

COMPONENT REPLACEMENT CAUTIONS (Cont.)

CONNECTING LINES & FITTINGS

A new "O" ring should be used in all instances when connecting lines and fittings (dip "O" ring in clean refrigeration oil and make certain it is not twisted during installation). Always use two wrenches to avoid twisting or distorting lines and fittings, tighten coupling nuts securely.

PLACING SYSTEM IN OPERATION

After component replacement and/or system servicing has been completed and all connections have been made, proceed as follows:

- 1) Evacuate the system using a vacuum pump.
- 2) Charge the system with new R-12 (refrigerant) according to each individual vehicle manufacturers procedure as outlined in this Manual.

NOTE — Also see *Refrigerant Capacity* in this Section.

- 3) Leak test the system, with particular attention to all new connections and components.
- 4) Make a performance test of the system.

COMPRESSOR REPLACEMENT

COMPRESSOR ISOLATION METHOD

On systems which have compressors equipped with stem-type service valves (York and some Tecumseh), it is possible to isolate the compressor for removal as detailed below.

Isolating — 1) Remove caps from compressor service valve stems and service ports. Connect manifold gauge set to service port connection, purge test hoses, then crack compressor service valves so that system pressures are indicated on test gauges.

2) If system has been fully discharged previously (zero high pressure gauge reading), system should be slightly charged so that high pressure gauge reading is above zero to prevent air and moisture entering when connections are broken.

3) Front-seat suction (inlet) service valve by turning valve stem in fully. Operate the compressor until low side (suction) gauge reading drops to 2 psi. Stop compressor, front-seat discharge (outlet) service valve by turning valve in fully and disconnect compressor clutch lead to prevent compressor operation with this valve front-seated. Compressor is now isolated from system.

CAUTION — Compressor must never be operated with this discharge valve front seated (closed) as damage to compressor valves would result.

Removal — 1) Carefully remove service valves from compressor by unscrewing the mounting bolts. Do not disturb line connections and do not turn valve stems with valve assemblies disconnected from compressor (to prevent system discharge). Cap service valves and plug compressor openings to prevent entry of dirt and moisture.

2) If compressor clutch is to be removed (for installation on replacement compressor), energize compressor clutch with engine NOT running and remove clutch mounting bolt from end of compressor shaft, then install 3/8"-11 bolt in driveshaft hole and tighten bolt to loosen clutch from shaft with clutch energized, disconnect clutch lead. Remove drive belt and clutch.

3) Drain and measure compressor oil level. Retain measurement to make proper oil adjustment during installation.

4) Remove compressor mounting bolts and lift compressor off engine. Remove clutch field assembly from compressor (on early compressors with rotating field, remove brush assembly).

Installation — 1) Position compressor on engine, install compressor clutch using new retaining bolt and washer (energize clutch to hold shaft while tightening nut).

2) Make necessary compressor oil level check and add oil if necessary.

NOTE — See *Compressor Oil Check* in this Section.

3) Remove service valve caps and shipping plugs from compressor valve ports and immediately install service valves on compressor using new "O" rings.

4) Without disturbing service valve positions (front-seated), use vacuum pump to evacuate compressor, then close vacuum pump valve and stop the pump.

COMPRESSOR REPLACEMENT (Cont.)

- 5) Back-seat service valves to cut compressor into the system, operate system for 5 minutes at fast idle.
- 6) Leak test compressor connections and compressor seal.
- 7) Recheck compressor oil level, adding or removing oil as necessary for correct oil level.

COMPRESSOR DISCHARGE METHOD

NOTE — To help prevent the possibility of accidentally hooking up the low side to the high side when recharging, the high side fitting is changed from $\frac{7}{16}$ "-20 thread to $\frac{3}{8}$ "-24 thread. A special hose adapter will be used when hooking up the high side valve.

This procedure is to be used on vehicles which have compressor equipped with Schrader service valves. In these cases, the compressor cannot be isolated and the system must be discharged prior to compressor removal.

Removal — 1) If possible, operate A/C system for 10 minutes with engine at 1000-1200 RPM and system controls set for maximum cooling and high fan speed. Stop engine.

2) If equipped with a Low Refrigerant Protection System (most GM vehicles), disconnect thermal limiter connector.

3) Discharge the system. When discharge is complete, slowly loosen screw which retains compressor fitting assembly to compressor. As screw is being loosened, work fitting assembly back and forth to break the seal and carefully bleed off any remaining pressure. Now remove screw, fitting assembly, and "O" rings. Immediately cap all system openings.

4) Disconnect compressor clutch coil wire and superheat switch wire (if equipped). Remove compressor retaining bolts and lift compressor from vehicle.

5) Measure and discard compressor oil.

Installation — 1) Add oil to compressor being installed according to manufacturer's recommended procedure.

NOTE — See *Compressor Oil Check* in this Section, and rotate shaft four or five times to permit proper lubrication of the compressor shaft seal. Also clean front face of compressor before installing clutch.

2) If installing replacement compressor, remove cover plate very slowly to bleed off pressure. Attach fitting assembly, using new "O" rings.

3) Evacuate, charge, and leak test the system. Remove jumper wire from thermal limiter and reconnect limiter; then, reconnect clutch coil and superheat switch (if equipped).