST 95994-10020

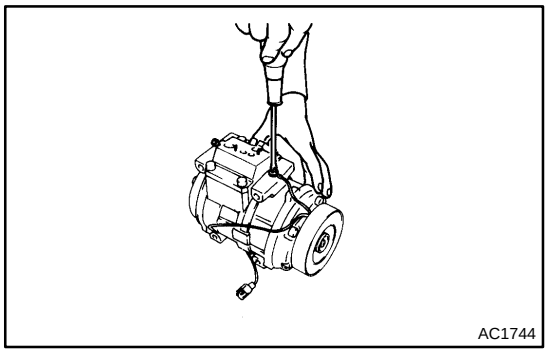


NOTICE:
At the time of reassembly, please refer to the following item.
The snap ring should be installed so that beveled side faces up.



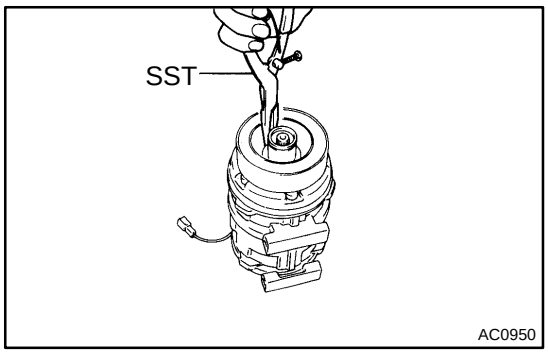
(b) Using a plastic hammer, tap the rotor off the shaft.

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

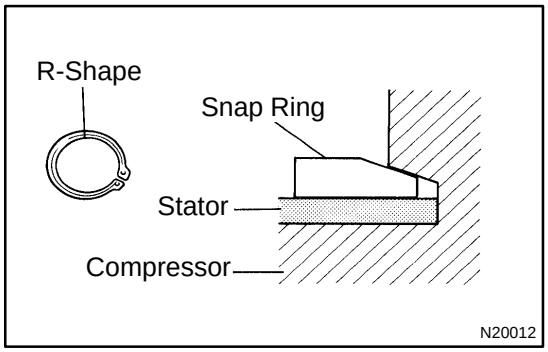


3. REMOVE STATOR

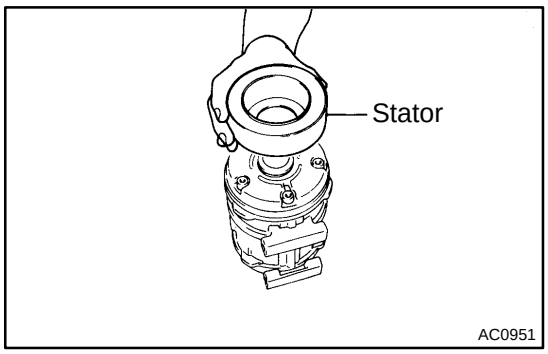
(a) Disconnect the stator lead wire from the compressor housing.



(b) Using SST, remove the snap ring.
SST 95994-10020



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.



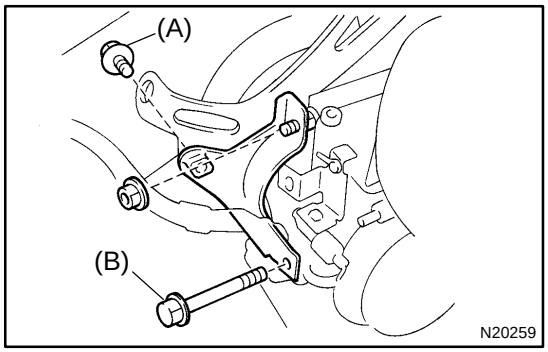
(c) Remove the stator.

AC1N4-02

INSTALLATION

1. INSTALL COMPRESSOR

(a) Install the compressor with 3 nuts.
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 AND SUCTION HOSES

Connect both hoses with the bolt and nut.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

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

HINT:
Lubricate 2 new O-ring with compressor oil and install them to the tube.

4. INSTALL AND CHECK DRIVE BELT
(See page AC-19 , AC-17)

5. CONNECT NEGATIVE (-) TERMINAL CABLE TO BATTERY

6. EVACUATE AIR FROM REFRIGERATION SYSTEM AND CHARGE WITH REFRIGERANT
Specified amount: 600 ± 50 g (21.16 ± 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

COMPRESSOR AND MAGNETIC CLUTCH

AC2G4-01

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.

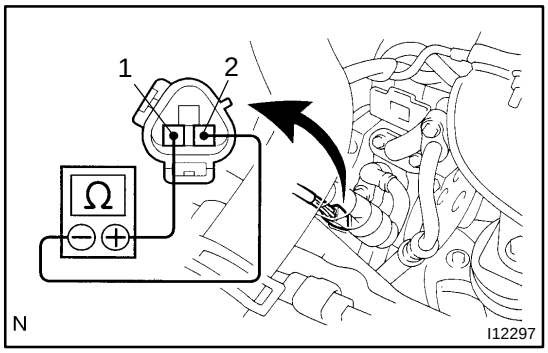
2. INSPECT REFRIGERANT PRESSURE

(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: 65 - 125 Ω at 20 ˚C (68 ˚F)

If resistance is not as specified, replace the sensor.

5. CHECK FOR LEAKAGE OF GREASE FROM CLUTCH BEARING

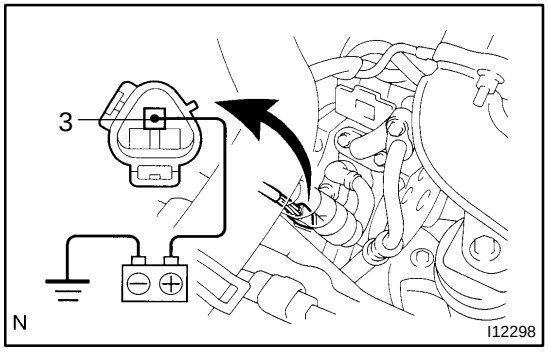
6. CHECK FOR SIGNS OF OIL ON PRESSURE PLATE OR ROTOR

7. 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.



8. 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.

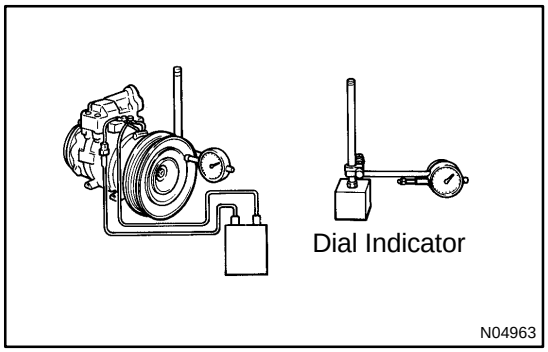
(c) Check that the magnetic clutch energized.

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

AC1N3-02

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page AC-46).



AFTER REASSEMBLY, CHECK MAGNETIC CLUTCH CLEARANCE

(a) Set the dial indicator to the pressure plate of the magnetic clutch.

(b) Connect the magnetic clutch lead wire to the positive (+) terminal of the battery.

(c) Check the clearance between the pressure plate and rotor when connecting the negative (-) terminal to the battery.

Standard clearance:
0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

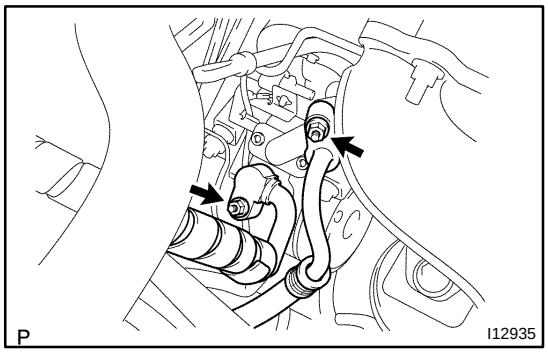
If the clearance is not within the standard, adjust the clearance using shims to obtain the standard.

Shim thickness:
0.1 mm (0.004 in.)
0.3 mm (0.012 in.)
0.5 mm (0.020 in.)

AC1N1-02

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-18)

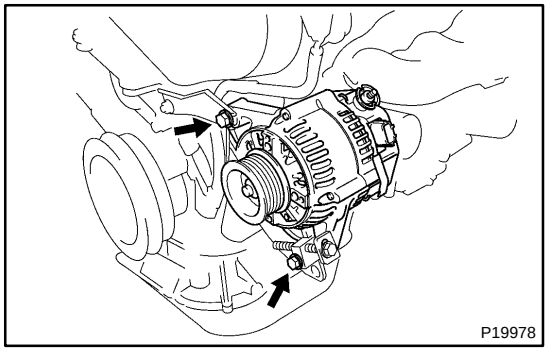


6. **DISCONNECT DISCHARGE AND SUCTION HOSES**

Remove the 2 nuts and disconnect the both hoses.

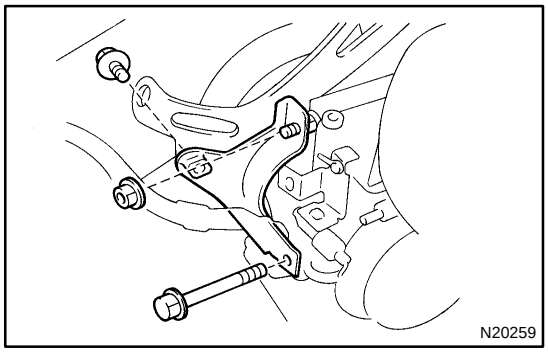
NOTICE:

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



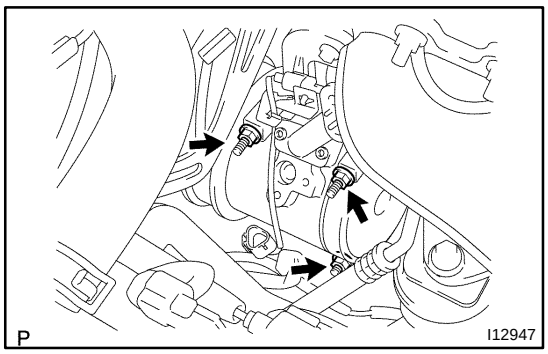
7. **REMOVE GENERATOR**

(a) Disconnect the generator connector.
(b) Remove the nut, and disconnect the generator wire.
(c) Disconnect the wire harness from the clamp.
(d) Remove the pivot bolt, adjusting lock bolt and generator.

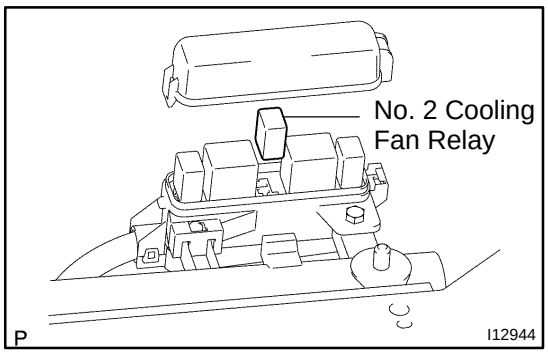


8. **REMOVE COMPRESSOR**

(a) Disconnect the connector.
(b) Disconnect the wire harness clamp.
(c) Remove the 2 bolts, nut and drive belt adjusting bar bracket.



(d) Remove the 3 bolts and compressor.

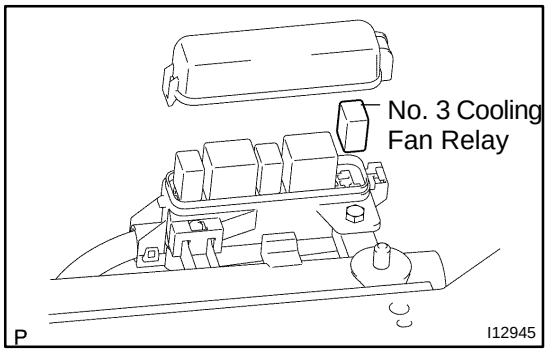


COOLING FAN RELAY

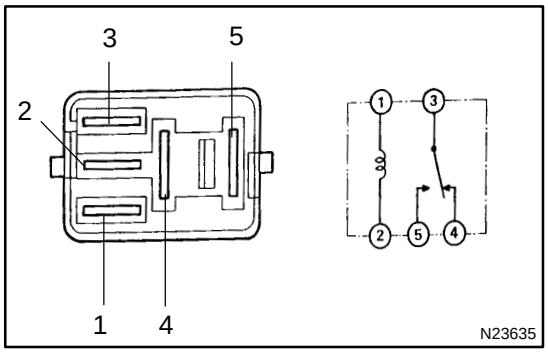
AC20V-02

INSPECTION

1. REMOVE NO. 2 COOLING FAN RELAY FROM RELAY BLOCK NO. 8



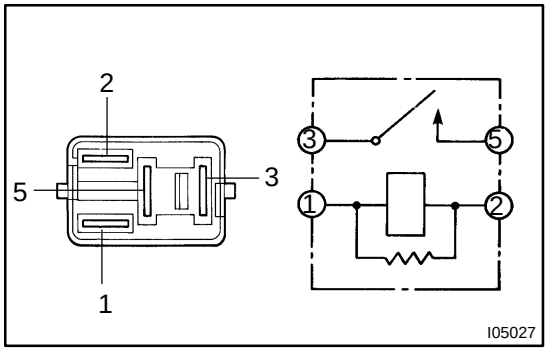
2. REMOVE NO. 3 COOLING FAN RELAY FROM RELAY BLOCK NO. 8



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

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

If continuity is not as specified, replace the relay.



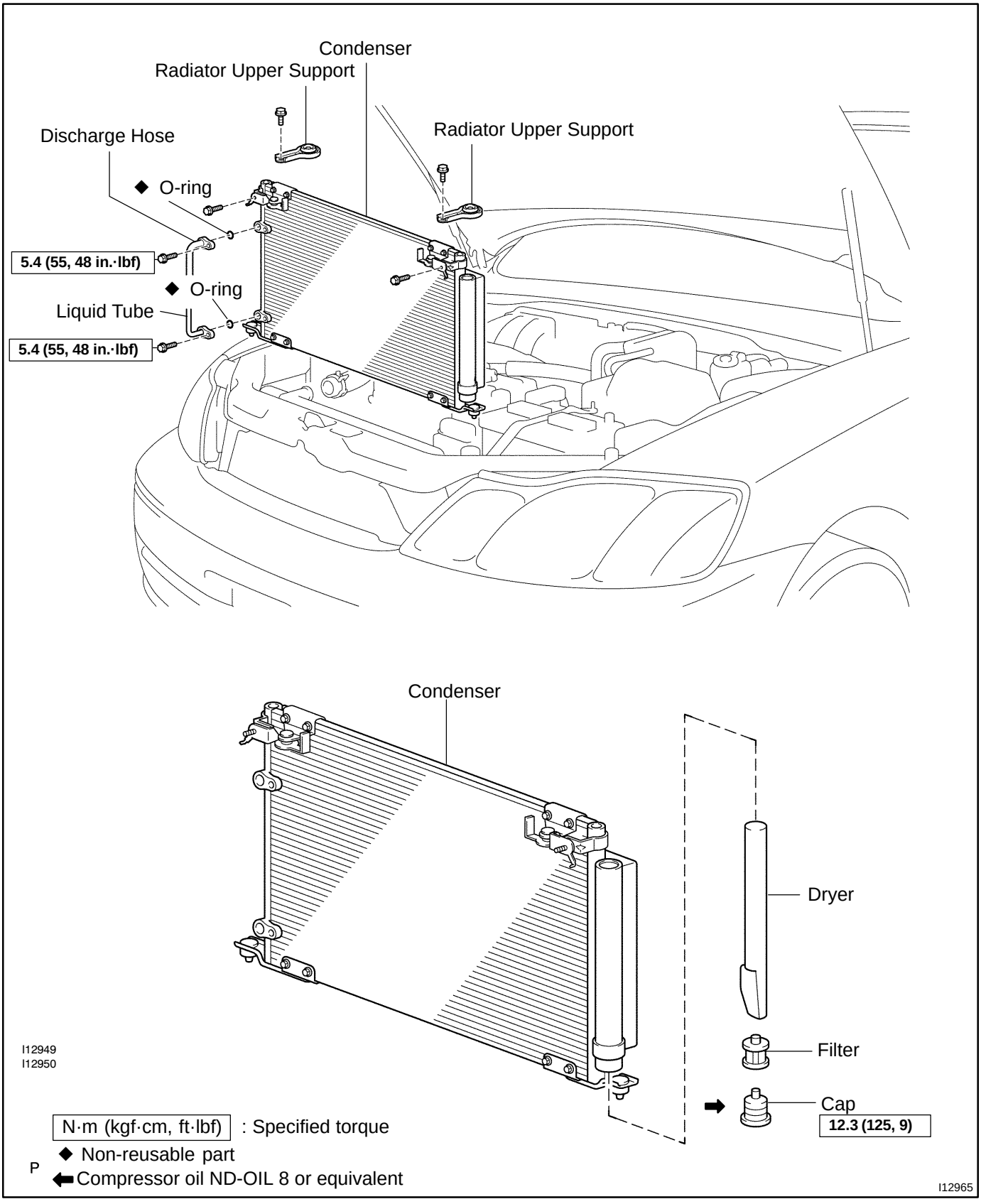
4. INSPECT NO. 3 COOLING FAN RELAY (Marking: A.C FAN NO. 3) CONTINUITY

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.

AC28I-02

COMPONENTS



AC2G7-01

INSTALLATION

Installation is in the reverse order of removal (See page AC-53).

CONDENSER

AC2G5-01

ON-VEHICLE INSPECTION

1. INSPECT CONDENSER FINS FOR BLOCKAGE OR DAMAGE

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

NOTICE:

Be careful not to damage the fins.

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

2. INSPECT CONDENSER AND FITTING FOR LEAKAGE

Using a gas leak detector, check for leakage.

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

AC2G6-01

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

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

Evacuate air from refrigeration system.

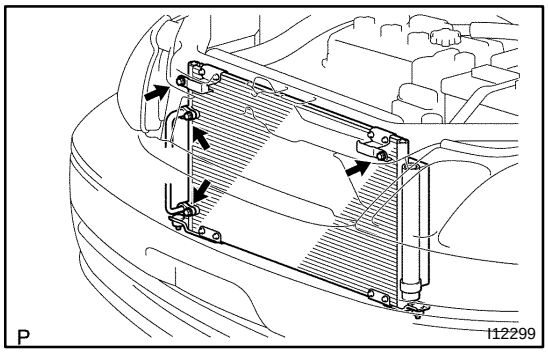
Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 600 ± 50 g (21.16 ± 1.76 oz.)

2. REMOVE RADIATOR AND CONDENSER FANS

(See page AC-46)

3. REMOVE 2 RADIATOR UPPER SUPPORTS



4. DISCONNECT DISCHARGE HOSE AND LIQUID TUBE

Remove the 2 bolts and disconnect the hose and tube.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

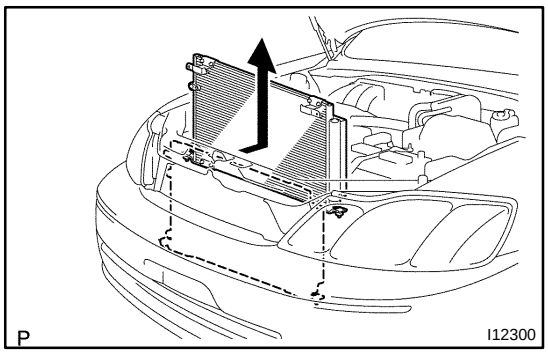
NOTICE:

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

HINT:

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

Lubricate 2 new O-rings with compressor oil and install them to the hose.



5. REMOVE CONDENSER

(a) Remove the 2 condenser set bolts.

(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 condenser.

Add 40 cc (1.4 fl.oz.)

Compressor oil: ND-OIL 8 or equivalent

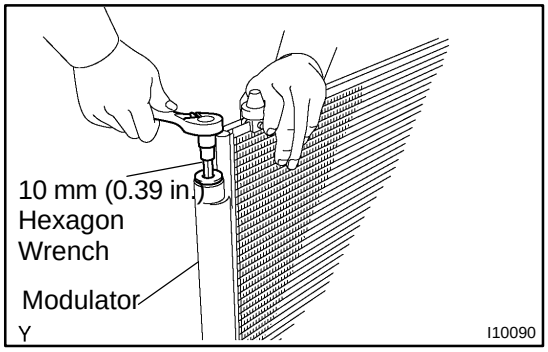
AC28K-02

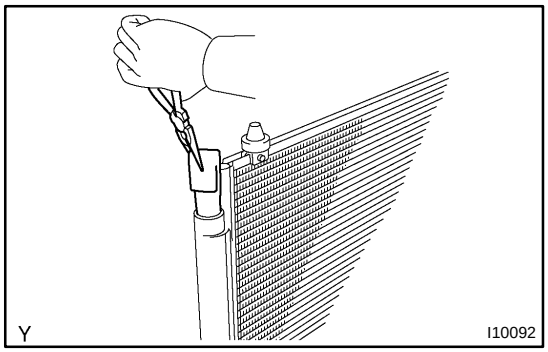
REPLACEMENT

REPLACE DRIER FROM MODULATOR

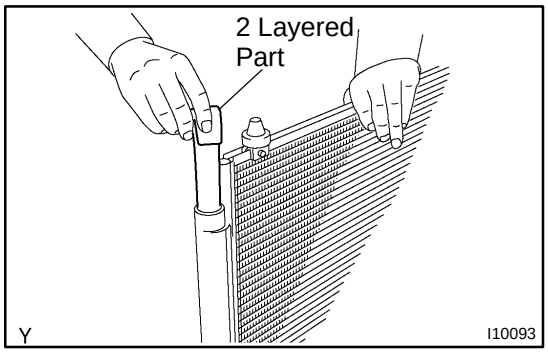
(a) Using a hexagon wrench (10 mm, 0.39 in.), remove the cap from the modulator.

(b) Remove the filter from the modulator.





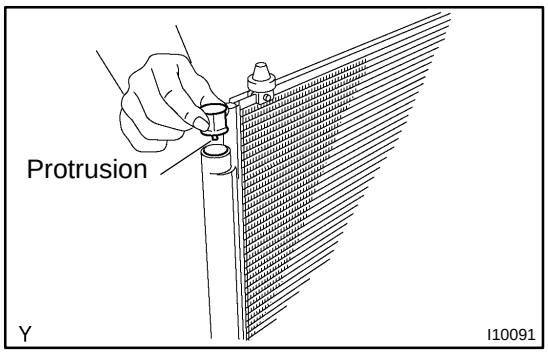
(c) Using pliers, remove the drier.



(d) Insert a new drier into the modulator.

NOTICE:

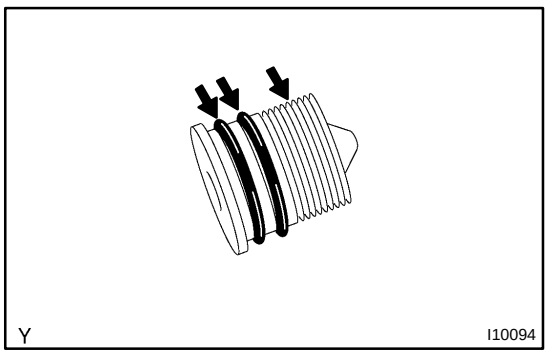
- **Do not remove the drier from a vinyl bag until inserting it into the modulator.**
- **Install the drier with its 2 layered part faced upward to the modulator.**



(e) Insert the filter into the modulator.

NOTICE:

Install the filter with its protrusion faced downward to the modulator.



(f) Install the cap to the modulator.

(1) Apply compressor oil to the O-rings and screw part of the cap.

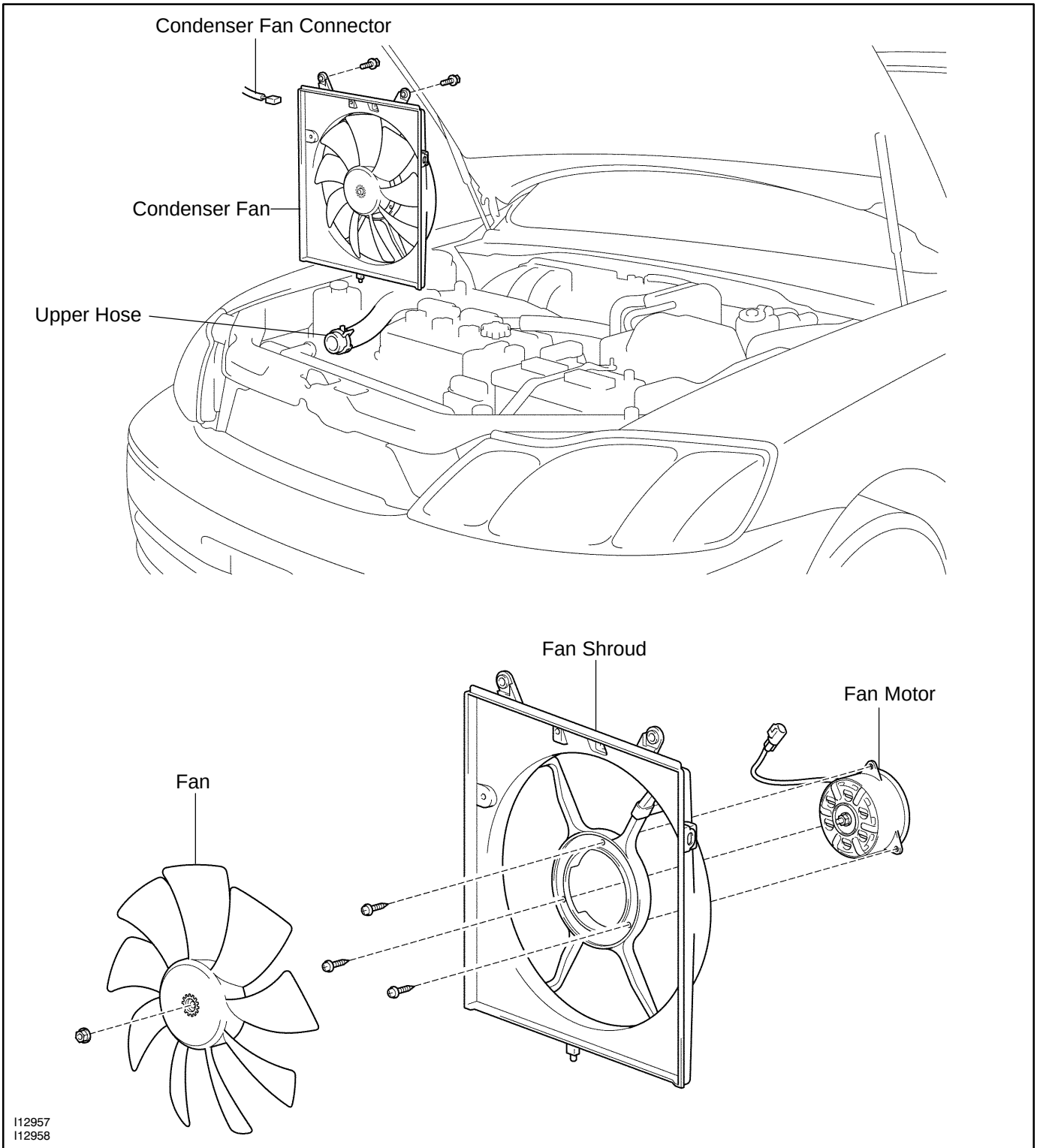
Compressor oil: ND-OIL 8 or equivalent

(2) Using a hexagon wrench (10 mm, 0.39 in.), install the caps.

Torque: 12.3 N·m (125 kgf·cm, 9 ft·lbf)

AC105-03

COMPONENTS



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

◆ Non reusable part

I12968

CONDENSER FAN

AC104-03

ON-VEHICLE INSPECTION

1. INSPECT CONDENSER FAN OPERATION

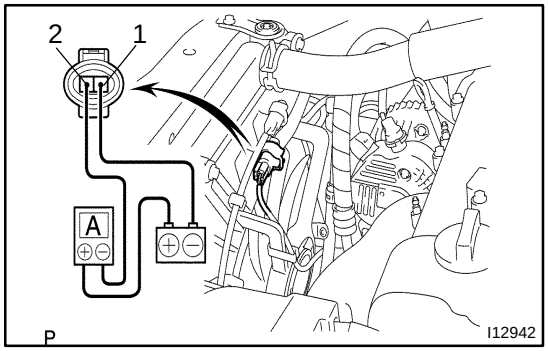
Inspect the fan operation at these conditions, as shown in the chart.

Test conditions:

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

Condition	Fan operation (Fan speed)
Engine coolant temperature 88 ˚C (190 ˚F) or below	Rotate (Low speed)
Engine coolant temperature 98 ˚C (208 ˚F) or above	Rotate (High speed)
Refrigerant pressure is less than 1,520 kPa (15.5 kgf/cm^2, 220 psi)	Rotate (Low speed)
Refrigerant pressure is 1,520 kPa (15.5 kgf/cm^2, 220 psi) or above	Rotate (High speed)

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



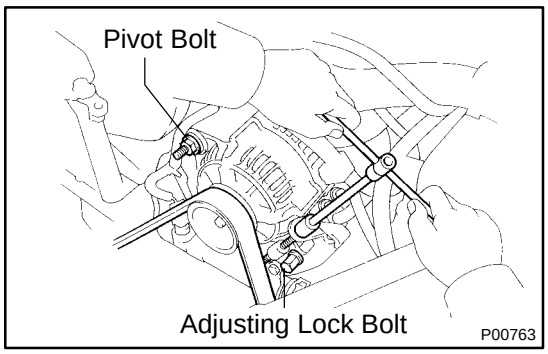
2. INSPECT CONDENSER FAN MOTOR OPERATION

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

Specified amperage: 9.2 - 11.0 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 water temp. switch.

AC2FW-01



INSTALLATION

INSTALL DRIVE BELT

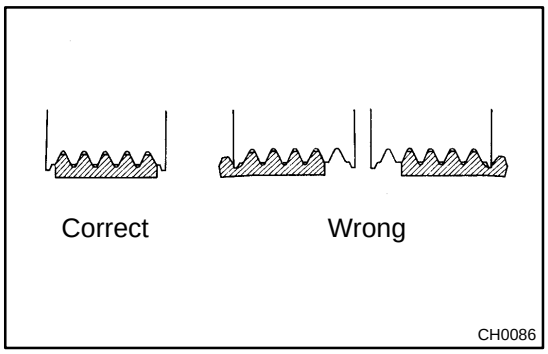
(a) Install the drive belt.

(b) Apply drive belt tension by adjusting bolt.

Drive belt tension:
New belt: 165 ± 22 lbf
Used belt: 110 ± 22 lbf

(c) Tighten the adjusting lock bolt and pivot 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)



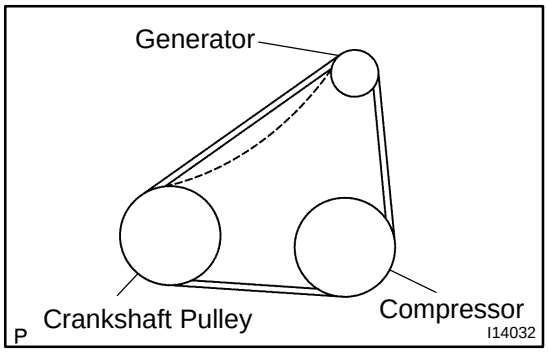
DRIVE BELT

AC0YF-03

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.

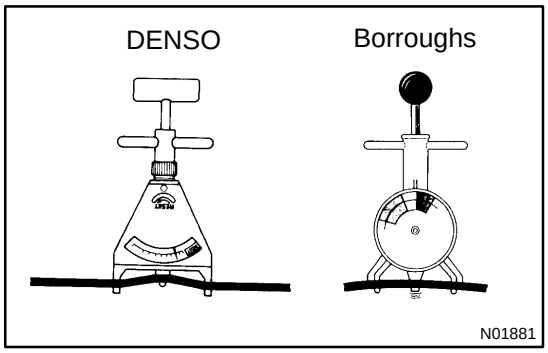
Drive belt tension:

New belt: 165 ± 22 lbf

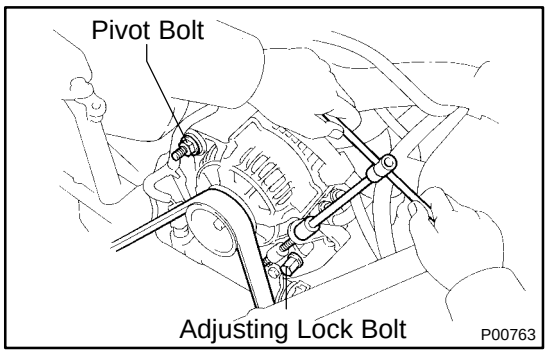
Used belt: 88 ± 22 lbf

HINT:

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



AC0YG-03



REMOVAL

REMOVE DRIVE BELT

(a) Loosen the pivot bolt and adjusting lock nut.

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

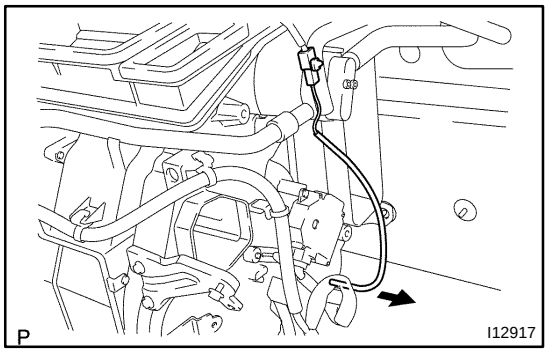
EVAPORATOR TEMPERATURE SENSOR

AC2GG-01

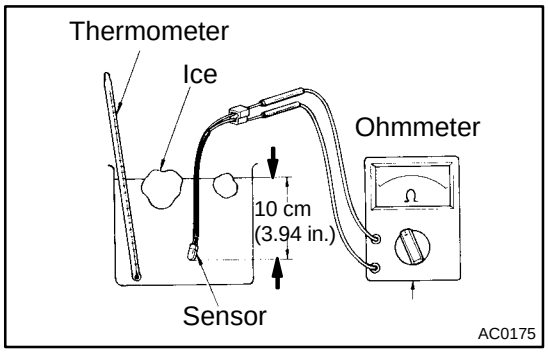
INSPECTION

1. REMOVE EVAPORATOR TEMPERATURE SENSOR

(a) Remove the blower unit (See page AC-37).

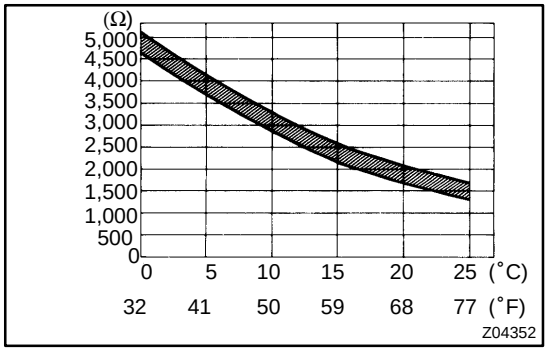


(b) Remove evaporator temperature sensor.
  (1) Disconnect the connector.
  (2) Pull out the sensor.



2. INSPECT EVAPORATOR TEMPERATURE SENSOR

Inspect evaporator temperature sensor resistance.
  (1) Place the sensor in cold water, and while changing the temperature of the water, measure resistance at the connector and at the same time, measure temperature of the water with a thermometer.



  (2) Compare the 2 readings on the chart.

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

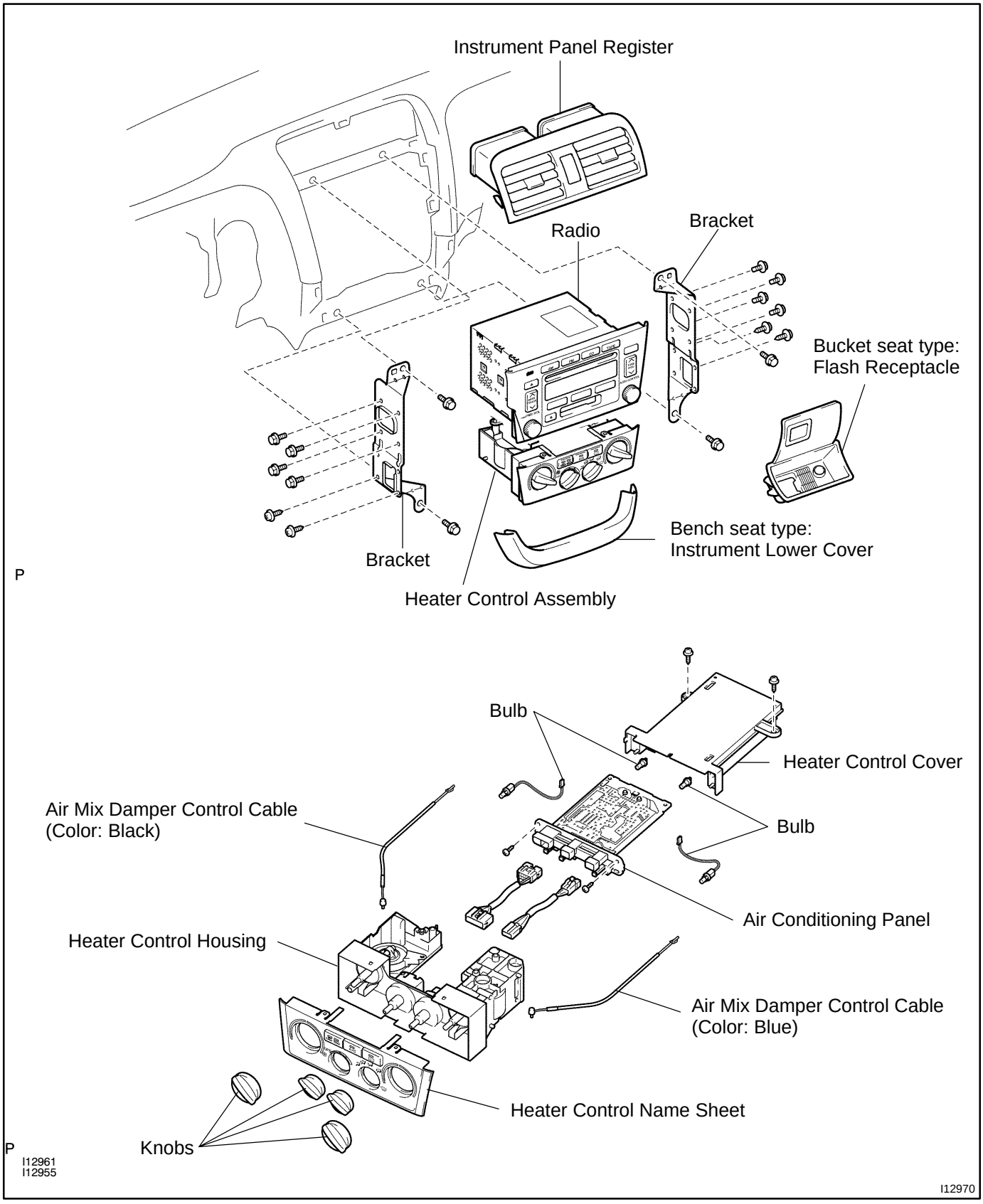
3. INSTALL EVAPORATOR TEMPERATURE SENSOR

(a) Install the evaporator temperature sensor.
  (1) Install the sensor.
  (2) Connect the connector.

(b) Install the blower unit. (See page AC-41)

AC2GO-01

COMPONENTS



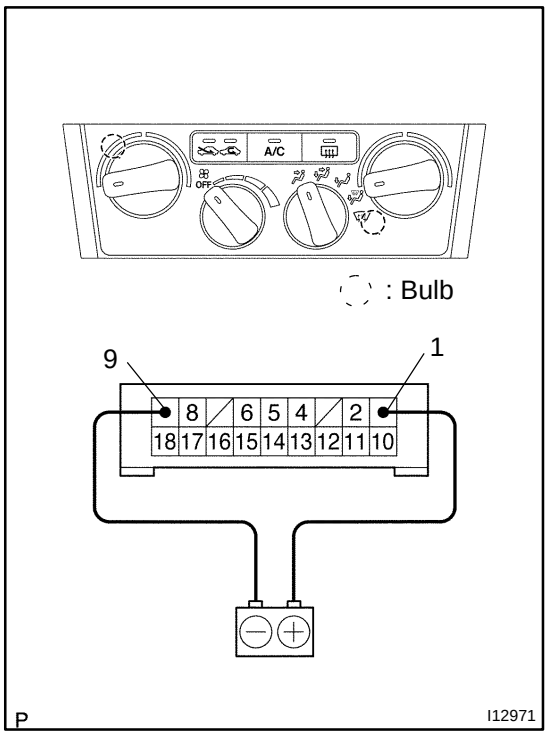
AC2GQ-01

INSPECTION

1. INSPECT ILLUMINATION OPERATION

Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 9 then check that the illuminations lights up.

If operation is not as specified, check the faulty bulb.

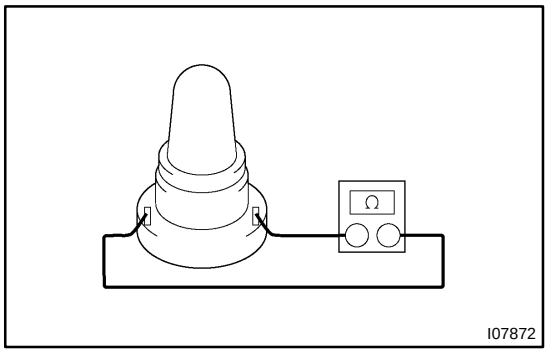


2. INSPECT BULB

Apply the tester as shown in the illustration to the test for continuity.

If continuity exists, replace the heater control.

If no continuity exists, replace the bulb.

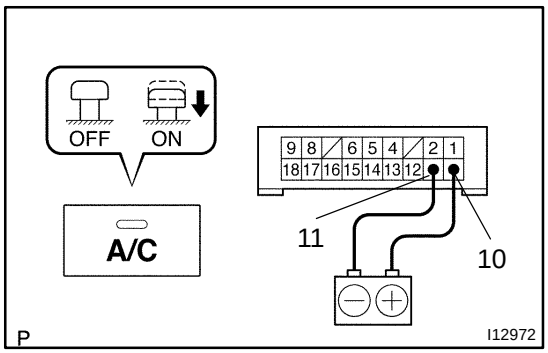


3. INSPECT A/C INDICATOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 11.

(b) Push the A/C button in and then check that the indicator lights up.

If operation is not as specified, replace the switch.

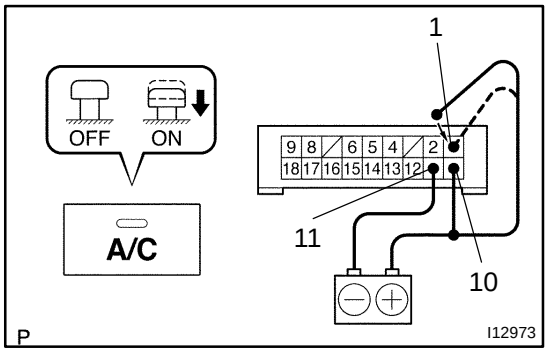


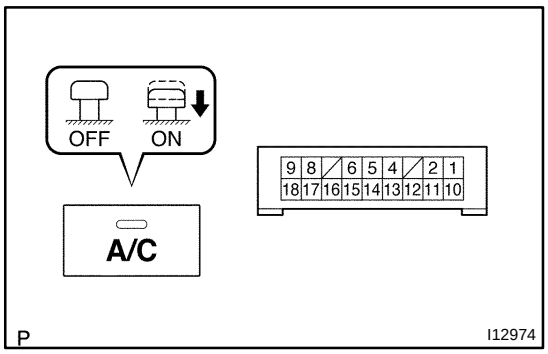
4. INSPECT DIMMING OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 11 while press the switch.

(b) Connect the positive (+) lead from the battery to terminal 1 and then check that the indicator dims.

If operation is not as specified, replace the switch.

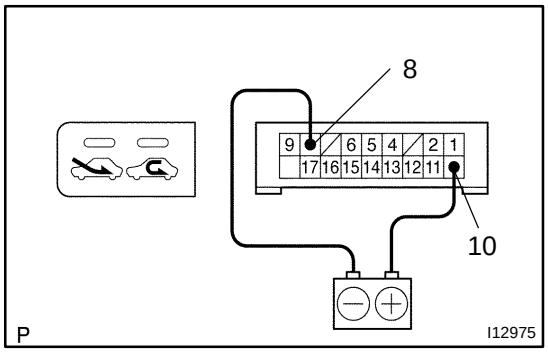




5. INSPECT A/C SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
OFF	5 - 6	No continuity
ON	5 - 6	Continuity

If operation is not as specified, replace the switch circuit board.

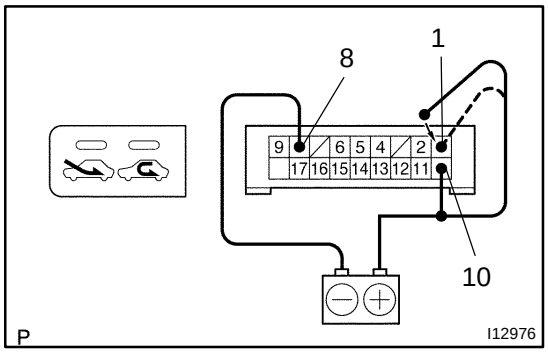


6. INSPECT RECIRC INDICATOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 8.

(b) Push the REC button in and then check that the indicator lights up.

If operation is not as specified, replace the switch circuit board.

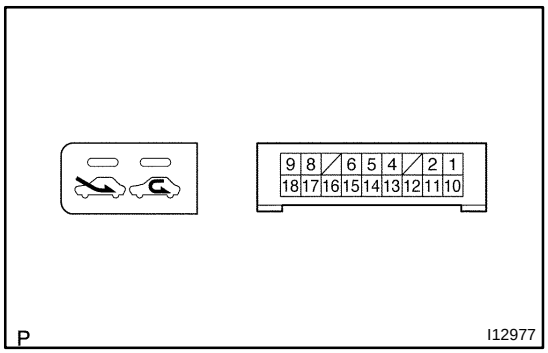


7. INSPECT DIMMING OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 8 while press the switch.

(b) Connect the positive (+) lead from the battery to terminal 4 and then check that the indicator dims.

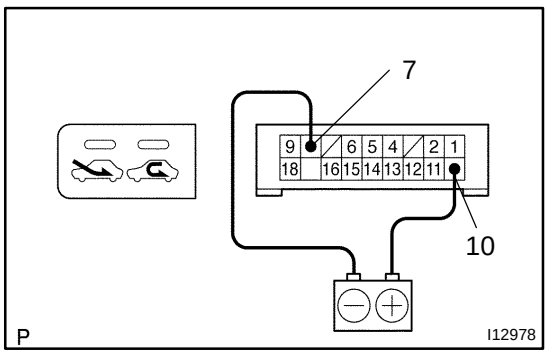
If operation is not as specified, replace the switch circuit board.



8. INSPECT RECIRC SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
OFF	18 - 8	No continuity
ON	18 - 8	Continuity

If operation is not as specified, replace the switch circuit board.

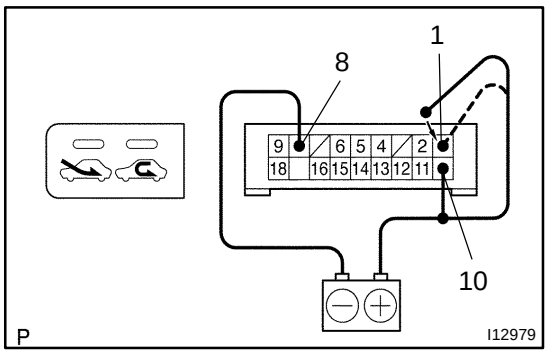


9. INSPECT FRESH INDICATOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 8.

(b) Push the FRS button in and then check that the indicator lights up.

If operation is not as specified, replace the switch circuit board.

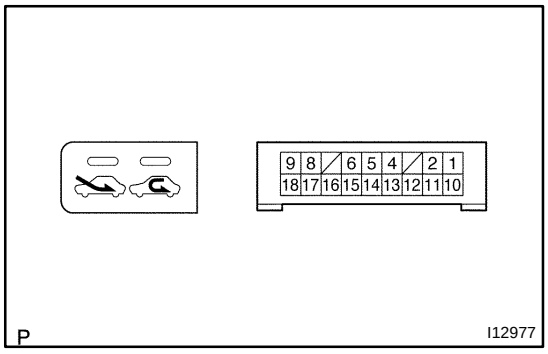


10. INSPECT DIMMING OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10 and the negative (-) lead to terminal 8 while press the switch.

(b) Connect the positive (+) lead from the battery to terminal 1 and then check that the indicator dims.

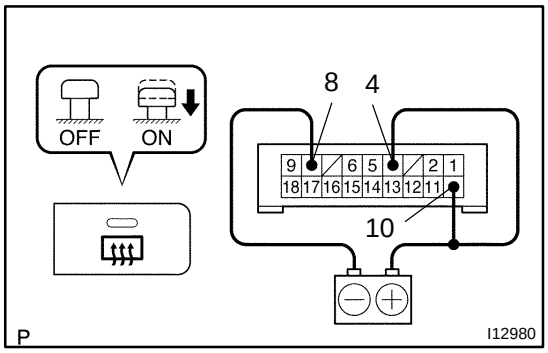
If operation is not as specified, replace the switch circuit board.



11. INSPECT FRESH SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
OFF	17 - 8	No continuity
ON	17 - 8	Continuity

If operation is not as specified, replace the switch circuit board.

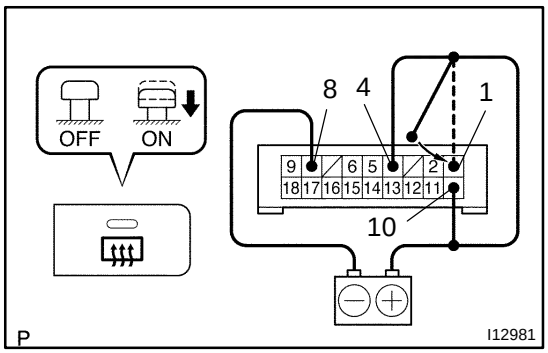


12. INSPECT REAR DEFOGGER INDICATOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10, 4 and negative (-) lead to terminal 8.

(b) Push the RDEF button in and then check that the indicator lights up.

If operation is not as specified, replace the switch circuit board.

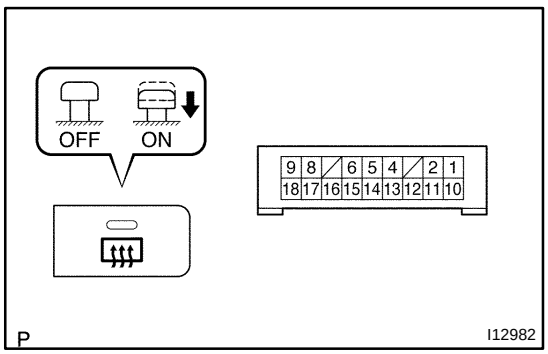


13. INSPECT DIMMING OPERATION

(a) Connect the positive (+) lead from the battery to terminal 10, 4 and negative (-) lead to terminal 8 while press the switch.

(b) Connect the positive (+) lead from the battery to terminal 1 and then check that the indicator dims.

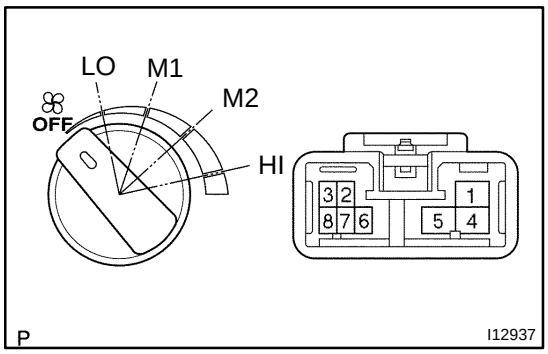
If operation is not as specified, replace the switch circuit board.



14. INSPECT REAR DEFOGGER SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
OFF	4 - 8	No continuity
ON	4 - 8	Continuity

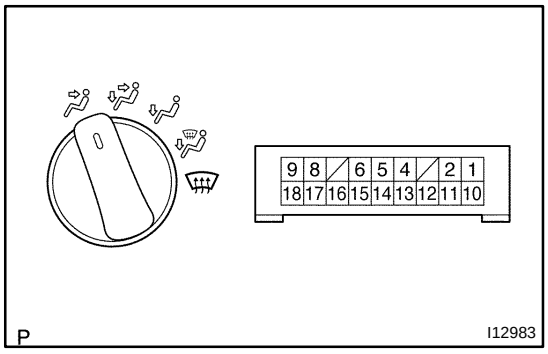
If operation is not as specified, replace the switch circuit board.



15. INSPECT BLOWER SPEED CONTROL SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
OFF	-	No continuity
LO	1 - 8	Continuity
M1	1 - 6 - 8	Continuity
M2	1 - 5 - 8	Continuity
HI	1 - 4 - 8	Continuity

If operation is not as specified, replace the switch.



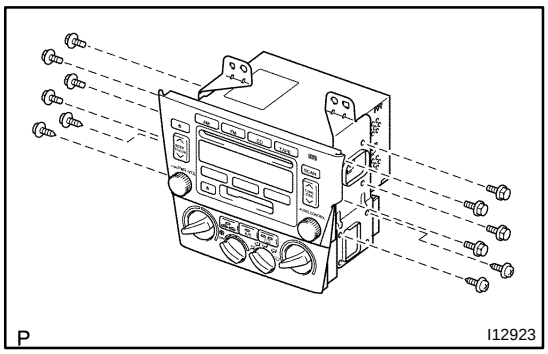
16. INSPECT MODE CONTROL SWITCH CONTINUITY

Condition / Circuit	Tester connection	Specified condition
FACE	12 - 8	Continuity
B/L	13 - 8	Continuity
FOOT	14 - 8	Continuity
FOOT/DEF.	15 - 8	Continuity
DEF.	16 - 8	Continuity

If operation is not as specified, replace the switch.

AC2GR-01

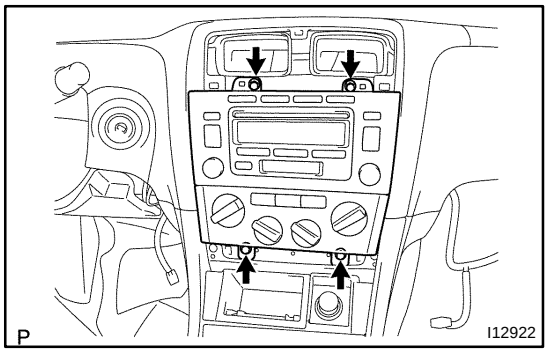
INSTALLATION



1. INSTALL HEATER CONTROL ASSEMBLY

(a) Install the heater control assembly and stereo opening cover assembly to 2 brackets.

(b) Install the 8 bolts and 4 screws.

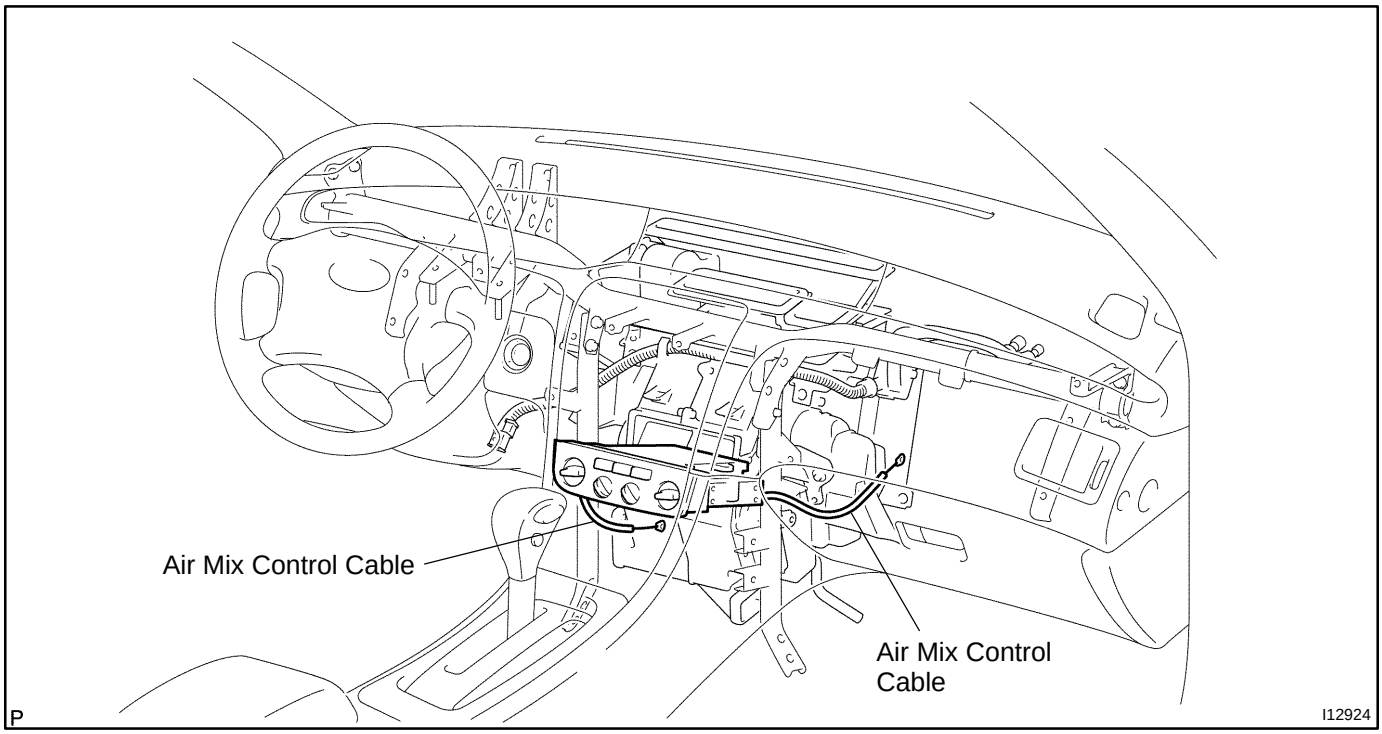


(c) Connect the connectors.

(d) Install the heater control assembly with the 4 bolts.

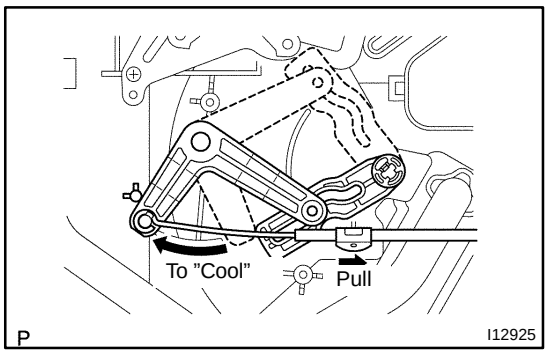
(e) Pass the through the air mix control cable (Driver side) as shown the illustration.
Driver side cable should be set between driver side brace and A/C unit.

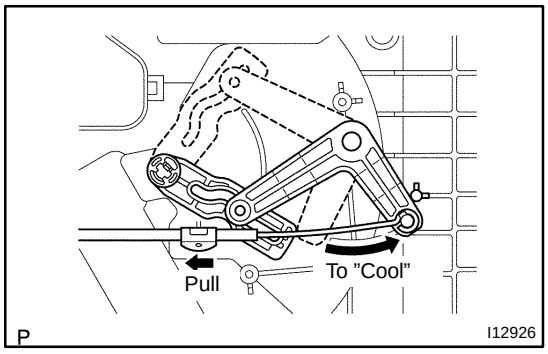
(f) Pass the throught the air mix control cable (Passenger side) as shown the illustration.
Passenger side cable should be set outerside passenger side side brace.



2. CONNECT HEATER CONTROL CABLES

(a) Set the air mix control knobs to ”MAX. COOL” position.



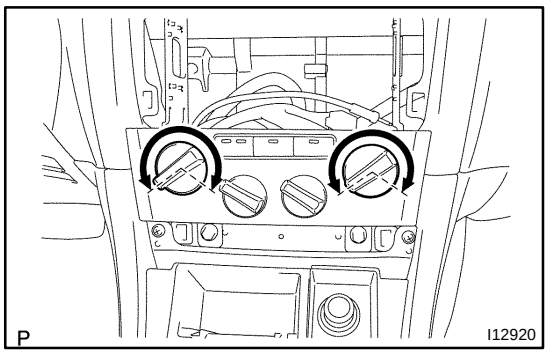


(b) Adjust air mix control cables.
Set the cable connectors to lever pin and clamp the cable outers with keeping the knobs to "MAX. COOL" position (Both driver side and passenger side).

NOTICE:

- **Don't bend the cable on setting the cable.**
- **Don't move the air mix knob before finishing on clamping the cable outer.**

3. INSTALL CENTER CLUSTER FINISH PANEL
(See page BO-97)



HEATER CONTROL ASSEMBLY (Manual A/C)

AC2GN-01

ON-VEHICLE INSPECTION

INSPECT HEATER CONTROL DIALS OPERATION

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

If click sound can not be heard or recoil is felt, adjust the control cable or check control cable and heater control assembly.

AC2GP-01

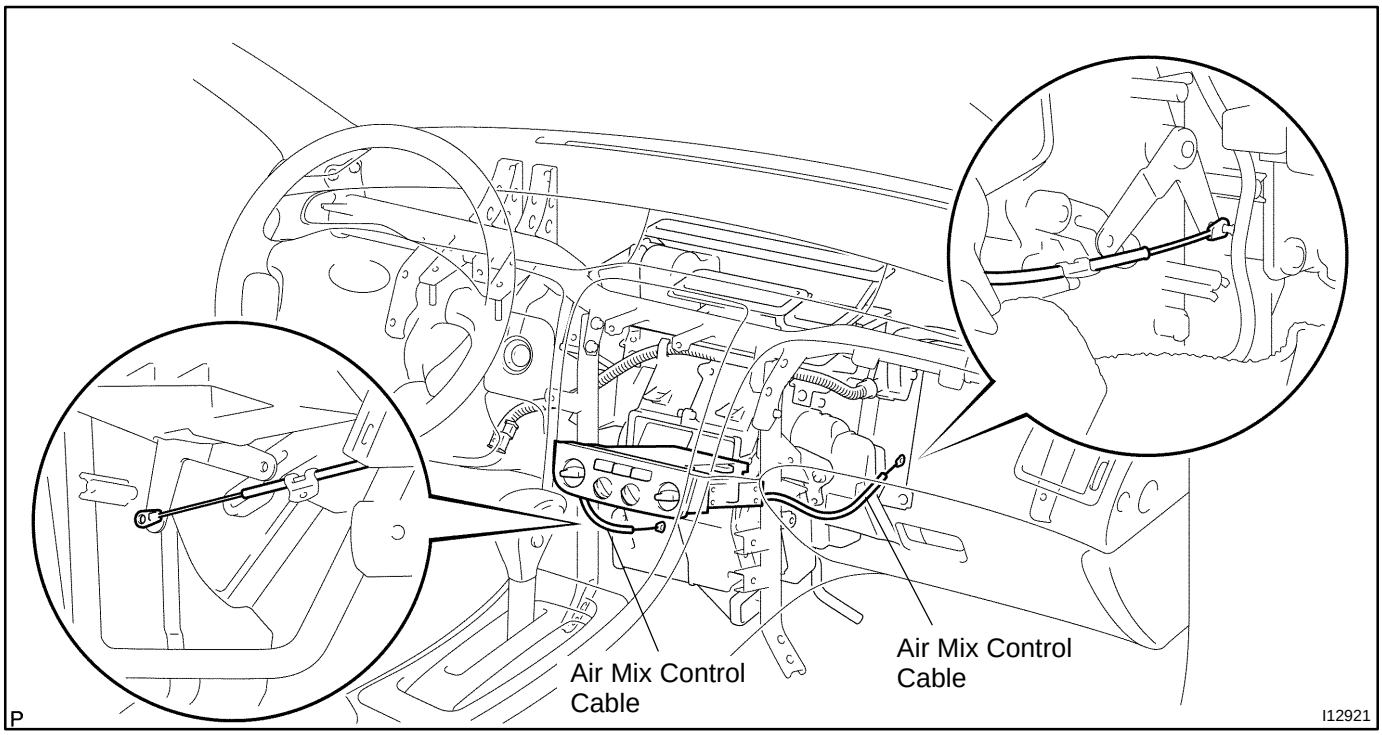
REMOVAL

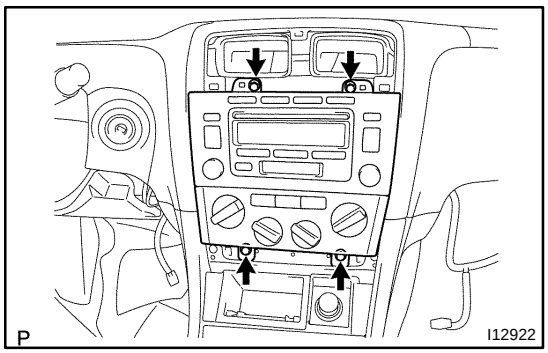
1. REMOVE CENTER CLUSTER FINISH PANEL
(See page BO-90)

2. DISCONNECT HEATER CONTROL CABLES

NOTICE:

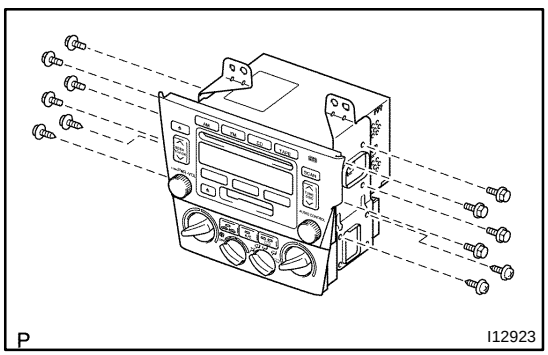
When the air mix damper control cable is disconnected, should not bend the cable.





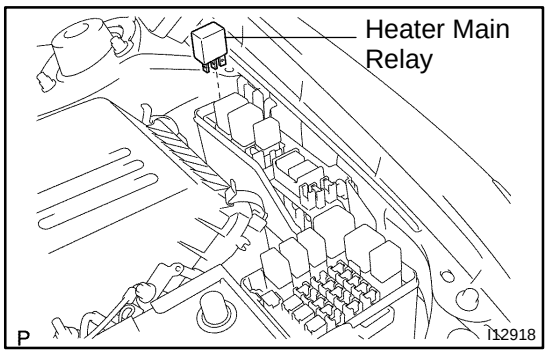
3. REMOVE HEATER CONTROL ASSEMBLY

(a) Remove the 4 bolts and pull out the heater control assembly with stereo opening cover assembly, then disconnect the connectors.



(b) Remove the 8 bolts, 4 screws and 2 brackets.

(c) Separate the heater control assembly and stereo opening cover assembly.

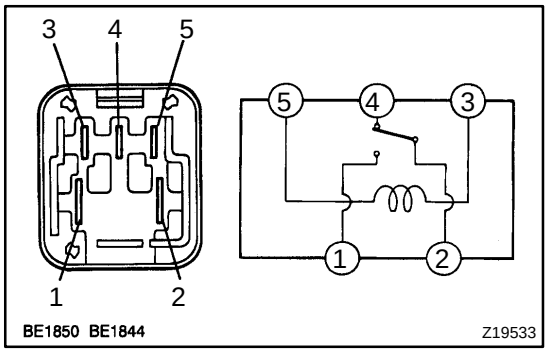


HEATER MAIN RELAY

AC20T-02

INSPECTION

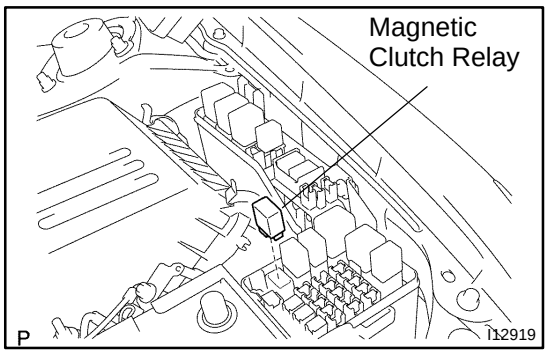
1. REMOVE HEATER MAIN RELAY FROM NO. 2 J/B



2. INSPECT HEATER MAIN RELAY (Marking: HTR) CONTINUITY

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

If continuity is not as specified, replace the relay.

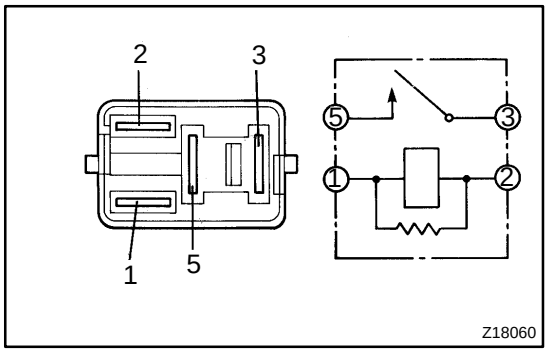


MAGNETIC CLUTCH RELAY

AC20U-03

INSPECTION

1. REMOVE MAGNETIC CLUTCH RELAY FROM NO. 2 J/B

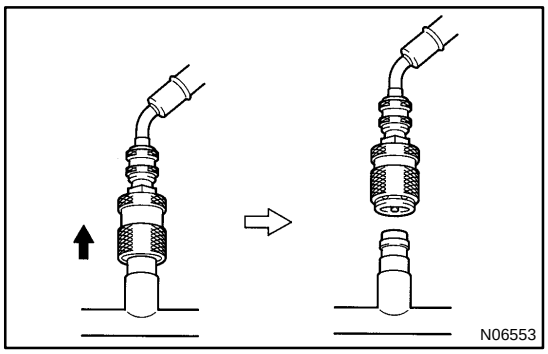


2. INSPECT MAGNETIC CLUTCH RELAY (Marking: MG CLT) CONTINUITY

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

If continuity is not as specified, replace the relay.

AC0YJ-02



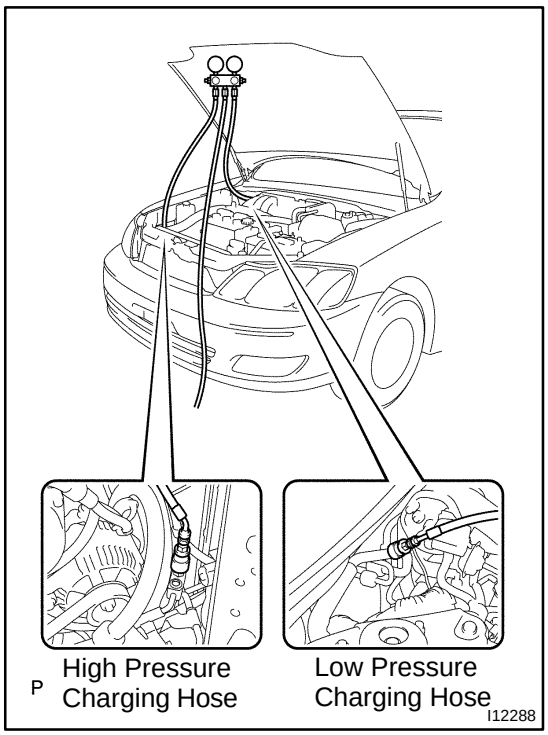
SET OFF

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**



MANIFOLD GAUGE SET

AC0YI-02

SET ON

1. CONNECT CHARGE HOSE TO MANIFOLD GAUGE SET

Tighten the nuts by hand.

CAUTION:

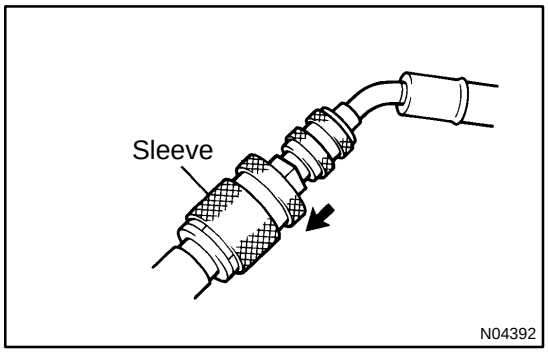
Do not connect the wrong hoses.

2. CONNECT QUICK DISCONNECT ADAPTERS TO CHARGING HOSES

Tighten the nuts by hand.

3. CLOSE BOTH HAND VALVES OF MANIFOLD GAUGE SET

4. REMOVE CAPS FROM SERVICE VALVE ON REFRIGERANT LINE



5. CONNECT QUICK DISCONNECT ADAPTER TO SERVICE VALVES

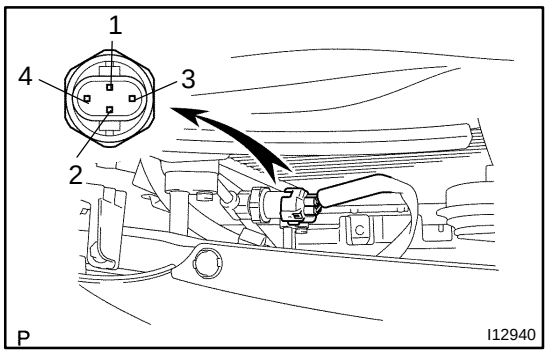
HINT:

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

AC102-02

INSTALLATION

Installation is in the reverse order of removal (See page AC-66).

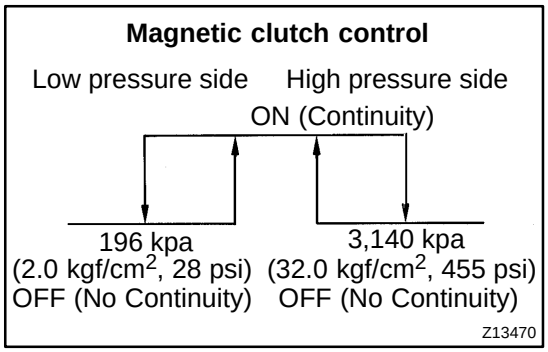


PRESSURE SWITCH

AC100-03

ON-VEHICLE INSPECTION

1. **SET ON MANIFOLD GAUGE SET (See page AC-20)**
2. **DISCONNECT CONNECTOR FROM PRESSURE SWITCH**
3. **RUN ENGINE AT APPROX. 1,500 RPM**

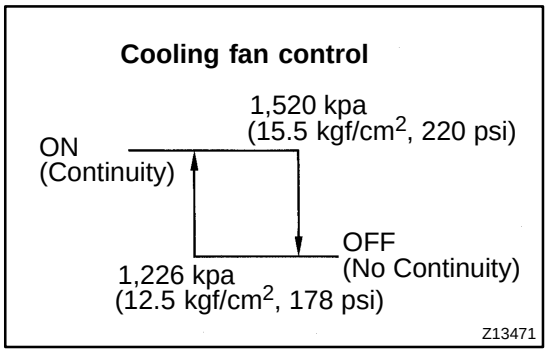


4. **Magnetic clutch control:**
   INSPECT PRESSURE SWITCH OPERATION

(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**

AC101-03

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

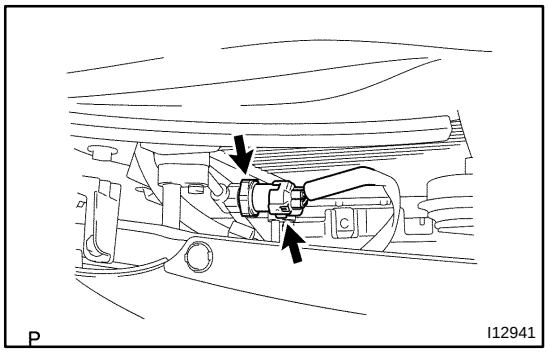
HINT:

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: 600 ± 50 g (21.16 ± 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)

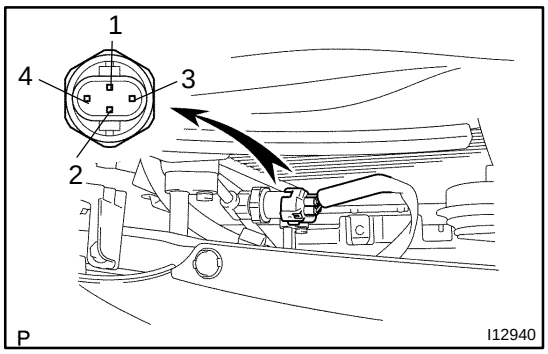
HINT:

- 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 them to the switch.

AC102-02

INSTALLATION

Installation is in the reverse order of removal (See page AC-66).

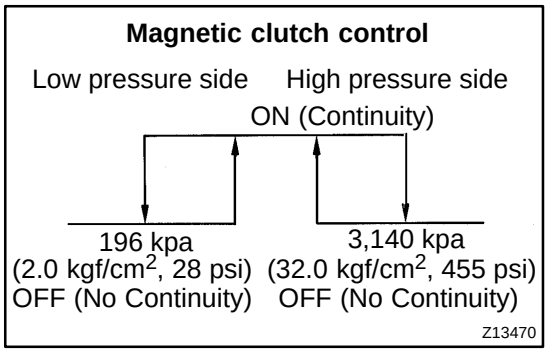


PRESSURE SWITCH

AC100-03

ON-VEHICLE INSPECTION

1. **SET ON MANIFOLD GAUGE SET (See page AC-20)**
2. **DISCONNECT CONNECTOR FROM PRESSURE SWITCH**
3. **RUN ENGINE AT APPROX. 1,500 RPM**

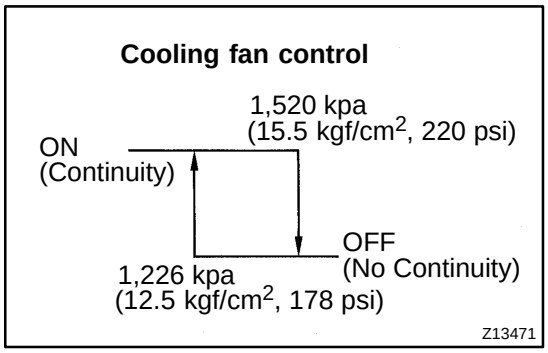


4. **Magnetic clutch control:**
   INSPECT PRESSURE SWITCH OPERATION

(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**

AC101-03

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

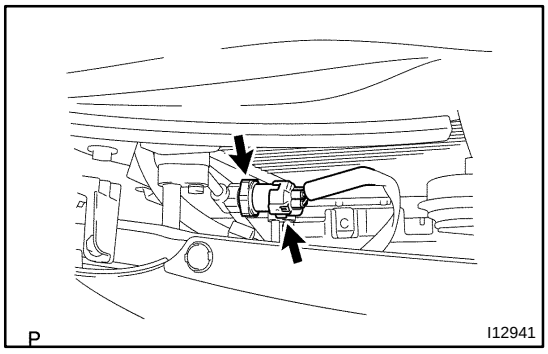
HINT:

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: 600 ± 50 g (21.16 ± 1.76 oz.)



2. REMOVE PRESSURE SWITCH FROM LIQUID TUBE

Disconnect the connector and remove the pressure switch.

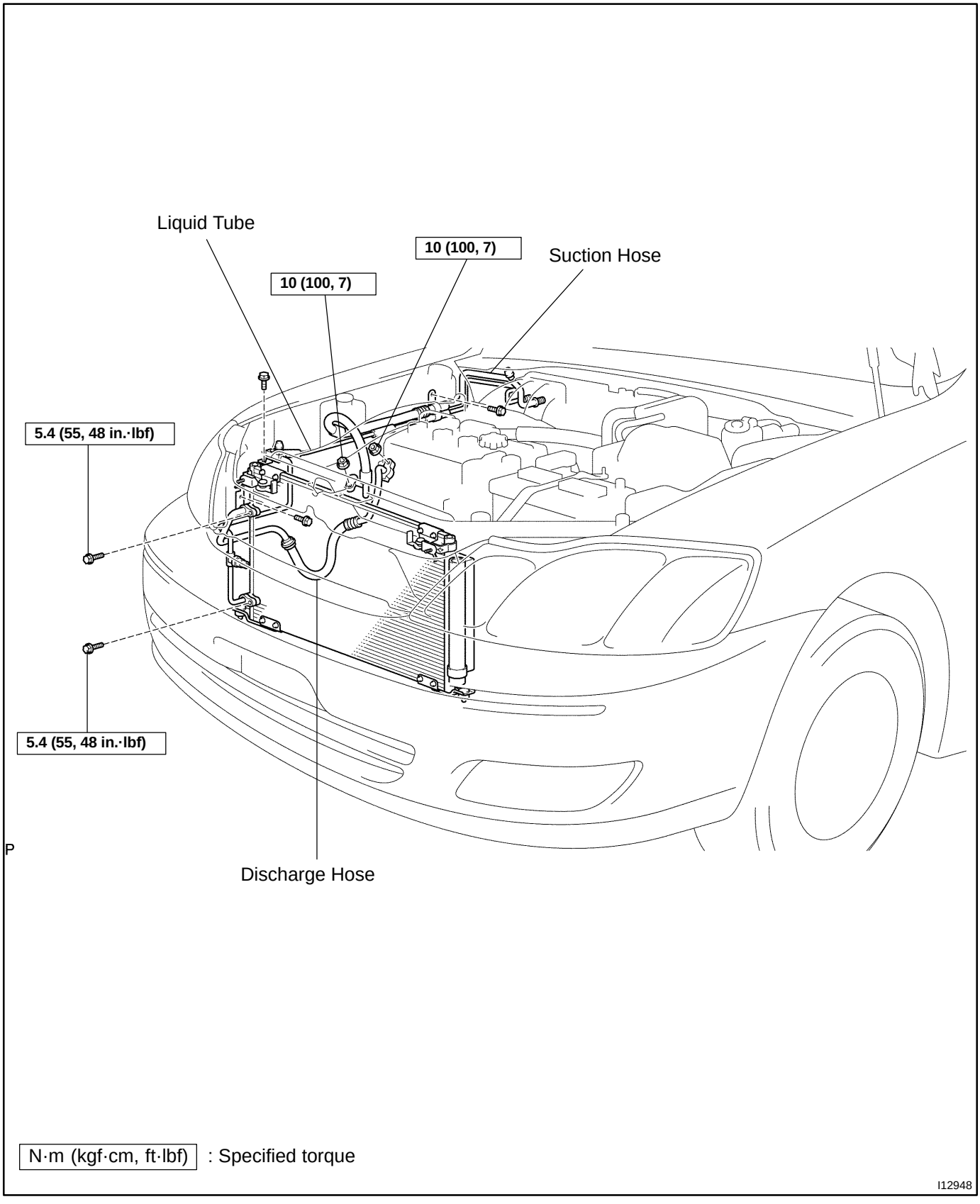
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

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 them to the switch.

AC0YL-02

LOCATION



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

I12948

REFRIGERANT LINE

AC0YK-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.

AC0YM-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
Condenser x Discharge hose	5.4	55	48 in.·lbf
Condenser x Liquid tube	5.4	55	48 in.·lbf
Compressor x Discharge hose	10	100	7
Compressor x Suction hose	10	100	7
Expansion valve x Evaporator	5.4	55	48 in.·lbf
Suction line (Block joint)	10	100	7
Liquid line (Block joint)	10	100	7

4. EVACUATE AIR IN REFRIGERATION SYSTEM AND CHARGE SYSTEM WITH REFRIGERANT
Specified amount: 600 ± 50g (21.16 ± 1.76 oz.)

5. INSPECT FOR LEAKAGE OF REFRIGERANT

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

6. INSPECT A/C OPERATION

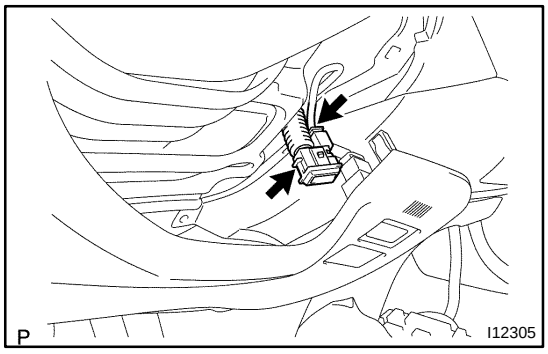
ROOM TEMPERATURE SENSOR

AC2GE-01

INSPECTION

1. REMOVE ROOM TEMPERATURE SENSOR

(a) Remove the lower No. 1 panel (See page BO-90).



(b) Disconnect the connector.

(c) Remove the sensor from the aspirator hose.

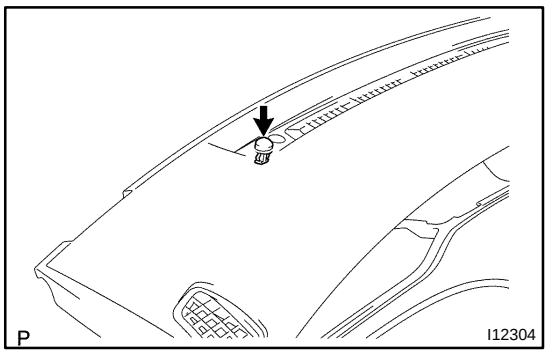
2. INSPECT ROOM TEMPERATURE SENSOR CIRCUIT (See page DI-763)

3. INSTALL ROOM TEMPERATURE SENSOR

(a) Install the sensor to the aspirator hose.

(b) Connect the connector.

(c) Install the lower No. 1 panel (See page BO-97).



SOLAR SENSOR

AC2GD-01

INSPECTION

1. REMOVE SOLAR SENSOR

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

HINT:

Tape the screwdriver tip before use.

2. INSPECT SOLAR SENSOR CIRCUIT

(See page DI-784 , DI-775)

3. INSTALL SOLAR SENSOR

Install the solar sensor, then connect the connector.

TROUBLESHOOTING (Manual A/C)

AC2FV-01

PROBLEM SYMPTOMS TABLE

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

Symptom	Suspect Area	See page
No blower operation	2. HTR Fuse	-
	3. Heater main relay	AC-68
	4. Blower motor	AC-56
	5. Blower resistor	AC-57
	6. Blower speed control switch	AC-83
	7. Wire harness	-
No blower control	1. Blower motor	AC-56
	2. Blower resistor	AC-57
	3. Blower speed control switch	AC-83
	4. Wire harness	-
No air temperature control	1. Engine coolant volume	-
	2. Heater control assembly	AC-80
No compressor operation	1. Refrigerant volume	AC-3
	2. A.C Fuse	-
	3. Magnetic clutch	AC-42
	4. Compressor lock sensor	AC-42
	5. Compressor	AC-42
	6. Pressure switch	AC-65
	7. Heater main relay	AC-68
	8. Blower speed control switch	AC-83
	9. A/C switch	AC-83
	10.A/C amplifier	AC-77
	11.Evaporator temp. sensor	AC-64
	12.Wire harness	-
No cool air comes out	1. Refrigerant volume	AC-3
	2. Refrigerant pressure	AC-3
	3. Drive belt	AC-17
	4. Magnetic clutch	AC-42
	5. Compressor lock sensor	AC-42
	6. Pressure switch	AC-65
	7. Evaporator temp. sensor	AC-64
	8. A/C switch	AC-83
	9. A/C amplifier	AC-77
	10.Heater control assembly	AC-80
	11.Wire harness	-
No engine idle-up when A/C switch ON	1. A/C amplifier	AC-77
	2. Idle control system	DI-102
	3. Wire harness	-
No air inlet control	1. Air inlet servomotor	AC-39
	2. Heater control assembly	AC-80
	3. Wire harness	-
No mode control	1. Air outlet servomotor	AC-60
	2. Heater control assembly	AC-80
	3. Wire harness	-

Blinking of A/C indicator	1. Compressor 2. Drive belt 3. Compressor lock sensor 4. A/C amplifier	AC-42 AC-17 AC-42 AC-77
Brightness does not change when light control switch is turned	1. Headlight and taillight system 2. Heater control assembly	BE-19 AC-80