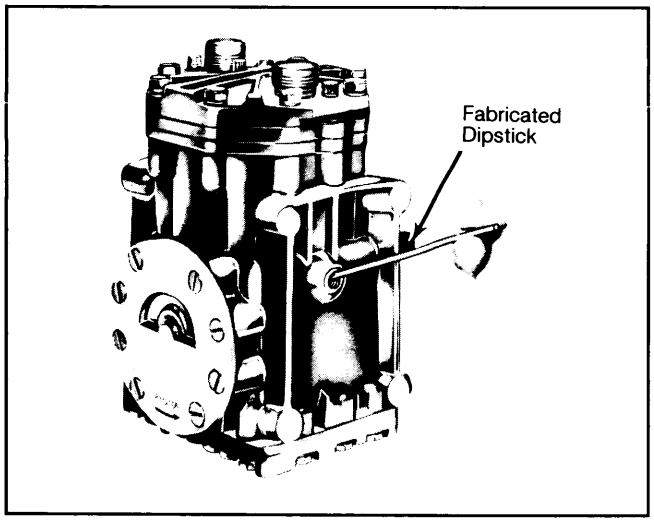
Air Conditioning Servicing

COMPRESSOR OIL CHECK (Cont.)

Fig. 3: Checking Oil on Vertically Mounted York Compressor



NOTE: The following oil checking procedure details isolating the compressor prior to checking. It is possible to discharge the entire system and then check the oil level.

YORK COMPRESSOR OIL LEVEL

Application	Measurement
Ford	
Horizontal Mount	13/16"
Vertical Mount	7/8-1 1/8"
Jeep	
Horizontal Mount	13/16"
Vertical Mount	7/8-1 1/8"

1) Turn both the high and low pressure service valve clockwise as far as possible (front-seat position). Loosen cap on the high pressure service valve and bleed residual pressure from compressor.

CAUTION: Only loosen cap a small amount and DO NOT remove cap until pressure is totally relieved.

NOTE: Oil level check plugs are located on either side of compressor crankcase; use check plug which is most convenient.

2) Fabricate a suitable dipstick according to specifications. Check oil level. Add clean refrigerant oil if necessary. Install new "O" ring seal on filler plug.

3) When oil check is complete, compressor must be purged of air before operating the system. Refer to procedure under Component Replacement.

Fig. 4: Dimensions for Tecumseh Compressor Oil Level Dipstick

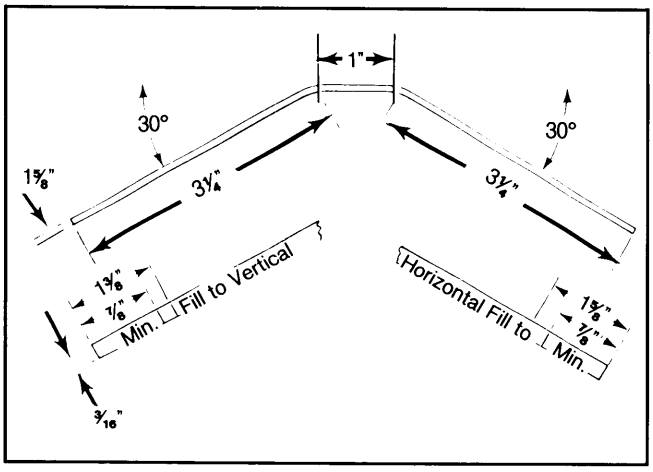
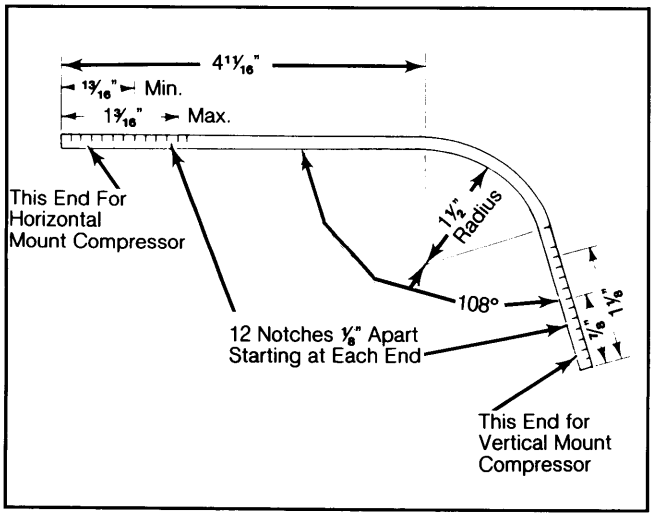


Fig. 5: Dimemsions for York Compressor Oil Level Dipstick



COMPONENT REPLACEMENT CAUTIONS

BEFORE OPENING THE SYSTEM

Before disconnecting any lines or fittings, the system must be completely discharged; however, if only the compressor is being removed and the compressor is equipped with stem-type service valves (York or Tecumseh), compressor may be isolated without discharging the system. Refer to Compressor Isolation Method.

DISCONNECTING LINES & FITTINGS

After system is discharged, carefully clean entire area around coupling nut to prevent dirt from entering the system. Always use two wrenches to avoid twisting or distorting lines and fittings (hold fitting with one wrench while loosening coupling nut with second wrench).

Cap or plug all LINES and FITTINGS immediately to prevent entry of air and moisture into system and do not remove these caps until connections are being made.

See following pages for removal and installation of each component. After replacement or repaired component is installed, connect lines as directed below.

COMPONENT REPLACEMENT CAUTIONS (Cont.)

COMPONENT REPLACEMENT

See following pages for removal and installation of each component. After replacement or repaired component installed, connect lines as directed below.

In addition to checking and adjusting the compressor oil level (see Compressor Oil Check), certain component replacement requires additional refrigeration oil. Add specified amounts of oil directly to the component prior to installation.

REFRIGERATION OIL ADDITION

Application	Amount
With Frigidaire Compressor	
Evaporator	3 oz.
Condenser	1 oz.
Receiver-Drier	1 oz.
With Air-Temp Compressor	
Evaporator	2 oz.
Condenser	1 oz.
Receiver-Drier	1 oz.

COMPRESSOR REPLACEMENT

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. *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 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.

Isolating (Ford)

Turn both high and low pressure manual valves to extreme clockwise (front seat) position. Loosen cap on high pressure manual valve connection to compressor and allow gas to escape until compressor is relieved of pressure.

Isolating (Jeep)

1) Connect standard A/C pressure gauge and manifold assembly (J-23575). Close both gauge hand valves and mid-position both service valves. Start engine and operate A/C.

2) Turn suction service valve slowly clockwise toward front seat position. When suction pressure is reduced to zero or less, stop engine and compressor and quickly finish frontseating suction service valve.

3) Front-seat discharge service valve. Loosen oil check plug slowly to release any internal pressure in compressor. Compressor is now isolated from system.

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 5/8-11 bolt in driveshaft hold and tighten bolt to loosen clutch from shaft with clutch energized, disconnect clutch lead. Remove drive belt and clutch.

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

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. *See Compressor Oil Check in this Section.*

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

4) Leak test compressor, and then evacuate it and connect it back into system. Recheck compressor oil level, adding or removing oil as necessary for correct oil level.

COMPRESSOR DISCHARGE METHOD

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 (Chrysler Corp.)

1) Discharge system. Measure and record refrigerant level so that it can be refilled to exact level in replacement or repaired compressor. Disconnect suction and discharge lines and cap openings.

2) Disconnect magnetic clutch-to-control unit wire and on Air-Temp compressors, remove clutch assembly. Remove compressor-to-bracket attaching bolts and remove compressor. On C-171 compressors, drain oil from suction and discharge ports.

Installation (Chrysler Corp.)

1) Reverse removal procedures noting the following: On C-171 compressors, add oil to bring level to 5 ounces. On Air-Temp compressors, rotate crankshaft assembly by hand at least 2 revolutions to clear oil accumulation from compressor head before energizing clutch, or damage to reed valves will result.

Air Conditioning Servicing

COMPRESSOR REPLACEMENT (Cont.)

2) On all models, evacuate and charge air conditioning system.

Removal (General Motors "C", "K" & "S")

Discharge system. Remove connector attaching bolt. Remove connector and cap openings. Disconnect wiring to clutch actuating coil. Remove drive belt. Remove compressor mounting brackets and compressor. Drain and measure oil in compressor.

Installation (General Motors "C", "K" & "S")

Replace oil in compressor with exact amount drained. Reverse removal procedures, installing new "O" rings on connector. Evacuate and charge system. Check operation.

Removal (General Motors "G" Models)

1) Disconnect battery ground cable and compressor clutch connector. Purge system of refrigerant. Remove drive belt.

2) Remove 2 bolts and 2 clamps holding engine cover and remove engine cover. Remove air cleaner, fitting and muffler assembly. Cap openings.

3) Remove compressor-to-bracket bolts. Remove engine oil tube support bracket bolt and nut from compressor. Remove clutch ground wire and remove compressor. Drain and measure oil in compressor.

Installation (General Motors "G" Models)

Replace oil in compressor with same amount as that removed. Reverse removal procedures, installing new "O" rings on connectors. Evacuate and charge system.

GENERAL SERVICE SPECIFICATIONS

REFRIGERANT CAPACITY

O.E.M. REFRIGERANT TABLE

Application	Capacity (Lbs.)
Chrysler Corp.	
Van Models	
W/Standard System	3⅜
W/Auxiliary Rear System	4
All Remaining Models	2⅝
Ford	
All Models Exc. "E" Models	3½
"E" Series Models	
W/Standard System	3½
W/Auxiliary Rear System	4¼
General Motors	
Standard System	
"C" & "K" Models	3¾
"G" Models	3
"S" Models	2½
Overhead System	
"C" & "K" Models	5¼
"G" Models	5
Jeep	
"CJ" & Scrambler Models	2½
Cherokee, Wagoneer & Trucks	2¼

COMPRESSOR BELT TENSION

BELT ADJUSTMENT TABLE (TENSION IN LBS.) [1]

Application	New Belt	Used Belt
Chrysler Corp.	[2] ¼-½"	[2] ½-5/16"
Ford	120-160	75-120
General Motors		
"S" Models		
4-Cyl.	157	90
6-Cyl.	146	67
All Others	135-145	90-100
Jeep	125-155	90-115

[1] — Using standard strand tension gauge unless otherwise indicated.

[2] — Chrysler Corp. recommends adjusting belt tension using the deflection method. Deflection is measured under a 10 pound load.