A/C COMPRESSOR REFRIGERANT OIL CHECKING

1993 Jeep Cherokee

1993 GENERAL SERVICING
Compressor Refrigerant Oil Checking

Chrysler Motors

* PLEASE READ THIS FIRST *

NOTE: For compressor application, see COMPRESSOR APPLICATIONS & BODY DESIGNATIONS in this article. DO NOT exceed A/C system refrigerant oil capacity when servicing system. See REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS in this article.

REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS

NOTE: Due to late changes, always refer to underhood A/C Specification Label in engine compartment or A/C compressor label while servicing A/C system. If A/C Specification Label and specifications in table differ, use label specifications.

REFRIGERANT OIL & REFRIGERANT CAPACITY TABLE (CARS)

Application	(1) Oil Ounces	Refrigerant Ounces
Chrysler Corp.		
All FWD Cars	(2) 7.3	32
Concorde, Intrepid & Vision	5.0	28
Laser & Talon	5.0	33

(1) - Total system capacity, unless otherwise noted.
(2) - With fixed displacement compressor. Use 8.7 ounces with variable displacement compressor.

REFRIGERANT OIL & REFRIGERANT CAPACITY TABLE (LIGHT TRUCKS & VANS)

Application	(1) Oil Ounces	Refrigerant Ounces
Chrysler Corp. (Except Jeep)		
Dakota	4.6	44
FWD Vans (2)		
With Rear Unit	13.4	50
Without Rear Unit	6.7	36
Pickup & Ramcharger	4.6	44
RWD Vans		
With Rear Unit	9.3	65
Without Rear Unit	7.3	45
Jeep		
Cherokee	4.6	38
Grand Cherokee (2)	8.0	28
Wrangler	4.6	32

(1) - Total system capacity, unless otherwise noted.
(2) - Models use R-134a refrigerant and PAG (ND8) Refrigerant Oil (Part No. 82300102).
(3) - Models with auxiliary unit may require additional refrigerant. See decal under hood for capacity.

(4) - Series codes are determined by fifth character of VIN code.
(5) - Models use PAG Refrigerant Oil (Part No. 12345923) and R-134a refrigerant.

COMPRESSOR APPLICATIONS

NOTE: Due to late changes, always refer to underhood A/C Specification Label in engine compartment or A/C compressor label while servicing A/C system. If A/C Specification Label and specifications differ, use label specifications.

COMPRESSOR APPLICATIONS TABLE (CARS)

Application	Compressor
Chrysler Corp.	
Concorde, Intrepid, Laser, Talon & Vision	Nippondenso 10PA17 10-Cyl.
Except Concorde, Intrepid, Laser, Talon & Vision	Nippondenso 6C-17 6-Cyl., Nippondenso 10PA17 10-Cyl., Sanden TR-105 10-Cyl., Sanden SD-709P 7-Cyl.

(1) - Body codes are determined by fourth character of VIN code.

COMPRESSOR APPLICATIONS TABLE (LIGHT TRUCKS & VANS)

Application	Compressor
Chrysler Corp. (Except Jeep)	
Dakota, Pickup & Ramcharger	Sanden SD-709 7-Cyl.
FWD Vans	Nippondenso 10PA17 10-Cyl.
RWD Vans	Sanden TR-105 10-Cyl.
Jeep	
Cherokee & Wrangler	Sanden SD-709 7-Cyl.
Grand Cherokee	Nippondenso 10PA17 10-Cyl.

(1) - Series codes are determined by fifth character of VIN code.

BODY DESIGNATIONS

BODY DESIGNATIONS TABLE (CHRYSLER CORP. CARS)

Body Designation (1)	Model
"A" Body	Acclaim, LeBaron Sedan & Spirit
"C" Body	Dynasty & New Yorker
"G" Body	Daytona
"J" Body	LeBaron Convertible/Coupe
"LH" Body	Concorde, Intrepid & Vision
"P" Body	Shadow & Sundance
"S" Body	Laser & Talon
"Y" Body	Fifth Avenue & Imperial

(1) - Body codes are determined by fifth character of VIN code.

BODY DESIGNATIONS TABLE (CHRYSLER CORP. LIGHT TRUCKS & VANS)

Model	Designation
Caravan	"D" & "K" Series
Dakota	"N" Series
Pickups (Full Size)	"D" & "W" Series
Ramcharger	"AD" & "AW" Series
Town & Country	"Y" Series
Vans (Full Size)	"B" Series
Voyager	"H" & "P" Series

REFRIGERANT OILS

Only NEW, pure, moisture-free refrigerant oil should be used in A/C systems. This oil is highly refined with a very low moisture content. Oil container must be tightly closed when not in use, or moisture from air will be absorbed into refrigerant oil.

Refrigerant R-12 based systems use mineral oil, while R-134a systems use synthetic/Polyalkylene Glycol (PAG) oil. Using a mineral oil based lubricant with R-134a systems will result in A/C compressor failure due to lack of proper lubrication.

Use ONLY specified oil for the appropriate system and A/C compressor. Always check the underhood A/C specification label or A/C compressor label before adding refrigerant oil to A/C compressor/system. The following types of R-134a refrigerant oil are currently available.

Chrysler/Jeep/Eagle
PAG (ND8) Refrigerant Oil (82300102)

NOTE: Synthetic/PAG oil absorbs moisture very rapidly, 2.3-5.6 percent by weight as compared to a mineral oil absorption rate of .005 percent by weight.

SERVICING PRECAUTIONS

DISCHARGING SYSTEM

If compressor has stem-type service valves, it can be isolated and removed without discharging entire system. Otherwise, discharge A/C system using approved refrigerant recovery/recycling equipment before loosening any fittings.

DISCONNECTING LINES & FITTINGS

After system is discharged, carefully clean area around all fittings to be opened. Always use 2 wrenches when loosening or tightening fittings. Some refrigerant lines are connected with a coupling. Special tools may be required to disconnect lines. Cap all openings as soon as lines are removed. DO NOT remove caps until ready to connect lines and fittings.

NOTE: All R-134a based systems use 1/2-16 ACME threaded fittings. Ensure all replacement parts match the connections of the system being worked on.

CONNECTING LINES & FITTINGS

Always use NEW gasket or "O" ring when connecting lines or fittings. Coat "O" ring with refrigerant oil, and ensure it is not

twisted during installation. To prevent damage to lines and fittings, always use 2 wrenches.

PLACING SYSTEM IN OPERATION

After component service or replacement has been completed, evacuate system thoroughly with a vacuum pump. Charge system with proper amount of refrigerant. See REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS in this article. Perform leak test. After system has been leak tested, check system operation.

NOTE: A/C systems normally will not need additional refrigerant oil unless oil loss has occurred due to ruptured lines, leaking compressor seals, compressor overhaul or component replacement.

CHECKING COMPRESSOR OIL

NIPPONDENSO 6C-17 6-CYLINDER

1) Slowly discharge system using approved refrigerant recovery/recycling equipment. Disconnect refrigerant hoses at compressor. Remove compressor bolts and compressor.

2) Remove suction port on top of compressor, and drain oil. Add proper amount of refrigerant oil to compressor (total system capacity minus amount retained in components that have not been replaced). See 6C-17 COMPONENT REFRIGERANT OIL CAPACITIES table. See REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS in this article for total system capacity.

3) Install compressor. Evacuate and recharge A/C system. Perform leak test.

6C-17 COMPONENT REFRIGERANT OIL CAPACITIES TABLE

Component	Ounces
Condenser	1
Evaporator	
Front	2
Rear (If Equipped)	2
Receiver-Drier	1

NIPPONDENSO 10PA17 10-CYLINDER

Chrysler Motors (Laser & Talon)

Add specified amount if components are replaced. See 10PA17 COMPONENT REFRIGERANT OIL CAPACITIES table.

Chrysler Motors (Except Laser & Talon)

1) Slowly discharge system using approved refrigerant recovery/recycling equipment. Disconnect refrigerant hoses at compressor. Remove compressor bolts and compressor.

2) Remove suction port on top of compressor, and drain oil. Add proper amount of refrigerant oil to compressor (total system capacity minus amount retained in components that have not been replaced). See 10PA17 COMPONENT REFRIGERANT OIL CAPACITIES table. See REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS in this article for total system capacity.

3) Install compressor. Evacuate and recharge A/C system. Perform leak test.

10PA17 COMPONENT REFRIGERANT OIL CAPACITIES TABLE

Component	Ounces
Laser & Talon	
Compressor	1
Condenser	2/3
Evaporator	1
Receiver-Drier	1/3
Refrigerant Lines	1/3
Except Laser & Talon	
Condenser	1
Evaporator	
Front	2
Rear (If Equipped)	2
Receiver-Drier	1

SANDEN SD-709 & SD-709P 7-CYLINDER

1) Start and operate engine at high idle with A/C on for 15 minutes. Stop engine. Connect manifold gauge set to compressor service valves. Ensure valves on gauge set are closed. Place both valves on compressor in mid position. Start engine, and operate A/C.

2) Slowly turn compressor suction valve clockwise toward closed (front-seated) position. When suction pressure is reduced to zero, turn engine and compressor off, and quickly turn suction valve stem inward to full front-seated position. Turn discharge valve into front-seated position.

3) Loosen oil level plug to release internal pressure in compressor. Compressor is now isolated from rest of system, and service valves can be removed from compressor.

4) Remove compressor oil plug. Look through oil fill plug hole, and rotate compressor crankshaft to allow Dipstick (6465) to be fully inserted. Insert Dipstick (6465), and measure oil. See Fig. 1. Each mark on dipstick represents one increment.

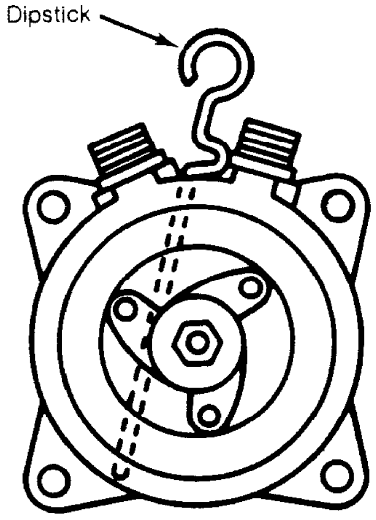

Fig. 1: Checking Compressor Oil Level
Courtesy of Sanden International U.S.A., Inc.

5) Place angle gauge across flat areas on mounting ears. Determine amount of oil needed based on mounting angle. See SD-709 &

SD-709P COMPRESSOR OIL INCREMENT CAPACITIES table.

6) If necessary, correct compressor oil level. Install compressor oil plug, and tighten it to 72-108 INCH lbs. (8-12 N.m). Evacuate and recharge A/C system. Perform leak test.

SD-709 & SD-709P COMPRESSOR OIL INCREMENT CAPACITIES TABLE

Mounting Angle	Oil Level (Increments)
0°	3-5
10°	4-6
20°	5-7
30°	6-8
40°	7-9
50°	8-10
60°	9-11
90°	10-12

SANDEN TR-105 10-CYLINDER

1) Slowly discharge system using approved refrigerant recovery/recycling equipment. Disconnect refrigerant hoses at compressor. Remove compressor bolts and compressor.

2) Remove suction port on top of compressor, and drain oil. When repairing A/C systems with excessive leak(s), add additional oil.

3) Add proper amount of refrigerant oil to compressor (total system capacity minus amount retained in components that have not been replaced). See TR-105 COMPONENT REFRIGERANT OIL CAPACITIES table. See REFRIGERANT OIL & REFRIGERANT SPECIFICATIONS in this article for total system capacity.

4) Install compressor. Evacuate and recharge A/C system. Perform leak test.

TR-105 COMPONENT REFRIGERANT OIL CAPACITIES TABLE

Component	Ounces
Condenser	1
Evaporator	
Front	2
Rear (If Equipped)	2
Receiver-Drier	1