COMPRESSOR

ACOKN-02

ON–VEHICLE INSPECTION

(Magnetic Clutch)

1. **MAKE THE FOLLOWING VISUAL CHECKS**

(a) Leakage of grease from the clutch bearing.

(b) Signs of oil on the pressure plate or rotor.

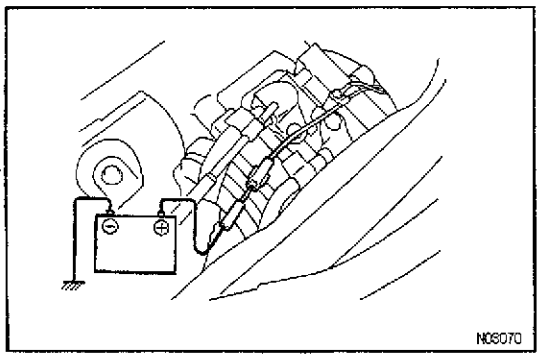
Repair or replace, as necessary.

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

(a) Start engine.

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

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



3. **INSPECT MAGNETIC CLUTCH**

(a) Disconnect the connector from the magnetic clutch.

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

(c) Check that the magnetic clutch is energized.

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

AC

(Compressor)

1. **INSTALL MANIFOLD GAUGE SET**

(See page AC–16)

2. **START ENGINE**
3. **INSPECT COMPRESSOR FOR METALLIC SOUND**

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

If metallic sound is heard, replace the compressor assembly.

4. **INSPECT PRESSURE OF REFRIGERATION SYSTEM**

See " REFRIGERANT SYSTEM INSPECTION WITH MANIFOLD GAUGE SET" on page AC–16

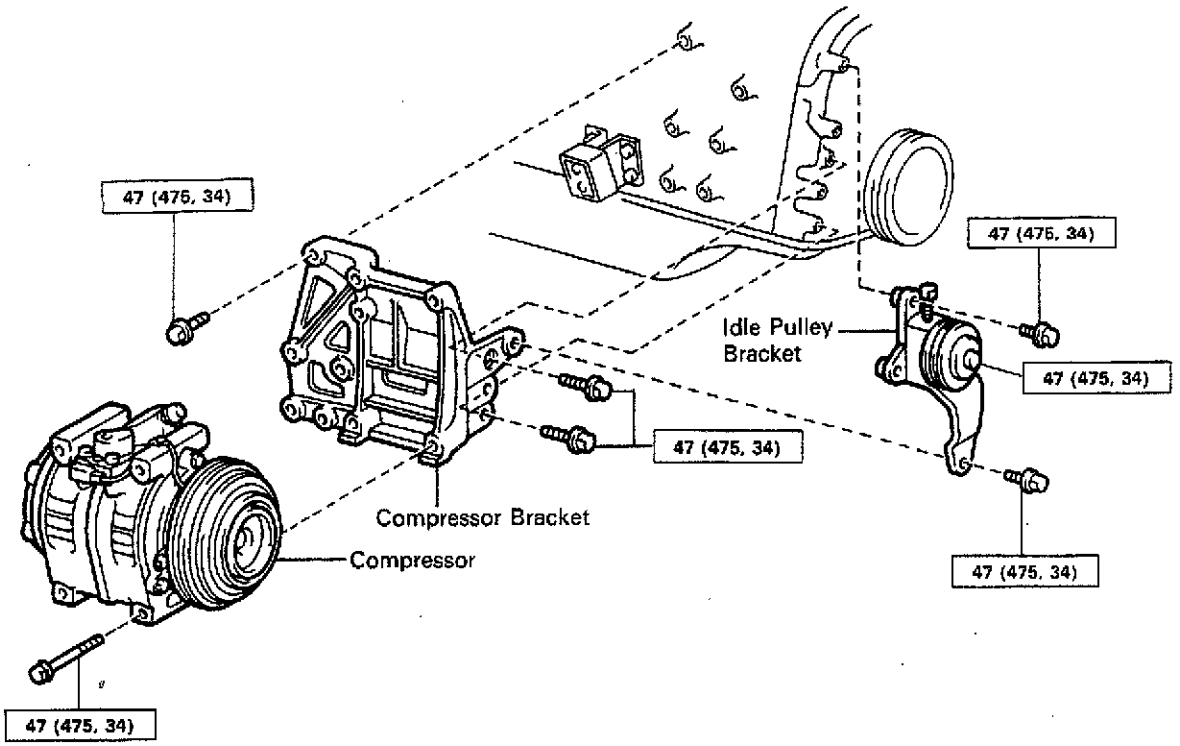
5. **STOP ENGINE**
6. **INSPECT VISUALLY FOR LEAKAGE OF REFRIGERANT FROM SAFETY SEAL**

If there is any leakage, replace the compressor assembly.

AC0UZ-01

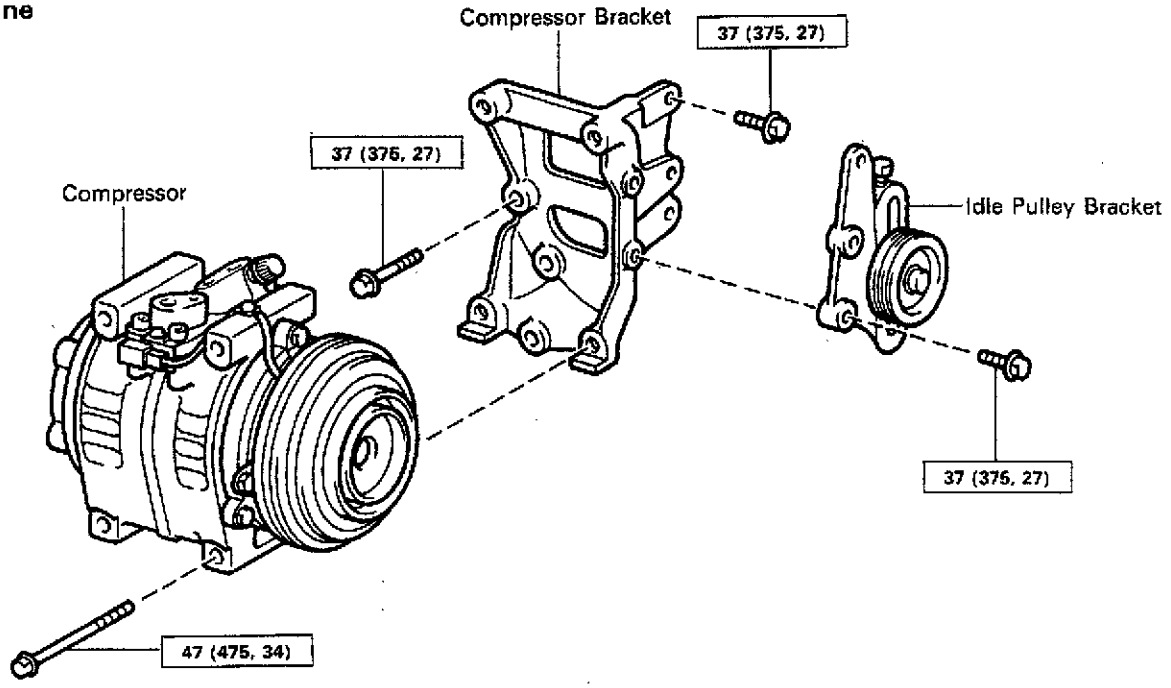
COMPRESSOR REMOVAL

• 3B, 14B Engine



AC

• 1HZ Engine



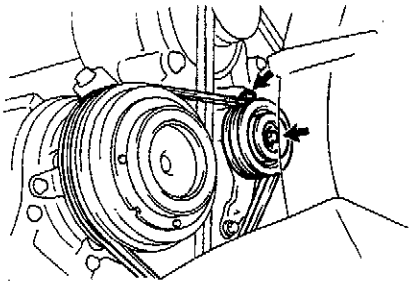
N08071
N08072

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

Z08194

1. **RUN ENGINE AT IDLE SPEED WITH A/C ON FOR APPROX. 10 MINUTES**
2. **STOP ENGINE**
3. **DISCONNECT NEGATIVE CABLE TO BATTERY**
4. **DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM**
5. **REMOVE ENGINE SERVICE HOLE COVER**
6. **REMOVE SHIFT LEVER ASSEMBLY**
   (See page AT–60)

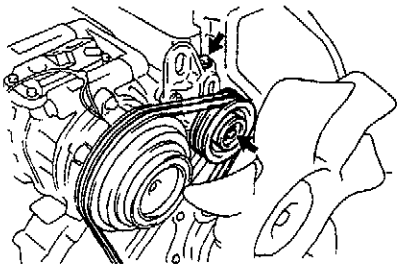
● 3B, 14B Engine



N08195

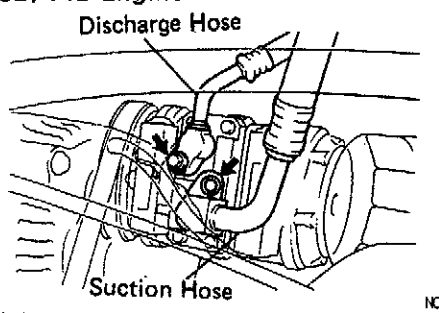
7. **LOOSEN IDLE PULLEY LOCK NUT AND REMOVE COMPRESSOR DRIVE BELT**

● 1HZ Engine



N08196

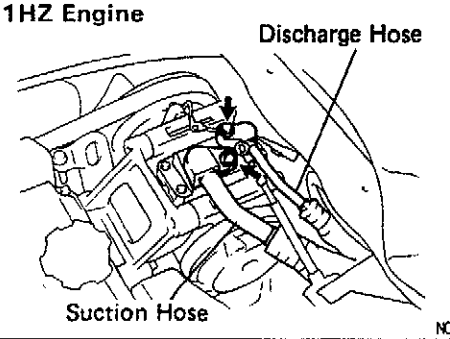
● 3B, 14B Engine



N08197

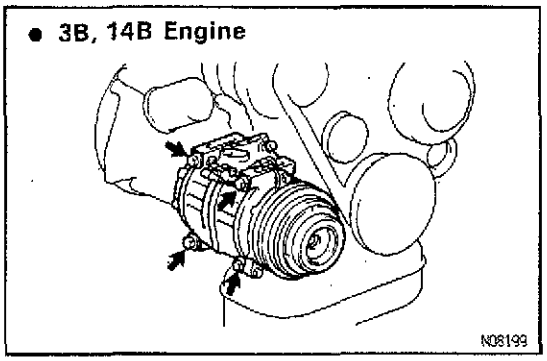
8. **REMOVE SUCTION HOSE AND DISCHARGE HOSE FROM COMPRESSOR**
   HINT: Cap the open fittings immediately to keep the moisture and dust out of the system.

● 1HZ Engine



N08198

● 3B, 14B Engine

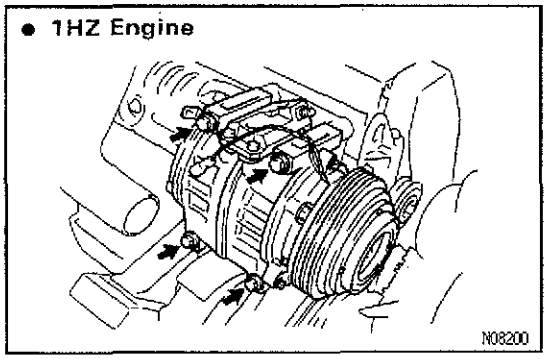


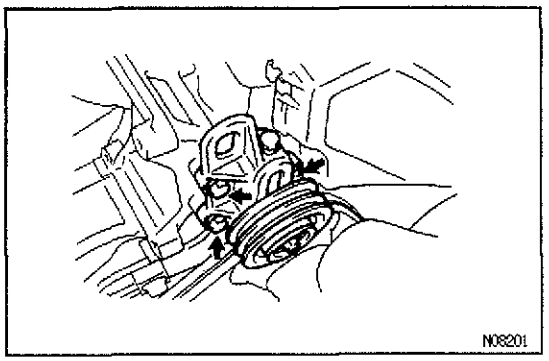
9. REMOVE COMPRESSOR

(a) Disconnect the connector from magnetic clutch.

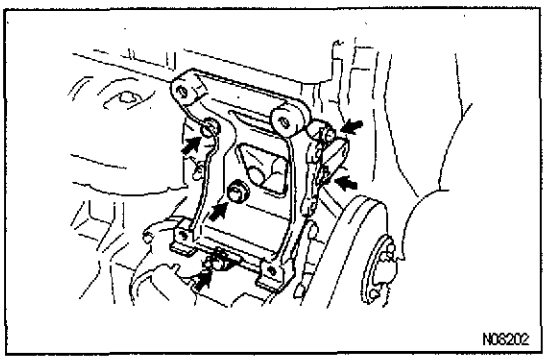
(b) (3B, 14B Engine)
Remove the 4 bolts and the compressor.
(1HZ Engine)
Remove the 4 bolts from the compressor.

● 1HZ Engine





(c) (1HZ Engine)
Remove the 3 bolts and the idle pulley bracket.

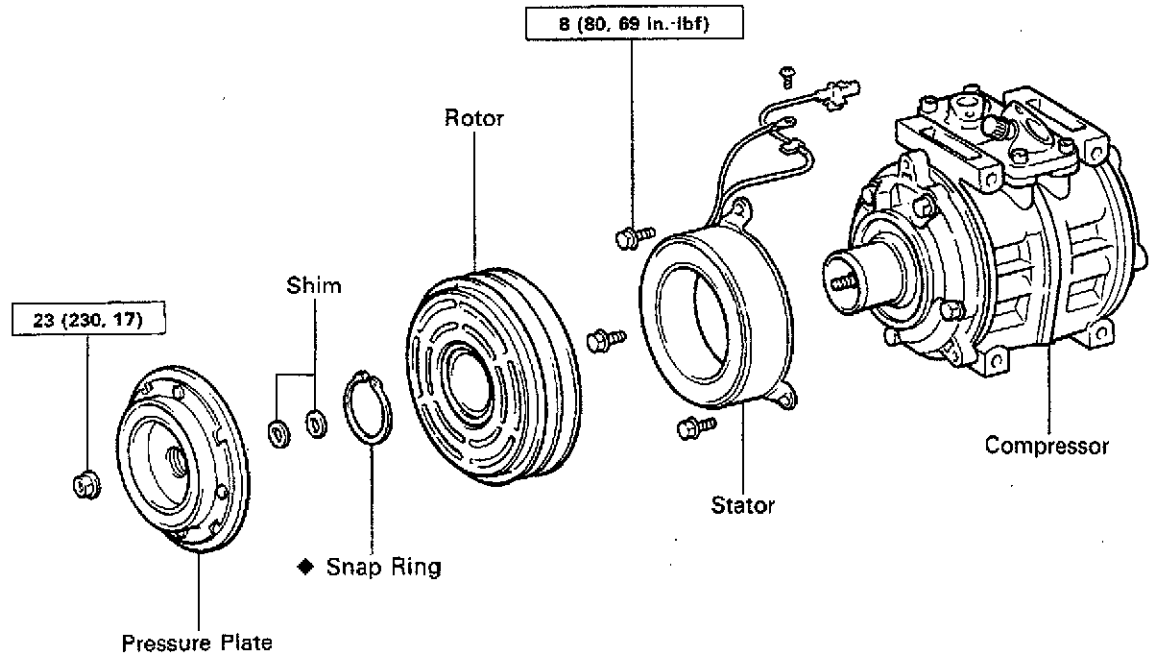


(d) (1HZ Engine)
Remove the 5 bolts and the compressor bracket.

(e) (1HZ Engine)
Remove the compressor.

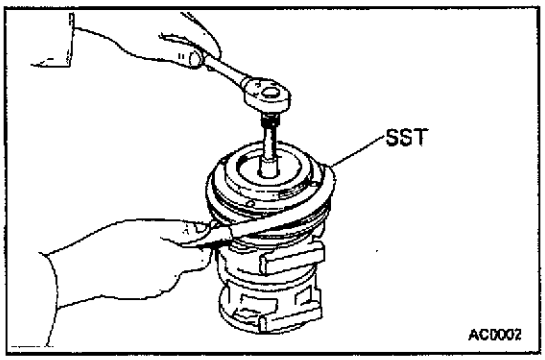
AC0V0-01

MAGNETIC CLUTCH DISASSEMBLY



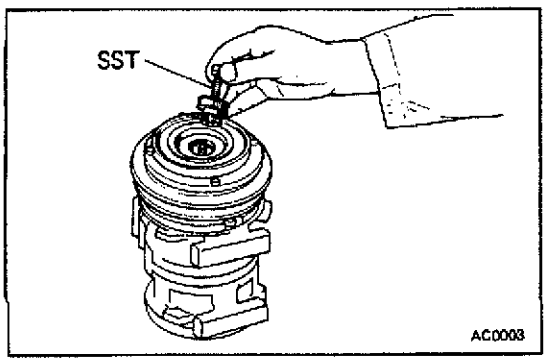
N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part

N08073

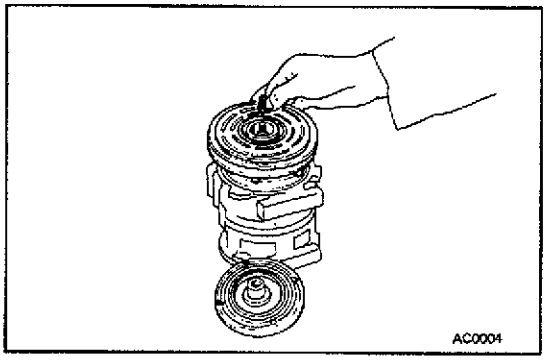


1. REMOVE PRESSURE PLATE

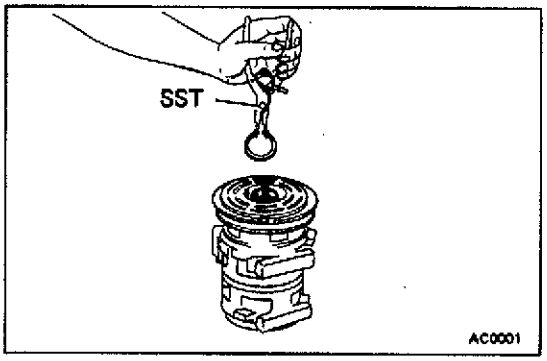
(a) Using SST and socket wrench, remove the shaft nut.
SST 07112–67010



(b) Using SST and socket wrench, remove the pressure plate.
SST 07112–71010

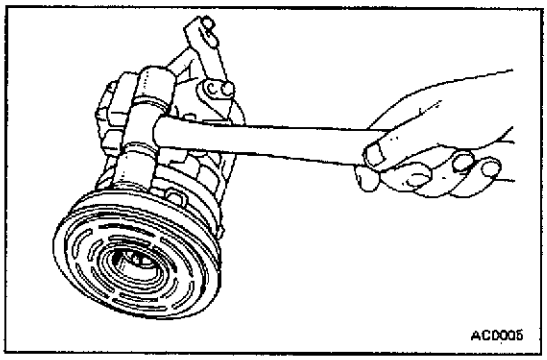


(c) Remove the shims from the shaft.

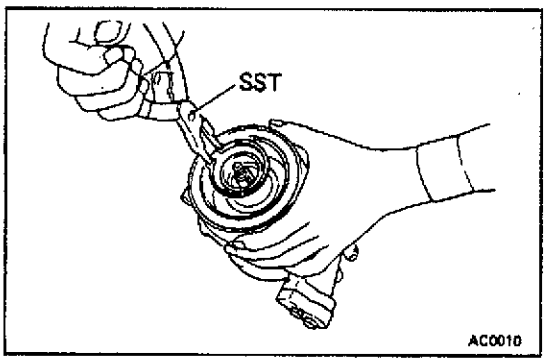


2. REMOVE ROTOR

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

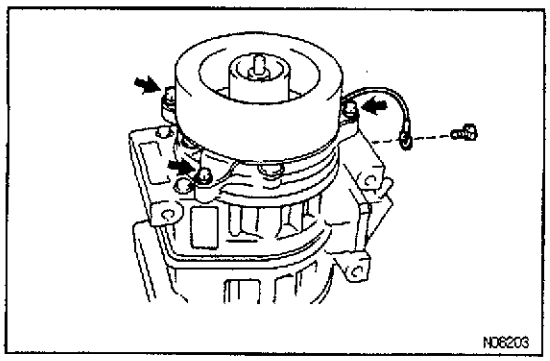


(b) Using a plastic hammer, tap the rotor off the shaft.
NOTICE: Be careful not to damage the pulley when tapping on the rotor.



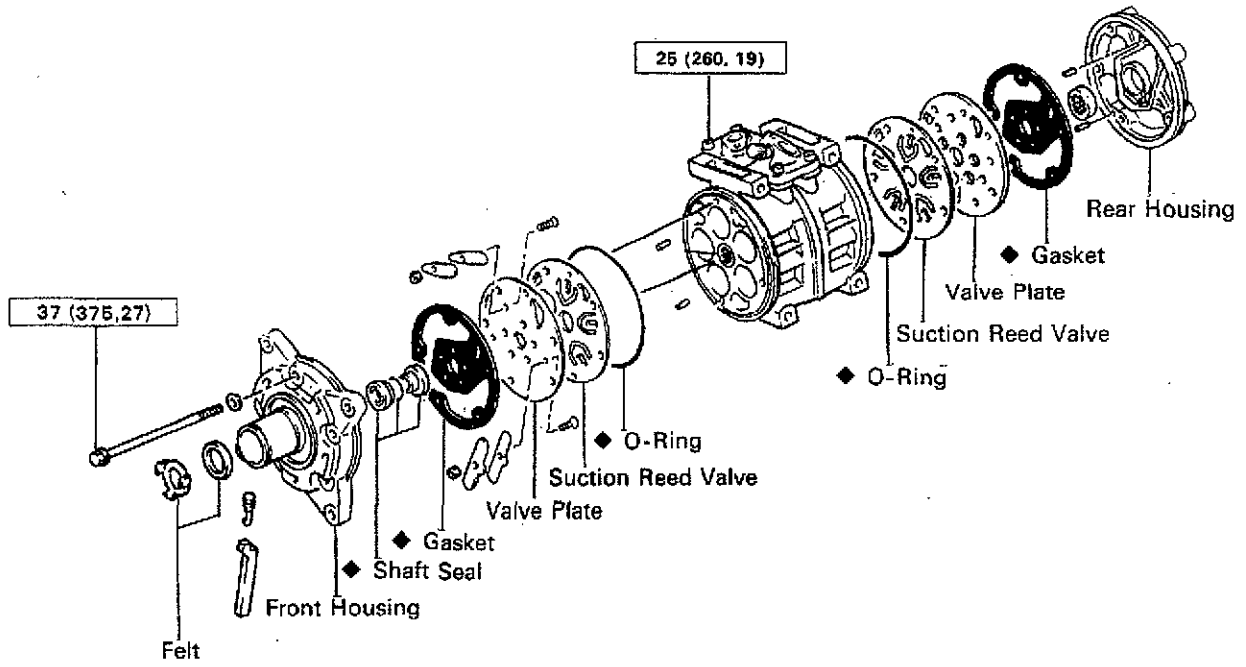
3. REMOVE STATOR

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

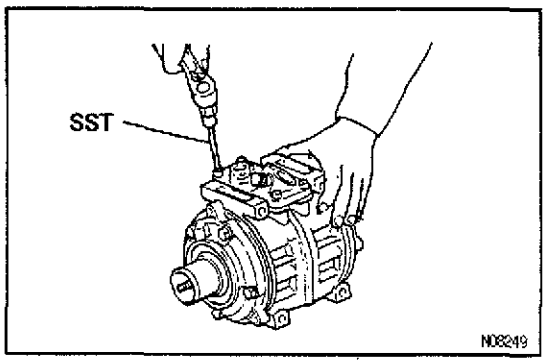


(b) Disconnect the stator lead wire from the compressor housing.
(c) Remove 3 bolts and the stator.

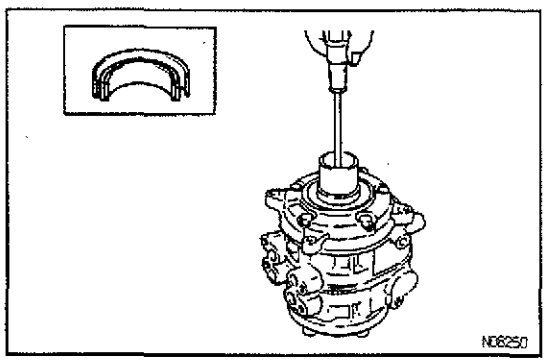
SHAFT SEAL REPLACEMENT



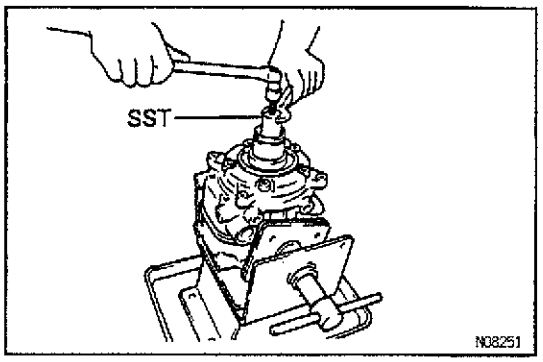
AC



1. **REMOVE SERVICE VALVE**
   Using SST, remove the 4 bolts holding the service valve.
   SST 07110–61050
2. **DRAIN COMPRESSOR OIL INTO MEASURING FLASK**
   Measure the quantity of drained oil because the same amount should be replaced later.

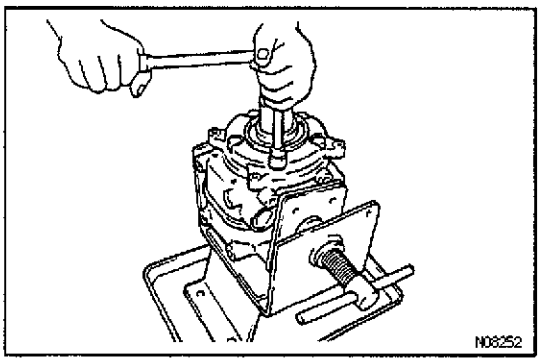


3. **REMOVE FELT**
   Using a screwdriver, remove the felt from the front housing.



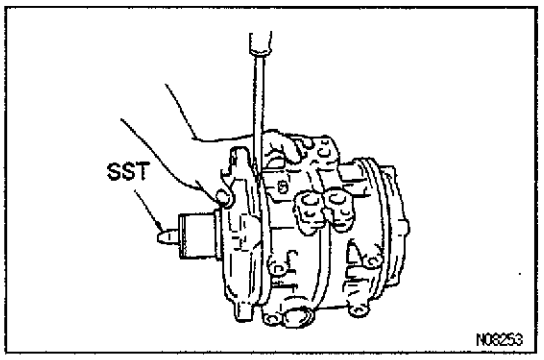
4. REMOVE KEY

Using SST, remove the key from the shaft.
SST 07712–45021



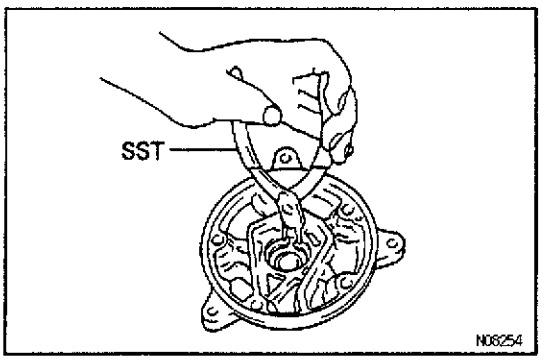
5. REMOVE FRONT HOUSING

(a) Remove the 5 through bolts.
HINT: Do not reuse 5 washers.



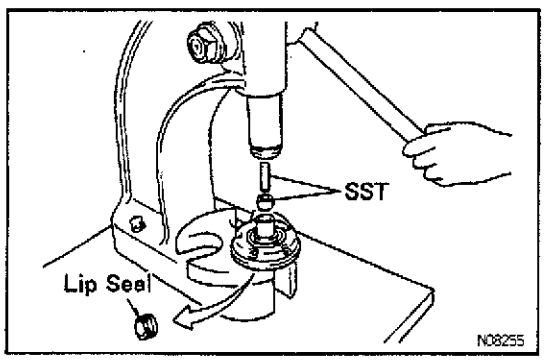
(b) Install SST onto the shaft.
SST 95042–10810 (NIPPONDENSO)

(c) Using a screwdriver, remove the front housing.
NOTICE: Be careful not to scratch the sealing surface of the front housing.

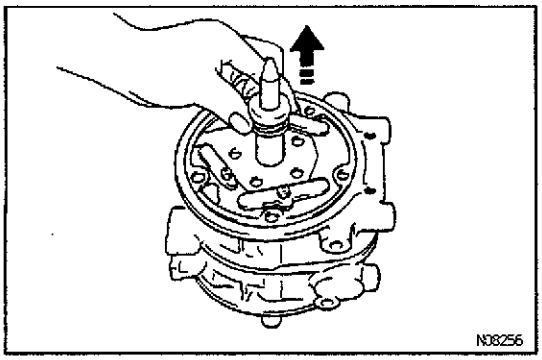


6. REMOVE SHAFT SEAL

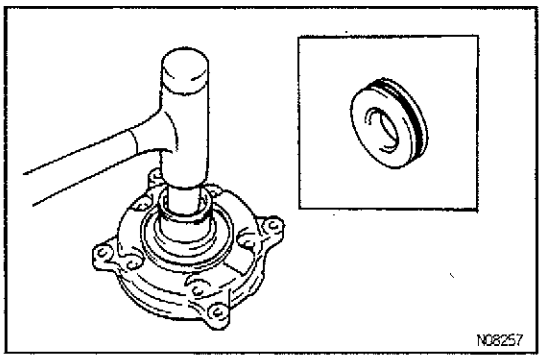
(a) Using SST, remove the snap ring.
SST 07714–84010



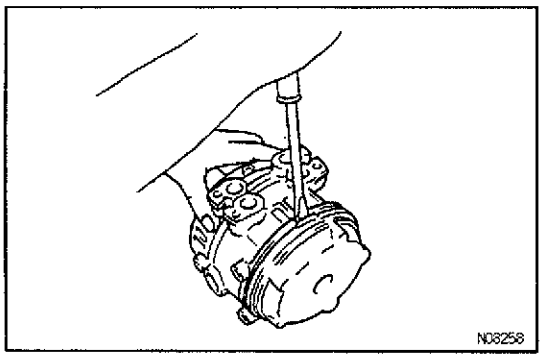
(b) Using SST, remove the shaft seal.
SST 95042–10611 (NIPPONDENSO),
95042–20420 (NIPPONDENSO)



(c) Install SST onto the shaft, and pull the mechanical seal upward.
SST 95042–10810 (NIPPONDENSO)



(d) Using the brass bar and plastic hammer, remove the seal plate.

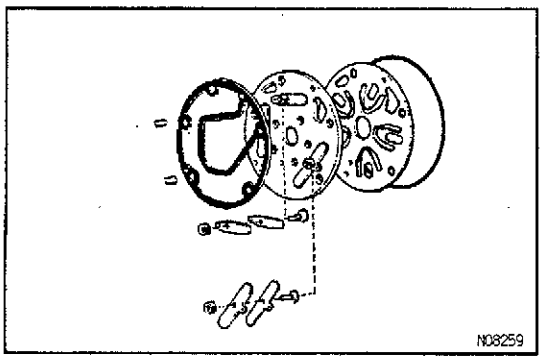


7. REMOVE REAR HOUSING

Using a screwdriver, remove the rear housing.

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

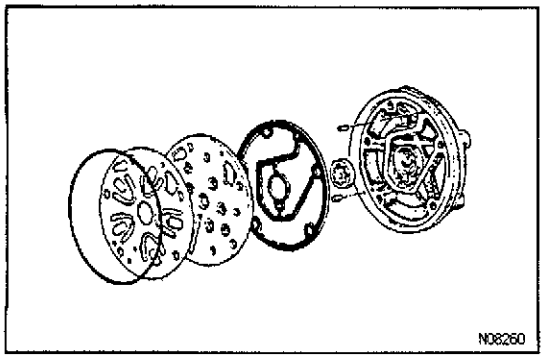
AC



8. REMOVE GASKET, VALVE PLATE, SUCTION REED VALVE AND O–RING

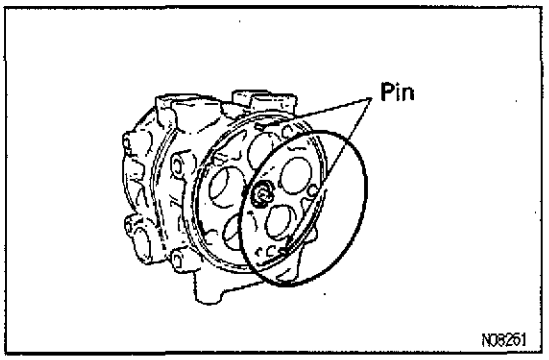
(a) Remove the 2 pins from the front housing. Discard the pins.

(b) Remove O–ring, suction reed valve, valve plate and gasket.



(c) Remove the 2 pins from the rear housing. Discard the pins.

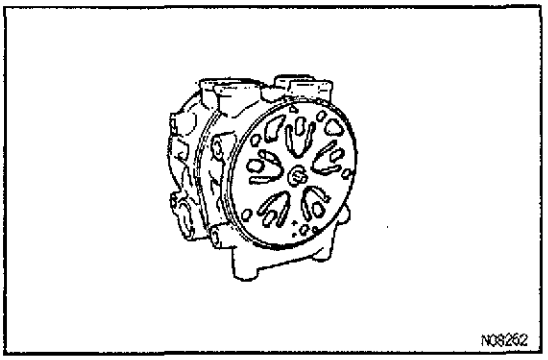
(d) Remove the O–ring, gasket, suction reed valve, valve plate and gasket. Discard them.



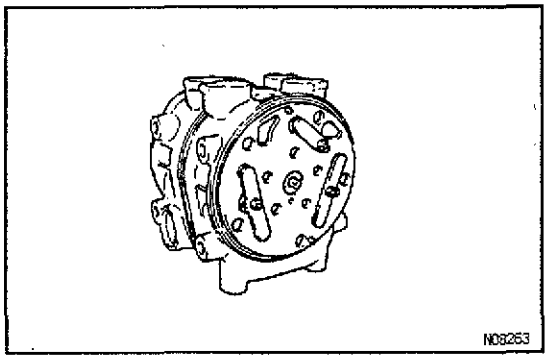
9. INSTALL REAR HOUSING

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

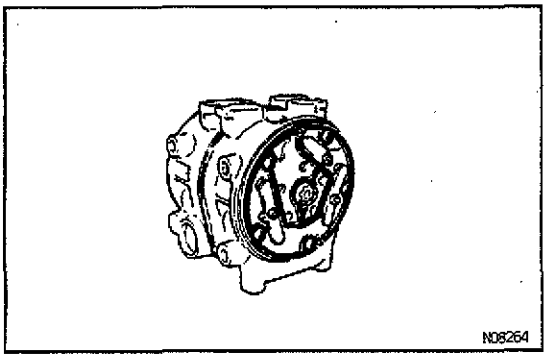
(b) Lubricate a new O–ring with compressor oil. Install the O–ring in the rear cylinder.



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

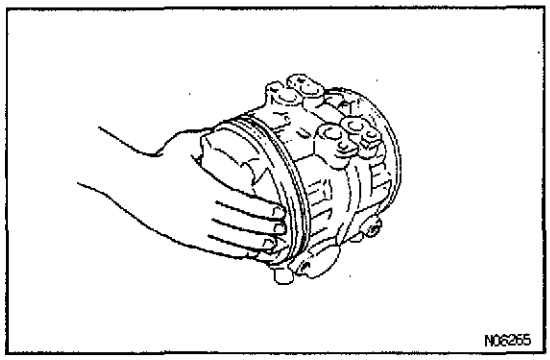


(d) Install the valve plate together with the discharge reed valve over the pins on the rear cylinder.

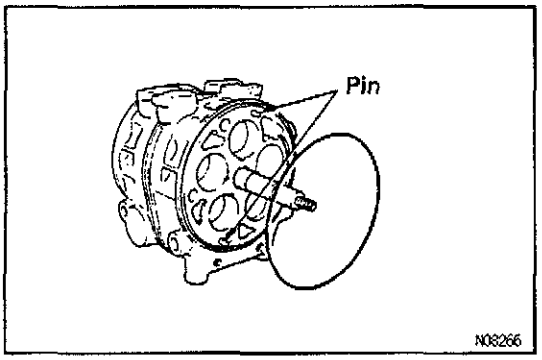


(e) Lubricate the new gasket with compressor oil.

(f) Install the gasket over the pins on the rear cylinder.



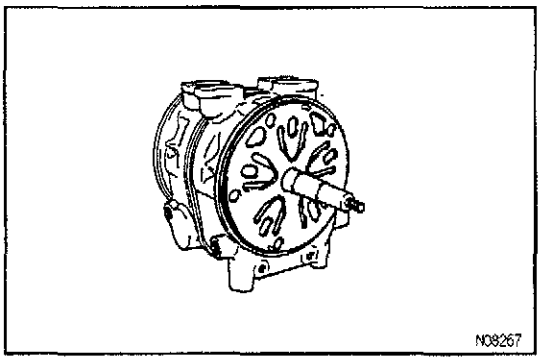
(g) Install the rear housing over the pins on the rear cylinder.



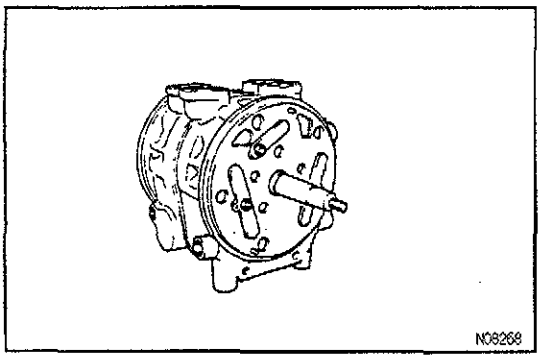
10. INSTALL FRONT HOUSING

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

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

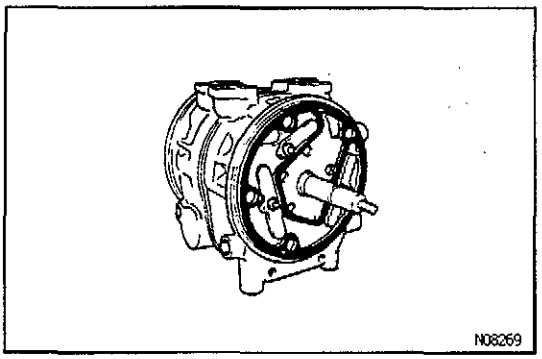


(c) Install the suction reed valve over the pins on the front cylinder.

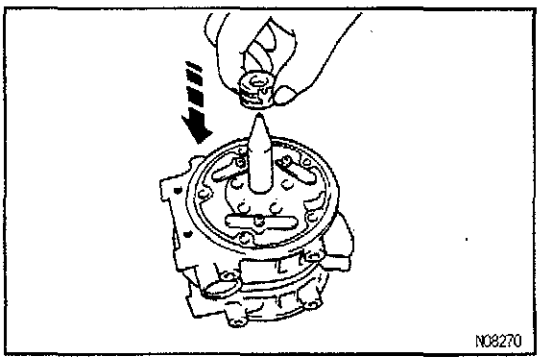


(d) Install the valve plate together with the discharge valve over the pins on the front cylinder.

AC

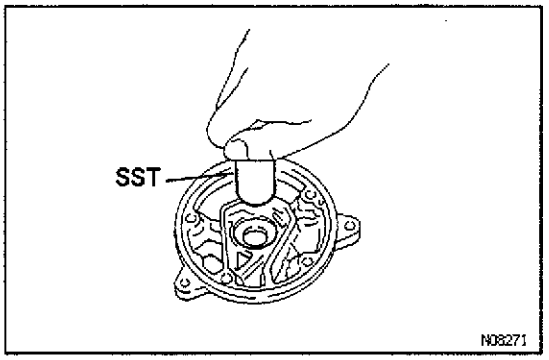


(e) Lubricate the new gasket with compressor oil. Install the gasket on the valve plate.

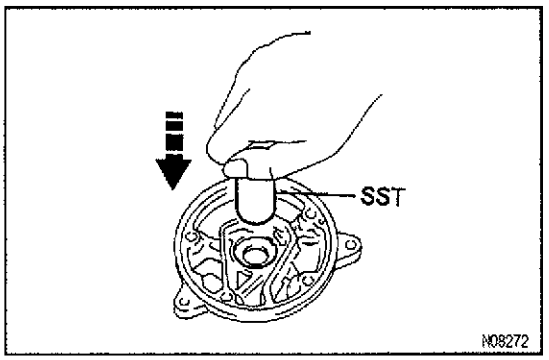


(f) Install SST onto the shaft.
SST 95042–10810 (NIPPONDENSO)

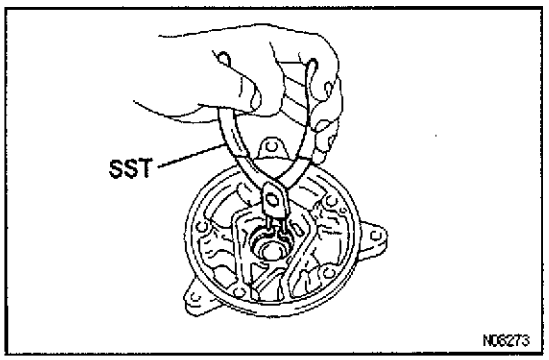
(g) Install the mechanical seal to the shaft.



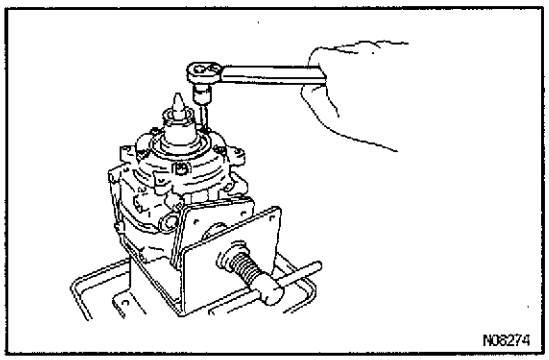
(h) Install a new O–ring to the seal plate.
(i) Using SST, install the seal plate to the front housing.
SST 95042–10540 (NIPPONDENSO)



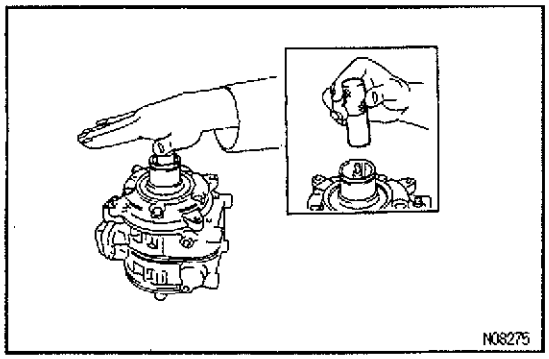
(j) Using SST, install the lip seal to the front housing.
SST 95042–10611 (NIPPONDENSO)



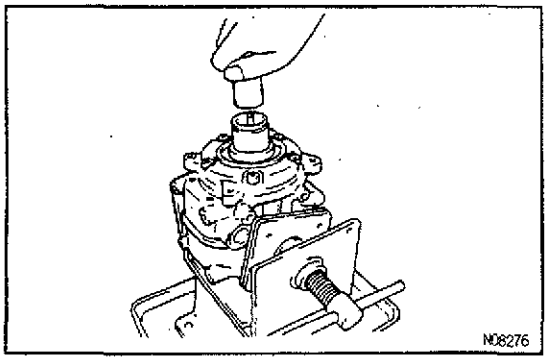
(k) Using SST, install the snap ring.
SST 07714–84010



(l) Install SST onto the shaft.
SST 95042–10611 (NIPPONDENSO)
(m) Install the front housing with the 5 through bolts.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

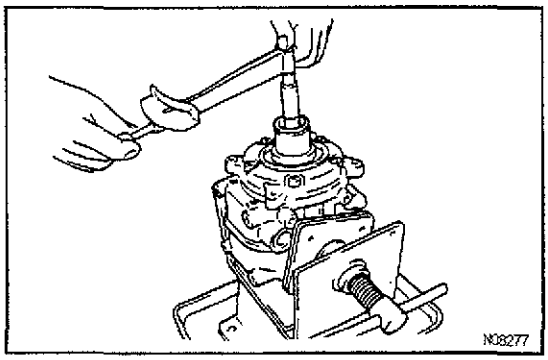


11. INSTALL KEY IN SHAFT GROOVE
Using SST, tap the key lightly by hand.
SST 95042–10530 (NIPPONDENSO)



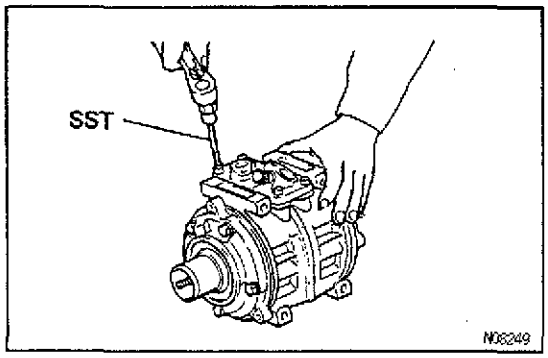
12. INSTALL FELT

Using pipe, install a new felt to the front housing.



13. CHECK SHAFT STARTING TORQUE

Starting Torque: 12.7 N·m (130kgf·cm, 9.4 in.·lbf) or less.



14. POUR COMPRESSOR OIL INTO COMPRESSOR

Add the same quantity plus 20 cc of oil into the compressor.

Compressor oil:

ND–OIL 8

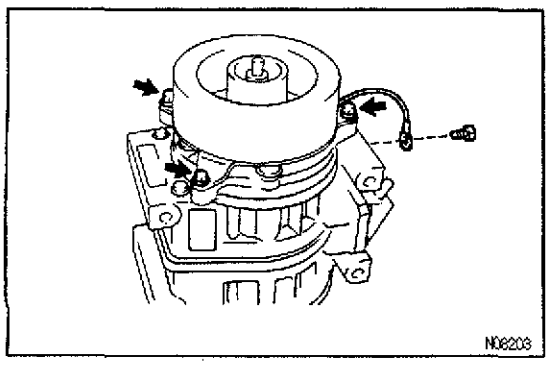
15. INSTALL SERVICE VALVE

(a) Lubricate new O–ring with compressor oil. Install O–ring in the service valves.

(b) Install the service valves on the compressor. Using SST and torque wrench, tighten the bolts.

Torque: 25 N·m (260 kgf·cm, 19 ft·lbf)

SST 07110–61050



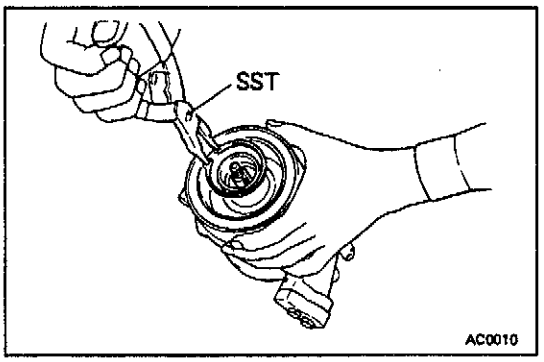
MAGNETIC CLUTCH ASSEMBLY

AC0V1–01

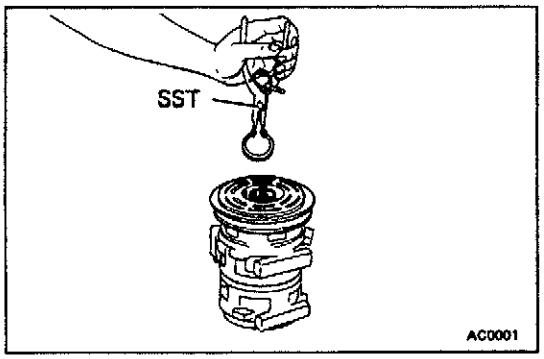
1. INSTALL STATOR

(a) Install the stator with 3 bolts.

Torque: 8 N·m (80 kgf·cm, 69 in.·lbf)

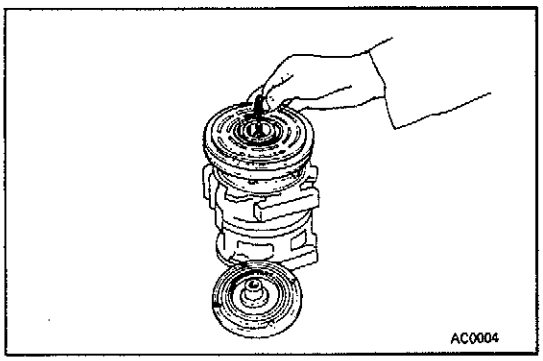


(b) Using SST, install the new snap ring.
SST 07112–84020
(c) Connect the stator lead wire to the compressor housing.



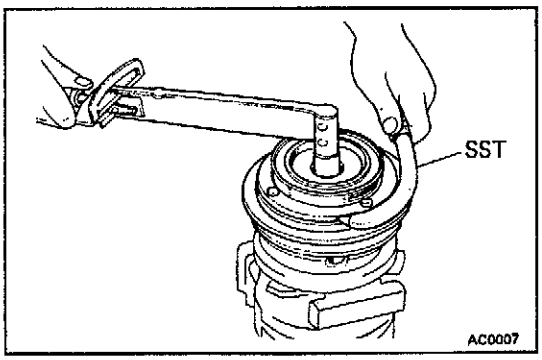
2. INSTALL ROTOR

(a) Install the rotor on the compressor shaft.
(b) Using SST, install the new snap ring.
SST 07114–84020

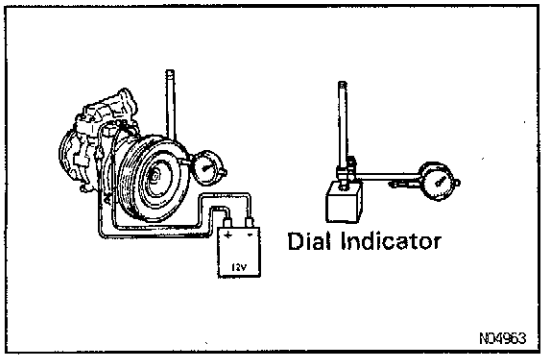


3. INSTALL PRESSURE PLATE

(a) Adjust the clearance between the pressure plate and rotor by putting shims on the compressor shaft.
Standard clearance:
0.4 – 0.7 mm (0.016 – 0.028 in.)
If the clearance is not within tolerance, add or reduce the number of shims to obtain the standard clearance.



(b) Using SST and torque wrench, install the shaft nut.
SST 07110–67010
Torque: 16 N·m (165 kgf·cm, 12 ft·lbf)



4. CHECK CLEARANCE OF MAGNETIC CLUTCH

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

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

(c) Check the clearance between the pressure plates and rotor, when connect the negative (−) terminal of the battery.

Standard clearance:

0.4 − 0.7 mm (0.016 − 0.028 in.)

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

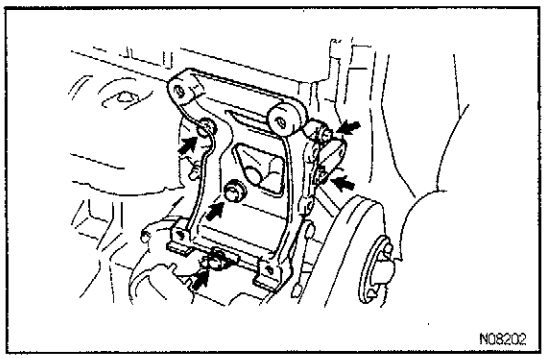
Shim Thickness:

0.1 mm (0.004 in.)
0.3 mm (0.012 in.)
0.5 mm (0.020 in.)

AC0V2-01

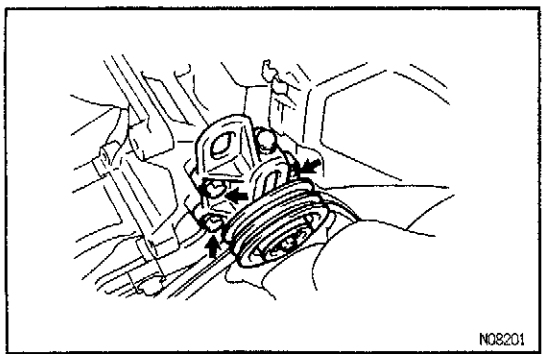
COMPRESSOR INSTALLATION

AC



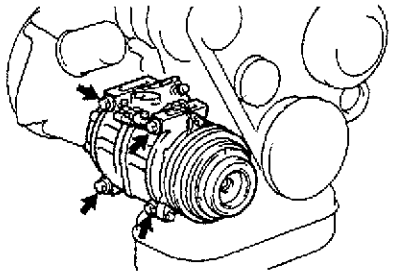
1. INSTALL COMPRESSOR

(a) (1HZ Engine)
Install the compressor bracket with the 5 bolts.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)



(b) (1HZ Engine)
Install the idle pulley bracket with the 3 bolts.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

• 3B, 14B Engine

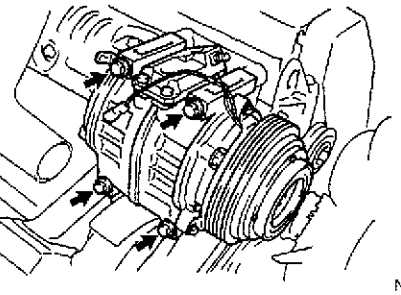


N08199

(c) Install the compressor with the 4 bolts.
Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

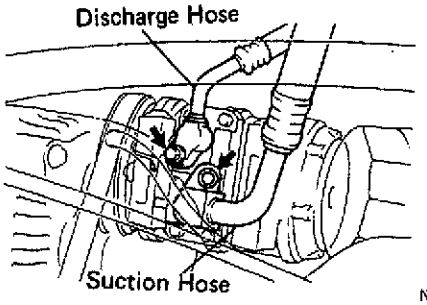
(d) Connect the connector to magnetic clutch.

• 1HZ Engine



N08200

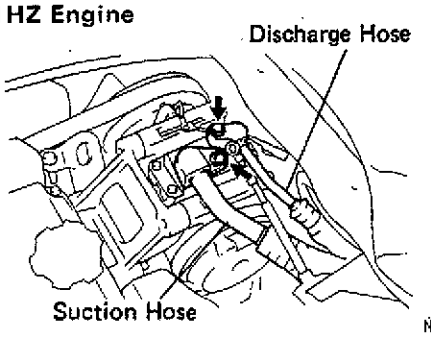
• 3B, 14B Engine



N08197

AC

• 1HZ Engine



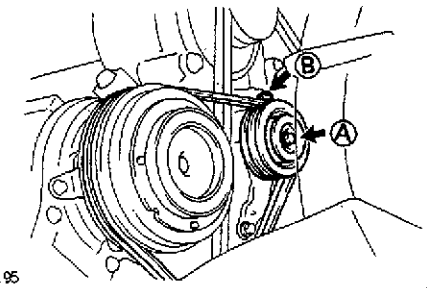
N08198

2. CONNECT DISCHARGE HOSE AND SUCTION HOSE TO COMPRESSOR

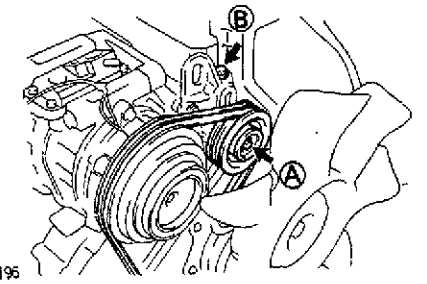
NOTICE: Hoses should be connected immediately after the caps have been removed.

Torque: 10 N·m (100 kgf·cm, 7.2 ft·lbf)

• 3B, 14B Engine



• 1HZ Engine



3. INSPECT COMPRESSOR DRIVE BELT

(a) Suspend drive belt.

(b) Adjust tension and loosen with adjusting bolt B.

Standard value:

Tension

New drive belt: 50 ± 10 kgf·cm

Inspecting : 30 ± 10 kgf·cm

Loosen

New drive belt: 9 – 11 mm

Inspecting : 11 – 15 mm

(c) Torque the lock nut.

Torque: 47 N·m (475 kgf·cm, 34 ft·lbf)

4. CONNECT THE MAGNETIC CLUTCH LEAD WIRE TO WIRE HARNESS

5. CONNECT NEGATIVE CABLE TO BATTERY

6. EVACUATE AIR FROM REFRIGERATION SYSTEM

7. CHARGE SYSTEM WITH REFRIGERANT AND INSPECT FOR LEAKAGE OF REFRIGERANT

Specified amount:

2,000 ± 50 g (70.54 ± 1.76 oz.)

8. CHECK DRIVE BELT TENSION

(See page AC–25)