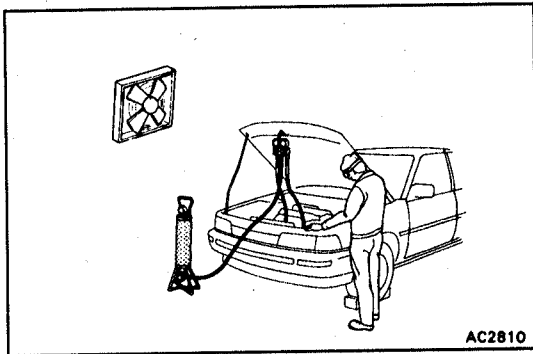


AIR CONDITIONING SYSTEM

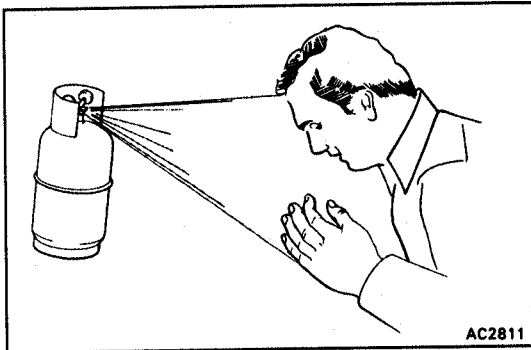
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PRECAUTION HANDLING PRECAUTIONS FOR REFRIGERANT

AC178-01

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



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

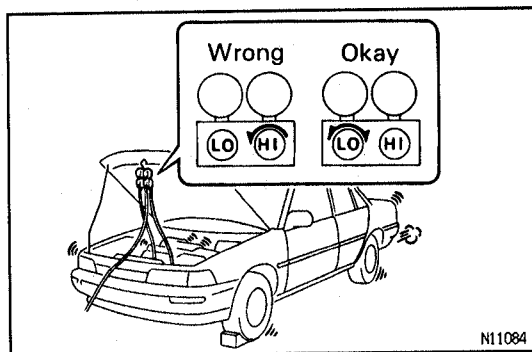
If liquid refrigerant gets in your eyes or on your skin:

- (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.

HANDLING PRECAUTIONS FOR REFRIGERANT CONTAINER

AC177-01

1. NEVER HEAT CONTAINER OR EXPOSE IT TO NAKED FLAME
2. BE CAREFUL NOT TO DROP CONTAINER AND NOT TO APPLY PHYSICAL SHOCKS TO IT



PRECAUTIONS WHEN CHARGING REFRIGERANT

AC178-02

1. 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 take care to avoid this.

2. 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.

3. 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.

GAS LEAK TEST DESCRIPTION

AC26L-01

1. PERFORM IN 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 and exhaust gas.)
- Repeat the test 2 or 3 times.
- Make sure there is some refrigerant remaining in the refrigeration system.

When compressor is OFF: approximately 392 — 588 KPa (4 — 6 kgf/cm², 57 — 35 psi)

2. GAS LEAK TEST IN A/C UNIT

- (a) 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 react to the volatile gases.

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

- (b) If gas leak is not detected on the drain hose, remove the blower resistor from the A/C unit. Then insert the gas leak detector sensor into the unit and perform the test.

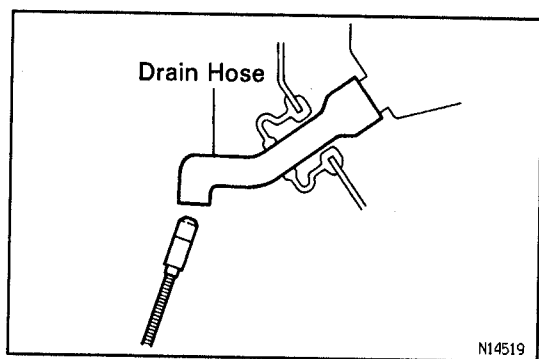
3 GAS LEAK TEST AT PRESSURE SWITCH

Disconnect the connector and leave the pressure switch for approximately 20 minutes. Then bring the gas leak detector close to the pressure switch and perform the test.

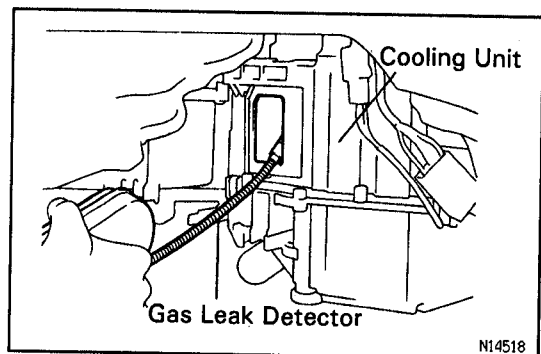
4 GAS LEAK TEST AT REFRIGERANT LINES

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

HINT: Make sure there is no dirt on joints.



N14519



N14518

AC

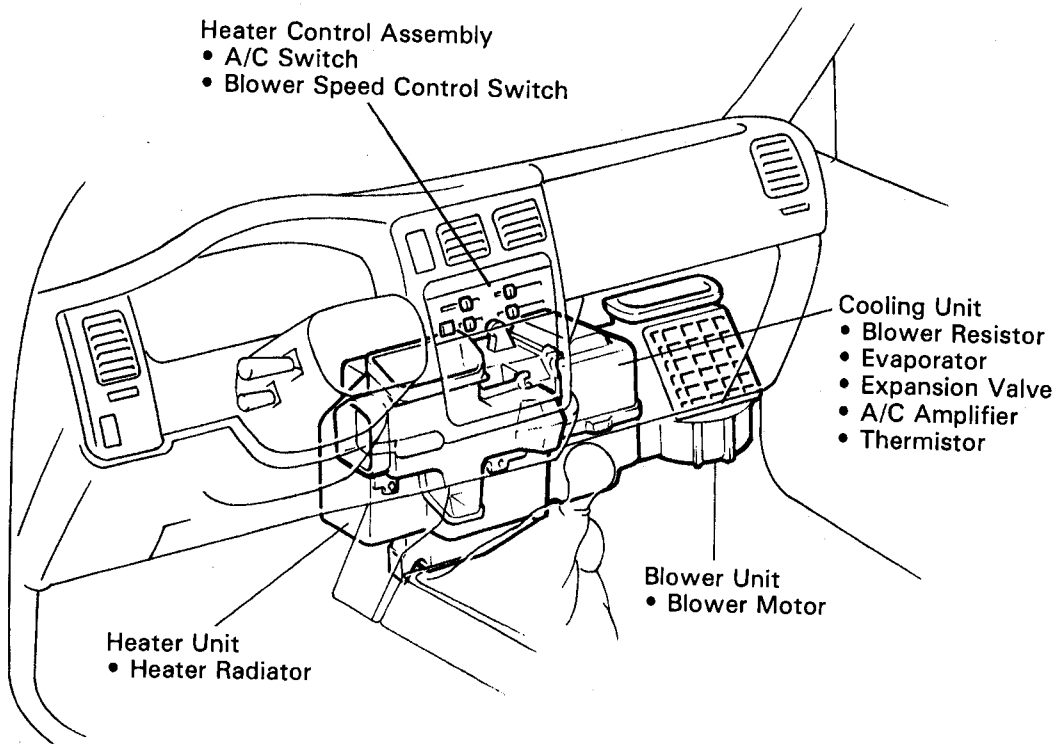
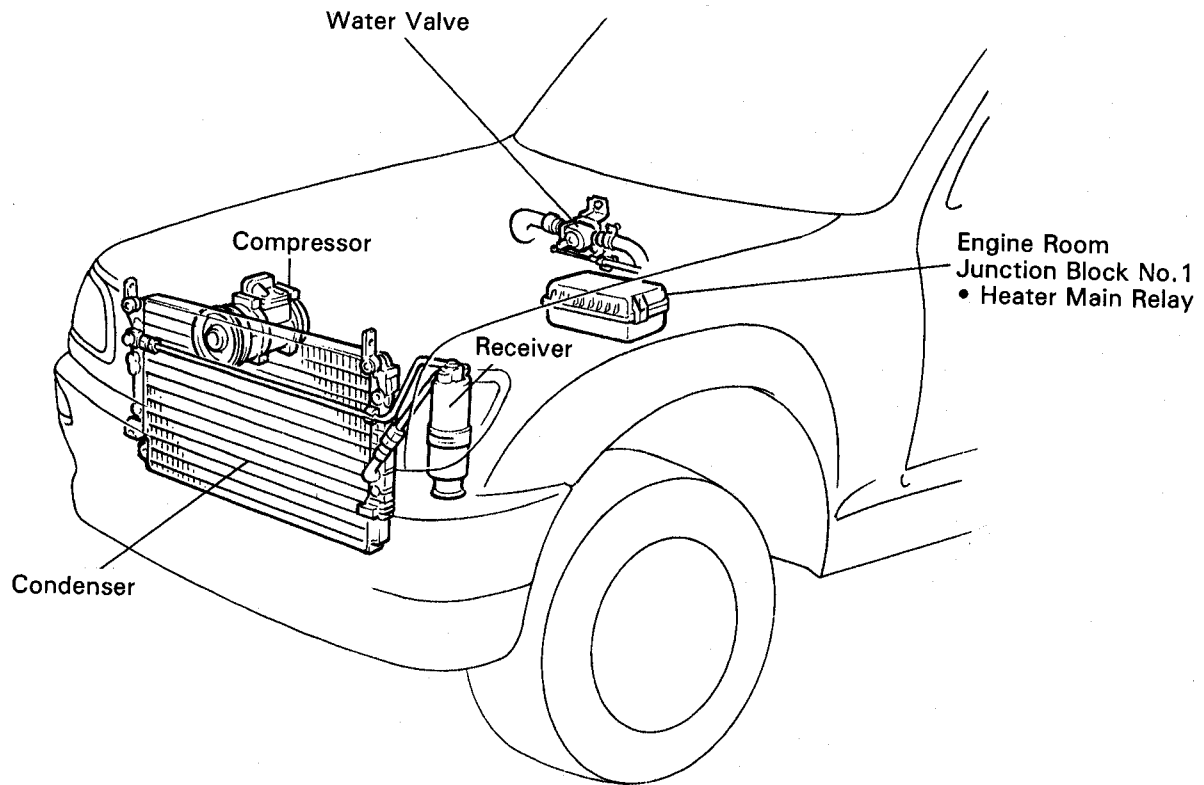
SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The TOYOTA TACOMA is equipped with an SRS (Supplemental Restraint System) such as the driver airbag. 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.

DESCRIPTION

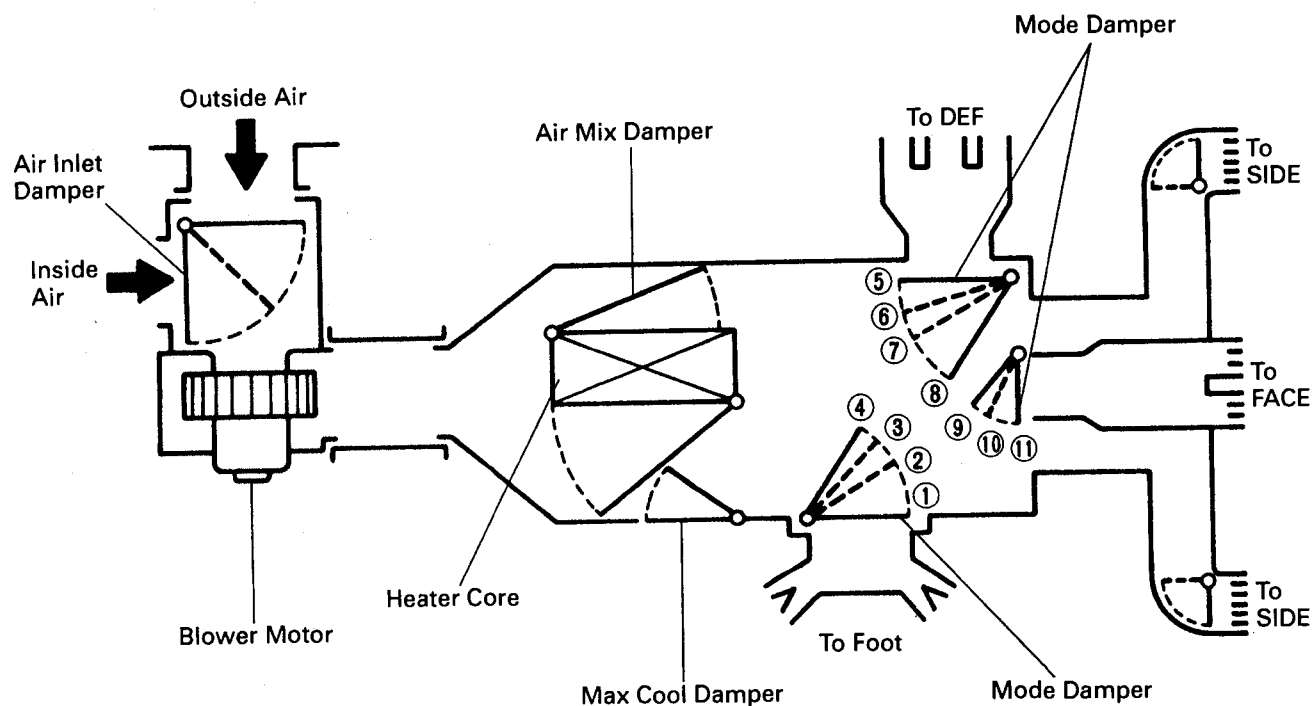
PARTS LOCATION

AC0K9-00



AC

DAMPERS POSITION



Mode	Air Flow Mode Damper Posions	Air Flow Vent			
		Center	Side	Foot	Def.
Face	① ⑤ ⑨	○	○		
Bi-Level	② ⑤ ⑩	○	○	○	
Foot	④ ⑥ ⑪		○	○	○
Foot/Def.	③ ⑦ ⑪		○	○	○
Def.	① ⑧ ⑪		○		○

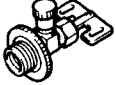
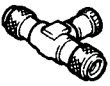
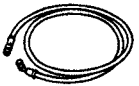
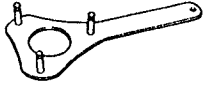
N14188
00018E

The size of circule (○) indicates the proportion of the air flow volume.

PREPARATION

SST(SPECIAL SERVICE TOOLS)

AC0ET-0A

	07110-58060 Air Conditioner Service Tool Set	
	(07117-58060) Refrigerant Drain Service Valve	
	(07117-58070) T-Joint	
	(07117-58080) Quick Disconnect Adapter	Discharge (diam. 16 mm)
	(07117-58090) Quick Disconnect Adapter	Suction (diam. 13 mm)
	(07117-78050) Refrigerant Charging Gauge	
	(07117-88060) Refrigerant Charging Hose	Discharge (Red)
	(07117-88070) Refrigerant Charging Hose	Suction (Blue)
	(07117-88080) Refrigerant Charging Hose	Utility (Green)
	07112-66040 Magnetic Clutch Remover	
	07112-76060 Magnetic Clutch Stopper	
	07114-84010 Snap Ring Pliers	
	07114-84020 Snap Ring Pliers	

AC



07116-38360 Gas Leak Detector Assembly

AC008-0F

RECOMMENDED TOOLS



09082-00050 TOYOTA Electrical Tester Set.

AC1KZ-02

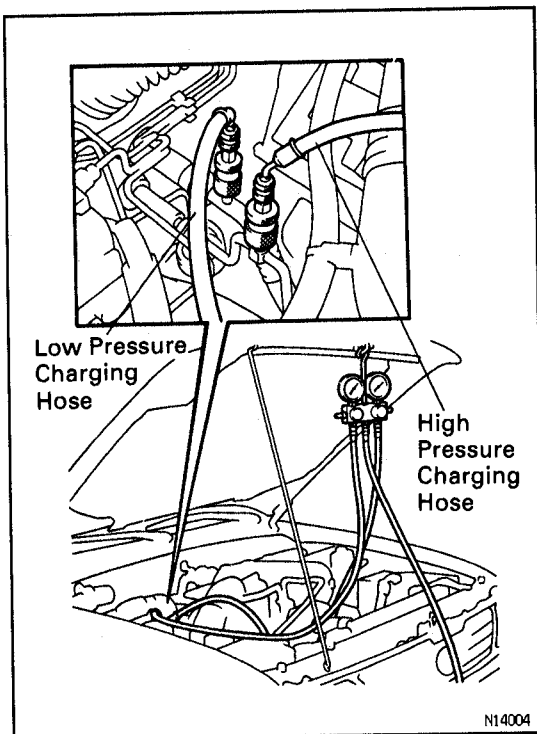
LUBRICANT

Item	Capacity	Classification
Compressor oil	—	ND-OIL 8 or equivalent
When replacing receiver	10 cc (0.34 fl.oz.)	
When replacing condenser	40 cc (1.4 fl.oz.)	
When replacing evaporator	40 cc (1.4 fl.oz.)	
When replacing compressor	140 cc (4.8 fl.oz.)	

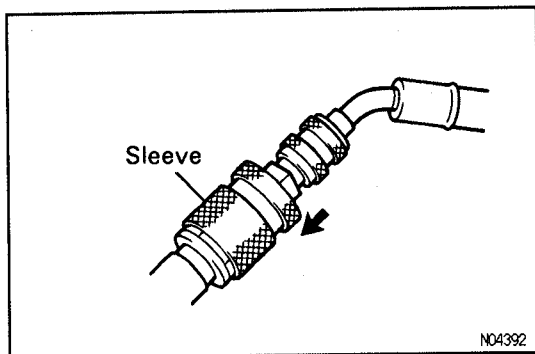
USE OF MANIFOLD GAUGE SET
MANIFOLD GAUGE SET INSTALLATION

AC0K3-07

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

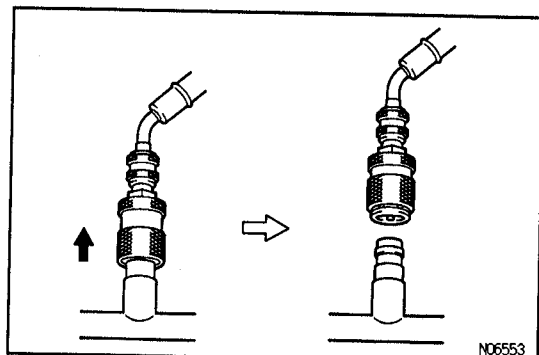


AC



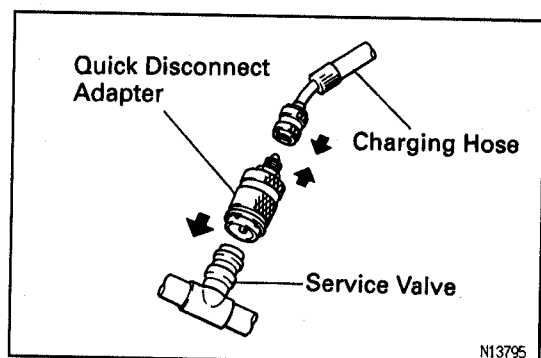
5. CONNECT QUICK DISCONNECT ADAPTERS TO SERVICE VALVES

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



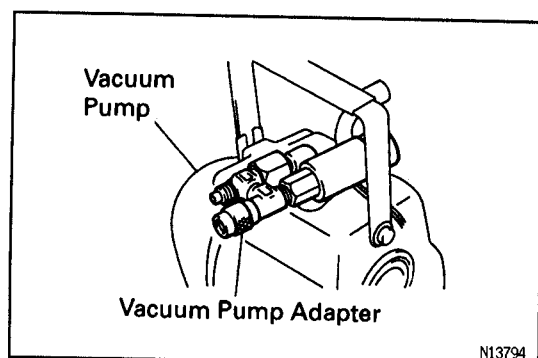
MANIFOLD GAUGE SET REMOVAL

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 adapters upward to unlock the connector and remove it from the service valve.
3. INSTALL CAPS TO SERVICE VALVES ON REFRIGERANT LINE

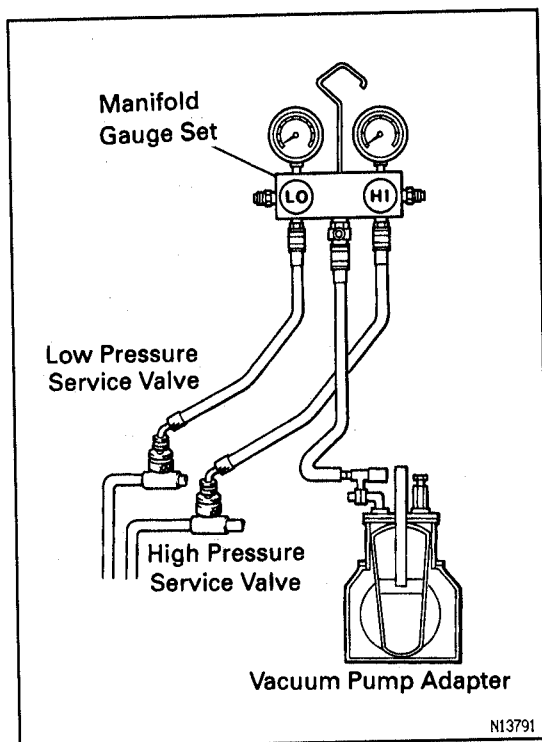


EVACUATING AIR IN REFRIGERATION SYSTEM AND CHARGING WITH REFRIGERANT

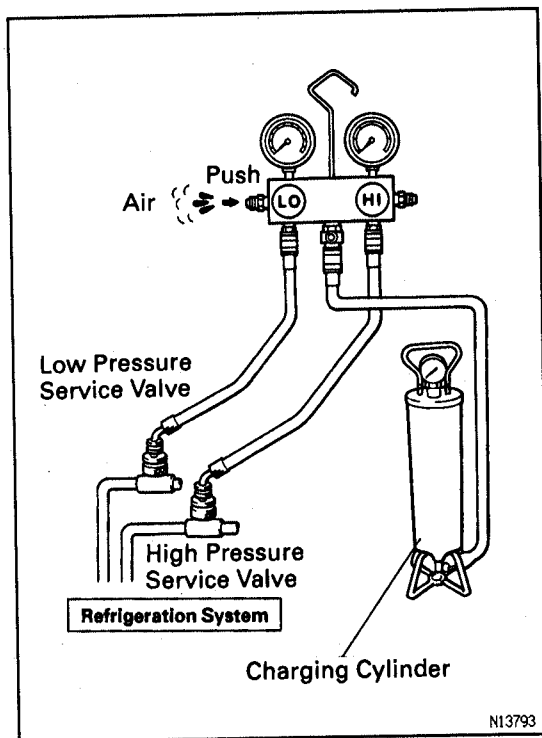
1. CONNECT QUICK DISCONNECT ADAPTERS TO CHARGING HOSES ^{AC10A-0A}
2. REMOVE CAPS FROM SERVICE VALVES ON REFRIGERANT LINES
3. INSTALL MANIFOLD GAUGE SET ON SERVICE VALVES
 - (a) Close both hand valves of manifold gauge set.
 - (b) Connect the quick disconnect adapters to the service valves.



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



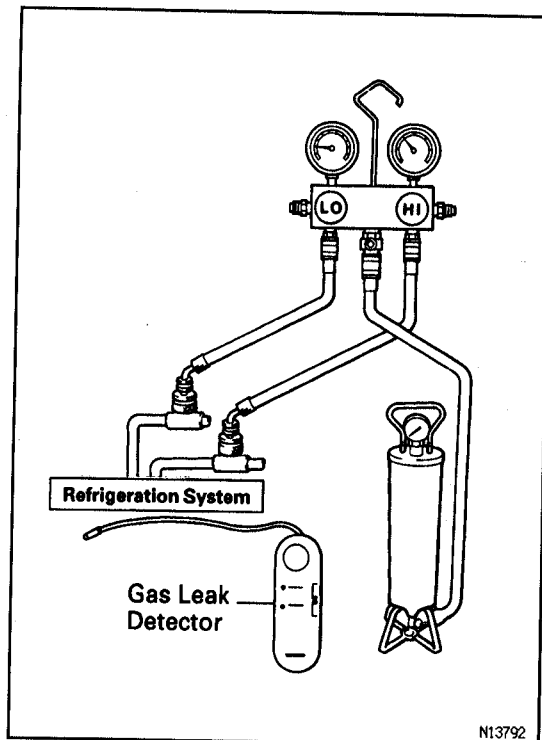
- (b) Connect the center hose of the manifold gauge set to the vacuum pump adapter.
- (c) Open both the high and low hand valves and run the vacuum pump.
- (d) After 10 minutes or more, check that the low pressure gauge indicates 750 mmHg (30 in.Hg) or more.
HINT: If the reading is not 750 mmHg (30 in.Hg) 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 longer and check that there is no gauge indicator.



5. INSTALL CHARGING CYLINDER

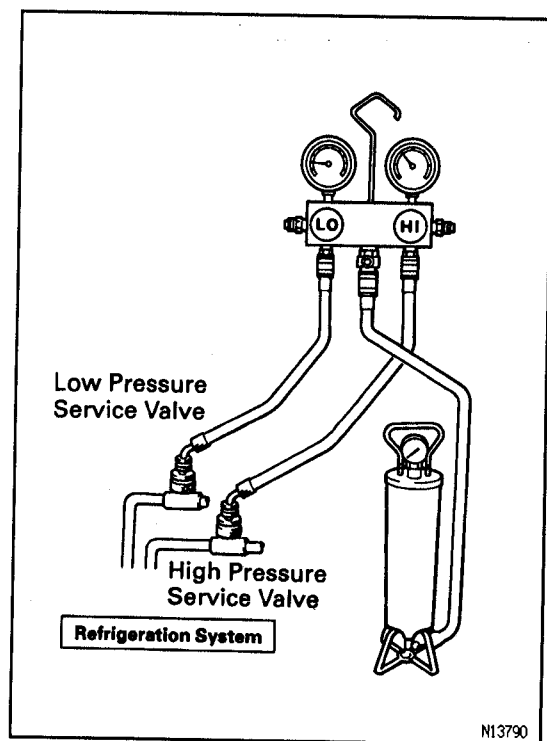
HINT: When handling the charging cylinder, always follow the direction given in the instruction manual.

- (a) Charge the proper amount of refrigerant in 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.



6. INSPECT REFRIGERATION SYSTEM FOR LEAKS

- Open the high pressure hand valve and charge refrigerant.
- When the low pressure gauge indicates 98 kPa (1 kgf/cm², 14 psi), close the high pressure hand valve.
- Using leak detector, check the system for leakage.
- If leak is found, repair the faulty component or connection. Add evacuate air from refrigeration system (Refer to 4).



7. CHARGE REFRIGERANT INTO REFRIGERANT SYSTEM

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

CAUTION:

- Never run the engine when charging the system through the high pressure side.
- Do not open the low pressure hand valve when the system is being charged with liquid refrigerant.

- Open the high pressure hand valve fully.
- 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.

8. REMOVE MANIFOLD GAUGE SET FROM SERVICE VALVES

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

9. INSTALL CAPS TO SERVICE VALVES ON REFRIGERANT LINES

TROUBLESHOOTING

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.

ACOLH-0A

See page	Part Name	Trouble	AC-19	AC-20	—	AC-43	Inspect outlet air control				Inspect cooling system for refrigerant			—	—	—	AC-27	AC-27
			Inspect volume of refrigerant	Inspect drive belt tension	Inspect engine coolant volume	Inspect A/C control lever adjustment	Heater main relay	Blower speed control switch	Blower resistor	Blower motor	High pressure switch	Engine coolant temp. switch	Inspect refrigerant lines	Compressor	Magnetic clutch			
		No blower operation					1	4	3	2								
		No air temperature control			1	2												
		No compressor operation	1				6	8						4	3			
		Compressor operates immediately	1								2							
		No cool air comes out	1	2										4	3			
		Cool air comes out immediately	1	2														
		Cool air comes out only at high engine rpm	1	2									3					
		Insufficient cooling	1	2							3		5					
		No engine idle up when A/C switch on																
		No warm air comes out			1	2												

AC

REFRIGERANT SYSTEM INSPECTION WITH MANIFOLD GAUGE SET

This is a method in which the trouble is located by using a manifold gauge set.

(See "USE OF MANIFOLD GAUGE SET" on page AC-8)

Read the manifold gauge pressure when the following conditions are established:

(a) Temperature at the air inlet with the switch set at RECIRC is 30 — 35 °C (86 — 95 °F)

(b) Engine running at 1,500 rpm

(c) Blower speed control switch set at high

(d) Temperature control set at max. cool

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

ACONR-09

1. NORMALLY FUNCTIONING REFRIGERATION SYSTEM

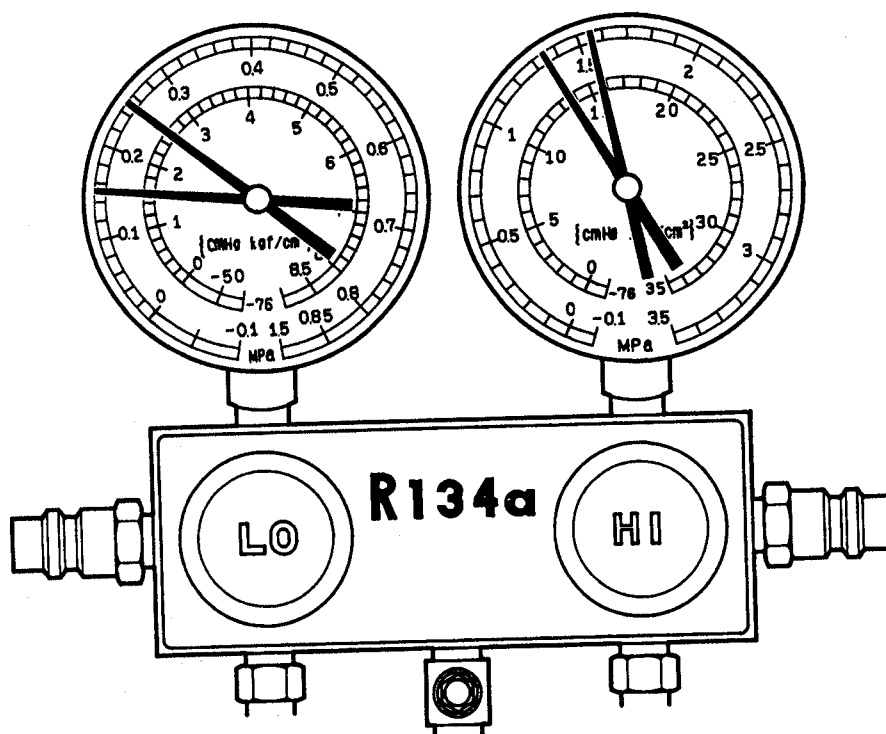
Gauge reading:

Low pressure side:

0.15 — 0.25 MPa (1.5 — 2.5 kgf/cm²)

High pressure side:

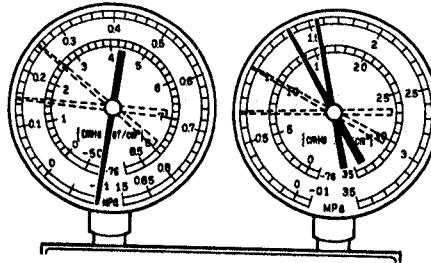
1.37 — 1.57 MPa (14 — 16 kgf/cm²)



N04147

2. MOISTURE PRESENT IN REFRIGERATION SYSTEM

Condition: Periodically cools and then fails to cool



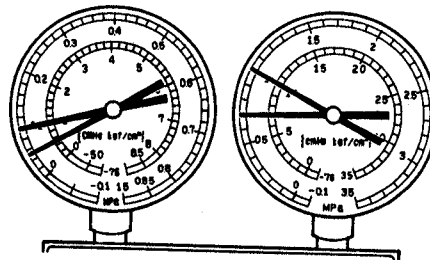
N04148

Symptom seen in refrigeration system	Probable cause	Diagnosis	Remedy
During operation, pressure on low pressure side sometimes becomes a vacuum and sometimes 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	- Replace receiver/drier - Remove moisture in cycle through repeatedly evacuating air - Charge proper amount of new refrigerant

V01034

3. INSUFFICIENT REFRIGERANT

Condition: Insufficient cooling



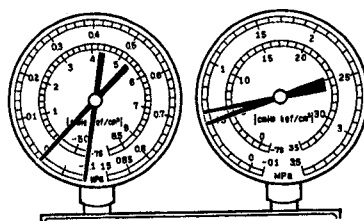
N04149

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	- Check for gas leakage with leak detector and repair if necessary - Charge proper amount of refrigerant - If indicated pressure value is near 0 when connected to gauge, create the vacuum after inspecting and repairing the location of the leak

V01035

4. POOR CIRCULATION OF REFRIGERANT

Condition: Insufficient cooling



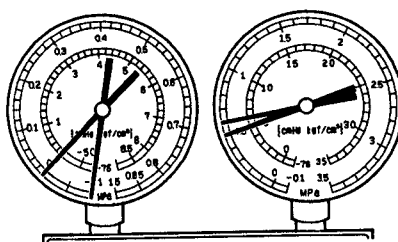
NO4150

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

V01030

5. REFRIGERANT DOES NOT CIRCULATE

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



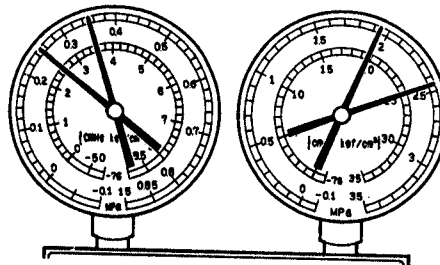
NO4150

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 heat sensing tube	Refrigerant does not circulate	- Check heat sensing tube, expansion valve and EPR - Clean out dirt in expansion valve by blowing with air If not able to remove dirt, replace expansion valve - Replace receiver - Evacuate air and charge new refrigerant to proper amount. For gas leakage from heat sensing tube, replace expansion valve.

V01041

6. REFRIGERANT OVERCHARGE OR INSUFFICIENT COOLING OF CONDENSER

Condition: Insufficient Cooling



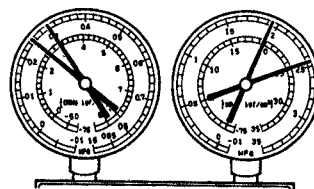
N04151

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 refrigerant in system - Insufficient cooling of condenser	- Excessive refrigerant in cycle → refrigerant overcharged - Condenser cooling insufficient → condenser fins clogged or fan motor faulty	- Clean condenser - Check fan motor operation - If (1) and (2) are in normal state, check amount of refrigerant Charge proper amount of refrigerant

V01032

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.

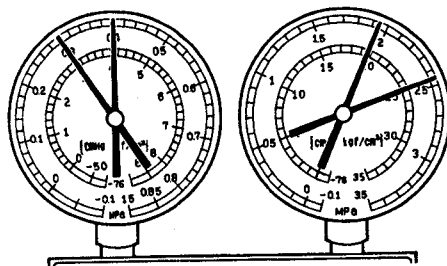
N04153

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

V01033

8. EXPANSION VALVE IMPROPERLY MOUNTED/HEAT SENSING TUBE DEFECTIVE (OPENS TOO WIDE)

Condition: Insufficient cooling



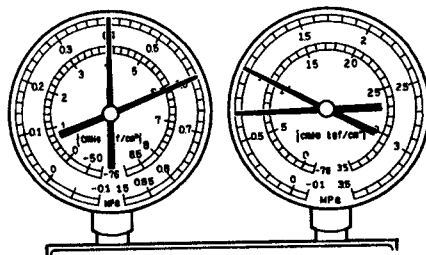
N04152

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 or heat sensing tube not installed correctly	- Excessive refrigerant in low pressure piping ↓ - Expansion valve opened too wide	(1) Check heat sensing tube installed condition (2) If (1) is normal, check expansion valve Replace if defective

V01031

9. DEFECTIVE COMPRESSION COMPRESSOR

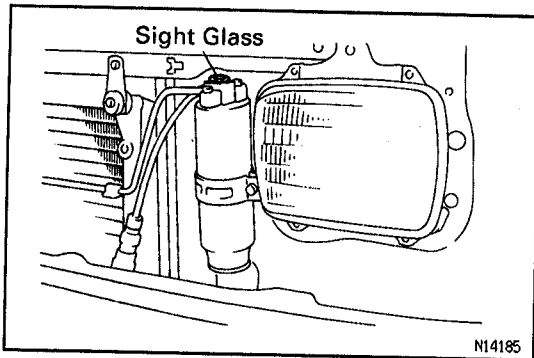
Condition: Does not cool



N04146

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

V01029



REFRIGERANT VOLUME

REFRIGERANT VOLUME INSPECTION

AC008-16

1. SET TEMPERATURE CONTROL AT MAX. COOL
 2. SET BLOWER SWITCH AT "HI"
 3. SET AIR INLET CONTROL AT "RECIRC"
 4. A/C SWITCH ON
 5. FULLY OPEN DOORS
 6. RUN ENGINE AT APPROX. 1,500 RPM
 7. INSPECT AMOUNT OF REFRIGERANT
- Observe the sight glass on the liquid tube.

Item	Symptom	Amount of refrigerant	Remedy
1	Bubbles present in sight glass	Insufficient*	(1) Check for gas leakage with gas leak tester and repair if necessary (2) Add refrigerant until bubbles disappear
2	No bubbles present in sight glass	None, sufficient or too much	Refer to items 3 and 4
3	No temperature difference between compressor inlet and outlet	Empty or nearly empty	(1) Check for gas leakage with gas leak tester 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.

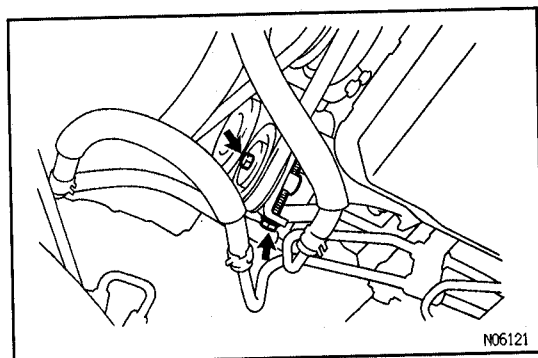
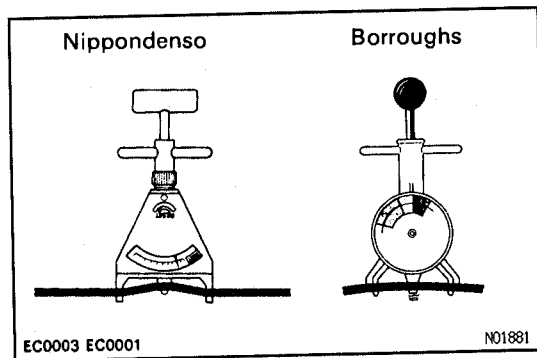
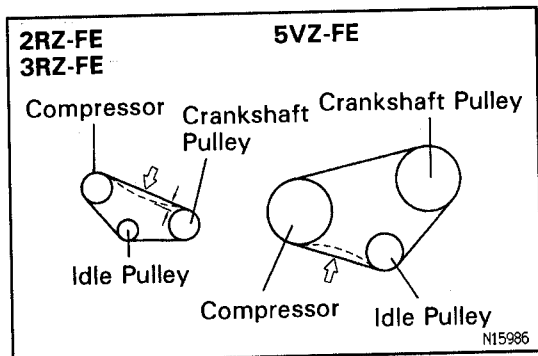
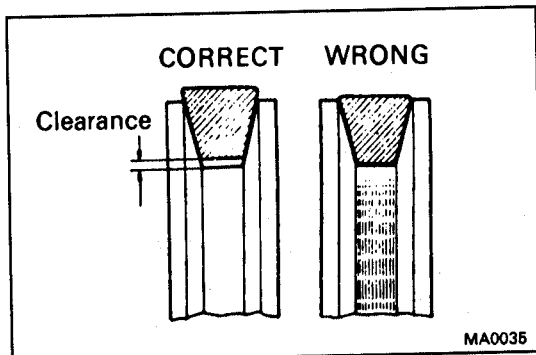
AC

REFRIGERANT CHARGE VOLUME

AC00H-0W

Specified amount:

$600 \pm 50 \text{ g (21.16} \pm 1.76 \text{ oz.)}$



DRIVE BELT TENSION

DRIVE BELT TENSION INSPECTION

AC1RF-02

1. **INSPECT DRIVE BELT INSTALLATION CONDITION**
Visually check drive belt for cracks, oiliness or wear. Check that the belt does not touch the bottom of the pulley groove.

If necessary, replace the drive belt.

2. **INSPECT DRIVE BELT DEFLECTION**

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

Belt tension gauge:

Nippondenso BTG-20 (95506-00020) or

Borroughs No. BT-33-73F

Drive belt tension:

New belt 160 ± 25 lbf

Used belt 100 ± 20 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.

DRIVE BELT REMOVAL

AC28M-01

1. **REMOVE PS DRIVE BELT**
(See SR section)
2. **REMOVE ENGINE UNDER COVER**
3. **LOOSEN IDLE PULLEY LOCK NUT**
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
4. **LOOSEN AND REMOVE COMPRESSOR DRIVE BELT**

DRIVE BELT INSTALLATION

AC28N-01

Installation is in the reverse order of removal.

IDLE—UP SPEED

IDLE UP SPEED INSPECTION

AC110-03

1. WARM UP ENGINE
2. SET VEHICLE IN THESE CONDITIONS:

- Blower switch high position
- A/C switch on
- Magnetic clutch on

3. INSPECT IDLE—UP SPEED

Standard idle up speed:

2RZ—FE, 3RZ—FE Engine:

900 $\pm$ 50 rpm

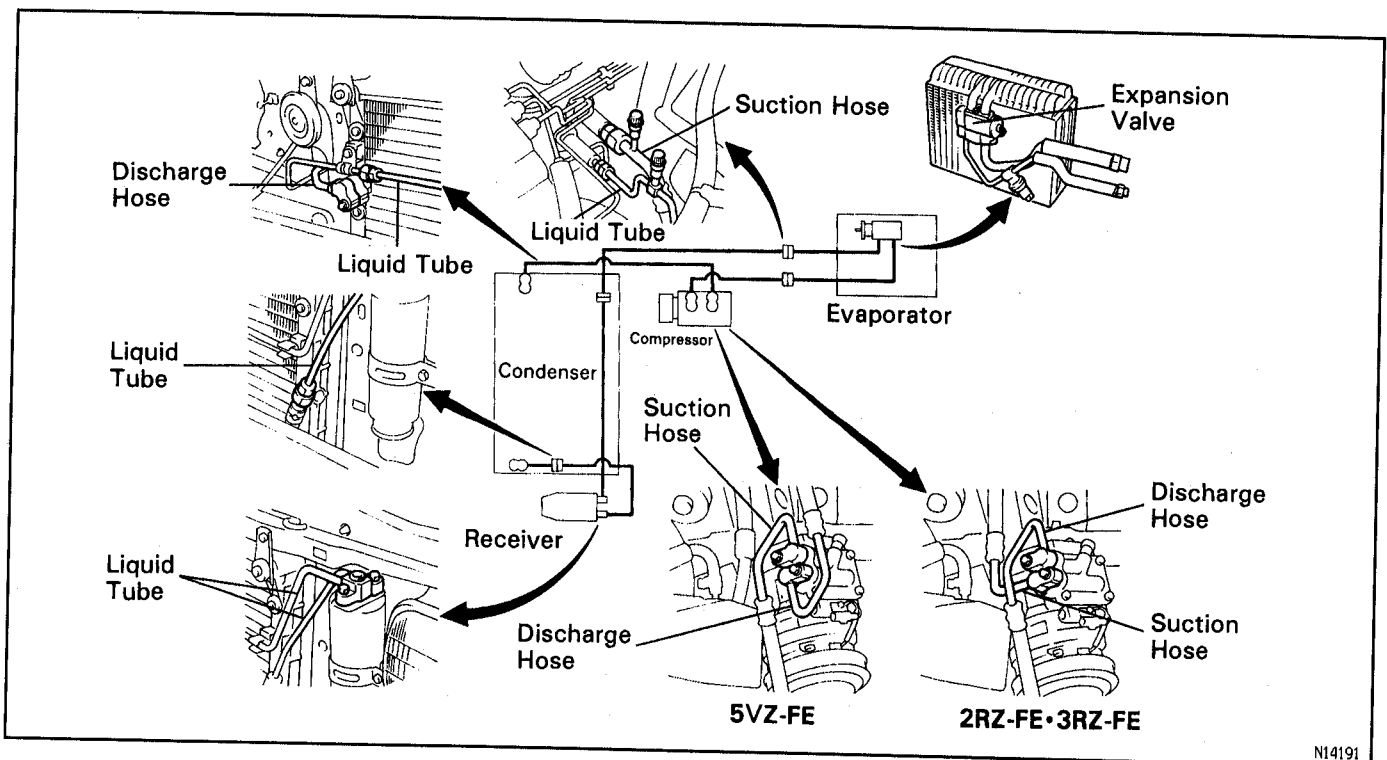
5VZ—FE Engine:

850 $\pm$ 50 rpm

REFRIGERANT LINES

TIGHTENING TORQUE OF REFRIGERATION LINES

AC00L-01



N14191

AC

ON—VEHICLE INSPECTION

AC00M-02

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.

REFRIGERANT LINES 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. **TORQUE CONNECTIONS TO SPECIFIED TORQUE**

NOTICE: Connections should not be torqued tighter than the specified torqued.

Receiver x Liquid tube

Torque: 6.0 N·m (61 kgf·cm, 53 ft·lbf)

Condenser x Discharge tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Condenser x Liquid tube

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

Compressor x Discharge tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Compressor x Suction tube

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Cooling unit x Liquid tube

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

Cooling unit x Suction tube

Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)

Expansion valve x Evaporator

Torque: 5.4 N·m (55 kgf·cm, 48 ft·lbf)

Suction line

Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)

Liquid line

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

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

Specified amount:

$600 \pm 50\text{g}$ ($21.16 \pm 1.76\text{ oz.}$)

5. **INSPECT FOR LEAKAGE OF REFRIGERANT**

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

6. **INSPECT AIR CONDITIONING OPERATION**

COOLING UNIT

COOLING UNIT REMOVAL

AC1RM-02

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

INSTALLATION HINT: 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. DISCONNECT SUCTION TUBE AND LIQUID TUBE FROM COOLING UNIT FITTINGS

Torque:

Liquid tube: 14 N·m (140 kgf·cm, 10 ft·lbf)

Suction tube: 32 N·m (330 kgf·cm, 24 ft·lbf)

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

INSTALLATION HINT: Lubricate 2 new O-rings with compressor oil and install the tubes.

3. REMOVE 2 GROMMETS

4. REMOVE DRAIN PIPE GROMMET

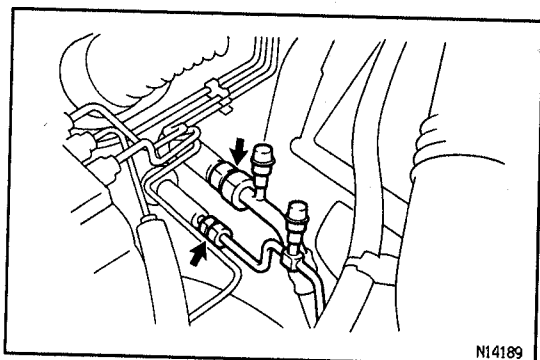
5. REMOVE GLOVE COMPARTMENT PARTS

(See page BO-27)

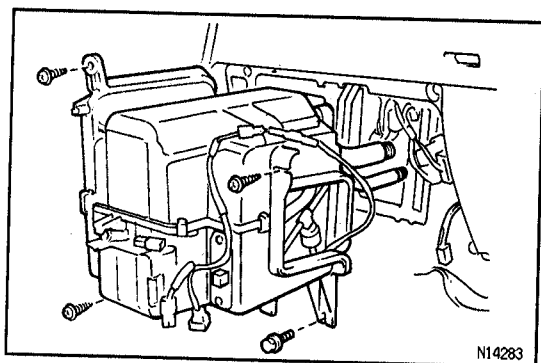
6. REMOVE COOLING UNIT

(a) Disconnect the connectors.

(b) Remove the 3 screws, bolt and the cooling unit.



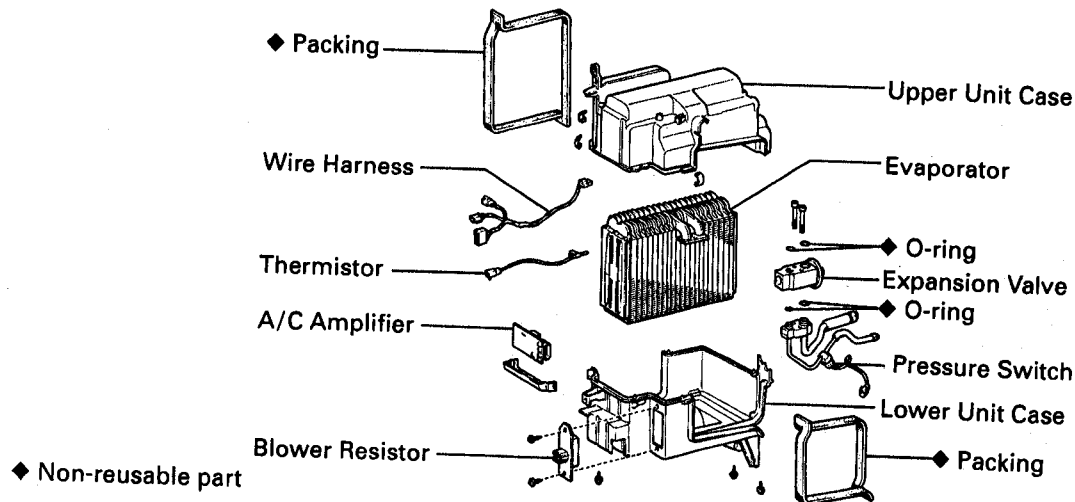
N14189



N14283

COOLING UNIT DISASSEMBLY

AC1RJ-02



◆ Non-reusable part

N14291

AC

1. REMOVE THESE PARTS

- (a) A/C amplifier.
- (b) Wire harness.

2. REMOVE BLOWER RESISTOR

Remove the 2 screws and blower resistor.

3. SEPARATE UPPER AND LOWER UNIT CASE

- (a) Using a knife, cut off the each packing.
- (b) Remove 3 clips and 3 screws.
- (c) Separate the upper and lower unit case.

4. REMOVE EVAPORATOR FROM LOWER UNIT CASE

ASSEMBLY HINT: If evaporator was replaced, add compressor oil to compressor.

Add 40 — 50 cc (1.4 — 1.7 fl.oz.)

Compressor oil:

ND—OIL 8 or equivalent

5. REMOVE THERMISTOR

Pull out the thermistor from evaporator.

6. REMOVE PRESSURE SWITCH

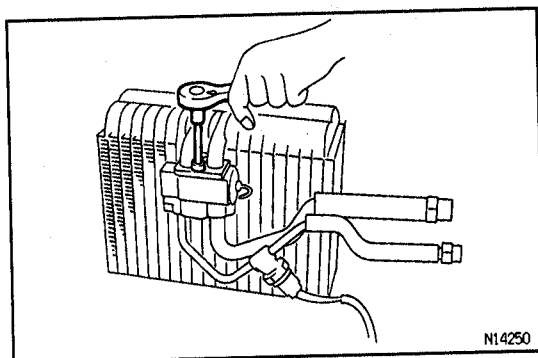
ASSEMBLY HINT: Lubricate a new O—ring with compressor oil and install the switch.

7. REMOVE EXPANSION VALVE

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

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

INSTALLATION HINT: Lubricate 4 new O—rings with compressor oil and install the tubes.

**COOLING UNIT ASSEMBLY**

AC26P-01

Assembly is in the reverse order of disassembly.

COOLING UNIT INSTALLATION

AC28Q-01

Installation is in the reverse order of removal.

HEATER UNIT

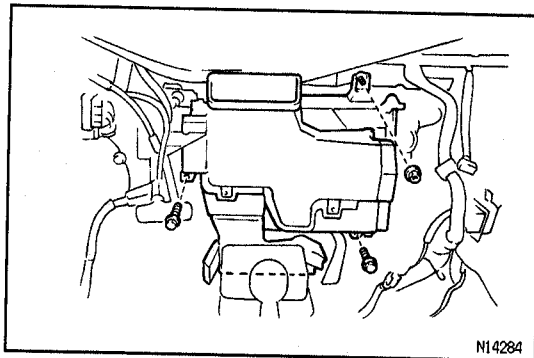
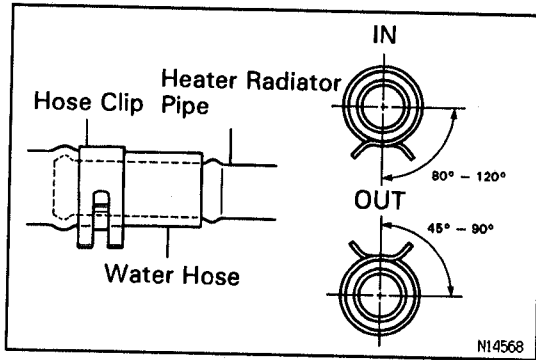
AC28R-01

HEATER UNIT REMOVAL**1. REMOVE COOLING UNIT**

(See page AC—23)

2. DRAIN ENGINE COOLANT FROM RADIATOR

REMOVAL HINT: It is not necessary to drain out all the coolant.



3. DISCONNECT WATER HOSES FROM HEATER RADIATOR PIPES

INSTALLATION HINT:

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

4. REMOVE INSTRUMENT PANEL AND REINFORCEMENT

(See page BO-27)

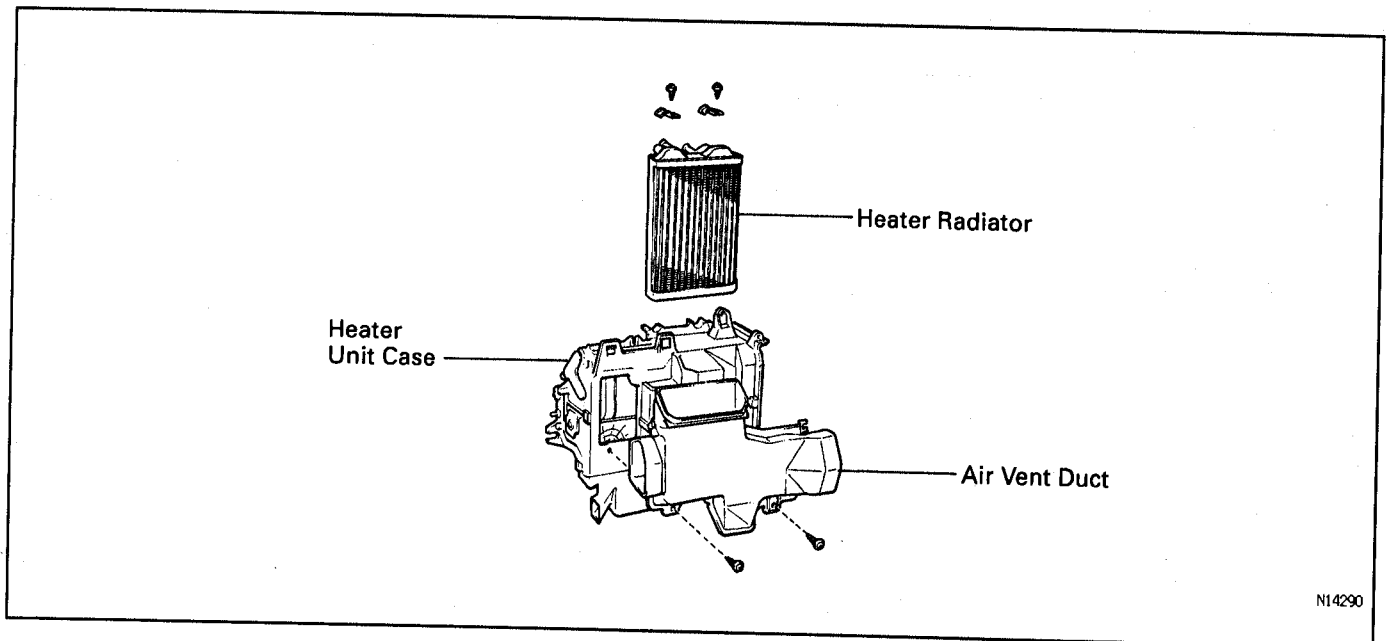
5. REMOVE DEFROSTER DUCT HEATER TO REGISTER NO.4

6. REMOVE HEATER UNIT

Remove the 2 bolts, the nut and the heater unit.

HEATER UNIT DISASSEMBLY

AC1RL-02



N14290

AC

1. REMOVE HEATER RADIATOR

- Remove the 2 screws and 2 plates.
- Pull out the heater radiator.

2. REMOVE AIR VENT DUCT

Remove the 2 screws and duct.

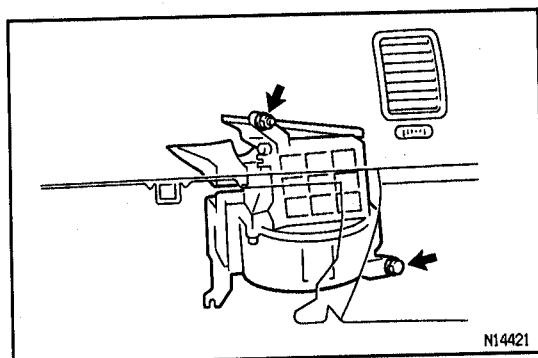
HEATER UNIT ASSEMBLY

AC268-01

Assembly is in the reverse order of disassembly.

HEATER UNIT INSTALLATION

Installation is in the reverse order of removal.

**BLOWER UNIT
BLOWER UNIT REMOVAL**

AC033-06

1. REMOVE GLOVE COMPARTMENT PARTS

(See page BO-27)

2. REMOVE COOLING UNIT

(See page AC-23)

3. REMOVE BLOWER UNIT

- (a) Disconnect the connector from the blower motor.
- (b) Disconnect the air inlet damper control cable from the blower motor.

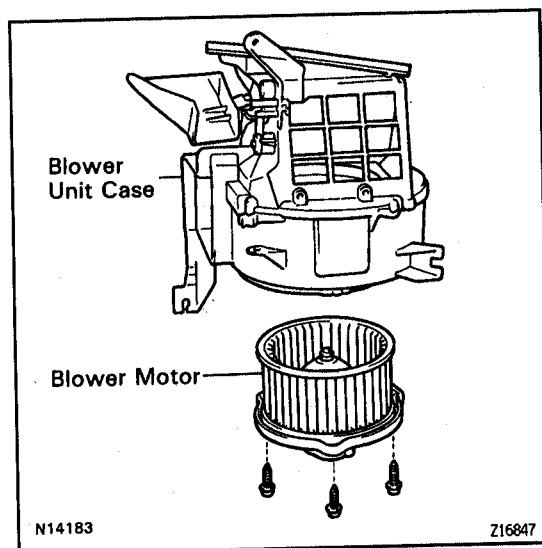
INSTALLATION HINT: For installing the control cable, refer to "HEATER CONTROL CABLES ADJUSTMENT".

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

AC118-06

BLOWER UNIT DISASSEMBLY**REMOVE BLOWER MOTOR**

Remove the 3 screws and blower motor.



AC

BLOWER UNIT ASSEMBLY

AC26U-01

Assembly is in the reverse order of disassembly.

BLOWER UNIT INSTALLATION

AC26V-01

Installation is in the reverse order of removal.

COMPRESSOR ON — VEHICLE INSPECTION

AC1RM-01

Magnetic Clutch:

1. MAKE THESE VISUAL CHECKS:

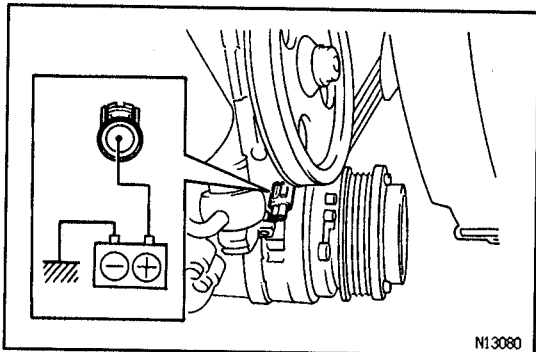
- (a) Leakage of grease from the clutch bearing.
- (b) Signs of oil on the pressure plate or rotor.

Repair or replace, as necessary.

2. INSPECT MAGNETIC CLUTCH BEARING FOR NOISE

- (a) Start 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.



3. INSPECT MAGNETIC CLUTCH

- (a) Disconnect the connector from the magnetic clutch.
 - (b) Connect the positive (+) lead from the battery to the terminal on the magnetic clutch connector and the negative (-) lead to the body ground.
 - (c) Check that the magnetic clutch is energized.
- If operation is not as specified, replace the magnetic clutch.

Compressor:

1. INSTALL MANIFOLD GAUGE SET

(See page AC-8)

2. START ENGINE

3. INSPECT COMPRESSOR FOR METALLIC SOUND

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

If metallic sound is heard, replace the compressor assembly.

4. INSPECT PRESSURE OF REFRIGERATION SYSTEM

See "REFRIGERANT SYSTEM INSPECTION WITH MANIFOLD GAUGE SET" on page AC-14

5. STOP ENGINE

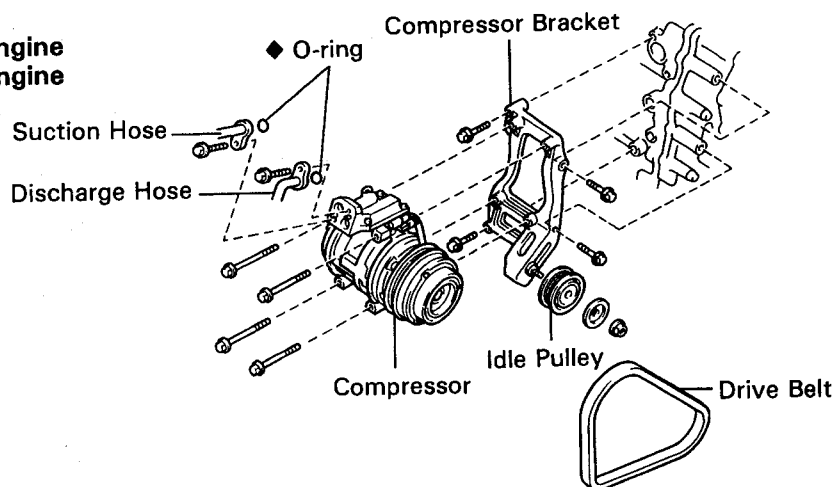
6. INSPECT VISUALLY FOR LEAKAGE OF REFRIGERANT FROM SAFETY SEAL

If there is any leakage, replace the compressor assembly.

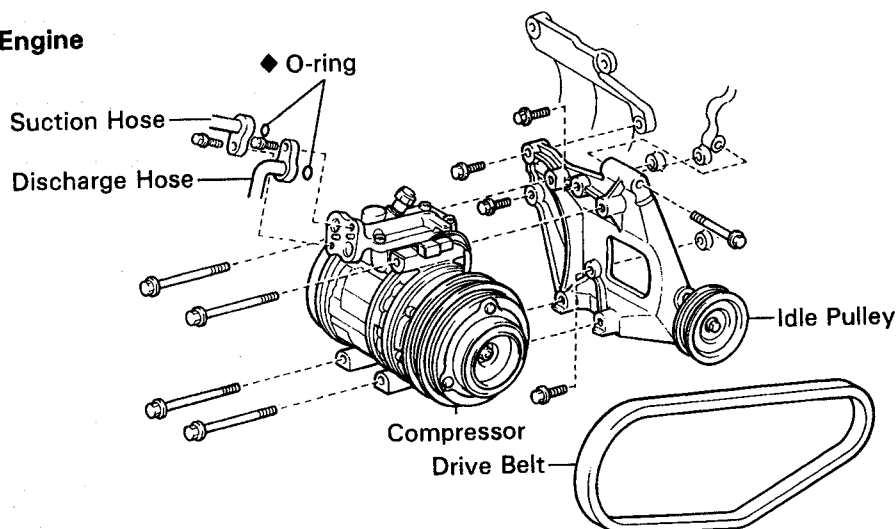
AC

COMPRESSOR REMOVAL

2RZ-FE Engine
3RZ-FE Engine



5VZ-FE Engine



N16460
N16459

◆ Non-reusable part

Z16645

1. RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX. 10 MINUTES WITH A/C ON
2. STOP ENGINE
3. DISCONNECT NEGATIVE (–) TERMINAL CABLE FROM BATTERY
4. DISCONNECT CLUTCH LEAD WIRE FROM WIRING HARNESS
5. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM
6. DISCONNECT 2 HOSES FROM COMPRESSOR SERVICE VALVES
NOTICE: Cap the open fitting immediately to keep moisture or dirt out of the system.
7. REMOVE COMPRESSOR

- (a) Remove the fan shroud.
- (b) Loosen the drive belt.
- (c) Remove the compressor mounting bolts and the compressor.

8. REMOVE COMPRESSOR BRACKET

2RZ—FE, 3RZ—FE Engine:

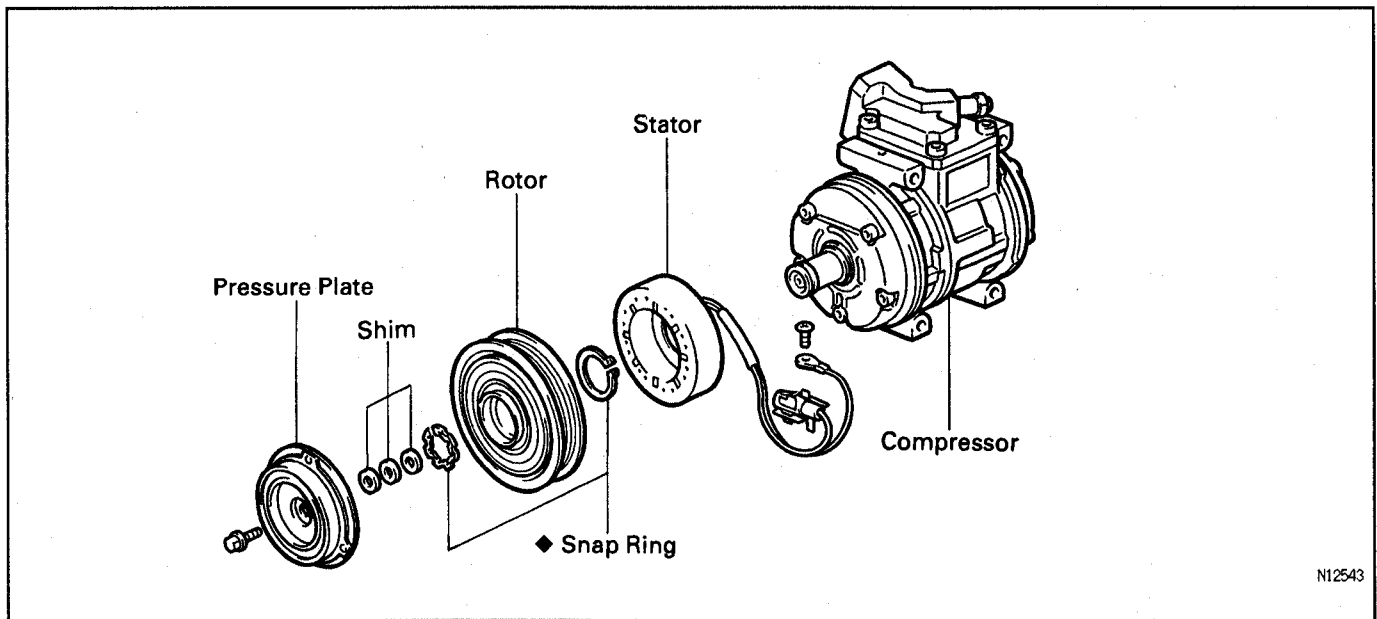
Remove the 4 bolts and compressor bracket.

5VZ—FE Engine:

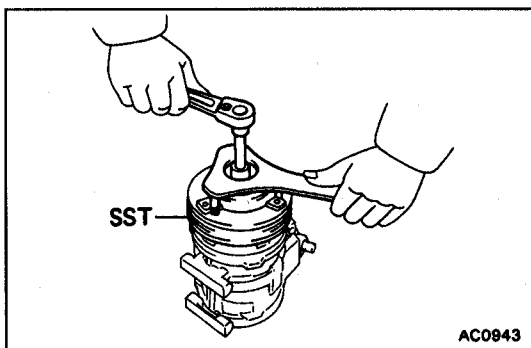
Remove the 5 bolts and compressor bracket.

MAGNETIC CLUTCH DISASSEMBLY

AC1RN-01



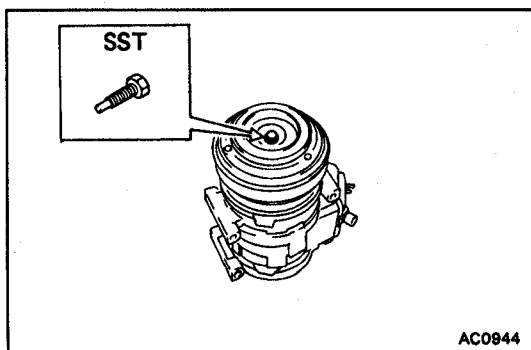
N12543



AC0843

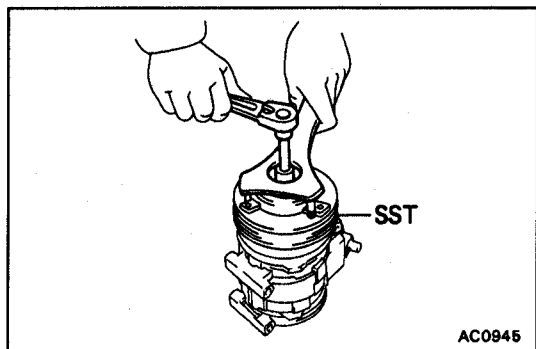
1. REMOVE PRESSURE PLATE

- (a) Using SST and socket wrench, remove the shaft bolt.
Torque: 14 N·m (140 kgf·cm, 10 ft·lbf)
SST 07112-76060



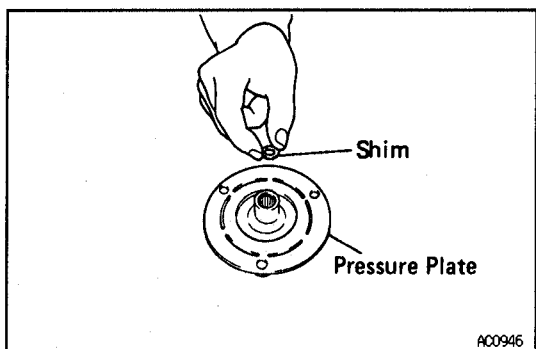
AC0844

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

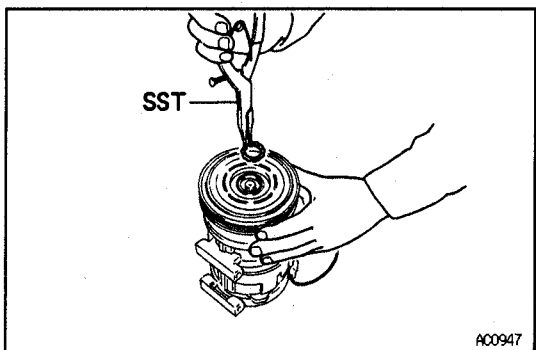


- (c) Using SST and socket wrench, remove the pressure plate.

SST 07112-76060



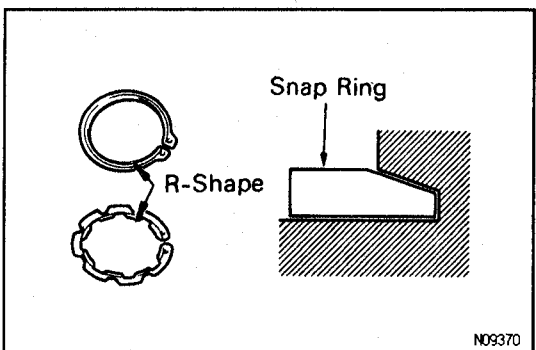
- (d) Remove the shims from the pressure plate.



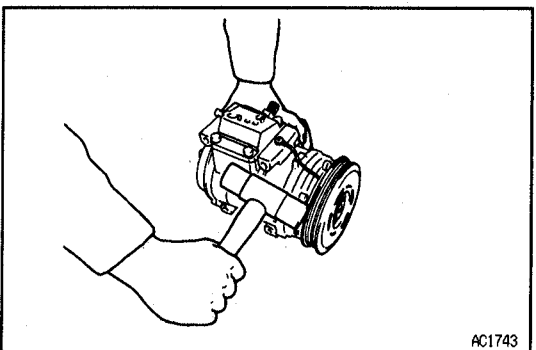
2. REMOVE ROTOR

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

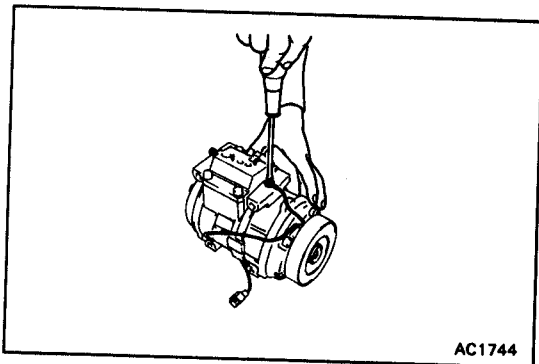
SST 07114-84020



ASSEMBLY NOTICE: The snap ring should be installed so that its beveled side faces up.

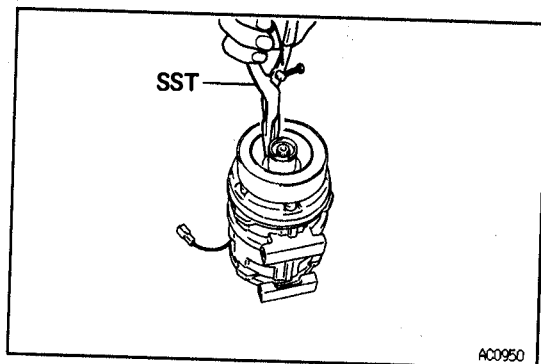


- (b) Using a plastic hammer, tap the rotor off the shaft.
DISASSEMBLY NOTICE: Be careful not to damage the pulley when tapping on the rotor.

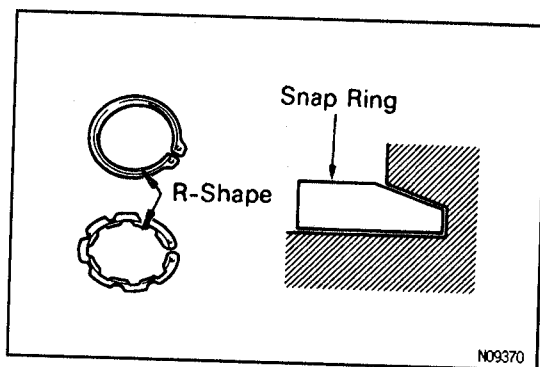


3. REMOVE STATOR

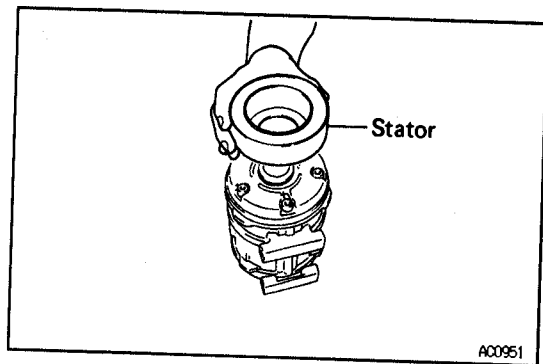
- (a) Disconnect the stator lead wire from the compressor housing.



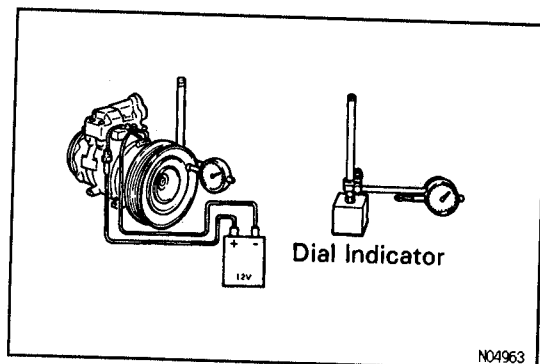
- (b) Using SST, remove the snap ring.
SST 07114-84020



ASSEMBLY NOTICE: The snap ring should be installed so that its beveled side faces up.



- (c) Remove the stator.



MAGNETIC CLUTCH ASSEMBLY

AC1RP-01

Assembly is in the reverse order of disassembly.
CHECK CLEARANCE OF MAGNETIC CLUTCH

- (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.

AC

- (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 standard clearance, adjust the clearance using shims to obtain the standard clearance.

Shim Thickness:

0.1 mm (0.004 in.)

0.3 mm (0.012 in.)

0.5 mm (0.020 in.)

AC10N-06

COMPRESSOR INSTALLATION

1. INSTALL COMPRESSOR BRACKET

Install the compressor bracket with the mounting bolts and nut.

Torque:

2RZ—FE, 3RZ—FE:

Bolt: 48 N·m (489 kgf·cm, 35 ft·lbf)

Pulley nut: 40 N·m (408 kgf·cm, 30 ft·lbf)

5VZ—FE: 47 N·m (479 kgf·cm, 35 ft·lbf)

2. INSTALL COMPRESSOR

Install the compressor with the 4 bolts.

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

3. INSTALL AND INSPECT COMPRESSOR DRIVE BELT (See page AC—20)

4. CONNECT DISCHARGE HOSE AND SUCTION HOSE TO COMPRESSOR

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

HINT: Lubricate 2 new O—rings with compressor oil and install the hoses.

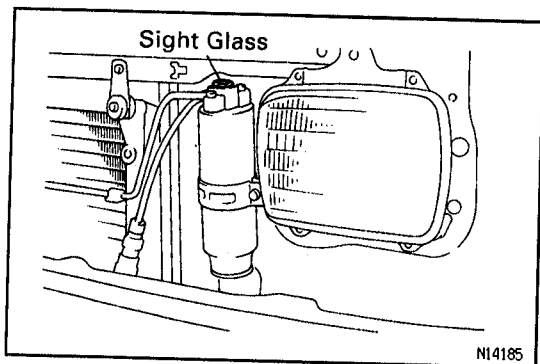
5. CONNECT MAGNETIC CLUTCH CONNECTOR

6. CONNECT NEGATIVE (—) TERMINAL CABLE TO BATTERY

7. CHARGE SYSTEM WITH REFRIGERANT AND IN- SPECT FOR LEAKAGE OF REFRIGERANT

Specified amount:

600 ± 50 g (21.16 ± 1.76 oz.)



RECEIVER

AC1RQ-02

ON — VEHICLE INSPECTION

INSPECT FITTING FOR LEAKAGE

Using a gas leak detector, check for leakage.

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

RECEIVER REMOVAL

AC1RR-02

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

INSTALLATION HINT: Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount:

$600 \pm 50 \text{ g}$ ($21.16 \pm 1.76 \text{ oz.}$)

2. DISCONNECT 2 LIQUID TUBES FROM RECEIVER

(a) Remove the union nut from the condenser.

Torque: $14 \text{ N}\cdot\text{m}$ ($140 \text{ kgf}\cdot\text{cm}$, $10 \text{ ft}\cdot\text{lbf}$)

(b) Remove the 2 bolts from receiver.

Torque: $6.0 \text{ N}\cdot\text{m}$ ($60 \text{ kgf}\cdot\text{cm}$, $52 \text{ in}\cdot\text{lbf}$)

INSTALLATION HINT: Lubricate 3 new O-rings with compressor oil to the compressor.

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

3. REMOVE RECEIVER FROM RECEIVER HOLDER

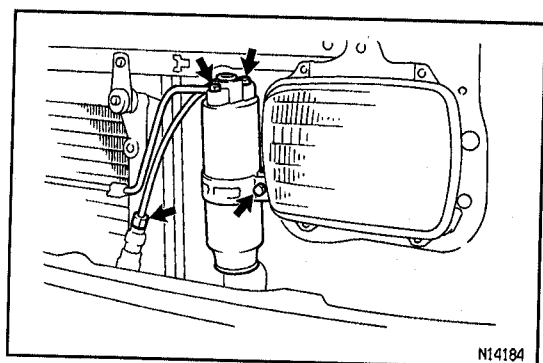
Remove the holder bolt and pull the receiver upward from the holder.

INSTALLATION HINT: If receiver was replaced, add compressor oil to compressor.

Add 20 cc (0.71 fl.oz.)

Compressor oil:

ND-OIL 8 or equivalent



RECEIVER INSTALLATION

AC20W-01

Installation is in the reverse order of removal.

AC

CONDENSER ON — VEHICLE INSPECTION

AC1RS-02

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.

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

AC2BX-01

CONDENSER REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

INSTALLATION HINT: Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount:

$600 \pm 50 \text{ g}$ ($21.16 \pm 1.76 \text{ oz.}$)

2. REMOVE THESE PARTS:

- Radiator Grille
- Hood Lock
- Front Bumper Filler

3. DISCONNECT LIQUID TUBE AND DISCHARGE HOSE FROM CONDENSER FITTING

Torque:

Discharge hose: $10 \text{ N}\cdot\text{m}$ ($100 \text{ kgf}\cdot\text{cm}$, $7 \text{ ft}\cdot\text{lbf}$)

Liquid tube: $14 \text{ N}\cdot\text{m}$ ($140 \text{ kgf}\cdot\text{cm}$, $10 \text{ ft}\cdot\text{lbf}$)

REMOVAL NOTICE: Cap open the fittings immediately to keep moisture out of the system.

INSTALLATION HINT: Lubricate 2 new O-rings with compressor oil and install the tubes.

4. REMOVE CONDENSER

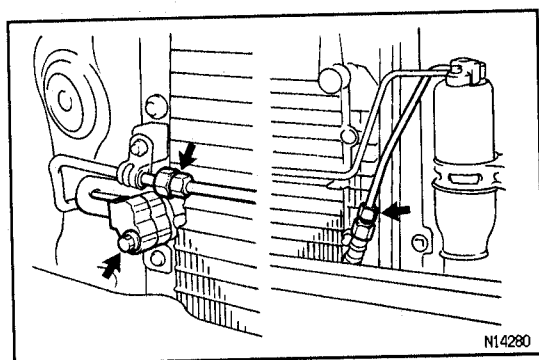
Remove the 2 condenser mounting bolts and pull out the condenser.

INSTALLATION HINT: If condenser was replaced, add compressor oil to the compressor.

Add $40 - 50 \text{ cc}$ ($1.4 - 1.7 \text{ fl.oz.}$)

Compressor oil:

ND-OIL 8 or equivalent



N14280

CONDENSER INSTALLATION

Installation is in the reverse order of removal.

EVAPORATOR EVAPORATOR INSPECTION

AC013-00

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.

EVAPORATOR REMOVAL AND INSTALLATION

AC1KR-02

(See page AC-23)

HEATER RADIATOR HEATER RADIATOR REMOVAL AND INSTALLATION

AC1RT-01

(See page AC-25)

HEATER RADIATOR INSPECTION

AC1L8-02

INSPECT FINS FOR BLOCKAGE

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

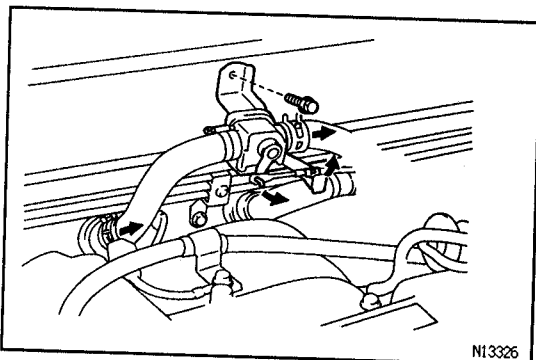
WATER VALVE WATER VALVE REMOVAL

AC1L8-04

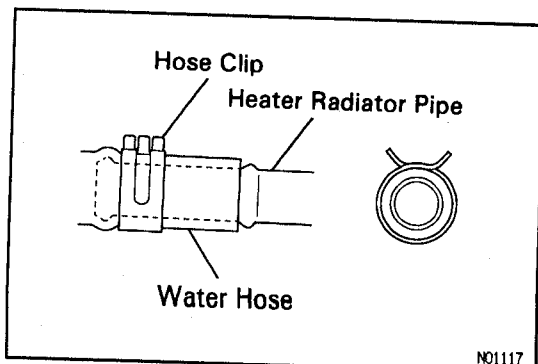
1. **DRAIN ENGINE COOLANT FROM RADIATOR**
REMOVAL HINT: It is not necessary to drain out all the coolant.
2. **DISCONNECT WATER VALVE CONTROL CABLE**
INSTALLATION HINT: For installing the control cable, refer to "HEATER CONTROL CABLES ADJUSTMENT"
3. **DISCONNECT WATER HOSE**
4. **REMOVE WATER VALVE**
 - (a) Disconnect the water hose from the heater radiator pipe.
 - (b) Remove the bolt and the water valve.

INSTALLATION HINT:

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



N13326



N01117

WATER VALVE INSTALLATION

Installation is in the reverse order of removal.

EXPANSION VALVE ON-VEHICLE INSPECTION

AC0JA-07

1. CHECK QUANTITY OF GAS DURING REFRIGERATION CYCLE
2. INSTALL MANIFOLD GAUGE SET
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/cm², 199 — 228 psi).

4. CHECK EXPANSION VALVE

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

HINT: When the low pressure drops to 0 kPa (0 kgf/cm², 0 psi), feel the receiver's IN and OUT sides for zero temperature difference.

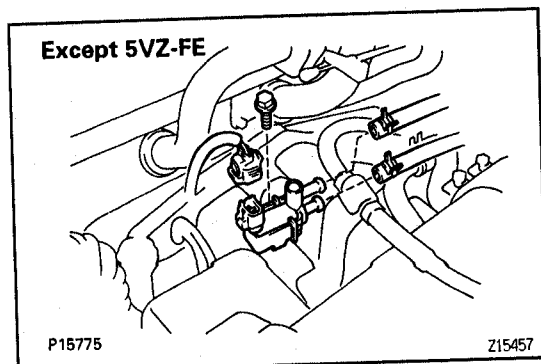
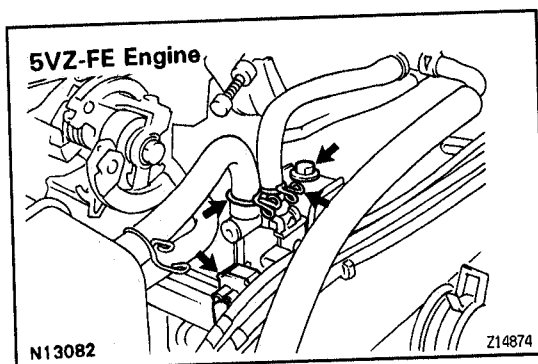
EXPANSION VALVE REMOVAL AND INSTALLATION

AC370-01

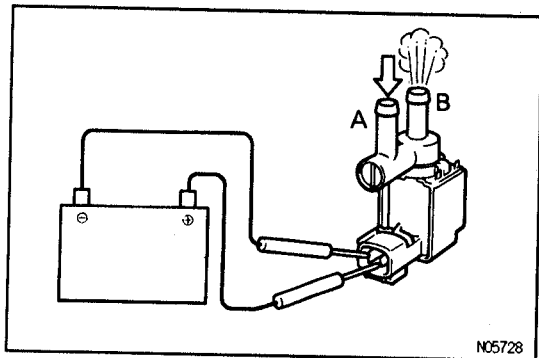
(See page AC-23)

VACUUM SWITCHING VALVE (VSV) VSV INSPECTION

AC271-01

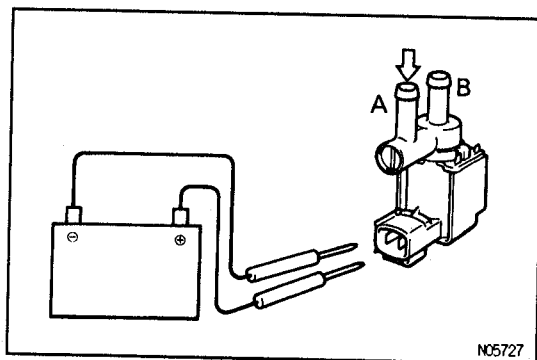


1. REMOVE VSV
 - (a) Disconnect the vacuum hoses and the connector from the VSV.
 - (b) Remove the bolt and the VSV.

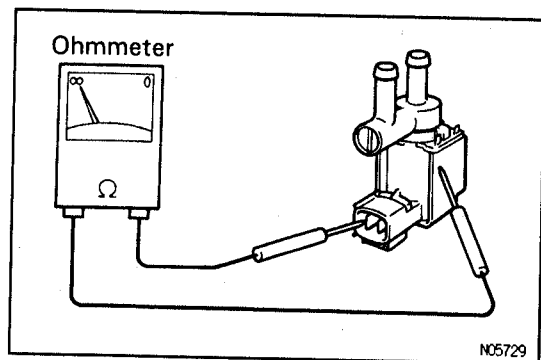


2. CHECK VACUUM CIRCUIT CONTINUITY IN VSV BY BLOWING AIR INTO PIPES

- (a) Connect the VSV terminals to the battery terminals, as shown in the illustration.
- (b) Blow into pipe "A" and check that air comes out of pipe "B".

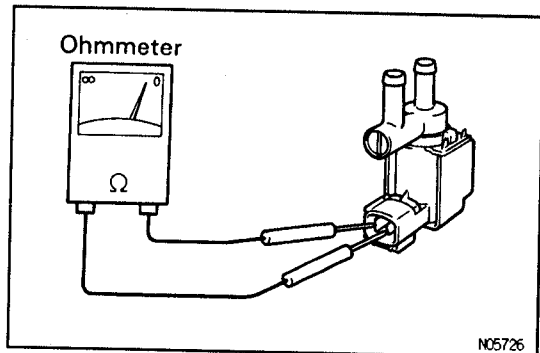


- (c) Disconnect the battery.
 - (d) Blow into pipe "A" and check that air does not come out of pipe "B".
- If a problem is found, replace the VSV.



3. CHECK FOR SHORT CIRCUIT

Using an ohmmeter, check that there is no continuity between either terminals and the VSV body. If there is continuity, replace the VSV.



4. CHECK FOR OPEN CIRCUIT

Using an ohmmeter, measure resistance between the 2 terminals.

Standard resistance:

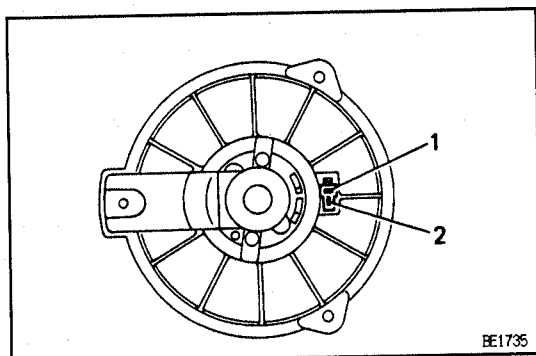
30 – 34 Ω at 20°C (68°F)

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

BLOWER MOTOR BLOWER MOTOR REMOVAL AND INSTALLATION

AC0WQ-04

(See page "BLOWER UNIT" AC-26)



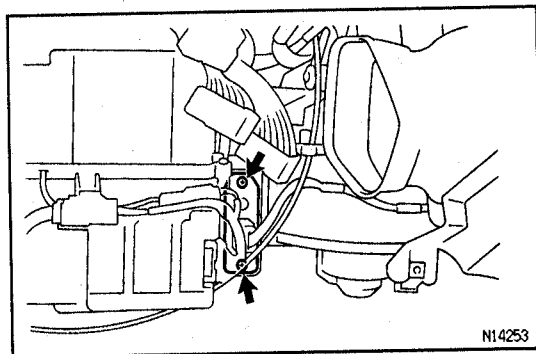
EE1735

MOTOR INSPECTION

AC03N-08

INSPECT BLOWER MOTOR OPERATION

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



NI4253

BLOWER RESISTOR BLOWER RESISTOR REMOVAL

AC0FX-08

1. REMOVE GROVE COMPARTMENT PARTS
(See page BO-27)
2. REMOVE BLOWER RESISTOR
 - (a) Disconnect the connector.
 - (b) Remove the 2 screws and the blower resistor.

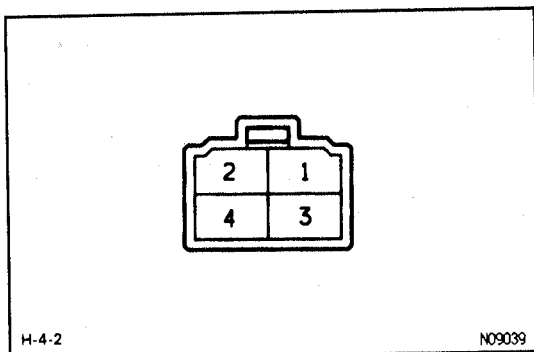
BLOWER RESISTOR INSPECTION

AC0FY-08

INSPECT BLOWER RESISTOR CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2 - 3 - 4	Continuity

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



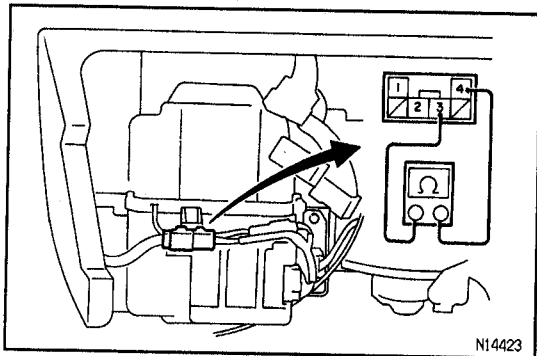
H-4-2

NO9039

BLOWER RESISTOR INSTALLATION

AC372-01

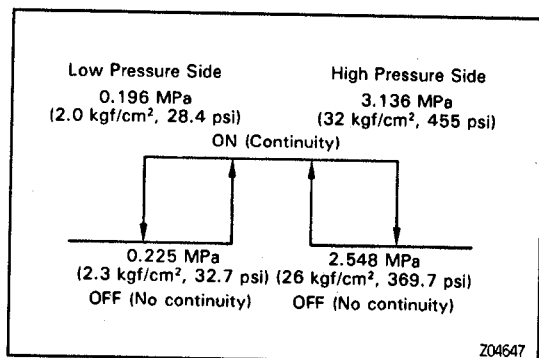
Installation is in the reverse order of removal.



ACOL1-0C

PRESSURE SWITCH ON — VEHICLE INSPECTION

1. **INSTALL MANIFOLD GAUGE SET**
(See page AC-8)
2. **REMOVE GLOVE COMPARTMENT DOOR**
Remove the 2 screws and the glove compartment door.
3. **DISCONNECT CONNECTOR FROM PRESSURE SWITCH**
4. **RUN ENGINE AT APPROX. 1,500 RPM**
5. **INSPECT PRESSURE SWITCH OPERATION**
Check continuity between 3 and 4 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 REMOVE MANIFOLD GAUGE SET**
7. **CONNECT CONNECTOR TO PRESSURE SWITCH**
8. **INSTALL GLOVE COMPARTMENT DOOR**
Install the glove compartment door with the 2 screws.



PRESSURE SWITCH REMOVAL AND INSTALLATION

ACOL2-0B

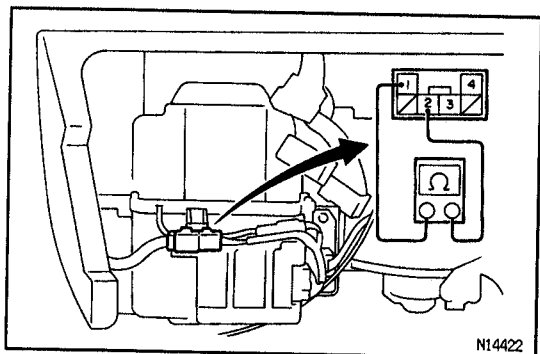
(See "COOLING UNIT" on page AC-23)

THERMISTOR ON — VEHICLE INSPECTION

AC1KU-04

1. **REMOVE GLOVE COMPARTMENT DOOR**
Remove the 2 bolts and the glove compartment door.
2. **DISCONNECT CONNECTOR OF THERMISTOR**
3. **CHECK RESISTANCE OF THERMISTOR**
Measure resistance between 1 and 2 terminals.
Standard resistance:
1,500 Ω at 25 °C (77°F)
If resistance is not as specified, replace the thermistor.

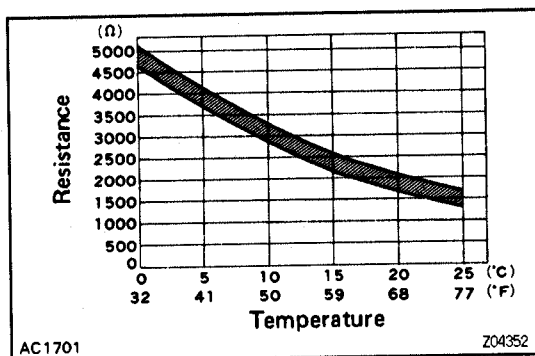
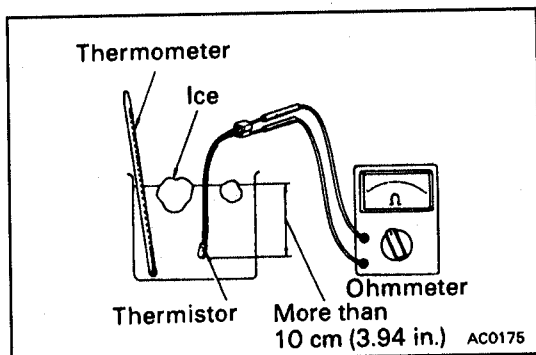
AC



THERMISTOR REMOVAL AND INSTALLATION

AC1KV-02

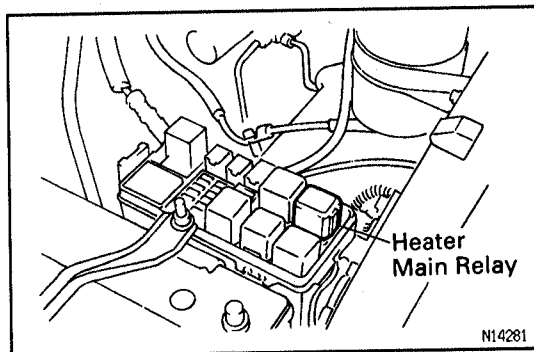
(See page AC-23)



THERMISTOR INSPECTION

INSPECT THERMISTOR RESISTANCE

- Place the thermistor 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.
- Compare the 2 readings on the chart. If resistance value is not as specified, replace the thermistor.



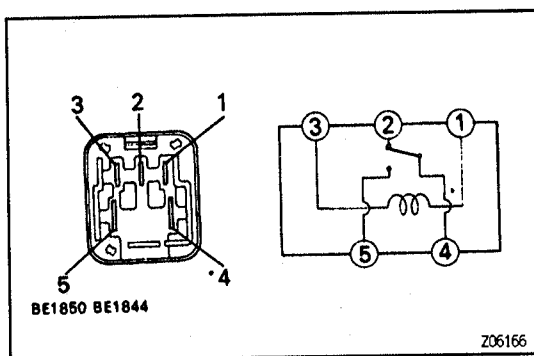
RELAY RELAY INSPECTION

1. REMOVE RELAY

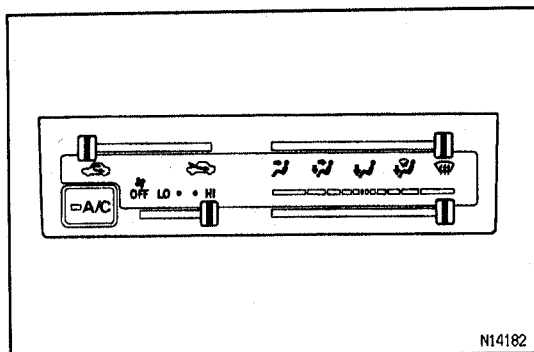
2. INSPECT HEATER MAIN RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.



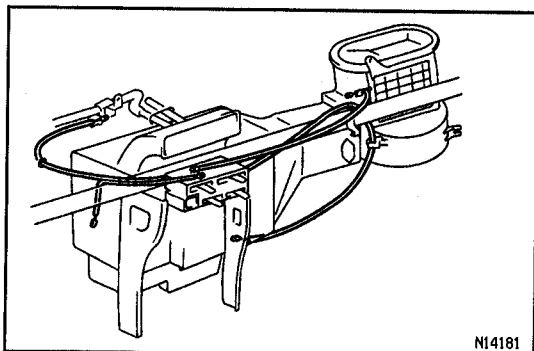
AC



AIR CONDITIONING CONTROL ASSEMBLY ON-VEHICLE INSPECTION

INSPECT A/C CONTROL LEVERS OPERATION

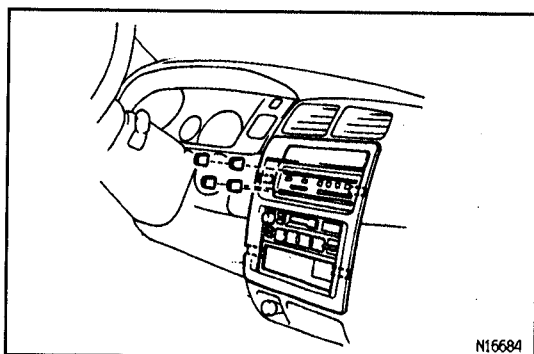
Move the control levers to left and right, and check for stiffness and binding through the full range of the levers.



A/C CONTROL ASSEMBLY REMOVAL

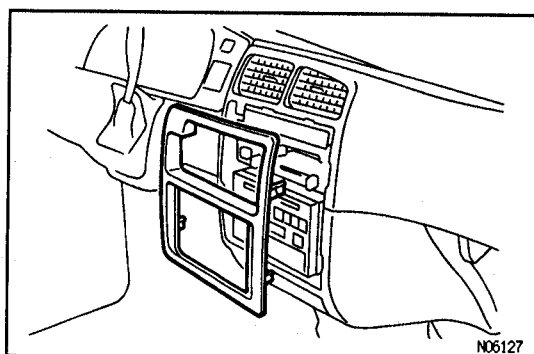
AC1L8-03

1. DISCONNECT HEATER CONTROL CABLES



2. REMOVE THESE PARTS:

- (a) Heater control knobs
- (b) A/C switch
- (c) A/C control panel



3. REMOVE INSTRUMENT PANEL CENTER LOWER FINISH PANEL

4. REMOVE A/C CONTROL ASSEMBLY

Remove the 3 screws and A/C control assembly then disconnect the the connector.

A/C CONTROL ASSEMBLY INSPECTION

AC274-01

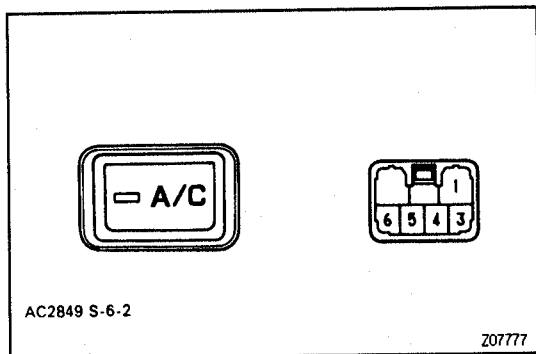
1. INSPECT BLOWER SPEED CONTROL SWITCH CONTINUITY

Terminal Switch position	1	2	5	6	8	Illumination	
						3	4
OFF							
LO							
○ (M1)	○		○	○			
○ (M2)		○	○	○			
H1			○	○	○		

SH-8-2

V01960

If continuity is not as specified, replace the blower speed control switch.



2. INSPECT A/C SWITCH CONTINUITY

Condition/ Circuit	Tester connection	Specified condition
A/C switch OFF	—	No continuity
A/C switch ON	4 — 5 4 — 6	Continuity
Illumination	1 — 3	Continuity

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

AC278-01

SWITCHES REMOVAL

1. REMOVE BLOWER SPEED CONTROL SWITCH

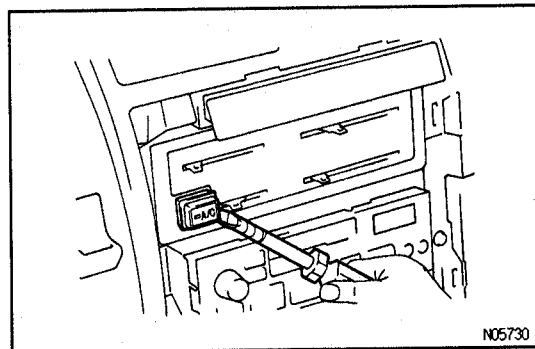
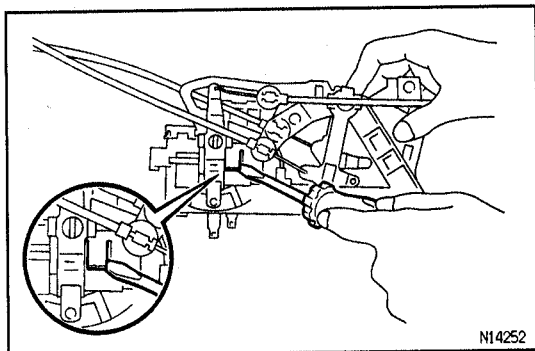
- Remove the illumination light from the heater control assembly.
- Using a screwdriver, pry loose the clip and push out the blower speed control switch to rear of the heater control assembly.

REMOVAL HINT: Tape the screwdriver tip before use.

2. REMOVE A/C SWITCH

Using a screw driver, pry loose the clip and remove the A/C switch.

REMOVAL HINT: Tape the screwdriver tip before use.



AC276-01

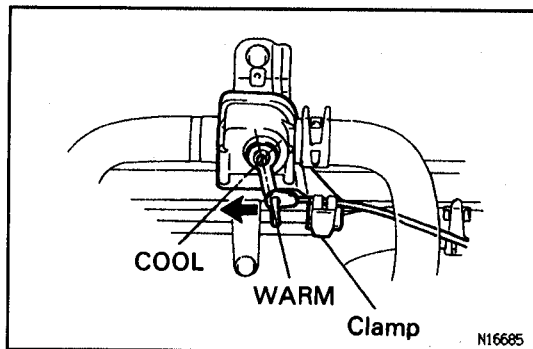
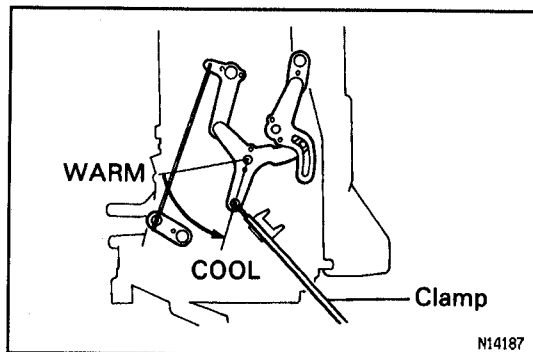
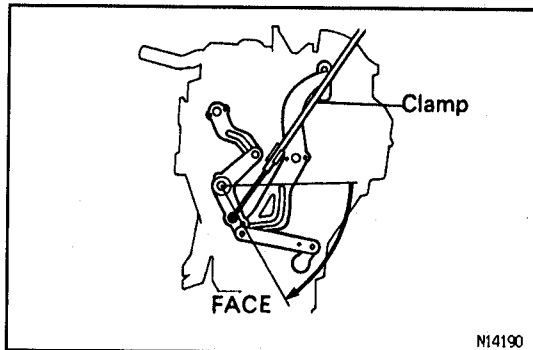
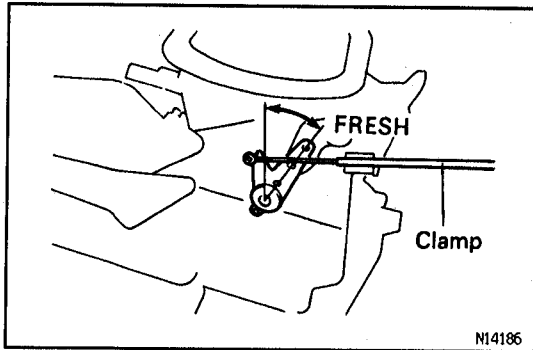
SWITCHES INSTALLATION

Installation is in the reverse order of removal.

AC277-01

A/C CONTROL ASSEMBLY INSTALLATION

Installation is in the reverse order of removal.



HEATER CONTROL CABLES ADJUSTMENT

1. SET A/C CONTROL LEVERS IN THESE CONDITIONS:

- (a) Air inlet control lever "FRESH" position.
- (b) Mode control lever "FACE" position
- (c) Temperature control lever "COOL" position.

2. ADJUST AIR INLET DAMPER CONTROL CABLE

Set the air inlet damper on "FRESH" position, install the control cable and lock the clamp.

3. ADJUST MODE DAMPER CONTROL CABLE

Set the mode damper on "FACE" position, install the control cable and lock the clamp.

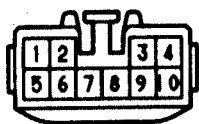
4. ADJUST AIR MIX DAMPER CONTROL CABLE

Set the air mix damper on "WARM" position, install the control cable and lock the clamp.

5. ADJUST WATER VALVE CONTROL CABLE

Set the water valve on "WARM" position, install the control cable and lock the clamp.

Wire harness side



e-10-1

Z15513

AIR CONDITIONING AMPLIFIER ON – VEHICLE INSPECTION

ACOLD-07

INSPECT AMPLIFIER CIRCUIT

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

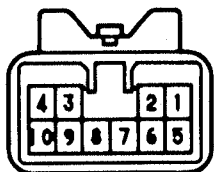
Test conditions:

- Ignition switch ON
- Temperature control lever MAX COOL
- Blower control lever HI
- A/C switch ON

Tester connection	Condition	Specified condition
4 – Ground	Constant	Continuity
3 – ECM terminal ACT	Constant	Continuity
8 – ECM terminal AC1	Constant	Continuity
9 – Ground	Constant	40 Ω at 25 °C (77 °F)
2 – 10	Constant	1.5 k Ω at 25 °C (77 °F)
5 – Ground	A/C switch ON	Battery positive voltage
5 – Ground	A/C switch OFF	No voltage

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

From back side



e-10-2

Z15514

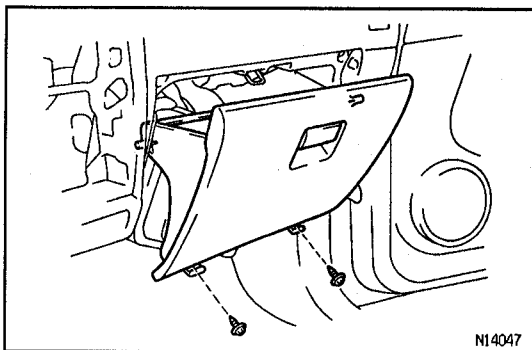
- (b) Connect the connector to A/C amplifier and inspect wire harness side connector from the back side, as shown.

Test conditions:

- Ignition switch ON
- A/C switch ON
- Temperature control dial MAX COOL
- Blower control lever HI
- Install manifold gauge set

Tester connection	Condition	Specified condition
1 – Ground	Refrigerant pressure 196 – 3,410 kPa	Battery positive voltage
1 – Ground	Refrigerant pressure less than 196 kPa or more than 3,140 kPa	No voltage

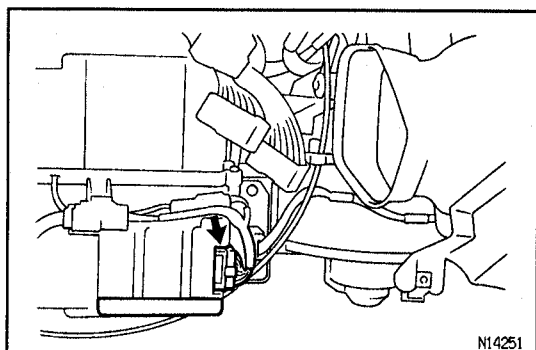
If circuit is not as specified, replace the A/C amplifier.



AMPLIFIER REMOVAL

1. REMOVE GLOVE COMPARTMENT DOOR

Remove the 2 screws and the glove compartment door.



2. REMOVE A/C AMPLIFIER

- (a) Disconnect the connector from the amplifier.
- (b) Remove amplifier cover.
- (c) Remove the amplifier from the cooling unit.

AMPLIFIER INSTALLATION

Installation is in the reverse order of removal.

SERVICE SPECIFICATIONS

SERVICE DATA

AC05J-09

Refrigerant charge volume		600 ± 50 g (21.16 ± 1.76 oz.)
Drive belt tension		
	New belt	160 ± 25 lbf
	Used belt	100 ± 20 lbf
Idle up speed		—
	2RZ—FE, 3RZ—FE	900 ± 50 rpm
	5VZ—FE	850 ± 50 rpm
Magnetic clutch clearance		0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

TORQUE SPECIFICATIONS

AC02A-0T

Part tightened	N·m	kgf·cm	ft·lbf
Compressor and Compressor Bracket x Engine	37	375	27
Compressor x Compressor bracket	25	250	18
Compressor bracket x Engine (2RZ—FE, 3RZ—FE)	48	489	35
Compressor bracket x Engine (5VZ—FE)	47	479	35
Idle pulley lock nut (2RZ—FE, 3RZ—FE)	40	408	30
Suction and Discharge hose x Compressor	10	100	7
Suction hose x A/C unit	32	330	24
Discharge tube x Condenser	10	100	7
Liquid tube x Receiver	6.0	60	52 in.·lbf
Liquid tube x Condenser	10	100	7
Liquid tube x A/C unit	14	140	10
Expansion valve x Evaporator	5.4	55	48 in.·lbf
Expansion valve x Liquid tube	14	140	10