

# REFRIGERATION SYSTEM

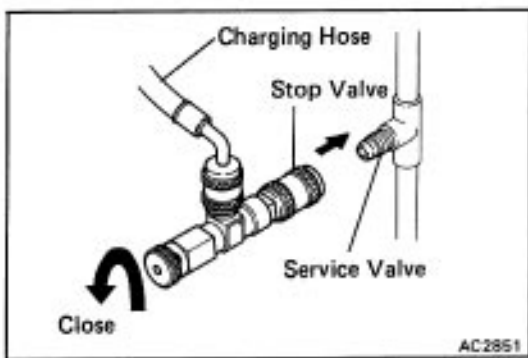
## Checking of Refrigerant Volume

1. RUN ENGINE AT APPROX. 1,500 RPM
2. OPERATE AIR CONDITIONER AT MAXIMUM COOLING FOR A FEW MINUTES

3. CHECK AMOUNT OF REFRIGERANT  
Observe the sight glass on the receiver.

Item	Symptom	Amount of refrigerant	Remedy
1	Bubbles present in sight glass	Insufficient*	(1) Check for gas leakage with gas leak tester and repair if necessary (2) Add refrigerant until bubbles disappear
2	No bubbles present in sight glass	None, sufficient or too much	Refer to items 3 and 4
3	No temperature difference between compressor inlet and outlet	Empty or nearly empty	(1) Check for gas leakage with gas leak tester and repair if necessary (2) Add refrigerant until bubbles disappear
4	Temperature between compressor inlet and outlet is noticeably different	Proper or too much	Refer to items 5 and 6
5	Immediately after air conditioner is turned off, refrigerant in sight glass stays clear	Too much	(1) Recover refrigerant (2) Evacuate air and charge proper amount of purified refrigerant
6	When air conditioner is turned off, refrigerant foams and then stay clear	Proper	—

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



## Installation of Manifold Gauge Set

HINT: To prevent releasing refrigerant, use charging hoses with a stop valve when installing the manifold gauge set to service valves on the refrigerant line.

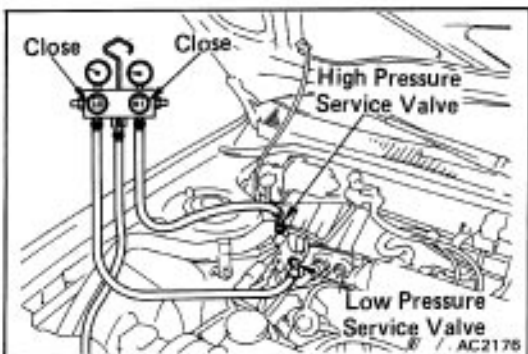
1. CONNECT CHARGING HOSES WITH A STOP VALVE TO MANIFOLD GAUGE SET

Tighten the nuts by hand.

**CAUTION:**

- Do not connect the wrong hoses to the high pressure and the low pressure sides.
- To prevent loosening the nuts, do not apply compressor oil to seat of the connection.

2. CLOSE HAND VALVES OF BOTH STOP VALVES
3. CLOSE BOTH HAND VALVES OF GAUGE SET
4. REMOVE PLUGS FROM SERVICE VALVES ON REFRIG-ERANT LINE



## 5. CONNECT STOP VALVES TO SERVICE VALVES

Tighten the nuts by hand.

### CAUTION:

- Do not connect the wrong valves to the high pressure and the low pressure sides.
- To prevent loosening the nuts, do not apply compressor oil to seat of the connection.

## 6. OPEN HAND VALVES OF BOTH STOP VALVES

## REMOVAL OF MANIFOLD GAUGE SET

### 1. CLOSE BOTH HAND VALVES OF MANIFOLD GAUGE SET

### 2. CLOSE HAND VALVES OF BOTH STOP VALVES

### 3. DISCONNECT STOP VALVES FROM SERVICE VALVES ON REFRIGERANT LINE

### 4. INSTALL PLUGS TO SERVICE VALVES

## COMPRESSOR

## ON-VEHICLE INSPECTION

### 1. INSTALL MANIFOLD GAUGE SET

(See page [AC-17](#))

### 2. RUN ENGINE AT APPROX. 1,500 RPM

### 3. CHECK COMPRESSOR FOR FOLLOWING:

- High pressure gauge reading is not lower and low pressure gauge reading is not higher than normal.
- Metallic sound
- Leakage from shaft seal

If defects are found, repair the compressor.

### 4. CHECK MAGNETIC CLUTCH

- Inspect the pressure plate and the rotor for signs of oil.
- Check the clutch bearings for noise and grease leakage.
- Using an ohmmeter, measure the resistance of the stator coil between the clutch lead wire and ground.

**Standard resistance:  $3.4 - 3.8\Omega$  at  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ )**

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

- Connect the positive (+) lead from the battery to terminal 1, check that the magnetic clutch is energized.

If magnetic clutch is not energized, replace the coil.

**NOTICE: Do not short the positive (+) lead wire on the vehicle by applying battery voltage.**

