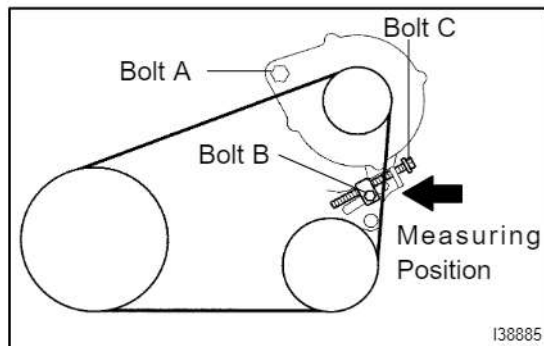


ADJUSTMENT



1. ADJUST V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

- Loosen bolt A.
- Loosen bolt B.
- Apply drive belt tension by turning bolt C.

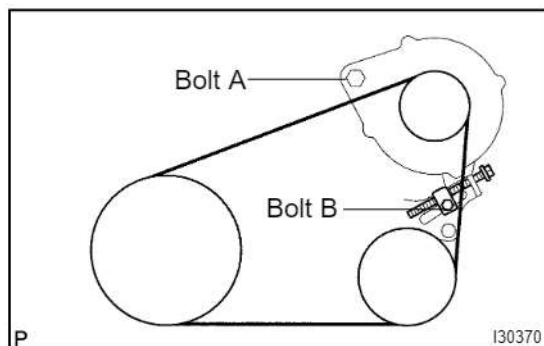
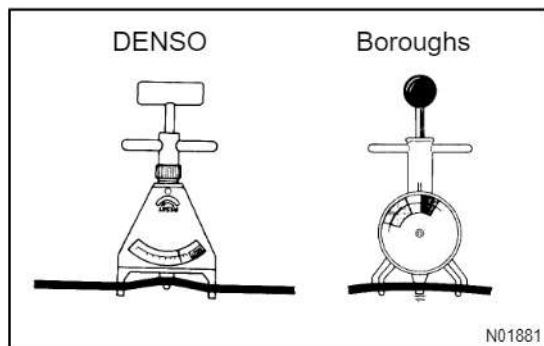
Drive belt tension:

New belt: 160 to 180 lbf

Used belt: 115 to 135 lbf

HINT:

- "New V belt" refers to a belt which has been used for less than 5 minutes on a running engine.
- "Used V belt" refers to a belt which has been used for 5 minutes or more on a running engine.



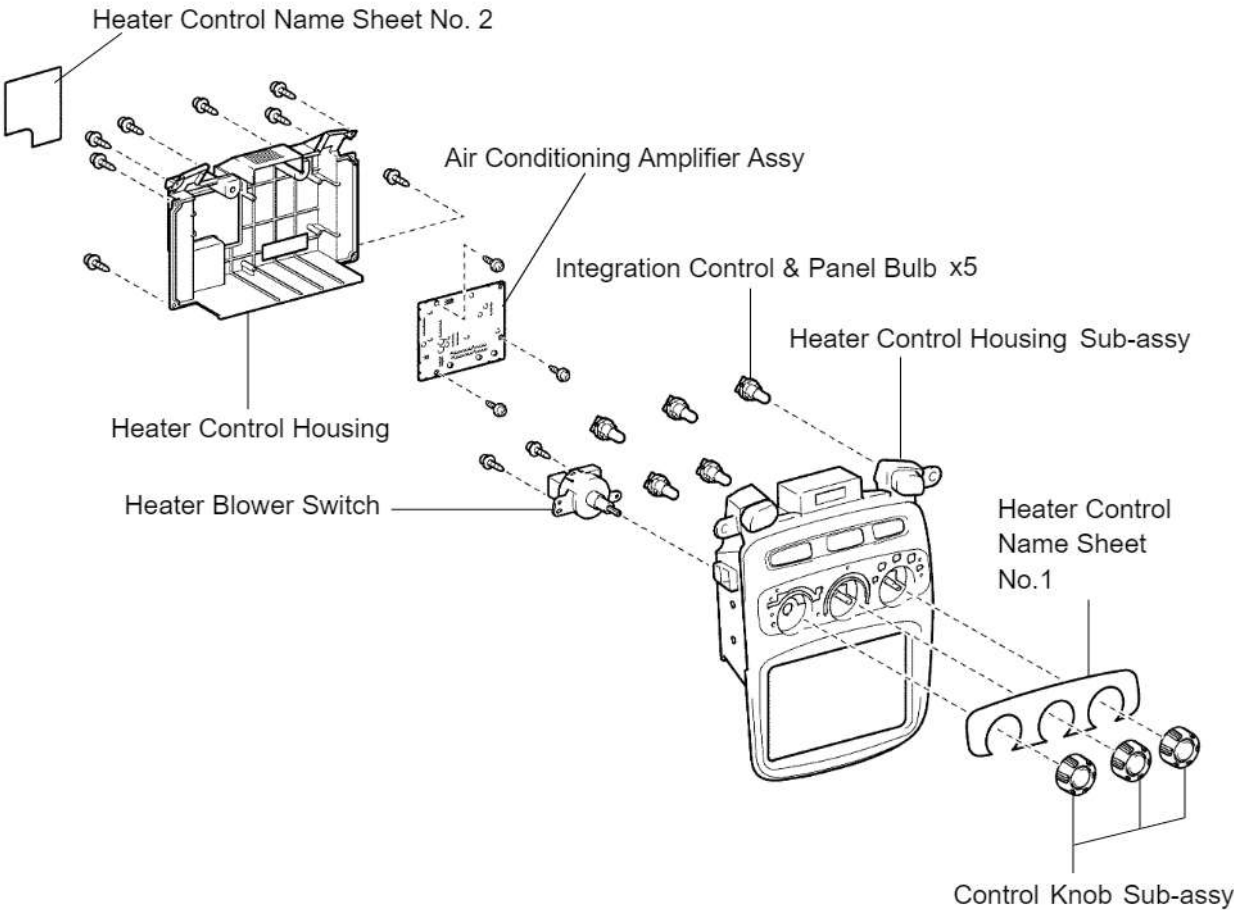
- Tighten bolt A.
Torque: 58 N·m (591 kgf·cm, 43 ft·lbf)
- Tighten bolt B.
Torque: 18 N·m (183 kgf·cm, 13 ft·lbf)

INTEGRATION CONTROL & PANEL ASSY

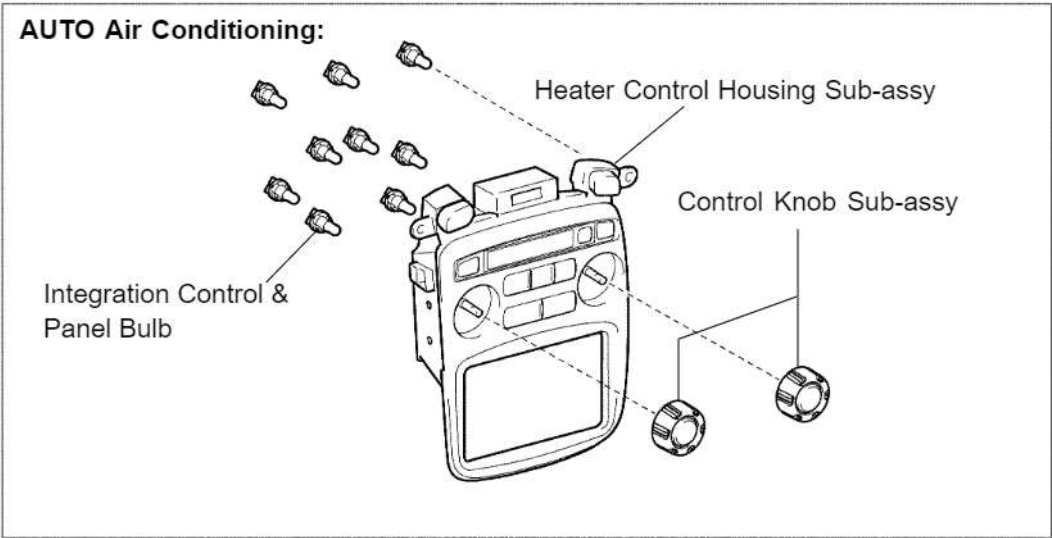
COMPONENTS

5519T-01

Manual Air Conditioning:



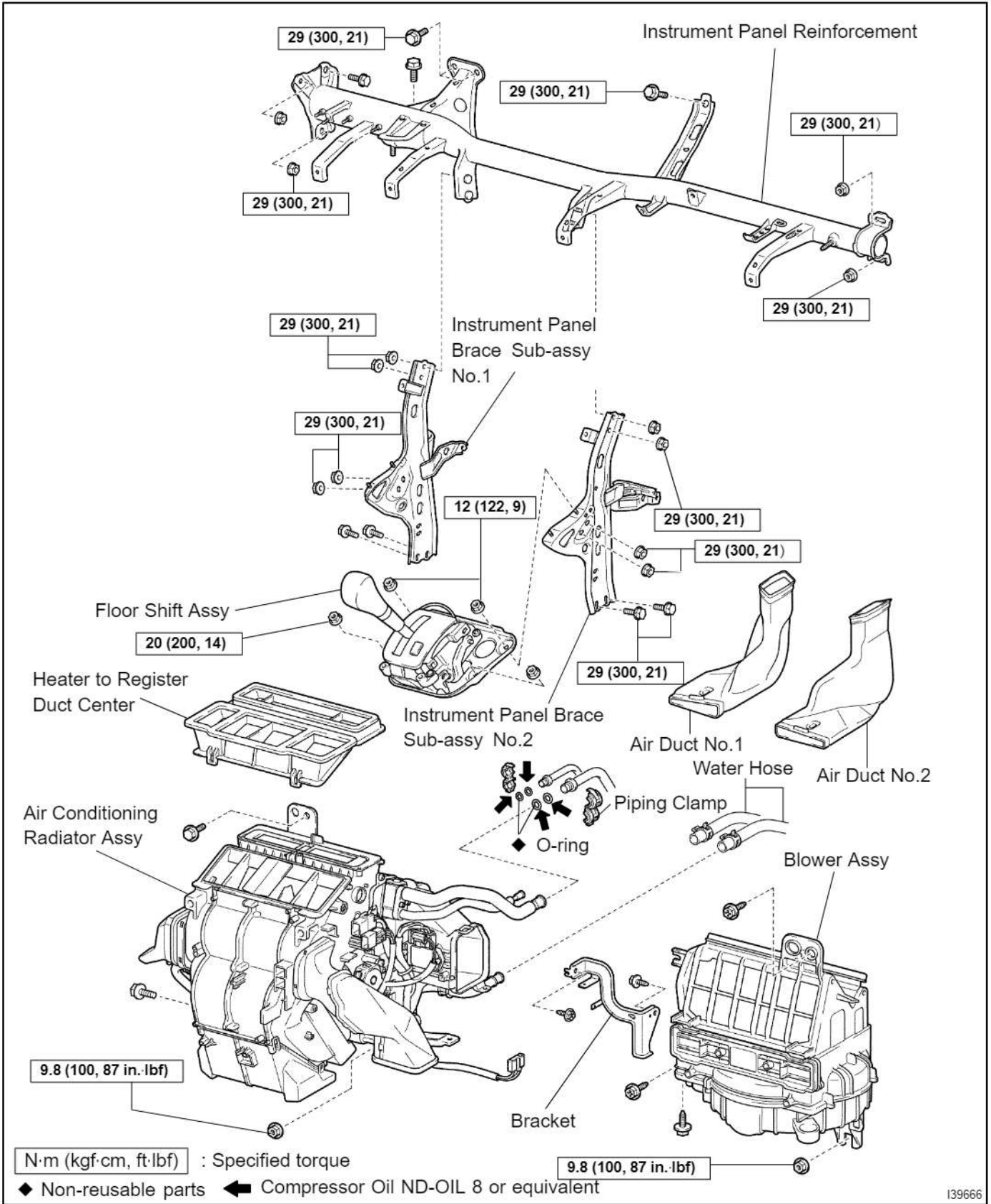
AUTO Air Conditioning:



140413

AIR CONDITIONING RADIATOR ASSY COMPONENTS

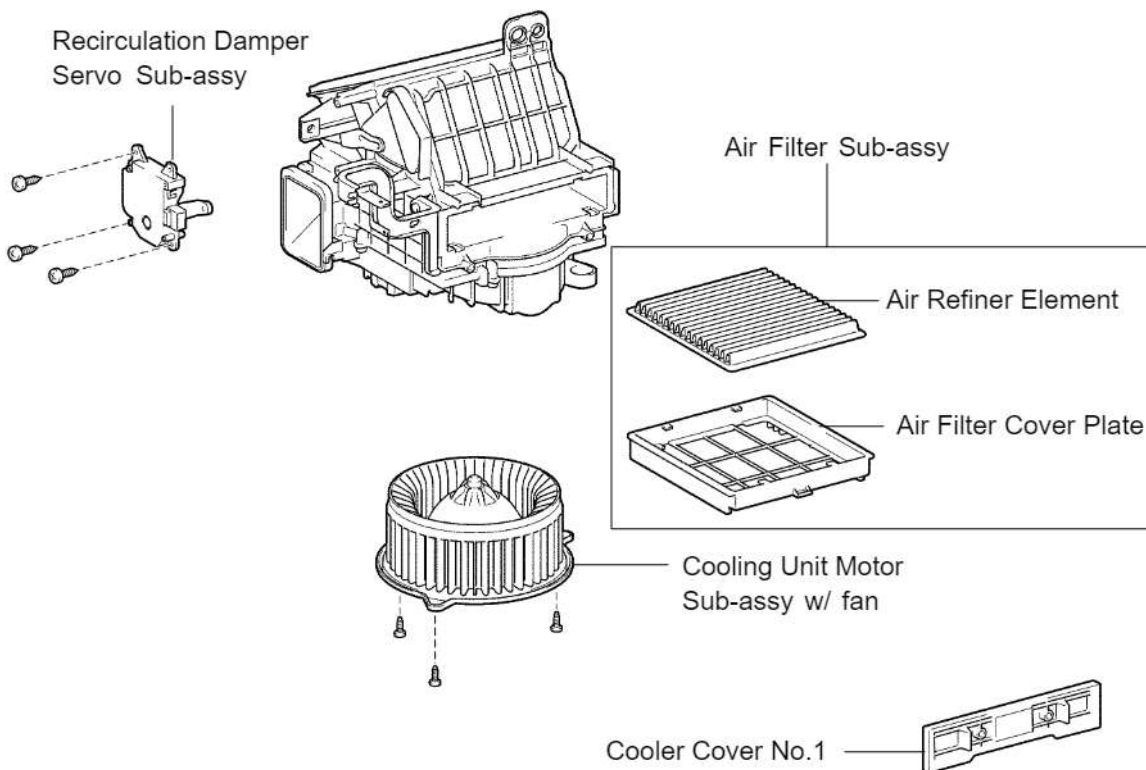
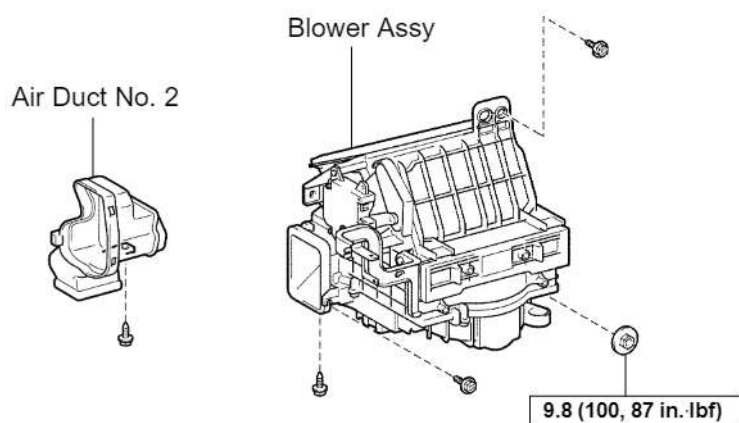
5519V/01



139666

BLOWER ASSY COMPONENTS

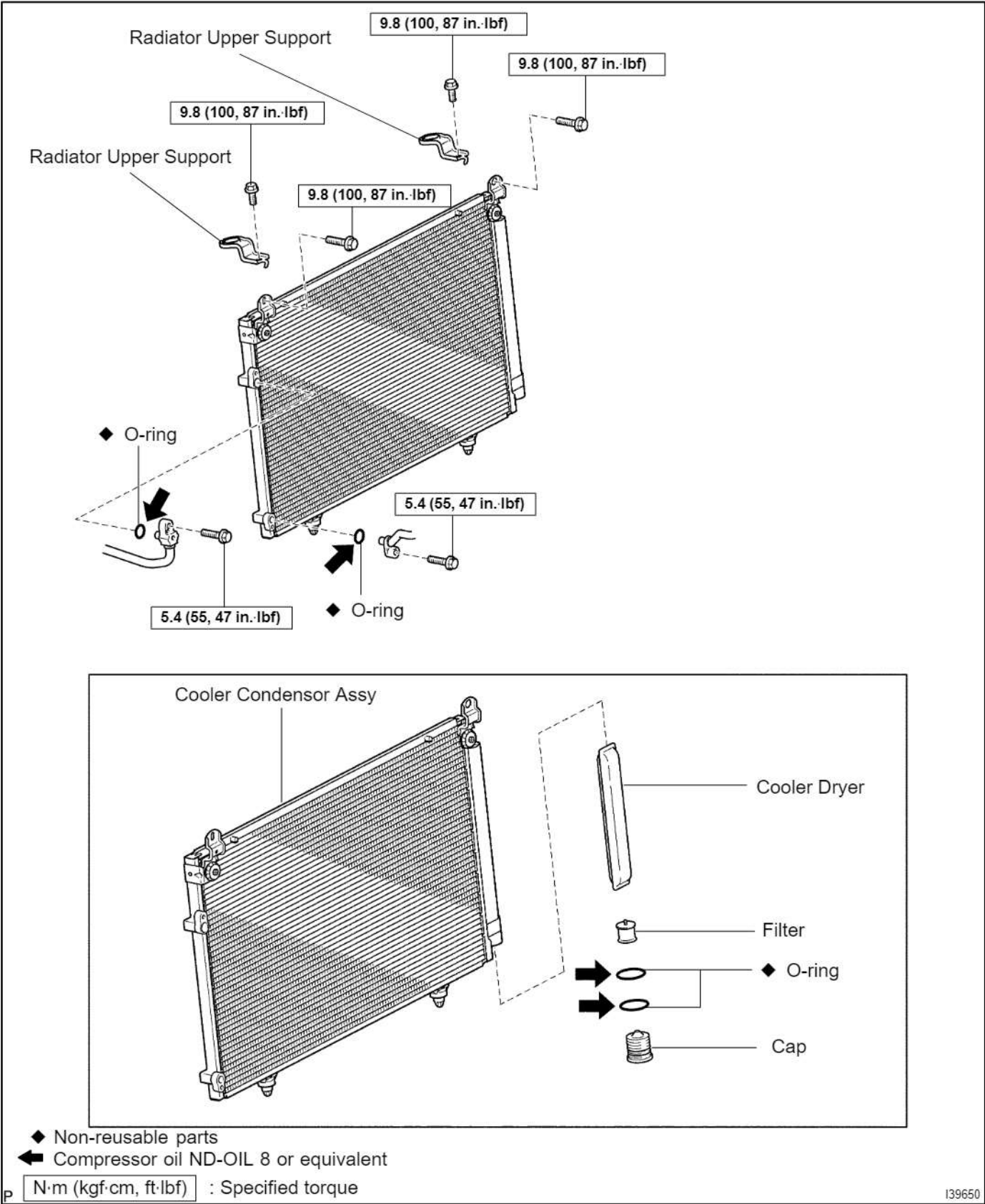
5519X-01



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

I39665

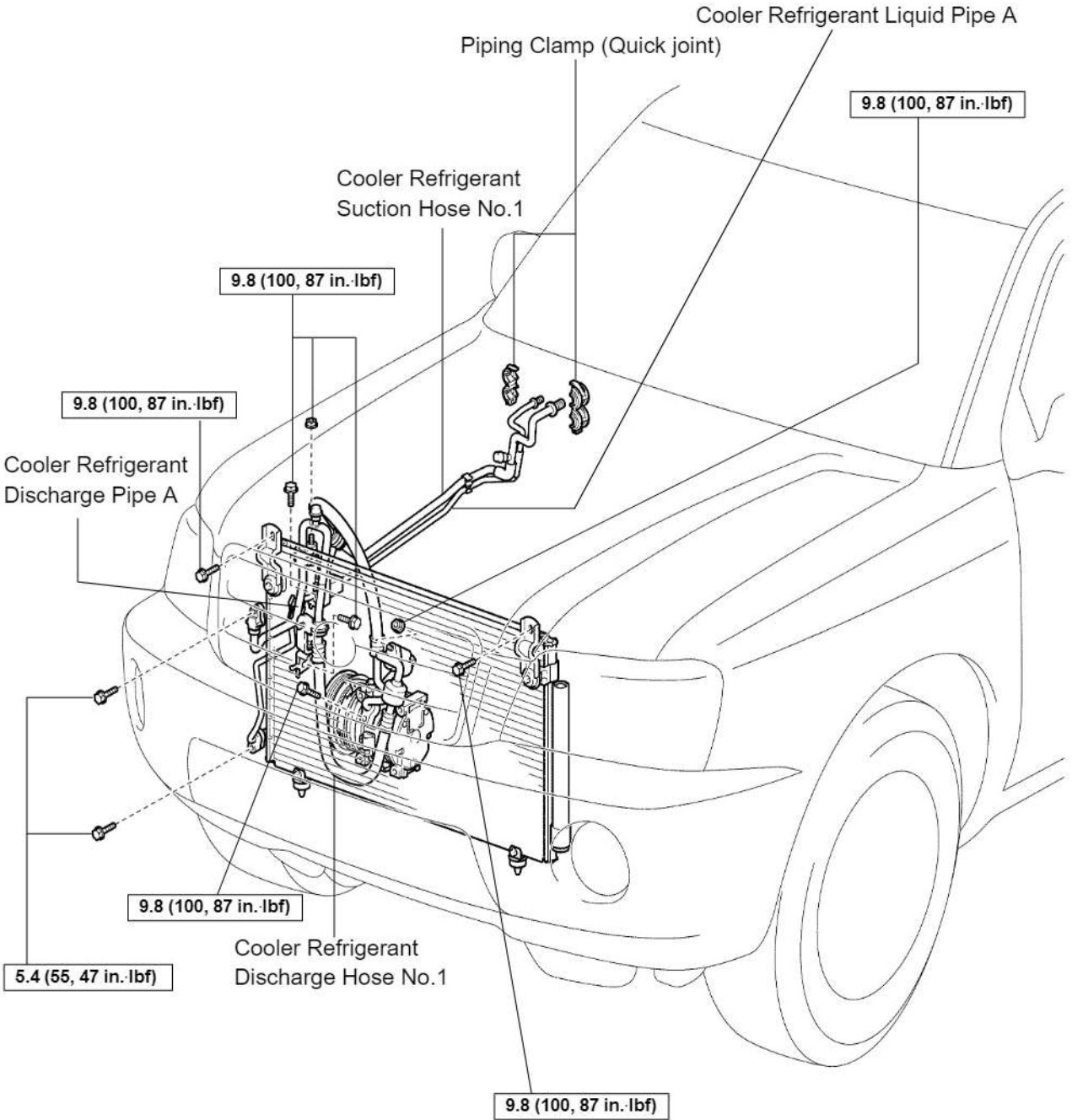
COMPONENTS



REFRIGERANT LINE COMPONENTS

5502H-03

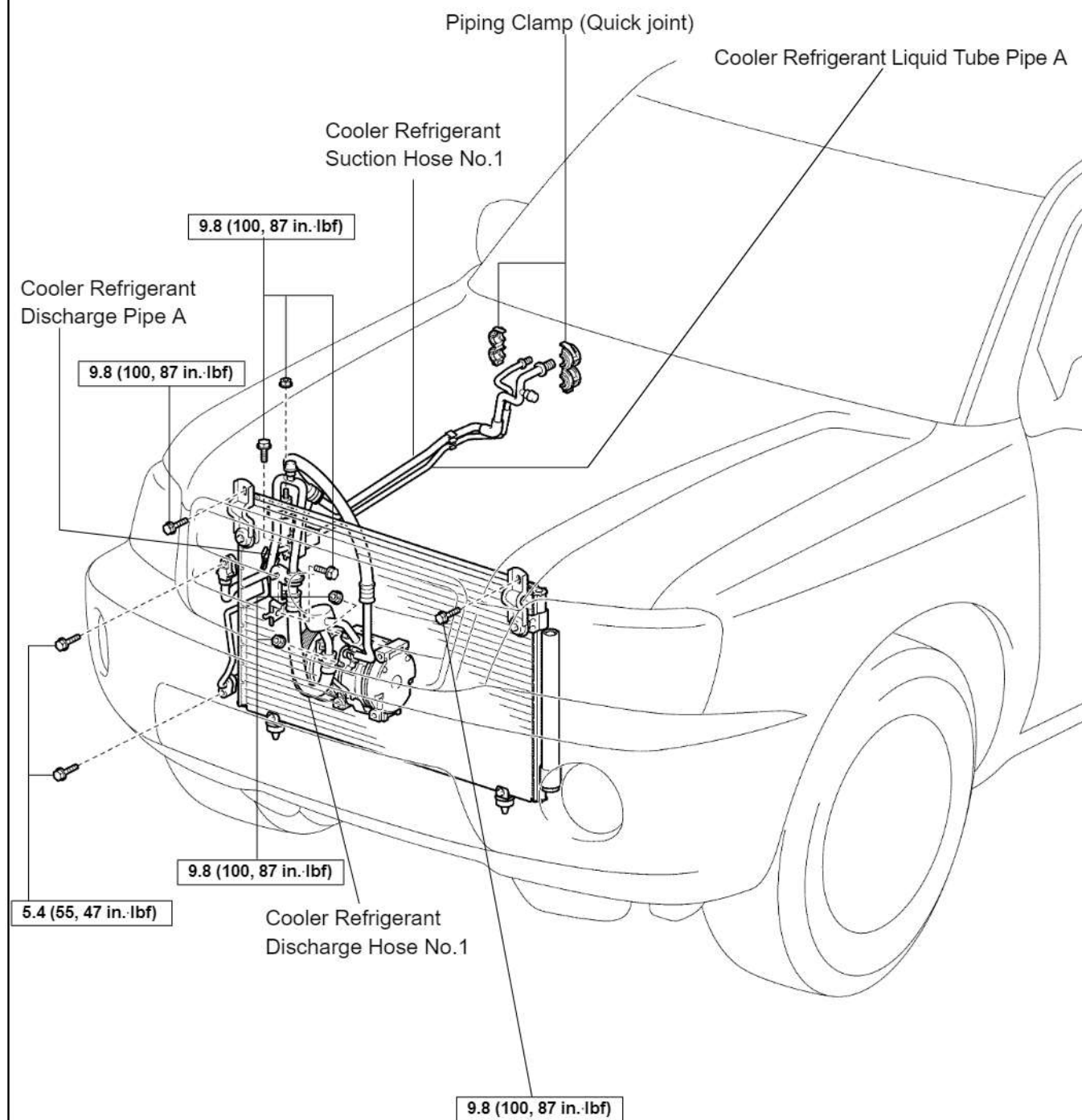
3MZ-FE:



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

141129

2AZ-FE:



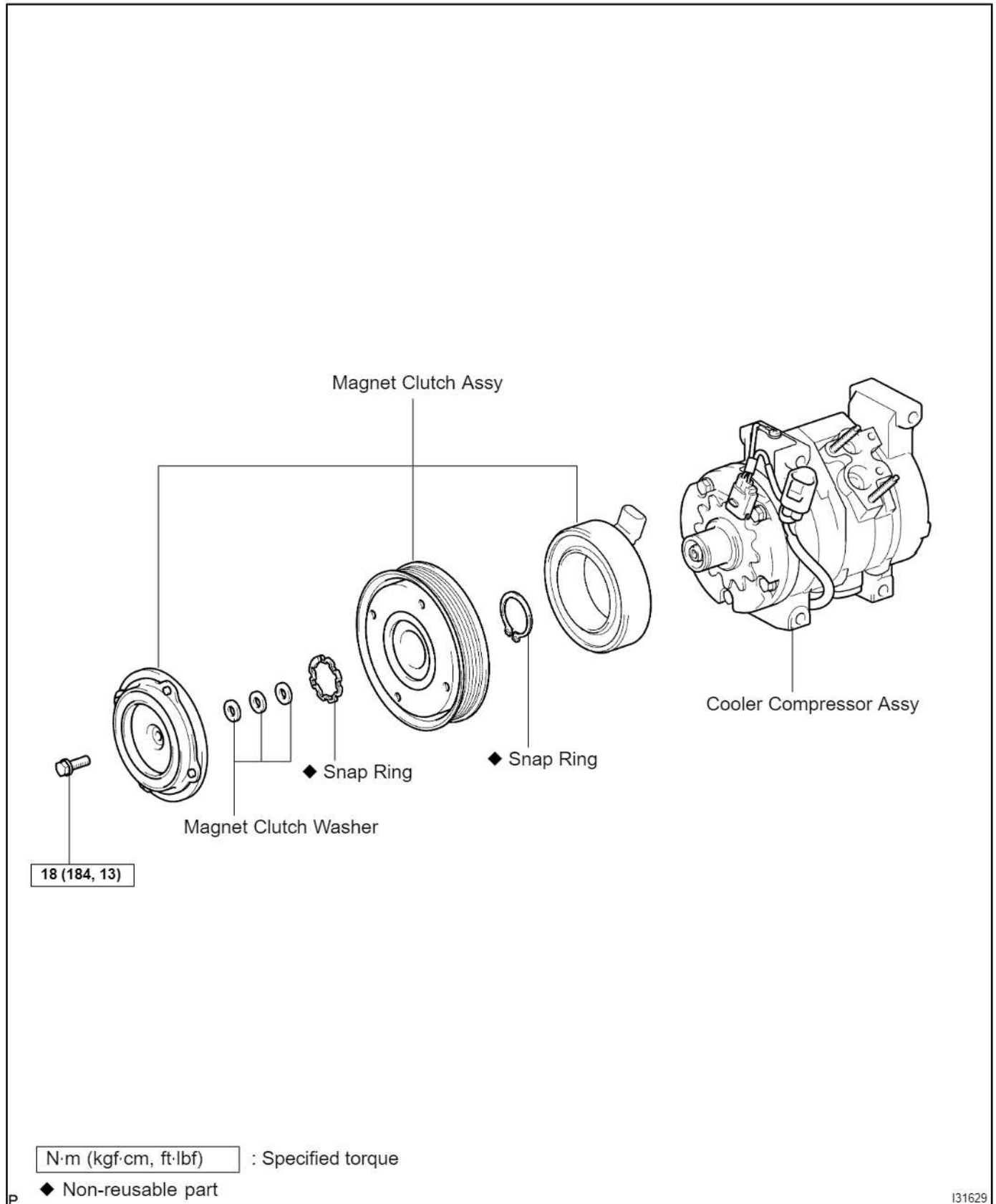
P N·m (kgf·cm, ft·lbf) : Specified torque

I41130

COOLER COMPRESSOR ASSY (2AZ-FE)

COMPONENTS

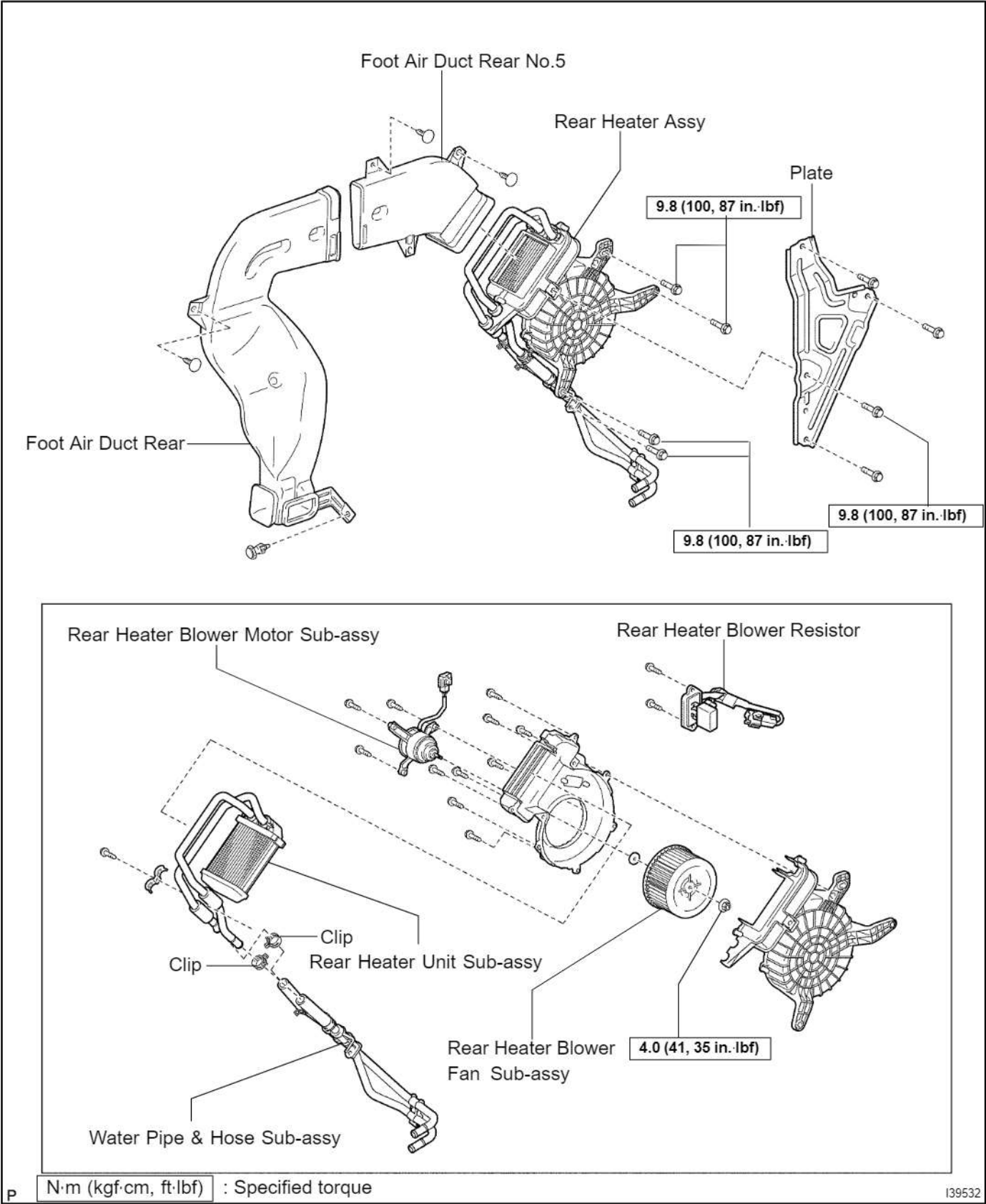
551A1-01



I31629

REAR HEATER ASSY COMPONENTS

551AB-01

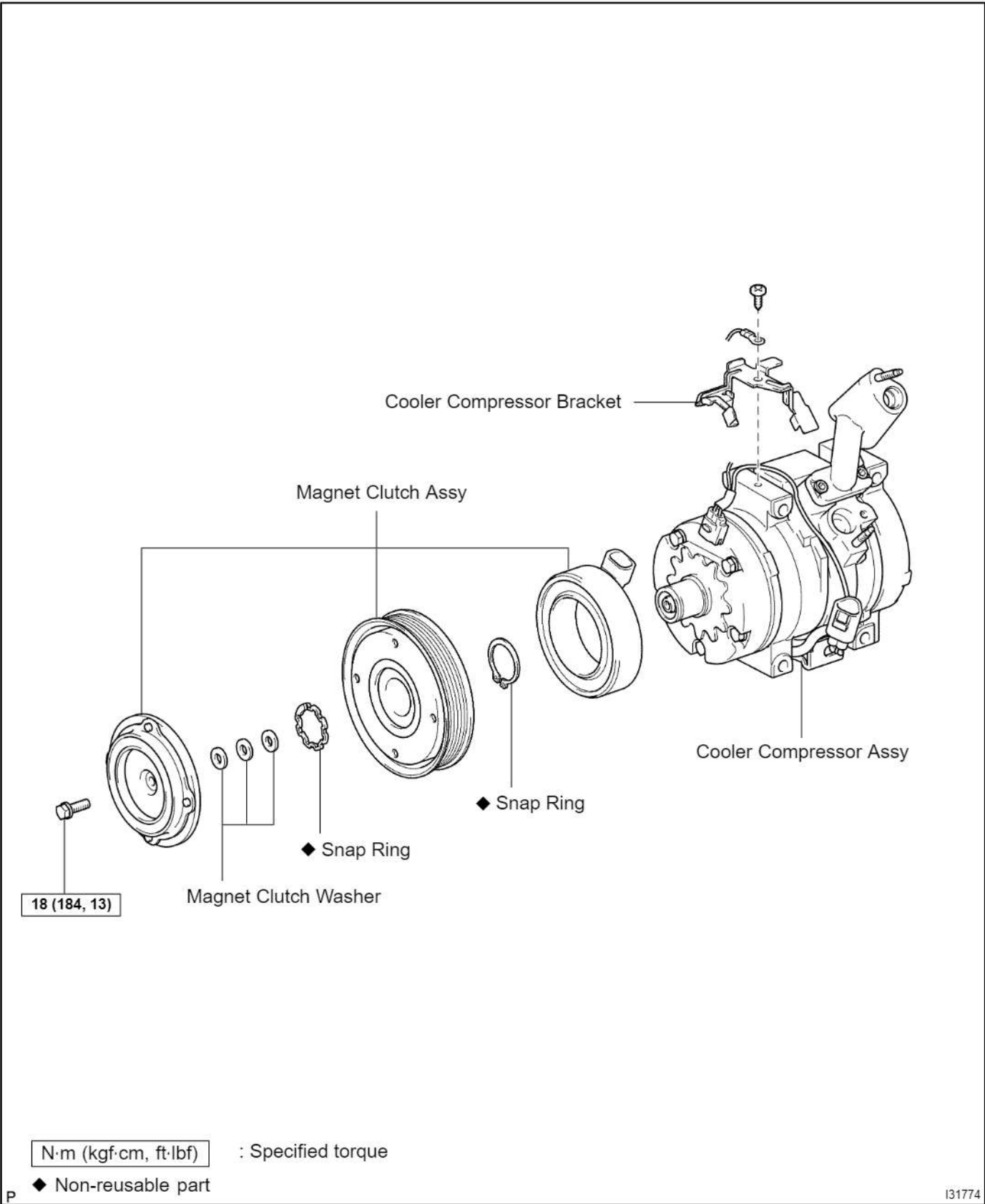


139532

COOLER COMPRESSOR ASSY (3MZ-FE)

COMPONENTS

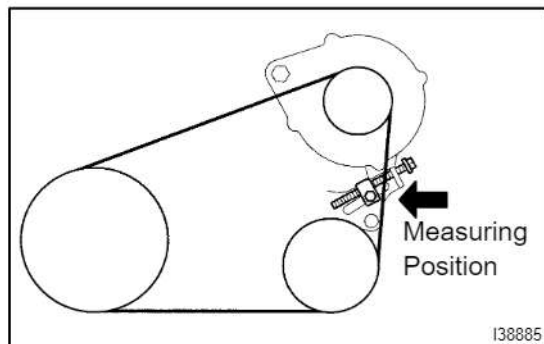
5519Z-01



V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

INSPECTION

5519Q-01



1. INSPECT V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

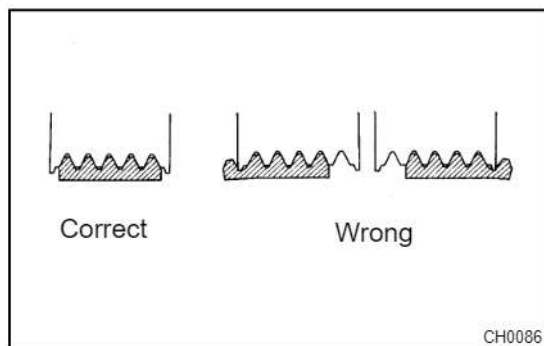
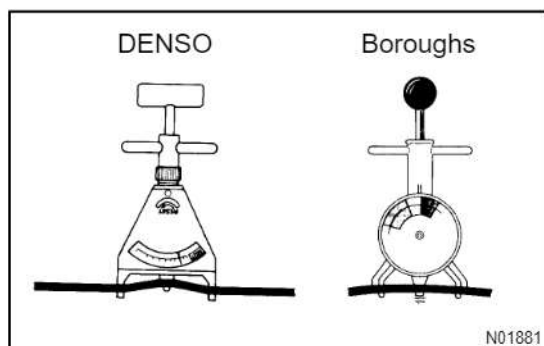
(a) Belt tension:

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

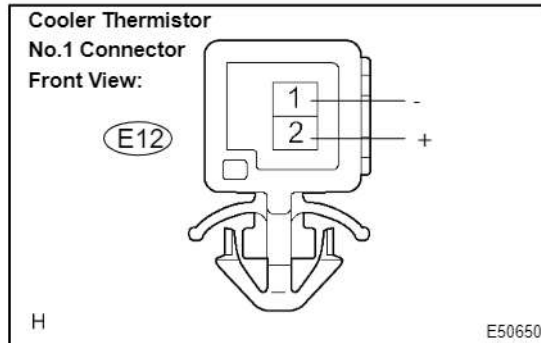
	New belt N (kg, lb)	Used belt N (kg, lb)
V belt	160 to 180	115 to 135

NOTICE:

- Check the V belt deflection at the specified point.
- When installing a new belt, set its tension value as specified.
- When checking a belt used for over 5 minutes, confirm the deflection value is within the specified range.
- When reinstalling a belt used for over 5 minutes, perform the check based on the used deflection value.
- V belt tension and deflection values should be checked after 2 revolutions of engine cranking.
- When using a belt tension gauge, confirm the accuracy first by using a master gauge.
- Check that the drive belt fits properly in the ribbed grooves.



INSPECTION



1. COOLER THERMISTOR NO.1(MANUAL AIR CONDITIONER)

- Remove cooler thermistor No. 1.
- Check resistance between terminals 1 and 2 of cooler thermistor No. 1 at each temperature, as shown in the chart.

Standard:

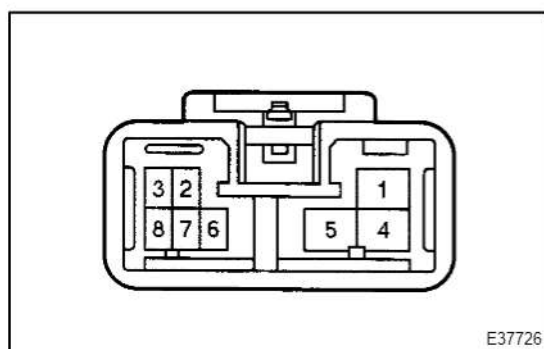
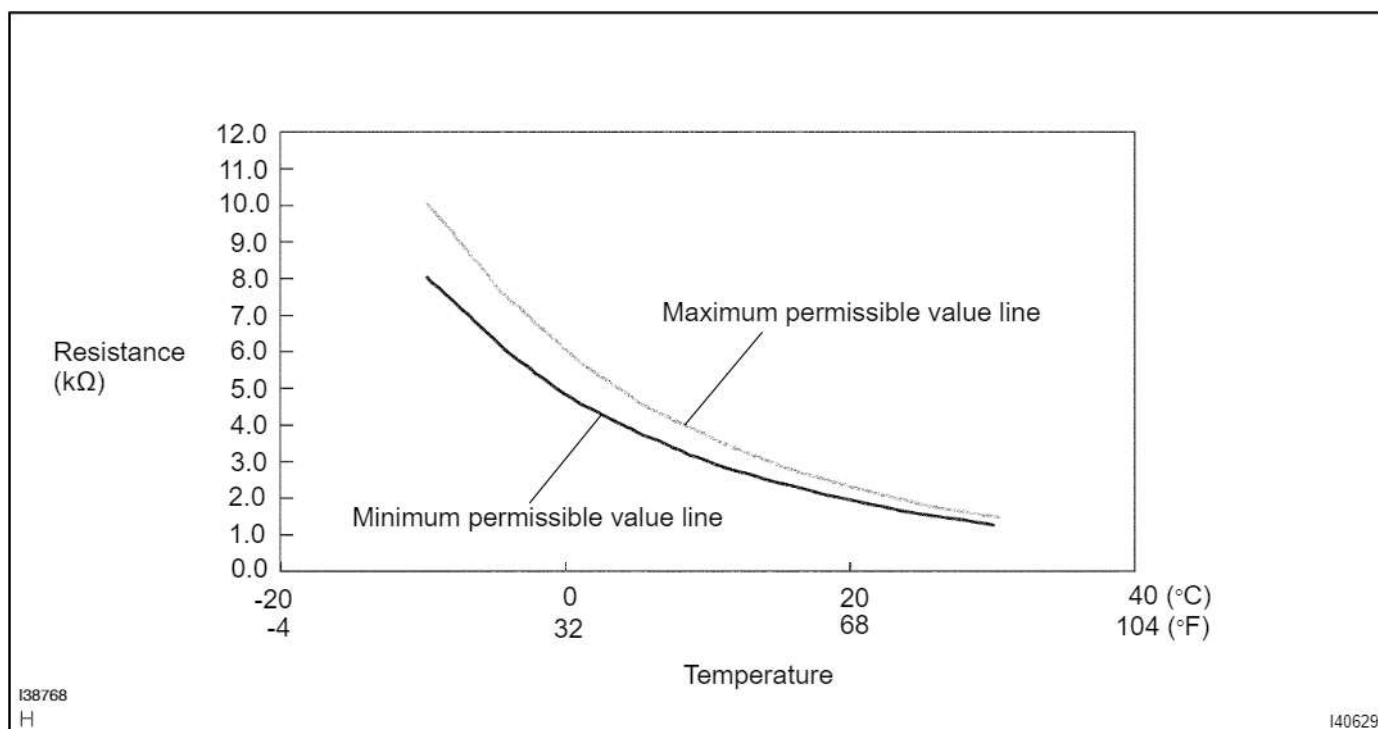
Tester connection	Condition	Specified condition
E12-1 - E12-2	-10 °C (14°F)	8.00 to 10.00 kΩ
E12-1 - E12-2	-5 °C (23°F)	6.15 to 7.65 kΩ
E12-1 - E12-2	0°C (32°F)	4.75 to 5.85 kΩ
E12-1 - E12-2	5°C (41°F)	3.70 to 4.55 kΩ
E12-1 - E12-2	10°C (50°F)	3.00 to 3.73 kΩ
E12-1 - E12-2	15°C (59°F)	2.45 to 2.88 kΩ
E12-1 - E12-2	20°F (68°F)	1.95 to 2.30 kΩ
E12-1 - E12-2	25°C (77°F)	1.60 to 1.80 kΩ
E12-1 - E12-2	30°C (86°F)	1.28 to 1.47 kΩ

NOTICE:

- Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.
- When measuring the sensor temperature must be the same as the ambient temperature.

HINT:

As the temperature increases, the resistance decrease (see the graph below).



2. HEATER BLOWER SWITCH(MANUAL AIR CONDITIONER)

(a) Inspect blower switch continuity.

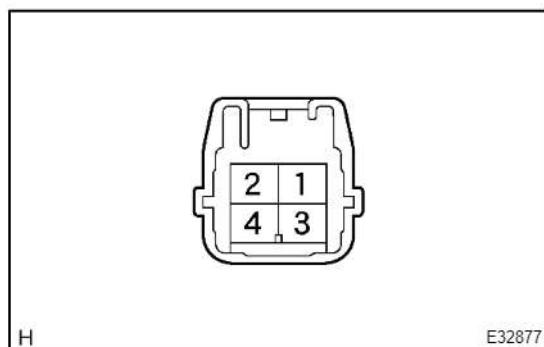
Condition / Circuit	Tester connection	Specified condition
OFF	-	No continuity
LO	1 - 8	Continuity
M1	1 - 6 - 8	Continuity
M2	1 - 5 - 8	Continuity
HI	1 - 4 - 8	Continuity

If continuity is not as specified, replace the air conditioner control assy.

(b) Inspect illumination operation.

Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 3 then check that the illuminations light up.

If there is bulb not light up, replace the bulb.

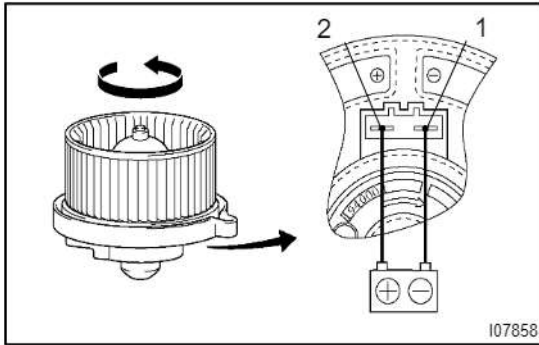


3. BLOWER RESISTOR(MANUAL AIR CONDITIONER)

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

Tester connection	Specified condition
1 - 2	0.642 - 0.738 Ω
1 - 3	0.205 - 0.235 Ω
1 - 4	1.572 - 1.803 Ω

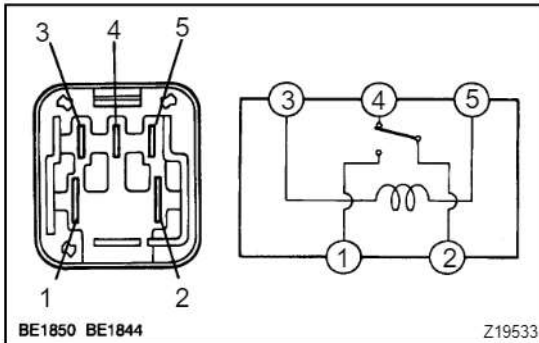
If resistance is not as specified, replace the blower resistor.



4. COOLING UNIT MOTOR SUB-ASSY W/FAN(MANUAL AIR CONDITIONER)

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

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



5. HEATER BLOWER MOTOR RELAY ASSY(MANUAL AIR CONDITIONER)

- (a) Check that the continuity exists between each pair of terminals of heater blower motor relay assy, as shown in the chart.

Tester connection	Specified condition
1 - 4	No continuity
2 - 4	Continuity
3 - 5	62.5 - 90.9 Ω

- (b) Apply battery voltage between terminals 3 and 5.

- (c) Check continuity each pair of terminals, as shown the chart.

Tester connection	Specified condition
1 - 2	Continuity
2 - 4	No continuity

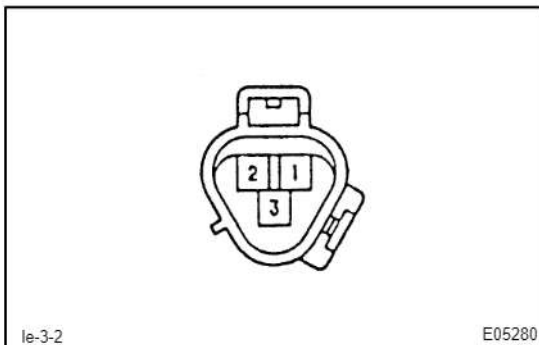
If continuity is not as specified, replace the heater blower motor relay.

6. MAGNET CLUTCH ASSY(MANUAL AIR CONDITIONER)

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

- (b) Check that the magnetic clutch energized.

If operation is not as specified, replace the magnet clutch assy.

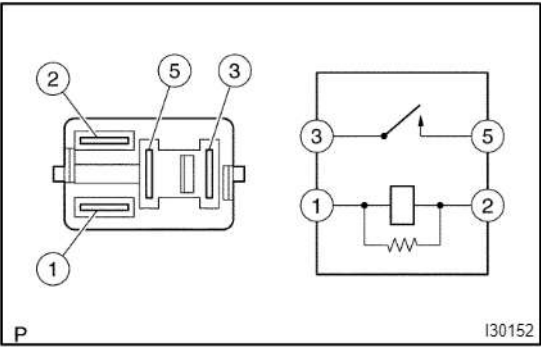


7. COOLER COMPRESSOR ASSY(MANUAL AIR CONDITIONER)

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

Resistance: 165 - 205 Ω at 20 °C (68 °F)

If resistance is not as specified, replace the cooler compressor assy.



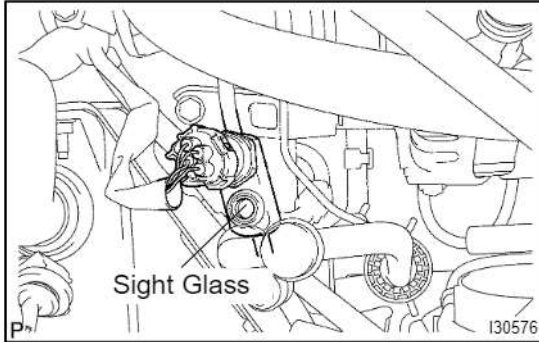
8. MAGNET- CLUTCH RELAY(MANUAL AIR CONDITIONER)

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 magnet-clutch relay.

REFRIGERANT ON-VEHICLE INSPECTION

5502F-03



1. INSPECT REFRIGERANT VOLUME

- (a) Check the sight glass on the cooler refrigerant liquid pipe A.

Test conditions:

- Engine is running at 1,500 rpm
- Blower speed control switch is at "HI"
- A/C switch is ON
- Temperature control dial is at "MAX. COOL"
- Doors are fully open

Item	Symptom	Amount of refrigerant	Corrective Actions
1	Bubbles exist	Insufficient*	(1) Check for gas leakage and repair if necessary (2) Add refrigerant until bubbles disappear
2	No bubbles exist	Empty, insufficient or excessive	Refer to 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	Considerable temperature difference between compressor inlet and outlet	Proper or excessive	Refer to 5 and 6
5	Immediately after air conditioning is turned off, refrigerant clears	Excessive	(1) Discharge refrigerant (2) Remove air and supply proper amount of purified refrigerant
6	Immediately after air conditioning is turned off, refrigerant foams and then becomes clear	Proper	-

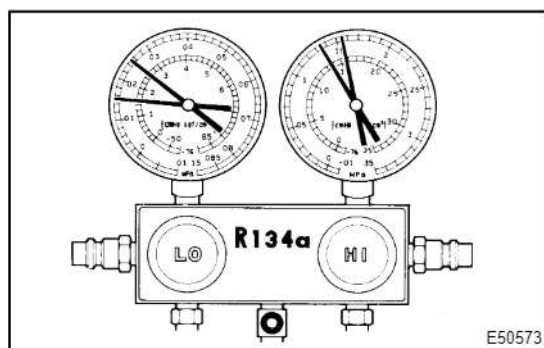
*: Bubbles in the sight glass with ambient temperatures higher than usual can be considered normal if cooling is sufficient.

2. INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET

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

Test conditions:

- Temperature at the air inlet with the switch set at RECIRC is 30 to 35°C (86 to 95°F)
- Engine is running at 1,500 rpm
- Blower speed control switch is at "HI"
- Temperature control dial is at "COOL"
- A/C switch is ON
- Doors are fully open



- (1) Normally functioning refrigeration system

Gauge reading:

Low pressure side:

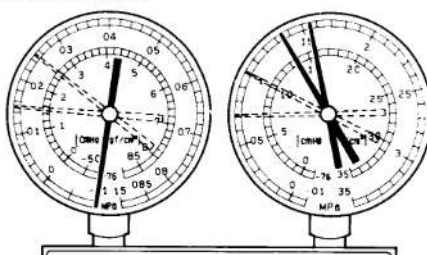
0.15 to 0.25 MPa (1.5 to 2.5 kgf/cm²)

High pressure side:

1.37 to 1.57 MPa (14 to 16 kgf/cm²)

- (2) Moisture is present in refrigeration system

Condition: Periodically cools and then fails to cool.

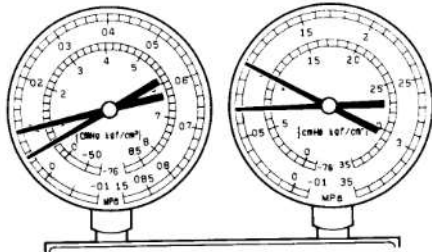


I22117

Symptom	Probable cause	Diagnosis	Corrective Actions
During operation, pressure on low pressure side cycles between normal and vacuum	Moisture in refrigeration system freezes at expansion valve orifice, causing a temporary stop of cycle. However, when it melts, normal state is restored.	• Drier in oversaturated state • Moisture in refrigeration system freezes at expansion valve orifice and blocks circulation of refrigerant	(1) Replace condenser (2) Remove moisture in cycle by repeatedly evacuating air (3) Supply proper amount of new refrigerant

(3) Insufficient cooling

Condition: Cooling system does not function effectively.

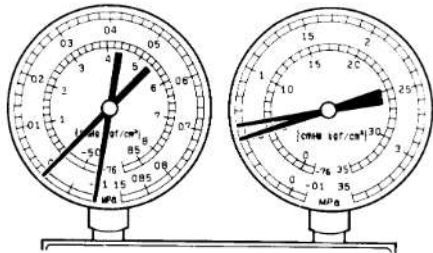


I22118

Symptom	Probable cause	Diagnosis	Corrective Actions
- Pressure is low on both low and high pressure sides - Bubbles are seen through sight glass continuously - Insufficient cooling performance	Gas leakage in refrigeration system	- Insufficient refrigerant - Refrigerant leaking	- Check for gas leakage and repair if necessary - Supply proper amount of new refrigerant - If the indicated pressure value is close to 0 when connected to the gauge, create a vacuum after inspecting and repairing the location of leakage.

(4) Poor circulation of refrigerant

Condition: Cooling system does not function effectively.

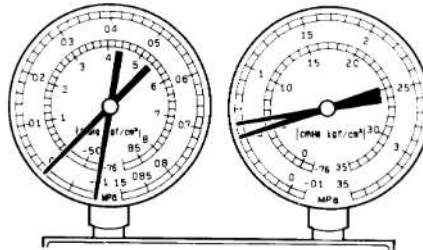


I22119

Symptom	Probable cause	Diagnosis	Corrective Action
- Pressure is low on both low and high pressure sides - Frost exists on pipe from condenser to unit	Refrigerant flow is obstructed by dirt in the receiver	Receiver is clogged	Replace condenser

(5) Refrigerant does not circulate

Condition: Cooling system does not function (sometimes it may function).

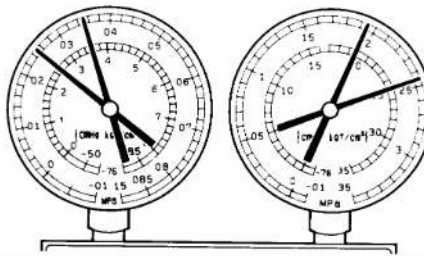


I22120

Symptom	Probable cause	Diagnosis	Corrective Actions
- Vacuum is indicated on low pressure side and very low pressure is indicated on high pressure side - Frost or dew is seen on piping on both sides of receiver/drier or expansion valve	- Refrigerant flow is obstructed by moisture or dirt in refrigeration system - Refrigerant flow is obstructed by a gas leak from expansion valve	Refrigerant does not circulate	- Check the expansion valve - Clean out dirt in expansion valve by blowing air - Replace condenser - Evaporate air and supply proper amount of new refrigerant - For gas leakage from expansion valve, replace expansion valve

(6) Refrigerant is overcharged or cooling effectiveness of condenser is insufficient

Condition: Cooling system does not function.

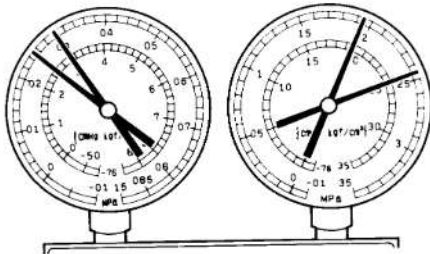


I22121

Symptom	Probable cause	Diagnosis	Corrective Actions
- Pressure is too high on both low and high pressure sides - No air bubbles are seen through sight glass even when engine rpm lowers	- Unable to develop sufficient performance due to excessive use of refrigeration system - Cooling effectiveness of condenser is insufficient	- Excessive refrigerant in cycle → excessive refrigerant is supplied - Condenser cooling effectiveness is insufficient → condenser fins are clogged at cooling fan	- Clean condenser - Check cooling fan with cooling fan motor operation - If (1) and (2) are normal check the amount of refrigerant and supply proper amount of refrigerant

(7) Air present in refrigeration system

Condition: Cooling system does not function.



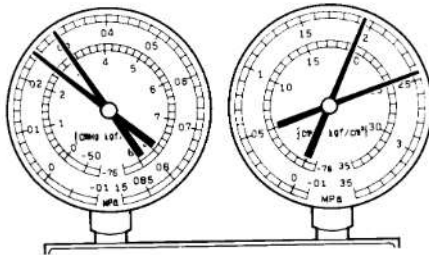
NOTE: These gauge indications occur when the refrigeration system opens and the refrigerant is charged without vacuum purging.

I22122

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure is too high on both low and high pressure sides • The low pressure piping is too hot to touch • Bubbles can be seen through sight glass	Air in 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 supply new refrigerant

(8) Expansion valve malfunction

Condition: Insufficient cooling

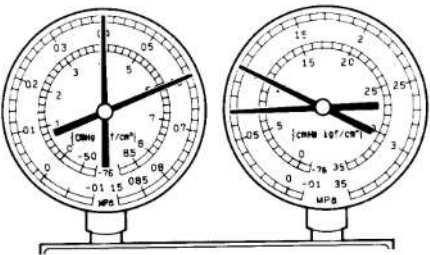


I22123

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure is 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

(9) Defective compressor

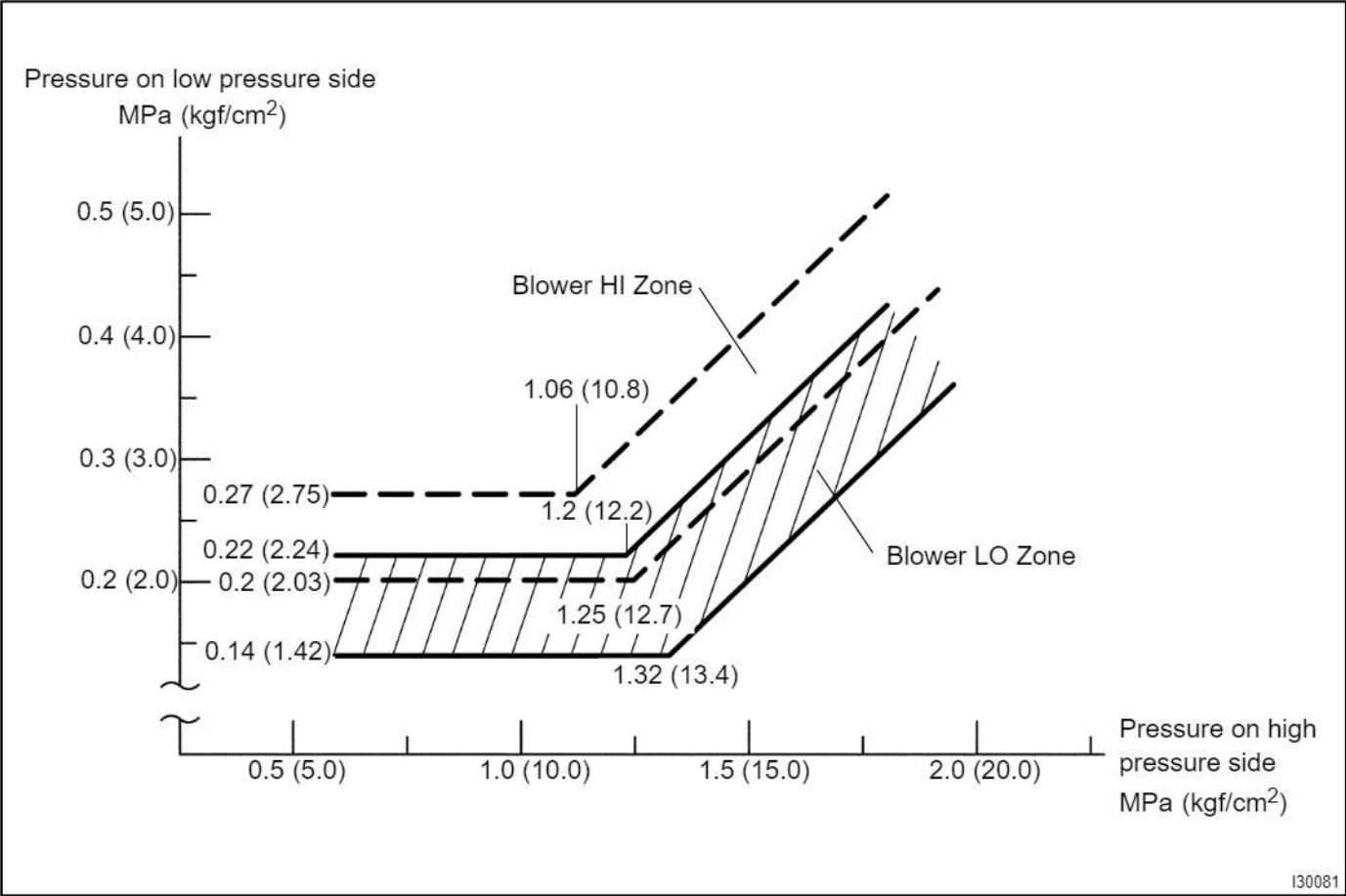
Condition : Insufficient cooling



I22124

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure is too high both on low and high pressure sides • Pressure is too low on high pressure side	Internal leak in compressor	• Compression failure • Leakage from damaged valve or broken sliding parts	Repair or replace compressor

Gauge readings (Reference)



COOLER CONDENSER ASSY

5502P-03

ON-VEHICLE INSPECTION

1. INSPECT COOLER CONDENSER ASSY

- (a) If a fin of the cooler condenser assy is dirty, clean it with water and dry it with compressor air.

NOTICE:

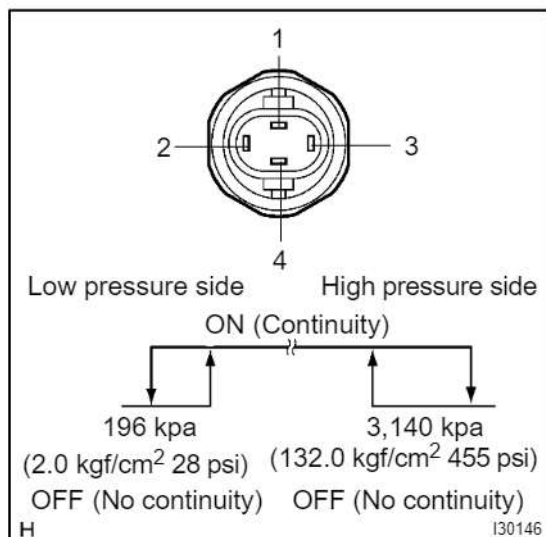
Do not damage the fin of the condenser assy.

- (b) If a fin of the condenser assy is bent, make it straight using a screwdriver or pliers.

2. INSPECT CONDENSER FOR LEAKAGE OF REFRIGERANT

- (a) Using a halogen leak detector, check pipe joints for gas leakage.
(b) If gas leakage is detected in a joint, check the torque of the joint.

ON-VEHICLE INSPECTION



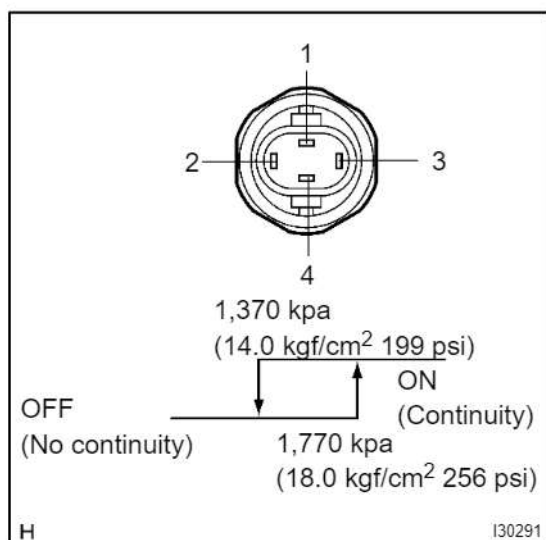
1. INSPECT PRESSURE SWITCH NO.1.

(a) Magnetic clutch control:

Inspect pressure switch operation.

- (1) Set on the manifold gauge set.
- (2) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (-) lead to terminal 1.
- (3) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

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

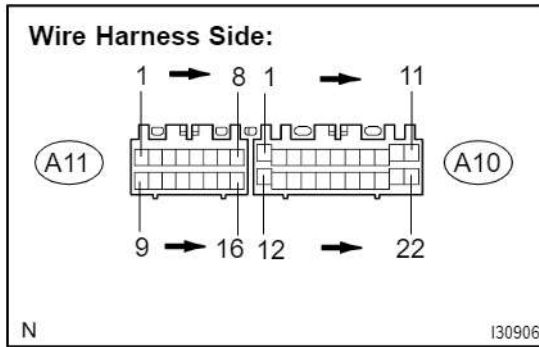


(b) Cooling fan control:

Inspect pressure switch operation.

- (1) Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (-) lead to terminal 3.
- (2) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

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

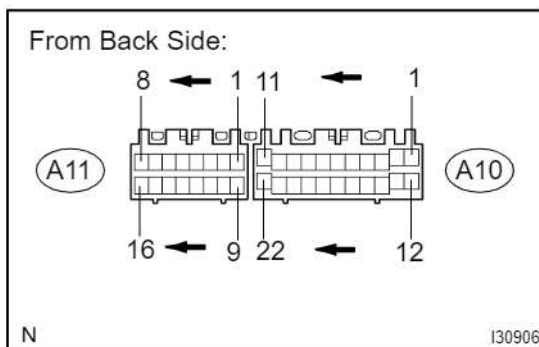


2. INSPECT AIR CONDITIONER AMPLIFIER ASSY CIRCUIT

- (a) Disconnect the connectors from the A/C amplifier assy and inspect the connector on the wire harness side, as shown the chart.

Symbols (Terminals No.)	Wiring Color	Condition	Specified condition
A10-11 (GND) - Body Ground	W-B - Body Ground	Constant	Continuity
A11-5 (TE) - A11-12 (SG-1)	LG - P	Evaporator temp.: 25°C (77°F)	1.5 kΩ
A10-2 (IG) - Body Ground	BR - Body Ground	Turn ignition switch: ON	Battery positive voltage
A10-2 (IG) - Body Ground	BR - Body Ground	Turn ignition switch: LOCK or ACC	No voltage
A10-12 (+B) - Body Ground	W - Body Ground	Constant	Battery positive voltage
A10-13 (ACC) - Body Ground	GR - Body Ground	Turn ignition switch: ACC	Battery positive voltage
A10-13 (ACC) - Body Ground	GR - Body Ground	Turn ignition switch: except ACC	No voltage

If the circuit is as specified, try to replace the A/C amplifier assy with a new one. If the circuit is as specified, inspect the circuits connected to other parts.



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

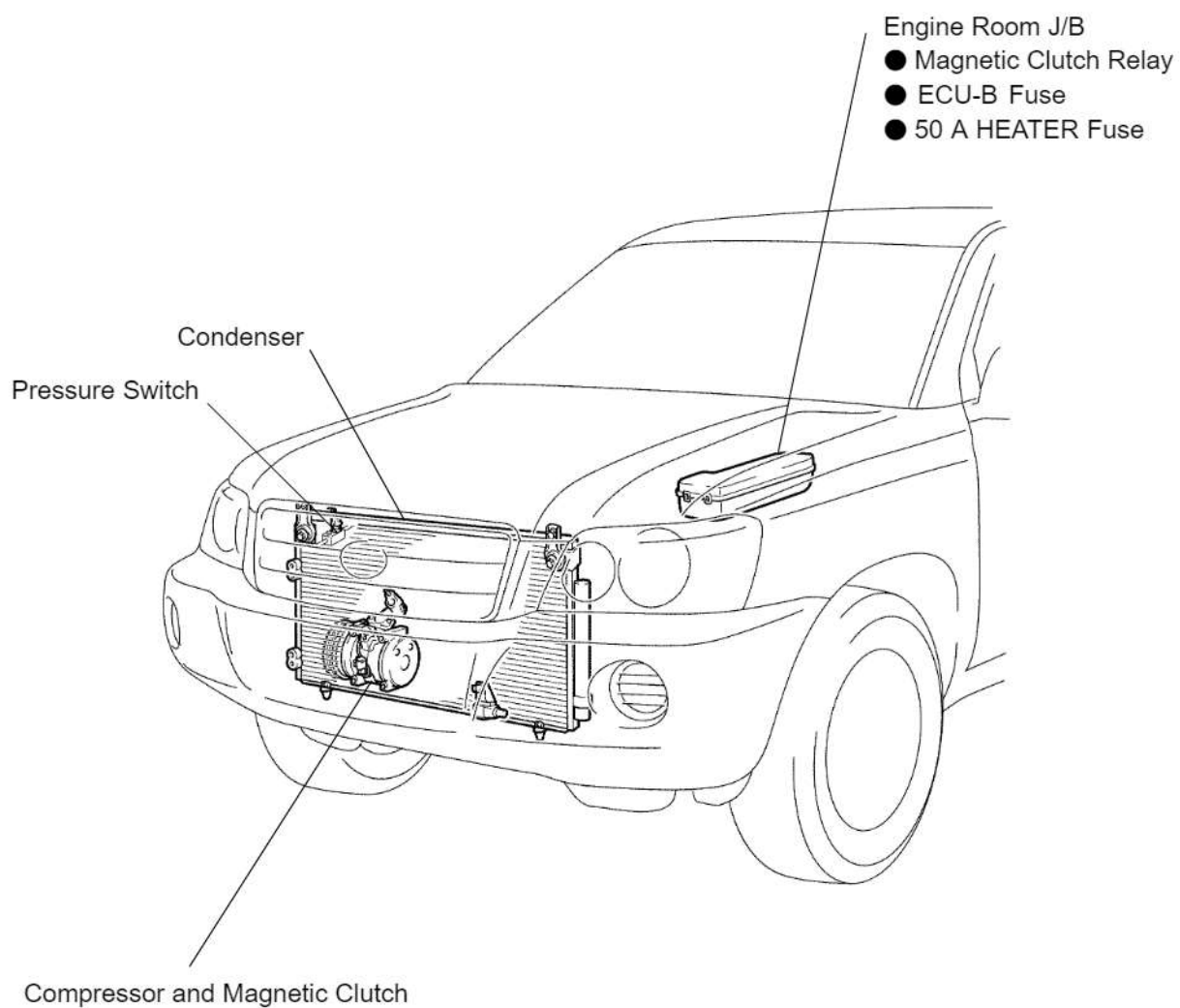
Symbols (Terminals No.)	Wiring Color	Condition	Specified condition
A10-4 (MR/F) - Body Ground	Y - Body Ground	Turn ignition switch ON	Battery positive voltage
A10-4 (MR/F) - Body Ground	Y - Body Ground	Turn ignition switch OFF	Below 1 V
A10-5 (AIR) - Body Ground	B - Body Ground	Turn ignition switch ON and air flow selector at DEF position	Below 1 V
A10-5 (AIR) - Body Ground	B - Body Ground	Turn ignition switch ON and air flow selector at except DEF position	Battery positive voltage

Symbols (Terminals No.)	Wiring Color	Condition	Specified condition
A10-6 (AIF) - Body Ground	W - Body Ground	Turn ignition switch ON and air inlet control selector at FRESH	10 - 14 V
A10-6 (AIF) - Body Ground	W - Body Ground	Turn ignition switch ON and air inlet control selector at RE-CIRCULATION	Below 1 V
A10-7 (HR) - Body Ground	O - Body Ground	Turn ignition switch ON and operate the blower motor	Below 1 V
A10-7 (HR) - Body Ground	O - Body Ground	Turn ignition switch ON and does not operate the blower motor	Battery positive voltage
A10-9 (MPX-)	G	Multiplex communication circuit	-
A10-15 - A10-21	V (*1)	Ignition switch ON and light control rheostat volume DARK	No voltage
A10-15 - A10-21	V (*1)	Ignition switch ON and light control rheostat volume LIGHT	Battery voltage
A11-2 (MPX+)	V (*2) G (*3)	Multiplex communication circuit	-
A11-6 (TPO) - A11-1 (SG-4)	R - B	Turn ignition switch ON and air flow selector at DEF position	0.5 - 1.5 V
A11-6 (TPO) - A11-1 (SG-4)	R - B	Turn ignition switch ON and air flow selector at FACE position	4.5 - 5.5 V
A11-7 (AOD) - Body Ground	G - Body Ground	Turn ignition switch ON and air flow selector at DEF position	Battery positive voltage
A11-7 (AOD) - Body Ground	G - Body Ground	Turn ignition switch ON and air flow selector at except FACE position	Below 1 V
A11-8 (AOF) - Body Ground	V - Body Ground	Turn ignition switch ON and air flow selector at except FACE position	Below 1 V
A11-8 (AOF) - Body Ground	V - Body Ground	Turn ignition switch ON and air flow selector at FACE position	Battery positive voltage
A11-9 (S5-4) - A11-1 (SG-4)	BR - B	Turn ignition switch ON	4.5 - 5.5 V
A11-10 (TP) - A11-12 (SG-1)	SB - P	Turn ignition switch ON and set temp.: MAX. COOL position	4.5 - 5.5 V
A11-10 (TP) - A11-12 (SG-1)	SB - P	Turn ignition switch ON and set temp.: MAX. WARM position	0.5 - 1.5 V
A11-11 (S5-1) - A11-12 (SG-1)	O - P	Turn ignition switch ON	4.5 - 5.5 V
A11-13 (AMC) - A11-1 (SG-4)	GR - B	Turn ignition switch ON and set temp.: MAX. COOL position	Battery positive voltage
A11-13 (AMC) - A11-1 (SG-4)	GR - B	Turn ignition switch ON and set temp.: MAX. WARM position	Below 1 V
A11-14 (AMH) - A11-1 (SG-4)	B - B	Turn ignition switch ON and set temp.: MAX. COOL position	Below 1 V
A11-14 (AMH) - A11-1 (SG-4)	B - B	Turn ignition switch ON and set temp.: MAX. WARM position	Battery positive voltage

- *1: If the circuit is as specified, try to replace the A/C amplifier assy with a new one. If the circuit is as specified, inspect the circuits connected to other parts.
- *2: w/ Navigation System.
- *3: w/o Navigation System.

LOCATION

Manual A/C Models:



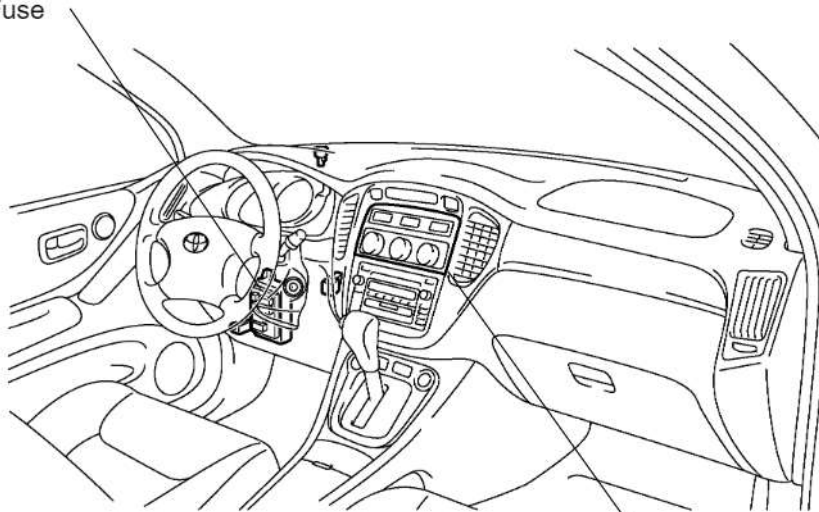
**Manual A/C Models:
w/o Navigation System:**

Instrument Panel J/B

- 15 A HEATER Fuse
- RADIO No. 2 Fuse
- AM1 Fuse

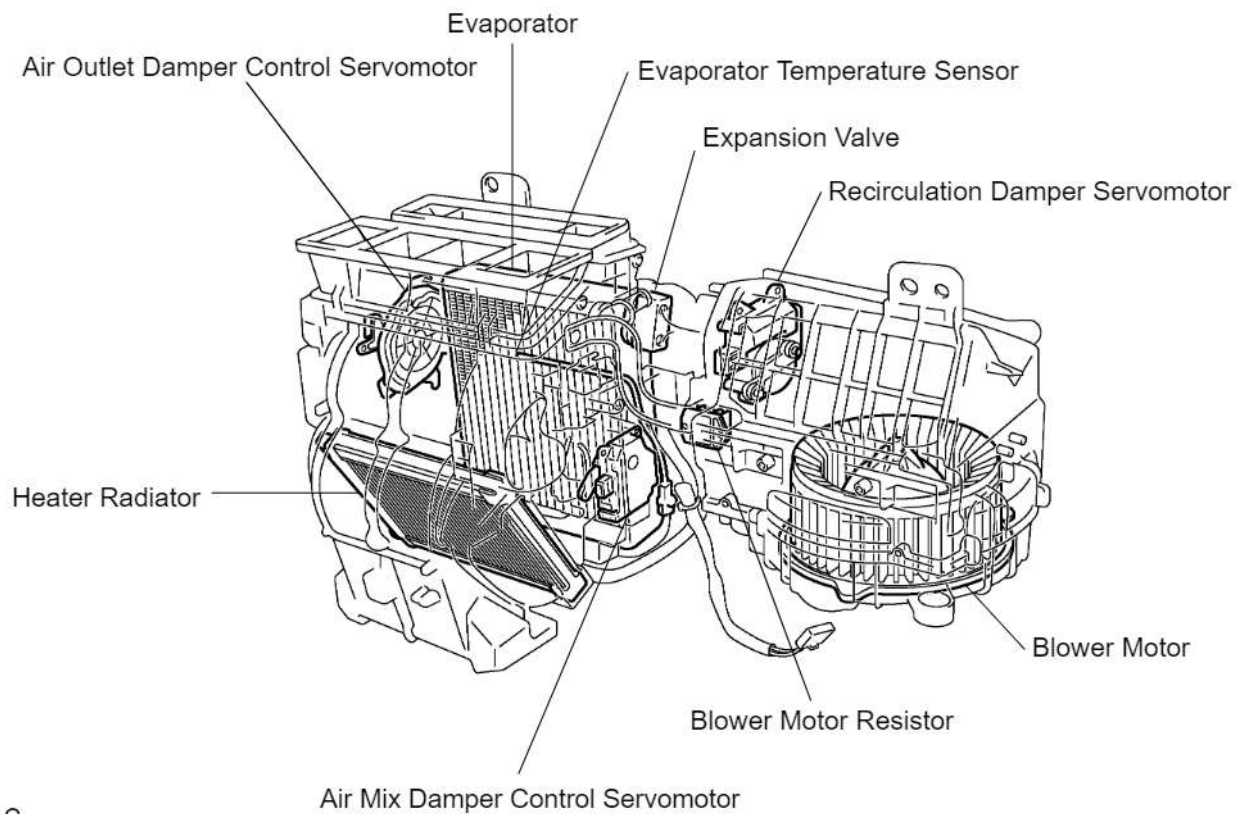
w/ Navigation System:

Multi Display Assy



Heater Control Assembly

- A/C Amplifier Assy



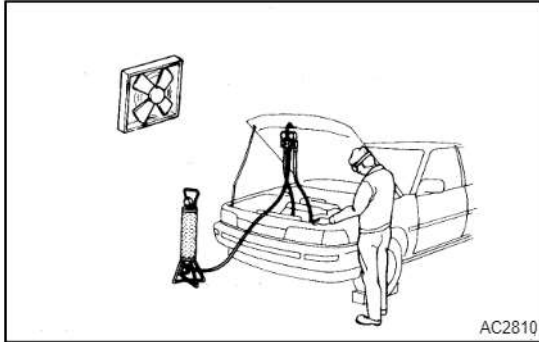
C

I41029

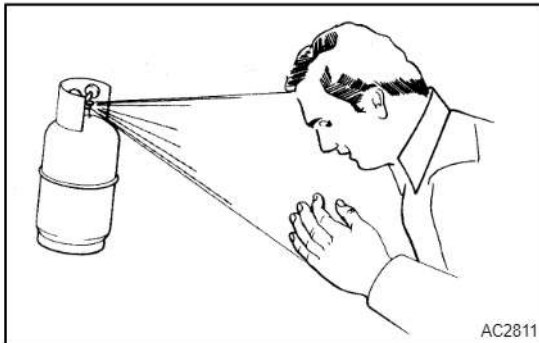
AIR CONDITIONING SYSTEM

PRECAUTION

551A9-01



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



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

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

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

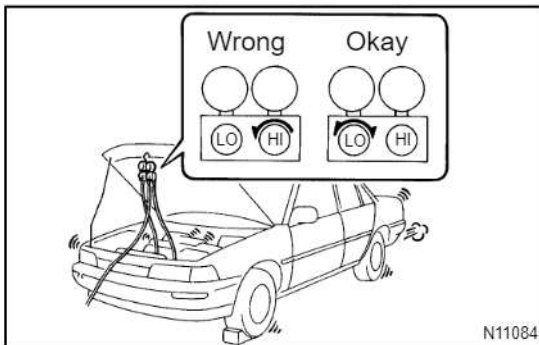
CAUTION:

Do not rub your eyes or skin.

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

4. **NEVER HEAT CONTAINER OR EXPOSE IT TO NAKED FLAME**

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



6. **DO NOT OPERATE COMPRESSOR WITHOUT ENOUGH REFRIGERANT IN 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, necessary care should be taken.

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

If the high pressure valves 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**

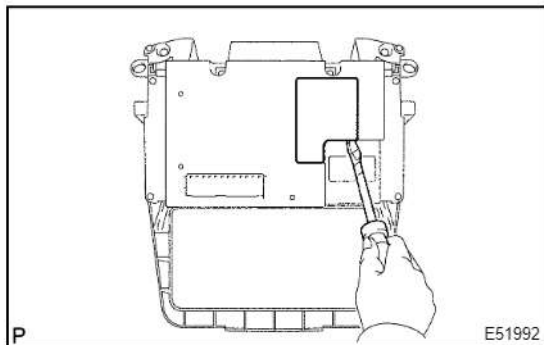
If refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy, engine overheating etc.

OVERHAUL

HINT:

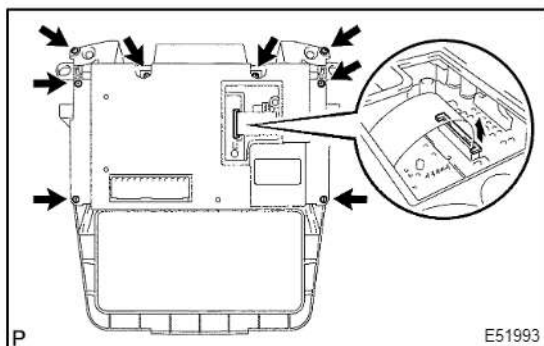
COMPONENTS: see page 55-25

1. REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY CENTER (SEE PAGE 71-10)
2. REMOVE INTEGRATION CONTROL & PANEL ASSY (SEE PAGE 71-10)
3. REMOVE RADIO RECEIVER ASSY (SEE PAGE 71-10)
4. REMOVE CONTROL KNOB SUB-ASSY
5. REMOVE HEATER CONTROL NAME SHEET NO.1 (MANUAL AIR CONDITIONING)



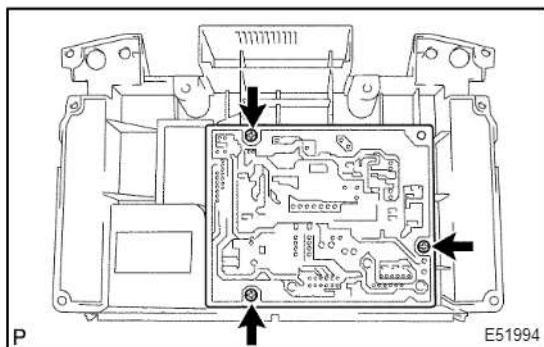
6. REMOVE HEATER CONTROL NAME SHEET NO.2

- (a) Using a screwdriver protected by taping, remove the heater control name sheet No. 2.



7. REMOVE HEATER CONTROL HOUSING SUB-ASSY

- (a) Release the lock of connector and disconnect the cable.
- (b) Remove the 8 screws and heater control housing.



8. REMOVE AIRCONDITIONER AMPLIFIER ASSY

- (a) Remove the 3 screws and air conditioner amplifier assy from the heater control housing.

9. REMOVE HEATER BLOWER SWITCH (MANUAL AIR CONDITIONING)

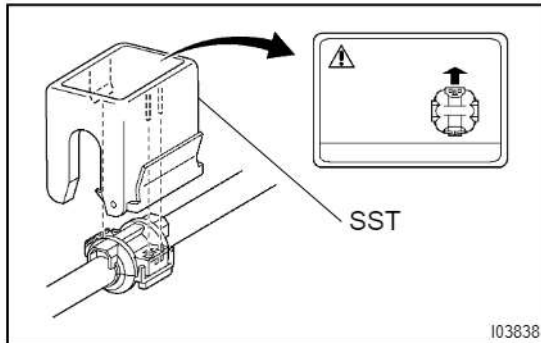
OVERHAUL

HINT:

COMPONENTS: see page 55-27 ,71-6

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (SEE PAGE 55-17)

SST 07110-58060 (07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)



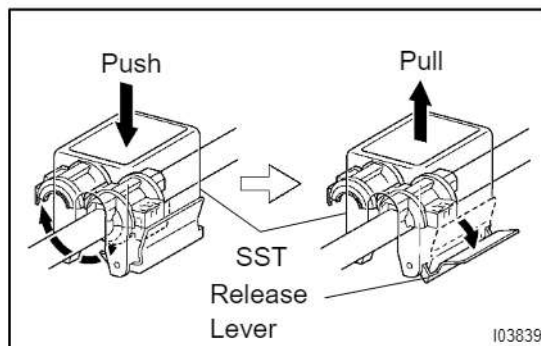
2. DISCONNECT COOLER REFRIGERANT SUCTION PIPE NO.1

(a) Install SST on piping clamp.

SST 09870-00015

HINT:

Make sure the direction of the piping clamp claw and SST by seeing the illustration shown on the caution label.

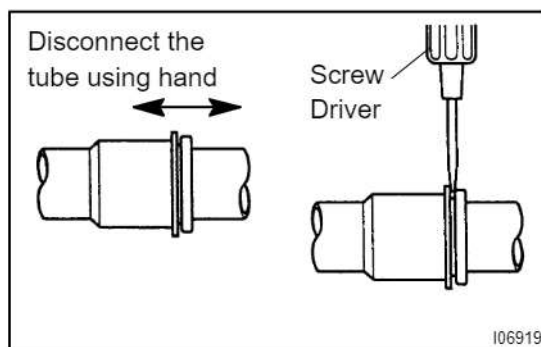


(b) Push down the SST and release the clamp lock.

NOTICE:

Be careful not to deform the tube when pushing SST.

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



(d) Disconnect the cooler refrigerant suction hose No.1.

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.

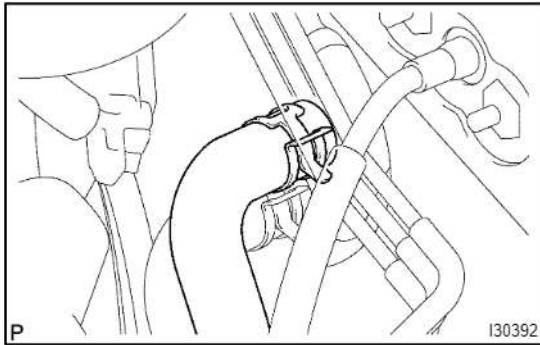
(e) Remove the 2 O-rings from the cooler refrigerant suction hose No.1.

3. DISCONNECT COOLER REFRIGERANT LIQUID PIPE A

SST 09870-00025

HINT:

Disconnect of the cooler refrigerant liquid pipe A is same as the cooler refrigerant suction pipe No.1.



4. DISCONNECT HEATER OUTLET WATER HOSE

- (a) Using pliers, grip the claws of the clip and slide the clip, and then disconnect the heater outlet water hose.

NOTICE:

- Do not apply any excessive force to the heater outlet water hose.
- Prepare a drain pan or cloth for when the cooling water leaks.

5. DISCONNECT HEATER INLET WATER HOSE

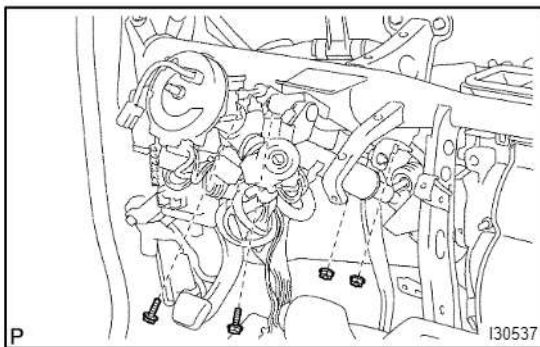
- (a) Disconnection of the heater inlet water hose is same as the heater outlet water hose.

6. REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-10)

SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05021)

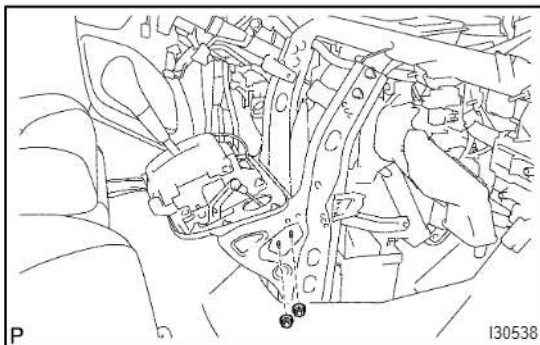
HINT:

Refer to the instructions for removal of the instrument panel safety pad sub-assy.



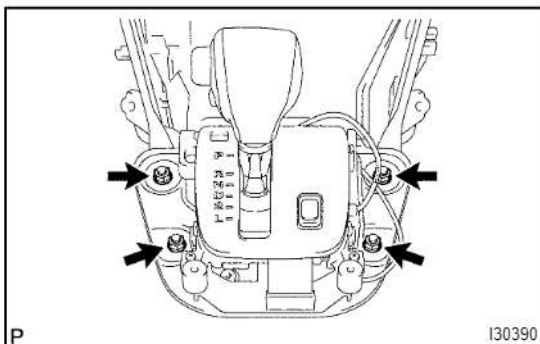
7. SEPARATE STEERING COLUMN ASSY

- (a) Remove the 2 bolts and 2 nuts, disconnect the steering column assy from the instrument panel reinforcement assy.

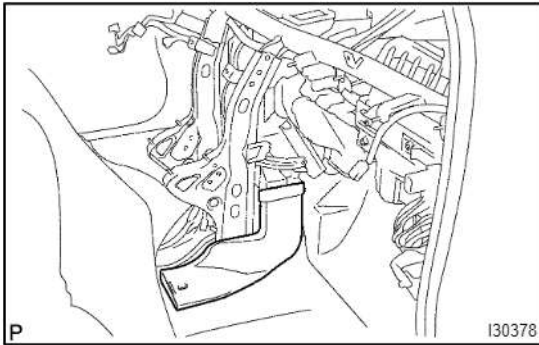


8. SEPARATE FLOOR SHIFT ASSY

- (a) Remove the 2 nuts and disconnect the shift cable.



- (b) Remove the 4 nuts and disconnect transmission floor shift assy.



9. REMOVE AIR DUCT REAR NO.2

- (a) Remove the side scuff plate.
- (b) Take up the floor carpet.

HINT:

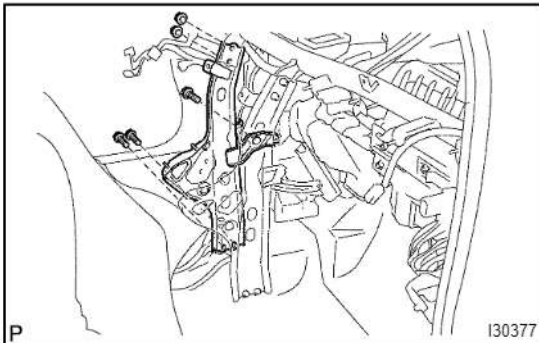
Take up the floor carpet so that the air duct rear No.2 can be removed.

- (c) Remove the air duct rear No.2.

10. REMOVE AIR DUCT REAR NO.1

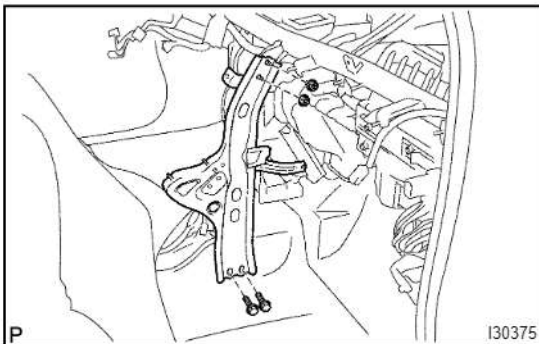
HINT:

Remove it in the same way with the air duct rear No.2.



11. REMOVE INSTRUMENT PANEL BRACE SUB-ASSY NO.1

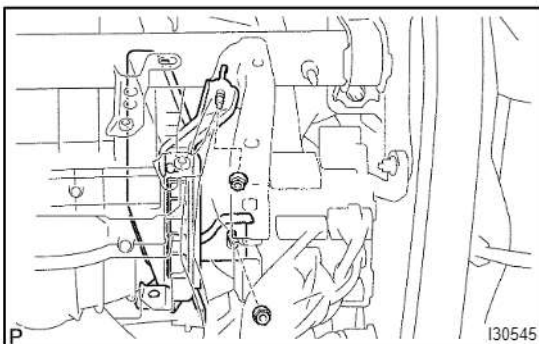
- (a) Disconnect the connector clamp.
- (b) Remove the 3 bolts, 2 nuts and instrument panel brace sub-assy No.1.



12. REMOVE INSTRUMENT PANEL BRACE SUB-ASSY NO.2

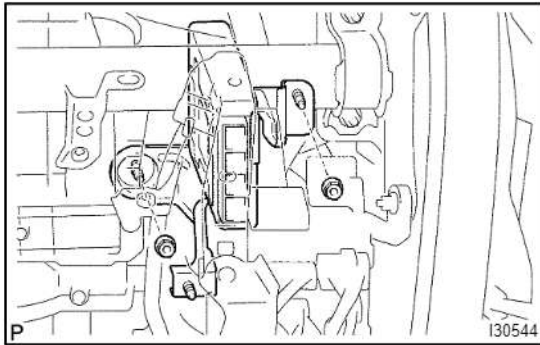
- (a) Remove the 2 bolts, 2 nuts and instrument panel brace sub-assy No.2.

13. REMOVE AIRCONDITIONER AMPLIFIER ASSY (W/ LEXUS NAVIGATION SYSTEM) (SEE PAGE 55-68)

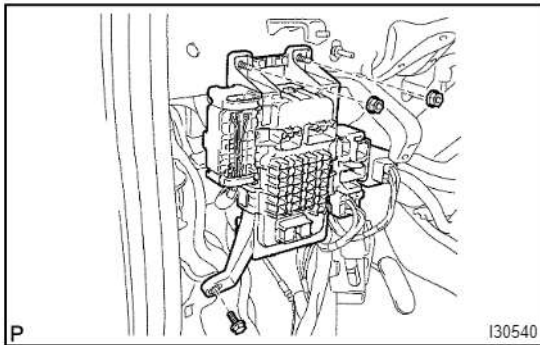


14. REMOVE ECM

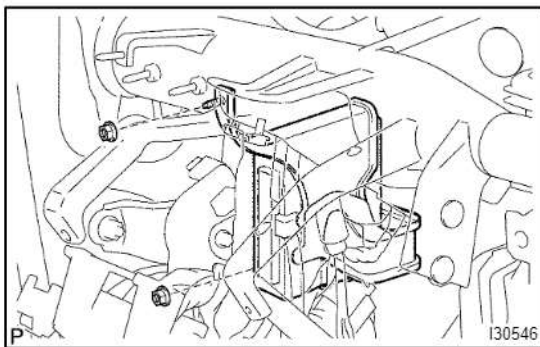
- (a) Disconnect the connector.
- (b) Remove the 2 nuts, and ECU.

**15. REMOVE MULTIPLEX NETWORK BODY ECU**

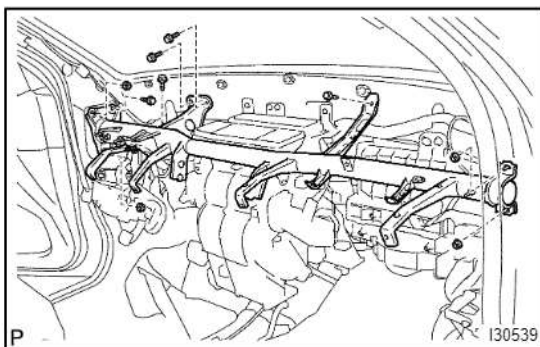
- (a) Disconnect the connector.
- (b) Remove the 2 nuts and multiplex network body ECU.

**16. DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSY**

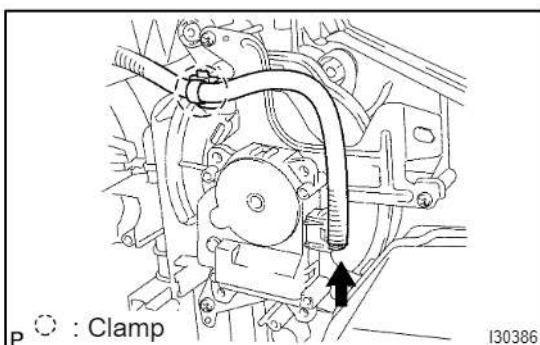
- (a) Remove the bolt and 2 nuts, disconnect the instrument panel junction block assy.

**17. REMOVE SKID CONTROL ECU ASSY**

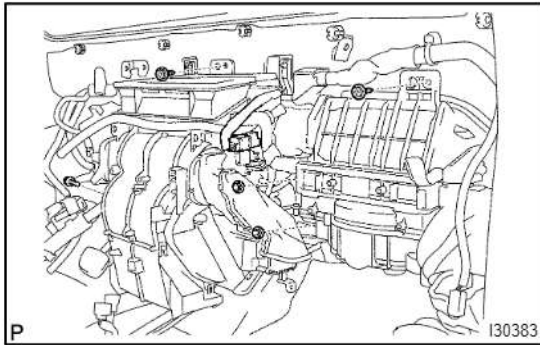
- (a) Disconnect the connector.
- (b) Remove the 2 nuts and skid control ECU assy.

**18. REMOVE INSTRUMENT PANEL REINFORCEMENT ASSY**

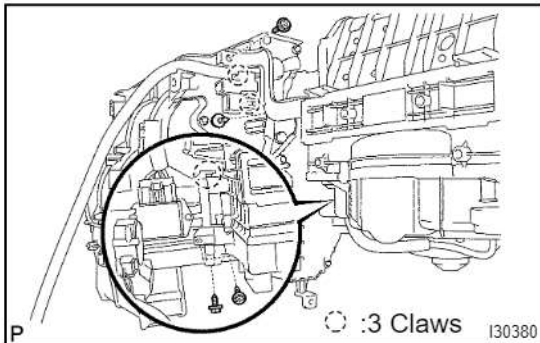
- (a) Remove the 5 bolts, 4 nuts and instrument panel reinforcement assy.

**19. REMOVE AIR CONDITIONER UNIT ASSY**

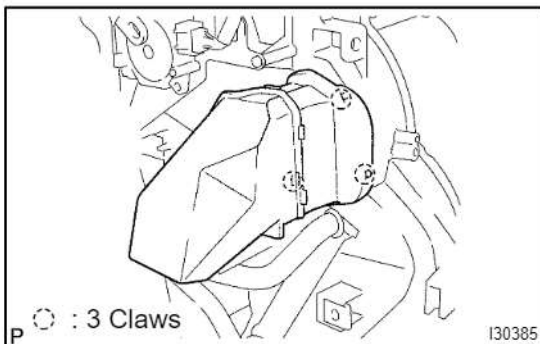
- (a) Disconnect the connector and clamp.



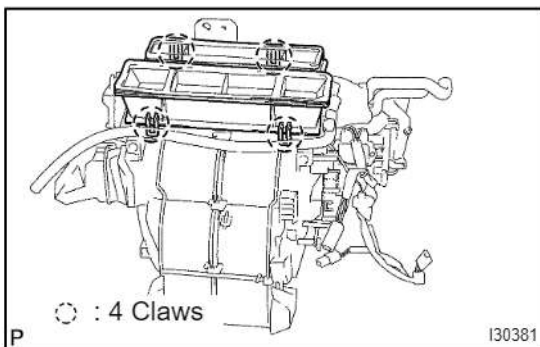
- (b) Disconnect the connectors connecting the wiring air indicator harness sub-assy and vehicle harness.
 - (c) Remove the 2 bolts, 2 nuts and air conditioner unit assy.
- 20. REMOVE AIR CONDITIONING RADIATOR ASSY**
- (a) Remove the screw, disconnect the connected part of the duct and take off the air duct No.2.



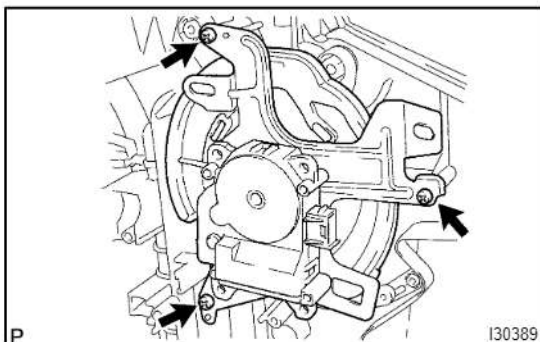
- (b) Remove the 4 screws and bracket.
- (c) Disconnect the connection between the blower assy and the air conditioner radiator assy and remove the air conditioning radiator assy.



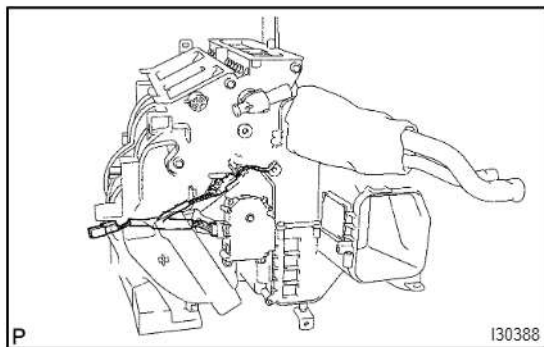
- 21. REMOVE AIR DUCT NO.1**
- (a) Release the 3 claw fittings, remove the air duct No.1.



- 22. REMOVE HEATER TO REGISTER DUCT CENTER**
- (a) Release the 4 claw fittings, remove the heater to register duct center.

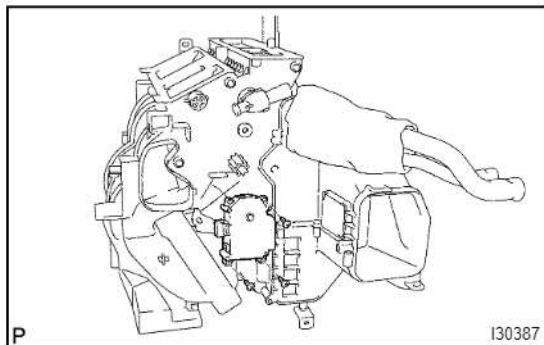


- 23. REMOVE MODE DAMPER SERVO SUB-ASSY**
- (a) Remove the 3 screws and mode damper servo sub-assy.



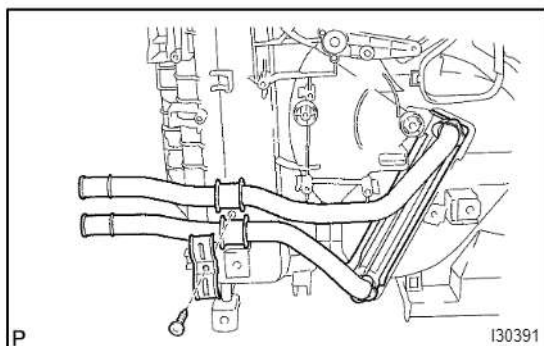
24. REMOVE WIRING AIR CONDITIONING HARNESS SUB-ASSY

- (a) Remove the wiring air conditioning harness sub-assy from the air conditioner radiator assy.



25. REMOVE AIRMIX DAMPER SERVO SUB-ASSY

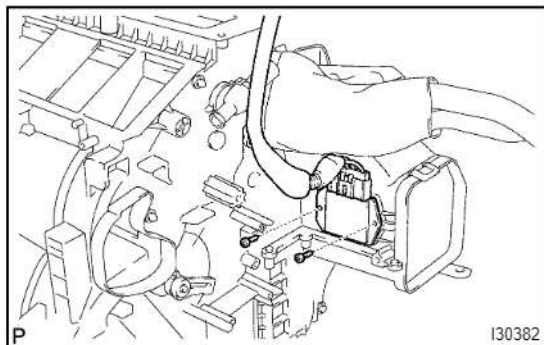
- (a) Remove the 3 screws and airmix damper servo sub-assy.



26. REMOVE HEATER RADIATOR UNIT SUB-ASSY

- (a) Remove the screw and clamp.
- (b) Remove the heater radiator unit sub-assy from the air conditioner radiator assy.

27. REMOVE COOLER THERMISTOR NO.1



28. REMOVE BLOWER MOTOR CONTROL (AUTO AIR CONDITIONING)

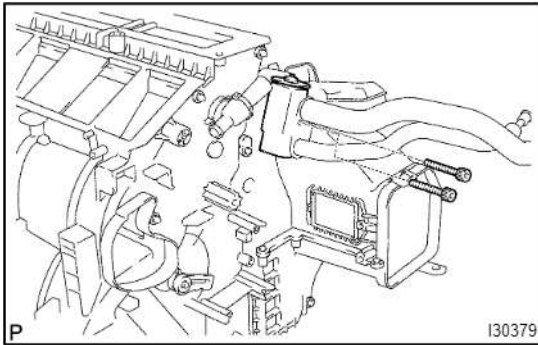
- (a) Remove the 2 screws and blower motor control.

29. REMOVE BLOWER RESISTOR (MANUAL AIR CONDITIONING)

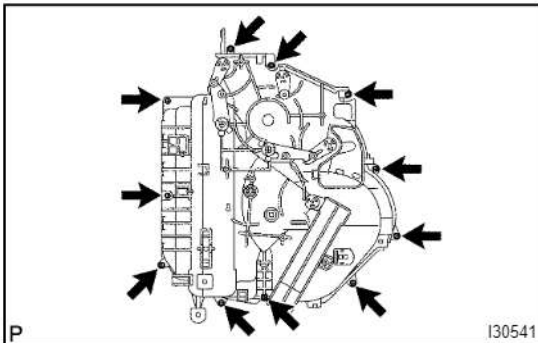
- (a) Remove the 2 screws and blower resistor.

30. REMOVE WIRING AIR INDICATOR HARNESS SUB-ASSY NO.2

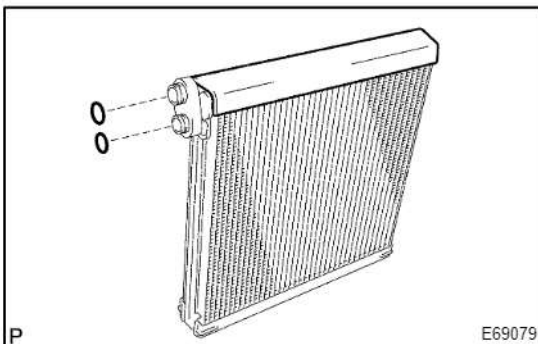
- (a) Remove the wiring air indicator harness sub-assy No.2 from the blower motor control.

**31. REMOVE COOLER EXPANSION VALVE**

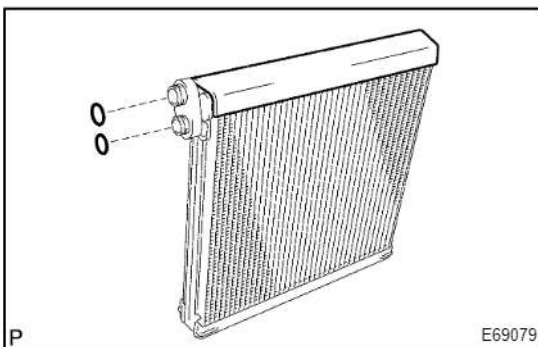
- (a) Using a hexagon wrench 4 mm (0.16 in.), remove the 2 hexagon bolts and cooler expansion valve.
- (b) Remove the 2 O-rings from the air conditioner tube assy.

**32. REMOVE COOLER EVAPORATOR SUB-ASSY NO.1**

- (a) Remove the 11 screws and radiator case.
- (b) Remove the cooler evaporator sub-assy No.1 from the air conditioner radiator assy.



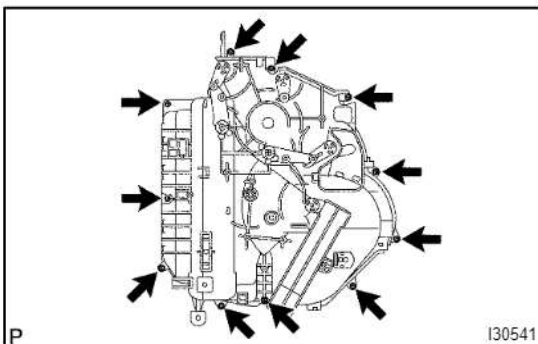
- (c) Remove the 2 O-rings from the cooler evaporator sub-assy No.1.

**33. INSTALL COOLER EVAPORATOR SUB-ASSY NO.1**

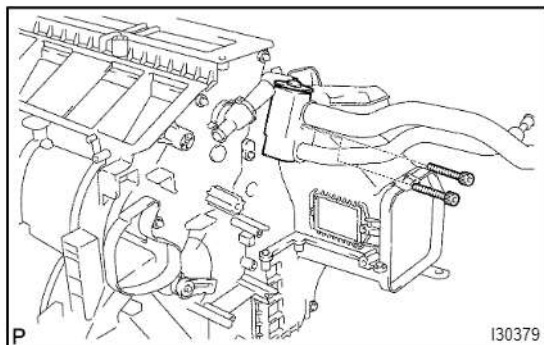
- (a) Sufficiently apply compressor oil to the 2 new O-rings and fitting surface of the cooler evaporator sub-assy No.1.

Compressor oil: ND-OIL 8 or equivalent

- (b) Install the 2 O-rings on the cooler evaporator sub-assy No.1.



- (c) Install the cooler evaporator No.1 to the air conditioner radiator assy.
- (d) Install the evaporator cover with the 11 screws.

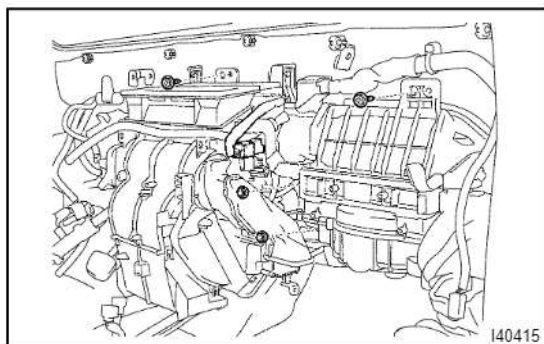
**34. INSTALL COOLER EXPANSION VALVE**

- (a) Sufficiently apply compressor oil to the 2 new O-rings and fitting surface of the air conditioning tube assy.

Compressor oil: ND-OIL 8 or equivalent

- (b) Install the 2 O-rings on the air conditioning tube assy.
 (c) Using a hexagon wrench 4mm (0.15 in.), install the cooler expansion valve and 2 hexagon bolts to the cooler evaporator No.1.

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

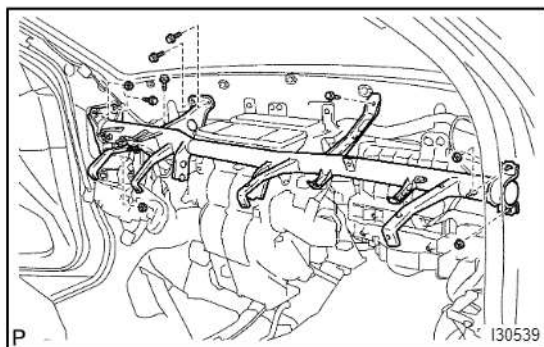
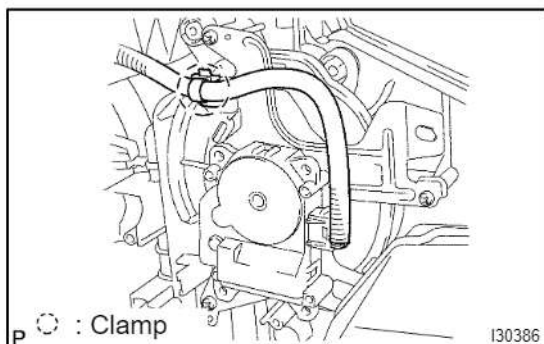
**35. INSTALL AIR CONDITIONER UNIT ASSY**

- (a) Install the air conditioner unit assy with the 2 bolts and 2 nuts.

Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)

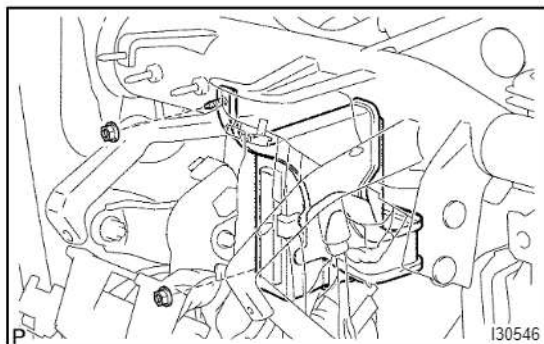
- (b) Connect the connectors connecting the wiring air indicator No.2 harness and vehicle harness.

- (c) Install the connector and clamp.

**36. INSTALL INSTRUMENT PANEL REINFORCEMENT ASSY**

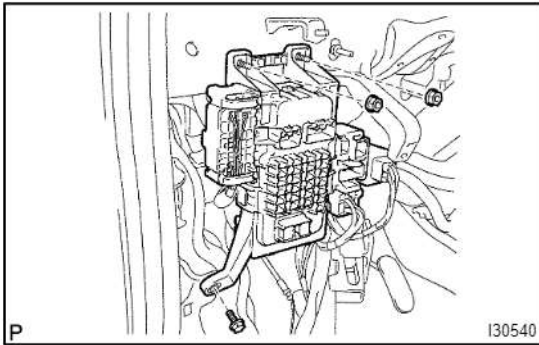
- (a) Install the instrument panel reinforcement assy with the 5 bolts and 4 nuts.

Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)

**37. INSTALL SKID CONTROL ECU ASSY**

- (a) Install the skid control ECU assy with the 2 nuts.

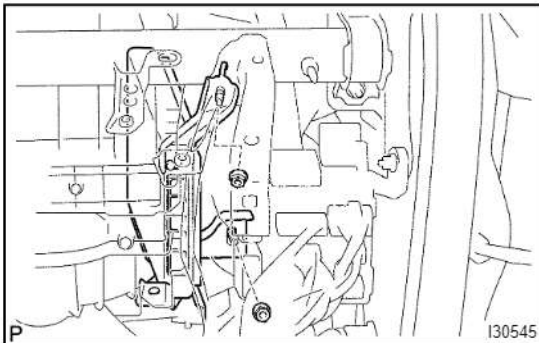
Torque: 5.0 N·m (50 kgf·cm, 43 in·lbf)



38. INSTALL INSTRUMENT PANEL JUNCTION BLOCK ASSY

- (a) Install the instrument panel junction block assy with the bolt and 2 nuts.

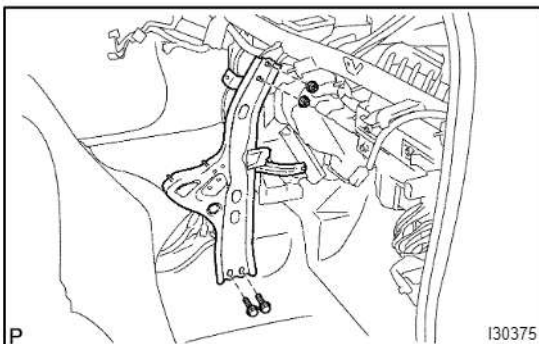
Torque: 8.4 N·m (86 kgf·cm, 74 in·lbf)



39. INSTALL ECM

- (a) Install the ECM with the 2 nuts.

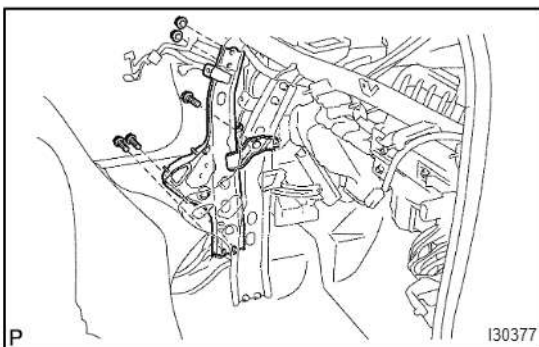
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)



40. INSTALL INSTRUMENT PANEL BRACE SUB-ASSY NO.2

- (a) Install the instrument panel brace sub-assy No.2 with the 2 bolts and 2 nuts.

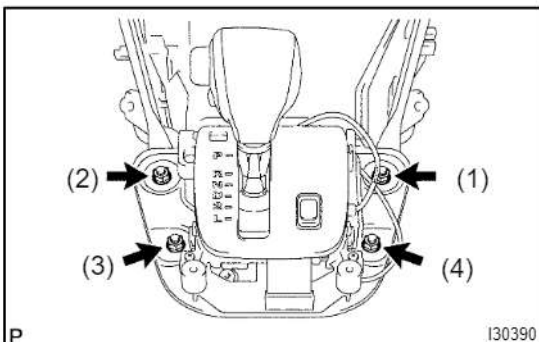
Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)



41. INSTALL INSTRUMENT PANEL BRACE SUB-ASSY NO.1

- (a) Install the instrument panel brace sub-assy No.1 with the 3 bolts and 2 nuts.

Torque: 29 N·m (300 kgf·cm, 21 ft·lbf)



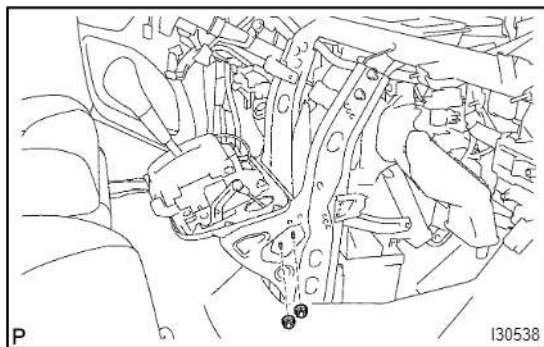
42. INSTALL FLOOR SHIFT ASSY

- (a) Install the floor shift assy with the 4 nuts.

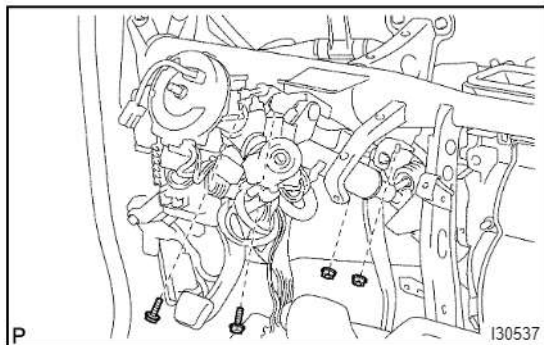
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

NOTICE:

Tighten the nuts in numerical order shown in the illustration to install the floor shift assy.



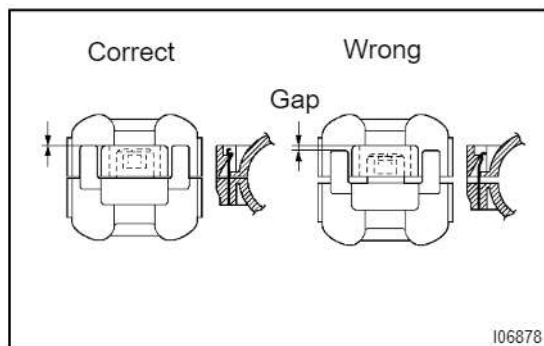
- (b) Install the shift cable with the 2 nuts.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)



43. INSTALL STEERING COLUMN ASSY

- (a) Install the steering column assy with the 2 bolts and 2 nuts.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)

44. INSTALL INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-10)



45. INSTALL COOLER REFRIGERANT SUCTION PIPE NO.1

- (a) Remove the attached vinyl tape from the pipe.
 (b) Coat a new O-ring with compressor oil and install them to the hose.
Compressor oil: ND-OIL 8 or equivalent
 (c) Install the cooler refrigerant suction pipe No.1 and piping clamp.

HINT:

- Be sure to connect the pipe securely.
- After connection, check the fitting for claw of the piping clamp.

46. INSTALL COOLER REFRIGERANT LIQUID PIPE A

- (a) Remove the attached vinyl tape from the pipe.
 (b) Coat a new O-ring with compressor oil and install it to the pipe.
Compressor oil: ND-OIL 8 or equivalent
 (c) Install the cooler refrigerant liquid pipe A and piping clamp.

47. ADD COOLANT

2AZ-FE: (SEE PAGE 16-6)

3MZ-FE: (SEE PAGE 16-26)

48. CHECK FOR ENGINE COOLANT LEAKS

2AZ-FE: (SEE PAGE 16-1)

3MZ-FE: (SEE PAGE 16-20)

49. CHARGE REFRIGERANT (SEE PAGE 55-17)

SST 07110-58060 (07117-58060, 07117-58070, 07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

Specified amount: **650 ± 50 g (22.93 ± 1.76 oz.)**

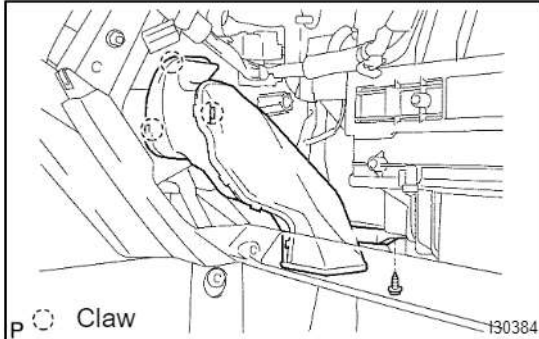
50. WARM UP ENGINE**51. INSPECT LEAKAGE OF REFRIGERANT (SEE PAGE 55-17)**

OVERHAUL

HINT:

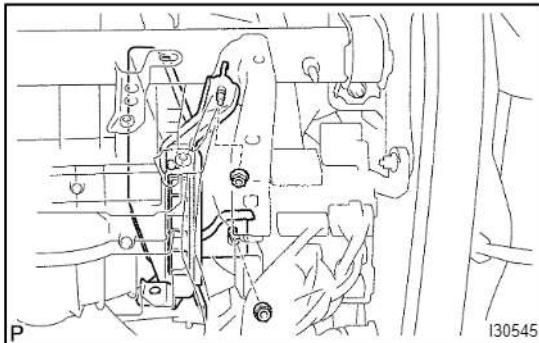
COMPONENTS: see page 55-40

1. REMOVE GLOVE COMPARTMENT DOOR ASSY(SEE PAGE 71-10)



2. REMOVE AIR DUCT NO.2

- (a) Remove the screw.
- (b) Release the 3 claw fittings and remove the air duct No.2.

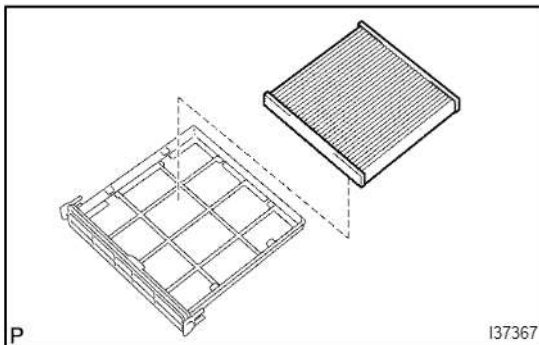


3. REMOVE ECM

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

4. REMOVE CLEAN AIR FILTER SUB-ASSY

- (a) Release the 2 claw fittings and remove the air filter sub-assy.

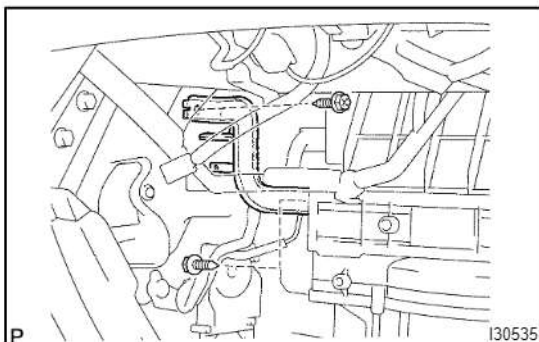


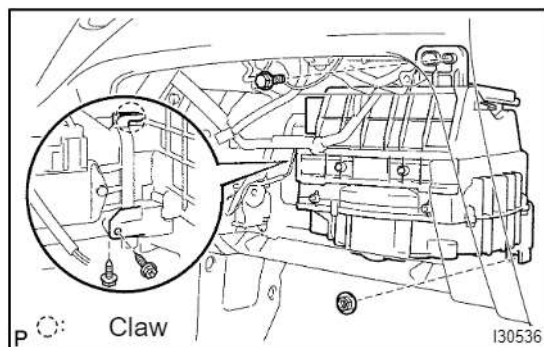
5. REMOVE CLEAN AIR FILTER

- (a) Remove the air refiner element from the air filter cover plate.

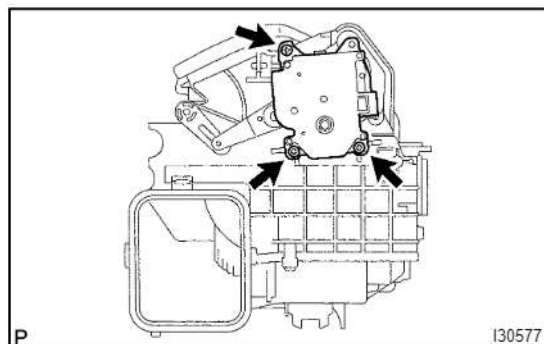
6. REMOVE BLOWER ASSY

- (a) Disconnect the connector and clamp of the cooling unit motor w/ fan sub-assy.
- (b) Disconnect the connector of the recirculation damper servo.
- (c) Remove the 2 screws and bracket.



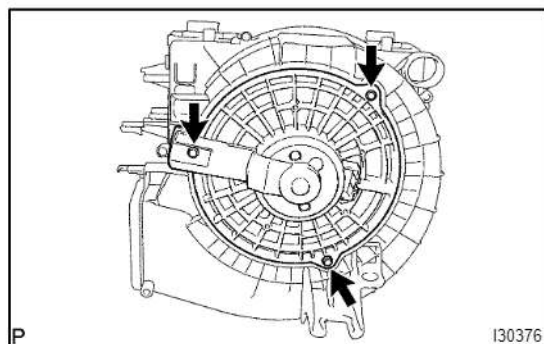


- (d) Remove the bolt, nut and 2 screws.
- (e) Disconnect the part fitted to the air conditioner radiator assy and remove the blower assy.



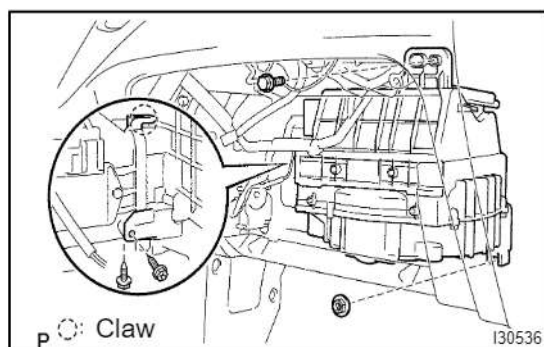
7. REMOVE RECIRCULATION DAMPER SERVO SUB-ASSY

- (a) Remove the 3 screws and air inlet servo motor (recirculation damper servo sub-assy).



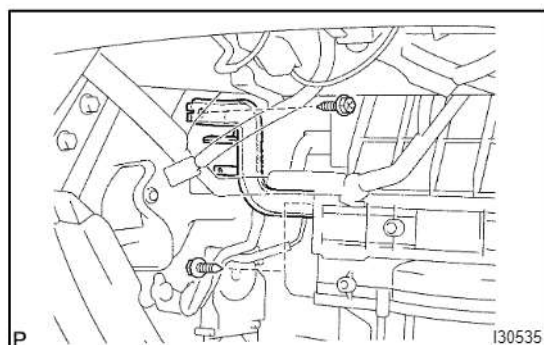
8. REMOVE COOLING UNIT MOTOR SUB-ASSY W/FAN

- (a) Remove the 3 screws and cooling unit motor servo sub-assy w/ fan.

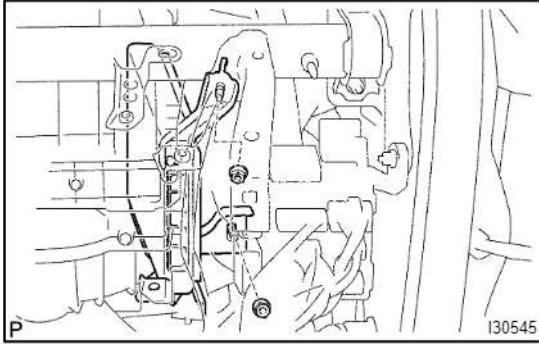


9. INSTALL BLOWER ASSY

- (a) Aligning the part to be fitted with that of the air conditioner radiator assy, install the blower assy.
- (b) Install the blower assy with the bolt, nut and 2 screws.
Torque: 9.8 N·m (100kgf·cm, 87 in·lbf)



- (c) Install the bracket with the 2 screws.
- (d) Install the connector and clamp.

**10. INSTALL ECM**

- (a) Install the ECM with the 2 nuts.

Torque: 5.5 N·m (56 kgf·cm, 49 in.·lbf)

REPLACEMENT

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

- Turn the A/C switch on.
- Operate the cooler compressor at an engine rpm of approximately 1,000 for 5 to 6 minutes to circulate the refrigerant and collect compressor oil remaining in each component into the cooler compressor as much as possible.
- Stop the engine.
- Using SST, let the refrigerant gas out.
SST 07110-58060 (07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

2. CHARGE REFRIGERANT

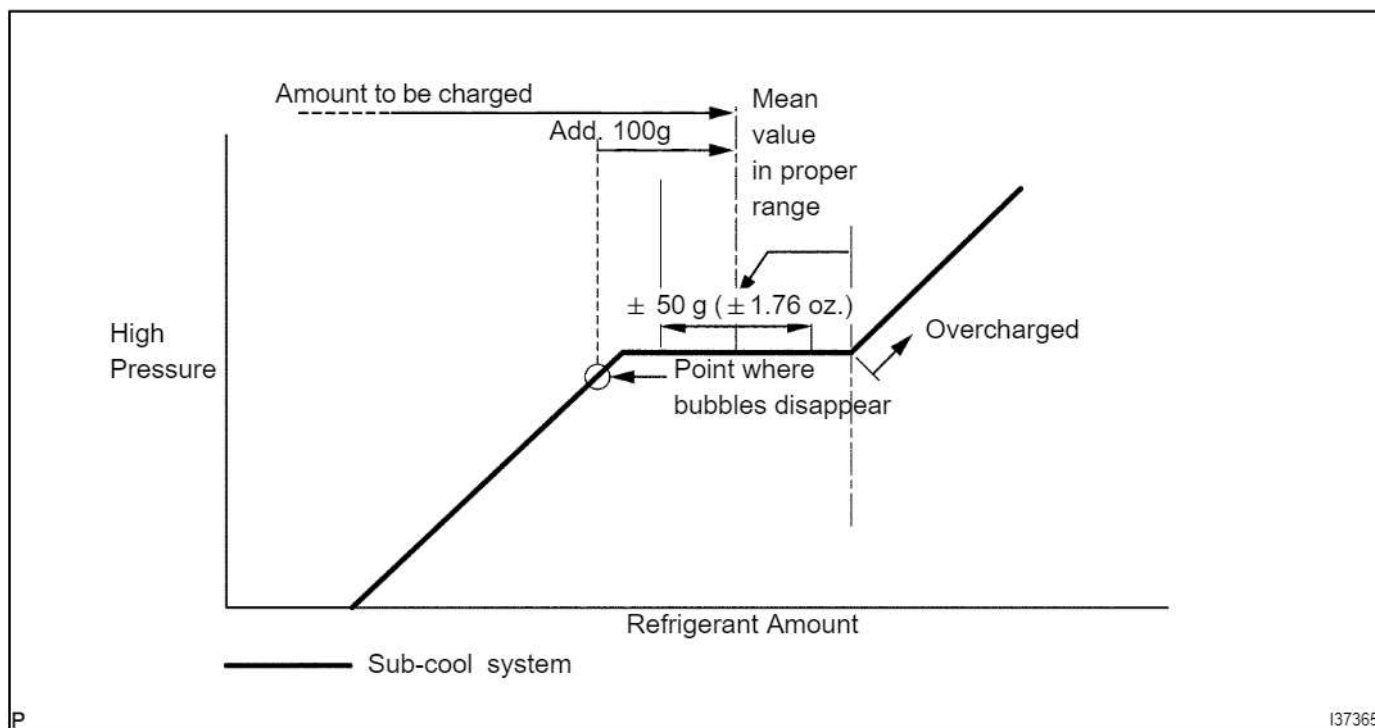
- Using a vacuum pump, perform vacuum purging.
- Using SST charge refrigerant, HFC-134a (R134a).

Standard: 650 ± 50 g (22.93 ± 1.76 oz.)

SST 07110-58060 (07117-58060, 07117-58070, 07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

NOTICE:

Do not start the engine before charging with refrigerant as the cooler compressor doesn't work properly without any refrigerant, which causes the compressor to overheat.



3. WARM UP ENGINE

NOTICE:

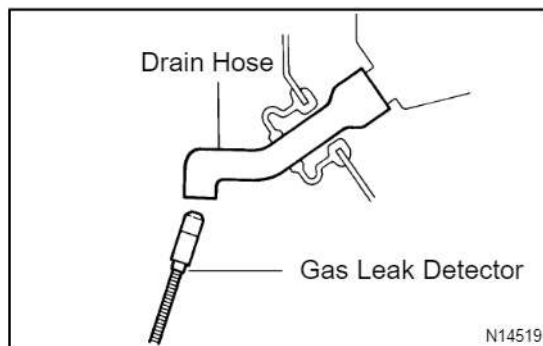
Warm up the engine at less than 2000 rpm for 2 minutes or more after charging with refrigerant.

4. INSPECT LEAKAGE OF REFRIGERANT

(a) Perform in these conditions:

- Stop the engine.
- Secure good ventilation (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 to 588 kPa (4 to 6 kgf/cm², 57 to 85 psi)



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

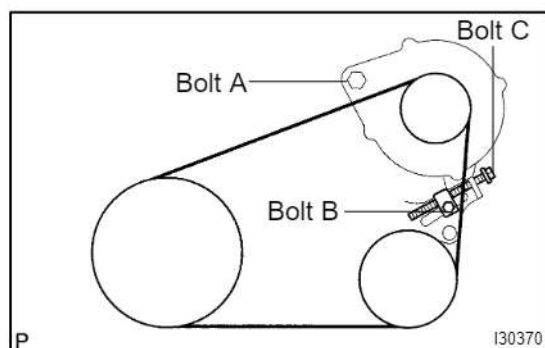
HINT:

- 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 bringing 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.

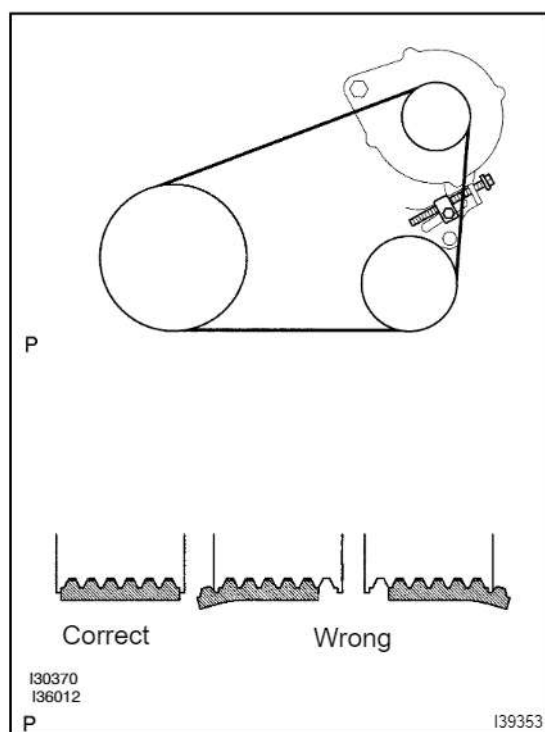
- (c) If a gas leak is not detected on the drain hose, remove the blower motor control (blower resistor) from the cooling unit. Insert the gas leak detector sensor into the unit and perform the test.
- (d) Disconnect the connector and leave the pressure switch for approximately 20 minutes. Bring the 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.

REPLACEMENT



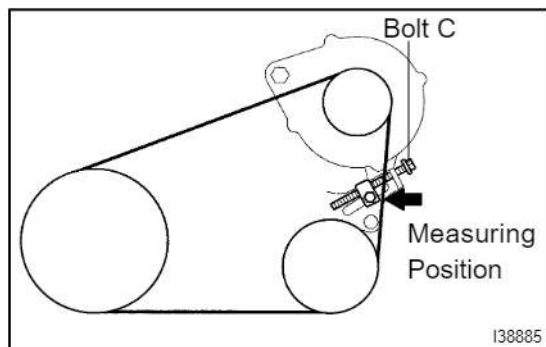
1. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

- (a) Loosen bolt A.
- (b) Loosen bolt B.
- (c) Loosen bolt C and remove the V belt.



2. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

- (a) Temporarily install the V belt as illustrated.



3. ADJUST V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

- (a) Apply drive belt tension by turning bolt C.

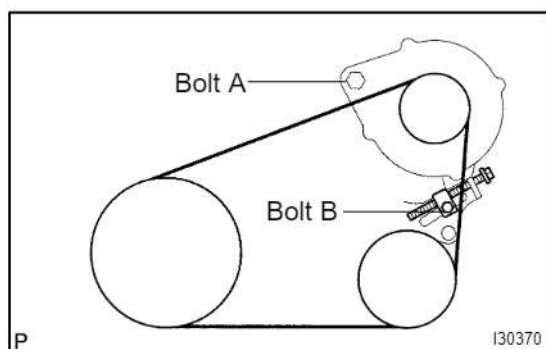
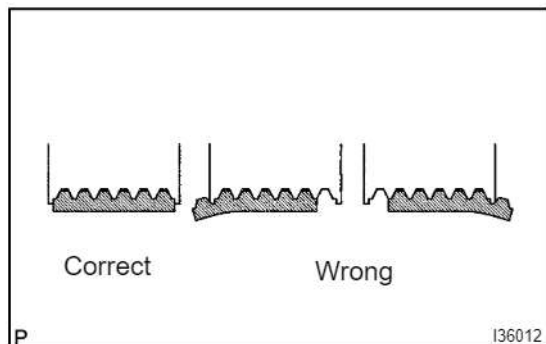
Drive belt tension:

New belt: 160 to 180 lbf

Used belt: 115 to 135 lbf

NOTICE:

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



4. FULLY TIGHTEN V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

- (a) Tighten bolt A.

Torque: 58 N·m (591 kgf·cm, 43 ft·lbf)

- (b) Tighten bolt B.

Torque: 18 N·m (183 kgf·cm, 13 ft·lbf)

REPLACEMENT

HINT:

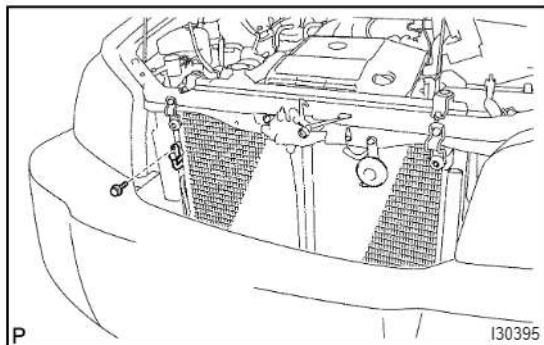
COMPONENTS: see page 55-59

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (SEE PAGE 55-17)

SST 07110-58060 (07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

2. REMOVE BATTERY

3. REMOVE RADIATOR GRILLE (SEE PAGE 76-2)

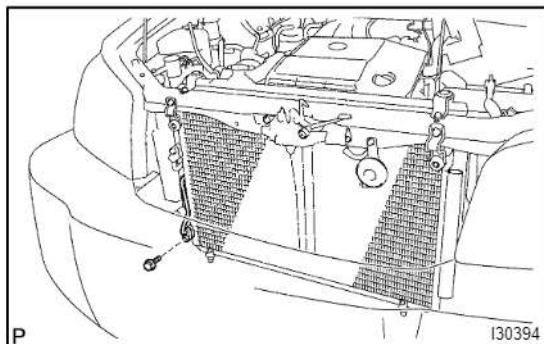


4. DISCONNECT COOLER REFRIGERANT DISCHARGE PIPE A

- (a) Remove the bolt and disconnect the cooler refrigerant discharge pipe from the condenser assy.
- (b) Remove the O-ring from the cooler refrigerant discharge pipe.

NOTICE:

Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

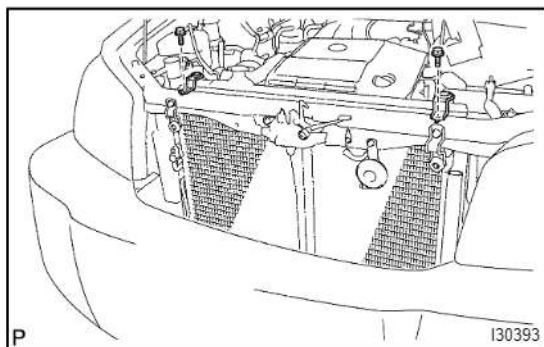


5. DISCONNECT COOLER REFRIGERANT LIQUID PIPE A

- (a) Remove the bolt and disconnect the cooler refrigerant liquid pipe A from the condenser assy.
- (b) Remove the O-ring from the cooler refrigerant liquid A pipe.

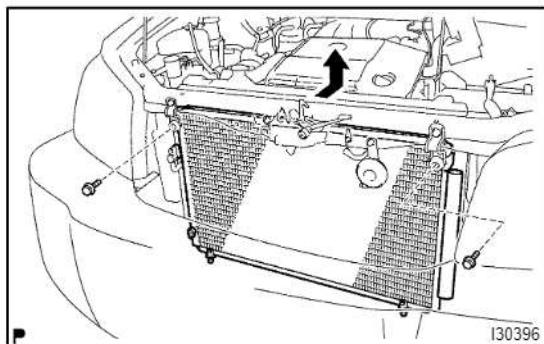
NOTICE:

Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

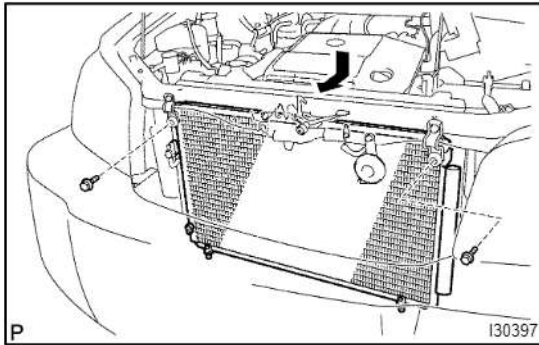


6. REMOVE COOLER CONDENSER ASSY

- (a) Remove the 2 bolts and 2 radiator upper supports.



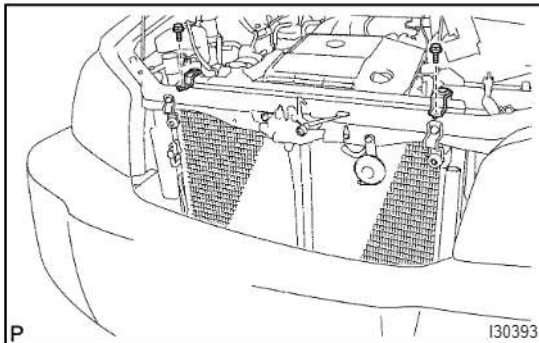
- (b) Remove the 2 bolts and slide the upper part of the radiator rearward to remove the cooler condenser assy.



7. INSTALL COOLER CONDENSER ASSY

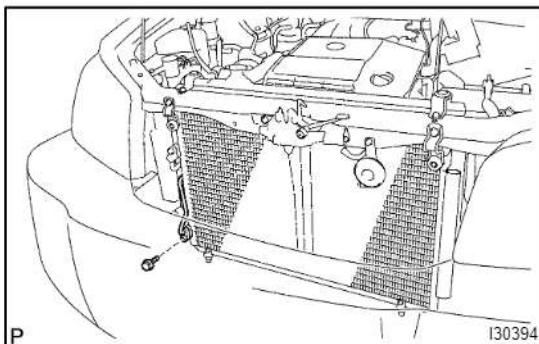
- (a) Insert the bush on the lower side of the cooler condenser assy into the cross member.
- (b) Install the cooler condenser assy and 2 bolts.

Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)



- (c) Install the radiator upper support and 2 bolts to the upper part of the radiator.

Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)



8. INSTALL COOLER REFRIGERANT LIQUID PIPE A

- (a) Remove the attached vinyl tape from the pipe and connecting part of the cooler condenser assy.
- (b) Sufficiently apply compressor oil to the O-ring and pipe joint.

Compressor oil: ND-OIL 8 or equivalent

- (c) Install a new O-ring to the cooler refrigerant liquid pipe A.
- (d) Connect the cooler refrigerant liquid pipe A to the condenser assy with the bolt.

Torque: 5.4 N·m (55 kgf·cm, 47 in·lbf)

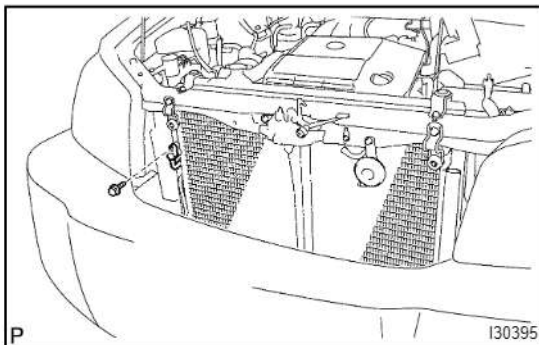
9. INSTALL COOLER REFRIGERANT DISCHARGE PIPE A

- (a) Remove the attached vinyl tape from the tube and connecting part of the condenser assy.
- (b) Sufficiently apply compressor oil to the O-ring and tube joint.

Compressor oil: ND-OIL 8 or equivalent

- (c) Install a new O-ring to the cooler refrigerant discharge tube.
- (d) Connect the cooler refrigerant liquid pipe A to the condenser assy with the bolt.

Torque: 5.4 N·m (55 kgf·cm, 47 in·lbf)



10. CHARGE REFRIGERANT (SEE PAGE 55-17)

SST 07110-58060 (07117-58060, 07117-58070, 07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

Specified amount: 650 ± 50 g (22.93 ± 1.76 oz.)

11. WARM UP ENGINE

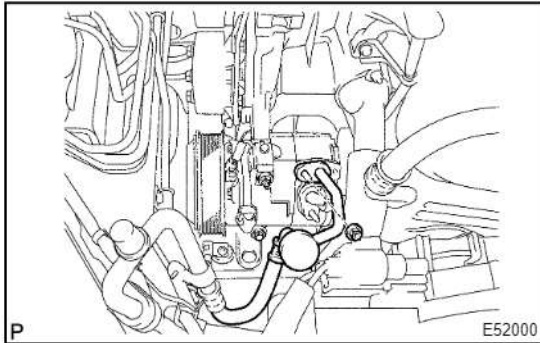
12. INSPECT LEAKAGE OF REFRIGERANT (SEE PAGE 55-17)

REPLACEMENT

HINT:

COMPONENTS: see page 55-44

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (SEE PAGE 55-17)
2. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (SEE PAGE 14-5)
3. REMOVE GENERATOR ASSY (SEE PAGE 19-16)

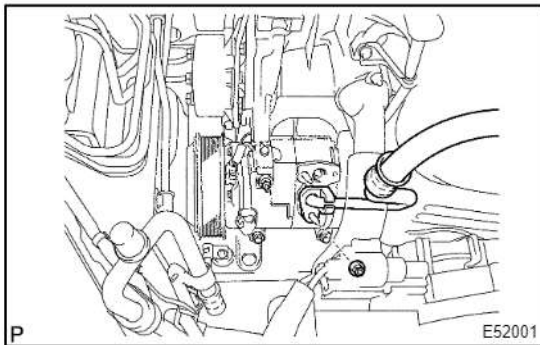


4. DISCONNECT COOLER REFRIGERANT DISCHARGE HOSE NO.1

- (a) Remove the nut and disconnect the cooler refrigerant discharge hose No.1.
- (b) Remove the O-ring from the cooler refrigerant discharge hose No.1.

NOTICE:

Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

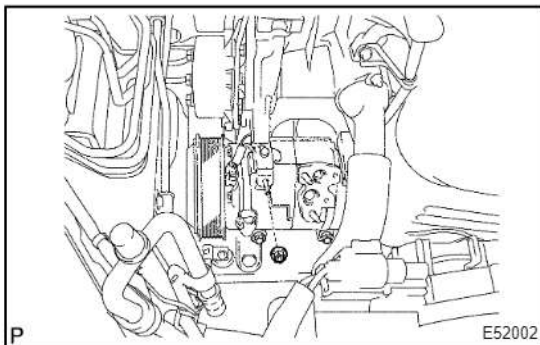


5. DISCONNECT COOLER REFRIGERANT SUCTION HOSE NO.1

- (a) Remove the nut and disconnect the cooler refrigerant suction hose No.1.
- (b) Remove the O-ring from the cooler refrigerant suction hose No.1.

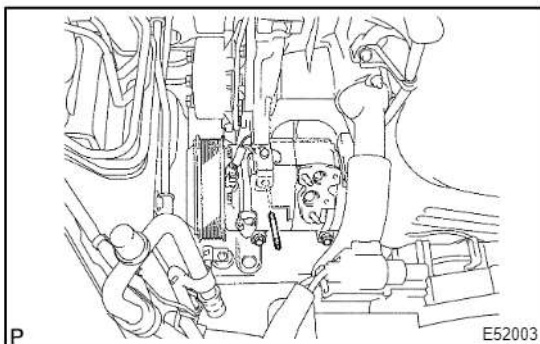
NOTICE:

Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

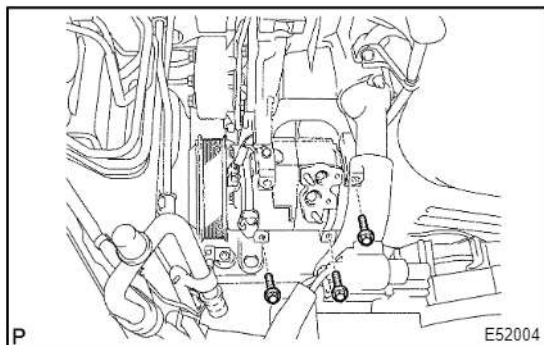


6. REMOVE COMPRESSOR AND MAGNETIC CLUTCH

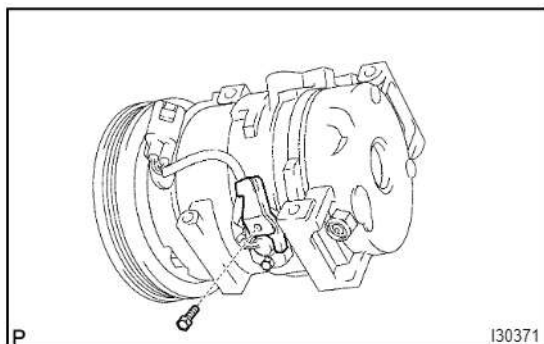
- (a) Disconnect the connector.
- (b) Remove the nut.



- (c) Using a E8 torque socket wrench, remove the stud bolt.



- (d) Remove the 3 bolts and compressor and magnetic clutch.

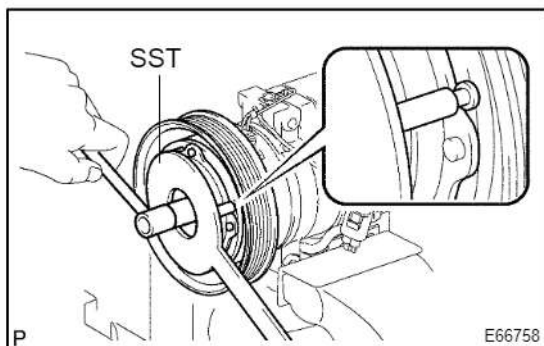


7. REMOVE MAGNET CLUTCH ASSY

- (a) Remove the bolt and the bracket.
 (b) Place the compressor and magnetic clutch in a vise.

NOTICE:

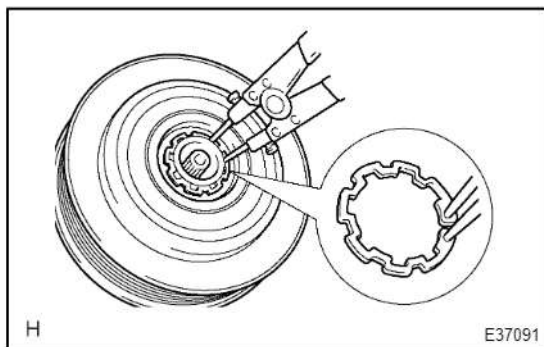
Do not get the bracket and harness caught in the vise.



- (c) Using SST, hold the magnet clutch hub.
 SST 95047-10400
 (d) Remove the bolt, magnet clutch hub and magnet clutch washer.

HINT:

There is no set number of magnet clutch washers since they are used for adjusting.

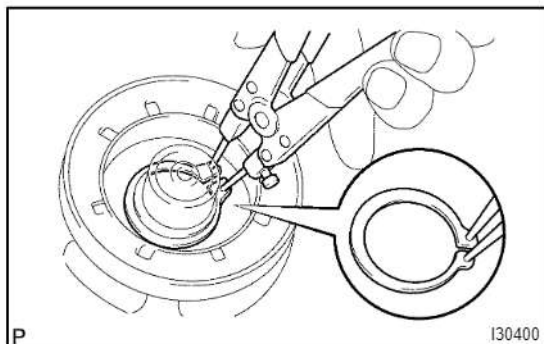


- (e) Using a snap ring expander, remove the snap ring and magnet clutch rotor.

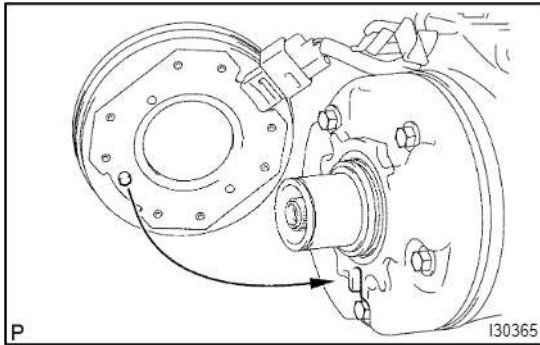
NOTICE:

Do not damage the seal cover of the bearing when removing the snap ring.

- (f) Remove the screw and disconnect the connector.

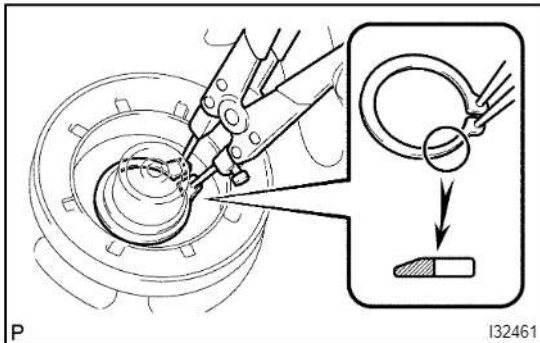


- (g) Using a snap ring expander, remove the snap ring and magnet clutch stator.



8. INSTALL MAGNET CLUTCH ASSY

- (a) Fit the parts as shown in the illustration and install the magnet clutch stator.

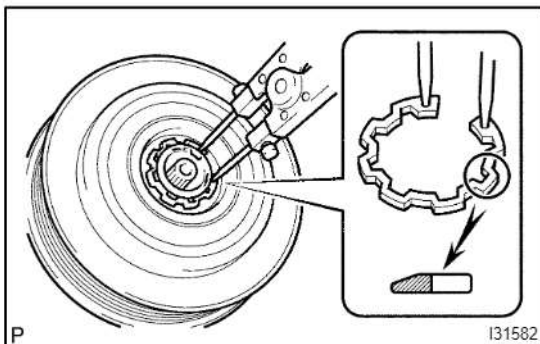


- (b) Using a snap ring expander, install a new snap ring with the chamfered side facing up.

NOTICE:

Do not damage the seal cover of the bearing when removing the snap ring.

- (c) Install the screw and connect the connector.



- (d) Using a snap ring expander, install the magnet clutch rotor and a new snap ring with the chamfered side facing up.

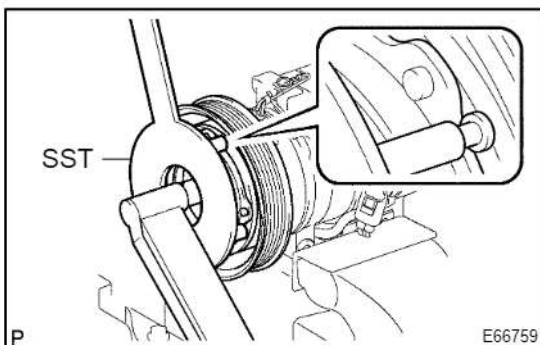
NOTICE:

- Do not expand the snap ring by more than 30.5 mm (1.2 in) when installing it.
- Do not damage the seal cover of the bearing when removing the snap ring.

- (e) Install the magnet clutch washer and magnet clutch hub.

NOTICE:

Do not change the combination of the magnet clutch washers used before disassembly.



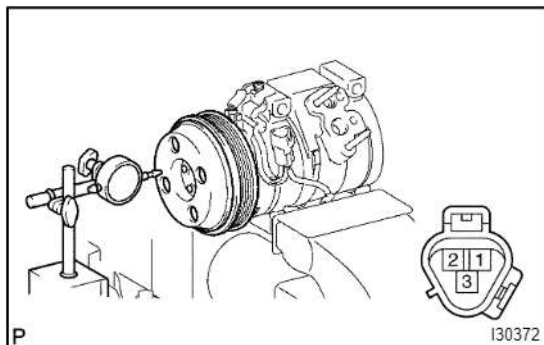
- (f) Using SST, hold the magnet clutch hub and install the bolt.

SST 95047-10400

Torque: 18 N·m (183 kgf·cm, 13 ft·lbf)

NOTICE:

Make sure that there is no foreign matter or oil on the compressor shaft, bolt, and clutch hub.



9. INSPECT MAGNETIC CLUTCH CLEARANCE

- (a) Set the dial gage to the magnet clutch hub.
- (b) Connect the positive battery lead to terminal 3 of the magnet clutch connector and the negative lead to the earth wire. Turn on and off the magnet clutch and measure the clearance.

Standard clearance:

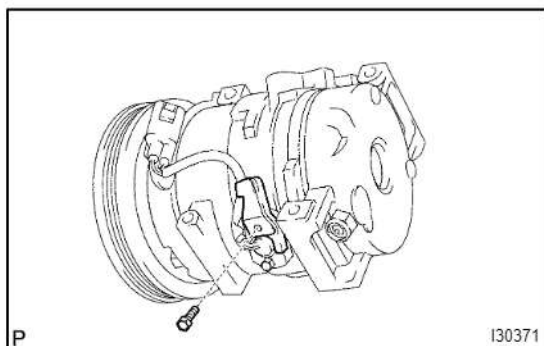
0.35 to 0.60 mm (0.013 to 0.023 in.)

If the measured value is not within the standard range, remove the magnet clutch hub and adjust it with magnet clutch washers.

NOTICE:

Adjustment shall be performed with 3 or less magnet clutch washers.

- (c) Remove the compressor and magnetic clutch from the vise.



- (d) Install bracket with the bolt.

10. INSPECT COMPRESSOR OIL

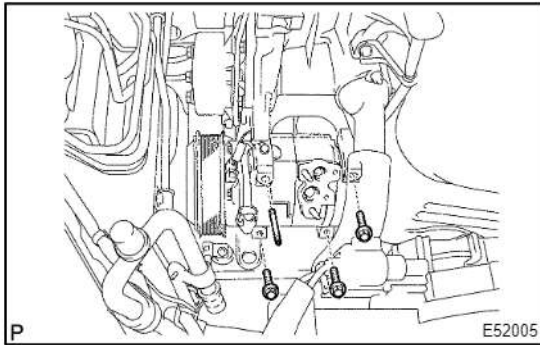
- (a) When replacing the compressor and magnetic clutch with new one, after gradually removing the refrigerant gas from the service valve, drain the following amount of oil from the new compressor and magnetic clutch before installation.

Standard:

(Oil capacity inside new cooler compressor assy: 120 + 15 cc (4.06 + 0.5 fl.oz.)) - (Remaining oil amount in the removed cooler compressor assy) = (Oil amount to be removed when replacing)

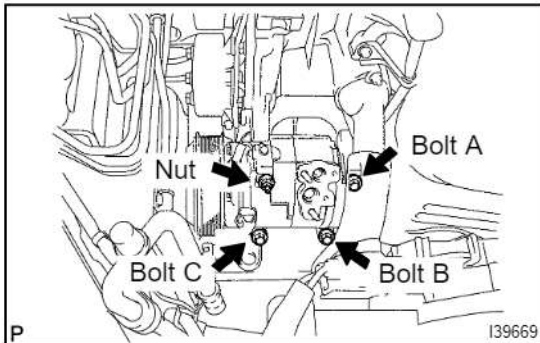
NOTICE:

- When checking the compressor oil level, observe the precautions on the cooler removal/installation.
- Because compressor oil remains in the pipes of the vehicle, if a new cooler compressor assy is installed without removing some oil inside, the oil amount becomes too much, preventing heat exchange in the refrigerant cycle and causing refrigerant failure.
- If the remaining oil in the removed cooler compressor assy is too small in volume, check for oil leakage.
- Be sure to use ND-OIL8 for compressor oil.



11. TEMPORARILY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

- (a) Install the compressor and magnetic clutch with the stud bolt, 3 bolts and nut.



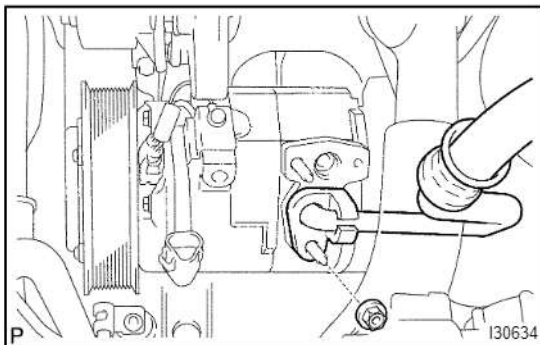
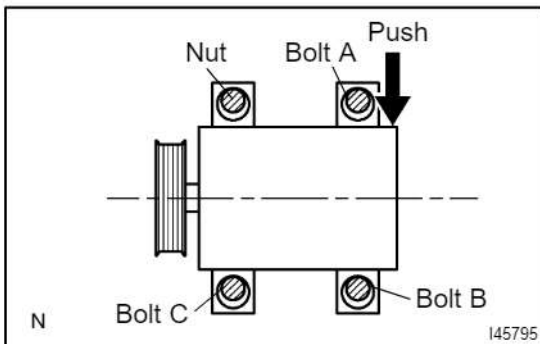
12. FULLY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

- (a) Temporarily tighten nut.

HINT:

Do not over tighten the bolt until the compressor no longer moves.

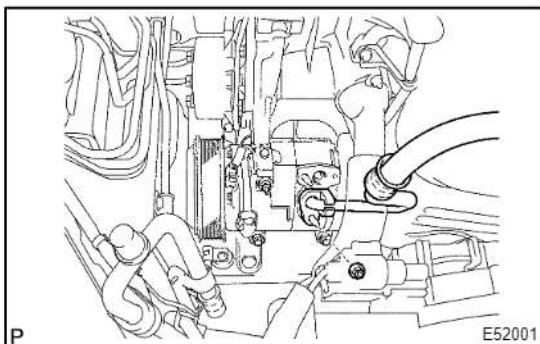
- (b) Push down on the rear side of the compressor and fully tighten bolt B, bolt C, bolt A and nut in order.
- (c) Connect the connector.



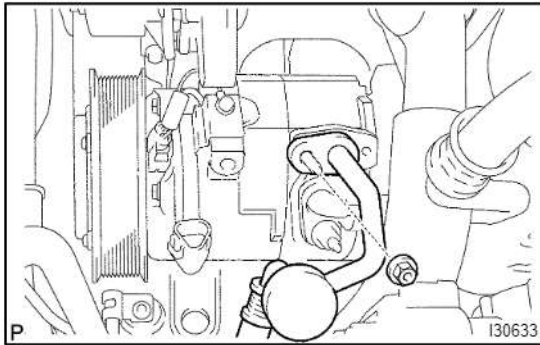
13. INSTALL COOLER REFRIGERANT SUCTION HOSE NO.1

- (a) Remove the attached vinyl tape from the hose.
- (b) Sufficiently apply compressor oil to the O-ring and fit surface of the compressor and magnetic clutch.
- (c) Install a new O-ring to the cooler refrigerant suction hose No.1.

Compressor oil: ND-OIL 8 or equivalent

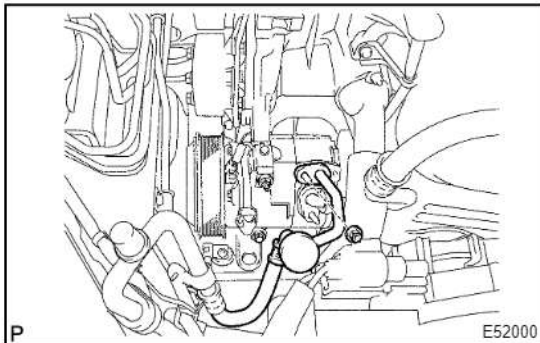


- (d) Install the cooler refrigerant suction hose No.1 to the compressor and magnetic clutch with the nut.
Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)

**14. INSTALL COOLER REFRIGERANT DISCHARGE HOSE NO.1**

- (a) Remove the attached vinyl tape from the hose.
- (b) Sufficiently apply compressor oil to the O-ring and fit surface of the compressor and magnetic clutch.
- (c) Install a new O-ring to the cooler refrigerant discharge hose No.1.

Compressor oil: ND-OIL 8 or equivalent



- (d) Install the cooler refrigerant discharge hose No.1 to the compressor and magnetic clutch with the nut.

Torque: 9.8 N·m (100 kgf·cm, 87 in.·lbf)

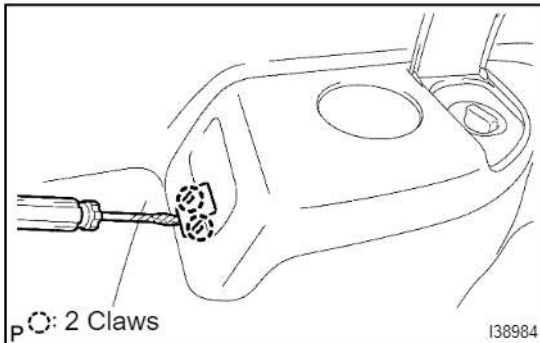
- 15. INSTALL BELT, V-RIBBED (SEE PAGE 14-5)**
- 16. INSTALL GENERATOR ASSY (SEE PAGE 19-16)**
- 17. CHARGE REFRIGERANT (SEE PAGE 55-17)**
- 18. WARM UP ENGINE (SEE PAGE 55-17)**
- 19. INSPECT LEAKAGE OF REFRIGERANT (SEE PAGE 55-17)**

REAR HEATER BLOWER SWITCH REPLACEMENT

551A5-02

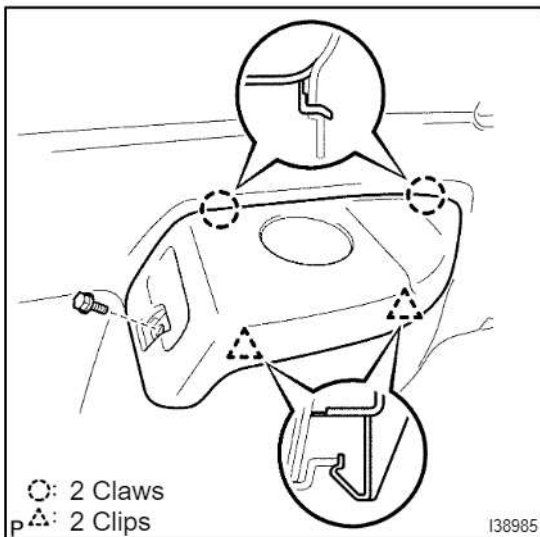
HINT:

Installation is in the reverse order of removal.



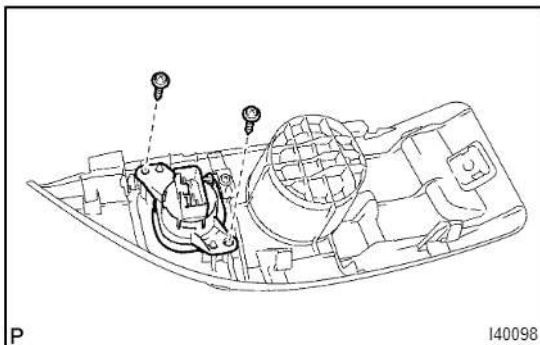
1. REMOVE DECK SIDE TRIM COVER FRONT LH

- (a) Using a thin flat-head screwdriver with the tip taped up with protective tape, disengage the 2 claw fittings and remove the deck side trim cover front.



2. REMOVE DECK SIDE TRIM COVER RH

- (a) Remove the bolt.
- (b) Release the 2 clip fittings and 2 claw fittings.
- (c) Remove the connector and deck side trim cover RH.



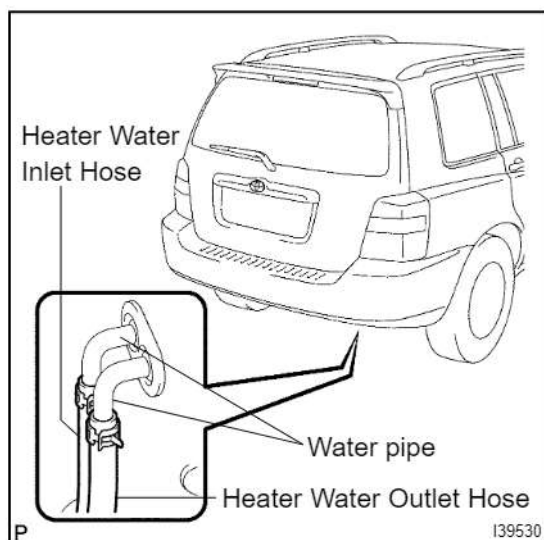
3. REMOVE REAR HEATER BLOWER SWITCH

- (a) Remove the 2 screws and rear heater blower switch.

REPLACEMENT

HINT:

- Installation is in the reverse order of removal.
 - COMPONENTS: see page 55-63
1. REMOVE DECK SIDE TRIM COVER FRONT LH (SEE PAGE 55-62)
 2. REMOVE DECK SIDE TRIM COVER RH (SEE PAGE 55-62)
 3. REMOVE DECK TRIM SIDE PANEL ASSY RH (SEE PAGE 76-21)



4. DISCONNECT HEATER WATER OUTLET HOSE

- (a) Using pliers, grip the claws of the clip and slide the clip, and disconnect the heater water outlet hose.

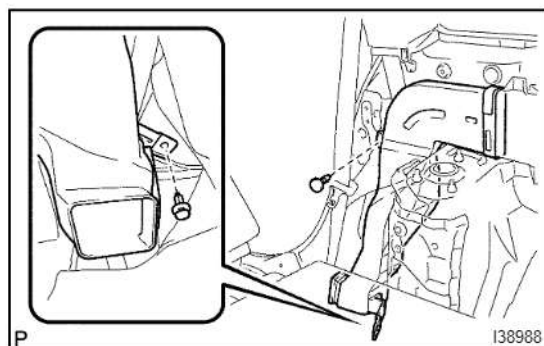
NOTICE:

- When installing or removing the hoses, hold heater water pipes to prevent deformation.
- Do not apply any excessive force to the heater water outlet hose.
- Prepare a drain pan or cloth in case the cooling water leaks.

5. DISCONNECT HEATER WATER INLET HOSE

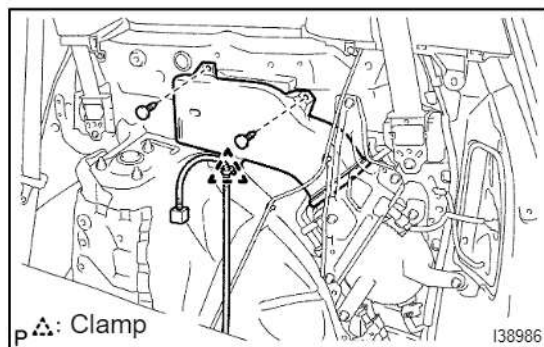
HINT:

Disconnect the heater water inlet hose in the same way as the heater water outlet hose.



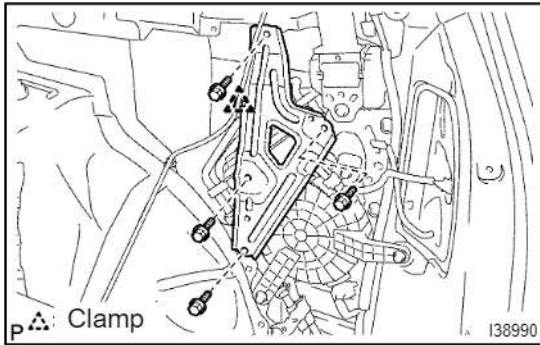
6. REMOVE FOOT AIR DUCT REAR

- (a) Remove the 2 clips and foot air duct rear.



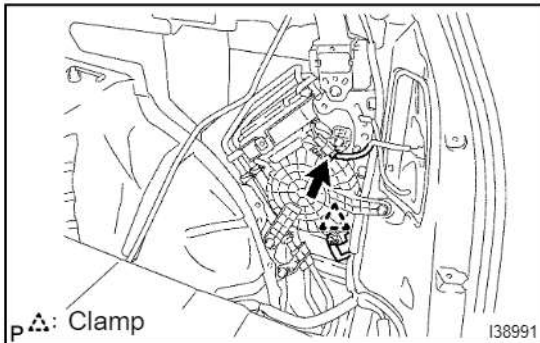
7. REMOVE AIR DUCT REAR NO.5

- (a) Disconnect the wire harness clamp.
- (b) Remove the 2 clips and air duct rear No.5.

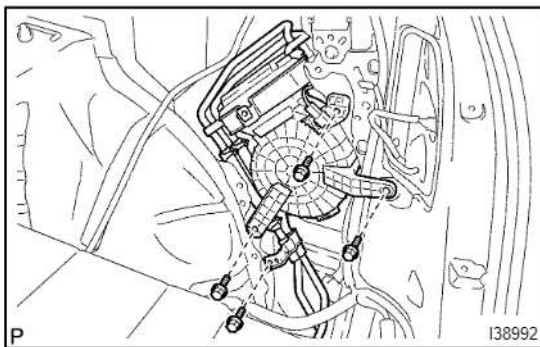


8. REMOVE REAR HEATER ASSY

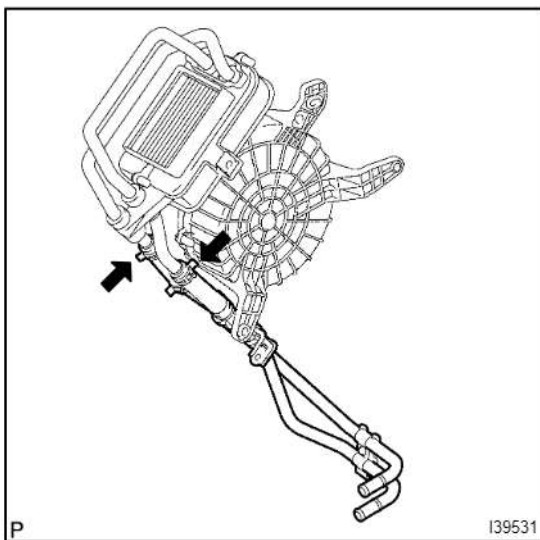
- (a) Disconnect the washer hose clamp.
- (b) Remove the 4 bolts and plate.



- (c) Disconnect the heater relay No.1 clamp.
- (d) Disconnect the heater blower resistor connector.



- (e) Remove the 4 bolts and rear heater assy.

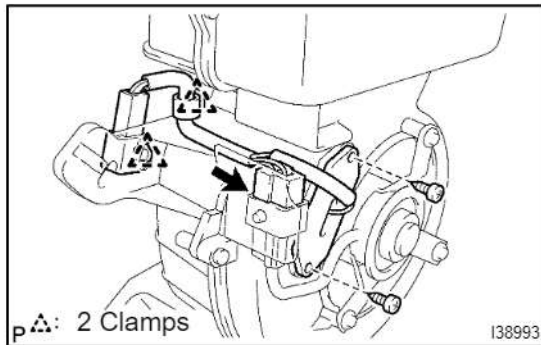


9. REMOVE WATER PIPE & HOSE SUB-ASSY

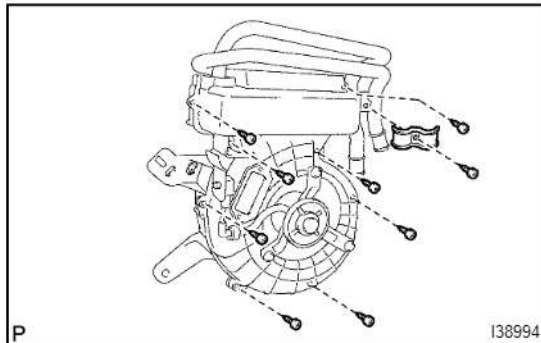
- (a) Using pliers, grip the claws of the 2 clips and slide the 2 clips, and disconnect the heater water hose.

NOTICE:

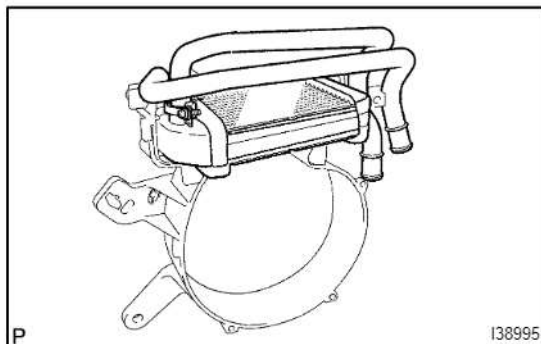
Do not apply any excessive force to the heater water hose.

**10. REMOVE REAR HEATER BLOWER RESISTOR**

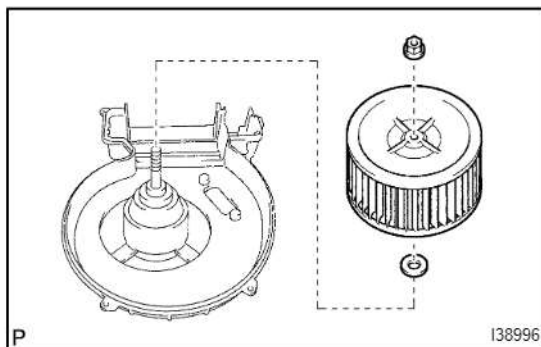
- (a) Disconnect the 2 clamps and connector.
- (b) Remove the 2 screws and rear heater blower resistor.

**11. REMOVE REAR HEATER UNIT SUB-ASSY**

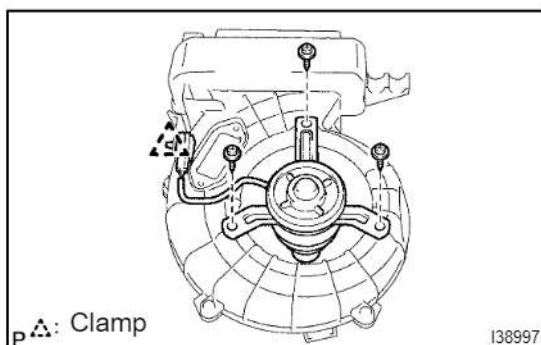
- (a) Remove the 9 screws and clamp.



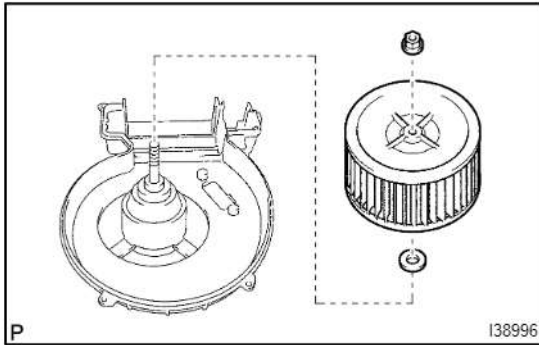
- (b) Remove the rear heater unit sub-assy from the heater case.

**12. REMOVE REAR HEATER BLOWER FAN SUB-ASSY**

- (a) Remove the nut and heater blower fan sub-assy.
- (b) Remove the washer.

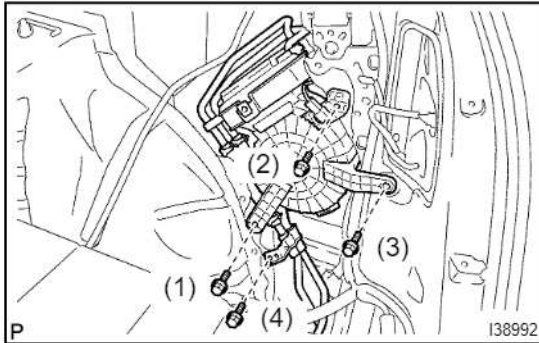
**13. REMOVE REAR HEATER BLOWER MOTOR SUB-ASSY**

- (a) Disconnect the connector clamp.
- (b) Remove the 3 screws and heater blower motor sub-assy.

**14. INSTALL REAR HEATER BLOWER FAN SUB-ASSY**

- (a) Install the washer.
- (b) Install the heater blower fan sub-assy with the nut.

Torque: 4.0 N·m (41 kgf·cm, 35 in.·lbf)

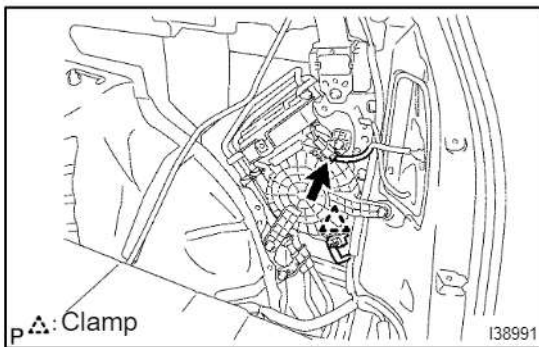
**15. INSTALL REAR HEATER ASSY**

- (a) Install the rear heater assy with the 4 bolts.

Torque: 9.8 N·m (100 kgf·cm, 87 in.·lbf)

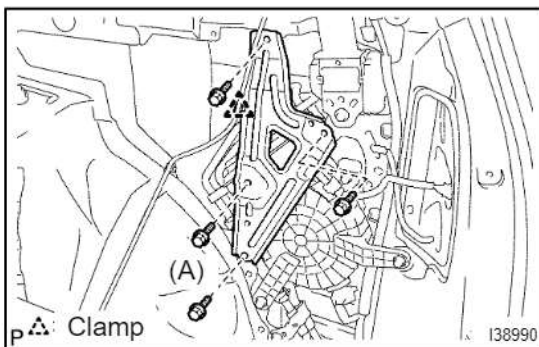
NOTICE:

Tighten the bolts in the numerical order shown in the illustration to install the rear heater assy.



- (b) Install the heater blower resistor connector.

- (c) Install the heater relay No.1.



- (d) Install the waher hose.

- (e) Install the plate with the 4 bolts.

Torque:

Bolt A: 9.8 N·m (100 kgf·cm, 87 in.·lbf)

REPLACEMENT

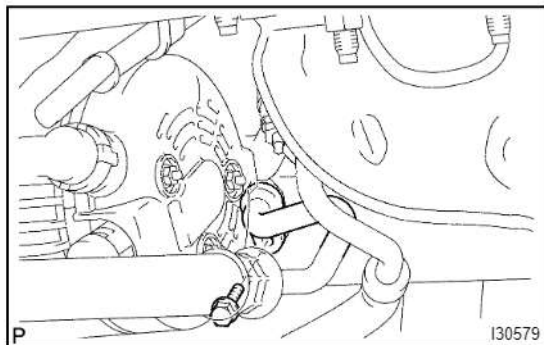
HINT:

COMPONENTS: see page 55-51

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (SEE PAGE 55-17)

SST 07110-58060 (07117-58080, 07117-58090, 07117-78050, 07117-88060, 07117-88070, 07117-88080)

2. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (SEE PAGE 55-22)

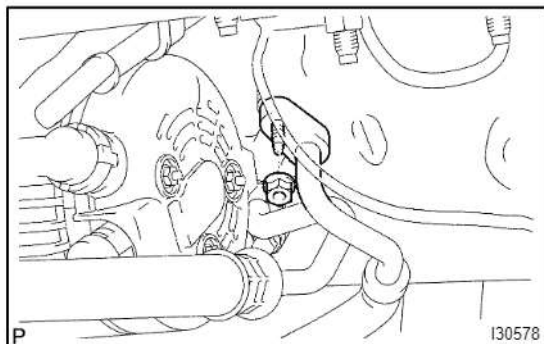


3. DISCONNECT COOLER REFRIGERANT SUCTION HOSE NO.1

- Remove the bolt and disconnect the cooler refrigerant suction hose No.1 from the compressor and magnetic clutch.
- Remove the O-ring from the cooler refrigerant suction hose No.1.

NOTICE:

Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.



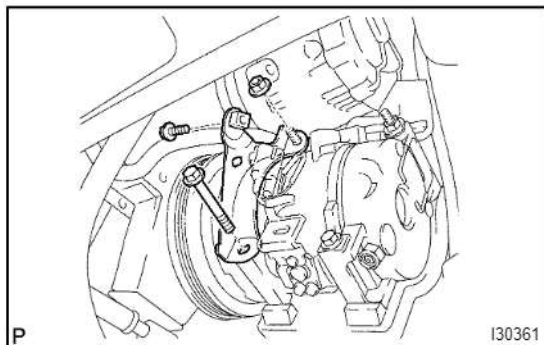
4. DISCONNECT COOLER REFRIGERANT DISCHARGE HOSE NO.1

- Remove the nut and disconnect the cooler refrigerant discharge hose No.1 from the compressor and magnetic clutch.
- Remove the O-ring from the cooler refrigerant discharge hose No.1.

NOTICE:

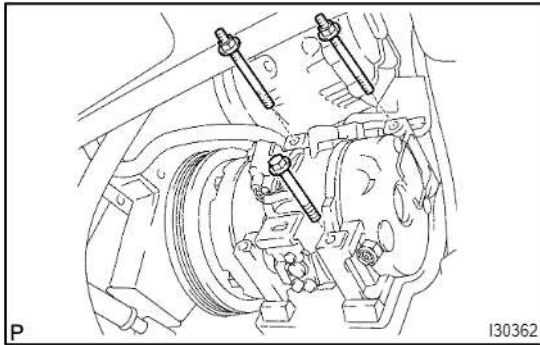
Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

5. REMOVE ENGINE UNDER COVER NO.1

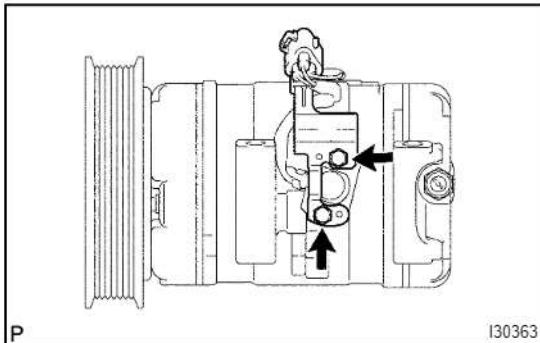


6. REMOVE COMPRESSOR AND MAGNETIC CLUTCH

- Disconnect the connector and clamp.
- Remove the 2 bolts, nut and the cooler compressor bracket.



- (c) Remove the 3 bolts and the compressor and magnetic clutch.

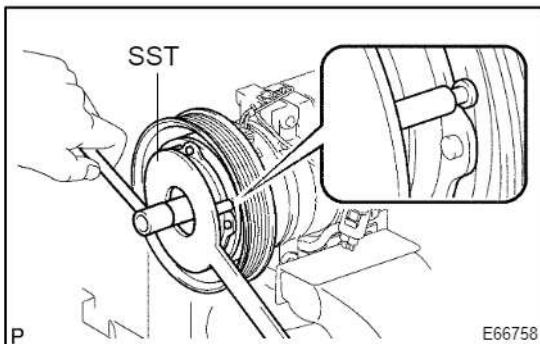


7. REMOVE MAGNET CLUTCH ASSY

- (a) Remove the 2 bolts and the bracket.
(b) Place the compressor and magnetic clutch in a vise.

NOTICE:

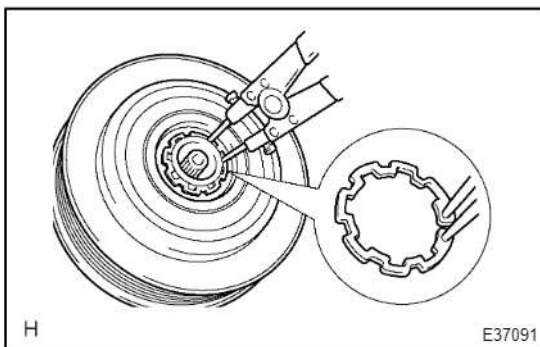
Do not get the bracket and harness caught in the vise.



- (c) Using SST, hold the magnet clutch hub.
SST 95047-10400
(d) Remove the bolt, magnet clutch hub and magnet clutch washer.

HINT:

There is no set number of magnet clutch washers since they are used for adjusting.

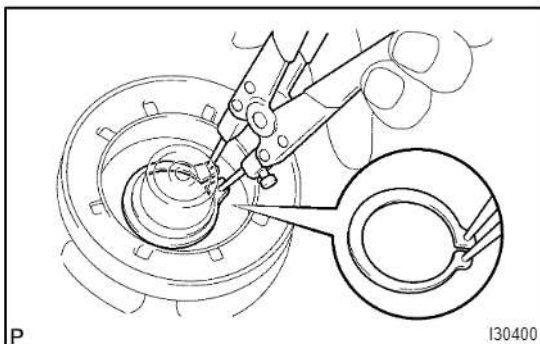


- (e) Using a snap ring expander, remove the snap ring and magnet clutch rotor.

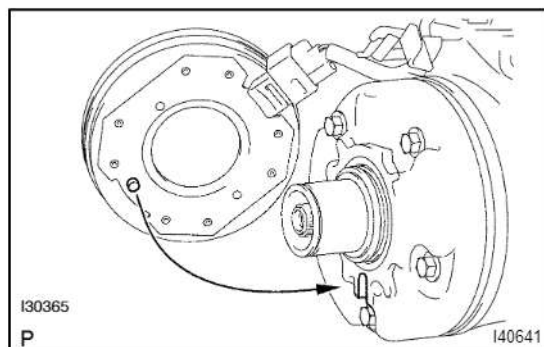
NOTICE:

Do not damage the seal cover of the bearing when removing the snap ring.

- (f) Remove the screw and disconnect the connector.

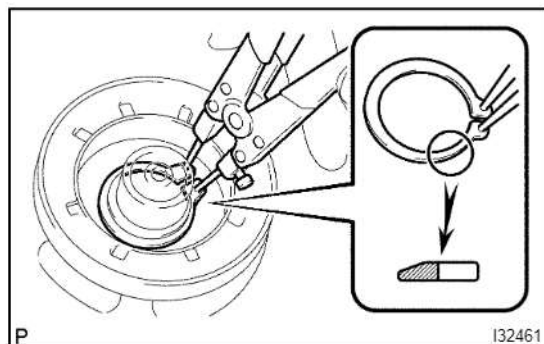


- (g) Using a snap ring expander, remove the snap ring and magnet clutch stator.



8. INSTALL MAGNET CLUTCH ASSY

- (a) Fit the magnet clutch stator convex to the compressor groove as shown in the illustration and install the magnet clutch stator.

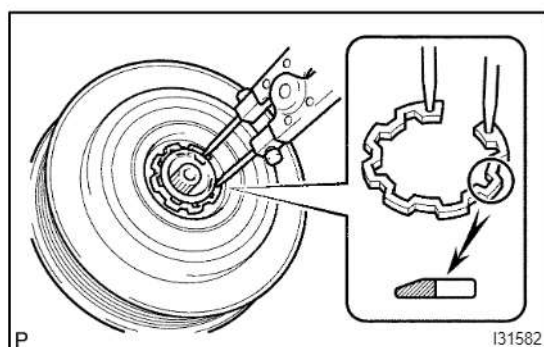


- (b) Using a snap ring expander, install a new snap ring with the chamfered side facing up.

NOTICE:

Do not damage the seal cover of the bearing when removing the snap ring.

- (c) Install the screw and connect the connector.



- (d) Using a snap ring expander, install the magnet clutch rotor and a new snap ring with the chamfered side facing up.

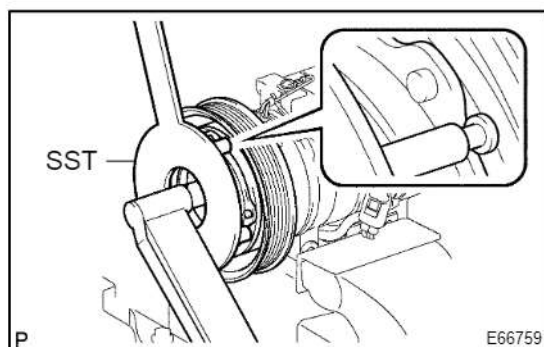
NOTICE:

- Do not expand the snap ring by more than 30.5 mm when installing it.
- Do not damage the seal cover of the bearing when removing the snap ring.

- (e) Install the magnet clutch washer and magnet clutch hub.

NOTICE:

Do not change the combination of the magnet clutch washers used before disassembly.



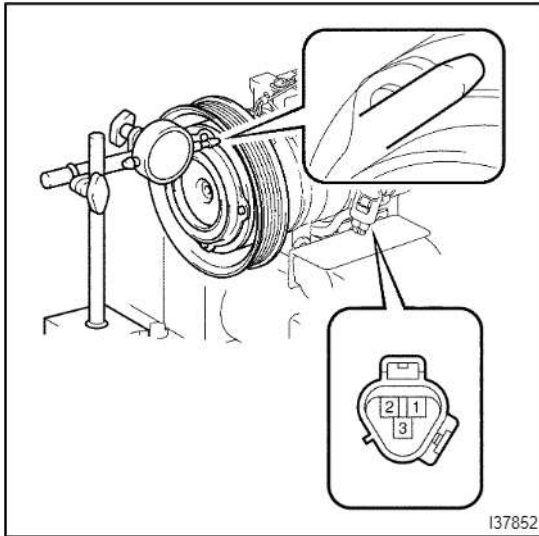
- (f) Using SST, hold the magnet clutch hub and install the bolt.

SST 95047-10400

Torque: 18 N·m (183 kgf·cm, 13 ft·lbf)

NOTICE:

Make sure that there is no foreign matter or oil on the compressor shaft, bolt, and clutch hub.



9. INSPECT MAGNETIC CLUTCH CLEARANCE

- Set the dial gage to the magnet clutch hub.
- Connect the positive battery lead to terminal 3 of the magnet clutch connector and the negative lead to the earth wire. Turn on and off the magnet clutch and measure the clearance.

Standard clearance:

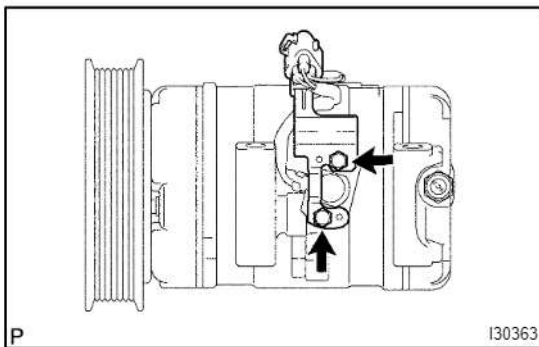
0.35 to 0.60 mm (0.013 to 0.023 in.)

If the measured value is not within the standard range, remove the magnet clutch hub and adjust it with magnet clutch washers.

NOTICE:

Adjustment should be performed with 3 or less magnet clutch washers.

- Remove the compressor and magnetic clutch from the vise.



- Install bracket with the 2 bolts.

10. INSPECT COMPRESSOR OIL

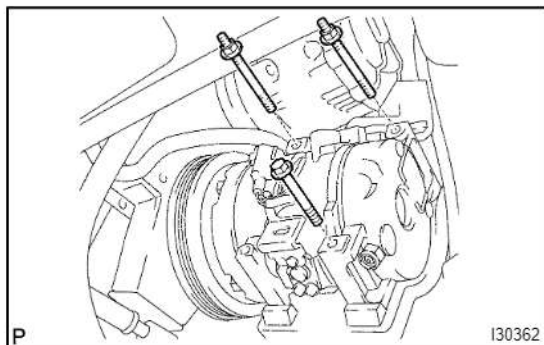
- When replacing the compressor and magnetic clutch with a new one, after gradually removing the refrigerant gas from the service valve, drain the following amount of oil from the new compressor and magnetic clutch before installation.

Standard:

(Oil capacity inside new compressor and magnetic clutch: 120 + 15 cc (4.0 + 0.5 fl. oz.)) - (Remaining oil amount in the removed compressor and magnetic clutch) = (Oil amount to be removed when replacing)

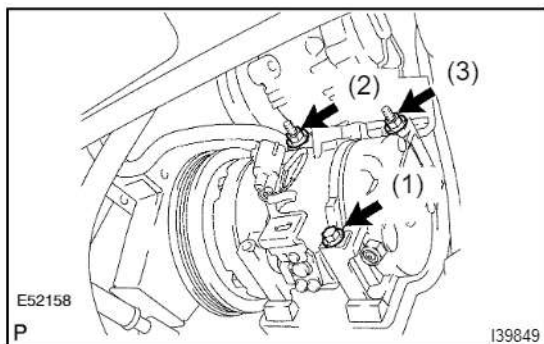
NOTICE:

- When checking the compressor oil level, observe the precautions on the cooler removal/installation.
- When a new compressor and magnetic clutch is installed without removing the oil remaining in the pipes (of the vehicle), the oil amount will become excessive, which prevents heat exchange in the refrigerant and causes refrigerant failure.
- If the remaining oil in the removed compressor and magnetic clutch is too small in volume, check for oil leakage.
- Be sure to use ND-OIL8 or equivalent for compressor oil.



11. TEMPORARILY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

- (a) Temporarily tighten the compressor and magnetic clutch with the 3 bolts.



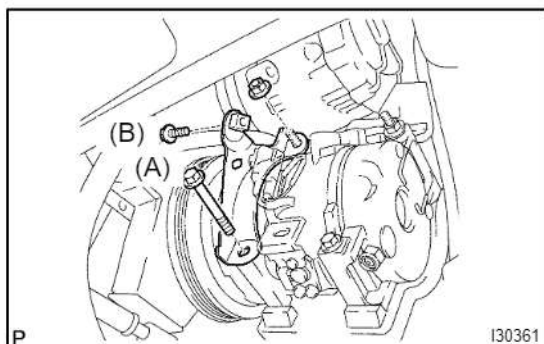
12. FULLY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

- (a) Fully tighten the compressor and magnetic clutch with the 3 bolts.

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

NOTICE:

Tighten the bolts in the numerical order shown in the illustration to install the compressor and magnetic clutch.



- (b) Install the cooler compressor bracket with the 2 bolts and nut.

Torque:

Bolt (A): 25 N·m (250 kgf·cm, 18 in·lbf)

Bolt (B): 18 N·m (184 kgf·cm, 13 in·lbf)

Nut : 25 N·m (250 kgf·cm, 18 in·lbf)

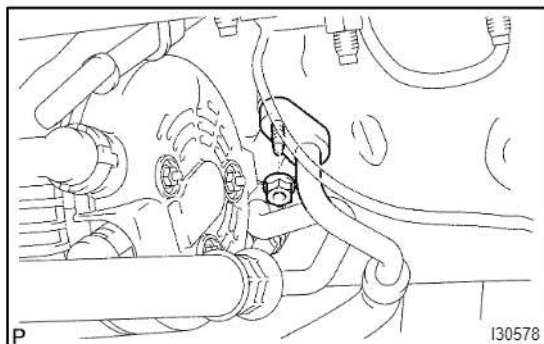
- (c) Connect the connector and clamp on the cooler compressor bracket.

13. INSTALL COOLER REFRIGERANT DISCHARGE HOSE NO.1

- (a) Remove the attached vinyl tape from the hose.
- (b) Sufficiently apply compressor oil to the new O-ring and fitting surface of the compressor and magnetic clutch.

Compressor oil: ND-OIL8 or equivalent

- (c) Install the O-ring to the cooler refrigerant discharge hose No.1.



- (d) Install the cooler refrigerant discharge hose No.1 to the compressor and magnetic clutch with the nut.

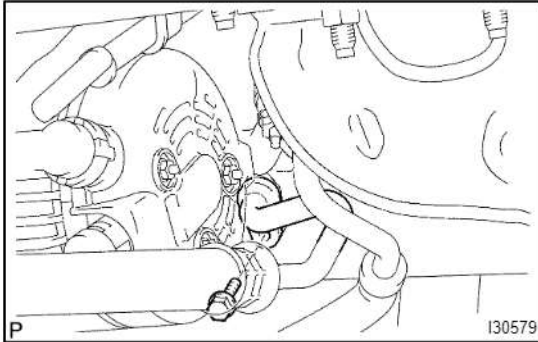
Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)

14. INSTALL COOLER REFRIGERANT SUCTION HOSE NO.1

- (a) Remove the attached vinyl tape from the hose.
- (b) Sufficiently apply compressor oil to the new O-ring and fitting surface of the compressor and magnetic clutch.

Compressor oil: ND-OIL8 or equivalent

- (c) Install the O-ring to the cooler refrigerant suction hose No.1.



- (d) Install the cooler refrigerant suction hose No.1 to the compressor and magnetic clutch with the bolt.
Torque: **9.8 N·m (100 kgf·cm, 87 in.·lbf)**

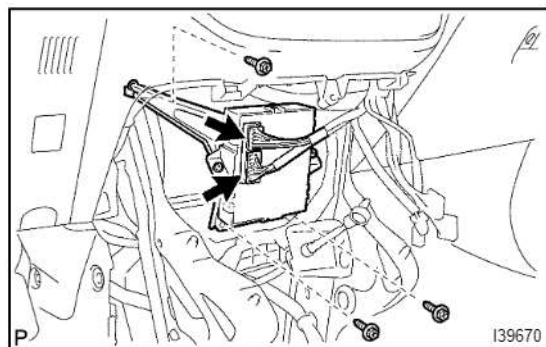
15. **INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**
(SEE PAGE [55-22](#))
16. **ADJUST V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**
(SEE PAGE [55-24](#))
17. **FULLY TIGHTEN V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**
(SEE PAGE [55-24](#))
18. **CHARGE REFRIGERANT (SEE PAGE [55-17](#))**
SST 07110-58060 (07117-58060, 07117-58070, 07117-58080, 07117-58090, 07117-78050,
07117-88060, 07117-88070, 07117-88080)
Specified amount: **650 ± 50 g (22.93 ± 1.76 oz.)**
19. **WARM UP ENGINE (SEE PAGE [55-17](#))**
20. **INSPECT LEAKAGE OF REFRIGERANT (SEE PAGE [55-17](#))**

AIRCONDITIONER AMPLIFIER ASSY

55TAB/01

REPLACEMENT

1. REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY CENTER (SEE PAGE 71-10)
2. REMOVE MULTI-DISPLAY (CRT DISPLAY) DISPLAY (SEE PAGE 71-10)
3. REMOVE FRONT SEAT ARMREST ASSY CENTER (SEE PAGE 71-10)



4. REMOVE AIRCONDITIONER AMPLIFIER ASSY
 - (a) Disconnect the connector.
 - (b) Remove the 3 screws and air conditioner amplifier assy.