

A/C COMPRESSOR REFRIGERANT OIL CHECKING

1998 GENERAL SERVICING General Motors Corp. - Compressor Refrigerant Oil Checking

BODY DESIGNATIONS

NOTE: Always refer to underhood A/C specification label in engine compartment or A/C compressor label while servicing A/C system. If engine compartment/compressor label specifications differ from specifications in this article, use underhood/compressor label specifications.

BODY DESIGNATIONS

Model	(1) Body Designation
Achieva, Cutlass, Grand Am, Malibu & Skylark	"N" Body
Aurora & Riviera	"G" Body
Bonneville, Eighty Eight LeSabre, LSS & Regency	"H" Body
Camaro & Firebird	"F" Body
Catera	"V" Body
Cavalier & Sunfire	"J" Body
Century, Grand Prix, Intrigue, Lumina, Monte Carlo & Regal	"W" Body
Concours, DeVille & Seville	"K" Body
Corvette	"Y" Body
Eldorado	"E" Body
Metro	"M" Body
Park Avenue	"C" Body
Prizm	"S" Body
Saturn	"Z" Body
(1) Body codes are determined by fourth character of VIN code.	

REFRIGERANT OIL & REFRIGERANT CAPACITY SPECIFICATIONS

NOTE: DO NOT exceed A/C system refrigerant oil capacity when servicing system.

REFRIGERANT OIL & R-134a REFRIGERANT CAPACITY

Application	(1) Oil/Ounces	Refrigerant/Ounces
"C" Body	9.0	32.0
"E" & "K" Bodies	8.0	32.0
"F" Body	9.0	24.0
"G" Body		
With HD6/HT6 Compressor	8.0	32.0
With V5 Compressor	9.0	32.0

"H" Body	9.0	32.0
"J" Body	9.0	24.0
"M" Body	3.4	19.0-21.0
"N" Body	9.0	(2)
"S" Body	(3) 4.1	22.9-26.5
"V" Body	9.0	33.5
"W" Body	9.0	30.0
"Y" Body	9.0	26.0
"Z" Body	5.0	24.0
<p>(1) Total system capacity, unless otherwise noted. Refer to underhood A/C specification label in engine compartment for specified oil type.</p> <p>(2) Refrigerant capacity for Achieva, Grand Am and Skylark is 36.0 ounces. Refrigerant capacity for Cutlass and Malibu is 28.0 ounces.</p> <p>(3) Compressor oil capacity.</p>		

REFRIGERANT OILS

NOTE: **Use ONLY the specified oil for the A/C system or compressor. Always check the underhood A/C specification label or A/C compressor label before adding refrigerant oil to A/C compressor/system.**

Use only NEW, moisture-free refrigerant oil in A/C systems. Refrigerant 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-134a systems use Polyalkylene Glycol (PAG) refrigerant oil. Using a mineral oil based lubricant with R-134a systems will result in A/C compressor failure due to lack of proper lubrication.

All compressors have different lubrication requirements and use different Polyalkylene Glycol (PAG) refrigerant oils. Use only the specified PAG refrigerant 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.

General Motors

On all models except Saturn, use PAG Refrigerant Oil (Part No. 12345923). On Saturn, use Saturn PAG Refrigerant Oil.

NOTE: **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

Discharge A/C system, using approved refrigerant recovery/recycling equipment before loosening any fittings. Follow refrigerant recovery/recycling equipment manufacturer's instructions.

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 spring-lock coupling. Special tools may be required to disconnect lines. Cap all openings as soon as lines are removed. DO NOT remove service valve 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" rings when connecting lines or fittings. Coat "O" rings with NEW refrigerant oil, and ensure it is not twisted during installation. To prevent damage to lines and fittings, always use 2 wrenches or specified tools. Keep refrigerant oil off fitting threads. Long term contact of oil on threads may cause future damage to threads.

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 & R** -134a REFRIGERANT CAPACITY TABLE. 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

HARRISON HD6/HT6, HD6/HR-6HE 6-CYL., V5 5-CYL. & V7 7-CYL.

NOTE: Replacement compressor may be shipped with 8-9 ounces of NEW refrigerant oil. Drain NEW shipping refrigerant oil into a clean container and retain for later use.

1. Operate system for several minutes to stabilize system, if possible. Turn engine off. Discharge A/C system, using approved refrigerant recovery/recycling/recharging equipment. Remove compressor. Drain and measure refrigerant oil from old compressor through suction and discharge ports, and drain plug.
2. If no compressor oil leaks exist and more than one ounce is drained, add drained amount using NEW refrigerant oil. If less than one ounce is drained from old compressor, add 2 ounces of NEW refrigerant

oil.

3. When replacing other A/C components, add specified amount of NEW refrigerant oil to component. See **HD6/HT6, HD6/HR-6HE, V5 & V7 COMPONENT REFRIGERANT OIL CAPACITIES** table. Install compressor drain plug and compressor. Evacuate and charge system. Perform leak test. Ensure A/C system is operating properly.

NOTE: **Approximately 3 ounces of refrigerant oil, suspended in refrigerant, will be lost due to a large, abrupt leak. When replacing a faulty A/C component, add amount of NEW oil specified for component plus 3 ounces to compensate for oil loss. If oil cannot easily be added to component, add it to accumulator.**

HD6/HT6, HD6/HR-6HE V5 & V7 COMPONENT REFRIGERANT OIL CAPACITIES

Component	Ounces
Accumulator/Receiver-Drier	
Except "F", "N", "V" & "W" Bodies	3.5
"F", "N" & "V" Bodies	(1)
"W" Body	(2)
Compressor	
"C" Body	(3)
"E", "K", "V" & "Y" Bodies	2.0
"F", "G", "H", "J", "P" & "N" Bodies	(4)
"W" Body	(2)
Condenser	
Except "W" Body	1.0
"W" Body	(2)
Evaporator	
Except "U" & "W" Bodies	3.0
"U" Series	(2)
(1) Add amount drained from old accumulator/receiver-drier plus one ounce.	
(2) Information not available at time of publication.	
(3) Ensure replacement compressor contains the same amount of NEW refrigerant oil as was drained from old compressor.	
(4) Drain and measure refrigerant oil from old compressor. If old compressor had less than one ounce, add 2 ounces of NEW refrigerant oil to replacement compressor. If old compressor had more than one ounce, add the same amount of NEW refrigerant oil to replacement compressor.	

NIPPONDENSO 10-CYLINDER

Metro

1. Discharge A/C system, using approved refrigerant recovery/recycling equipment. Remove compressor. Drain, measure and discard refrigerant oil from old compressor. Drain NEW refrigerant oil from replacement compressor if necessary. Add NEW refrigerant oil to replacement compressor equal to amount drained from oil compressor.
2. Add specified amount of refrigerant oil to components that are replaced during compressor replacement. See **NIPPONDENSO COMPONENT REFRIGERANT OIL CAPACITIES** table. Install compressor. Evacuate and charge system. Perform leak test.

NIPPONDENSO COMPONENT REFRIGERANT OIL CAPACITIES

Component	Ounces
Compressor	3.0
Condenser	0.7-1.0
Receiver-Drier	0.3
System Total	3.4

ZEXEL ROTARY VANE

1. Slowly discharge A/C system, using approved refrigerant recovery/recycling equipment. Remove old A/C compressor. Install compressor oil drain Adapters (SA9149AC-5 and SA9149AC-6) to service ports. Drain compressor oil from high-side port first and then low-side port. Rotate compressor clutch plate in both directions to remove oil from compressor. Measure oil amount drained, and discard oil.
2. New compressors are shipped with 5 ounces of NEW Saturn PAG refrigerant oil and nitrogen gas. Open compressor sealing plugs slowly to release nitrogen gas. Drain and measure oil into a clean container (this oil will be used in new compressor).
3. Ensure amount of refrigerant oil in replacement compressor is the same as amount removed from old compressor plus amount removed during refrigerant recovery. This represents total system capacity, minus amount retained in components that have not been replaced. See **ZEXEL COMPONENT REFRIGERANT OIL CAPACITIES** table. Install compressor. Evacuate, charge and leak test A/C system. Ensure A/C system operates properly.

ZEXEL COMPONENT REFRIGERANT OIL CAPACITIES

Component	Ounces
Condenser	0.8
Evaporator	2.3
Receiver-Drier	1.0
Large Refrigerant Loss	(1)
System Total	5.0

(1) If a sudden refrigerant loss occurs due to a large leak (hose rupture or collision), approximately 3 ounces of refrigerant oil will be lost. After repairs have been performed, add 3 ounces of NEW refrigerant oil, plus amount required for component replaced.