SERVICE MANUAL

LOADER
455ZX

EN - 9813/4800 - ISSUE 3 - 11/2017

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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Table 48. Engine - Exhaust Smoke Excessive (White/Blue Smoke)

Cause	Remedy
Improper starting procedure.	Verify proper starting procedure.
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.
Oil level incorrect.	Check oil level.
Diesel or hydraulic oil in sump.	Check oil consistency. If oil contamination is suspected check equipment such as PTO (Power Take-Off) pump for hydraulic oil leaks past the seal into the engine. Drain, flush and fill with clean oil.
Coolant temperature too low (over-cooling) - light blue or white high speed/light load.	Check the thermostat and replace if necessary.
ECM or electrical sensor fault.	Check the electronic fault codes. Check the electrical connections at the ECM and sensors.
One or more engine injectors worn or malfunctioning. - white/ blue smoke at operating temperature.	Check the electronic fault codes. Check the electrical connections at the injectors.
Coolant leaking into combustion chamber.	Check the EGR (Exhaust Gas Recirculation) Cooler for leaks. Replace Cylinder head gasket if necessary.
Leaking valve stem seals - evident after long idle period and then acceleration.	Replace valve seals.
Piston rings not sealing - evident with persistent blue smoke at all speeds/load.	Check the engine compression.

Table 49. Engine - Will Not Shut Off

Cause	Remedy
Stop switch or stop switch electrical system failure.	Check the operation of the stop switch. Check the correct electrical wires for open or short circuits.

Table 50. Lubricating Oil - Consumption Excessive

Cause	Remedy
Oil leaks.	Inspect the engine for visible signs of leaks. Pay particular attentions to seals, gaskets oil cooler and external connections.
Oil level over-full.	Check oil level.
Incorrect lubricating oil (specification of viscosity). Tier 4 Final Engines require a special oil grade. Refer to (PIL 75-03).	Make sure the correct lubricating oil is being used. Check for reduced viscosity from dilution with fuel. Fuel dilution in lubricating oil can originate from a defective high pressure fuel pump driveshaft seal. Review/reduce the lubricating oil change intervals.
Crankcase ventilation (CCV) system blocked.	Check the breather tube area for signs of lubricating oil loss. Check and if necessary replace the CCV filter.
Lubricating oil cooler leak.	Check for lubricating oil in the coolant.
Turbocharger leaking lubricating oil to the air intake or exhaust.	Inspect the air crossover tube for evidence of lubricating oil transfer.
Valve guide seals are leaking.	Replace valve guide stem seals as required.
Piston rings not sealing - lubricating oil being consumed by the engine (blue smoke from exhaust).	Check the engine compression
Worn cylinder bores - lubricating oil being consumed by the engine (blue smoke from exhaust).	Check the engine compression.
Glazed cylinder bores.	De-glaze bores as required.

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Technical Data

Table 126.

Component	Value
Operating pressure	0.8bar (11.6psi)
Expected minimum free flow delivery	2.5L/min

Table 127. Expected electrical values

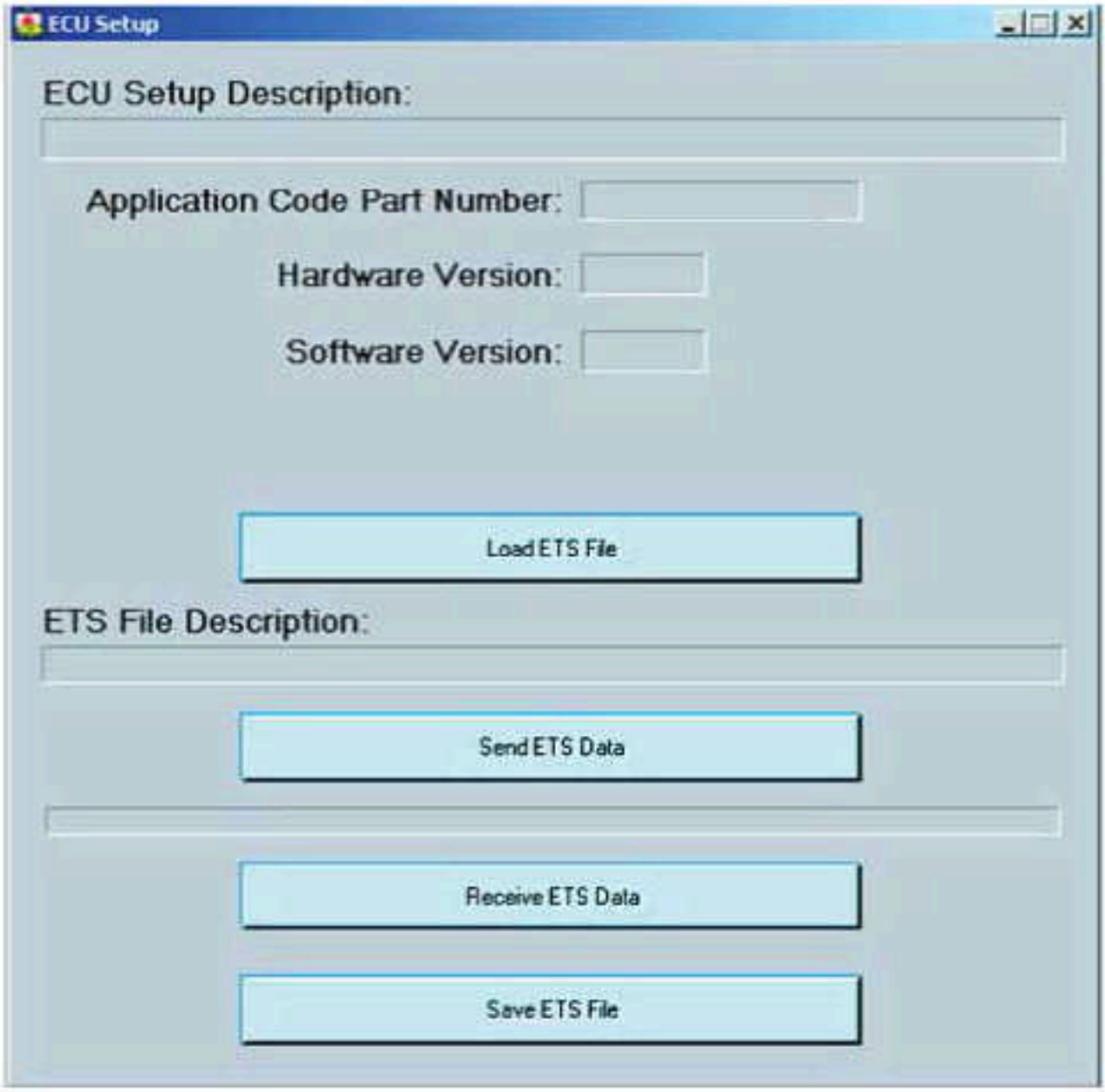
Machine Voltage V	Minimum Voltage V	Maximum Voltage V	Minimum Resistance Ohms	Maximum Resistance Ohms	Minimum Current Draw A	Maximum Current Draw A
12	8	16	0.8	1.5	4	8
24	20	30	4.9	5.7	4	5.5

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Engine Harness

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Figure 857.



ETS Function

The ETS function provides a means of loading and uploading gearbox ECU software setup files between the ECU and the computer. On earlier versions of servicemaster a separate program was required to perform this function. This is now incorporated within shiftmaster diagnostics 2.3. The setup files have a file name extension of ets.

- Load ETS File: A revision to the gearbox ECU software file may be supplied by JCB for installation on particular ECU models. Store the file on the computer which is to be connected to the gearbox ECU. The shiftmaster diagnostic program needs to open this file and obtain the software version and other applicable information to make sure it is compatible with the ECU connected to the computer.
- Send ETS Data: This allows the computer to send a software setup file to the gearbox ECU.
- Receive ETS Data: This reads the existing setup file from the gearbox ECU.
- Save ETS File: This saves the data received from the ECU onto the computer.

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Drain and Fill

Fill

1. Remove the dust cap from the filler coupling.
2. Clean the area around the filler coupling and the coupling on the filler hose.
3. Attach the filler hose to the coupling.
4. Make sure that you use the correct type of grease. Refer to PIL (75-06).
5. Fill the tank until the top of the follower plate is level with the maximum level mark. The follower plate is the plate on top of the grease inside the tank.
6. Remove the filler hose.
7. Clean the area around the filler coupling and install the dust cap.
8. Air may be introduced into the tank when you fill the grease. This air will exit through the tank vent. If a large amount of air is present, do the continuous greasing cycles for the specified duration.

   Duration: 1min

Figure 54.



A Tank
B Filler coupling
C Dust cap
D Follower plate
E Test button

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