SERVICE MANUAL

LOADALL (ROUGH TERRAIN VARIABLE REACH TRUCK)
533-105, 535-v125, 535-v140, 540-140, 540-170, 540-200, 540-v140, 540-v180, 550-140, 550-170

EN - 9813/8750 - ISSUE 1 - 07/2017

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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Cause	Remedy
Fuel filter(s) blocked, fuel supply restricted.	Check/replace the fuel filter(s). Check fuel lines for restriction.
Fuel is aerated.	Check the fuel system for loose connections and possible air ingress points. Rectify and bleed the fuel system.
Fuel lift pump not operating correctly (fuel supply inadequate).	Check that the lift pump is operating and delivering fuel to the injection pump. Check fuses.
Air intake or exhaust system blocked.	Visually check the air intake and exhaust system for blockage or obstruction - remove as required. Check the air filter elements for signs of blocking - replace as required.
One or more fuel injectors worn or malfunctioning.	Check the electrical connections at the injectors.
Exhaust leak at the manifold or turbocharger.	Check/repair leaks in the manifold or turbocharger gaskets. Look for a cracked manifold.
Extra injector sealing washer installed under injector.	Remove extra injector sealing washer.
Inlet and exhaust valve clearances set incorrectly.	Set the valve clearances to the recommended clearances.
Worn or malfunctioning high pressure fuel pump.	Do all the necessary fault finding checks before removal of the high pressure fuel pump
Engine compression low in one or more cylinders.	Check the engine compression.
Electrical sensor fault.	Check the electrical connections at the sensors.
Excessive exhaust back pressure	Inspect Catalyst. Check Exhaust pressure readings using Servicemaster.

Table 107. Engine - Will Not Reach Maximum RPM

Cause	Remedy
Tachometer faulty.	Verify engine speed with hand tachometer. Repair as required.
Engine overloaded.	Verify high idle speed without load. Investigate operation to be sure correct gear is being used.
Pedal/ Hand Throttle position sensor (TPS) system defective.	Check the throttle assembly.
Fuel is aerated.	Check the fuel system for loose connections and possible air ingress points. Rectify and bleed the fuel system.
Fuel lift pump not operating correctly (fuel supply inadequate).	Check that the lift pump is operating and delivering fuel to the injection pump. Check fuses.
Fuel is contaminated or incorrect grade diesel fuel used.	Stop the engine. Replace the fuel filters. Operate the engine with a temporary supply of the correct grade of clean fuel. Monitor the engine performance. Dirty fuel will cause damage to the high pressure fuel pump and injectors.
Fuel filter(s) blocked, fuel supply restricted.	Check/replace the fuel filter(s). Check fuel lines for restriction.
Turbocharger wastegate actuator diaphragm ruptured.	Repair or replace turbocharger.
One or more fuel injectors worn or malfunctioning.	Check the electrical connections at the injectors.
Worn or malfunctioning high pressure fuel pump.	Do all the necessary fault finding checks before removal of the high pressure fuel pump.

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Diagram

(For: 533-105 [T2/3])

Typical Schematic Circuit

The schematics show an overview of the system. For the machine specific schematics, refer to electrical system- general, refer to (PIL 33-00).

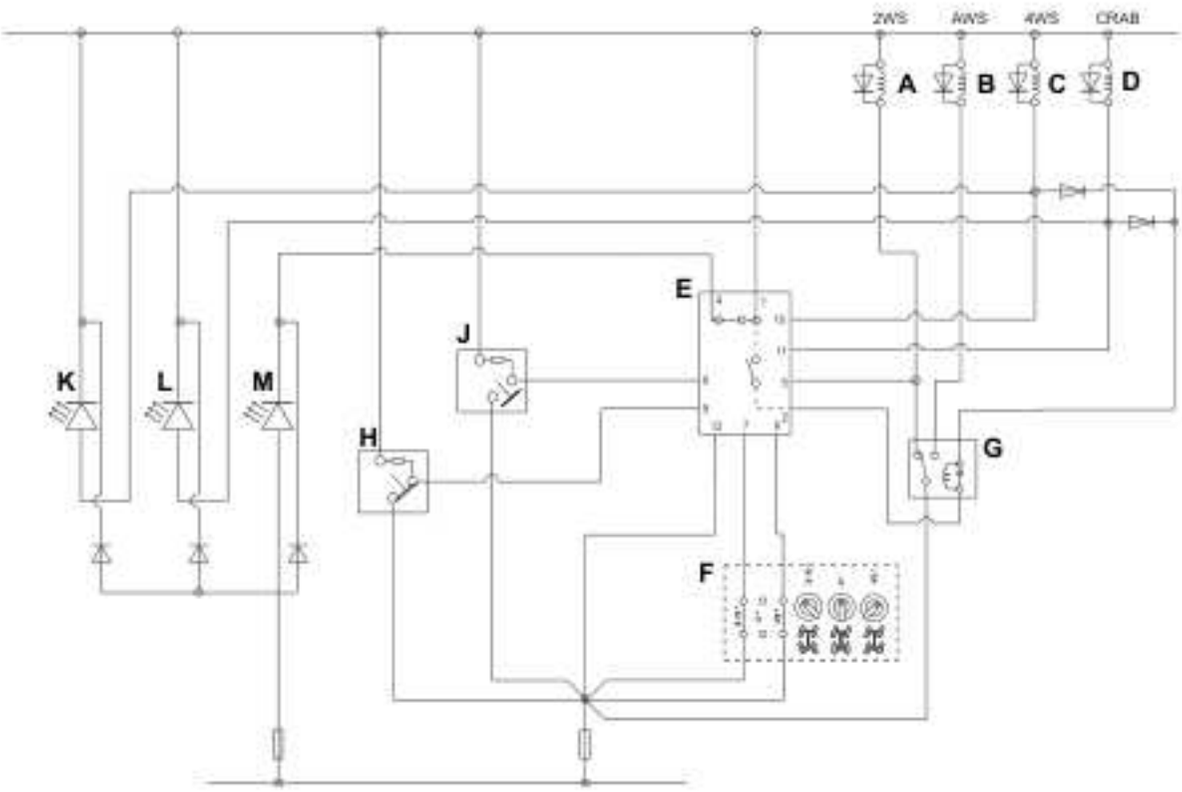
Central to the steer mode system is the ECU (Electronic Control Unit). When the operator selects a steer mode using the cab mounted selector switch, the ECU energises the 2 wheel steer solenoids or the crab steer solenoid on the steer mode valve as necessary. A changeover relay energises the 2 wheel steer solenoid and the all wheel steer solenoid, which in turn is also controlled by the ECU.

The indicator LED (Light Emitting Diode)s on the instrument panel illuminate to show the steer mode currently operative.

The steer mode valve spools have mechanical detents. Loss of electrical power to the valve solenoid coils will not cause the system to change steer mode suddenly.

Faulty electrical connections to the solenoid coils (energising the coil) could cause the steer mode to change suddenly with no operator input.

Figure 655. Typical Schematic Circuit



A 2 wheel steer solenoid
B All wheel steer solenoid
C 4 wheel steer solenoid
D Crab steer solenoid
E ECU
F Selector switch
G Changeover relay
H Rear axle proximity switch
J Front axle proximity switch
K 4 wheel steer LED
L Crab steer LED
M 2 wheel steer LED

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Technical Data

For: 540-v180 [T2/3] ..... Page 30-5
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(For: 540-v180 [T2/3])

Your machine may be installed with a different valve depending on the specification of your machine.

Two valve variants are shown below. Make sure you identify which valve you have installed.

6 Spool Valve Block

These specifications are only applicable to some machine models, make sure you are referring to the correct machine.

Refer to Figure 1012.

Refer to hydraulic system, parallel circuit control valve block, (PIL 30-54)

Table 485. 6 Spool, Parallel Service, Double Acting Spools

Spool 1	Boom raise & lower service	Manually operated
Spool 2	Boom extend & retract service	Manually operated
Spool 3	Carriage tilt service	Manually operated
Spool 4	Auxiliary / sway service	Manually operated
Spool 5	RH Stabiliser	Manually operated
Spool 6	LH Stabiliser	Manually operated

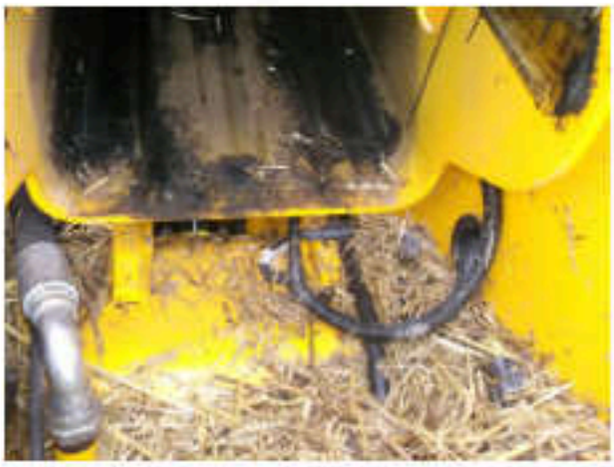
Table 486. Relief Valve Pressures

Item[1]	Description	Pressure
7	Auxiliary ram ARV (Auxiliary Relief Valve)	138bar (2,000.0psi)
8	Tilt ram head side ARV	276bar (4,000.0psi)
9	Extend ram head side ARV	276bar (4,000.0psi)
10	Auxiliary ram ARV	138bar (2,000.0psi)
11	Tilt ram head side ARV	276bar (4,000.0psi)
12	Extend ram head side ARV	276bar (4,000.0psi)

(1) Refer to figure 1

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Figure 66.

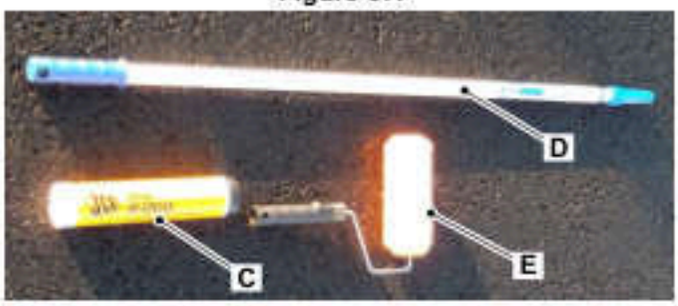


7. Add a full tube of grease in the rear of the lift arm.

   Consumable: Special HP Grease

8. Use a telescopic extension handle and a paint roller to spread the grease along the bottom and the adjacent sides of the lift arm.

Figure 67.



C Grease
D Telescopic extension handle
E Paint roller

9. Make sure you apply the grease evenly.

Figure 68.



10. Fully cycle the lift arm three times, make sure the hoses take a sufficient coating of grease and that the hoses do not cross over.

Figure 69.

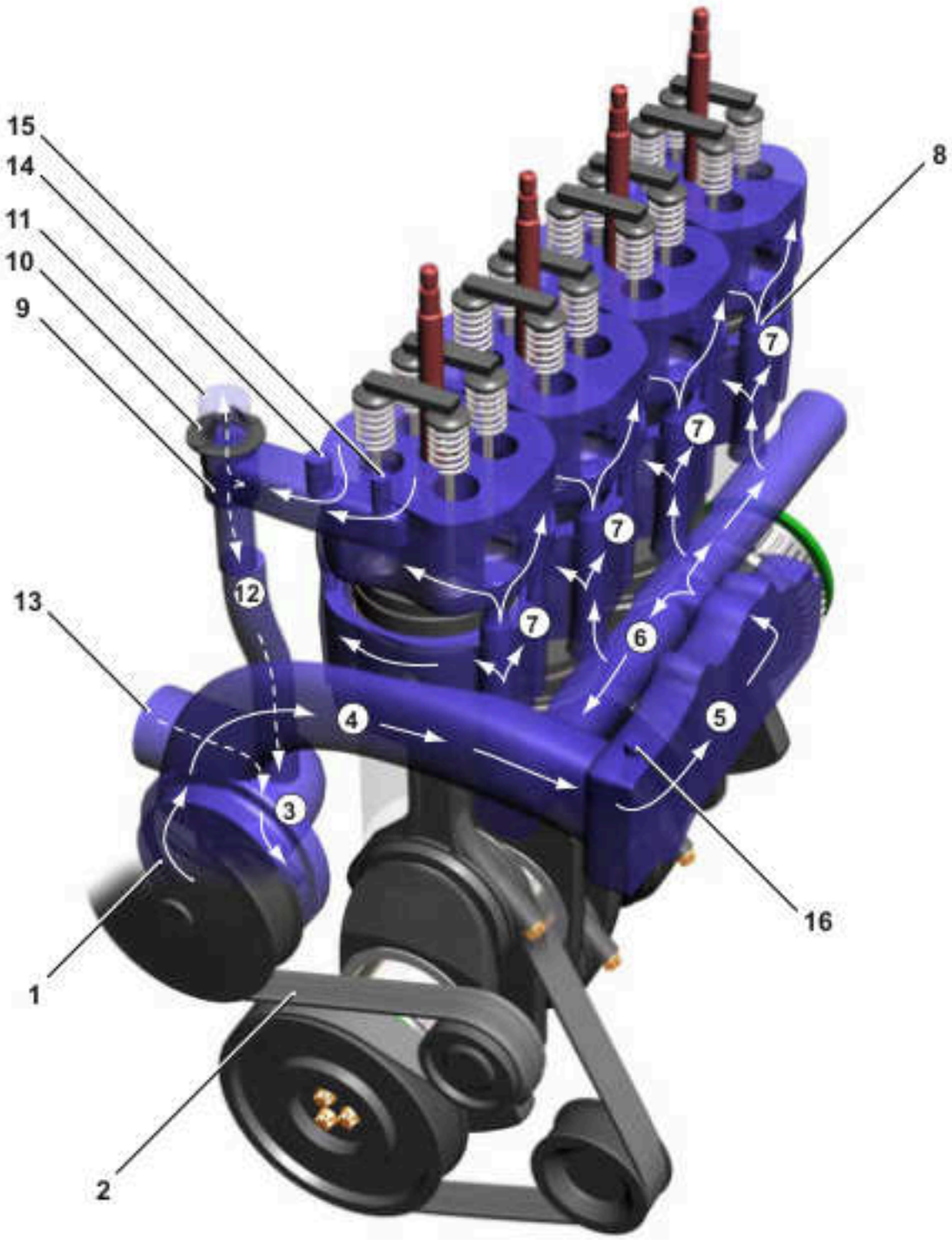


11. Install the access panel.
12. Install the bolts on the back of the lift arm.

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(For: JCB 4.4 T2 Mech Turbo, JCB 4.4 T2 Mech Turbo and Aftercooled, JCB 4.4 T3 Mech Turbo, JCB 4.4 T3 Mech Turbo and Aftercooled)

Figure 535.



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