

A WARNING

SAFETY

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The proper and safe lubrication and maintenance procedures for this machine, recommended by Caterpillar, are outlined in the **LUBRICATION & MAINTENANCE GUIDE** for this machine.

Improper performance of lubrication or maintenance procedures is dangerous and could result in injury or death. Read and understand the LUBRICATION & MAINTENANCE GUIDE before performing any lubrication or maintenance.

The serviceman or mechanic may be unfamiliar with many of the systems on this machine. This makes it important to use caution when performing service work. A knowledge of the system and/or component is important before the removal or disassembly of any component.

Because of the size of some of the machine components, the serviceman or mechanic should check the weights noted in this Manual. Use proper lifting procedures when removing any components.

Following is a list of basic precautions that should always be observed.

1. Read and understand all Warning plates and decals on the machine before operating, lubricating or repairing the machine.
2. Always wear protective glasses and protective shoes when working around machines. In particular, wear protective glasses when pounding on any part of the machine or its attachments with a hammer or sledge. Use welders gloves, hood/goggles, apron and other protective clothing appropriate to the welding job being performed. Do not wear loose-fitting or torn clothing. Remove all rings from fingers when working on machinery.

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Do not operate this machine unless you have read and understand the instructions in the OPERATOR'S GUIDE. Improper machine operation is dangerous and could result in injury or death.

3. Disconnect battery and discharge any capacitors before starting to work on machine. Hang "Do Not Operate" tag in the Operator's compartment.
4. If possible, make all repairs with the machine parked on a level, hard surface. Block machine so it does not roll while working on or under machine.
5. Do not work on any vehicle that is supported only by lift jacks or a hoist. Always use blocks or jack stands to support the vehicle before performing any disassembly.
6. Relieve all pressure in air, oil or water systems before any lines, fittings or related items are disconnected or removed. Always make sure all raised components are blocked correctly and be alert for possible pressure when disconnecting any device from a system that utilizes pressure.
7. Lower the bucket, blade, ripper or other implements to the ground before performing any work on the machine. If this cannot be done, make sure the bucket, blade, ripper or other implement is blocked correctly to prevent it from dropping unexpectedly.
8. Use steps and grab handles when mounting or dismounting a machine. Clean any mud or debris from steps, walkways or work platforms before using. Always face machine when using steps, ladders and walkways. When it is not possible to use the designed access system, provide ladders, scaffolds, or work platforms to perform safe repair operations.

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9. To avoid back injury use a hoist when lifting components which weigh 50 lb. (23 kg) or more. Make sure all chains, hooks, slings, etc., are in good condition and are in the correct capacity. Be sure hooks are positioned correctly. Lifting eyes are not to be side loaded during a lifting operation.
10. To avoid burns, be alert for hot parts on machines which have just been stopped and hot fluids in lines, tubes and compartments.
11. Be careful when removing cover plates. Gradually back off the last two bolts or nuts located at opposite ends of the cover or device and pry cover loose to relieve any spring or other pressure, before removing them completely.
12. Be careful when removing filler caps, breathers and plugs on the machines. Hold a rag over the cap or plug to prevent being sprayed or splashed by liquids under pressure. The danger is even greater if the machine has just been stopped because fluids can be hot.
13. Always use tools that are in good condition and be sure you understand how to use them before performing any service work.
14. Reinstall all fasteners with same part number. Do not use a lesser quality fastener if replacements are necessary.
15. Repairs which require welding should be performed only with the benefit of the appropriate reference information and by personnel adequately trained and knowledgeable in welding procedures. Make reference to "Techniques of Structural Repair Course"-form number JEG03719. Determine type of metal being welded and select correct welding procedure and electrodes, rods or wire to provide a weld metal strength equivalent at least to that of parent metal.
16. Do not damage wiring during removal operations. Reinstall the wiring so it is not damaged nor will it be damaged in operation by contacting sharp corners, or by rubbing against some object or hot surface. Do not connect wiring to a line containing fluid.
17. Be sure all protective devices including guards and shields are properly installed and functioning correctly before starting a repair. If a guard or shield must be removed to perform the repair work, use extra caution.
18. Always use lift arm supports to keep bucket arms raised and bucket tilted down when maintenance or repair work is performed which requires the bucket in the raised position.
19. Loose or damaged fuel, lubricant and hydraulic lines, tubes and hoses can cause fires. Do not bend or strike high pressure lines or install ones which have been bent or damaged. Inspect lines, tubes and hoses carefully. Tighten connections to the correct torque and make sure that all clamps, guards and heat shields are installed correctly to prevent vibration, or rubbing against other parts and excessive heat during operation. Shields that protect against oil spray onto hot exhaust components in event of a line, tube or seal failure must be installed correctly.

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NOTICE

This form lists the contents of the complete Service Manual for this product. The items listed can be ordered separately. When items are updated or supplements added, they will be announced in PREVIEW and should be ordered as they become available. Refer to the SERVICE MANUAL CONTENTS microfiche, Form REG1139F, for current contents and form numbers of this manual.

SECTION	TITLE	FORM NO.
ENGINE (Index Tab)		
REG00501-01		
Spacer Plate Supplement	3304 & 3306 Engines	SENR7883
Specifications	3304 Vehicular Engine	SENR7590
Systems Operation, Testing & Adjusting	3304 Vehicular Engine	SENR7591
Disassembly and Assembly	3304 Vehicular Engine	REG00974
POWER TRAIN (Index Tab)		
REG00501-02		
Specifications	920 & 930 Power Train	SEN R7335
Systems Operation, Testing & Adjusting	920 & 930 Power Train	REG00560
Power Shift Transmission		
Testing & Adjusting	920 (41J, 62K, 75J), 930 (41 K, 71 H, 73U, 79J)	REG01322
Disassembly and Assembly	920 & 930 Power Train	REG00975
VEHICLE SYSTEMS (Index Tab)		
REG00501-12		
Specifications	920 & 930 Steering System	REG01615
Systems Operation, Testing & Adjusting	920 & 930 Steering System	REG00513
Service Manual	Supplemental Steering System	REG00939
Tee Test	Tee Test Tools	REG00910
Tee Test	920 & 930 Steering System	REG01200
Tee Test	Steering Tee Test Procedure — I	REG01193
Specifications	920 & 930 Air System and Brakes	SENR7413
Systems Operation, Testing & Adjusting	920 & 930 Air System and Brakes	REG00545
Specifications	920 & 930 Loader Hydraulic System	REG01271
Systems Operation, Testing & Adjusting	920 & 930 Loader Hydraulic System	REG00523
Tee Test	920 & 930 Hydraulic System	R EG00879
Tee Test	Flow Meter Tee Test Procedure — II	REG00880
Disassembly and Assembly	920 & 930 Vehicle Systems	R EG00976
Service Manual	Single Cylinder Air Compressor	REG01343
Service Manual	TU-FLO Air Compressors	REG00914
LUBRICATION & MAINTENANCE (Index Tab)		
REG00501-10		
Guide	920 & 930 Wheel Loaders	SEBU5394

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