VOLVO
Volvo Trucks North America, Inc.
Greensboro, NC USA

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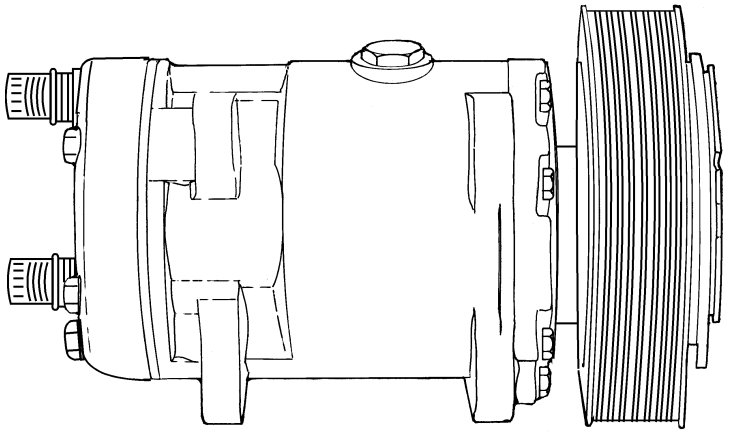
This Service Bulletin is a supplement to Service Manual, Climate Control, R134a, V776–874–630SM.

A/C Compressor Oil Level Check

(Effective from June 1998)



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The following bulletin gives detailed information for checking the compressor oil level on R134a air conditioning systems. Trucks with R134a refrigerant are factory-equipped with Sanden SD7H15HD compressors.

These procedures and specifications **replace** the existing procedures “Checking Compressor Oil Level,” found in Service Manual, *Climate Control, R134a*. Make a note in this service manual referring to this supplement.

This bulletin contains the following information:

General

General Precautions

See also “A/C Compressor Oil Level Check” page 1.

Note: The compressor oil level should be checked any time the A/C system has experienced a rapid and significant refrigerant leak or when an obvious refrigerant oil leak is observed. Additionally, annual air conditioning preventive maintenance inspections may suggest checking the oil compressor level.

Federal Regulations

The Environmental Protection Agency (EPA) requires that refrigerants be recovered and recycled and not released into the atmosphere. Regulations concerning the proper handling of refrigerants, certification and training of technicians, tooling, and other environmental law can be obtained by calling the EPA Hotline at 1–800–292–1996.

Service Warnings and Safety Precautions

⚠ WARNING

Always observe safe working habits when working with refrigerants. To prevent damage to the compressor and A/C system or possible personal injury, adhere to the following precautions.

- Only R134a certified technicians should perform recovery/recycling/recharging procedures.
- The work area is to be well ventilated and all gases and other hazardous materials put away. Avoid breathing the R134a vapor or mist. Exposure can irritate eyes, nose and throat.
- Do not smoke while servicing an A/C system.
- Because refrigerant evaporates very rapidly at temperatures above freezing (at atmospheric pressure), it tends to freeze everything it contacts. Protective clothing should be worn, including safety glasses and gloves, when servicing an A/C system.
- R134a and R–12 are **not** compatible and the R–12 recycling equipment should not be used to service R134a systems.
- R134a service equipment or A/C systems should not be pressure tested or leak tested with compressed air. Some mixtures of air and R134a have been shown to be combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion.
- Never run the engine when charging the system. Use the charging station.
- Do not attempt to charge the system without the proper equipment.

Note: For additional health and safety information, contact the refrigerant and lubricant manufacturers.

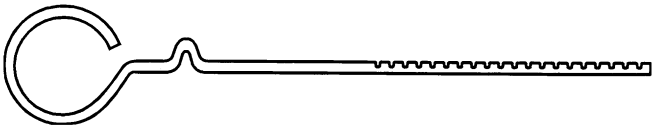
Tools

Special Tools

See also “A/C Compressor Oil Level Check” page 1.

The following special tools are required for work on R-12 climate control systems. These tools can be ordered from the vendors listed.

Compressor Oil Level Dipstick



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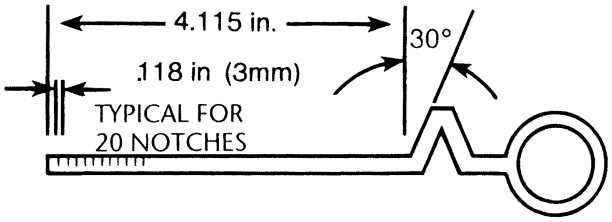
Kent Moore: P/N J–43338
1–800–328–6657

For accurate oil level measurement, a Kent Moore compressor oil level dipstick is recommended.



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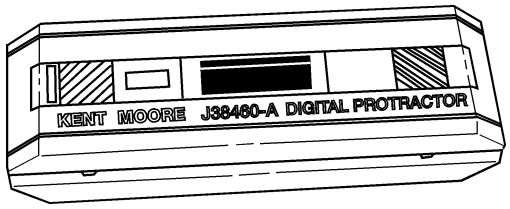
Note: If tool J43338 is not available, an oil dipstick can be fabricated from a welding rod, coat hanger, etc., using these specifications.

Digital Protractor



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Kent Moore: P/N J–38460
Call 1–800–328–6657

Design and Function

A/C Compressor Oil

See also “A/C Compressor Oil Level Check” page 1.

R134a System

Sanden refrigerant compressors built for use with R134a refrigerant are factory charged with Sanden SP20 Poly Alkaline Glycol (PAG) oil. Only Sanden SP20 PAG oil or equivalent PAG oils may be used when adding to or changing the compressor oil on R134a air conditioning systems.

Approved oils for Sanden R134a compressors
Sanden SP20 PAG oil
Sercon PAG II

⚠ CAUTION

NEVER mix PAG oils used in R134a air conditioning systems with mineral based oils used in R-12 air conditioning systems. These oils are not compatible. Failure to follow this precaution can result in serious component damage or failure.

Service Procedures

8743-06-03-01 A/C Compressor Oil Level, Checking

See also “A/C Compressor Oil Level Check” page 1.

1

WARNING

Personal injury hazard. Do not run the engine at idle without setting the parking brakes. Failure to set the brakes with the transmission out of gear may cause unexpected vehicle movement, resulting in personal injury and damage to the vehicle.

Run the engine with the A/C engaged (compressor running) for 10 minutes at idle.

2

WARNING

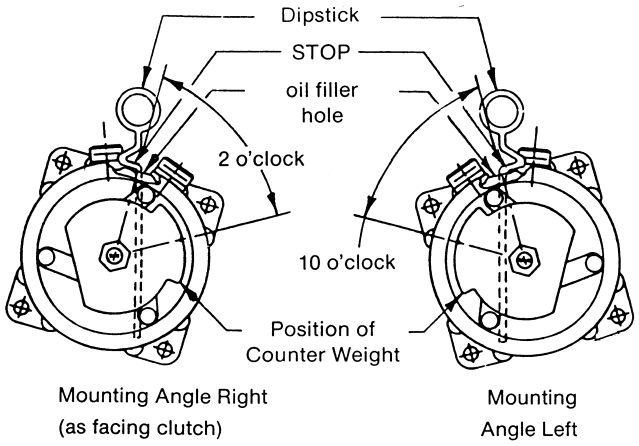
Exercise caution when working around engine components after running the engine. Components will be hot and can cause serious burns.

Recover the refrigerant using approved service procedures.

3

Remove or make adjustments as necessary to the compressor mounting, hoses, or other hardware that may interfere with gaining access to the oil filler plug. The oil filler plug and the area above it must be unobstructed to allow insertion of the oil check dipstick.

4



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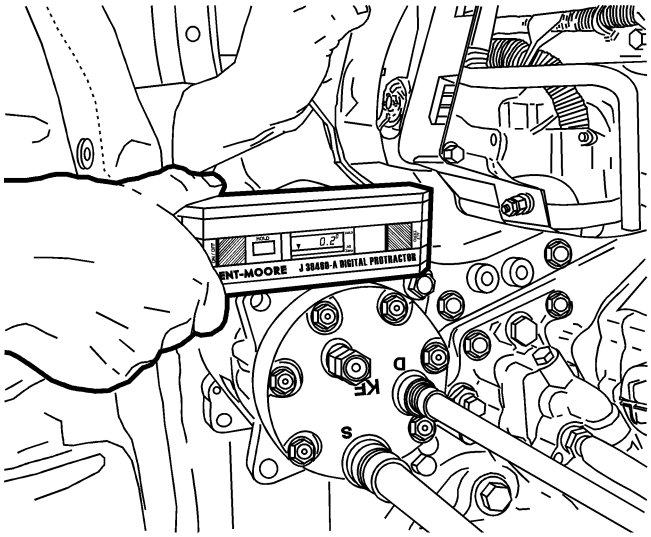
Determine if the compressor is an “angle right” or “angle left” mounting. See illustration. Turn the compressor clutch plate hex nut with a wrench to the 2 o’clock position for angle right mounting, or to the 10 o’clock position for an angle left mounting.

Note: A notch is cut in the compressor clutch plate to help reference the counterweight position.

5



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Determine the mounting angle of the compressor. To do this, place a digital protractor, P/N J–38460 (or equivalent tool) across the flat surfaces of the two mounting ears on the compressor. J–38460

Note: It may be necessary to move mounting hardware to position the digital protractor across the mounting ears. Upper or lower mounting ears may be used. The digital protractor will also work right side up or up side down. Consult the digital protractor's owner's manual for further operating instructions.

6

Remove the oil filler plug and insert oil dipstick J–43338. With the dipstick properly inserted, the angled stop should be resting on the top of the compressor with the angle pointing in toward the compressor shaft. See illustration for step 5. J–43338

7

Remove the dipstick and count the number of increments covered by the oil.

8

Compare the increment number obtained in step 7 and the mounting angle obtained in step 5 with the chart below. Add or remove oil as necessary to bring the oil to the proper level. See "A/C Compressor Oil" page 4 for approved oils.

Mounting angle in degrees	Acceptable oil level in increments
0°	5-7
10°	6-8
20°	7-9
30°	8-10
40°	9-11
50°	10-12
60°	11-13
90°	16-18

Example: If the compressor mounting angle is 20 degrees and the dipstick shows the oil level at increment 4, add oil in one fluid ounce increments until the oil level is at increment 8.

9

Check the O-Ring at the oil filler plug and the seat at the compressor. Reinstall the filler plug. Torque the plug to 15–25 Nm (11–18 ft-lb). 15–25 Nm (11–18 ft-lb)

Note: Do not over-tighten the plug to stop a leak. If the plug leaks, remove the plug, replace the O-ring and retorque.

10

Re-install and adjust any hardware as needed, using approved service procedures.

11

If all other A/C repairs are complete, evacuate and recharge the system using approved service procedures.