



Service Repair Manual

Model

322N EXCAVATOR

Product: EXCAVATOR

Model: 322-A N EXCAVATOR 9JL

Configuration: 322 L, 322 LN AND 322 N EXCAVATORS 9JL00001-UP (MACHINE) POWERED BY 3116 ENGINE

Disassembly and Assembly

Air Conditioning and Heating R134a for All Caterpillar Machines

Media Number -SEN5664-31

Publication Date -01/05/2015

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General Information

SMCS - 1808; 7309

Refrigeration System



Personal injury can result from contact with refrigerant.

This system is under pressure at all times, even if the engine is not running. Heat should never be applied to a charged system.

Contact with refrigerant can cause frost bite. Keep face and hands away to help prevent injury.

Protective goggles must always be worn when refrigerant lines are opened, even if the gauges indicate the system is empty of refrigerant.

Always use caution when a fitting is removed. Slowly loosen the fitting. If the system is still under pressure, evacuate the system recovering the refrigerant before removing the fitting.

Personal injury or death can result from inhaling refrigerant through a lit cigarette.

Inhaling air conditioner refrigerant gas through a lit cigarette or other smoking method or inhaling fumes released from a flame contacting air conditioner refrigerant gas, can cause bodily harm or death.

Do not smoke when servicing air conditioners or wherever refrigerant gas may be present.

Before any checks of the air conditioning and heating system are made, move the machine to a smooth horizontal surface. Lower all implements

to the ground. Make sure the transmission is in neutral or park and that the parking brake is engaged. Keep all other personnel away from the machine or where they can be seen.



WARNING

Personal injury can result from hot coolant. Any contact with hot coolant or with steam can cause severe burns. Allow cooling system components to cool before the cooling system is drained.

- All refrigerant lines that are metal or flexible hose must be free of sharp bends. Also, do not use a refrigerant line that is kinked. Sharp bends will cause a restriction in the refrigerant flow. Restrictions in the refrigerant lines are identified by cold spots or frost on the line at the location of the restriction. Restrictions in the lines reduce the performance and the efficiency of the system.
- The radius of bends in the flexible hose must never be less than ten times the outside diameter of the hose.
- Do not allow the flexible hoses to come within 63.5 mm (2.50 inch) of the exhaust manifold.
- The hoses need to be inspected yearly for leaks and for hardness. Conduct a leak test on all the hoses and the lines. Refer to the Testing and Adjusting, "Refrigerant Leakage - Test" section. Replace hoses if leaks or hardness are in the hoses. Replace hoses with new hose that is sealed and free of contaminants.
- The correct use of wrenches is important when connections are made. The type of wrench that is used is also important. Only use wrenches that are made for use with tube-type fittings. When a hose is connected or disconnected from the system, use a wrench on the fitting and use a wrench on the nut. When a metal line is connected or disconnected from the system, use a wrench on the fitting and use a wrench on the nut.
- Install protective plugs or protective caps on all components and hoses that are disconnected or removed.
- O-ring seals and O-ring seats must be in good condition. Small cuts, scratches, or particles of dirt will cause a leak in the system. Put new mineral oil (397-7507) on all new O-ring seals at the time of installation. Do not use any sealant on connections.
- Dust caps on the compressor block fittings are the primary seals on the air conditioning system.
- All machines should have an identification tag that specifies the refrigerant charge for the machine. The tag should be located in the operator compartment.

- If water is in the vents, check the non-return valve. If water leaks from the air conditioning system, check the non-return valve. The non-return valve should have the proper position and the proper direction.
- If engine coolant is leaking into the operator compartment, check for loose clamps on the heater hoses.

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446 and 446B Backhoe Loaders, Lexion 450 Combine, 3114 and 3116 Engines, IT18F Integrated Toolcarrier, D6M Track-Type Tractor and 928F, 950F and 950G Wheel Loaders

Media Number -SEN3611-18

Publication Date -01/05/2009

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i01928293

Fuel Priming Pump and Primary Fuel Filter - Remove and Install

SMCS - 1258-010; 1260-010

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat products.

Dispose of all fluids according to local regulations and mandates.

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