SERVICE MANUAL

LOADALL (ROUGH TERRAIN VARIABLE REACH TRUCK)
527-58 T4F

EN - 9813/7550 - ISSUE 1 - 04/2018

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

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Foreword

The Operator's Manual

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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
Inlet and exhaust valve clearances set incorrectly.	Set the valve clearances to the recommended clearances.
Worn or malfunctioning high pressure fuel pump.	Check the electronic fault codes. 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.
Engine in reduced torque or limp home mode.	Check the electronic fault codes.
ECM or electrical sensor fault.	Check the electronic fault codes. Check the electrical connections at the ECM and sensors.
Excessive exhaust back pressure	Inspect Catalyst. Check Exhaust pressure readings using Servicemaster.
Low DEF (Diesel Exhaust Fluid) Level.	Fill the DEF Tank with clean DEF

Table 51. 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. Check the electronic fault codes.
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 electronic fault codes. Check the electrical connections at the injectors.
Worn or malfunctioning high pressure fuel pump.	Check the electronic fault codes. Do all the necessary fault finding checks before removal of the high pressure fuel pump.

Table 52. Engine - RPM Surges

Cause	Remedy
Fuel level low.	Check the level in the fuel tank, use sight gauge or dipstick. Replenish as required.
Pedal/ Hand Throttle position sensor (TPS) system defective.	Check the throttle assembly. Check the electronic fault codes.
Fuel injection lines leaking.	Replace defective high pressure fuel lines. Do not repair defective fuel lines. If there is a fuel leak remove and discard the necessary components and install new ones.
Fuel tank cap vent/breather blocked.	Inspect and rectify as required. Replace cap if necessary.

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Table 113. TMAF (Temperature and Mass Air Flow) Sensor

Cause	Remedy
Sensor supply voltage or calibration fault	Disconnect the sensor, check sensor voltage supply at the harness connector (see relevant sensor help file for pin numbers or refer to engine electrical schematic). If voltage supply is faulty, disconnect all other sensor in turn until voltage supply returns. Replace the faulty sensor. If no sensor is faulty replace the ECM
	If sensor supply voltage is OK, proceed to 'Air inlet fault'.
Air inlet fault	Check all the hose connections for air leaks, repair as necessary.
	If no fault is found proceed to 'Sensor connection faulty'.
Sensor connection faulty	Check the condition of sensor to harness connection, make sure the seals are in place, check for signs of corrosion or contamination. Repair/replace as necessary.
	If no fault is found, proceed to 'Sensor failure'.
Sensor failure	If sensor is out of specification replace.
	If no faults is found, proceed to Step 5.
ECM connection fault	Disconnect the harness from engine ECM and inspect. Check seals are in place, check for signs of corrosion or contamination.
	If ECM pins are damaged, replace ECM and re-flash appropriate calibration (see Re-flashing an ECM.
	If harness is damaged, repair or replace as necessary.
	If no fault is found proceed to Step 6.
Wiring fault	Check the harness continuity and machine and engine earth contacts. Repair/ replace as necessary.
	If no fault found, raise Techweb Helpdesk call.

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Health and Safety

CAUTION The cooling system is pressurised when the coolant is hot. When you remove the cap, hot coolant can spray out and burn you. Make sure that the engine is cool before you work on the cooling system.

CAUTION Antifreeze can be harmful. Obey the manufacturer's instructions when handling full strength or diluted antifreeze.

Technical Data

Table 170.

Radiator cap pressure setting	1 bar (14.5 psi)
Thermostat	Wax element with by-pass blanking
Thermostat operating temperature:	
- Nominal temperature	96 °C (204.7 °F)
- Start to open temperature	94 –98 °C (201.1 – 208.3 °F)
- Full open temperature	110 °C (229.8 °F)
- Travel (fully open)	9 mm
Fan drive type	FEAD (Front End Accessory Drive) belt
Fan belt (FEAD) adjustment	Automatic belt tensioner
Fan belt (FEAD) type	Multigroove belt
Coolant Temperature Switch/Sender range	Refer to PIL 15-84
Coolant pump (non-serviceable part)	Bolt on, belt driven unit

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Remove and Install

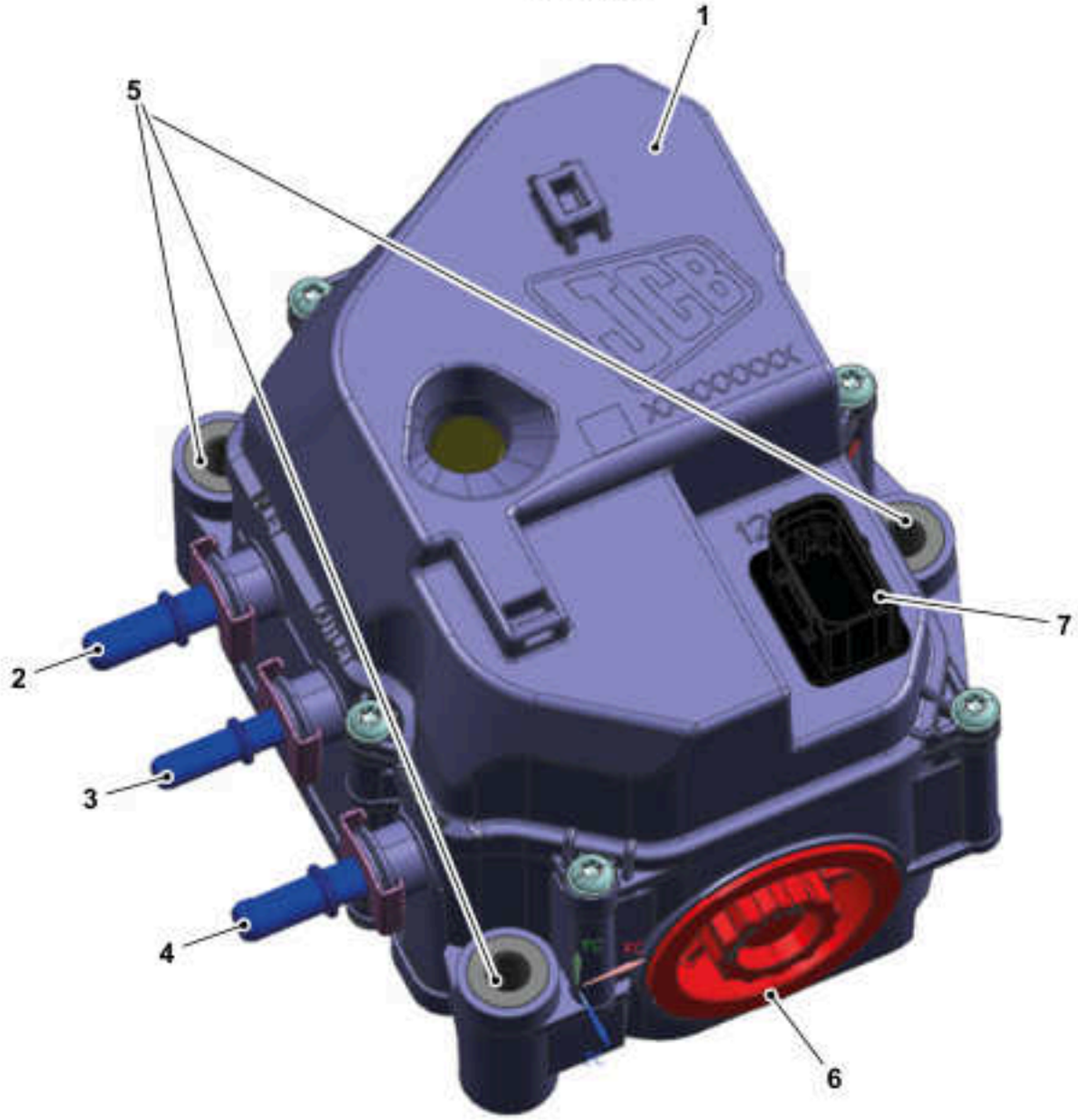
This component is not serviceable, if the component fails replace the complete module.

Before Removal

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 pump supply module.
3. Ensure that the area around the pump supply module is clean to prevent contamination of the SCR (Selective Catalytic Reduction) system.

Remove

Figure 402.



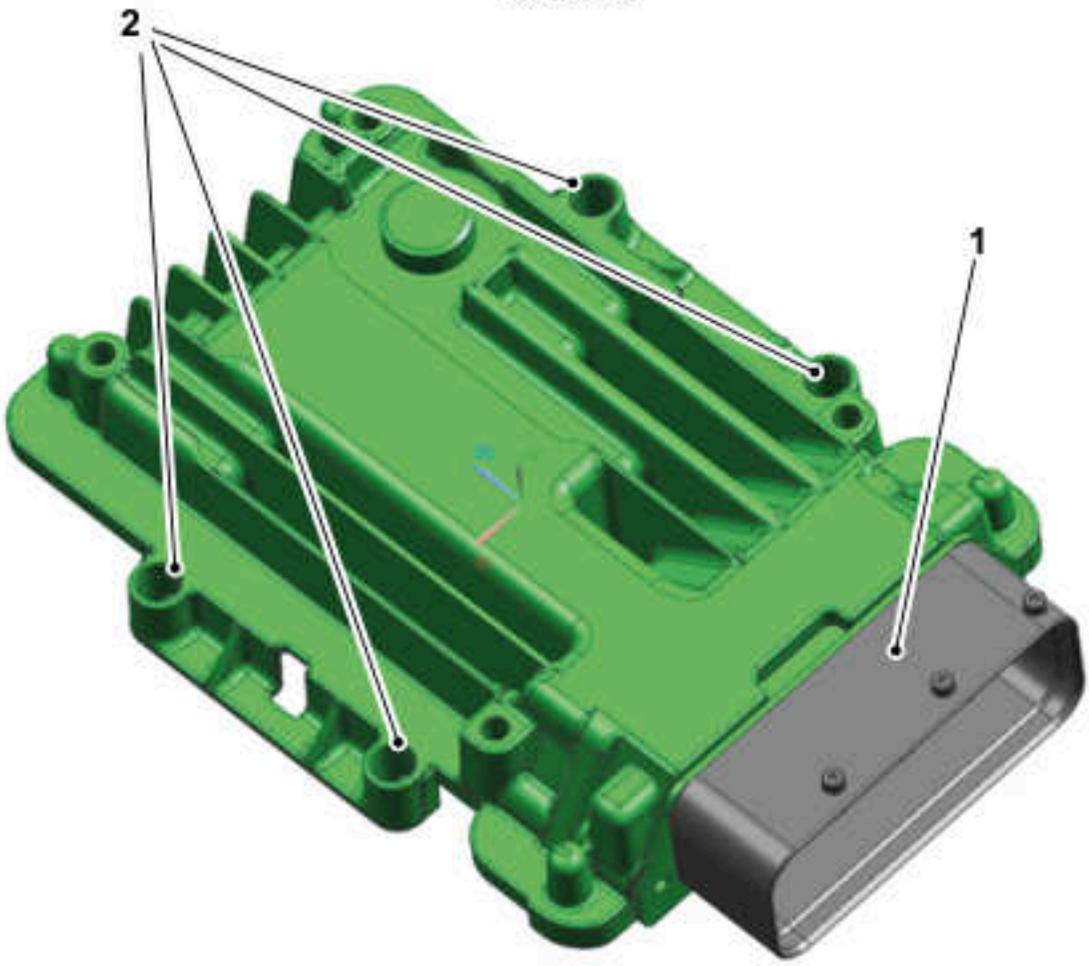
1 Pump supply module

2 DEF (Diesel Exhaust Fluid) inlet spigot

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Remove and Install

Figure 776.



1 Electrical connector

2 Bolts

Before removal

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 DCU (Dosing Control Unit).

Removal

1. Disconnect the electrical connector.
2. Remove the bolts.
3. Remove the DCU from the machine.

Install

1. Installation is the reversal of the removal procedure.
2. Tighten the bolts to the correct torque value.

Table 306. Torque Values

Item	Nm
2	8

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