



SERVICE MANUAL

LOADALL (ROUGH TERRAIN
VARIABLE REACH TRUCK)
531-70, 535-95, 541-70

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This manual contains original instructions, verified by the manufacturer (or their authorized representative).

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Foreword

The Operator's Manual


You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

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Drain and Fill

Refer to: PIL 15-21-00.

Clean

▲ Notice: Clean the engine before you start engine maintenance. Obey the correct procedures. Contamination of the fuel system will cause damage and possible failure of the engine.

Notice: The engine and other components could be damaged by high pressure washing systems. Special precautions must be taken if the machine is to be washed using a high pressure system.

Make sure that the alternator, starter motor and any other electrical components are shielded and not directly cleaned by the high pressure cleaning system. Do not aim the water jet directly at bearings, oil seals or the engine air induction system.

Before carrying out any service procedures that require components to be removed, the engine must be properly cleaned.

Cleaning must be carried out either in the area of components to be removed or, in the case of major work, or work on the fuel system, the whole engine and surrounding machine must be cleaned.

Stop the engine and allow it to cool for at least one hour. DO NOT attempt to clean any part of the engine while it is running.

1. Make sure that the electrical system is isolated.
2. Make sure that all electrical connectors are correctly coupled. If connectors are open fit the correct caps or seal with water proof tape.
3. Cover the alternator with a plastic bag to prevent water ingress.
4. Seal the engine air intake, exhaust and breather system.
5. Make sure that the oil filler caps and dipstick are correctly installed.
6. Use a low pressure water jet and soft bristle brush to soak off caked mud or dirt.
7. Apply an approved cleaning and degreasing agent with a brush. Obey the manufacturers instructions.
8. Use a pressure washer to remove the soft dirt and oil. Important: DO NOT aim the water jet directly at oil seals or electrical connectors and electronic components such as ECU (Electronic Control Unit)'s, alternator or fuel injectors. DO NOT place the jet nozzle closer than the specified distance to any part of the engine or exhaust system.

Length/Dimension/Distance: 600mm

9. When the pressure washing is complete move the machine away from the wash area, or alternatively, clean away the material washed from the machine.
10. Before working on specific areas of the engine use a compressed air jet to dry off any moisture. When the area is dry use a soft clean brush to remove any sand or grit particles that remain.
11. When removing components be aware of any dirt or debris that may be exposed. Cover any open ports and clean away the deposits before proceeding.

Additional cleaning must be carried out prior to working on the high pressure fuel system. [Refer to: PIL 18-00-00.](#)

Check (Condition)

Start the engine and check for:

- Excessive smoke
- Excessive vibration
- Excessive noise
- Overheating
- Performance
- Unusual smells.

Check (Leaks)

Before you start the machine, do a check for oil leaks:

1. Make the machine safe.
2. Get access to the engine compartment (if applicable)
3. Check the engine and the area below for oil leaks.
4. Close the engine cover (if applicable).
5. If necessary, contact your JCB dealer.

Check (Pressure)

Special Tools

Description	Part No.	Qty.
Pressure Gauge (0-70 Bar)	892/00346	1

This test is used to diagnose suspected poor compression in one or more of the engine cylinders. Use ServiceMaster to control the test.

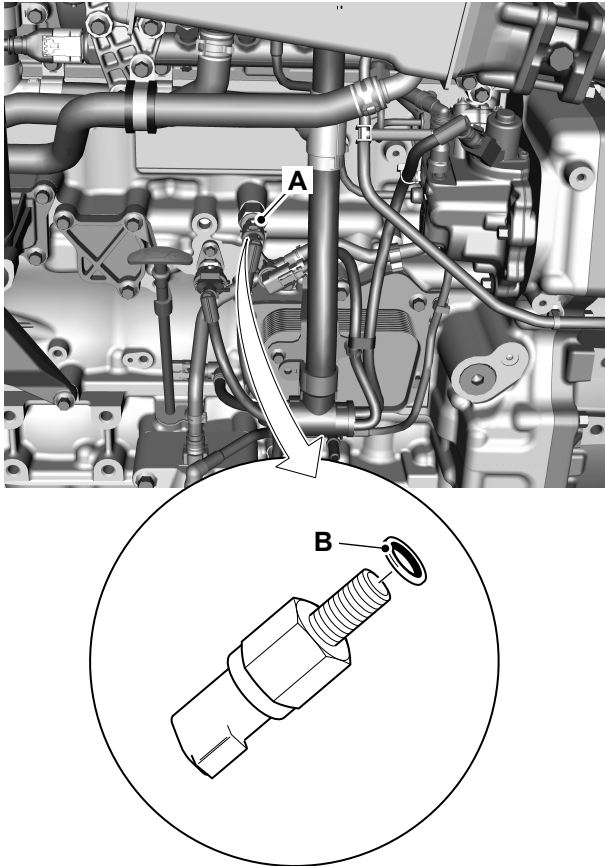
Engine Oil Pressure

Use the following procedures to measure the engine oil pressure. Several factors can influence the engine oil pressure, the following conditions are assumed:

- The correct engine oil has been used. [Refer to: PIL 15-21-00.](#)
- The engine oil level is correct. [Refer to: PIL 75-03-03.](#)

1. Make sure that the engine is safe to work on. If the engine has been running, let it cool before you start the service work.
2. Get access to the engine.
3. Disconnect the electrical connector to the oil pressure switch, remove the switch from the oil cooler housing.
4. Install a suitable adaptor into the vacant pressure switch port (M10 x 1.5mm thread) and a pressure test gauge. Make sure that the gauge has a sealing washer as shown.

[Special Tool: Pressure Gauge \(0-70 Bar\) \(Qty.: 1\)](#)

Figure 133.


A Oil pressure switch

B Sealing washer

5. Start the engine and allow a few seconds to gain oil pressure, increase the engine revs to the rated speed. Record the pressure gauge reading. Check that the pressure is within the specified tolerance.

Refer to: [PIL 15-00-00](#).

6. Remove the pressure gauge and install the pressure switch.

High Lubrication Oil Pressure

High oil pressure will be evident when starting in cold conditions. Typically the pressure will be 1 to 2 bar and higher in cold operation, the pressure should drop when the engine reaches normal operating temperature.

If the pressure remains high when operating temperature is achieved, check the oil level, if this is correct, suspect the oil pressure relief valve is at fault.

Low Lubrication Oil Pressure

Several factors can be the cause of low lubricating oil pressure:

- Low oil level - typically evident as a loss of pressure when operating on uneven ground or on a gradient.
- Blocked oil filter - a blocked filter will show as a gradual loss of pressure.
- Blocked suction strainer (pick-up pipe) - typically evident as low pressure on start up, if the blockage frees itself in the sump, the pressure will pick up to normal.
- Coolant in the oil - coolant in the lubricating oil will show as a milky discolouration of the oil and an increase in oil level. Check for damaged core plugs, lubricating oil cooler, cylinder head and/or gasket.
- Fuel in the oil - fuel in the lubricating oil, the oil will also have a diesel fuel smell. Check the fuel injection pump (FIP) shaft seal, piston ring wear, lift pump diaphragm damage or injector leakage if fuel is evident in the oil.
- Damaged oil pump - oil pressure will be high at low oil temperature but fall when oil becomes hotter.

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