

## OVER-ALL PERFORMANCE TEST

- (7) Reinstall suction and discharge lines. Use new gaskets to prevent leakage.
- (8) Evacuate and charge system.

Humidity (the amount of moisture in the air) has an important bearing on the temperature of the air delivered to the vehicle's interior. This is true of all air-conditioning systems whether in the home, office or vehicle. It is important to understand the effect humidity has on the performance of the system. When humidity is high, the evaporator has to perform a double duty. It must lower the air temperature and the temperature of the moisture carried in the air. Condensing of the moisture in the air transfers a great deal of heat energy into the evaporator fins and tubing. This reduces the amount of heat the evaporator can absorb from the air. In other words, high humidity greatly reduces the evaporator's ability to lower the temperature of the air delivered to the vehicle interior.

Evaporator capacity, used to reduce the amount of moisture in the air, is not wasted. Wringing some of the moisture out of the air entering the vehicle adds to the comfort of the passengers. However, an owner may expect too much from the air-conditioning system on humid days. A performance test is the best way to determine whether or not the system is performing up to standard. This test also provides valuable clues to the possible cause of trouble.

### Performance Test Procedure

Air temperature in test room must be 75°F (24°C) minimum for this test.

- (1) Connect a tachometer and manifold gauge set (Fig. 5).
- (2) Set A/C controls to Max A/C, temperature lever on full cool, and blower on high.
- (3) Start engine and adjust R.P.M. to 1000 with A/C clutch engaged.
- (4) Engine should be warmed up with doors, windows, and hood closed.
- (5) Insert a thermometer in the left center A/C outlet and operate the engine for 5 minutes. The A/C clutch may cycle depending on ambient conditions.
- (6) After 5 minutes note the discharge air temperature.

**NOTE: If the clutch cycles take the reading before the clutch disengages.**

- (7) Open the hood and disconnect the gray vacuum line going to the heater water control valve. Observe the valve arm for movement as the line is disconnected. If it does not move refer to the heater valve controls sections of this group. Plug the vacuum line to prevent leakage.

## COMPRESSOR OIL LEVEL

It is important to have the correct amount of oil in the A/C system to ensure proper lubrication and cooling capacity, the compressor is charged with 7 to 7.25 fl. oz. (207 to 214 ml) of oil at the factory.

The oil used in the compressors is a 500 SUS viscosity, wax-free refrigerant oil. Only refrigerant oil of the same type should be used to service the system. Do not use any other oil.

After the compressor has been installed and operated in the A/C system, the oil will be distributed throughout the system. Some of the oil will be trapped by components in the system. An equivalent amount of oil must be added to the system to compensate for the trapped oil when replacing the following:

- Evaporator Coil: 2 fl. oz. (59.2 ml).
- Condenser: 1 fl. oz. (30 ml).
- Filter-Drier: 1 fl. oz. (30 ml).

It will not be necessary to check oil level in the compressor or to add oil unless there has been an oil loss due to a ruptured line; excess shaft seal leakage; leakage from the evaporator, condenser or filter-drier; or loss due to a collision. Oil loss at a leak point will be evident by the presence of a wet, shiny surface around the leak. Replacement compressors are also charged with 7-7.25 fl. oz. (207-214 ml). When replacing a compressor, remove, drain oil, measure the amount and discard the old oil. For the replacement compressor use the same amount of refrigerant oil as recovered from the failed compressor. This adjustment is not needed if the system has been flushed, removing retained oil. The Oil Level Adjustment Chart should be followed to determine the need to perform an oil level adjustment.

### Check Oil Level—(Basic Fill)

- (1) Slowly discharge complete system.
- (2) With system discharged, remove suction and discharge lines from compressor.
- (3) Remove compressor and clutch assembly from vehicle.
- (4) Remove compressor oil by inverting compressor and draining oil from suction and discharge ports.
- (5) Add 5 fl. oz. (148 ml) of clear refrigerant oil through suction port.
- (6) Reinstall compressor and clutch assembly.