



Service Manual

272D SKID STEER LOADER

GSL00001-UP

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Product: SKID STEER LOADER
Model: 272D SKID STEER LOADER GSL
Configuration: 272D Skid Steer Loader GSL00001-UP (MACHINE)

Disassembly and Assembly

Air Conditioning and Heating R134a for All Caterpillar Machines

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Air Conditioner Lines - Remove and Install

SMCS - 1808-010



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.

NOTICE

Never weld or solder any charged components.

Care must be taken during removal of air conditioner lines. Before disconnecting any tube fittings, refer to Testing and Adjusting, "Refrigerant Recovery" in order to recover all refrigerant from the system.

Place dust caps on all hoses and fittings upon disconnecting.

Do not fold or twist hoses when you are routing the new hoses onto the machine. Damage can occur to the inner layers of the hoses and damage can cause premature failure.

Reassemble fittings by using the correct torque values for assembly of the air conditioning unit. Refer to Specifications, SENR3130, "Torque Specifications" in order to find the correct torque value.

Use the following procedure to reassemble the connections.

Proper Technique for Assembly



Illustration 1

g01519272

1. Drip clean mineral oil onto the clean O-ring.



Illustration 2

g01519286

2. Place the O-ring on fitting.
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Illustration 3

g01519288

3. Oil the O-ring again.



Illustration 4

g01519290

4. Align fittings and ensure that the seal is seated correctly. Hand tighten the fittings together.

Note: DO NOT CROSS THREAD.



Illustration 5

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5. Tighten the connection with proper torque. Use a wrench to avoid twisting parts.

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General Information

SMCS - 1808; 7309

Refrigeration System



WARNING

Personal injury can result from contact with refrigerant.

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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.



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.