

Air Conditioning Servicing

COMPRESSOR OIL CHECK

GENERAL NOTES

AIR TEMP, TECUMSEH & YORK COMPRESSORS

Oil level on these compressors may be checked with compressor mounted in vehicle. If these compressors are equipped with stem-type service valves, compressor may be "isolated", thereby avoiding necessity of discharging entire system. See *Compressor Isolating or related paragraphs in this Section*.

FRIGIDAIRE COMPRESSOR

When checking oil level on these compressors, it may be necessary to remove compressor from vehicle, as filler plug is located near bottom of compressor. After oil level is checked, system must be evacuated and recharged. See *Frigidaire Compressor in this Section*.

COMPRESSOR ISOLATING

On York and Tecumseh compressors with stem-type service valves (at compressor suction and discharge ports), it will not be necessary to discharge entire system in order to service compressor. See *York & Tecumseh Compressors and Compressor Replacement in this Section*.

REFRIGERATION OIL

Only new, pure, moisture-free refrigeration oil should be used in the air conditioning system. This oil is highly refined with moisture content less than 10 parts per million.

Refrigeration oil container must be kept tightly closed at all times when not in use, or moisture will be absorbed and introduced into the refrigeration system.

AIR-TEMP COMPRESSOR

CHRYSLER CORP.

Oil capacity is 10-12 oz. in 2-cylinder compressors and 9-10 oz. in 6-cylinder compressors. Oil level need not be checked each time system is discharged, unless refrigerant charge has been lost or significant oil loss is indicated. Quantity of oil in compressor sump is measured using dipstick. See *Fig. 1*.

2-Cylinder (RV-2) Oil Level Check

1) Slowly discharge system. Near completion of discharge, oil dipstick should be flushed with freon to insure a clean dipstick.

2) Slowly remove compressor filler plug (some residual pressure will remain after discharge). Insert oil lever dipstick until it bottoms in sump. Oil lever on stick must be 3-3.4". If necessary, add recommended oil to bring level to specifications. Install filler plug and recharge system.

6-Cylinder (C-171) Oil Level Check

1) Slowly discharge system. Disconnect suction and discharge lines from compressor and remove compressor.

2) Drain oil from suction port and discard. Add 9 oz. of new refrigerant oil through suction port. Clean drain plug and put a light coat of sealant on threads. Install drain plug and tighten to 90-130 INCH lbs. (10-14.5 N.m).

3) Install compressor, connect suction and discharge lines and tighten. Use new gaskets to prevent leakage.

4) Evacuate system and recharge to specification.

Oil Level Check After Discharge

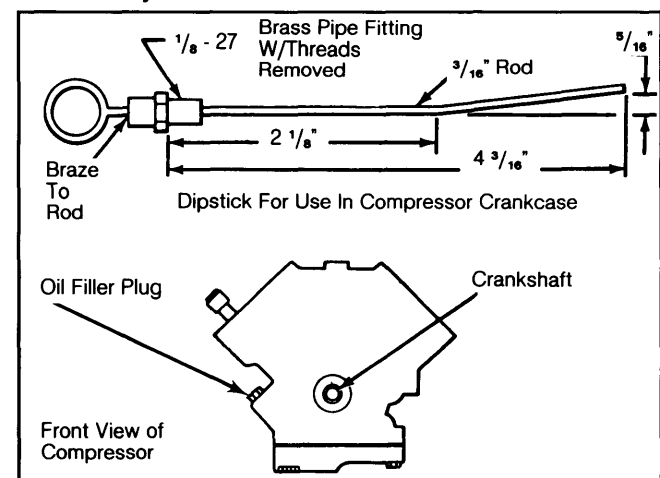
If using fast discharge method (with oil collector can attached to center discharge hose), measure amount of oil caught in can. Replace this amount with new oil. If following components are replaced, add specified additional amounts of oil:

AIR-TEMP OIL LEVELS

| Application | Specification |
|----------------------|---------------|
| Evaporator | 2 oz. |
| Condenser | 1 oz. |
| Receiver-Drier | 1 oz. |

NOTE: After adding oil, use standard dipstick method to determine exact oil level before recharging system.

Fig. 1: Air-Temp Compressor Oil Check Point and Dipstick for Chrysler



FRIGIDAIRE COMPRESSOR

GENERAL MOTORS

4 & 6-CYLINDER COMPRESSOR

A/C system with 6-cylinder compressor is fully charged with 10 oz. refrigerant oil. 4-cylinder compressor is fully charged with 6 oz. Optional overhead A/C system is fully charged with 13 oz. Adding additional oil is not required unless a definite oil loss has occurred.

NOTE: Do not reuse old oil.

On-Car Checking After Minor Repairs

1) With compressor in installed position and system fully discharged, loosen oil plug far enough to determine if oil will run out. If oil starts to run out, do not add additional oil other than amount shown for component replacement.

COMPRESSOR OIL CHECK (Cont.)

2) If oil does not run out and there is visible evidence of considerable oil loss somewhere in the system, add 4 ounces of new oil to the compressor after compensating for component replacement.

3) If oil does not run out and there is no visible evidence of a large oil leak, add 2 ounces of new oil to the compressor after repairing leak and adding proper amount to replaced components.

4) Oil can be added without removing the compressor, by using a special oil injector (J-7605-03) or by using the A/C service station unit as recommended by the manufacturer. If these are not available, remove compressor and add oil.

Off-Car Checking After Major Repair

1) Before performing repairs, if system is operable, run A/C for several minutes to stabilize. Turn off air conditioner and engine, discharge system completely, and remove compressor. Slowly remove oil drain plug, then drain and measure oil from compressor. Replace amounts as outlined below.

2) If new compressor is being installed, drain and measure oil from old compressor and add new oil to replacement compressor using described method below. If compressor is being overhauled, add one additional ounce of oil to amount being replaced.

3) If quantity drained is less than 4 ounces, add 6 ounces of replacement oil. If quantity drained is between 4 and 6 ounces, oil is properly distributed throughout the system; add same amount as drained. If quantity drained is more than 6 ounces, add ONLY 6 ounces.

NOTE: A-6 system will have 6 oz. of oil in accumulator and/or compressor. This is why measurement is required.

4) If compressor is inoperable, use the following method: Remove compressor, drain, measure, and discard the oil. If amount drained is more than 1½ ounces, and the system shows no sign of a major leak, add amount drained. If less than 1½ ounces is drained and system appears to have lost excessive oil, add 6 ounces to replacement compressor, or 7 ounces if compressor is being overhauled.

5) When replacing components, add additional amounts of oil as specified:

FRIGIDAIRE OIL LEVELS

| Application | Specification |
|----------------------|--------------------|
| Evaporator | 3 oz. |
| Condenser | 1 oz. |
| Receiver-Drier | 1 oz. |
| Accumulator | 1 oz. ¹ |

¹ — R-4 accumulator holds 2 oz. plus 1 oz. for desiccant.

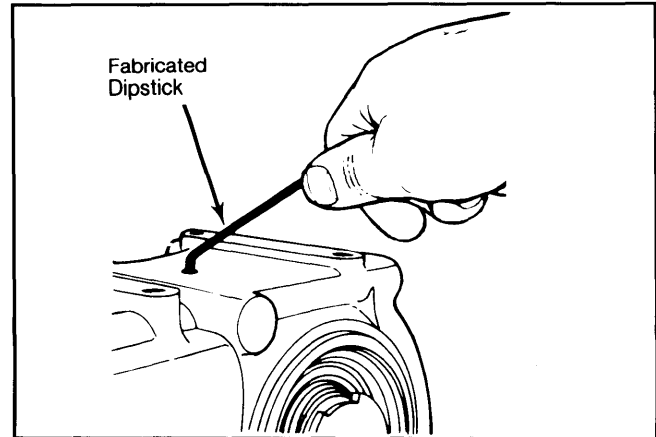
NOTE: If oil drained contains metal chips or other foreign material, replace receiver-drier and flush or replace other components as necessary.

TECUMSEH & YORK COMPRESSORS

FORD W/SCHRADER SERVICE VALVES

Check compressor oil level only if any portion of refrigerant system is being replaced, or if system was discharged due to a leak.

Fig. 2: Checking Compressor Oil Level Horizontally Mounted Unit



On horizontally mounted compressors, oil check hold is located on side of crankshaft which faces up. On opposite or downward side there is a corresponding boss provided on inner wall as an alternate oil check hole, for different mounting. When checking oil level on such a compressor, angle the dipstick such that it bottoms against lower side of compressor and not against boss.

1) After system has been charged, operate for approximately 10 minutes, or until pressures have stabilized (with ambient temperature of 60°F or higher).

2) Stop engine and discharge entire system using a suitable Schrader-Type service valve. Fabricate a suitable dipstick according to specifications (see Fig. 3). Remove oil filler plug and insert dipstick until it bottoms. If necessary, slightly rotate compressor crankshaft by hand so that dipstick will clear. Level on dipstick must be within specifications.

TECUMSEH COMPRESSOR OIL LEVEL

| Application | Measurement |
|------------------------|-------------|
| All Models | |
| Horizontal Mount | 7/8"-1 5/8" |
| Vertical Mount | 7/8"-1 3/8" |

FORD & JEEP W/STEM TYPE SERVICE VALVES

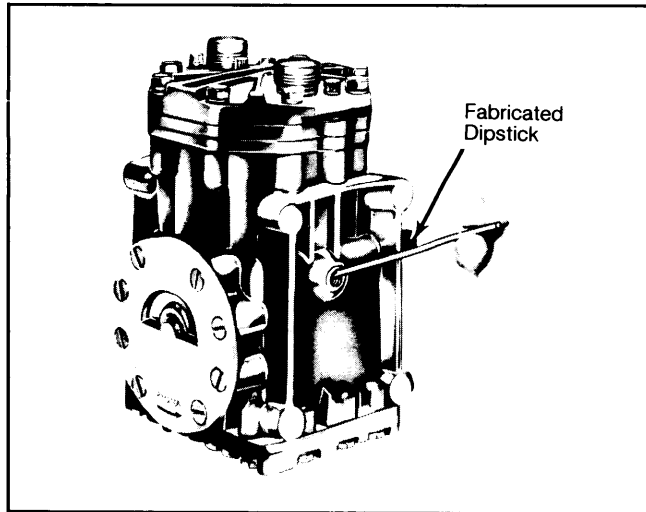
Oil level should be checked whenever the system is discharged for service part replacement, or if system has self-discharged due to component malfunction. Oil level is checked with compressor in operating position.

It is important when checking oil level that system has been operated and car interior temperature has cooled to desired setting. This is necessary to stabilize amount of oil in the system.

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

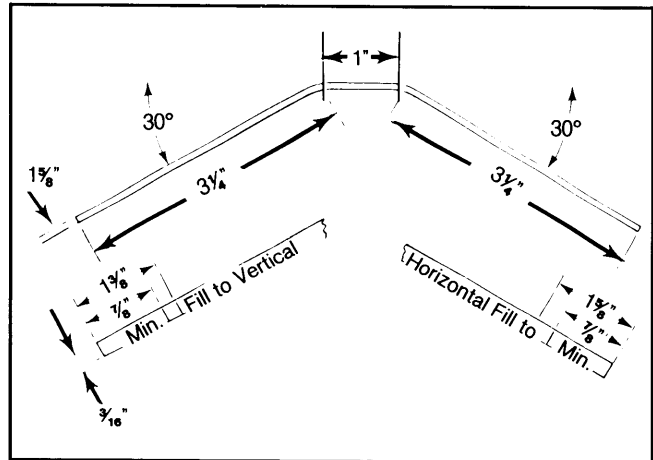
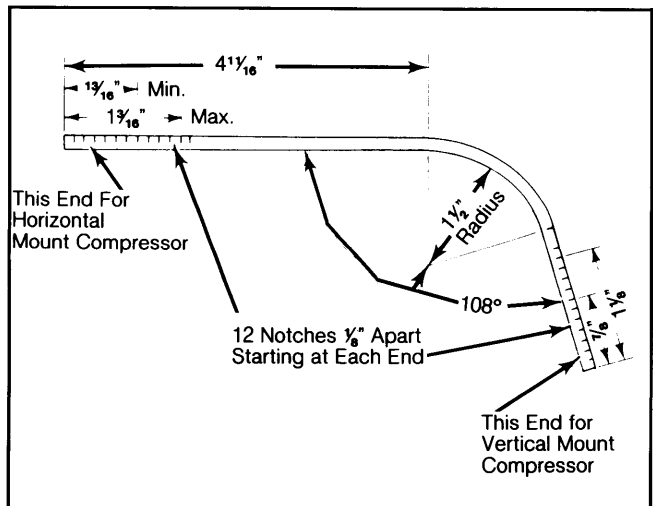


Fig. 5: Dimensions for York Compressor Oil Level Dipstick



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.