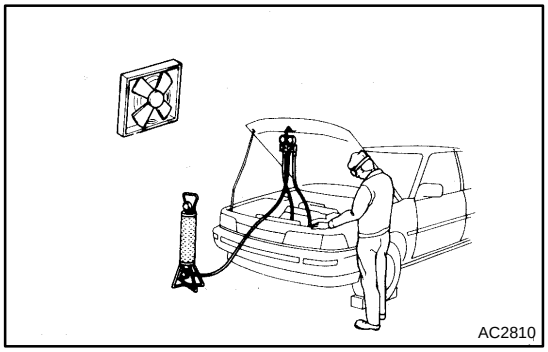
AIR CONDITIONING SYSTEM

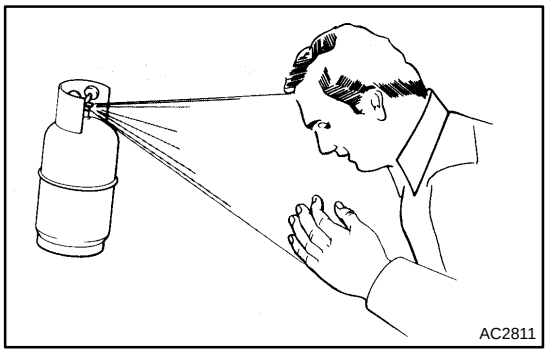
PRECAUTION

550BL–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:

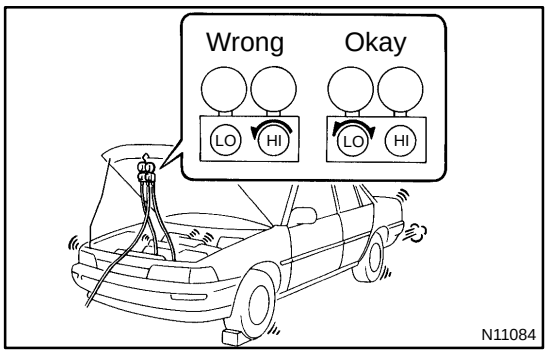
Do not rub your eyes or skin.

(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.

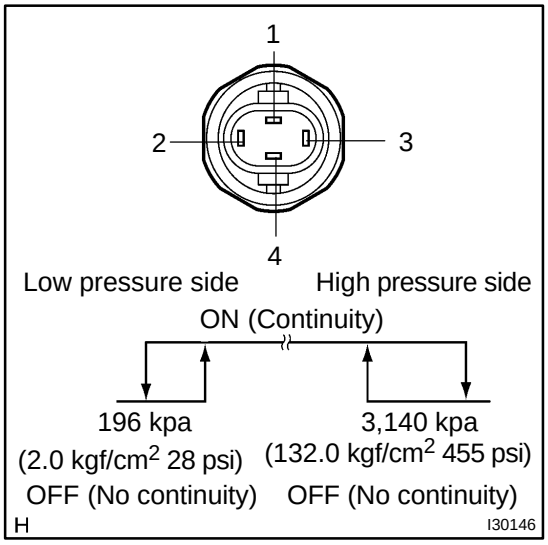
550BM–01

PROBLEM SYMPTOMS TABLE

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

Symptom	Suspect Area	See page
Whole functions of the A/C system does not operate.	1. HTR fuse (50 A) 2. HTR fuse (10 A) 3. A/C control assy 4. Wire harness or connector	– – 55–3 –
Air Flow Control : No blower operation	1. Heater Blower motor relay 2. Blower w/ fan motor sub–assy 3. A/C cotrol assy 4. Wire harness or connector	55–7 55–7 55–3 –
Air Flow Control : No blower control	1. Blower w/ fan motor sub–assy 2. Blower resistor 3. A/C control assy 4. Wire harness or connector	55–7 55–7 55–3 –
Air Flow Control : Insufficient air out	1. Blower w/ fan motor sub–assy 2. A/C cotrol assy 3. Wire harness or connector	55–7 55–3 –
Temperature Control : No cool air comes out	1. Volume of refrigerant 2. Drive belt tension 3. Refrigerant pressure 4. Cooler compressor assy 5. Pressure switch No. 1 6. Air mix damper servo sub–assy 7. Condenser fan 8. A/C cotrol assy 9. Wire harness or connector	55–12 55–21 55–12 55–7 55–3 55–7 – 55–3 –
Temperature Control : No warm air comes out	1. Engine coolant volume 2. Air mix damper servo sub–assy 3. Cooler thermistor No. 1 4. A/C cotrol assy 5. Heater radiator unit sub–assy 6. Wire harness or connector	– 55–7 55–7 55–3 – –
Temperature Control : Output air is warmer or cooler than the set temperature or response is slow.	1. Air mix damper servo sub–assy 2. A/C control assy 3. Wire harness or connector	55–7 55–3 –
Temperature Control : No temperature control (only Max. cool or Max. warm)	1. Air mix damper servo sub–assy 2. A/C cotrol assy 3. Wire harness or connector	55–7 55–3 –
No air inlet control	1. Blower damper servo sub–assy 2. A/C cotrol assy 3. Wire harness or connector	55–7 55–3 –
No air outlet control	1. Mode damper servo sub–assy 2. A/C cotrol assy 3. Wire harness or connector	55–7 55–3 –
No engine idle–up when A/C switch ON	1. Cooler compressor assy 2. A/C cotrol assy 3. ECM 4. Wire harness or connector	55–7 55–3 – –
Brightness does not changes when rheostat volume or light control switch it turned.	1. Illumination light system 2. A/C cotrol assy 3. Wire harness or connector	– 55–3 –

ON–VEHICLE INSPECTION



1. INSPECT PRESSURE SWITCH NO.1.

(a) Magnetic clutch control:

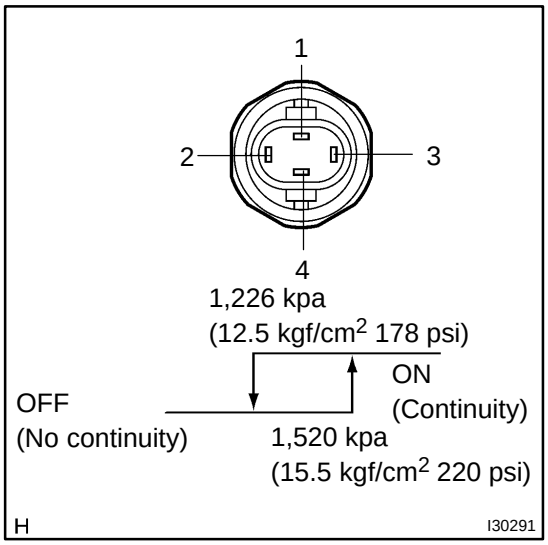
Inspect pressure switch operation.

(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.

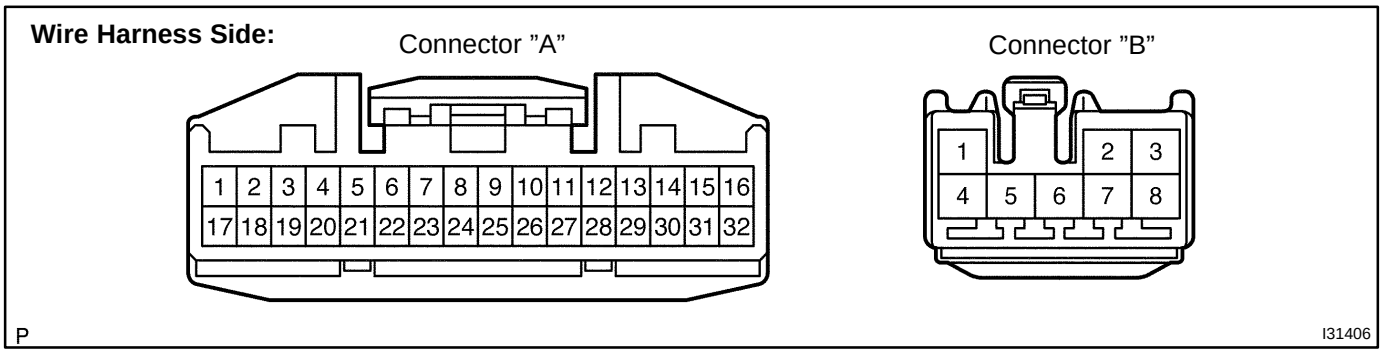
(1) Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 3.

(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 CONDITIONING CONTROL ASSY

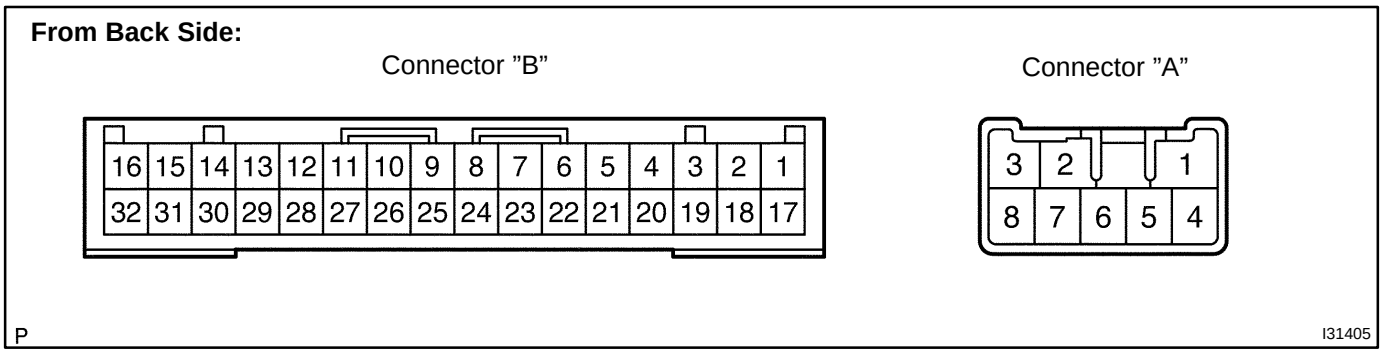
(a) Disconnect the connector from controller and inspect the connector on wire harness side, as shown in the chart.



Symbols (Terminal No.)	Condition	Specified condition
+B ⇔ GND (A1 ⇔ A32)	Always	10 – 14 V
IG ⇔ GND (A2 ⇔ A32)	Ignition switch: ON	0 → 10 – 14 V
GND ⇔ Body ground (A32 ⇔ Body ground)	Always	Continuity

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

(b) Connect the connector to heater controller and inspect wire harness side from the back side, as shown in the chart below.



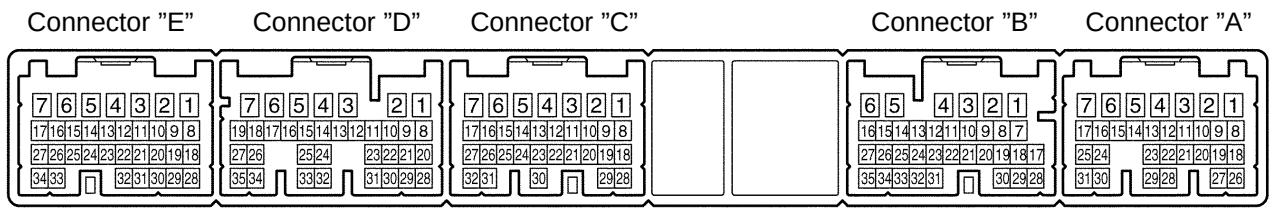
Symbols (Terminal No.)	Condition	Specified condition
E ⇔ Body ground (B1 ⇔ Body ground)	Always	Continuity
LO ⇔ E (B3 ⇔ B1)	Blower switch: OFF → LO	0 → Below 1.0 V
M1 ⇔ E (B5 ⇔ B1)	Ignition switch: ON Blower switch: OFF → M1	0 → Below 1.0 V
M2 ⇔ E1 (B6 ⇔ B1)	Ignition switch: ON Blower switch: OFF → M2	0 → Below 1.0 V
HI ⇔ E1 (B7 ⇔ B1)	Ignition switch: ON Blower switch: OFF → HI	0 → Below 1.0 V
REC ⇔ GND (A10 ⇔ A32)	Ignition switch: ON R/F switch: FRESH → RECIRCULATION	Open → Below 1.0 V
FRS ⇔ GND (A11 ⇔ A32)	Ignition switch: ON R/F switch: RECIRCULATION → FRESH	Open → Below 1.0 V

Symbols (Terminal No.)	Condition	Specified condition
TEST ⇔ SG (A27 ⇔ A30)	Ignition switch: ON Set temp: MAX. HOT → MAX. COLD	Below 1 V → Above 4 V
A/C ⇔ GND (A12 ⇔ A32)	Ignition switch: ON Blower switch: ON (Lo, M1, M2, Hi) A/C switch:OFF → ON	Below 2 V → Above 6 V
A/CB ⇔ GND (A4 ⇔ A32)	Ignition switch: ON Blower switch:OFF → ON (Lo, M1, M2, Hi)	0 → 10 – 14 V
ACID ⇔ GND (A13 ⇔ A32)	Ignition switch: ON Blower switch: ON (Lo, M1, M2, Hi) A/C switch: OFF → ON	Open → Below 1.0 V
S5 ⇔ GND (A25 ⇔ A32)	Ignition switch: LOCK → ON	0 → 5.0 V
SG ⇔ Body ground (A30 ⇔ Body ground)	Always	Continuity
TCOL ⇔ GND (A7 ⇔ A32)	Ignition switch: ON Set temp.: MAX. HOT → MAX. COLD	Below 1.0 V → 10 – 14 V
THOL ⇔ GND (A8 ⇔ A32)	Ignition switch: ON Set temp.: MAX. COLD → MAX. HOT	Below 1.0 V → 10 – 14 V
FACE ⇔ GND (A21 ⇔ A32)	Ignition switch: ON Mode select: Except FACE → FACE	Below 1.0 V → 0 V
DEF ⇔ GND (A17 ⇔ A32)	Ignition switch: ON Mode select: Except DEF → DEF	Below 1.0 V → 0 V
F/D ⇔ GND (A18 ⇔ A32)	Ignition switch: ON Mode select: Except F/D → F/D	Below 1.0 V → 0 V
FOOT ⇔ GND (A19 ⇔ A32)	Ignition switch: ON Mode select: Except FOOT → FOOT	Below 1.0 V → 0 V
B/L ⇔ GND (A20 ⇔ A32)	Ignition switch: ON Mode select: Except B/L → B/L	Below 1.0 V → 0 V

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

3. INSPECT ECM

From Back Side:



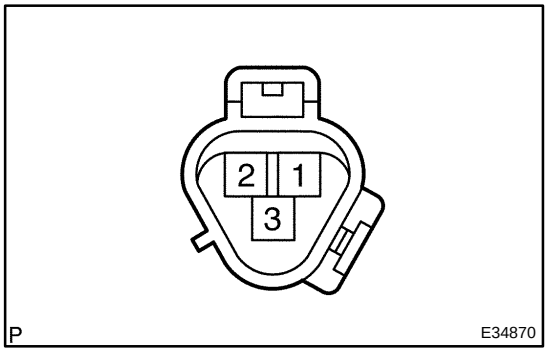
Symbols (Terminal No.)	Condition	Specified condition
PRE ⇔ Body ground (B1 ⇔ Body ground)	Start engine Refrigerant pressure: Normally → Less than 0.19 Mpa (2.0 kgf·cm2, 28 psi) or more than 1.34 Mpa (32 kgf·cm22, 2,455 psi)	0 → Below 1.0 V
A/CS ⇔ Body ground (B31 ⇔ Body ground)	Ignition switch: ON A/C switch: OFF → ON	0 → Below 1.0 V
THR ⇔ E2 (B32 ⇔ E28)	Evaporator temp.: 0 °C (32 °F) → 15 °C (59 °F)	2.0 – 2.4 → 1.4 – 1.8 V
A/CI ⇔ Body ground (B33 ⇔ Body ground)	Ignition switch: ON Magnetic clutch: OFF → ON	0 → Below 1.0 V

Symbols (Terminal No.)	Condition	Specified condition
LCKI ⇔ Body ground (C23 ⇔ Body ground)	Ignition switch: ON Magnetic clutch: OFF → ON	Pulse generation
E2 ⇔ Body ground (E28 ⇔ Body ground)	Always	Continuity
PR2 ⇔ Body ground*1 (C30 ⇔ Body ground)	Start engine Refrigerant pressure: Normally → Less than 0.19 Mpa (2.0 kgf·cm2, 28 psi) or more than 1.34 Mpa (32 kgf·cm22, 2,455 psi)	0 → Below 1.0 V

*1: 2AZ–FE

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.

INSPECTION



1. COOLER COMPRESSOR ASSY

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to the body ground.

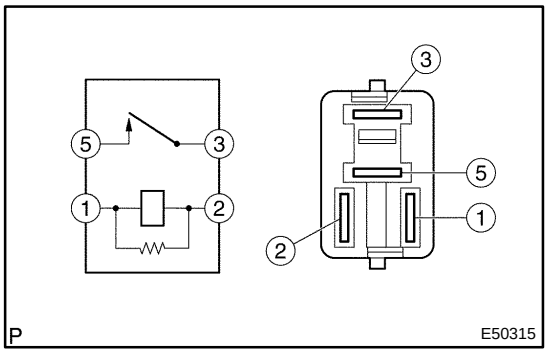
(b) Check that the magnetic clutch energized.

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

(c) Measure resistance between terminals 2 and 4.

Standard resistance: 165 – 205 Ω at 20 °C (68 °F)

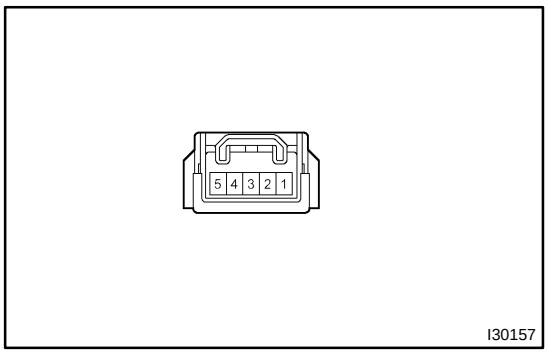
If resistance is not as specified, replace the cooler compressor assy.

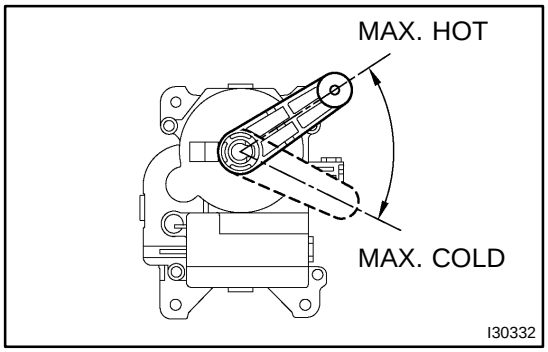


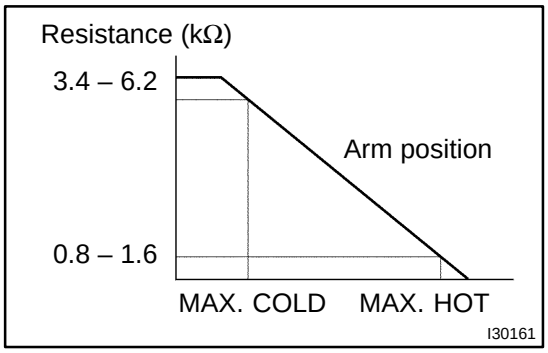
2. MAGNET–CLUTCH RELAY

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.







3. AIRMIX DAMPER SERVO SUB–ASSY

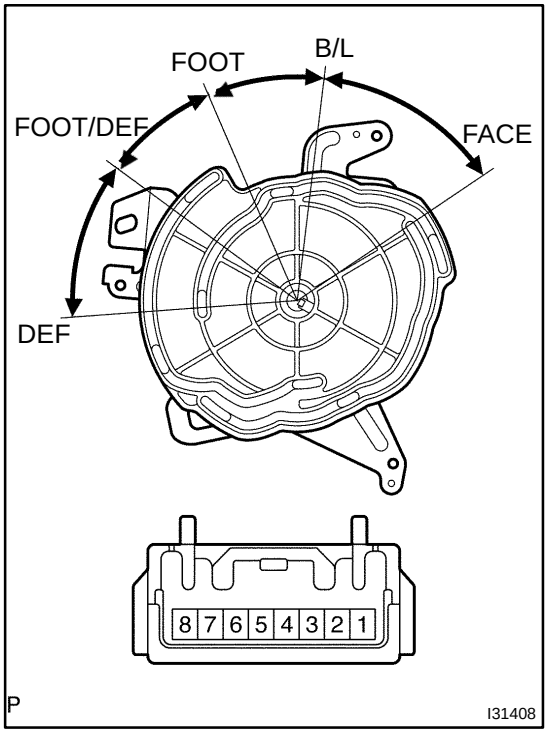
(a) Inspect servomotor operation.
  (1) Connect the positive (+) lead from the battery to terminal 4 and negative (–) lead to terminal 5, then check that the arm turns to ”COLD” side smoothly.
  (2) Connect the positive (+) lead from the battery to terminal 5 and negative (–) lead to terminal 4, then check that the arm turns to ”HOT” side smoothly.

If operations are not as specified, replace the air mix servomotor.

(b) Inspect position sensor resistance.
Measure resistance between terminals at servomotor arm each position as shown in the chart.

Tester connection	Condition	Specified condition
1 – 2	Constant	4.2 – 7.8 kΩ
1 – 3	Arm position at ”COLD”	3.4 – 6.2 kΩ
1 – 3	Arm position at ”HOT”	0.8 – 1.6 kΩ

If resistance is not as specified, replace the servomotor.

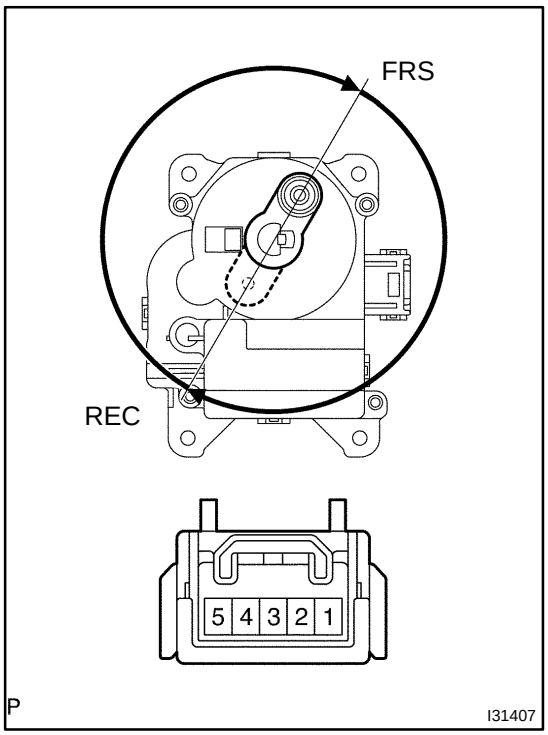


4. MODE DAMPER SERVO SUB–ASSY

(a) Inspect servomotor operation.
(b) Connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 8.
(c) Connect the negative (–) lead from the battery to each terminal, as shown in the chart and check that the shaft rotates at each position, as shown in the illustration.

Connected terminal	Position
1	DEF
2	FOOT/DEF
3	FOOT
5	B/L
6	FACE

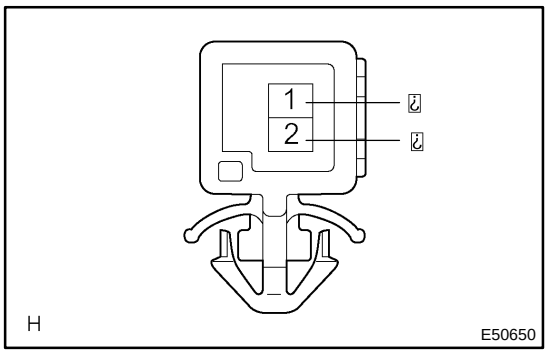
If operation is not as specified, replace the servomotor.



5. RECIRCULATION DAMPER SERVO SUB–ASSY

(a) Inspect servomotor operation.
   (1) Connect the positive (+) lead from the battery to terminal 5 and negative (–) lead to terminal 1, then check that the arm turns to ”REC” side smoothly.
   (2) Connect the positive (+) lead from the battery to terminal 5 and negative (–) lead to terminal 2, then check that the arm turns to ”FRS” side smoothly.

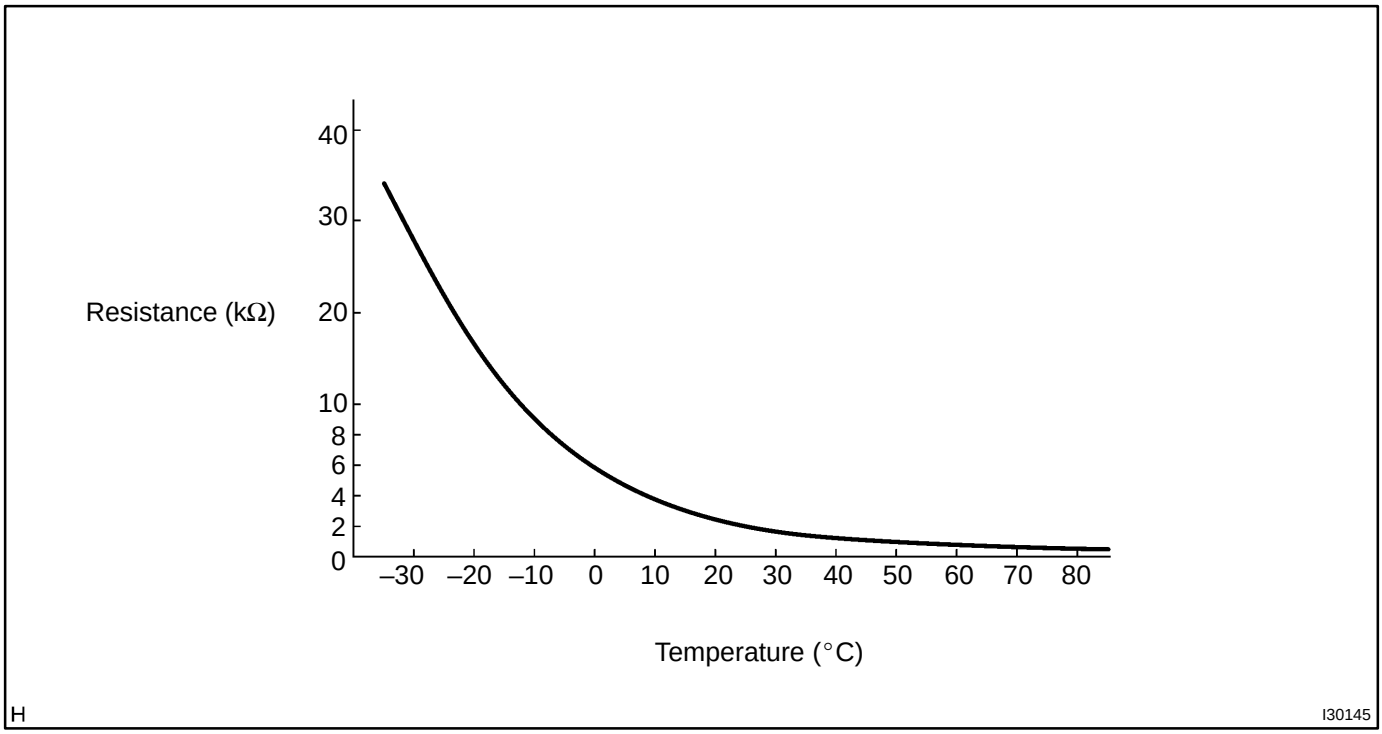
If operations are not as specified, replace the mode damper servomotor.



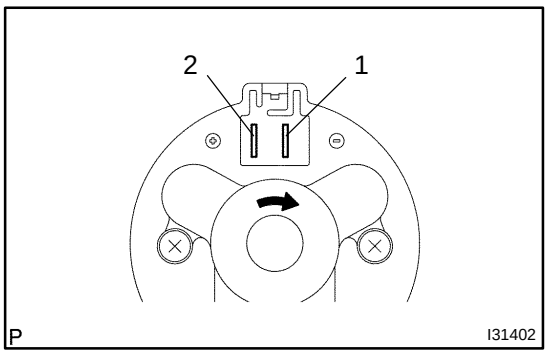
6. COOLER THERMISTOR NO.1

(a) Check resistance between terminals 1 and 2 of Cooler thermistor No. 1 at each temperature, as shown in the chart.

Resistance:



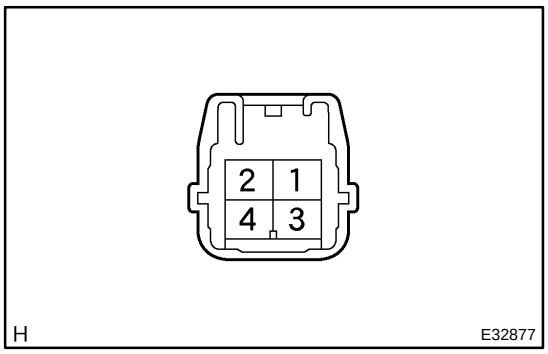
If resistance value is not as specified, replace the sensor.



7. BLOWER W/FAN MOTOR SUB–ASSY

(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.

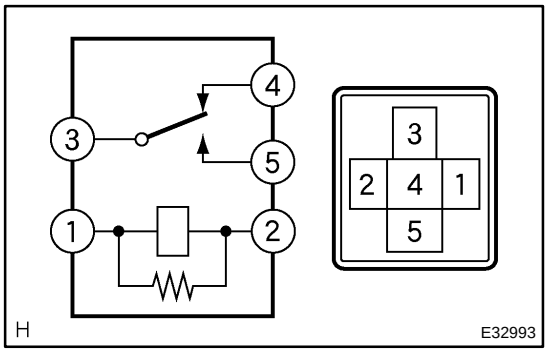


8. BLOWER RESISTOR

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

Tester connection	Specified condition
1 – 2	1.398 – 1.605 Ω
1 – 3	0.465 – 0.535 Ω
1 – 4	3.069 – 3.531 Ω

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



9. HEATER BLOWER MOTOR RELAY ASSY

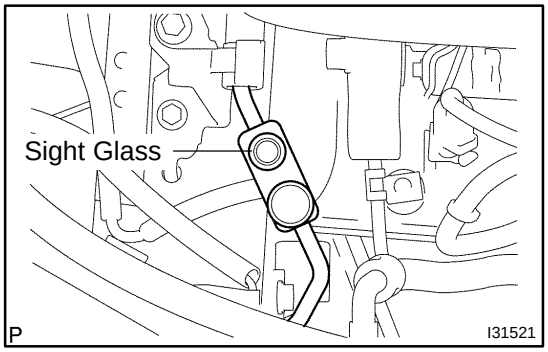
Condition	Tester connection	Specified condition
Constant	1 – 2 3 – 4	Continuity
Apply B + between terminals 1 and 2.	3 – 5	Continuity

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

REFRIGERANT

ON–VEHICLE INSPECTION

550BS–01



1. INSPECT REFRIGERANT VOLUME

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

Test conditions:

- Running engine at 1,500 rpm
- Blower speed control switch at ”HI”
- A/C switch ON
- Temperature control dial at ”MAX. COOL”
- Fully open the doors

Item	Symptom	Amount of refrigerant	Corrective Actions
1	Bubbles present	Insufficient*	(1) Check for gas leakage and repair if necessary (2) Add refrigerant until bubbles disappear
2	No bubbles present	None, insufficient or too much	Refer 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.	Correct or too much	Refer to 5 and 6
5	Immediately after air conditioning is turned off, refrigerant clear	Too much	(1) Discharge refrigerant (2) Remove air and supply proper amount or purified refrigerant
6	Immediately after air conditioning is turned off, refrigerant foams and then becomes clear	Correct	–

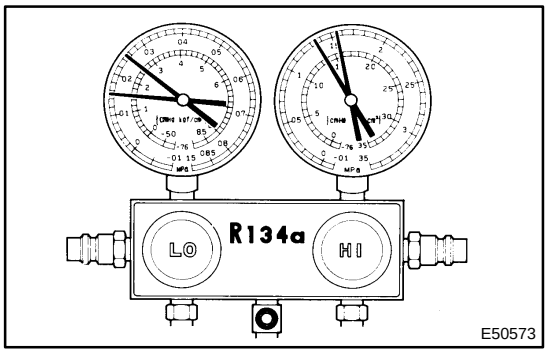
*: Bubbles in the sight glass with ambient temperatures higher than usual can be considered normal if cooling is sufficient.

2. INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET

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

Test conditions:

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

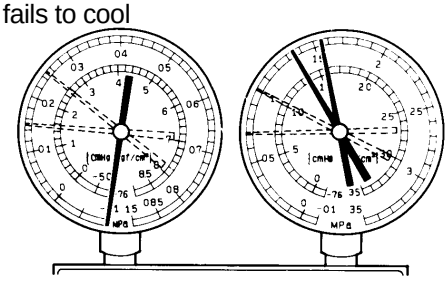


(1) Normally functioning refrigeration system.

Gauge reading:
Low pressure side:
0.15 – 0.25 MPa (1.5 – 2.5 kgf/cm^2)
High pressure side:
1.37 – 1.57 MPa (14 – 16 kgf/cm^2)

(2) Moisture present in refrigeration system.

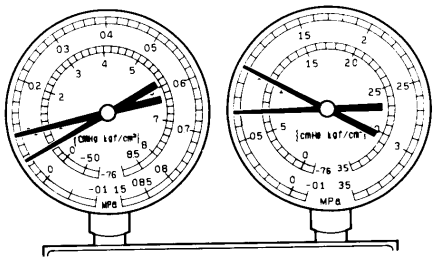
Condition : Periodically cools and then fails to cool



Symptom	Probable cause	Diagnosis	Remedy
During operation, pressure on low pressure side sometimes become a vacuum and sometime normal	Moisture in refrigerating system freezes at expansion valve orifice causing a temporary stop of cycle, however, when it melts, normal state is restored.	• Drier in oversaturected state • Moisture in refrigerating 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 eftectively.

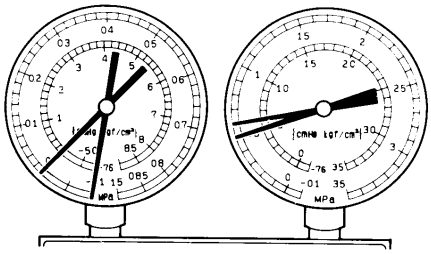


I22118

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure low on both low and high pressure sides • Bubbles seen thought sight glass continuously • Insufficient cooling performance	Gas leakage in refrigeration system	• Insufficient refrigerant • Refrigerant leaking	(1) Check for gas leakage and repair if necessary (2) Supply proper amount of new refrigerant (3) If indicated pressure value is close to a 0 when connected to gauge, create the vacuum after inspecting and repairing location of leak

(4) Poor circulation of refrigerant

Condition: Cooling system close not function effectively.

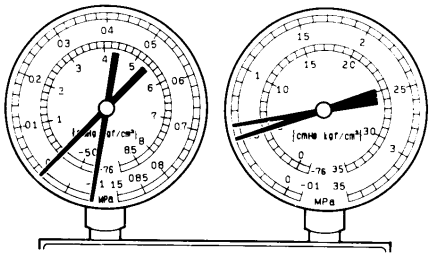


I22119

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

(5) Refrigerant does not circulate

Condition: Cooling system does not function. (Sometimes it way function)

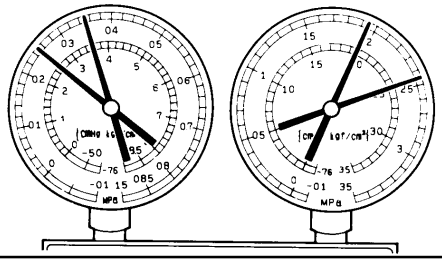


I22120

Symptom	Probable cause	Diagnosis	Corrective Actions
• 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 refrigerating system • Refrigerant flow obstructed by gas leaked from expansion valve	Refrigerant does not circulate	(1) Check expansion valve (2) Clean out dirt in expansion valve by air blowing (3) Replace condenser (4) Evaporate air and supply proper amount of new refrigerant. (5) For gas leakage from expansion valve, replace expansion valve

(6) Refrigerant overcharged or insufficient cooling of condenser

Condition: Cooling system does not function dftectively.

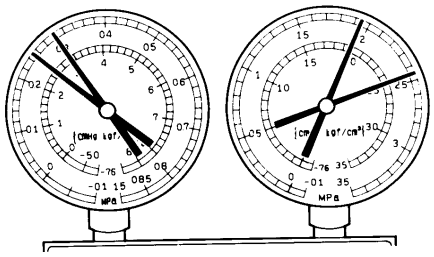


I22121

Symptom	Probable cause	Diagnosis	Remedy
• Pressure too high on both low and high pressure sides • No sir bubbles seen through the sight glass even when the engine rpm is lowered	• Unable to develop sufficient performance due to excessive use of refrigerating system • Insufficient cooling of condenser	• Excessive refrigerant in cycle→too much refrigerant supplied • Condenser cooling insufficient→condenser fins clogged at cooling fan	(1) Clean condenser (2) Check cooling fan with cooling fan motor operation (3) If (1) and (2) are in normal state, check amount of refrigerant and supply proper amount of refrigerant

(7) Air present in refrigeration system

Condition: Cooling system does not function.



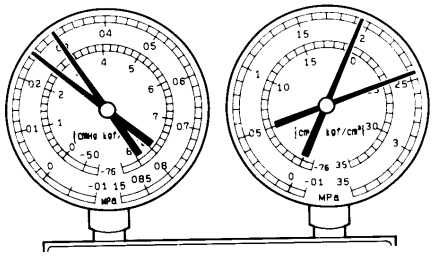
NOTE : These gauge indications are shown when the refrigerating system has been opens and the refrigerant charged without vacuum purging.

I22122

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure too high on both low and high pressure sides • The low pressure piping too hot to the touch • Bubbles seen through sight glass	Air entered in refrigerating system	• Air present in refrigerating system • Insufficient vacuum purging	(1) Check compressor oil to see if it is see if it is dirty or insufficient (2) Evacuate air and supply new refrigerant

(8) Expansion valve improperly

Condition: Refrigerant functions insufficient.

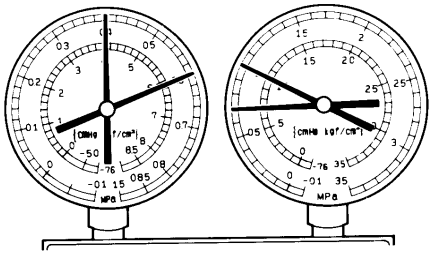


I22123

Symptom	Probable cause	Diagnosis	Corrective Actions
• Pressure too high on both low and high pressure sides • Frost or large amount of dew on piping on low pressure side	Trouble in expansion valve	• Excessive refrigerant in low pressure piping • Expansion valve opened too wide	Check expansion valve

(9) Defective compression compressor

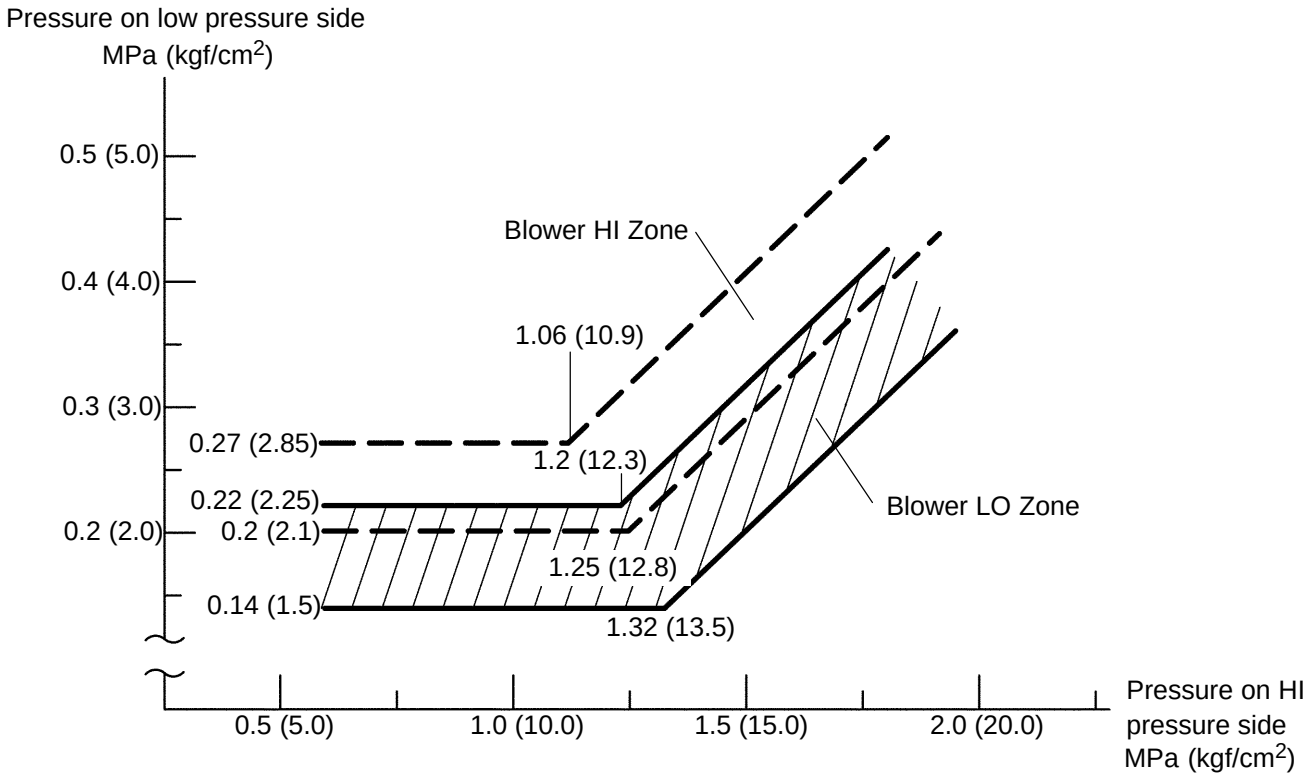
Condition : Refrigerant is not effective.



I22124

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

Gauge readings (Reference)



I30081

550BT–01

REPLACEMENT

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

(a) Turn the A/C switch ON.

(b) Operating the cooler compressor at the engine rpm of approx. 1,000 for 5 to 6 min., circulate the refrigerant and collect compressor oil remaining in each component into the cooler compressor as much as possible.

(c) Stop the engine.

(d) Let the refrigerant gas out.

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

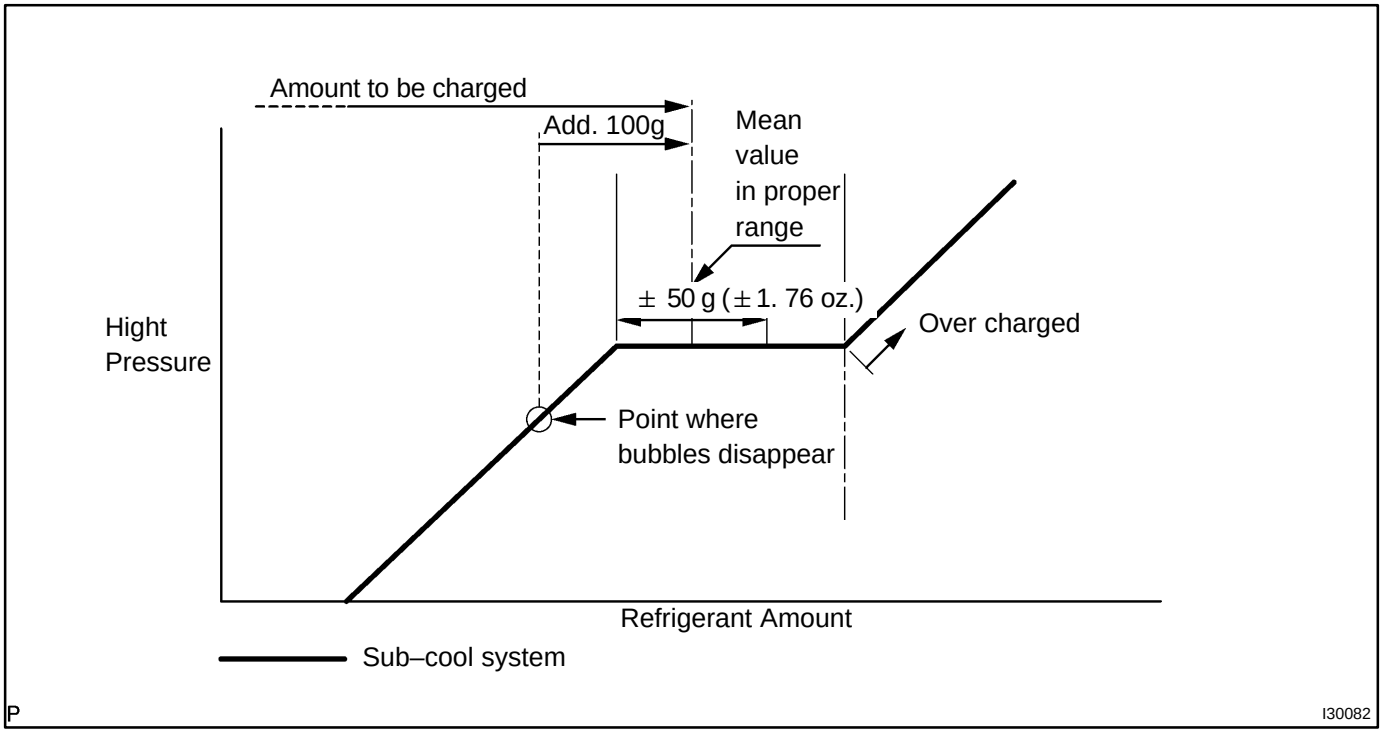
2. CHARGE REFRIGERANT

(a) Using a vacuum pump, perform a vacuum purping.

(b) Charge refrigerant, HFC–134a (R134a).

Standard: 550 ± 50 g (19.37 ± 1. 76 oz.)

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



3. WARM UP ENGINE

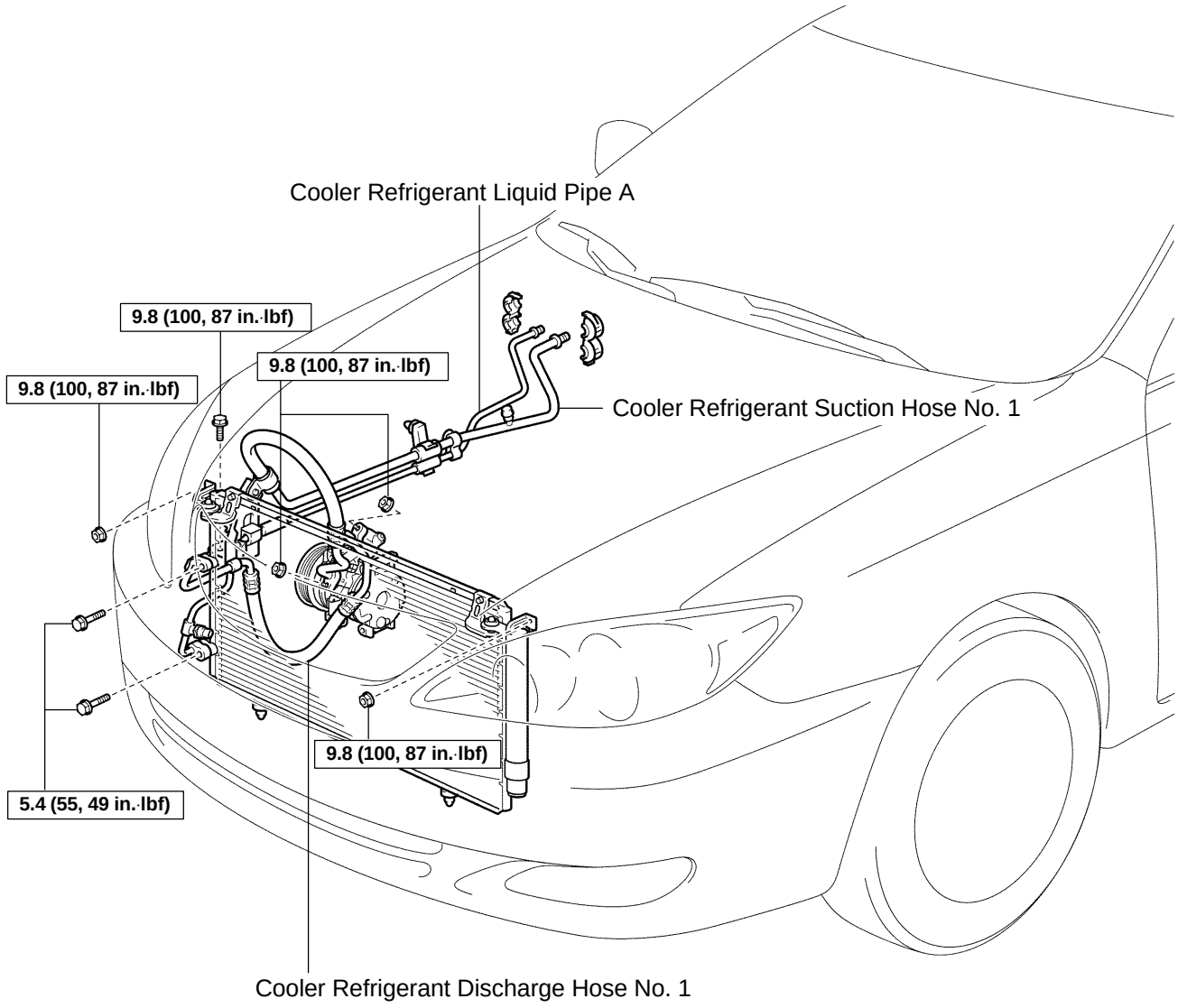
4. INSPECT LEAKAGE OF REFRIGERANT

REFRIGERANT LINE

COMPONENTS

550BX–01

1MZ–FE:

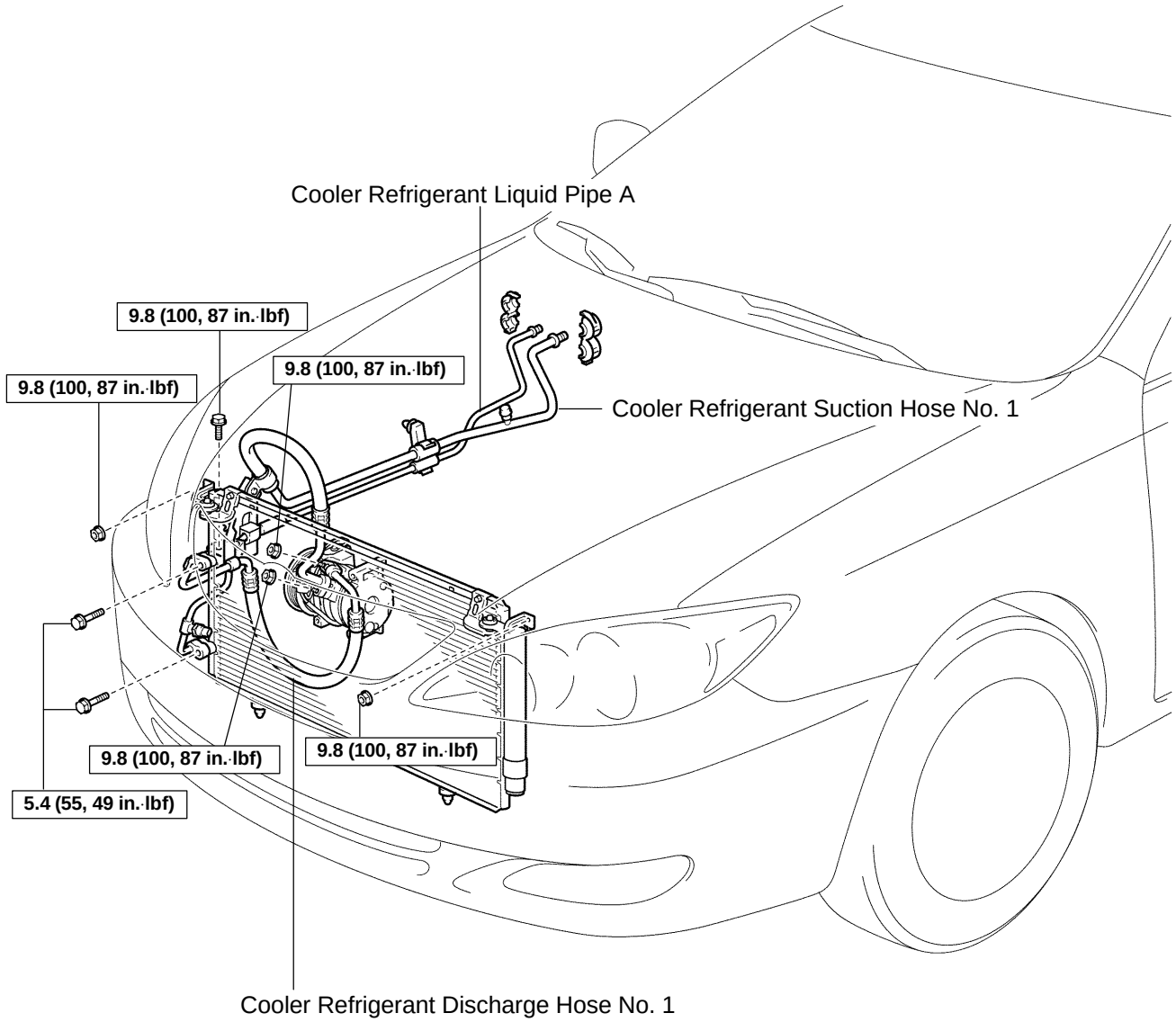


N·m (kgf·cm, ft·lbf) : Specified torque

P

I31330

2AZ–FE:



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

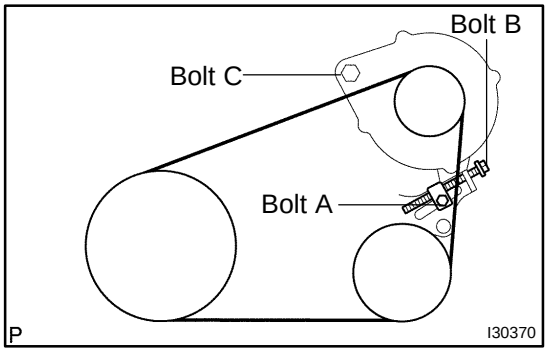
P

I31331

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

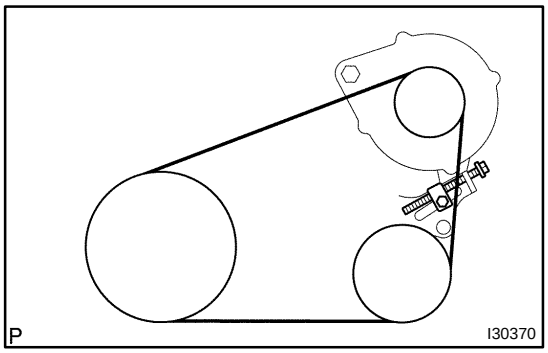
550BU–01

REPLACEMENT



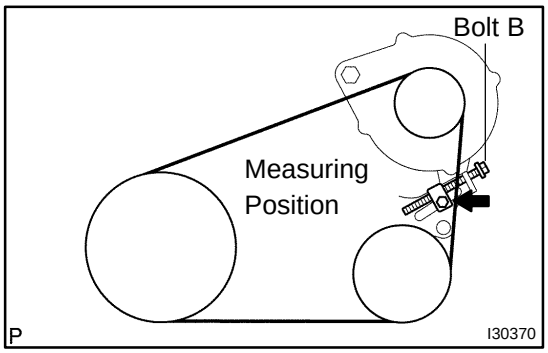
1. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

(a) Loosen the bolt C.
(b) Loosen the bolt A.
(c) Loosen the bolt B and remove the cooler V belt No. 1.



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

(a) Temporarily install the cooler V belt No. 1 as illustrated.

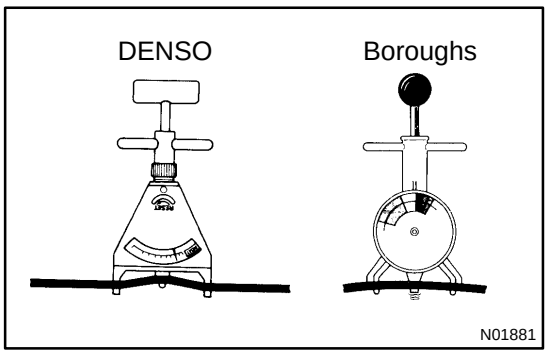


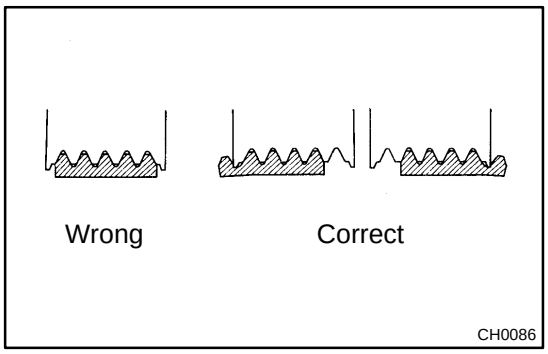
3. ADJUST V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

(a) Apply drive belt tension by turning the bolt B.
Drive belt tension:
New Belt: 165 ± 27 lbf
Used belt: 88 ± 22 lbf

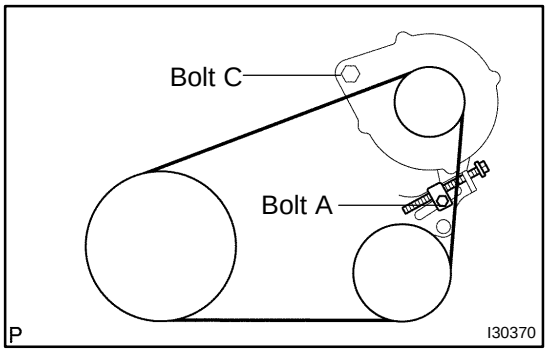
HINT:

- ”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.





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



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

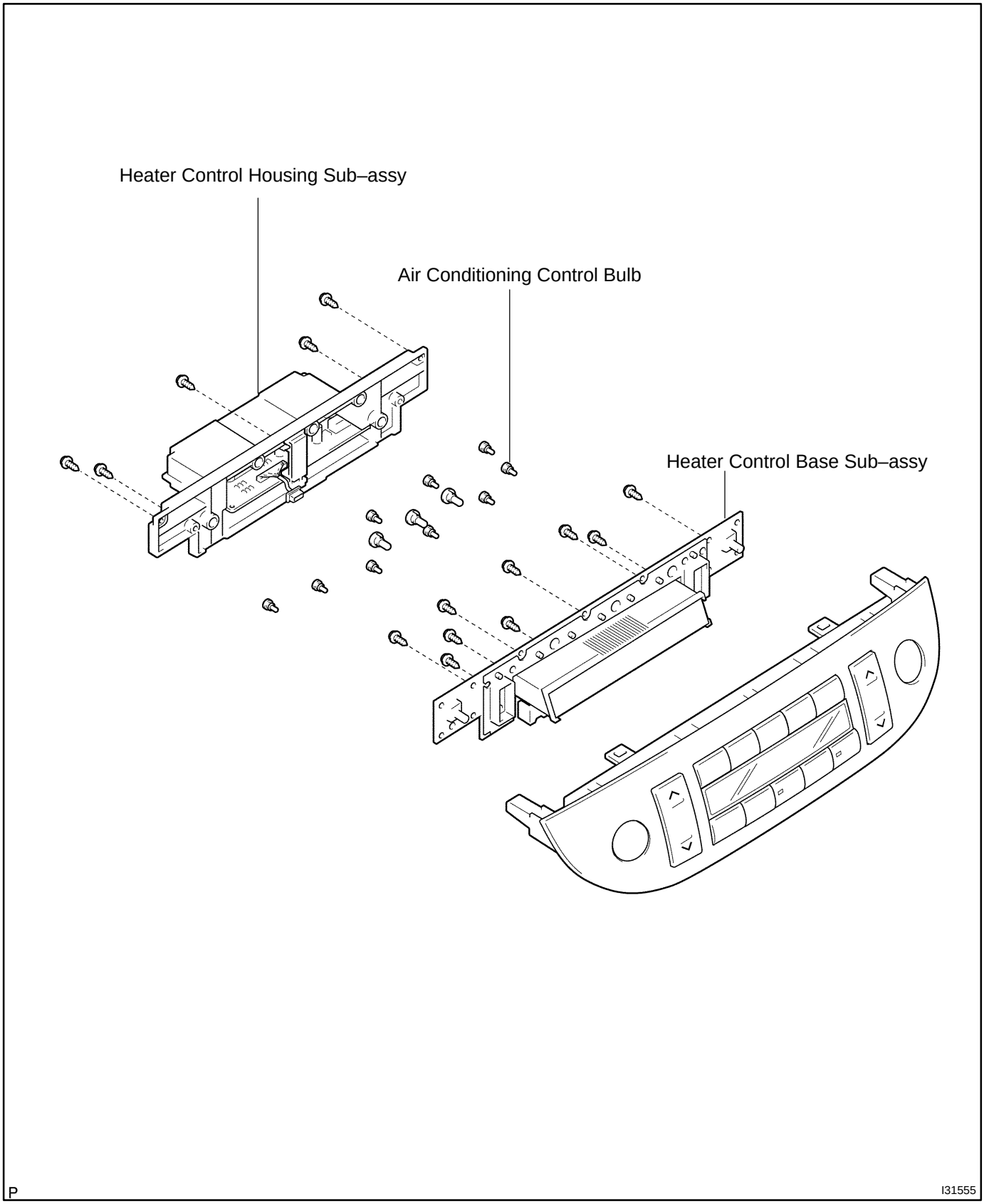
(a) Tighten the bolt A.
Torque: 17.5 N·m (178 kgf·cm, 12 ft·lbf)

(b) Tighten the bolt C.
Torque: 58 N·m (591 kgf·cm, 43 ft·lbf)

AIR CONDITIONER CONTROL ASSEMBLY

550BV–01

COMPONENTS



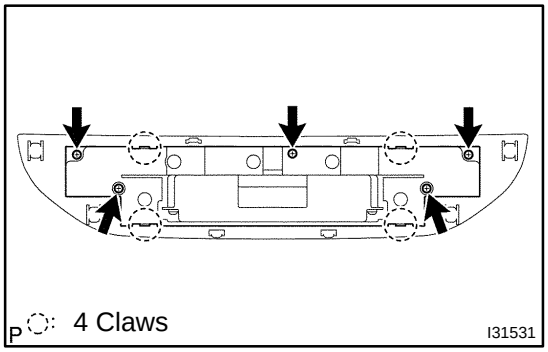
550BW–01

OVERHAUL

HINT:

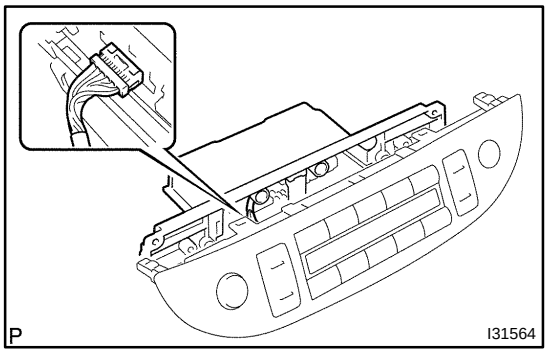
COMPONENTS: See page 55–23

1. REMOVE AIR CONDITIONER CONTROL ASSEMBLY (See page 71–12)



2. REMOVE HEATER CONTROL HOUSING SUB–ASSY

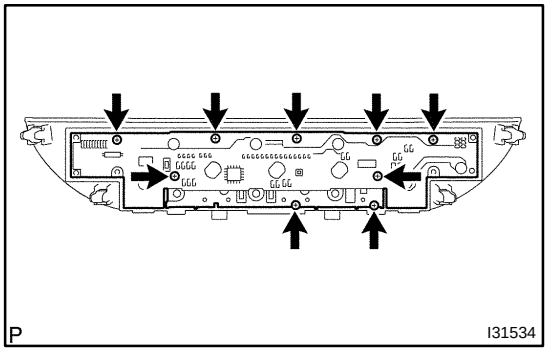
(a) Release the 4 fitting claws, remove the 5 screws.



(b) Disconnect the connector, remove the heater control housing sub–assy.

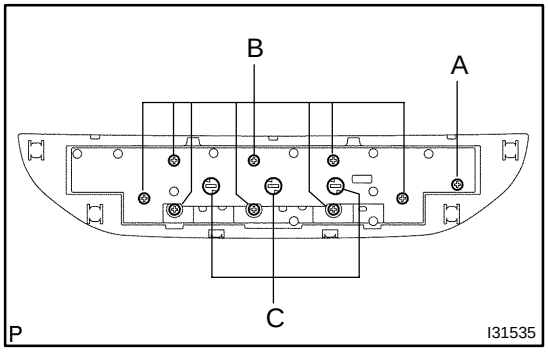
3. REMOVE AIR CONDITIONING CONTROL BULB

(a) Remove the air conditioning control bulb from the heater control base sub–assy.



4. REMOVE HEATER CONTROL BASE SUB–ASSY

(a) Remove the 9 screws and heater control base sub–assy.



5. INSTALL AIR CONDITIONING CONTROL BULB

(a) Install the air conditioning control bulb to the heater control base sub–assy.

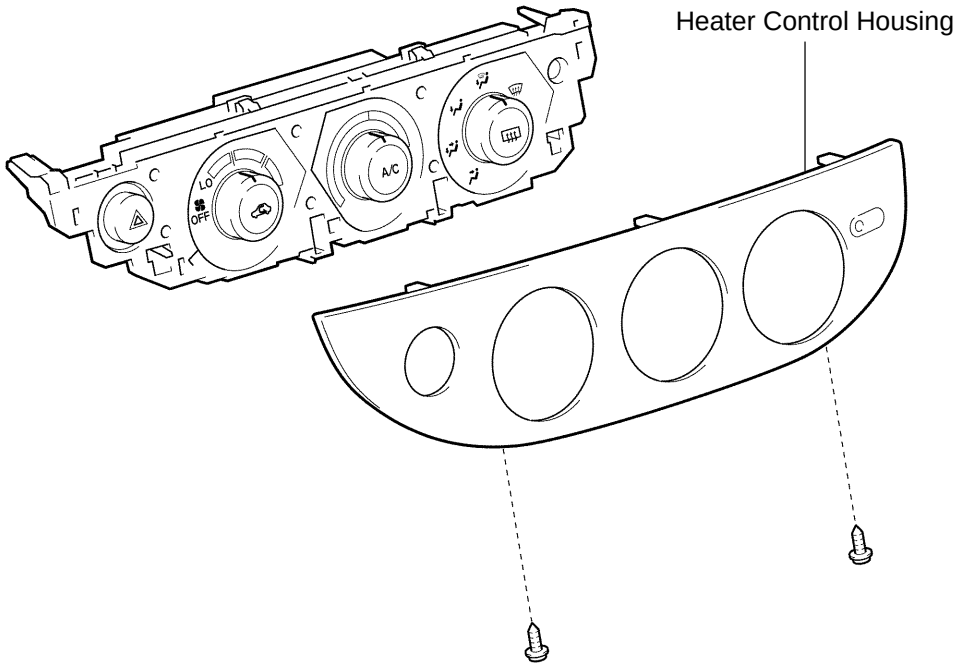
Bulb position:

Position	Part No.
A	90010 – 03054
B	90010 – 03055
C	90010 – 03056

AIR CONDITIONING PANEL SUB–ASSY

550BY–01

COMPONENTS



P

I31579

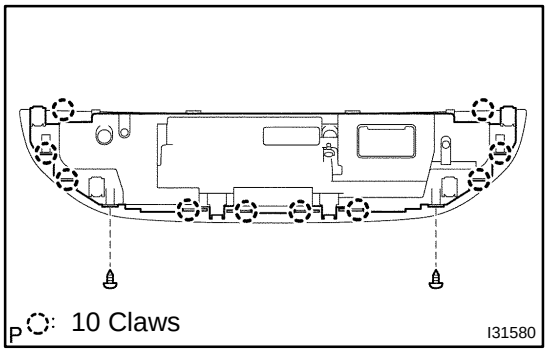
550BZ–01

OVERHAUL

HINT:

COMPONENTS: See page 55–25

1. REMOVE AIR CONDITIONING PANEL SUB–ASSY
(See page 71–12)



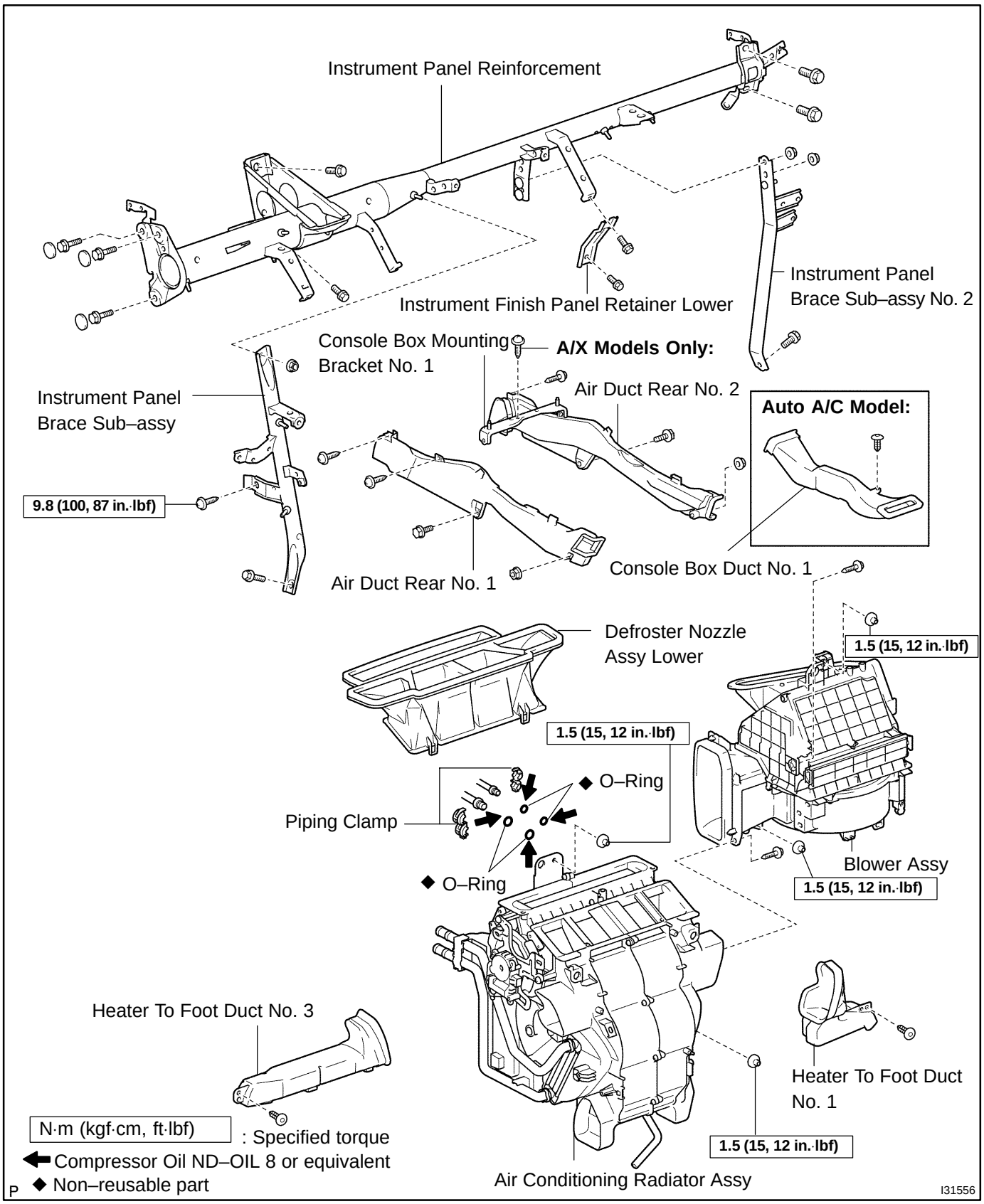
2. REMOVE HEATER CONTROL HOUSING

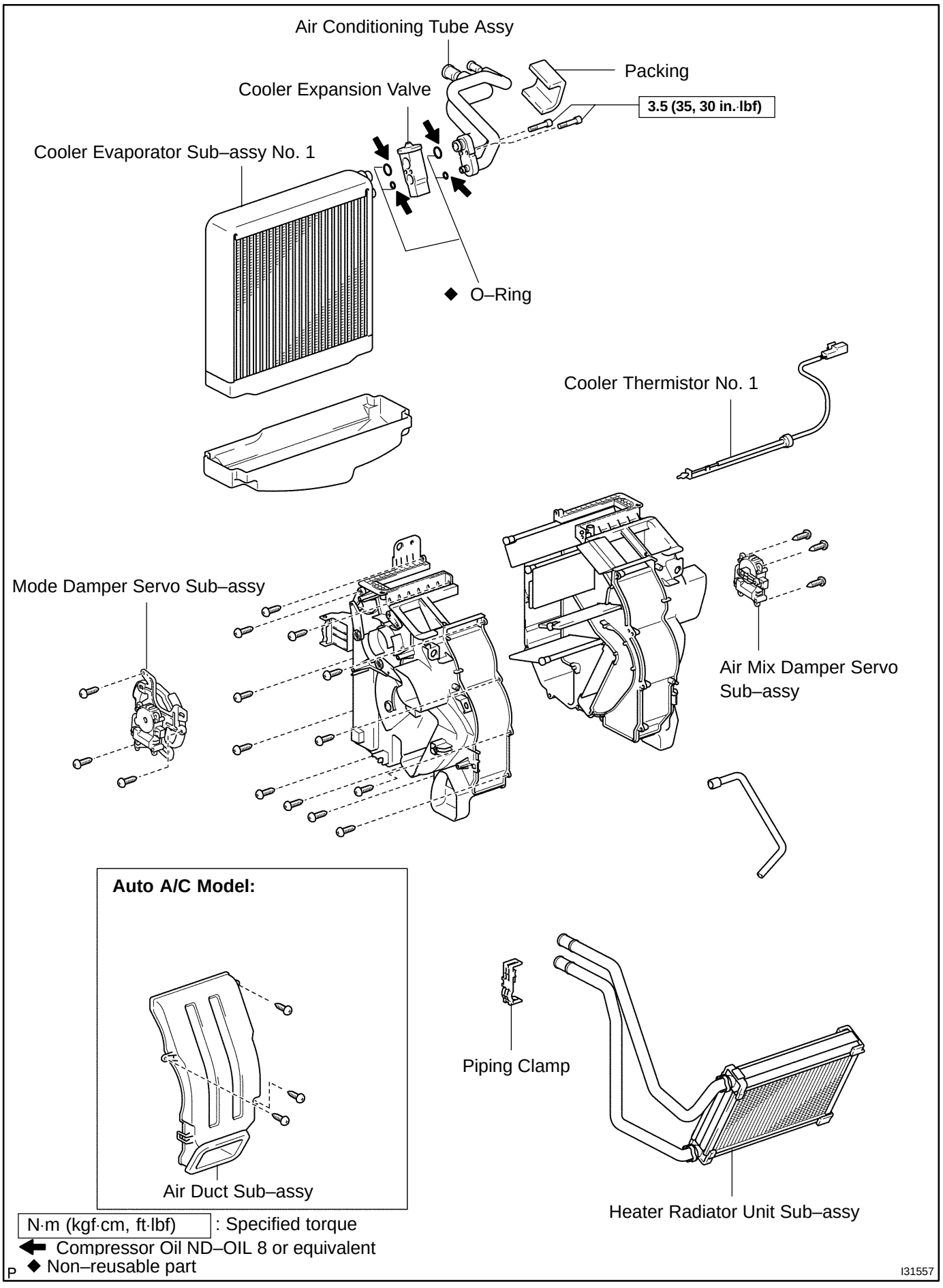
(a) Remove the 2 screws.
(b) Release the 10 fitting claws, remove the heater control housing.

AIR CONDITIONING RADIATOR ASSY

COMPONENTS

550C0–01




Air Conditioning Tube Assy
Packing
Cooler Expansion Valve
3.5 (35, 30 in.·lbf)
Cooler Evaporator Sub–assy No. 1
◆ O–Ring
Cooler Thermistor No. 1
Mode Damper Servo Sub–assy
Air Mix Damper Servo Sub–assy
Auto A/C Model:
Air Duct Sub–assy
Piping Clamp
Heater Radiator Unit Sub–assy
N·m (kgf·cm, ft·lbf) : Specified torque
Compressor Oil ND–OIL 8 or equivalent
◆ Non–reusable part
P
I31557

550C1–01

OVERHAUL

HINT:

COMPONENTS: See page 55–27

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (See page 55–18)

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

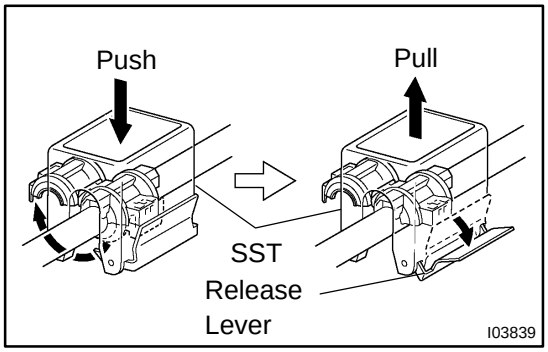
2. DISCONNECT COOLER REFRIGERANT SUCTION HOSE NO.1

(a) Install SST to piping clamp.

SST 09870–00015

HINT:

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

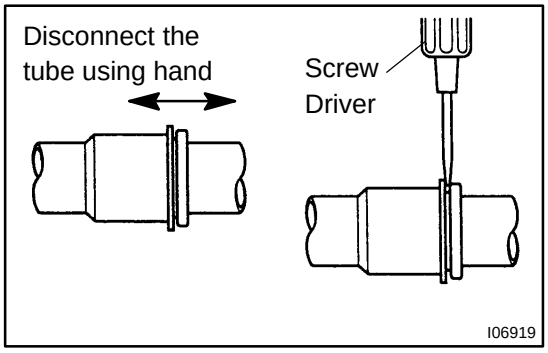


(b) Push down SST and release the clamp lock.

NOTICE:

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

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



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

NOTICE:

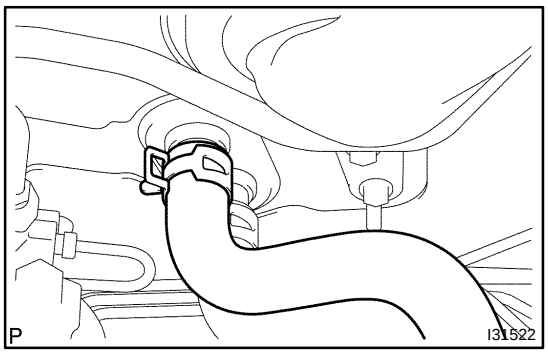
- **Do not use tools like screwdriver to remove the tube.**
- **Cap the open fittings immediately to keep moisture or dirt out of the system.**

3. DISCONNECT COOLER REFRIGERANT LIQUID PIPE A

SST 09870–00025

HINT:

Disconnect cooler refrigerant liquid pipe A in the same way as the cooler refrigerant suction hose No. 1.



4. DISCONNECT HEATER OUTLET WATER HOSE

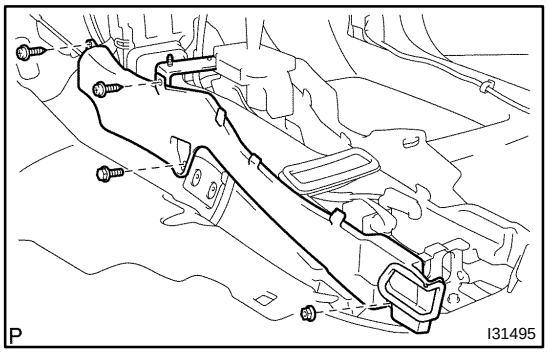
(a) Using pliers, grip the claws of clip and slide the clip and disconnect the heater outlet water hose.

5. DISCONNECT HEATER INLET WATER HOSE

HINT:
Disconnect in the same way as the heater outlet water hose.

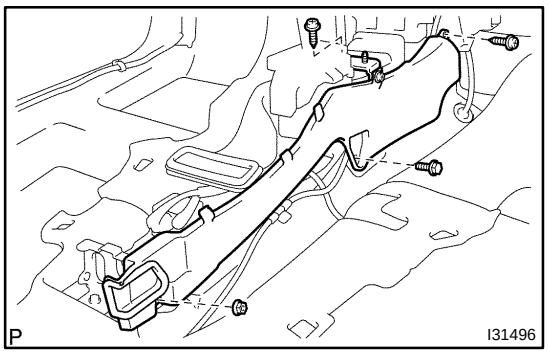
6. REMOVE INSTRUMENT PANEL SAFETY PAD SUB–ASSY
(See page 71–12)

HINT:
Refer to the instructions for removal of the instrument panel safety pad sub–assy.



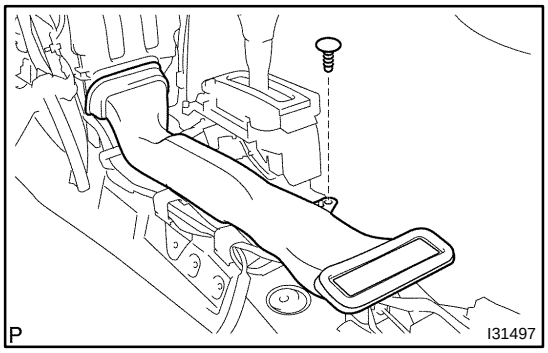
7. REMOVE AIR DUCT REAR NO.1

(a) Remove the 2 screws, bolt and nut.
(b) Remove the air duct rear No. 1.



8. REMOVE AIR DUCT REAR NO.2

(a) Remove the bolt and nut.
(b) A/X models:
Remove the 2 screws, air duct rear No. 2 and console box mounting bracket No. 1.
(c) M/X models:
Remove the screw, air duct rear No. 2 and console box mounting bracket No. 1.

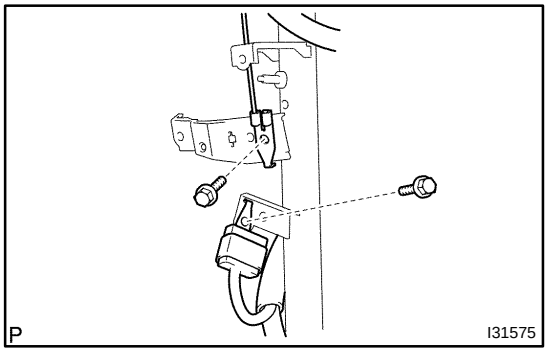


9. REMOVE CONSOLE BOX DUCT NO.1(AUTO AIR CONDITIONER)

(a) Remove the clip and console box duct No. 1.

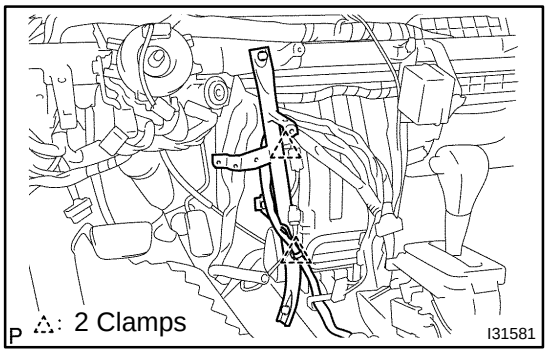
10. DISCONNECT FLOOR SHIFT PARKING LOCK CABLE ASSY

11. REMOVE WINDSHIELD WIPER RELAY ASSY

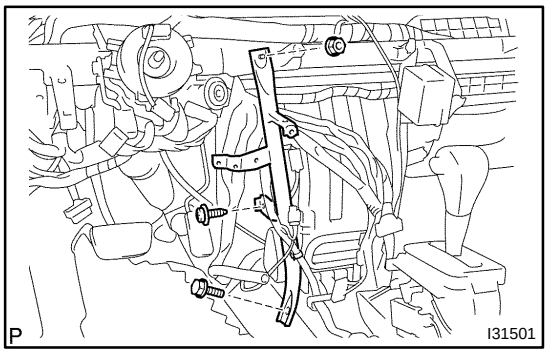


12. REMOVE INSTRUMENT PANEL BRACE SUB–ASSY NO.1

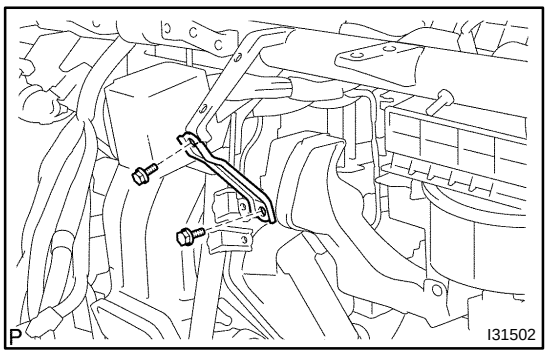
(a) Remove the 2 bolts and 2 earth wires.



(b) Release the 2 clamps.

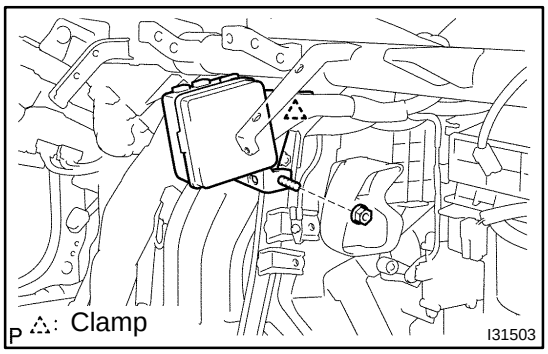


(c) Remove the bolt and screw.
(d) Remove the nut and instrument panel brace sub–assy No. 1.



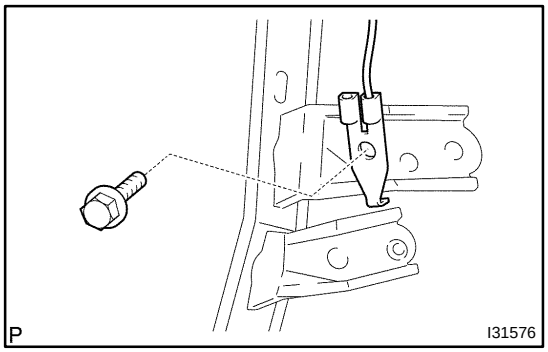
13. REMOVE INSTRUMENT FINISH PANEL RETAINER LOWER

(a) Remove the 2 bolts and instrument finish retainer lower.

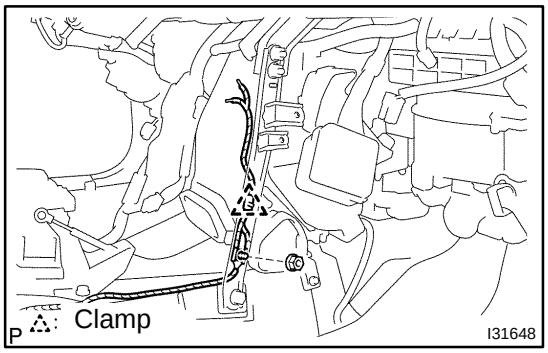


14. REMOVE INSTRUMENT PANEL BRACE SUB–ASSY NO.2

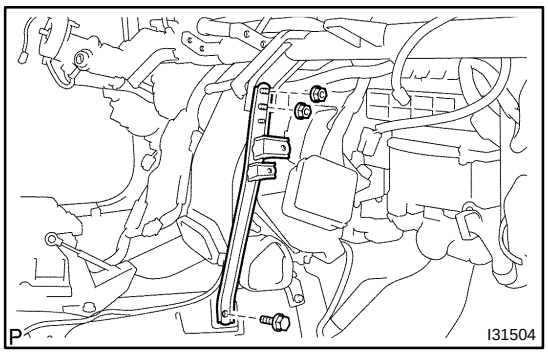
(a) Remove the clamp, nut and passenger side junction block.



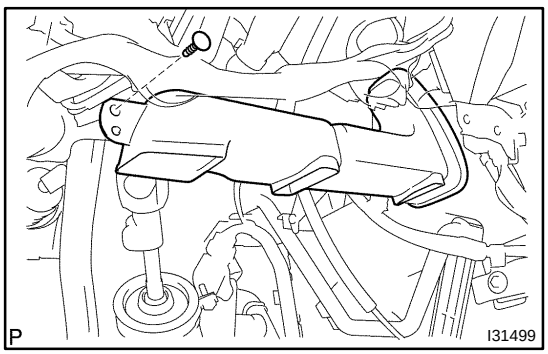
(b) Remove the bolt and earth wire.



(c) Remove the nut and clamp.

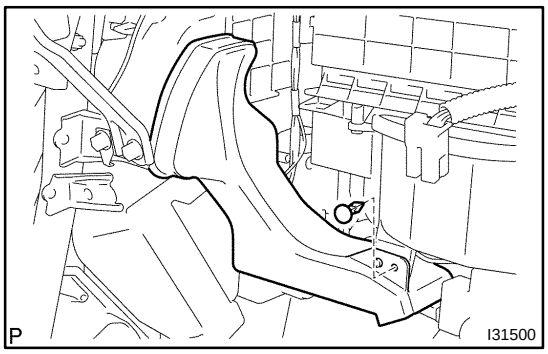


(d) Remove the 2 nuts, bolt and instrument panel brace sub–assy No. 2.



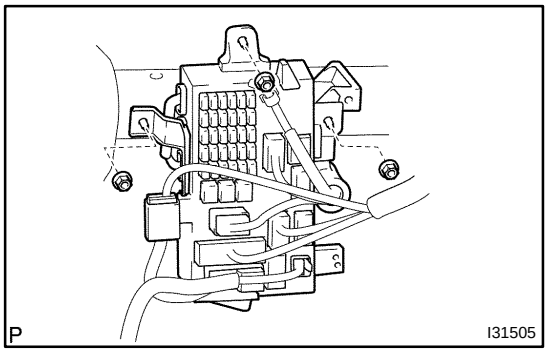
15. REMOVE HEATER TO FOOT DUCT NO.3

(a) Remove the clip and heater to foot duct No. 3.



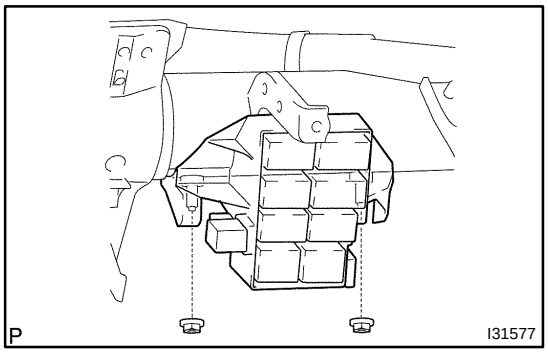
16. REMOVE HEATER TO FOOT DUCT NO.1

(a) Remove the clip and heater to foot duct No. 1.

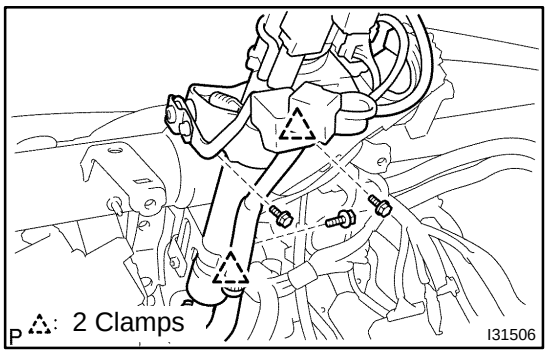


17. DISCONNECT STEERING COLUMN ASSY

(a) Remove the 3 nuts and driver side junction block.



(b) Remove the 2 nuts and steering side connector block.

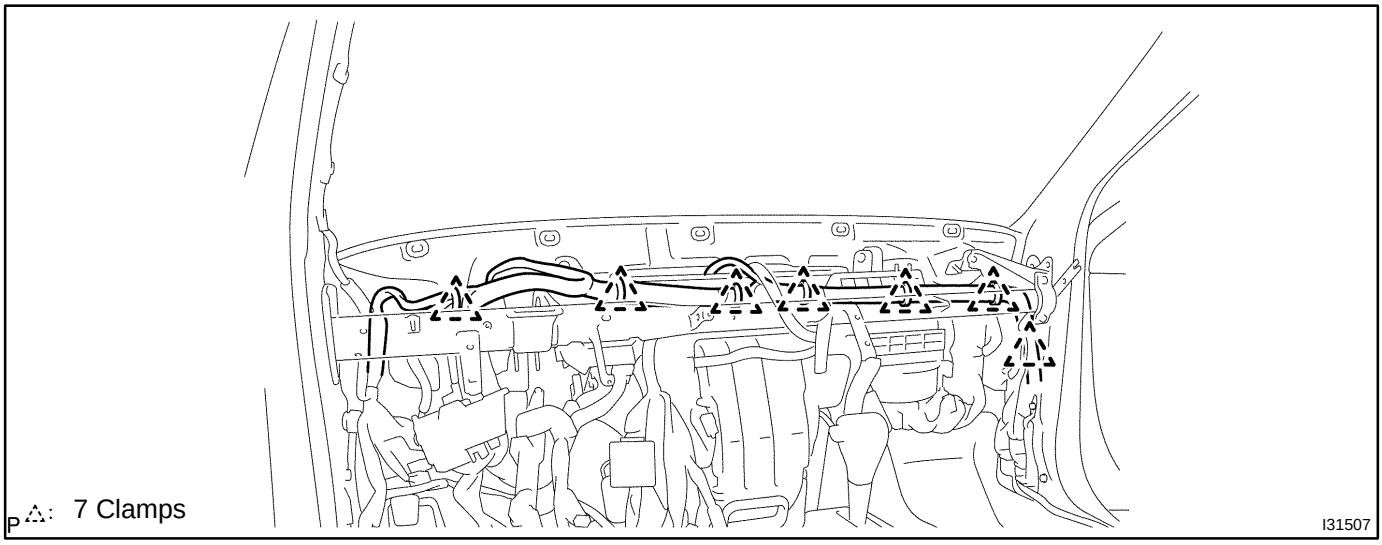


(c) Release the 2 clamps.

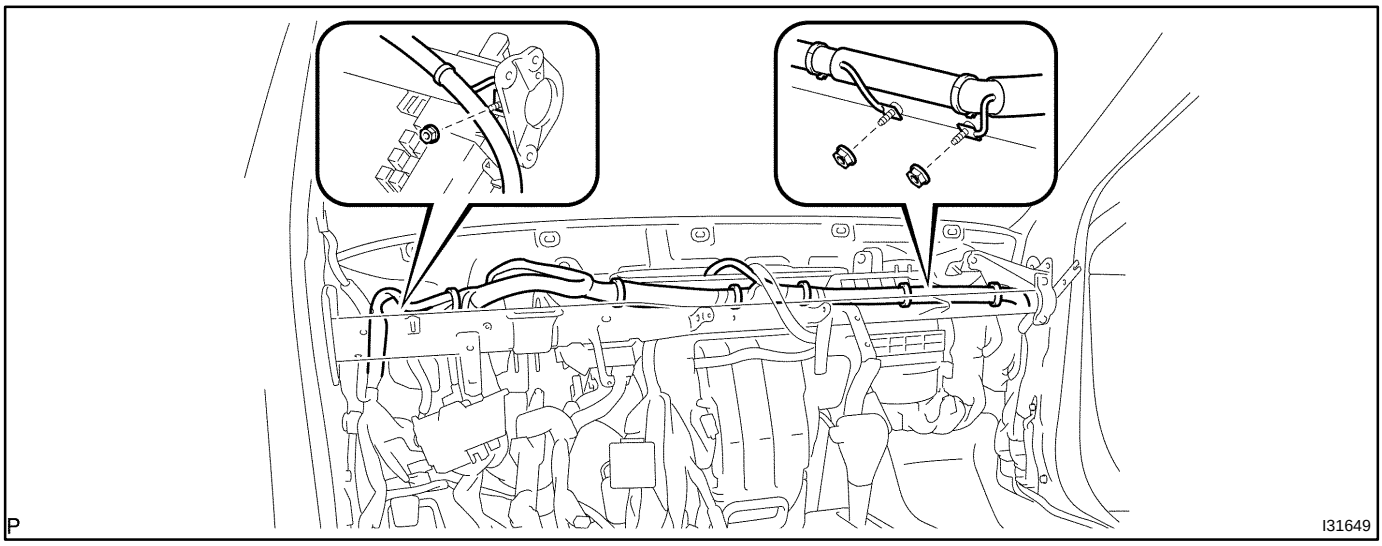
(d) Remove the 3 bolts, disconnect the steering column assy.

18. REMOVE INSTRUMENT PANEL REINFORCEMENT

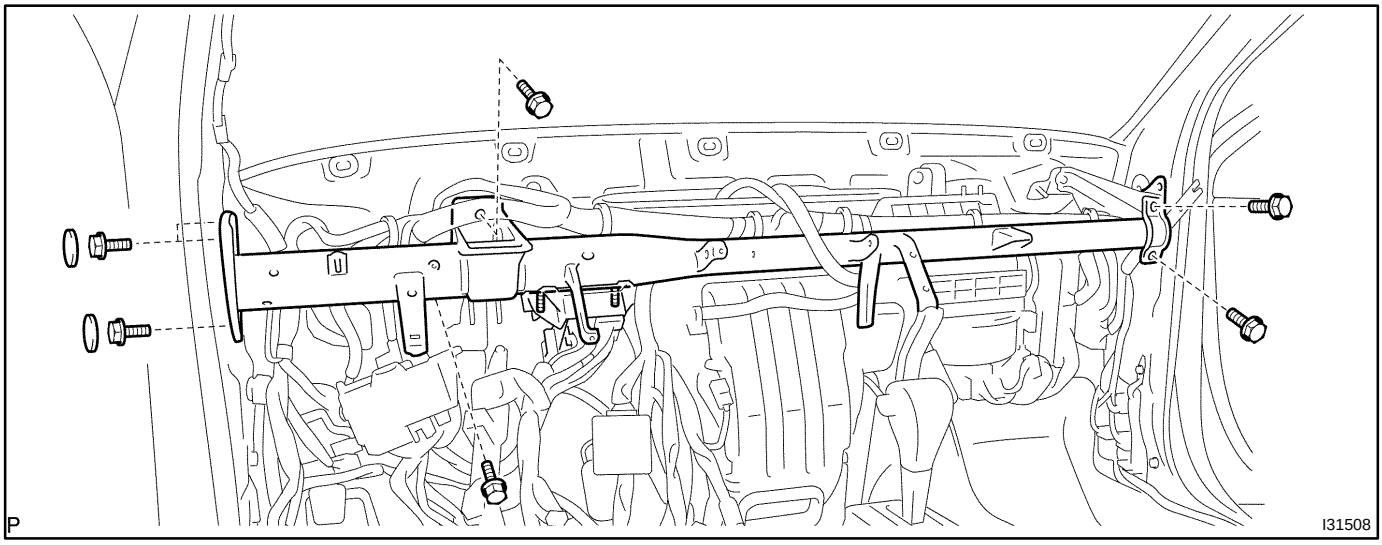
(a) Disconnect the 7 clamps and the wire harness.

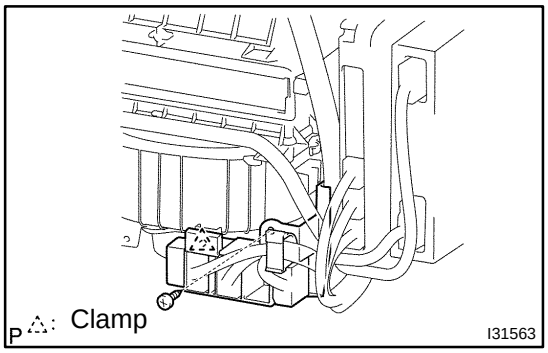


(b) Remove the 3 nuts, disconnect the 3 earth wires.



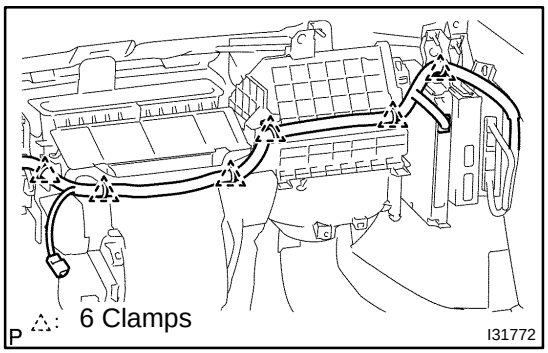
(c) Remove the 3 caps, 7 bolts and instrument panel reinforcement.



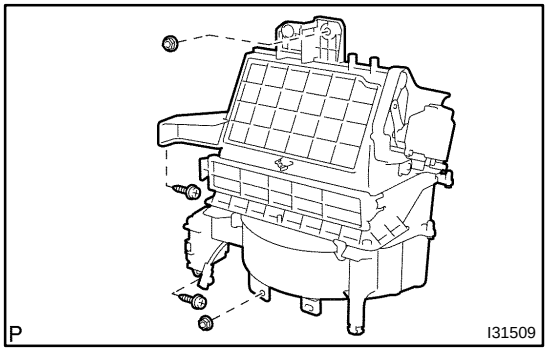


19. REMOVE BLOWER ASSY

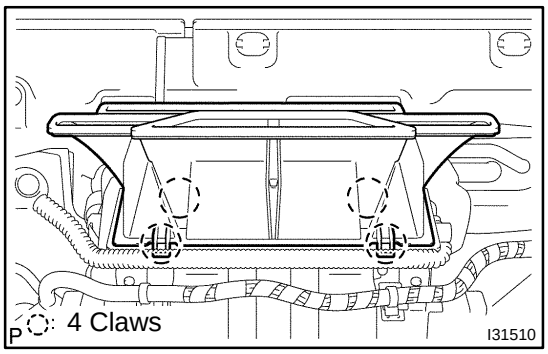
(a) Disconnect the connectors.
(b) Remove the screw, clamp and blower connector holder.



(c) Disconnect the 6 clamps and the wire harness.

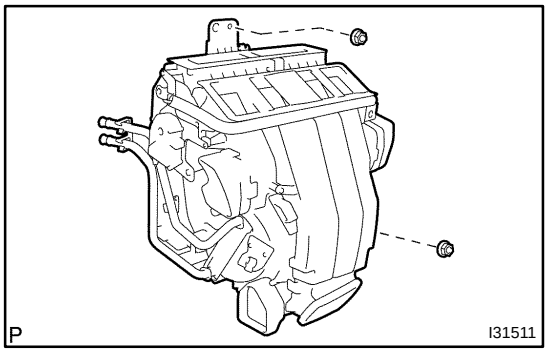


(d) Remove the 2 screws, 2 nuts and blower assy.



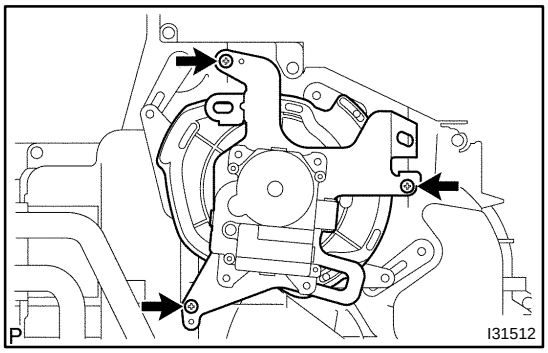
20. REMOVE DEFROSTER NOZZLE ASSY LOWER

(a) Release the 4 fitting claws, remove the defroster nozzle assy lower.



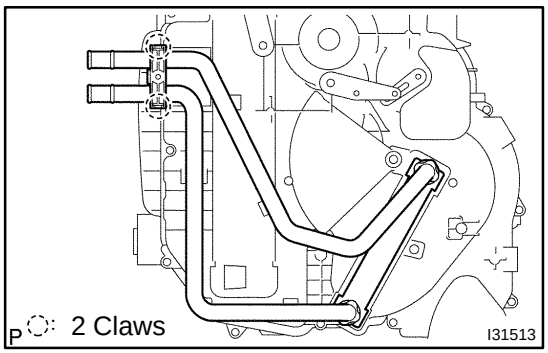
21. REMOVE AIR CONDITIONING RADIATOR ASSY

(a) Disconnect the connectors.
(b) Remove the 2 nuts and air conditioning radiator assy.



22. REMOVE MODE DAMPER SERVO SUB–ASSY

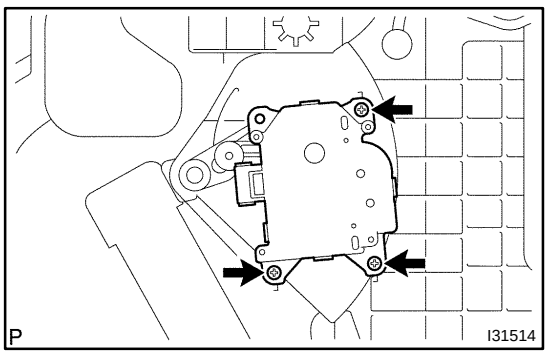
(a) Remove the 3 screws and mode damper servo sub–assy.



23. REMOVE HEATER RADIATOR UNIT SUB–ASSY

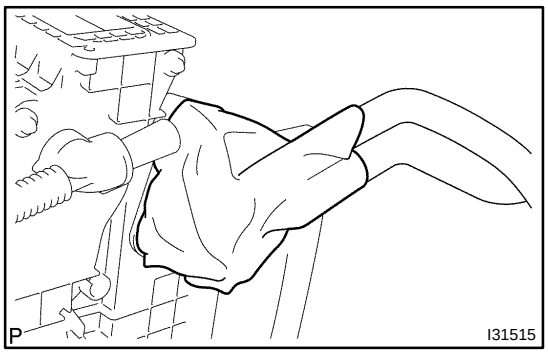
(a) Release the 2 fitting claws, remove the piping clamp.
(b) Remove the heater radiator unit sub–assy.

NOTICE:
Prepare a support plate and waste to catch the leaked coolant.



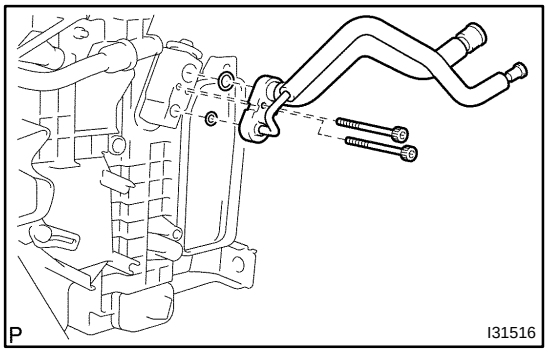
24. REMOVE AIRMIX DAMPER SERVO SUB–ASSY

(a) Remove the 3 screws and air mix damper servo sub–assy.



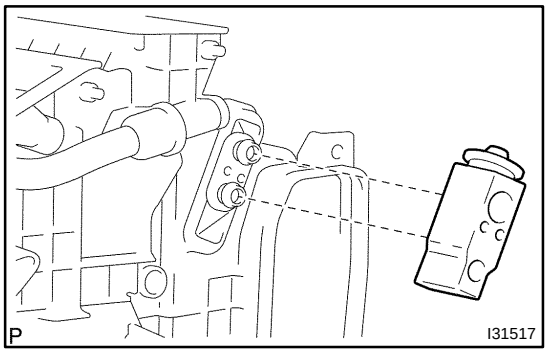
25. REMOVE AIR CONDITIONING TUBE ASSY

(a) Remove the packing.



(b) Using a hexagon wrench 4 mm (0.16 in.), remove the 2 hexagon bolts and air conditioning tube assy.

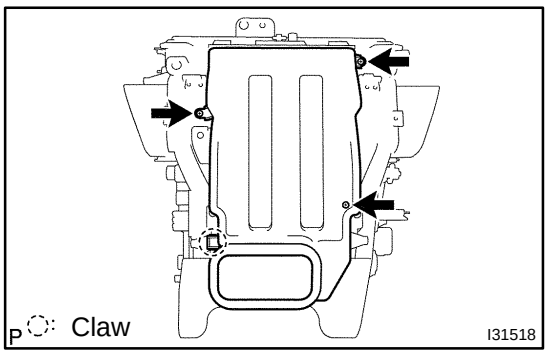
(c) Remove the 2 O–rings from the air conditioning tube assy.



26. REMOVE COOLER EXPANSION VALVE

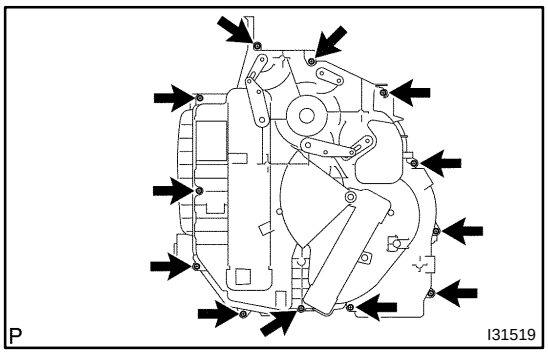
(a) Remove the cooler expansion valve from the cooler evaporator sub–assy No. 1.

27. REMOVE COOLER THERMISTOR NO.1

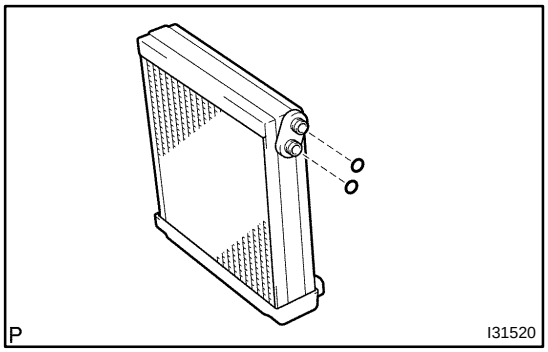


28. REMOVE COOLER EVAPORATOR SUB–ASSY NO.1

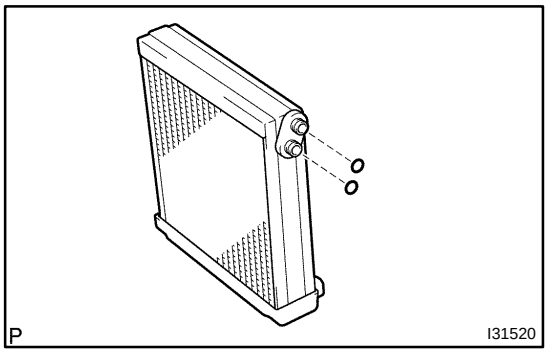
(a) Auto A/C model:
Release the fitting claw, remove the 3 screws and air duct sub–assy.



(b) Remove the 12 screws and heater case LH.
(c) Remove the cooler evaporator sub–assy No. 1 from the heater case RH.

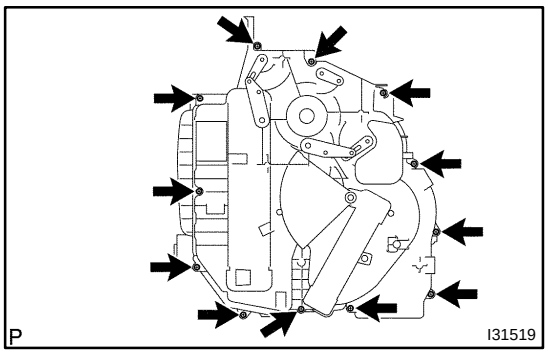


(d) Remove the 2 O–rings from the cooler evaporator sub–assy No. 1.

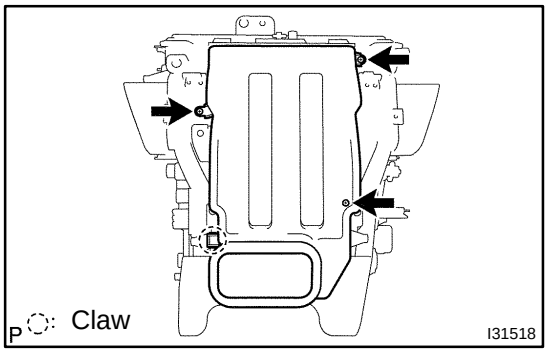


29. INSTALL COOLER EVAPORATOR SUB–ASSY NO.1

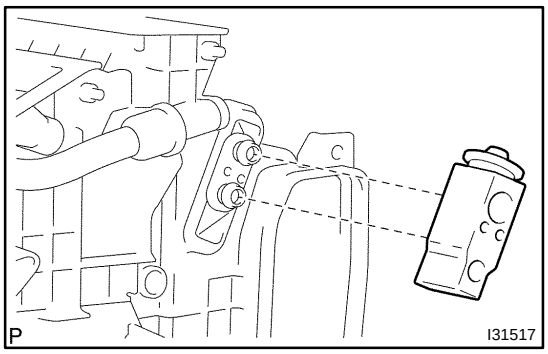
(a) Apply compressor oil to the contact surfaces of 2 new O–rings and the cooler expansion valve and install them.
Compressor oil: ND–OIL 8 or equivalent



(b) Install the cooler evaporator sub–assy No. 1 to the heater case RH.
(c) Install the heater case LH with the 12 screws.

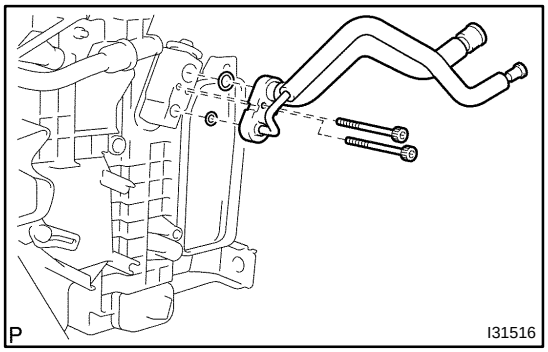


(d) Auto A/C model:
Install the air duct sub–assy with the 3 screws.



30. INSTALL COOLER EXPANSION VALVE

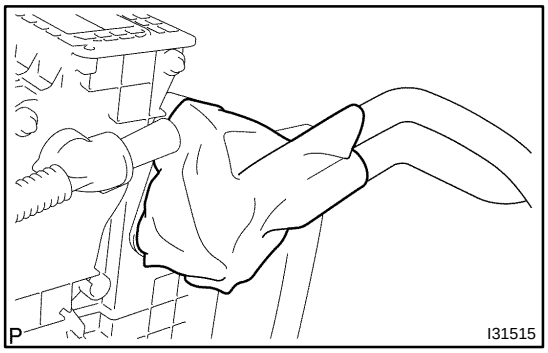
(a) Install the cooler expansion valve to the cooler evaporator No. 1.



31. INSTALL AIR CONDITIONING TUBE ASSY

(a) Apply compressor oil to the contact surfaces of 2 new O–rings and the air conditioning tube assy and install them.
Compressor oil: ND–OIL 8 or equivalent

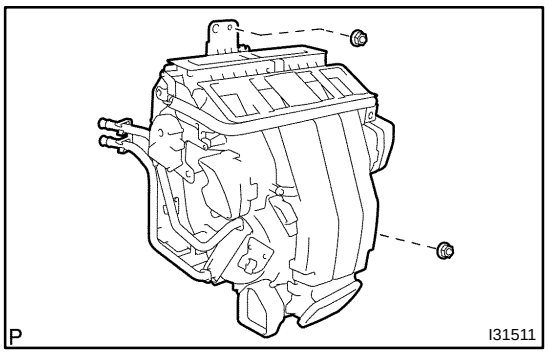
(b) Using a hexagon wrench 4 mm (0.16 in.), install the air conditioner tube assy and 2 hexagon bolts to the cooler evaporator sub–assy No. 1.
Torque: 3.5 N·m (35 kgf·cm, 30 in.·lbf)



(c) Install the packing.

HINT:

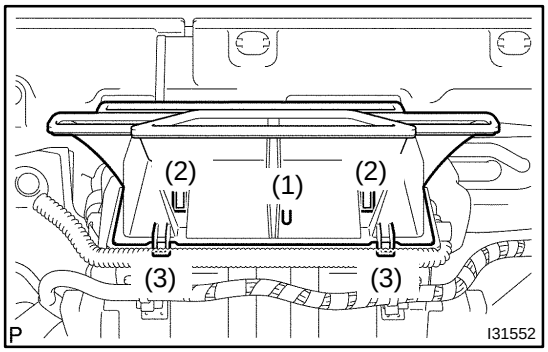
Securely attach so that the gap in the packing will not be mode.



32. INSTALL AIR CONDITIONING RADIATOR ASSY

(a) Install the air conditioning radiator assy with the 2 nuts.
Torque: 1.5 N·m (15 kgf·cm, 12 in.·lbf)

(b) Connect the connector.

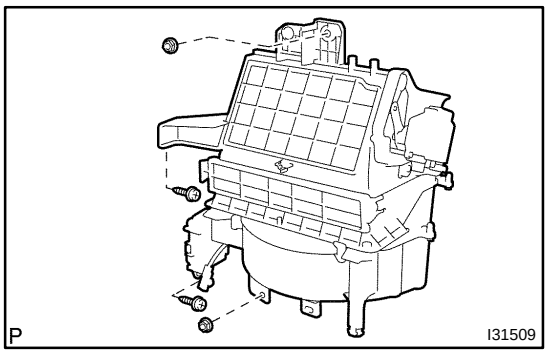


33. INSTALL DEFROSTER NOZZLE ASSY LOWER

(a) Install the defroster nozzle assy lower.

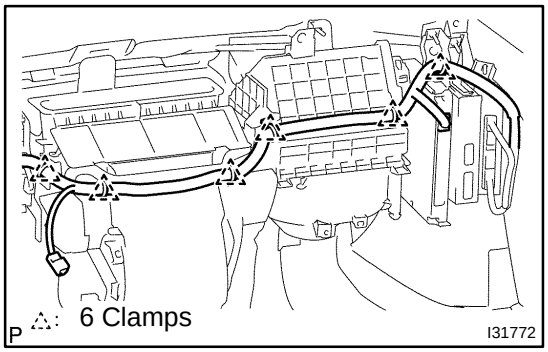
NOTICE:

After locating the pin (1) in the illustration, install (2), then (3).

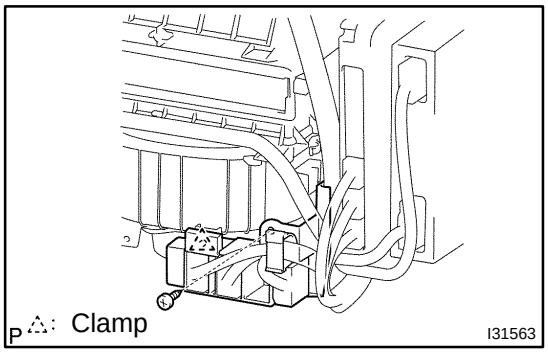


34. INSTALL BLOWER ASSY

(a) Install the blower assy with the 2 screws and 2 nuts.
Torque: 1.5 N·m (15 kgf·cm, 12 in.·lbf)



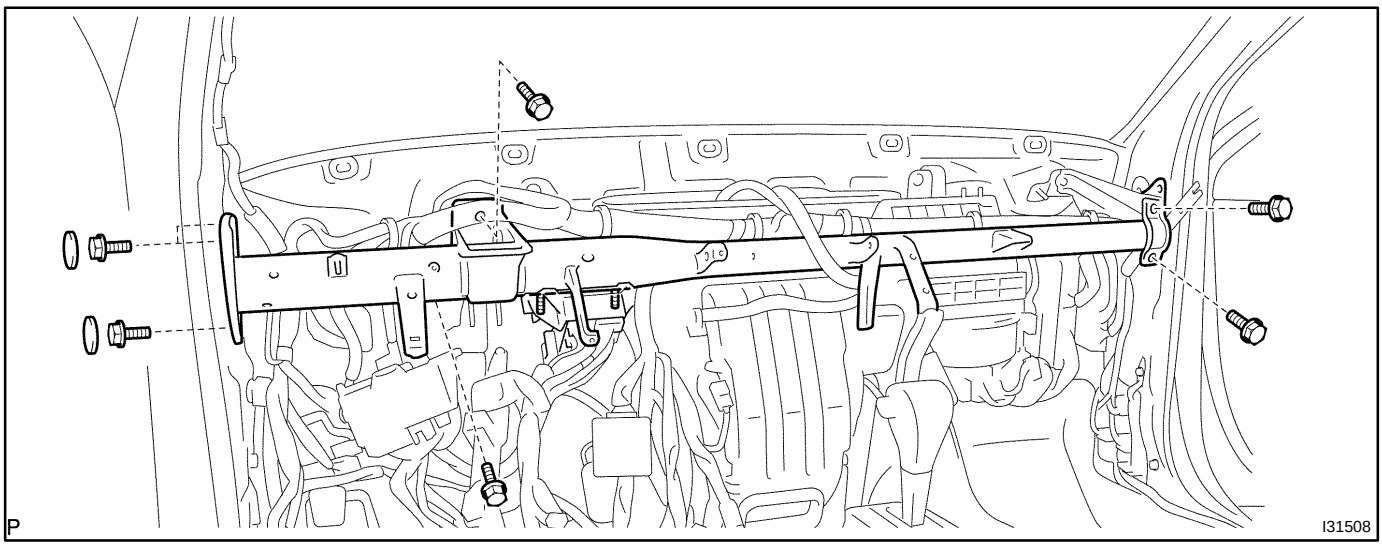
(b) Install the 6 clamps, connect the wire harness.



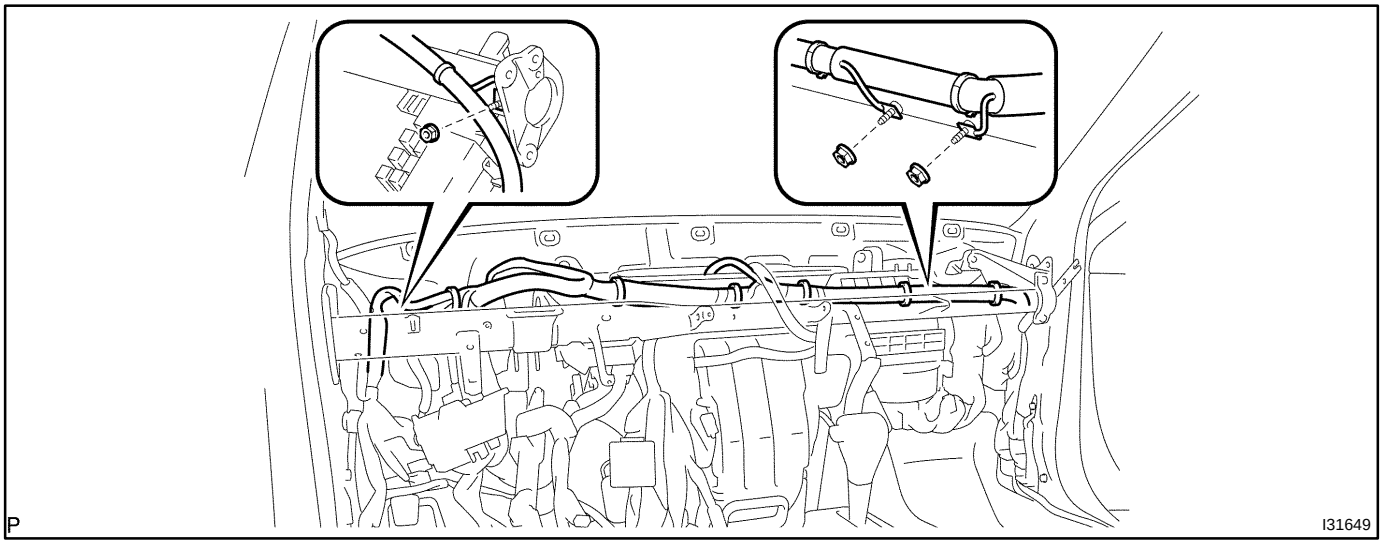
(c) Install the blower connector holder with the screw and clamp.
(d) Connect the connectors.

35. INSTALL INSTRUMENT PANEL REINFORCEMENT

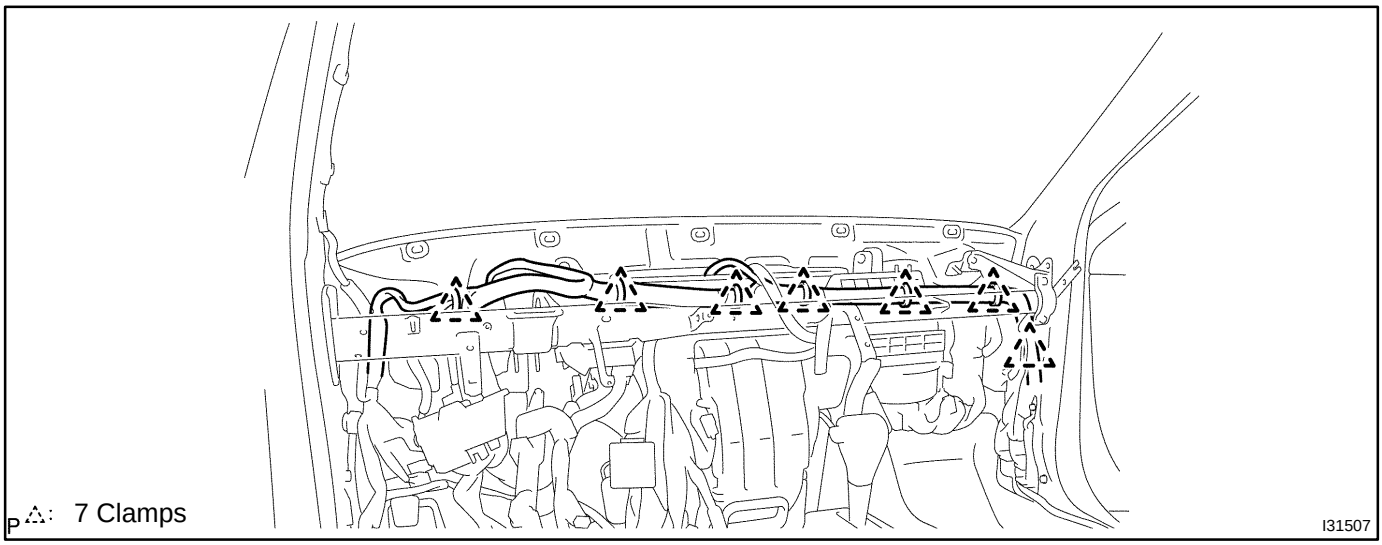
(a) Install the instrument panel reinforcement with the 7 bolts and 3 caps.

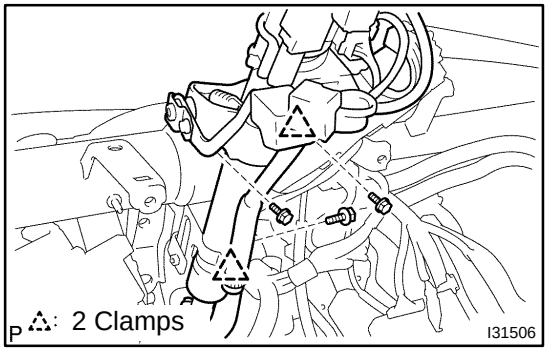


(b) Install the 3 earth wires with the 3 nuts.



(c) Install the 7 clamps, connect the wire harness.

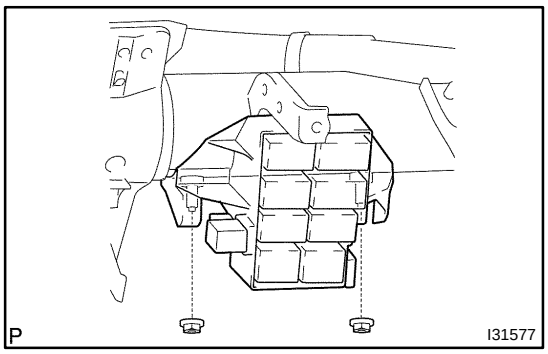




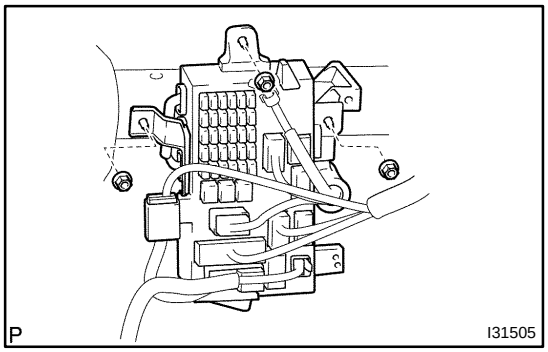
36. INSTALL STEERING COLUMN ASSY

(a) Install the steering column assy with the 3 bolts.

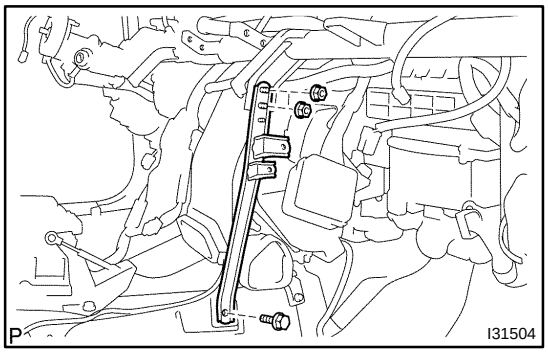
(b) Install the 2 clamps.



(c) Install the steering side connector block with the 2 nuts.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)

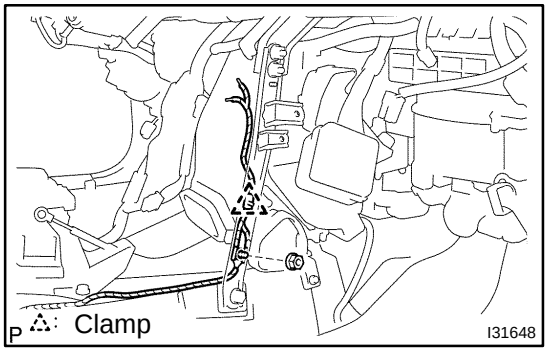


(d) Install the driver side junction block with the 3 nuts.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)

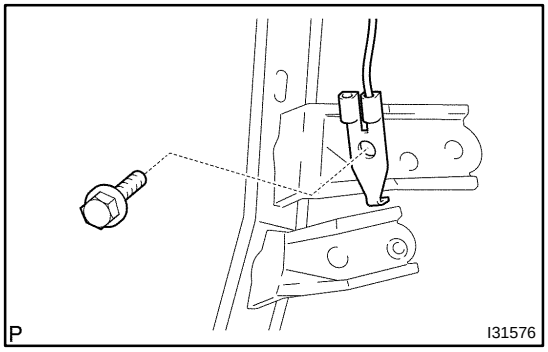


37. INSTALL INSTRUMENT PANEL BRACE SUB–ASSY NO.2

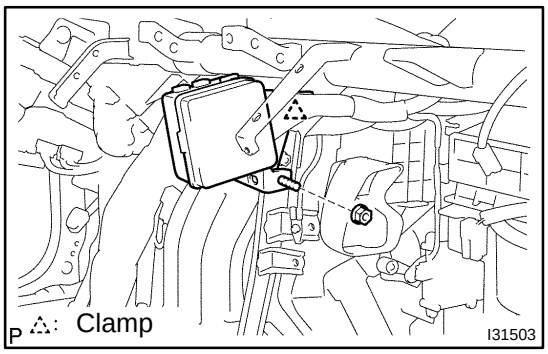
(a) Install the instrument panel brace sub–assy No. 2 with the 2 nuts and bolt.



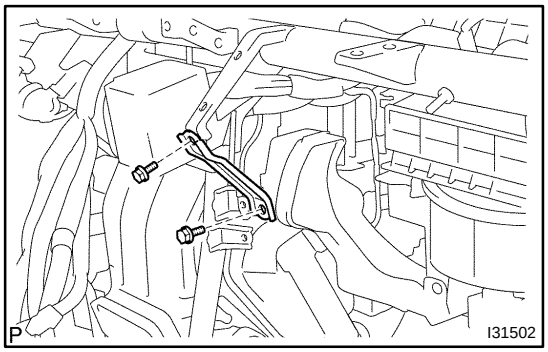
(b) Install the nut and clamp.



(c) Install the earth wire with the bolt.

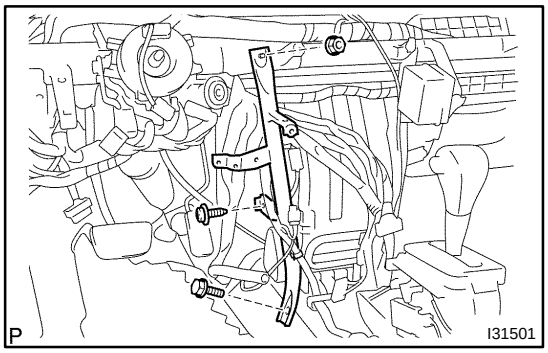


(d) Install the passenger side junction block with the nut and clamp.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)



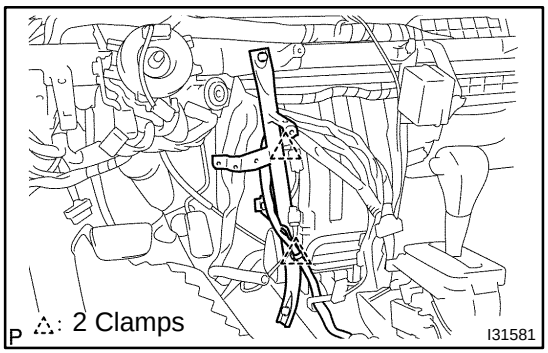
38. INSTALL INSTRUMENT FINISH PANEL RETAINER LOWER

(a) Install the instrument finish panel retainer lower with the 2 bolts.

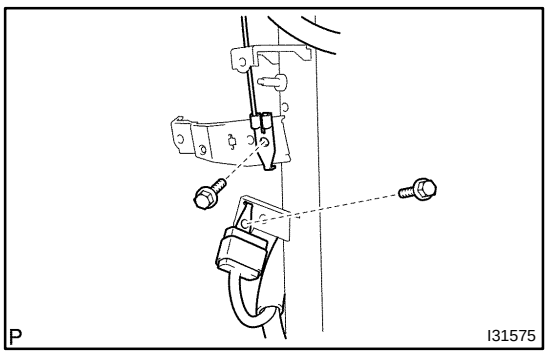


39. INSTALL INSTRUMENT PANEL BRACE SUB–ASSY NO.1

(a) Install the instrument panel brace sub–assy No. 1 with the nut.
(b) Install the bolt and screw.
Torque: 9.8 N·m (100 kgf·cm, 87 in.·lbf) (Screw)

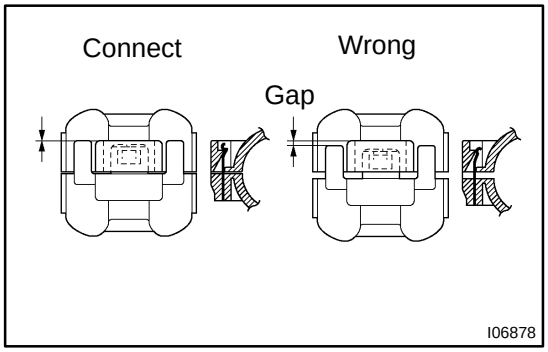


(c) Install the 2 clamps.



(d) Install the 2 earth wires with the 2 bolts.

40. INSTALL INSTRUMENT PANEL SAFETY PAD SUB–ASSY
(See page 71–12)



41. INSTALL COOLER REFRIGERANT SUCTION HOSE NO.1

(a) Lubricate new O–ring with compressor oil and install them to the hose.
Compressor oil: ND–OIL 8 or equivalent
(b) Install the cooler refrigerant suction hose No.1 and piping clamp.

HINT:
After connection, check the fitting for claw of the piping clamp.

42. INSTALL COOLER REFRIGERANT LIQUID PIPE A

HINT:
Install in the same way as the cooler refrigerant suction hose No. 1.

43. ADD COOLANT
1MZ–FE: (See page 16–20)
2AZ–FE: (See page 16–6)

44. CHARGE REFRIGERANT (See page 55–18)
SST 07110–58060 (07117–58060, 07117–58070, 07117–58080, 07117–58090, 07117–78050, 07117–88060, 07117–88070, 07117–88080)
Specified amount: 550 ± 50 g (19.37 ± 1.76 oz.)

45. WARM UP ENGINE

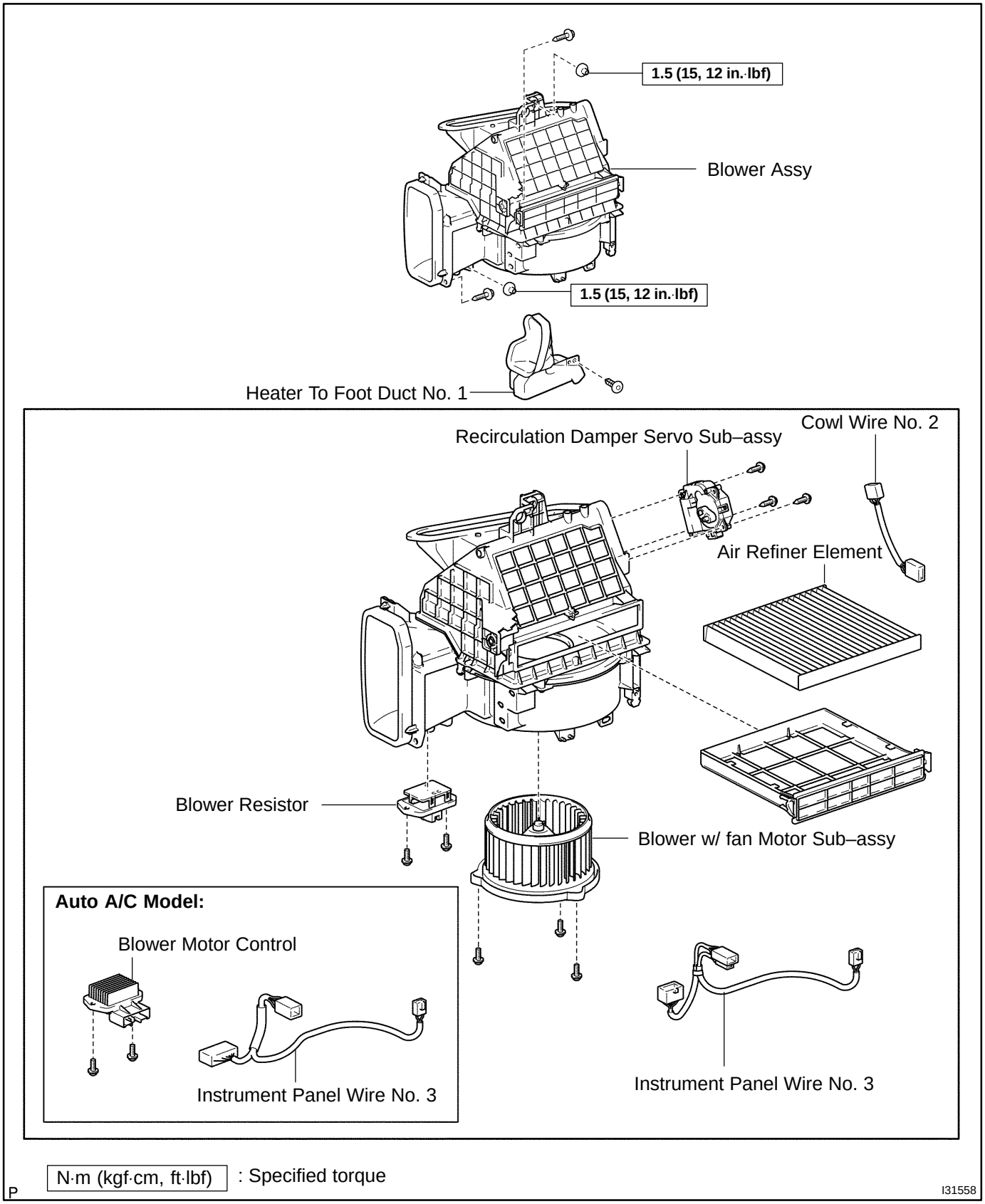
46. CHECK ENGINE COOLANT LEAK
1MZ–FE: (See page 16–14)
2AZ–FE: (See page 16–1)

47. INSPECT LEAKAGE OF REFRIGERANT (See page 55–18)

BLOWER ASSY

COMPONENTS

550C2–01



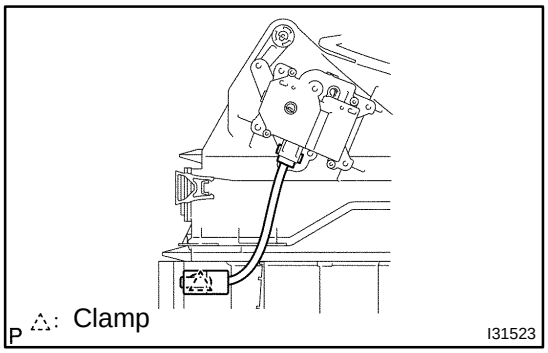
550C3–01

OVERHAUL

HINT:

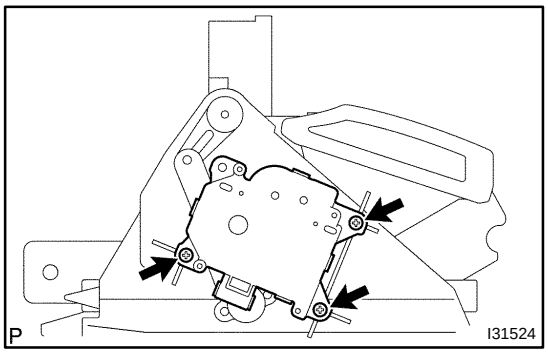
COMPONENTS: See page 55–45

1. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB–ASSY (See page 71–12)**
2. **REMOVE HEATER TO FOOT DUCT NO.1 (See page 55–29)**
3. **REMOVE BLOWER ASSY (See page 55–29)**
4. **REMOVE AIR REFINER ELEMENT**



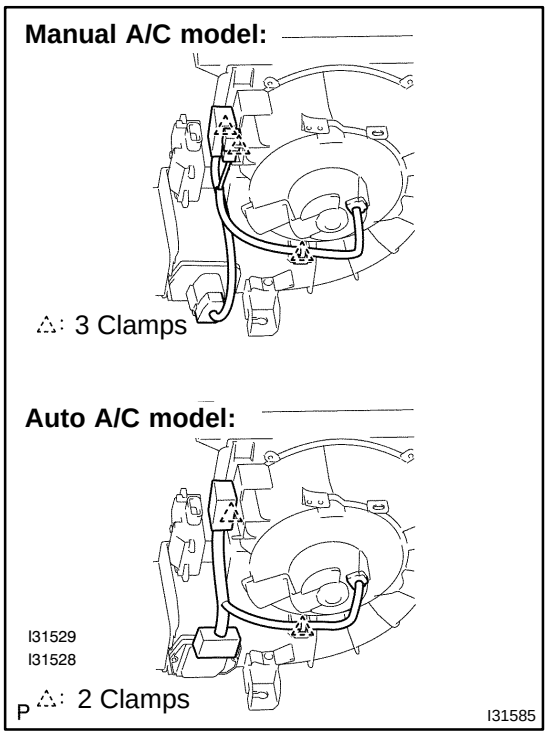
5. REMOVE COWL WIRE NO.2

(a) Remove the clamp and cowl wire No. 2.



6. REMOVE RECIRCULATION DAMPER SERVO SUB–ASSY

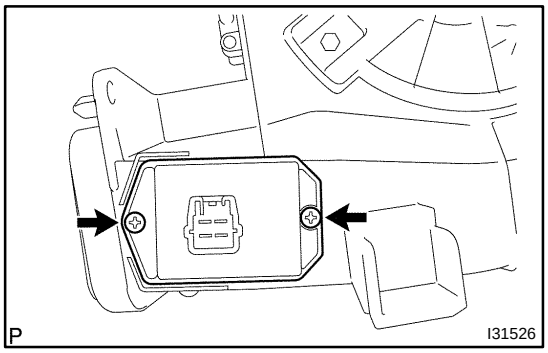
(a) Remove the 3 screws and recirculation damper servo sub–assy.



7. REMOVE INSTRUMENT PANEL WIRE NO.3

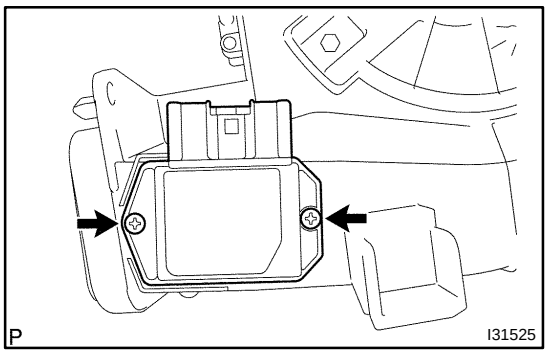
(a) Manual A/C model:
Disconnect the connectors, remove the 3 clamps and instrument panel wire No. 3.

(b) Auto A/C model:
Disconnect the connectors, remove the 2 clamps and instrument panel wire No. 3.



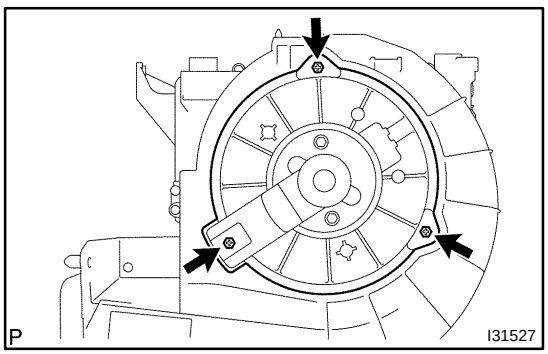
8. REMOVE BLOWER RESISTOR (MANUAL AIR CONDITIONER)

(a) Remove the 2 screws and blower resistor.



9. REMOVE BLOWER MOTOR CONTROL (AUTO AIR CONDITIONER)

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



10. REMOVE BLOWER W/FAN MOTOR SUB–ASSY

(a) Remove the 3 screws and blower w/fan motor sub–assy.

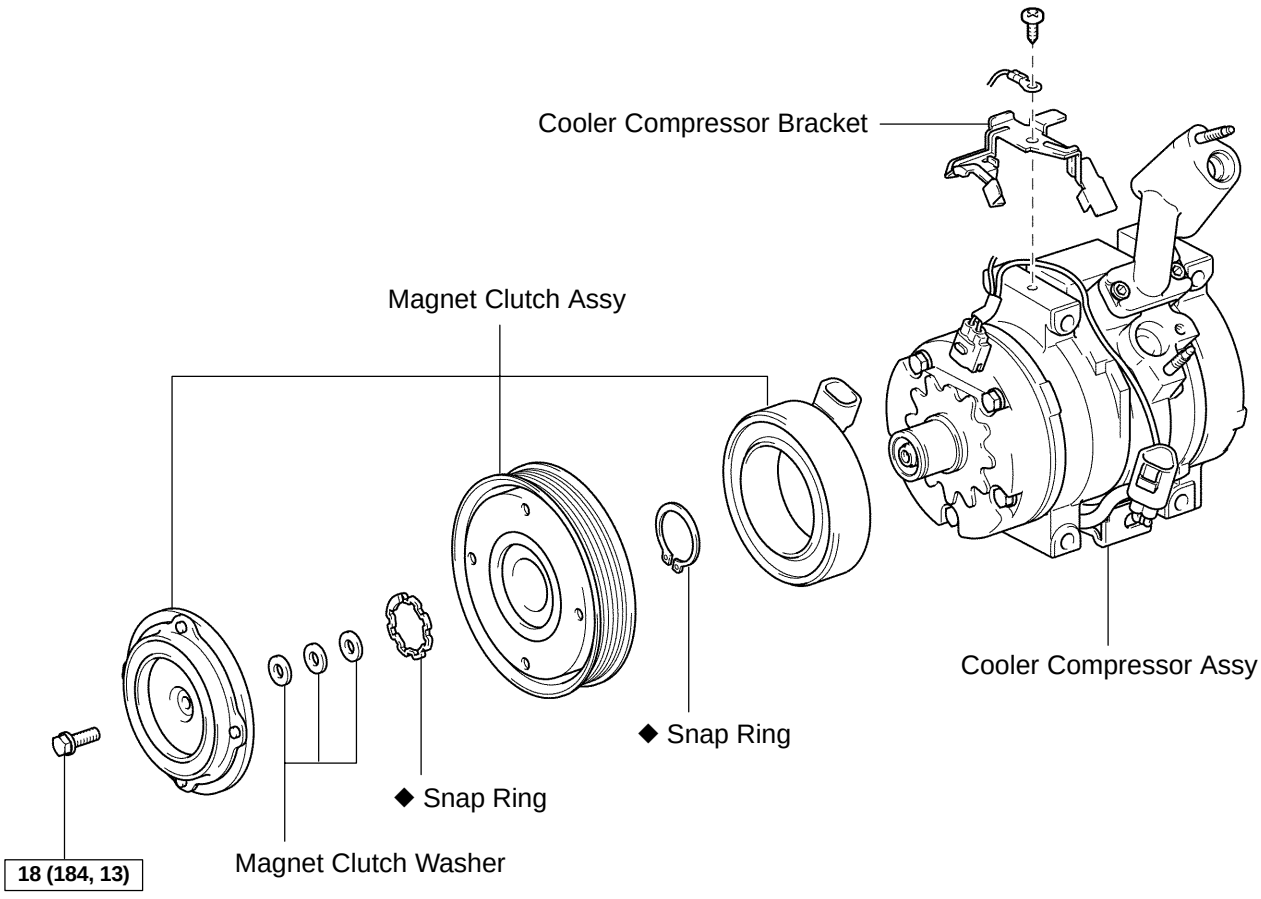
11. INSTALL BLOWER ASSY
(See page 55–29)

12. INSTALL INSTRUMENT PANEL SAFETY PAD SUB–ASSY
(See page 71–12)

COOLER COMPRESSOR ASSY (1MZ–FE)

550C4–01

COMPONENTS



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

◆ Non–reusable part

P

I31774

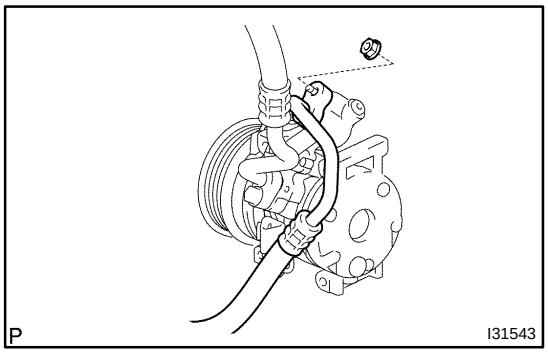
550C5–01

REPLACEMENT

HINT:

COMPONENTS: See page 55–49

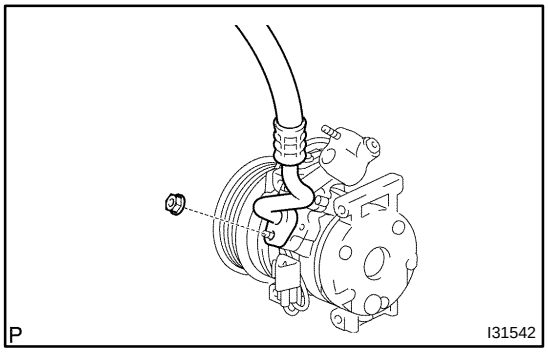
1. **DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (See page 55–18)**
   SST 07110–58060 (07117–58080, 07117–58090, 07117–78050, 07117–88060, 07117–88070, 07117–88080)
2. **REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 55–21)**
3. **REMOVE GENERATOR ASSY (See page 19–33)**



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.

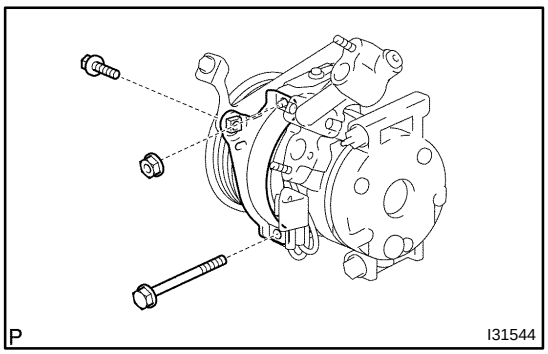
NOTICE:
Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.



5. **DISCONNECT COOLER REFRIGERANT SUCTION HOSE NO.1**

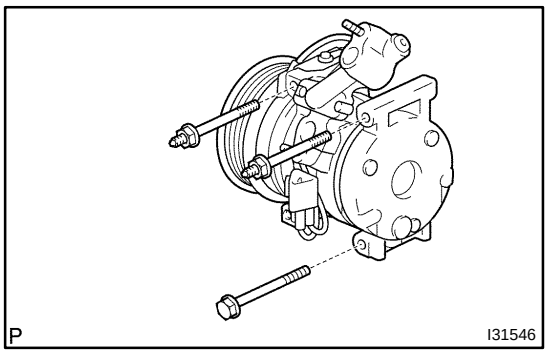
(a) Remove the nut and disconnect the cooler refrigerant suction hose No. 1.
(b) Remove the O–ring from the cooler refrigerant suction hose No. 1.

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

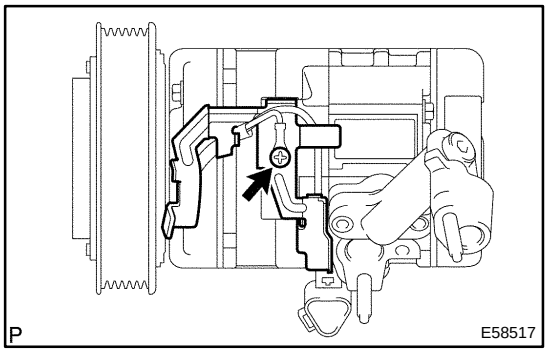


6. **REMOVE COMPRESSOR AND MAGNETIC CLUTCH**

(a) Disconnect the connector and clamp.
(b) Remove the 2 bolts, nut and cooler compressor bracket.

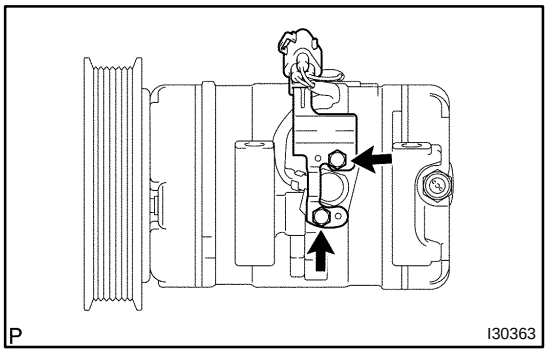


(c) Remove the 3 bolts and compressor and magnetic clutch.



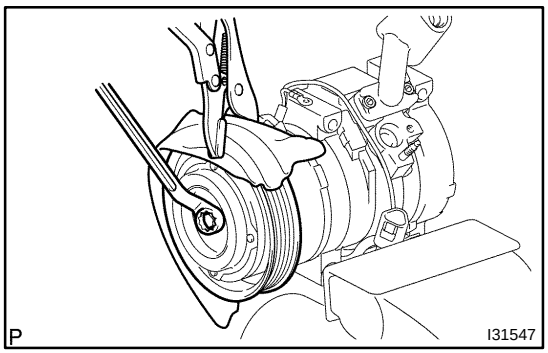
7. REMOVE COOLER COMPRESSOR BRACKET

(a) Remove the screw, earth wire and cooler compressor bracket.

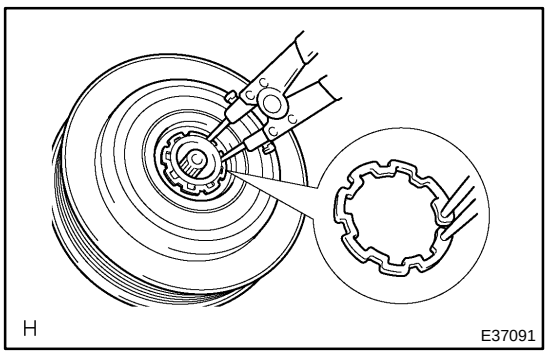


8. REMOVE MAGNET CLUTCH ASSY

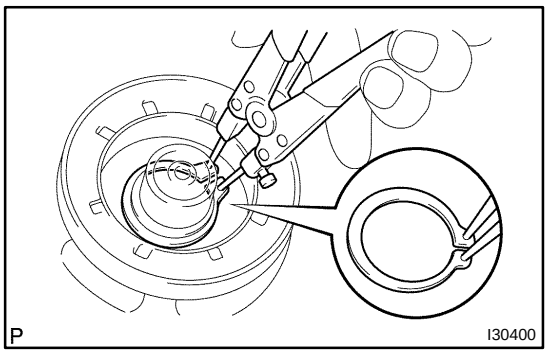
(a) Remove the bolt and bracket.
(b) Place the compressor and magnetic clutch in vise.



(c) Using a vise pliers, hold the magnet clutch hub.
(d) Remove the bolt, magnet clutch hub and magnet clutch washer.

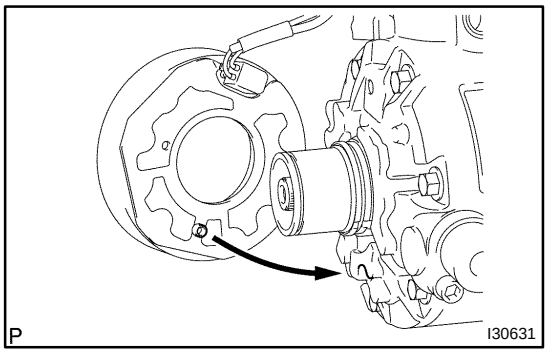


(e) Using a snap ring expander, remove the snap ring and magnet clutch rotor.
(f) Disconnect the connector.



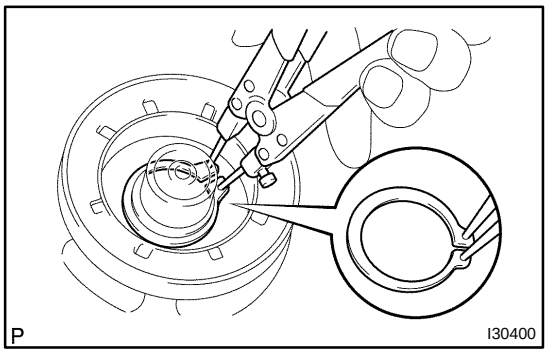
(g) Using a snap ring expander, remove the snap ring and magnet clutch starter.

9. REMOVE COOLER COMPRESSOR ASSY

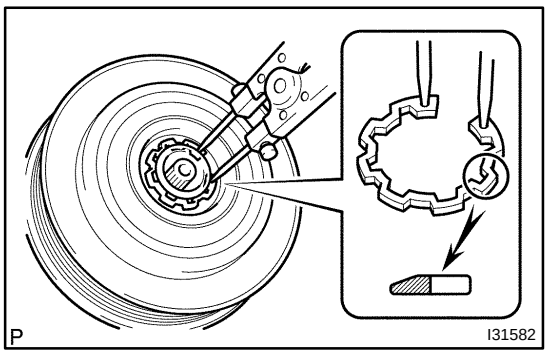


10. INSTALL MAGNET CLUTCH ASSY

(a) Matching the parts shown in the illustration, install the magnet clutch starter.

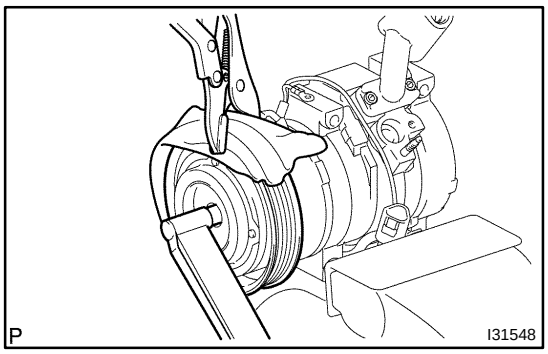


(b) Using a snap ring expander, install a new snap ring with the chamfered side facing up.
(c) Connect the connector.

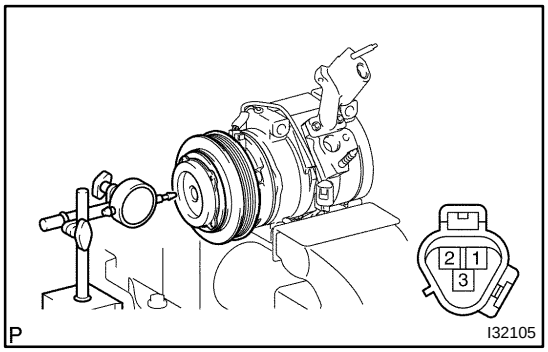


(d) Using a snap ring expander, install the magnet clutch rotor and a new snap ring with the chamfered side facing up.
(e) Install the magnet clutch washer and magnet clutch hub.

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



(f) Using a vise pliers, hold the magnet clutch hub and install the bolt.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)



11. INSPECT MAGNETIC CLUTCH CLEARANCE

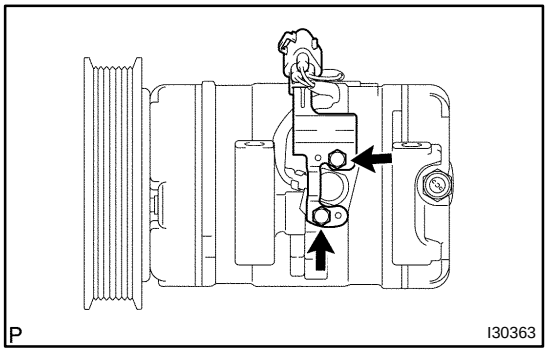
(a) Set the dial indicator to the magnet clutch hub.

(b) Connect the battery positive lead to the terminal 3 of 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 – 0.60 mm (0.014 – 0.024 in.)

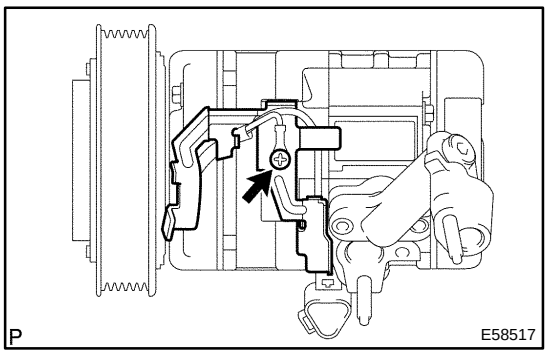
If the measured value is out of the standard range, remove the magnet clutch hub and adjust it with magnet clutch washers.

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

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



(d) Install the bolt and bracket.



12. INSTALL COOLER COMPRESSOR BRACKET

(a) Install the earth wire and cooler compressor bracket with the screw.

13. INSPECT COMPRESSOR OIL

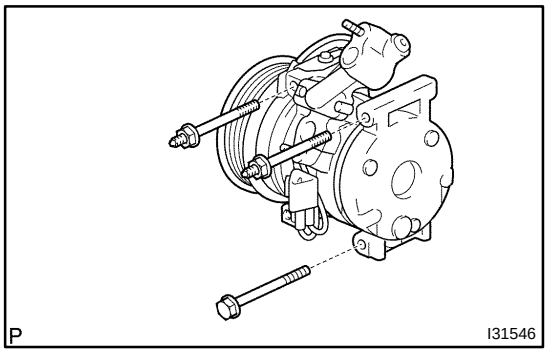
(a) When replacing the compressor and magnetic clutch with new one, after gradually removing the refrigerant gas from the service valve, drain the following amount of oil from the new compressor and magnetic clutch before installation.

Standard:

(Oil capacity inside new compressor and magnetic clutch: 120 + 15 cc (4.1 +0.51 fl.oz.)) – (Remaining oil amount in the removed compressor and magnetic clutch) = (Oil amount to be removed when replacing)

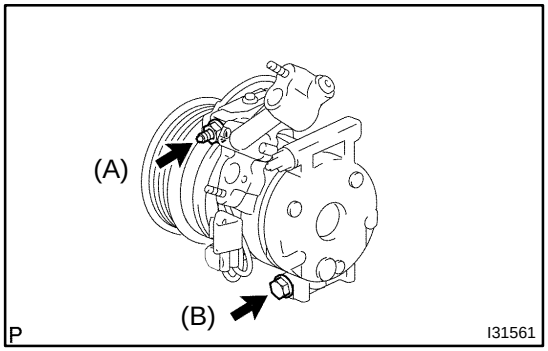
NOTICE:

- **When checking the compressor oil level, observe the precautions on the cooler removal/installation.**
- **Because compressor oil remains in the pipes of the vehicle, if a new compressor and magnetic clutch 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 compressor and magnetic clutch is too small in volume, check for oil leakage.**
- **Be sure to use ND–OIL8 for compressor oil.**



14. TEMPORARY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

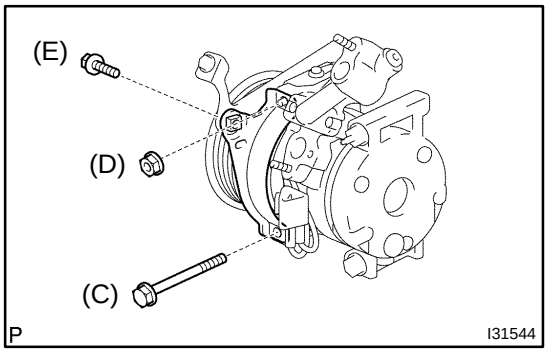
(a) Temporarily the compressor and magnetic clutch with the 3 bolts.



15. FULLY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

(a) Tighten the compressor and magnetic clutch with the bolt (A) and bolt (B).

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



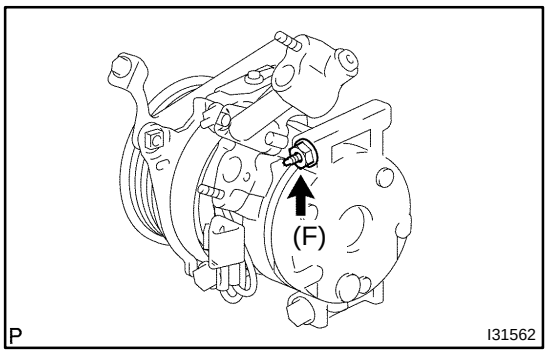
(b) Install the cooler compressor bracket with the 2 bolts and nut.

Torque:

25 N·m (250 kgf·cm, 18 ft·lbf) (Bolt (C))

25 N·m (250 kgf·cm, 18 ft·lbf) (Nut (D))

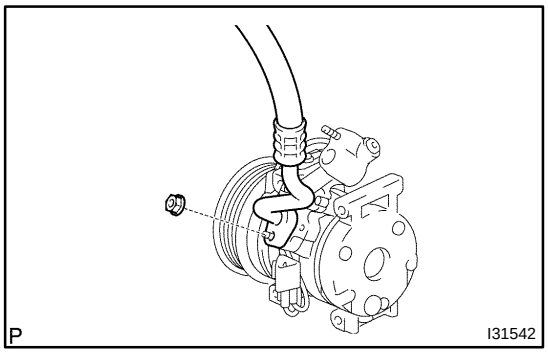
18 N·m (184 kgf·cm, 13 ft·lbf) (Bolt (E))



(c) Tighten the compressor and magnetic clutch with the bolt (F).
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
(d) connect the connector.

16. INSTALL COOLER REFRIGERANT SUCTION HOSE NO.1

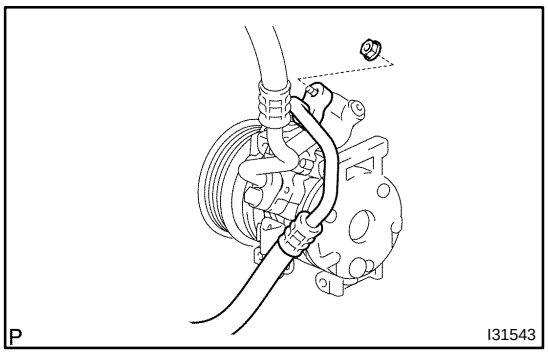
(a) Remove the attached vinyl tape from the hose.
(b) Sufficiently apply compressor oil to the new O–ring and fit surface of the compressor and magnetic clutch.
Compressor oil: ND–OIL 8 or equivalent
(c) Install a O–ring to the cooler refrigerant suction hose No. 1.



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

17. 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 fit surface of the compressor and magnetic clutch.
Compressor oil: ND–OIL 8 or equivalent
(c) Install a O–ring to the cooler refrigerant discharge hose No.1.



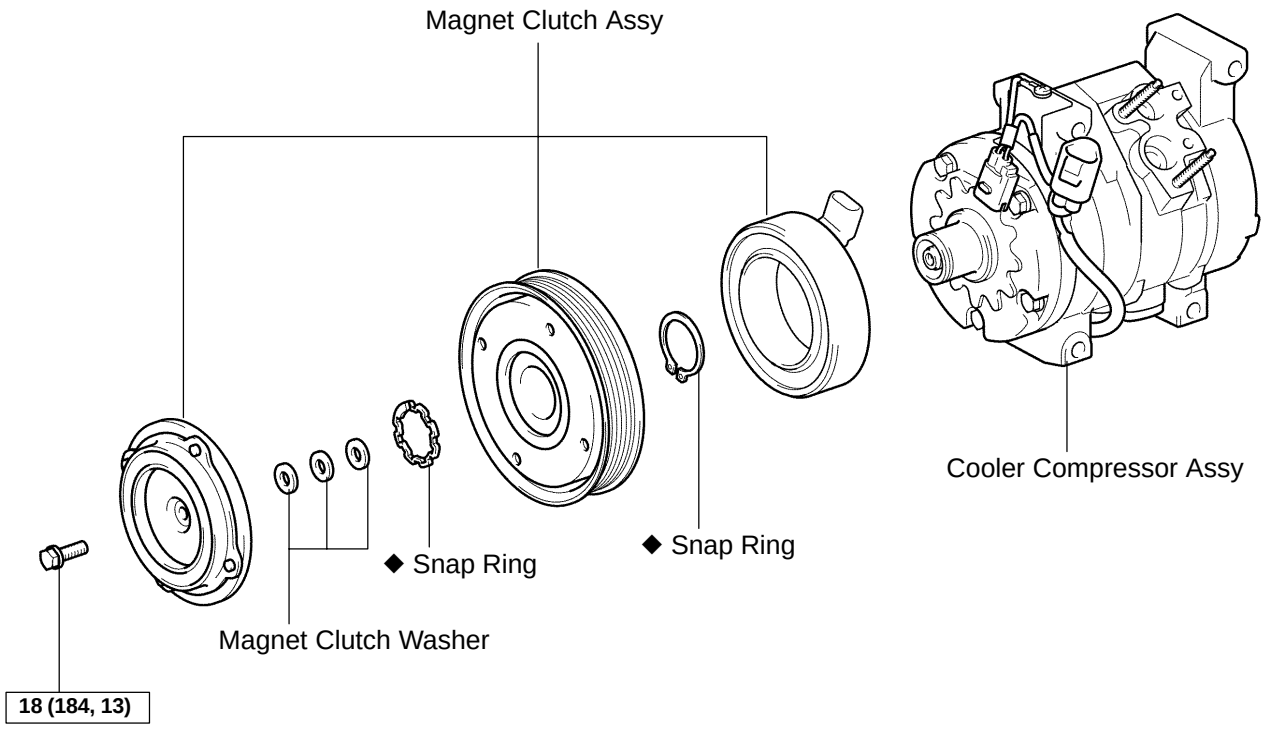
(d) Install the cooler refrigerant discharge hose No. 1 to the compressor and magnetic clutch with the nut.
Torque: 9.8 N·m (100 kgf·cm,87 in.·lbf)

18. INSTALL GENERATOR ASSY
(See page 19–33)
19. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1
(See page 55–21)
20. CHARGE REFRIGERANT (See page 55–18)
SST 07110–58060 (07117–58060, 07117–58070, 07117–58080, 07117–58090, 07117–78050, 07117–88060, 07117–88070, 07117–88080)
21. WARM UP ENGINE
22. INSPECT LEAKAGE OF REFRIGERANT (See page 55–18)

COOLER COMPRESSOR ASSY (2AZ–FE)

550C6–01

COMPONENTS



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

◆ Non–reusable part

P

I31629

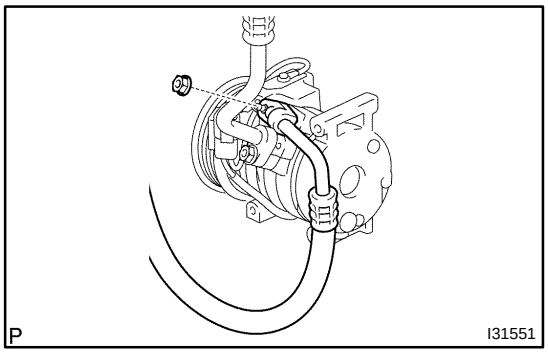
550C7–01

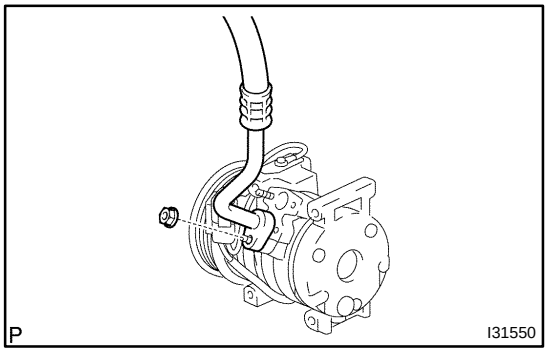
REPLACEMENT

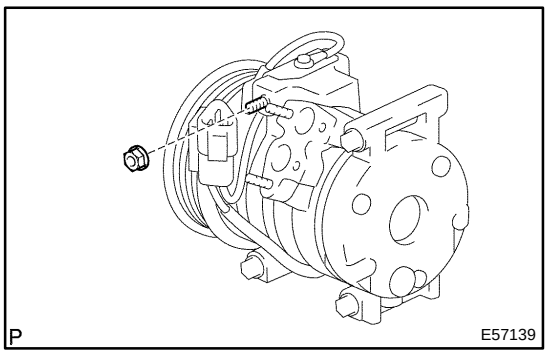
HINT:

COMPONENTS: See page 55–56

1. **DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (See page 55–18)**
   SST 07110–58060 (07117–58080, 07117–58090, 07117–78050, 07117–88060, 07117–88070, 07117–88080)
2. **REMOVE FAN AND GENERATOR V BELT (See page 14–5)**
   SST 09249–63010
3. **REMOVE GENERATOR ASSY (See page 19–13)**







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.

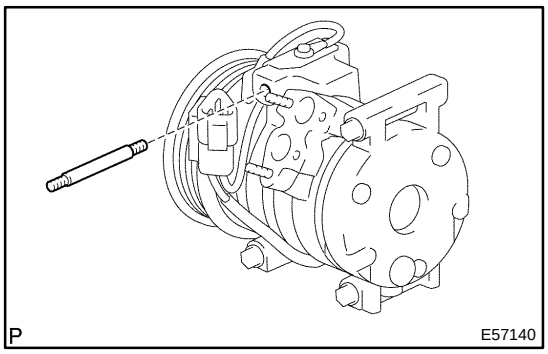
5. **DISCONNECT COOLER REFRIGERANT SUCTION HOSE NO.1**

(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.

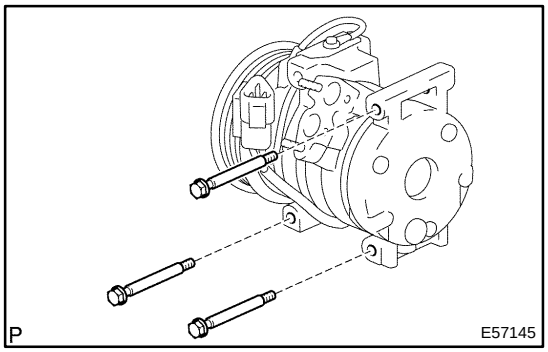
NOTICE:
Seal the opening of the disconnected parts using vinyl tape to prevent moisture and foreign matter from entering.

6. **REMOVE COMPRESSOR AND MAGNETIC CLUTCH**

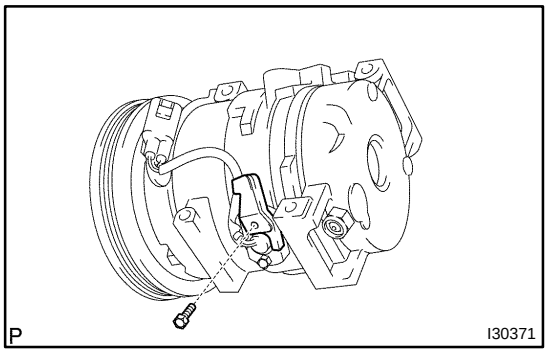
(a) Disconnect the connector.
(b) Remove the nut.



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

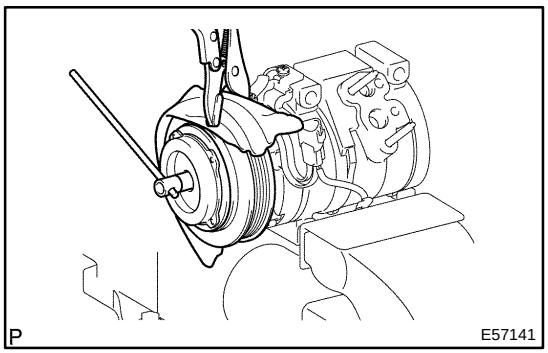


(d) Remove the 3 bolts and compressor and magnetic clutch.

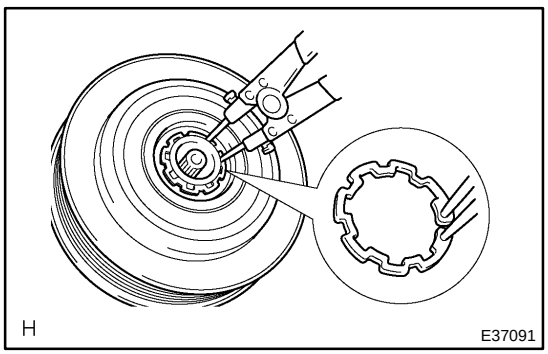


7. REMOVE MAGNET CLUTCH ASSY

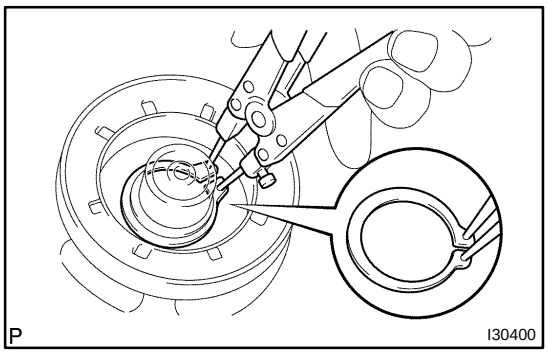
(a) Remove the bolt and bracket.
(b) Place the compressor and magnetic clutch in vise.



(c) Using a vise pliers, hold the magnet clutch hub.
(d) Remove the bolt, magnet clutch hub and magnet clutch washer.

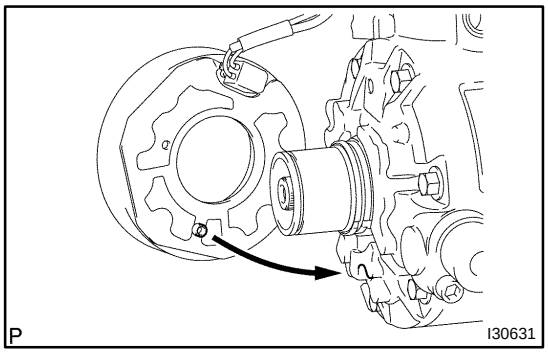


(e) Using a snap ring expander, remove the snap ring and magnet clutch rotor.
(f) Disconnect the connector.



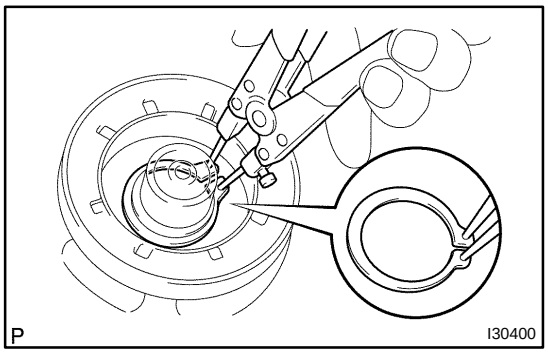
(g) Using a snap ring expander, remove the snap ring and magnet clutch starter.

8. REMOVE COOLER COMPRESSOR ASSY

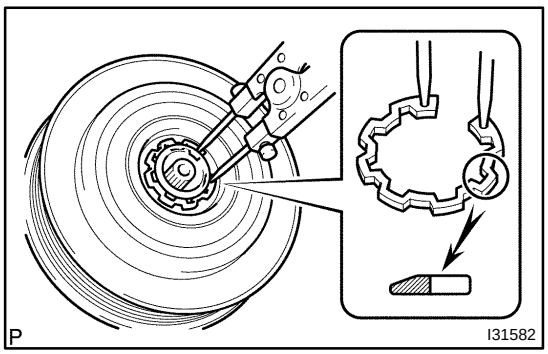


9. INSTALL MAGNET CLUTCH ASSY

(a) Matching the parts shown in the illustration, install the magnet clutch starter.

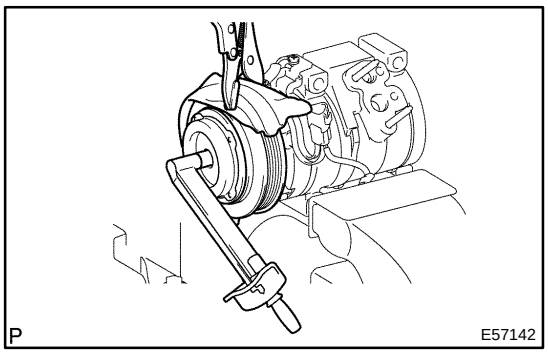


(b) Using a snap ring expander, install a new snap ring with the chamfered side facing up.
(c) Connect the connector.

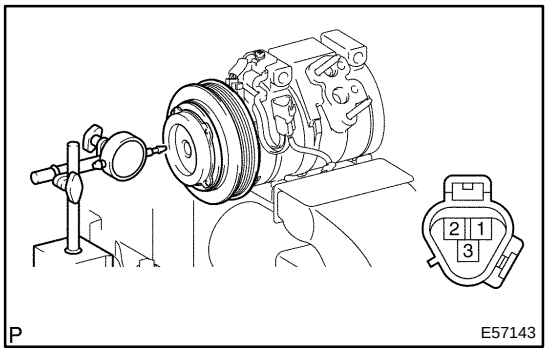


(d) Using a snap ring expander, install the magnet clutch rotor and a new snap ring with the chamfered side facing up.
(e) Install the magnet clutch washer and magnet clutch hub.

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



(f) Using a vise pliers, hold the magnet clutch hub and install the bolt.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)



10. INSPECT MAGNETIC CLUTCH CLEARANCE

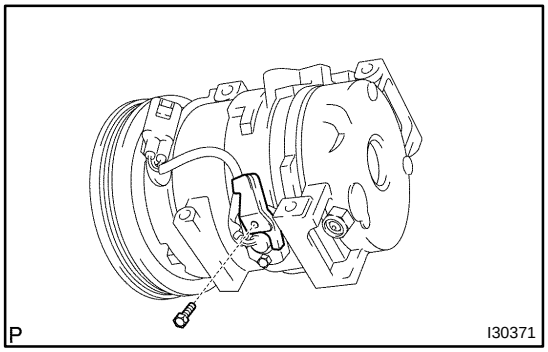
(a) Set the dial indicator to the magnet clutch hub.

(b) Connect the battery positive lead to the terminal 3 of 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 – 0.60 mm (0.014 – 0.024 in.)

If the measured value is out of 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 the bolt and bracket.

11. INSPECT COMPRESSOR OIL

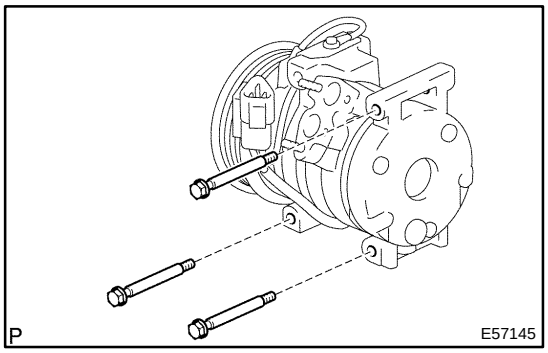
(a) When replacing the compressor and magnetic clutch with new one, after gradually removing the refrigerant gas from the service valve, drain the following amount of oil from the new compressor and magnetic clutch before installation.

Standard:

(Oil capacity inside new compressor and magnetic clutch: 120 + 15 cc (4.1 + 0.51 fl.oz.)) – (Remaining oil amount in the removed compressor and magnetic clutch) = (Oil amount to be removed when replacing)

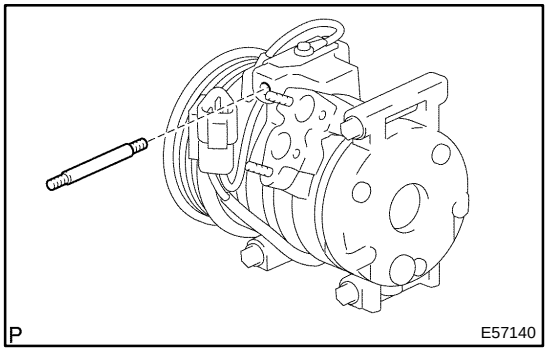
NOTICE:

- **When checking the compressor oil level, observe the precautions on the cooler removal/installation.**
- **Because compressor oil remains in the pipes of the vehicle, if a new compressor and magnetic clutch 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 compressor and magnetic clutch is too small in volume, check for oil leakage.**
- **Be sure to use ND–OIL8 for compressor oil.**



12. TEMPORARY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

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



13. FULLY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH

(a) Using a torque socket wrench (E8), install the bolt.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(b) Tighten the compressor and magnetic clutch with the 3 bolts and nut.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(c) Connect the connector.

NOTICE:

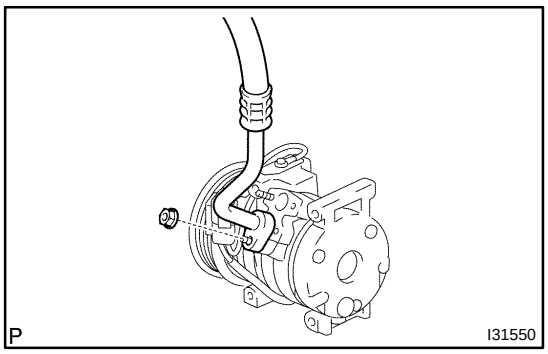
Tighten the bolts and nuts in following order shown in the illustration to install the compressor magnetic clutch.

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 fit surface of the compressor and magnetic clutch.
Compressor oil: ND–OIL 8 or equivalent

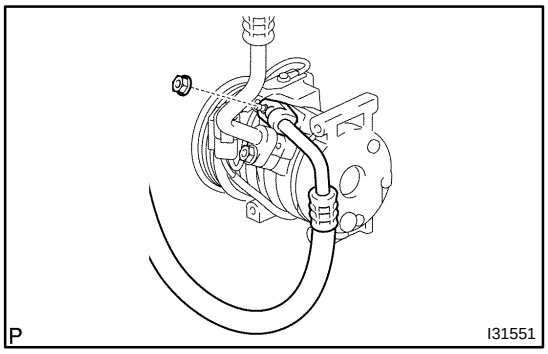
(c) Install a O–ring to the cooler refrigerant suction hose No. 1.



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

15. 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 fit surface of the compressor and magnetic clutch.
Compressor oil: ND–OIL 8 or equivalent
(c) Install a 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)

16. INSTALL GENERATOR ASSY
(See page 19–13)
17. INSTALL FAN AND GENERATOR V BELT
(See page 14–5)
SST 09249–63010
18. CHARGE REFRIGERANT (See page 55–18)
SST 07110–58060 (07117–58060, 07117–58070, 07117–58080, 07117–58090, 07117–78050, 07117–88060, 07117–88070, 07117–88080)
Specified amount: 550 ± 50 g (19.37 ± 1.76 oz.)
19. WARM UP ENGINE
20. INSPECT LEAKAGE OF REFRIGERANT (See page 55–18)

COOLER CONDENSER ASSY

550C8–01

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.

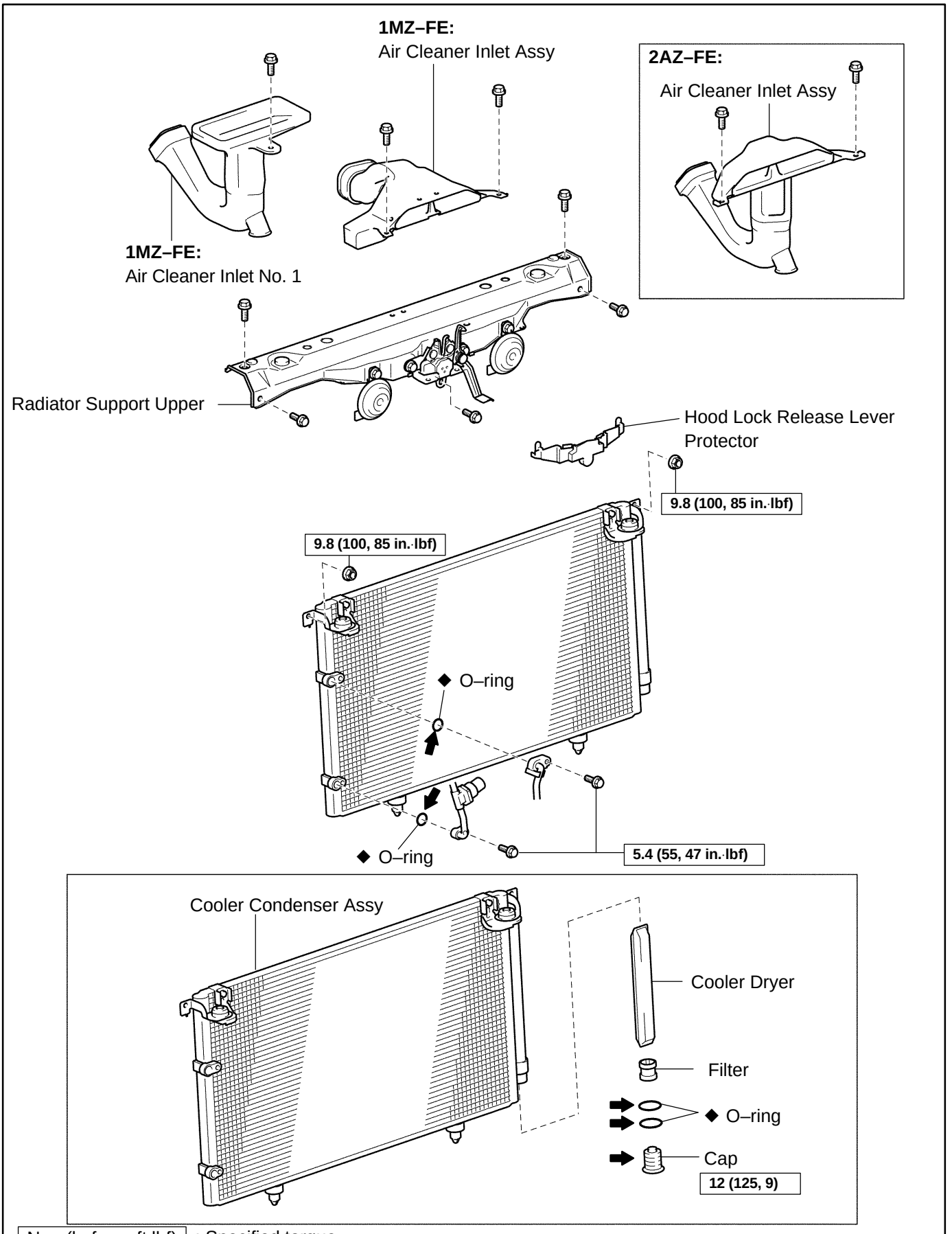
2. INSPECT CONDENSER FOR LEAKAGE OF REFRIGERANT

(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.

550C9–01

COMPONENTS



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

⬅ Compressor oil ND–OIL 8 or equivalent

◆ Non–reusable parts

I31559

550CA–01

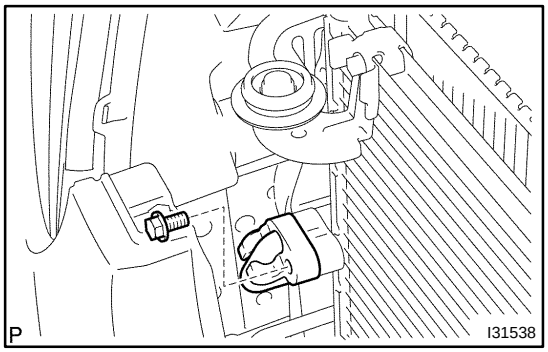
OVERHAUL

HINT:

COMPONENTS: See page 55–64

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM (See page 55–18)

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



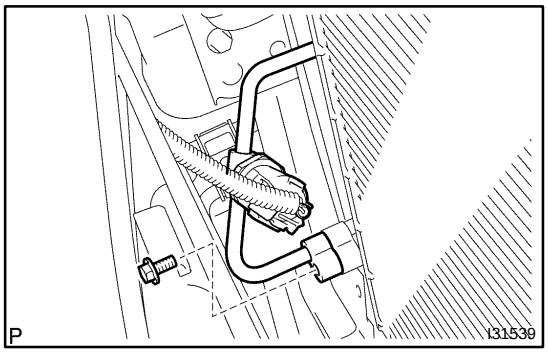
2. REMOVE COOLER REFRIGERANT DISCHARGE HOSE NO.1

(a) Remove the bolt and disconnect the cooler refrigerant discharge hose No. 1 from the cooler condenser assy.

(b) Remove the O–ring from the cooler refrigerant discharge hose No. 1.

NOTICE:

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



3. DISCONNECT COOLER REFRIGERANT LIQUID PIPE A

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

(b) Remove the O–ring from the cooler refrigerant liquid pipe A.

NOTICE:

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

4. REMOVE AIR CLEANER INLET ASSY

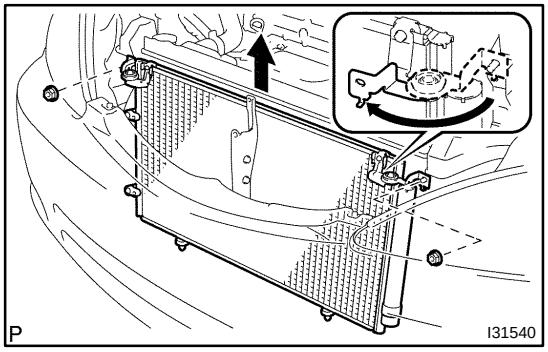
1MZ–FE: (See page 16–26)

2AZ–FE: (See page 16–12)

5. REMOVE RADIATOR SUPPORT UPPER

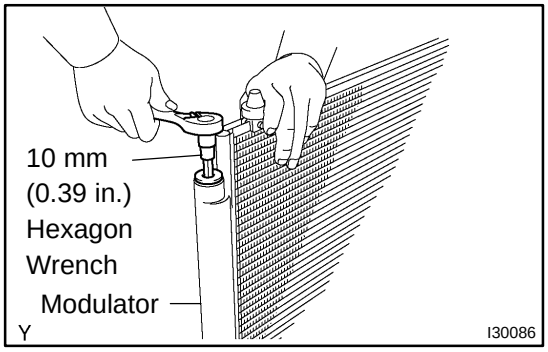
1MZ–FE: (See page 16–26)

2AZ–FE: (See page 16–12)



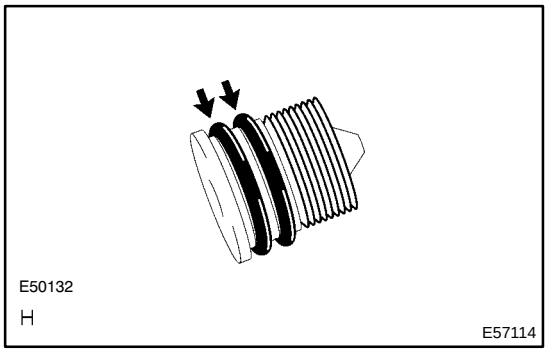
6. REMOVE COOLER CONDENSER ASSY

(a) Remove the 2 nuts and cooler condenser assy.

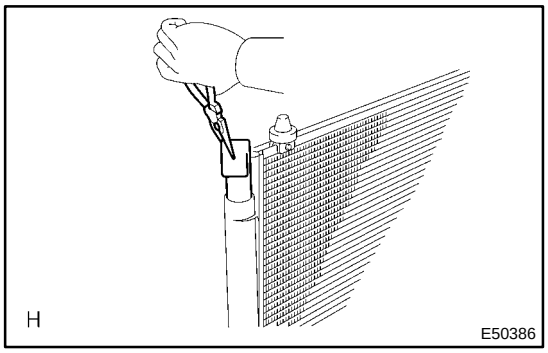


7. REMOVE COOLER DRYER

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



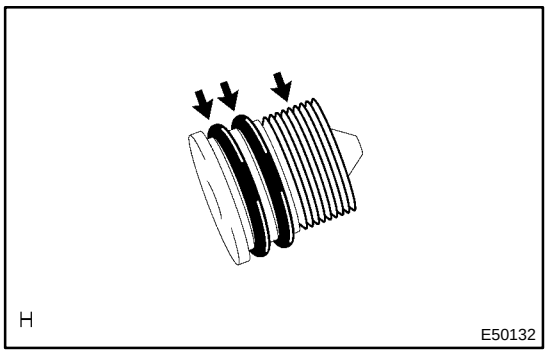
(b) Remove the 2 O–rings from the cap.



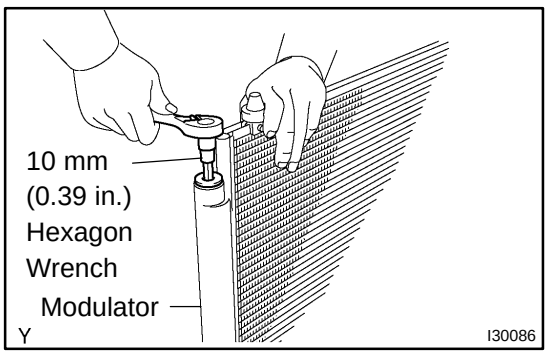
(c) Using a needle nose pliers, remove the cooler dryer.

8. INSTALL COOLER DRYER

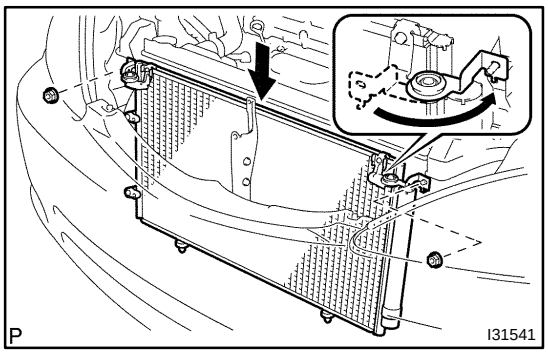
(a) Using a needle nose pliers, install the cooler dryer.



(b) Install 2 new O–rings to the cap.
(c) Sufficiently apply compressor oil to the fit surfaces of the O–ring and the cap.
Compressor oil: ND–OIL 8 or equivalent



(d) Using hexagon wrench 10 mm (0.39 in.), install the cap to the cooler condenser assy.
Torque: 12 N·m (125 kgf·cm, 9 ft·lbf)



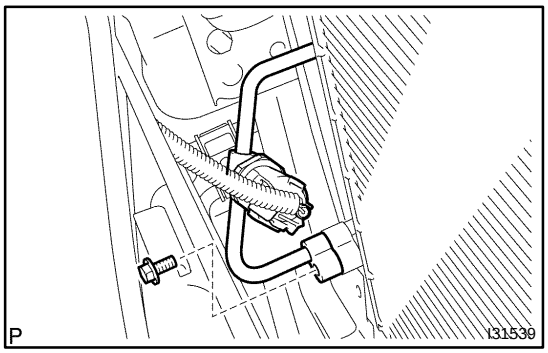
9. INSTALL COOLER CONDENSER ASSY

(a) Install the cooler condenser assy with the 2 nuts.
Torque: 9.8 N·m (100 kgf·cm, 85 in.·lbf)

10. INSTALL RADIATOR SUPPORT UPPER
1MZ–FE: (See page 16–26)
2AZ–FE: (See page 16–12)

11. INSTALL COOLER REFRIGERANT LIQUID PIPE A

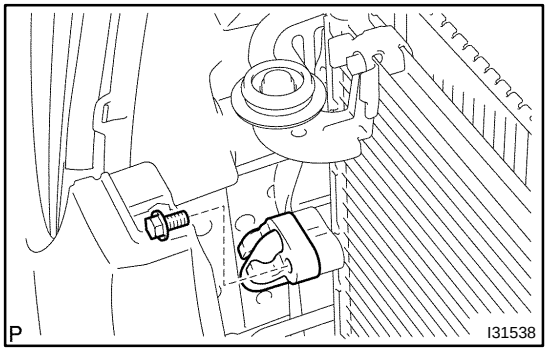
(a) Remove the attached vinyl tape from the tube and connecting part of the cooler condenser assy.
(b) Sufficiently apply compressor oil to the new O–ring and pipe joint.
Compressor oil: ND–OIL 8 or equivalent
(c) Install a O–ring to the cooler refrigerant liquid pipe A.



(d) Connect the cooler refrigerant liquid pipe A to the cooler condenser assy with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 47 in.·lbf)

12. INSTALL COOLER REFRIGERANT DISCHARGE HOSE NO.1

(a) Remove the attached vinyl tape from the tube and connecting part of the cooler condenser assy.
(b) Sufficiently apply compressor oil to the new O–ring and hose joint.
Compressor oil: ND–OIL 8 or equivalent
(c) Install a O–ring to the cooler refrigerant discharge hose No. 1.



(d) Connect the cooler refrigerant discharge hose No. 1 to the cooler condenser assy with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 47 in.·lbf)

13. CHARGE REFRIGERANT (See page 55–18)

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

Specified amount: 550 ± 50 g (19.37 ± 1.76 oz.)

14. WARM UP ENGINE

15. INSPECT LEAKAGE OF REFRIGERANT (See page 55–18)