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MANUAL PREVIEW

J.I. Case

Service Manual

W14, W14H & W14FL

Wheel Loader

S/n 9119673 & up

Volume 1 of 4

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Service Manual

CA-S-W14 LTE

W14, W14H, AND W14FL LOADERS, PIN 9119672 AND AFTER

TABLE OF CONTENTS

DIVISION/SECTION	SECTION NO.	FORM NO.
1 GENERAL		
Safety Rules, Service Manual Introduction, Location of Serial Numbers and Product Identification Number (PIN), and Torque Specifications	1001	8-41980
Maintenance and Lubrication Charts	1002	8-41980
General Engine Specifications	1010	8-24320
Detailed Engine Specifications	1023	9-78647
2 ENGINES		
Engine Stall Tests, Engine Removal and Installation, Engine Accessories	2000	8-41980
Engine Diagnosis - See Section 2201		
Engine Tune-Up	2002	8-23140
Cylinder Head, Valve Train, and Camshaft	2015	8-23150
Cylinder Block, Sleeves, Pistons, and Rods	2025	8-23160
Crankshaft, Main Bearings, Flywheel, and Oil Seals	2035	8-23170
Lubrication System	2047	8-23180
Cooling System	2055	8-23190
Engine Diagnosis	2201	8-20111
Reconditioning Engine Cylinder Block	2290	8-21170
Turbocharger Failure Analysis	2565	9-78235
3 FUEL SYSTEM		
Fuel Lines, Fuel Tank, and Engine Controls	3001	8-41980
Electric Fuel Pump	3002	8-41980
Fuel System and Filters	3010	9-75297
Robert Bosch Fuel Injection Pumps	3012	9-74937
17 mm Fuel Injectors	3213	8-20240
4 ELECTRICAL		
Electrical System Troubleshooting	4002	8-41980
Wiring Diagrams	4003	8-41980
Instrument Cluster, Gauges, and Warning Lamps	4004	8-41430
Batteries	4005	8-41430
Starter	4006	8-41980
Alternator	4007	8-41980
5 STEERING		
Steering System Troubleshooting	5002	8-41980
Steering Control Valve and Steering Column	5007	9-41980
Steering Cylinders	5010	8-41980
Center Pivot	5023	8-41980
Auxiliary Steering	5025	8-41980
6 POWER TRAIN		
Transmission Maintenance, Troubleshooting, and Pressure Checks	6102	8-41980
Transmission Operation	6103	8-41430
Transmission Removal, Installation, Disassembly, and Assembly	6110	8-41980
Transmission Controls	6118	8-41980
Drive Shaft, Center Bearing, and Universal Joints	6120	8-41980
Rear Axle Trunnion	6125	8-41980
Axle and Planetaries	6126	8-41980
Wheels and Tires	6129	8-41980

7 BRAKES

Air System Description, Diagram, and Troubleshooting	7102	8-41980
Air Compressor, Governor, and Reservoir	7103	8-41980
Brake Valve	7105	8-41980
Brake Actuator	7107	8-41980
Pressure Reducing Valve and Pressure Protection Valve	7109	8-41980
Air Horn and Air Horn Valve	7110	8-41430
Alcohol Evaporator	7111	8-41980
Double Check Valve and Stop Lamp Switch	7112	8-41980
Brakes	7121	8-41980
Disc Brake	7122	8-41980
Parking Brake System	7126	8-41980

8 HYDRAULICS

Hydraulic System Specifications, Diagrams, Maintenance, Troubleshooting, and Pressure Checks	8002	8-41980
Cleaning the Hydraulic System	8003	8-41980
Hydraulic Pump	8005	8-41980
Loader Control Valve	8007	8-41980
Hydraulic Cylinders	8090	8-41980
Backhoe Relief Valves and Selector Valve	8106	8-41980
Backhoe Control Valve	8107	8-41980
Stabilizer Control Valve for 35 Backhoe	8109	8-41980

9 MOUNTED EQUIPMENT

Air Conditioning Troubleshooting	9002	8-41430
Air Conditioning System	9003	8-41430
Loader	9010	8-41980
Cab and Canopy	9061	8-41430
Operators Seat and Seat Belt	9064	8-41430
Backhoe Model 26	9100	8-41980
Backhoe Model 35	9101	8-41980
Decals, Painting, and Noise Control	9201	8-41980

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ENGINE REMOVAL

1. Park the machine on a level surface.
2. Lower the loader bucket to the floor.
3. Stop the engine and apply the parking brake.
4. Remove the side panel.



5. If the machine has air conditioning, discharge the air conditioning system according to instructions in Section 9003.

6. Open the drain valve for the air reservoir.
7. Open the grille.
8. Loosen and remove the radiator cap.

9. Drain the cooling system. The drain valves are located at the front left side of the radiator and on the oil cooler at the right side of the engine. The cooling system contains 7 U.S. gallons (26 litres) of coolant.

10. Loosen and remove all but two nuts, lock washers, flat washers and bolts that fasten the fender in place.



11. Hold the fender in place and remove the other nuts, lock washers, flat washers, and bolts. Lower the fender onto the tire.



12. Remove the fender.



13. Loosen and remove the cap screws, lock washers, and flat washers that hold the hood side panel in place.



STEP 6



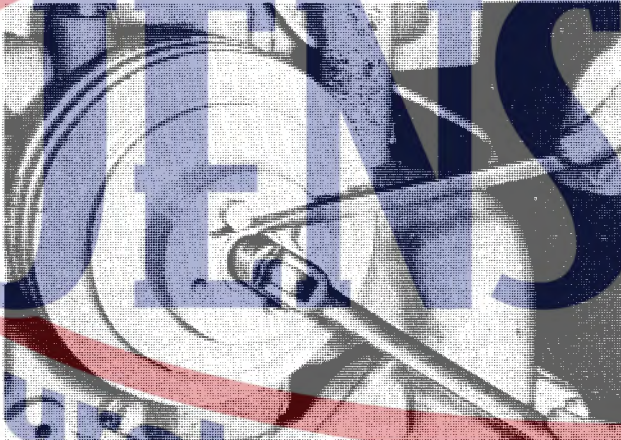
Remove the fan.

STEP 9



Remove the water pump retaining nuts.

STEP 7



Remove the bolt from the water pump pulley.

STEP 10



Remove the water pump from the water pump housing.

STEP 8



Remove the pulley.

STEP 11



Remove the gasket.

Water Pump Disassembly

STEP 12

STEP 14

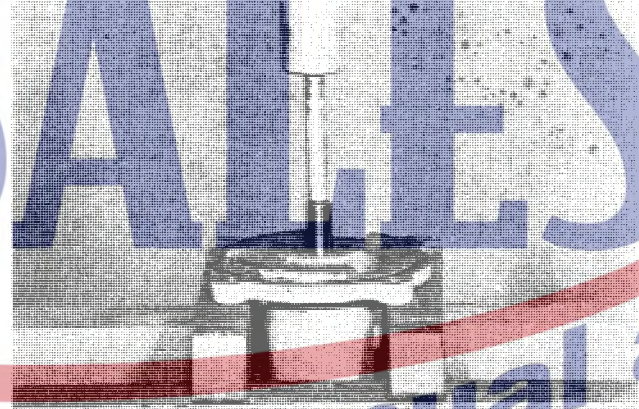


Remove the impeller from the pump shaft using a puller. When you remove the impeller, do not put the tool against the housing. A prybar will damage the seal face of the housing.

Remove the seal assembly from the housing.

STEP 13

STEP 15



Remove the seat assembly from impeller.

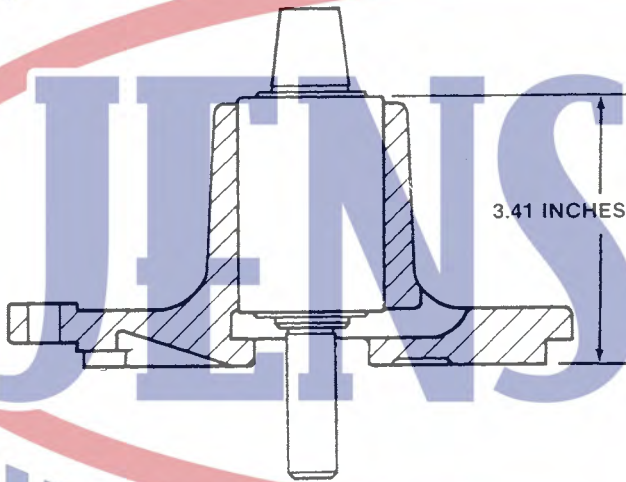
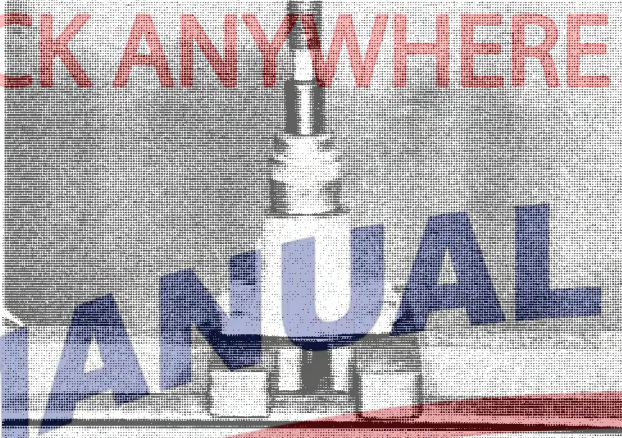
Press the pump shaft bearing out of the housing.

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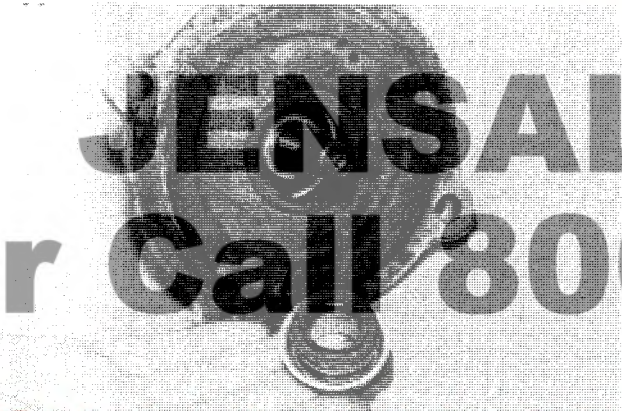
Water Pump Assembly

STEP 16



Press the pump shaft bearing into the housing to dimension shown. Push on bearing outer race only. Do not push on the shaft.

STEP 17



Install a new seal assembly in the water pump. Press only on seal outer metal ring during installation.

NOTE: Keep seal surfaces clean. Dirty finger marks or dust will cause leaks and more than normal wear.

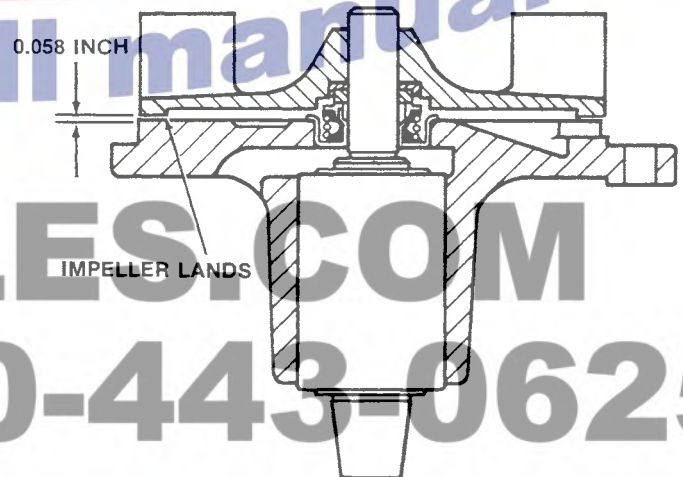
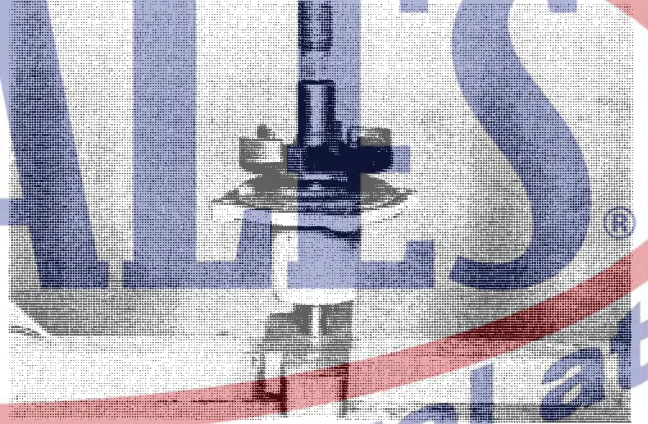
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STEP 18



Install a new pump seat assembly in the impeller.

STEP 19



SUPPORT BEARING SHAFT
WHEN PRESSING

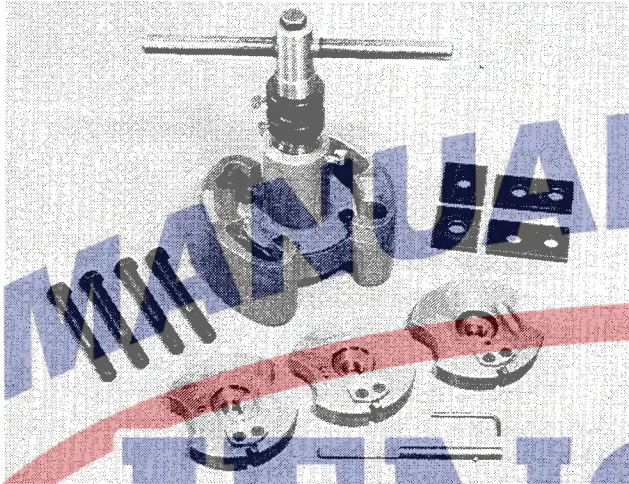
Press the impeller assembly on the pump shaft until a gap of 0.058 inch (1.473 mm) is reached between impeller lands and pump housing.

IMPORTANT: Before you press the impeller on, put a support under the bearing shaft so that the bearing does not receive the force.

RECONDITIONING THE UPPER COUNTERBORE AREA FOR THE CYLINDER SLEEVE

Using The Upper Counterbore Tool Set

STEP 118



UPPER COUNTERBORE TOOL SET (CAS - 10138)

The upper counterbore tool set (CAS - 10138) comes complete with three carbide cutters and plates. This tool is used to cut the sleeve counterbore area on the Case 4-1/8" (104.775 mm), 4-3/8" (111.125 mm) and 4-5/8" (117.475 mm) bore engines.



SPECIAL PLATE AND CUTTER FOR 5" BORE ENGINE

A special cutter and plate (CAS-10140) is available for cutting the sleeve counterbore area on the Case 5" (127.000 mm) bore engine. This special cutter is not part of the upper counterbore tool set (CAS-10138). Order the special cutter separately.

STEP 119

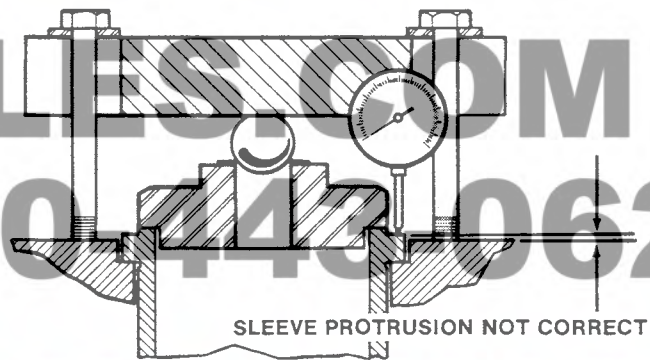
The upper counterbore area for the cylinder sleeve must be machined if:



the seat for the sleeve is not even.



the seat for the sleeve is tilting down.



the sleeve protrusion is not correct.

NOTE: A sleeve seat that is not even or a sleeve seat that is tilting down can cause cracks in the sleeve flange.

STEP 120

Shims for correcting sleeve protrusion are available in thickness of 0.005" (0.127 mm) and 0.010" (0.254 mm) for the 4-1/8" (104.775 mm), 4-3/8" (111.125 mm) and 4-5/8" (117.475 mm) bore engines.

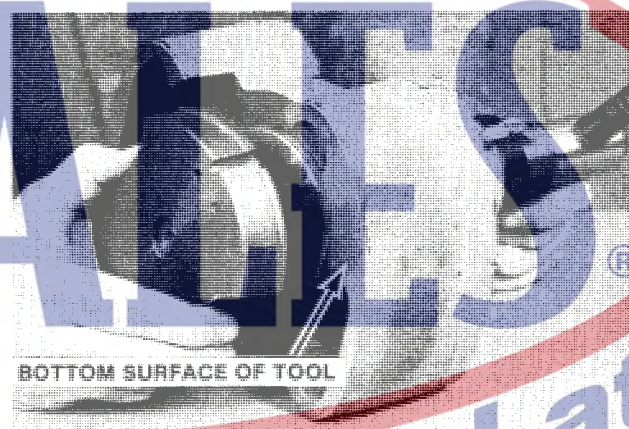
Shims are available in thickness of 0.20 mm, 0.25 mm, 0.30 mm, 0.50 mm and 0.75 mm for the 5" (127.000 mm) bore engines.

STEP 121

The top surface of the cylinder block must be clean. Remove dirt and gasket material.

STEP 122

The top surface of the cylinder block must be flat and free of rough areas which can result in a serious cutting error. Use emery cloth or a flat file to smooth the top surface.



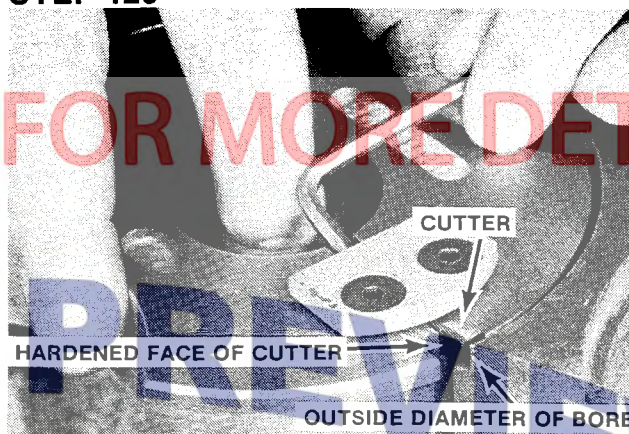
The bottom surface of the tool must also be clean, flat and free of rough areas.

STEP 123

Select the cutter plate for the correct bore size. The bore size is found on the top of each cutter plate.

STEP 124

Put the cutter plate with the cutter in the upper bore. The side of the plate with the lock plate must be up.

STEP 126

Push the cutter against the outside diameter of the bore. Tighten the capscrews in the lock plate.

NOTE: Make sure that the hardened face of the cutter is facing clockwise rotation.

STEP 125

Loosen the capscrews in the lock plate.

STEP 127

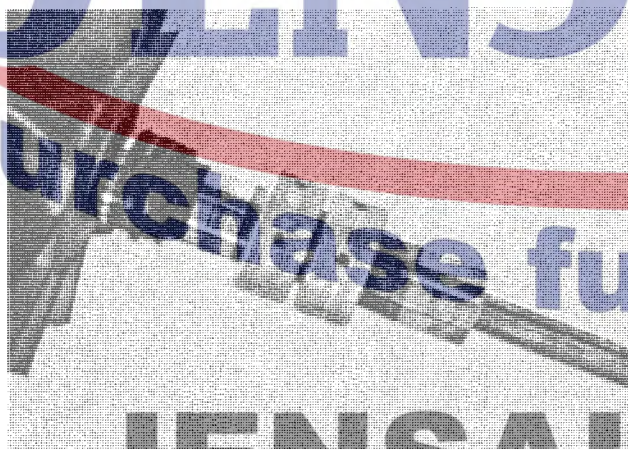
Install the cutter plate on the main shaft of the tool. The side of the cutter plate that has the largest outside diameter must be towards the tool.

Blade Edges Lifted

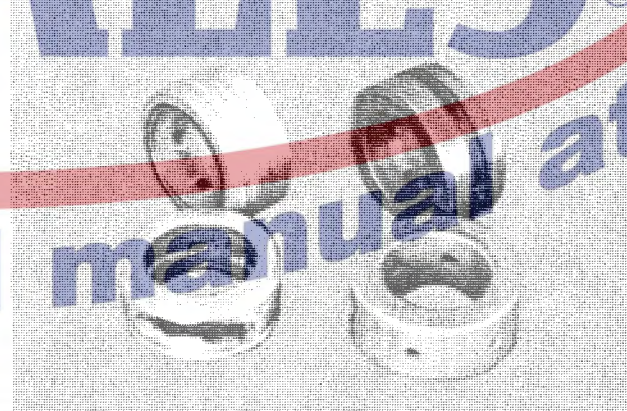
Blade edges of the compressor wheel lifted by improper removal of the compressor housing. Housing should not be pried off but lifted straight off.

Bearing Damage

Engine bearing material imbedded in the bearing surfaces. Checkout the engine for possible bearing failure.

Turbine Shaft & Bearings

Turbine shaft and bearings showing effect of oil starvation.

Bearing Failure

Bearing failures occur in two separate areas. Scoring on the inside as well as the outside is attributed to dirty oil. Abrasive wear can also cause erosion around the oil holes in the bearings. A good bearing is shown in the lower right for comparison.

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Fine Scratches on Shaft

Bent or Broken Shaft



Fine scratches on both bearing journals are evidence that abrasive material has contaminated the lubricating oil.

Bearing damage and extreme shaft motion caused by lack of lubrication or abrasives in the oil may eventually cause the shaft to bend or even break. When this type of damage is evident, check the bearings.

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NOTE: The Case Company reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.