

SMCS - 7320, 7337

All Applicable Machines

Reference: Service Manual Module; SENR5664; "Air Conditioning and Heating"

For maximum service life of all air conditioner components use the following tips.

Low refrigerant charge will cause loss of cooling and loss of compressor lubrication. Either of these will result in failure of the compressor.

Overcharge of refrigerant will cause loss of cooling and liquid slugging of the compressor. An overcharged system will fail at a rate that is more than two times the rate of failure of an undercharged system.

Charge R134a system by refrigerant weight. See Service Manual Module; SENR5664-04; "Air Conditioning and Heating".

Use only Caterpillar 153-8538 Air Conditioner Refrigerant Flushing Solution or Caterpillar approved Refrigerant Flushing Solution to remove foreign material (contamination) from the system. See Service Manual Module; SENR5664-04; "Air Conditioning and Heating".

Remove charging lines properly or a low charge condition will result. Charge accuracy can only be obtained if the charging lines are emptied of all refrigerant using the following steps.

1. With the compressor operating, close the high side valve (compressor to condenser/pressure side) at the charge point and disconnect this hose from the system.
2. With the high side valve end removed, open the high side and low side valves (return to compressor) at the gauge set or control panel. The refrigerant in the lines will be removed by the compressor through the low side hose.
3. Close the low side valve at the charge point connection with the system and remove from the now charged system.

Too much oil in the system will contribute to a low refrigerant charge, if proper charging and hose removal are not followed.

Add compressor lubricant per Service Manual Module; SENR5664-04; "Air Conditioning and Heating".

A bouncing or unsteady pressure reading, on the high side, with the machine running, and a steady reading on the low side, indicates that there is air in the system.

Some moisture does penetrate hoses that are used in R134a systems. Change the dryer or accumulator with desiccant annually. Moisture causes sludge, plugged systems and ice at the orifice device.

In R134a systems, hoses may lose as much as 0.18 Hg (.04 lb) of refrigerant per foot per year. The loss of refrigerant results in loss of cooling, lost compressor lubrication and compressor failure.

Under some conditions (temperatures greater than 32°C (90°F) and high humidity) gauge readings, with a low charge of R134a refrigerant, can imitate overcharge. Inaccurate gauge readings can result in lost cooling and compressor failure.

Refrigerant that is removed from a system cannot be accurately weighed. A 20 to 30 percent error can occur. This error is a result of oil that is removed and inaccuracies of the recovery devices.

Check the scale for accuracy every 30 days or after every 30 jobs, whichever comes first.

After recovering a system, if system pressure rises above .00 kPa (0 psi) within five minutes, the system must be re-recovered until the pressure does not increase. This will empty the accumulator of refrigerant.

Frost on the accumulator is a normal condition. Thickness of the frost will depend on the ambient temperature and the humidity.

Check the compressor function by disconnecting the in line dryer and measuring the compressor suction pressure. There should be between a 24 and 28 inch Hg vacuum. Caution: Do not run the compressor for more than two minutes in a vacuum.

Remove the in line dryers with quick disconnects, per Service Manual Module; SENR5664-04; "Air Conditioning and Heating". This will allow recovery of oil and refrigerant from the dryer.

Check the belt tension and condition per Service Manual Module; SENR5664-04; "Air Conditioning and Heating".

Perform regular maintenance on RRR carts and change oil in vacuum pumps.

Always use a backing wrench when working on HVAC line fittings. Failure to use a backing wrench results in twisted lines, pinched lines and leaks.

Secure line and wires to prevent chaffing and breakage.

Black sludge formation is caused by moisture in R134a system or cross charging R134a and R12 refrigerants.

The presence of white foam during recovery is normal. It is a mixture of oil and refrigerant.

Loss of cooling and/or compressor failure are caused by any of the following conditions: Low charge
Overcharge Too much oil Dirty or plugged filters Dirty or plugged condenser Dirty or plugged evaporator
Dirty or plugged orifice tube/expansion valve Moisture in the system Use of improper refrigerant Cab or
duct air leaks

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