COMPRESSOR AND MAGNETIC CLUTCH

ON–VEHICLE INSPECTION

AC0K0–01

1. **SET ON MANIFOLD GAUGE SET**
   (See page AC–21)
2. **START ENGINE**
3. **INSPECT COMPRESSOR FOR METALLIC SOUND**

Check if there is abnormal metallic sound from the compressor when the A/C switch is ON.

If abnormal metallic sound is heard, replace the compressor assembly.

4. **INSPECT REFRIGERANT PRESSURE**
   (See page AC–5)
5. **STOP ENGINE**
6. **INSPECT VISUALLY FOR LEAKAGE OF REFRIGERANT FROM SHAFT SEAL**

Using gas leak detector, check for leakage of refrigerant.

If there is any leakage, replace the seal ring, shaft seal, and O–rings or check the damage of front housing, rear housing and cylinder block.

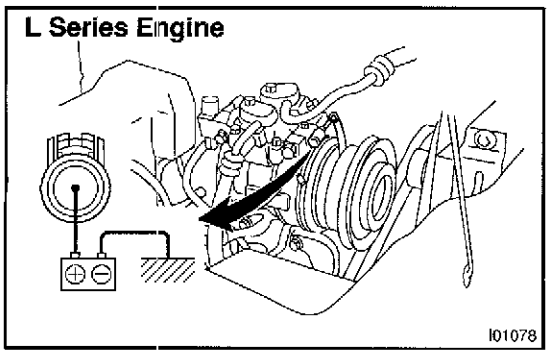
7. **SET OFF MANIFOLD GAUGE SET**
   (See page AC–22)
8. **MAKE THESE VISUAL CHECK:**

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

9. **INSPECT MAGNETIC CLUTCH BEARING FOR NOISE**

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

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



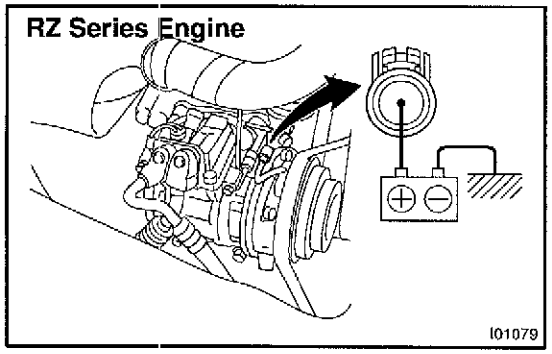
10. INSPECT MAGNETIC CLUTCH OPERATION

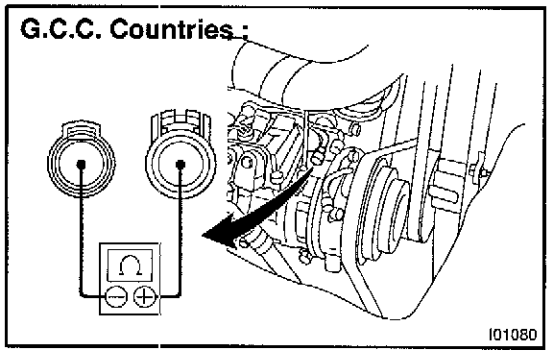
(a) Disconnect the connector.

(b) Connect the positive (+) lead from the battery to terminal on the magnetic clutch connector and the negative (–) lead to the body ground.

(c) Check that the magnetic clutch is energized.

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





11. G.C.C. Countries:
INSPECT TEMPERATURE SENSOR RESISTANCE

Measure resistance between terminals.

Standard resistance:

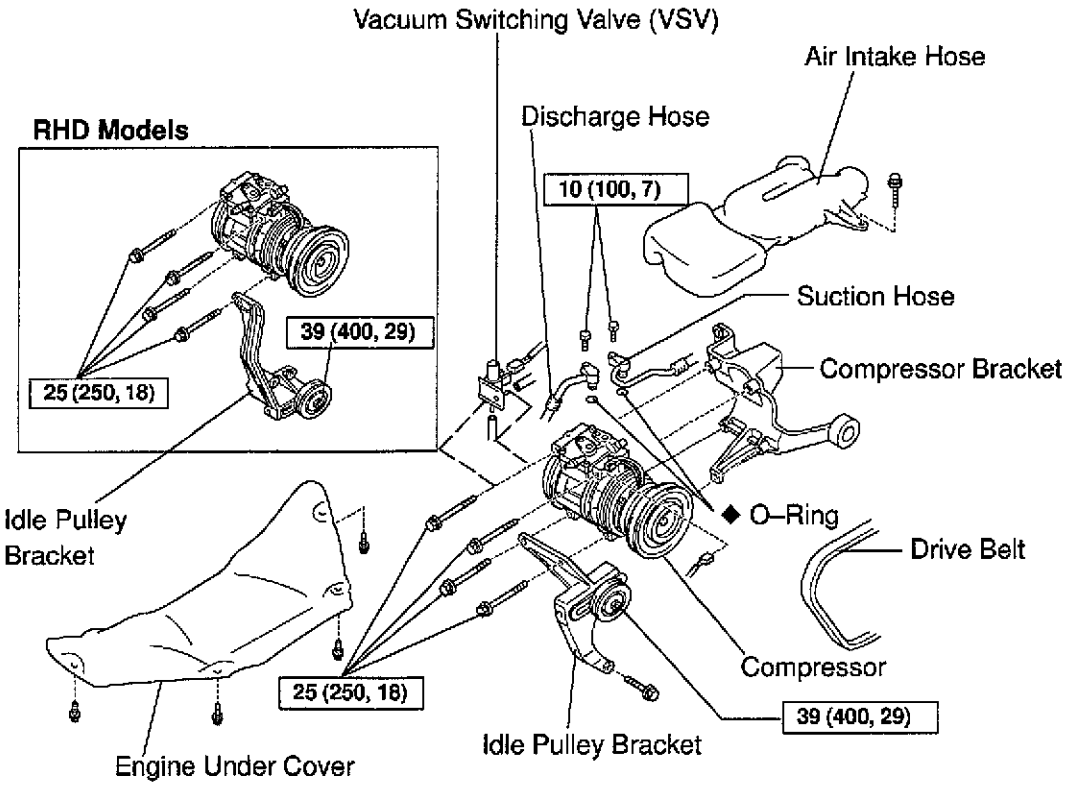
Less than 70 mΩ at 20 – 30 °C (68 – 86 °F)

If resistance is not as specified, replace the discharge cover with sensor.

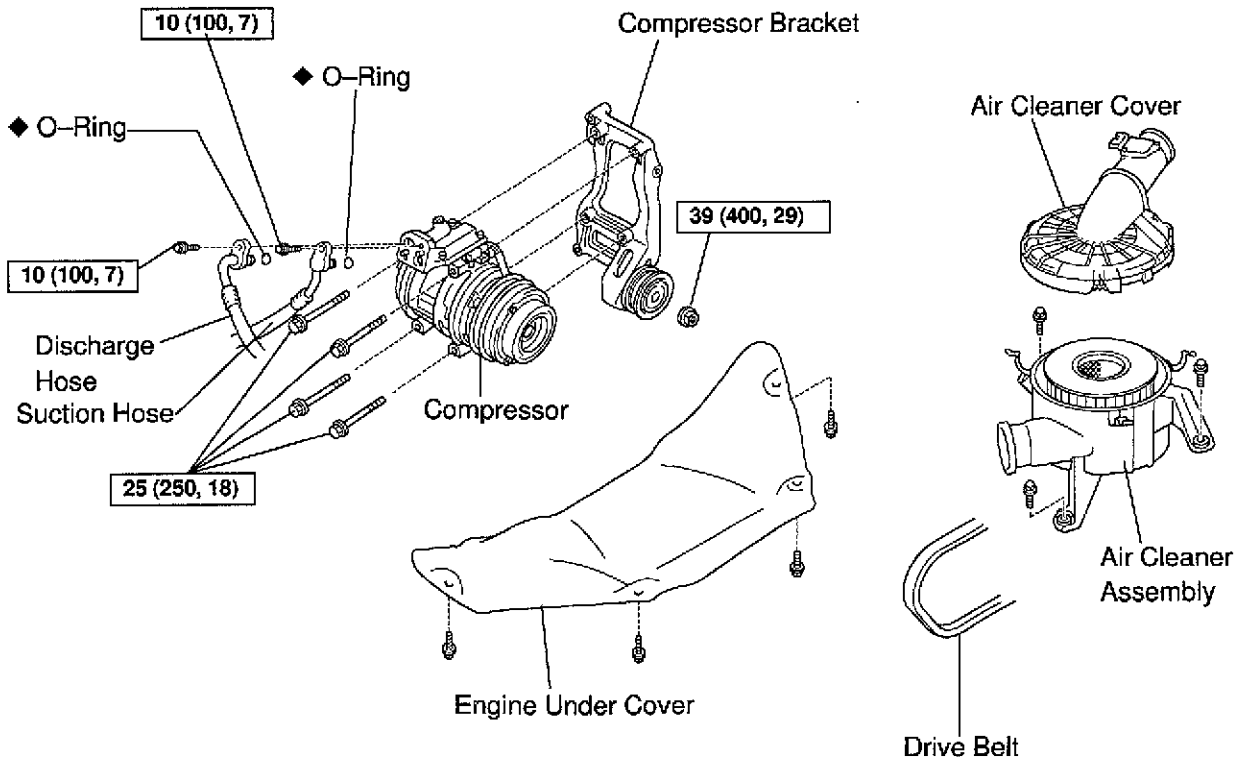
AC0K1-01

COMPONENTS

L Series Engine

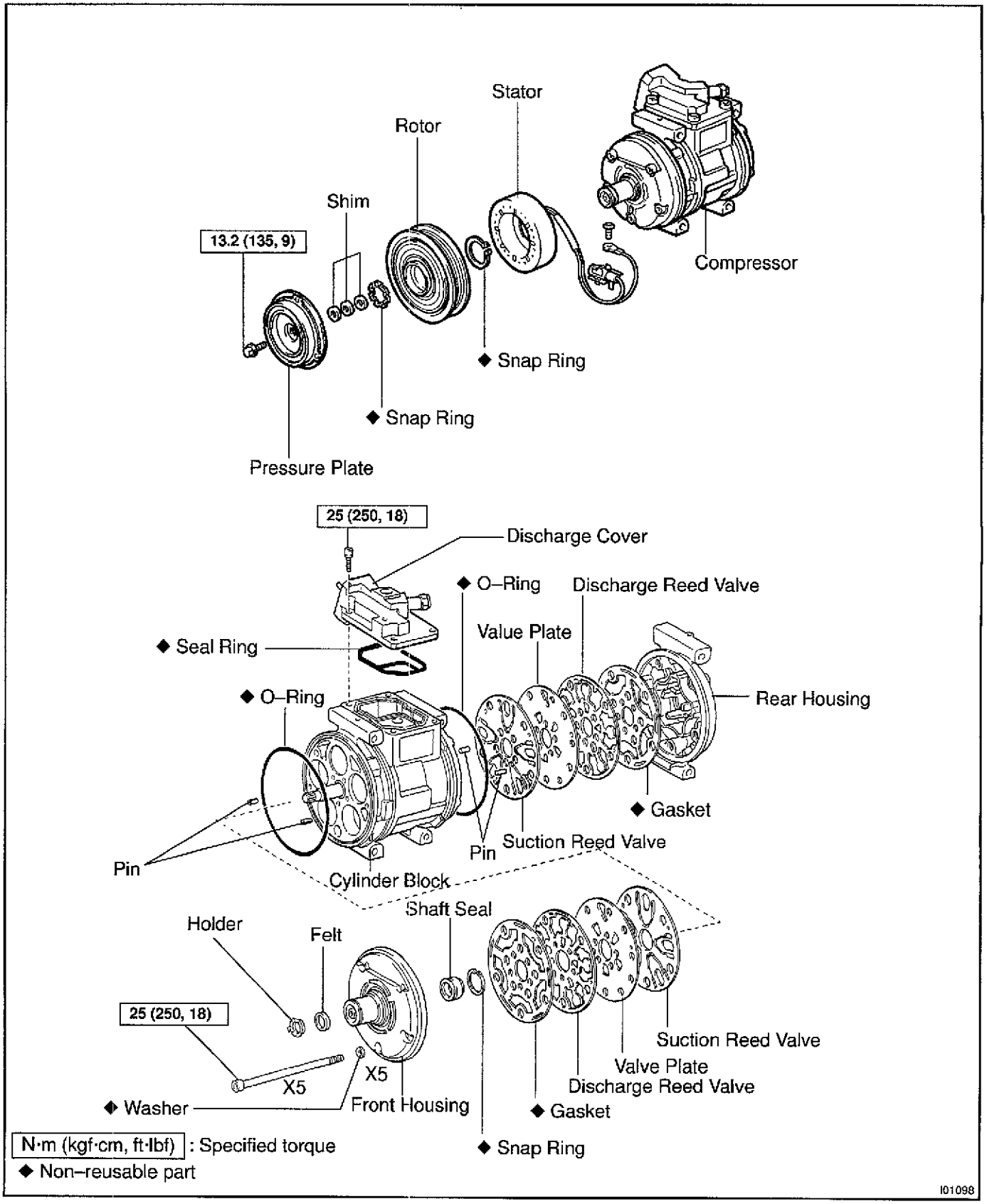


RZ Series Engine



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part

I01097

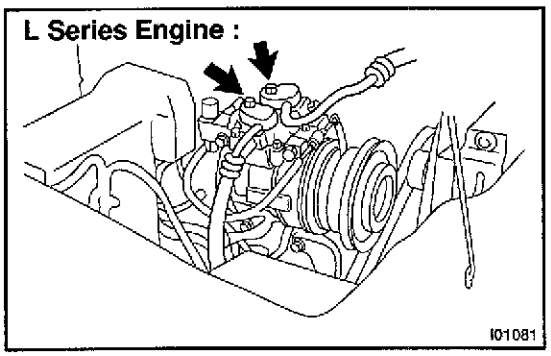

Stator
Rotor
Shim
13.2 (135, 9)
Compressor
◆ Snap Ring
◆ Snap Ring
Pressure Plate
25 (250, 18)
Discharge Cover
◆ O–Ring
Discharge Reed Valve
Value Plate
◆ Seal Ring
◆ O–Ring
Rear Housing
◆ Gasket
Pin
Pin
Suction Reed Valve
Cylinder Block
Shaft Seal
Holder
Felt
25 (250, 18)
X5
X5
◆ Washer
Front Housing
Suction Reed Valve
Valve Plate
Discharge Reed Valve
◆ Gasket
◆ Snap Ring
N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non–reusable part
I01098

AC0K2-01

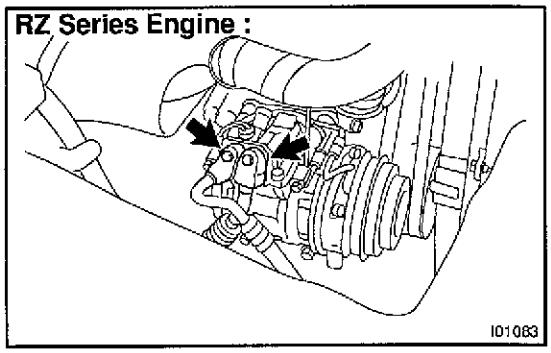
REMOVAL

1. **RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX. 10 MINUTES**
2. **STOP ENGINE**
3. **DISCONNECT NEGATIVE (–) TERMINAL CABLE FROM BATTERY**
4. **DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM**
5. **REMOVE DRIVE BELT**
   (See page AC–19)
6. **2RZ–FE, 3RZ–F, and 3RZ–FE Engine Models: REMOVE AIR CLEANER ASSEMBLY**

L Series Engine :



RZ Series Engine :



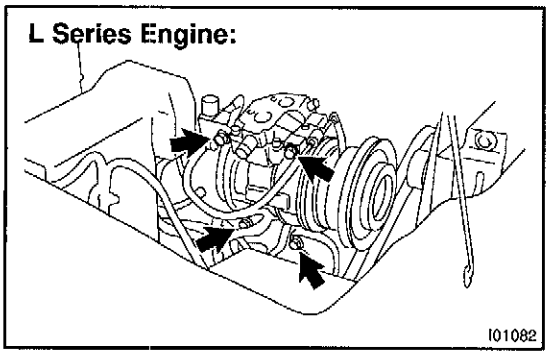
7. **DISCONNECT DISCHARGE AND SUCTION HOSES**

Remove the 2 bolts and disconnect the both hoses.

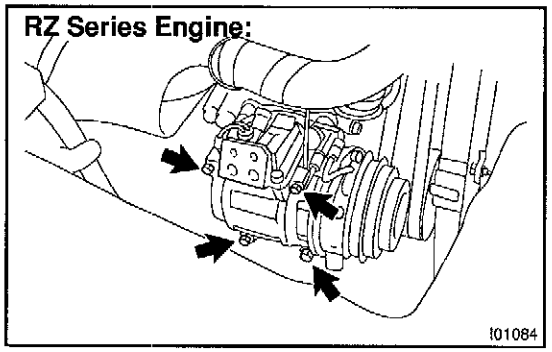
NOTICE:

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

L Series Engine:



RZ Series Engine:



8. REMOVE COMPRESSOR

(a) Disconnect the connector.

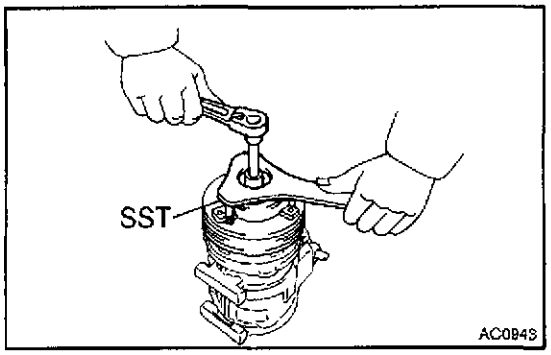
(b) Remove the 4 bolts and compressor.

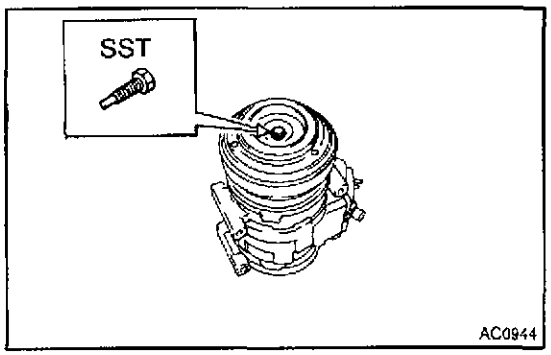
AC0K3-01

DISASSEMBLY

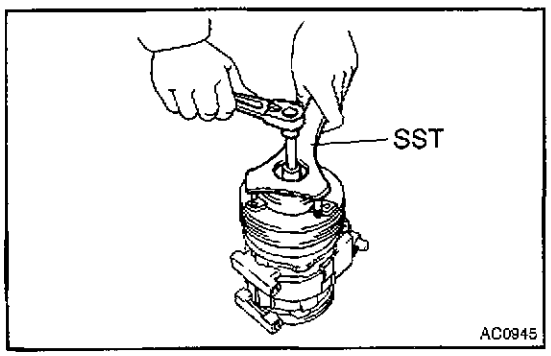
1. REMOVE PRESSURE PLATE

(a) Using SST and socket wrench, remove the shaft bolt.
SST 07112–76060

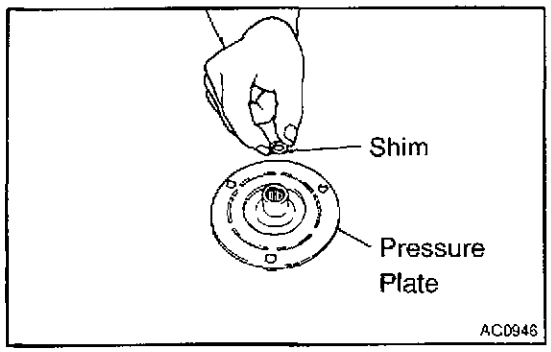




(b) Install SST on the pressure plate.
SST 07112–66040



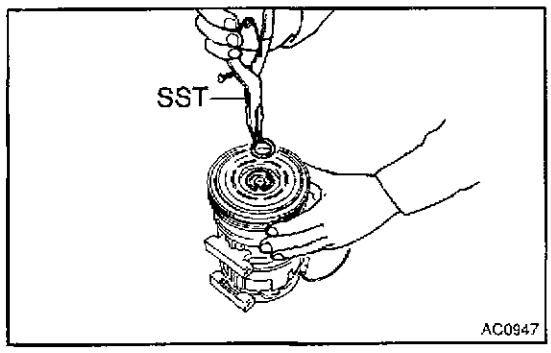
(c) Using SST and a socket wrench, remove the pressure plate.
SST 07112–66040, 07112–76060

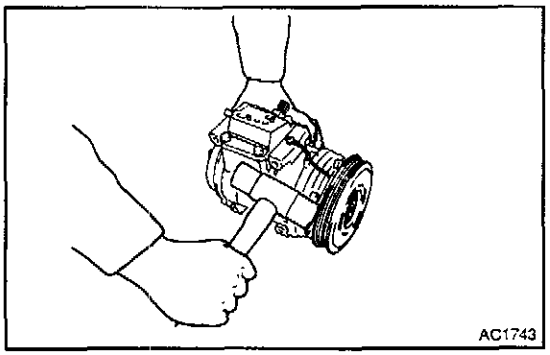


(d) Remove the shims from the pressure plate.

2. REMOVE ROTOR

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

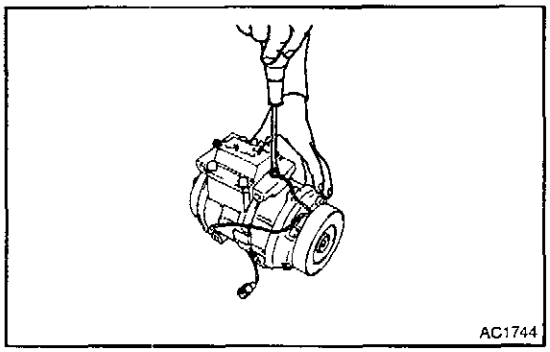




(b) Using a plastic hammer, tap the rotor off the shaft.

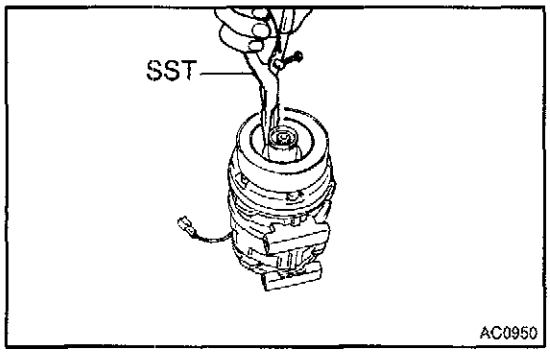
NOTICE:

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

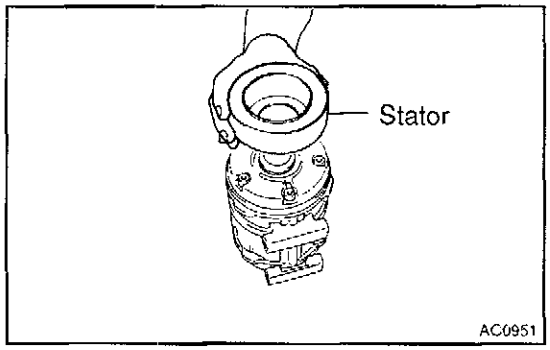


3. REMOVE STATOR

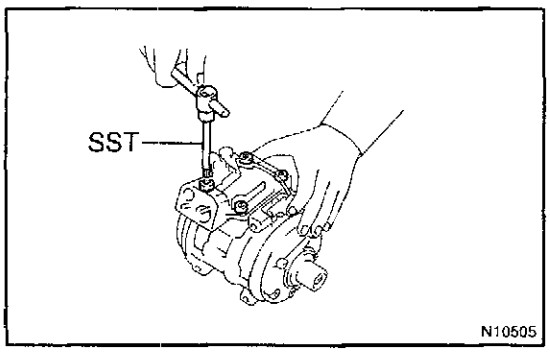
(a) Disconnect the stator lead wire from the compressor housing.



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

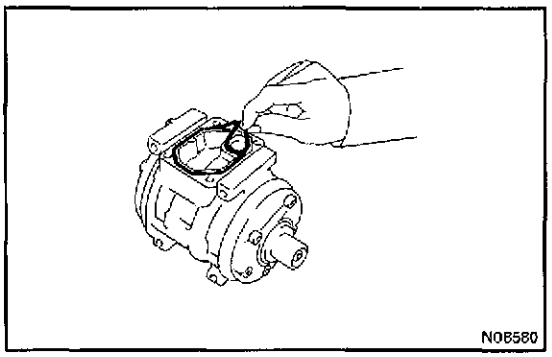


(c) Remove the stator.

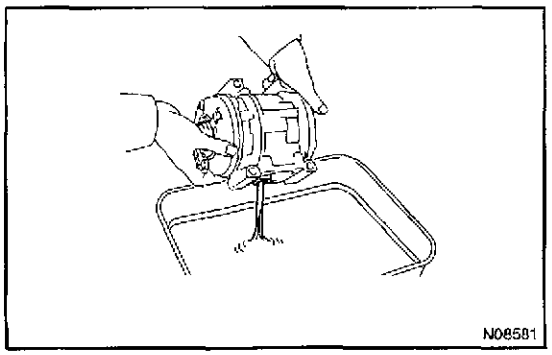


4. REMOVE SERVICE VALVE

(a) Using SST, remove the 4 bolts holding the service valve.
SST 07110–61050

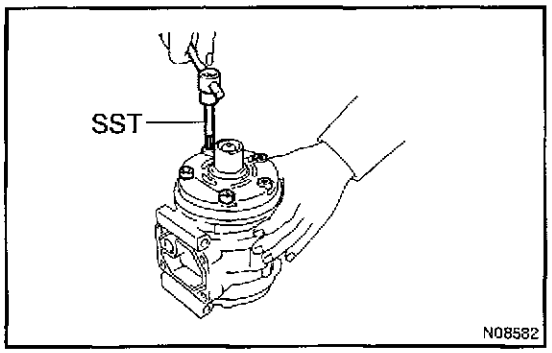


(b) Remove the seal ring from the cylinder block.
Discard the seal ring.



5. DRAIN COMPRESSOR OIL INTO MEASURING FLASK

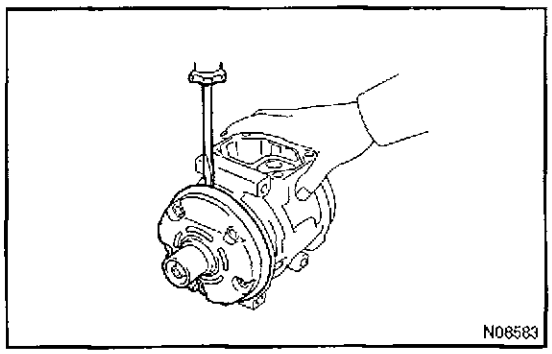
Measure the quantity of drained oil because the same amount should be replaced later.



6. REMOVE FRONT HOUSING

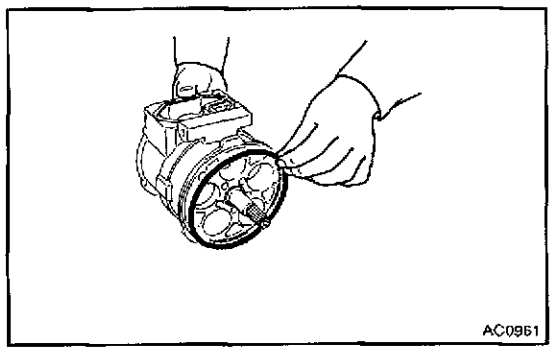
(a) Using SST, remove the 5 through bolts.
SST 07110–61050

HINT:
Do not reuse the 5 washers.

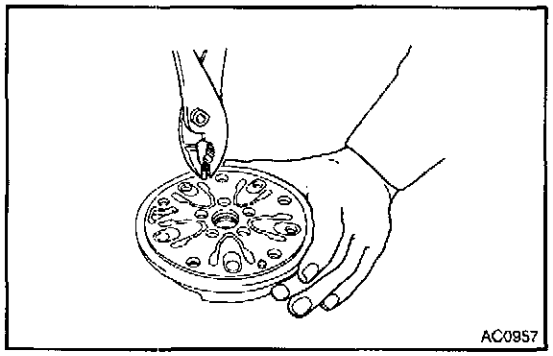


(b) Using a screwdriver, remove the front and rear housing.

NOTICE:
Be careful not to scratch the sealing surface of the front housing.



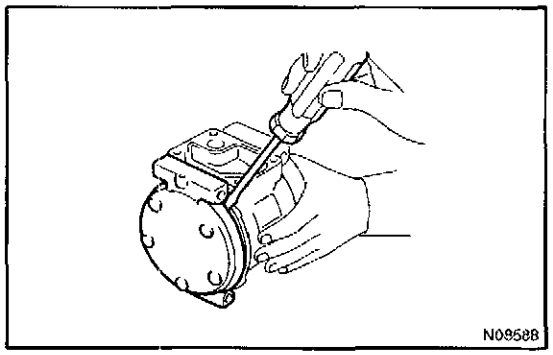
(c) Remove the front O–ring.
Discard the O–ring.



7. REMOVE THE 2 PINS FROM FRONT HOUSING

8. REMOVE THESE PARTS FROM FRONT HOUSING:

(a) Suction reed valve
(b) Valve plate
(c) Discharge reed valve
(d) Gasket

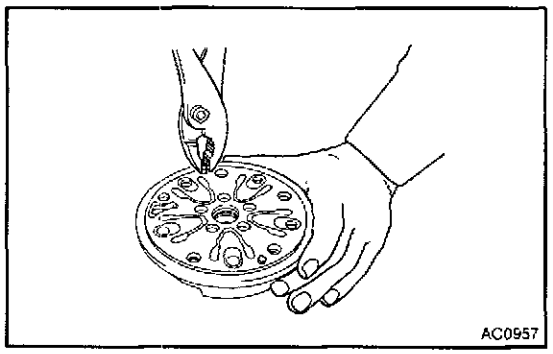


9. REMOVE REAR HOUSING

Using a screwdriver, remove the rear housing.

NOTICE:

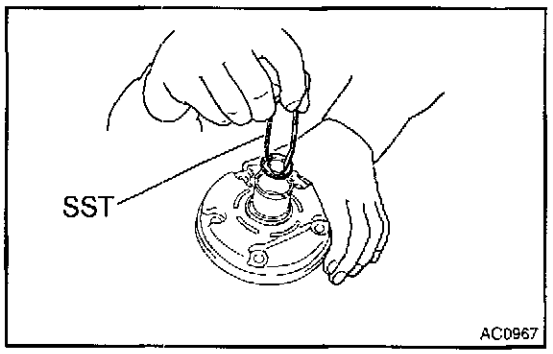
Be careful not to scratch the sealing surface of the rear housing.



10. REMOVE THE 2 PINS FROM REAR HOUSING

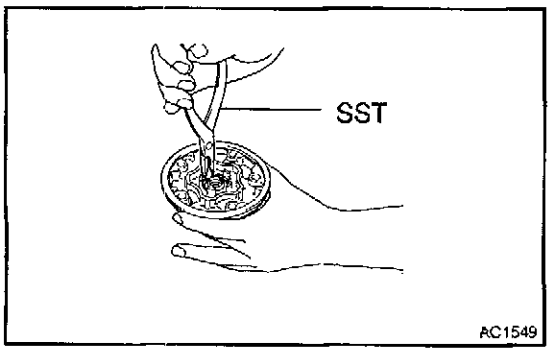
11. REMOVE THESE PARTS FROM REAR HOUSING:

(a) Suction reed valve
(b) Valve plate
(c) Discharge reed valve
(d) Gasket



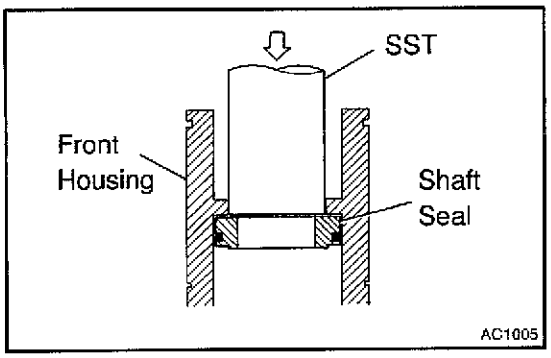
12. REMOVE FELT

(a) Set SST on the shaft.
SST 07112–15020
(b) Pull out the felt with felt holder of the front housing.

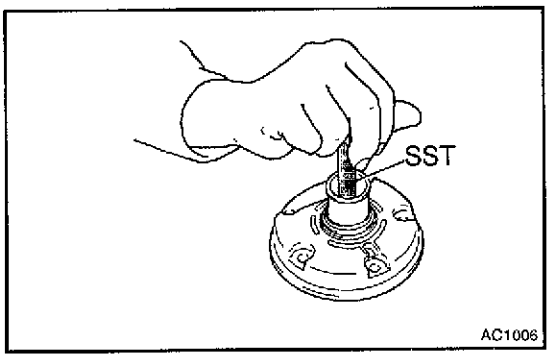


13. REMOVE SHAFT SEAL

(a) Using SST, remove the snap ring from the front housing.
SST 07114–87010



(b) Set SST on the shaft seal.
SST 07112–85030



(c) Using SST, push the shaft seal out of the front housing.
SST 07112–85030

AC0K4-01

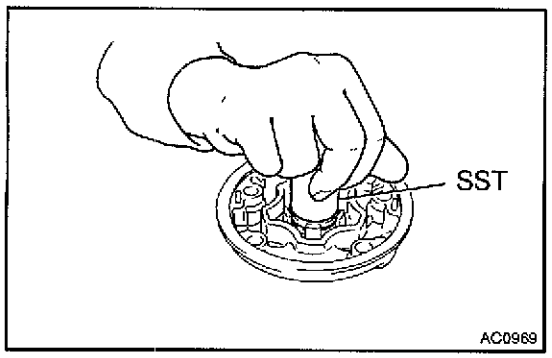
REASSEMBLY

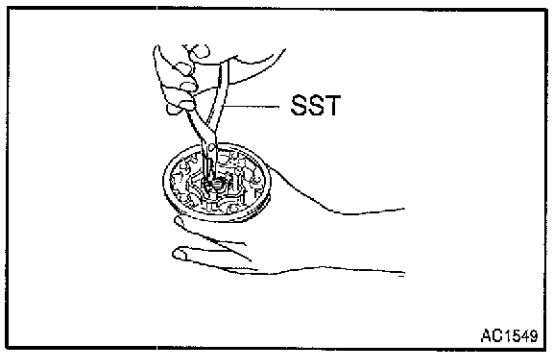
1. INSTALL NEW SHAFT SEAL

(a) Fit the new shaft seal onto SST and install the shaft seal into the front housing

HINT:

Clean up the surface of the shaft seal with compressor oil.





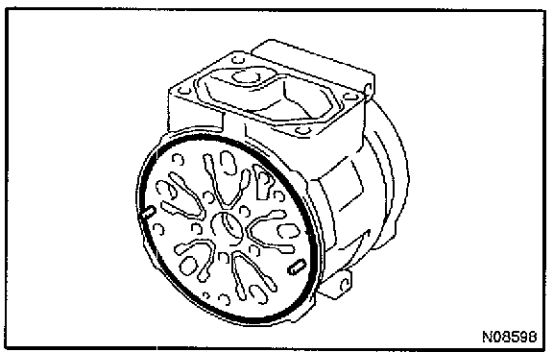
(b) Using SST, install the snap ring into the front housing.
SST 07114–84010

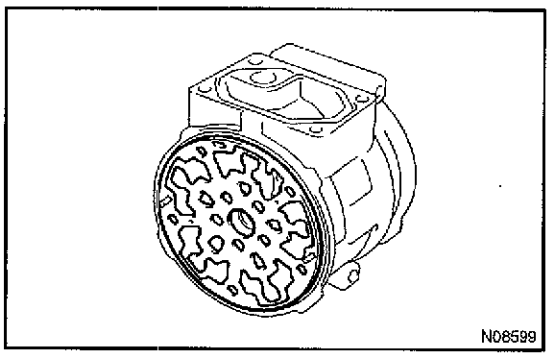
2. INSTALL REAR HOUSING

(a) Install 2 pins in the rear cylinder.

(b) Lubricate a new O–ring with compressor oil and install the O–ring in the rear cylinder.

(c) Install the rear suction valve over the pins on the rear cylinder.

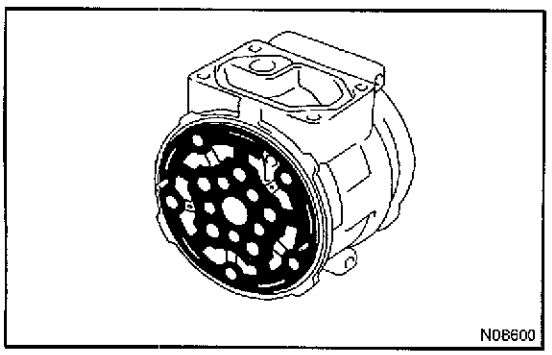




(d) Install the rear valve plate together with the discharge valve over the pins on the rear cylinder.

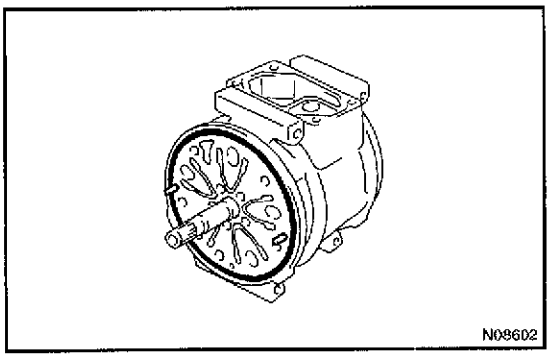
HINT:

The rear valve plate is marked with an "R".



(e) Lubricate a new gasket with compressor oil and install the gasket on the valve plate.

(f) Install the rear housing on the cylinder block.

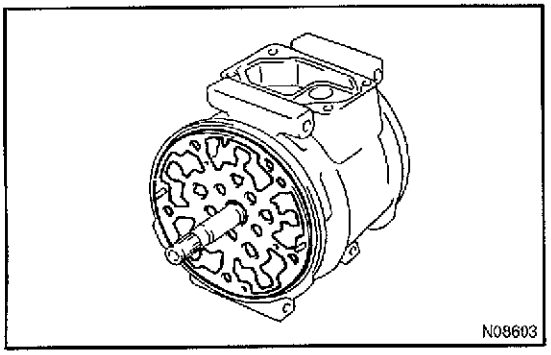


3. INSTALL FRONT HOUSING

(a) Install the 2 pins in the front cylinder.

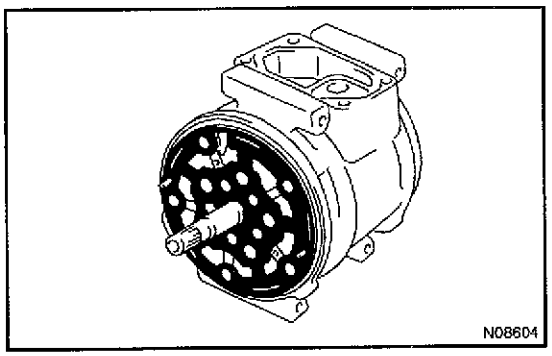
(b) Lubricate a new O–ring with compressor oil and install the O–ring in the front housing.

(c) Install the front suction valve over the pins on the front cylinder.

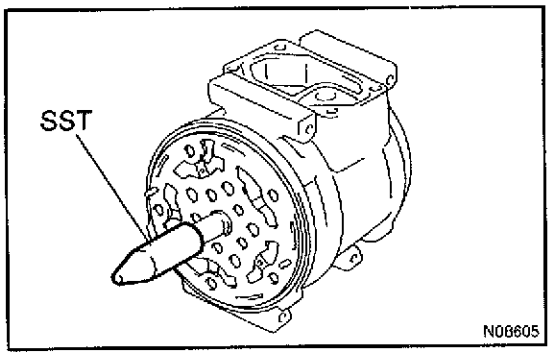


(d) Install the front valve plate together with the discharge valve over the pins on the front cylinder.

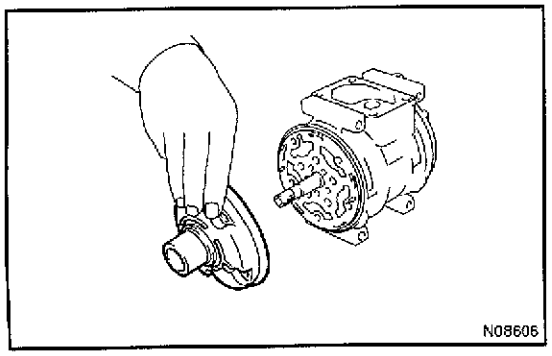
HINT:
The front valve plate is marked with an "F".



(e) Lubricate a new gasket with compressor oil and install the gasket on the valve plate.

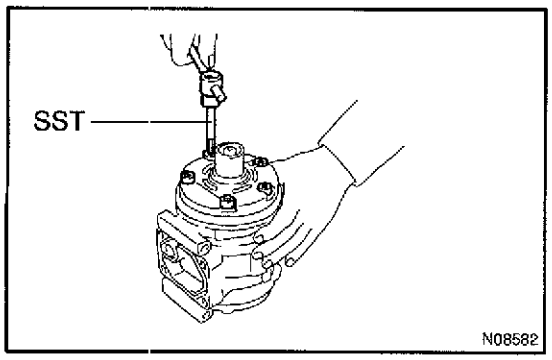


(f) Set SST on the shaft to protect the shaft seal.
SST 07112–85010



(g) Install the front housing on the front cylinder.

(h) Pull out the SST from the front housing.

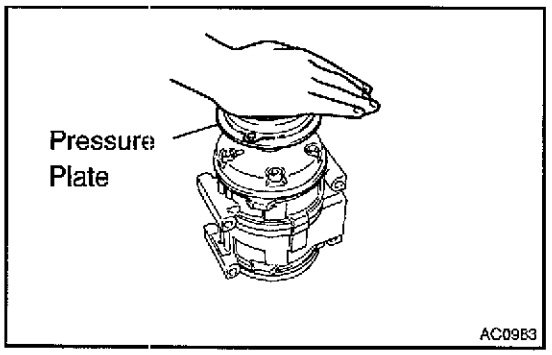


4. TIGHTEN 5 THROUGH BOLTS

Using SST and a torque wrench, tighten the 5 through bolts in 2 or 3 times.

SST 07110–61050

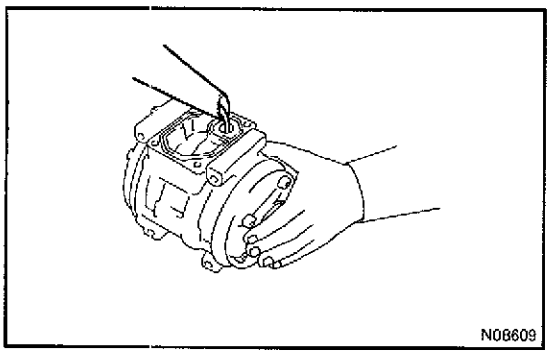
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)



5. INSTALL FELT

(a) Set the felt with felt holder to the front housing.

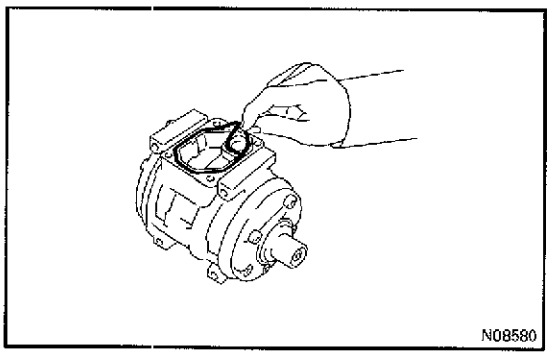
(b) Using pressure plate of magnetic clutch, install the felt.



6. POUR COMPRESSOR OIL INTO COMPRESSOR

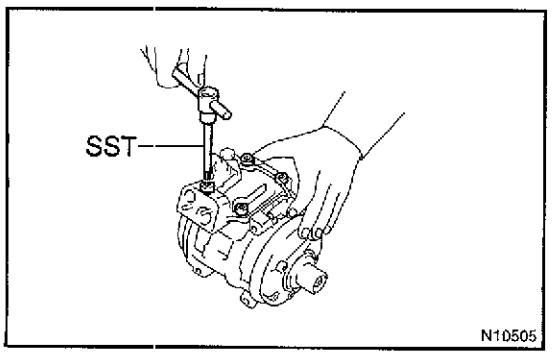
Add the same quantity of oil as was removed, plus 20 cc (0.7 fl.oz.), into the compressor.

Compressor oil: ND–OIL 8 or equivalent



7. INSTALL SERVICE VALVE

(a) Lubricate a new seal ring with compressor oil and install the seal ring in the service valve.

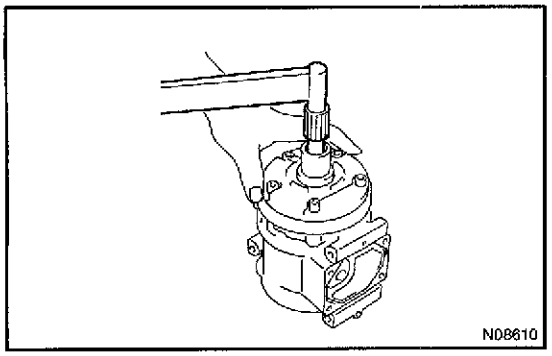


(b) Install the service valve on the compressor.

(c) Using SST and a torque wrench, tighten the 4 bolts.

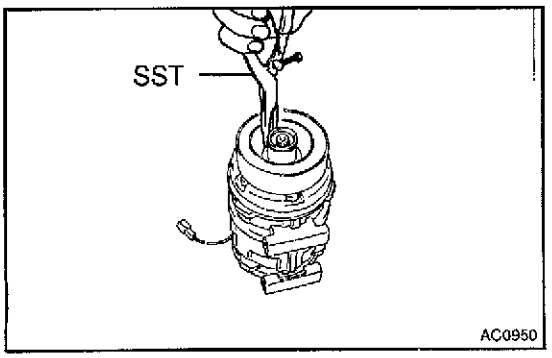
SST 07110–61050

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



8. CHECK SHAFT STARTING TORQUE

Torque: 2.9 N·m (30 kgf·cm, 26 in.·lbf)

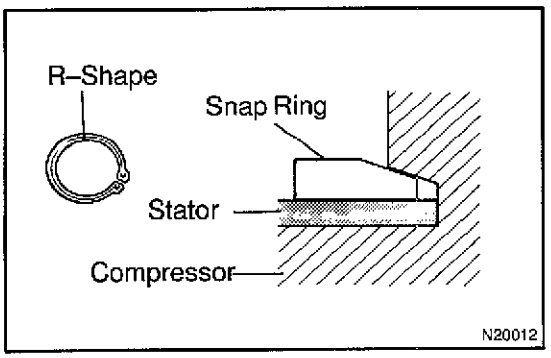


9. INSTALL STATOR

(a) Install the stator on the front housing.

(b) Using SST, install the new snap ring.

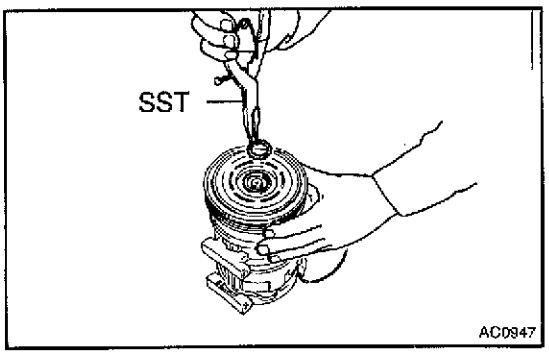
SST 07114–84020



NOTICE:

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

(c) Connect the stator lead wire.

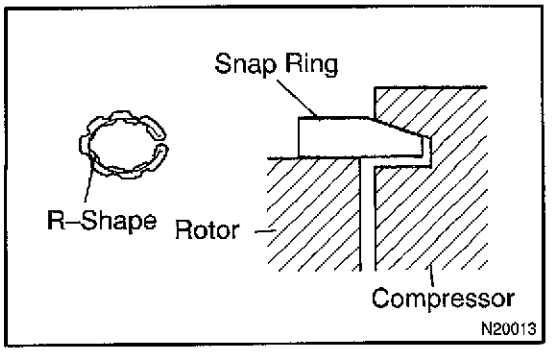


10. INSTALL ROTOR

(a) Install the rotor on the stator.

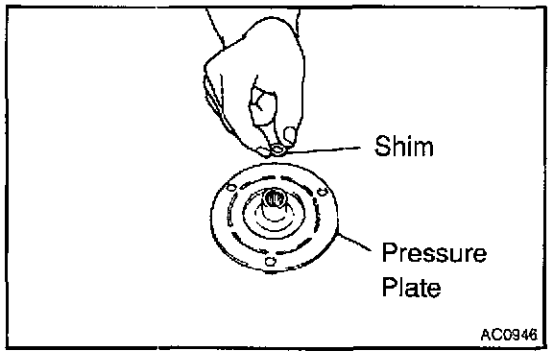
(b) Using SST, install the new snap ring.

SST 07114–84020



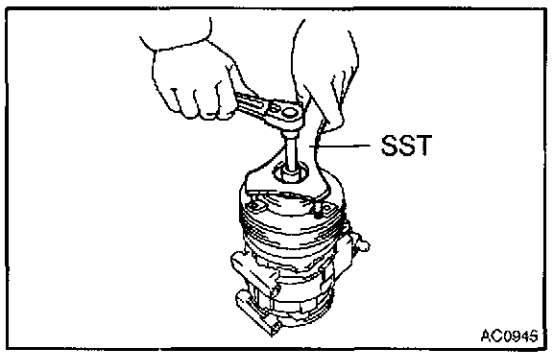
NOTICE:

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



11. INSTALL PRESSURE PLATE

(a) Install the shims to pressure plate.

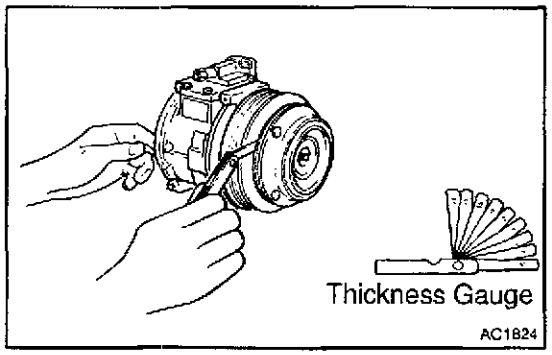


(b) Install the pressure plate on the rotor.

(c) Using SST and a socket wrench, tighten the shaft bolt.

SST 07112–76060

Torque: 13.2 N·m (135 kgf·cm, 9 ft·lbf)



12. INSPECT MAGNETIC CLUTCH CLEARANCE

Check the clearance between the pressure plate and rotor using thickness gauge.

Standard clearance:

0.5 ± 0.15 mm (0.020 ± 0.0059 in.)

If the clearance is not within standard clearance, change number of shims to obtain the standard clearance.

Shim thickness:

0.1 mm (0.0039 in.)

0.3 mm (0.012 in.)

0.5 mm (0.020 in.)

AC0K5–01

INSTALLATION

1. INSTALL COMPRESSOR

(a) Install the compressor with 4 bolts.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(b) Connect the connector.

2. CONNECT DISCHARGE AND SUCTION HOSES

Connect the both hoses with the 2 bolts
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

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

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

3. 2RZ–FE, 3RZ–F, and 3RZ–FE Engine Models:
INSTALL AIR CLEANER ASSEMBLY

4. INSTALL AND CHECK DRIVE BELT
(See page AC–20, AC–18)

5. CONNECT NEGATIVE (–) TERMINAL CABLE TO BATTERY

6. EVACUATE AIR FROM REFRIGERATION SYSTEM AND CHARGE SYSTEM WITH REFRIGERANT
Specified amount: 550 ± 50 g (19.40 ± 1.76 oz.)

7. INSPECT FOR LEAKAGE OF REFRIGERANT

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

8. INSPECT A/C OPERATION