Service Manual

TM310

Service Manual - TM310

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Publication No.
9803/9520-9



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Issued by JCB Technical Publications, JCB Service, World Parts Centre, Beamhurst, Uttoxeter, Staffordshire, ST14 5PA, England. Tel +44 1889 590312 Fax +44 1889 590177

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AVO 2002
- Red lead to volts (middle) socket on meter.
- Black lead to negative on meter.
- RH slider to DC voltage.
- LH slider. ⇨ *Fig 29. (📄 C-43)*.

AVO 2003
- Red lead to amps socket (marked A) on the meter.
- Black lead to negative on meter.
- RH slider to DC voltage
- LH slider to 200 Shunt

FLUKE 85
- Red lead to volts socket (marked V) on meter.
- Black lead to COM socket on meter.
- Set dial to mV.

7 Start the engine and run at maximum speed (see ***Technical Data***). Meter should show maximum alternator output in Amps (see ***Technical Data***).

Note: *The meter reading should be taken as soon as possible after starting the engine, as the charging current will fall rapidly.*

8 A zero reading indicates failure of the alternator and may be caused by one of the following conditions. These are listed in the order of probability.

a Defective suppression capacitor.

b Dirty slip rings or worn brushes.

c Defective regulator.

d Defective rectifier.

e Open or short - circuited field (rotor) windings.

f Open or short - circuited power (stator) windings.

9 To check for fault a, disconnect the capacitor and repeat the charging test. Renew the capacitor if necessary.

10 To check for faults b and c, remove the regulator and brush box assembly. Check the condition of the brushes and, if necessary, clean the slip rings using extra-fine glass paper. The regulator may only be checked by substitution.

11 Faults d, e, and f may be checked only by removing and dismantling the alternator for further testing.

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Quick Reference

Electrical connectors ⇨ *Fig 56. (F-75)*

Electrical circuit for lock up torque converter control. Shown with torque converter LOCKED. 'Live feed' wires are coloured red and feed to earth are green ⇨ *Fig 57. (F-76)*.

The information is intended as an aid when checking for faulty wires or connectors by means of continuity tests using a multimeter. DO NOT use a multimeter on the ECU connector pins (connectors A and B). Only test the associated wiring, uncouple connectors **CJ** and **MH** and then use a multimeter at the pins inside these connectors as applicable. Use the JCB Diagnostics system to identify possible faults with the ECU See ***Powershift Gearbox - JCB Diagnostics - User Guide***.

Note: Interconnecting harness connectors are not shown here. For full details see the relevant expanded harness schematic in this section.

Component Key

CP	Column switch
CU	Instruments
CJ	Harness connector - ECU - A
MH	Harness connector - ECU - B
MW	Transmission speed sensor
PE	Torque converter lock up solenoid control valve

ECU Connector TA

TA7	Column Forward switch
TA17	4th - Auto gear switch
TB14	Engine speed sensor - input

ECU Connector TB

TB3	Transmission speed sensor - input
TB1	Lock up torque converter control valve solenoid - output

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Fault Code	Description	Warning Displays	
E787	Intake air heater 2- relay enable fault - current below normal or open circuit	Message displayed on LCD	E787
E788	Intake air heater 2- relay enable fault - current above normal or grounded circuit	Message displayed on LCD	E788
E789	Ground Speed Sensor circuit fault - current above normal or grounded circuit.	Message displayed on LCD	E789
E790	Ground Speed Sensor circuit fault - mechanical system not responding or out of adjustment.	Message displayed on LCD	E790
E791	Ground Speed Sensor circuit fault - voltage above normal or shorted high.	Message displayed on LCD	E791
E792	Auxiliary Output 1 (temperature gauge/lamp) fault - voltage above normal or shorted high.	Message displayed on LCD	E792
E793	Auxiliary Output 2 (oil pressure gauge/lamp) fault - voltage above normal or shorted high.	Message displayed on LCD	E793
E794	Intake air heater 2- relay enable fault - voltage above normal or shorted high.	Message displayed on LCD	E794
E795	Sensor Supply Voltage 2 fault - data erratic, intermittent or incorrect.	Message displayed on LCD	E795
E796	ECU Power Output Supply 2 fault - voltage below normal or shorted low.	Message displayed on LCD	E796
E797	ECU Power Output Supply 1 fault - voltage below normal or shorted low.	Message displayed on LCD	E797
E798	ECU Power Output Supply 1 fault - current below normal or open circuit.	Message displayed on LCD	E798
E799	ECU Power Output Supply 1 fault - current above normal or grounded circuit.	Message displayed on LCD	E799

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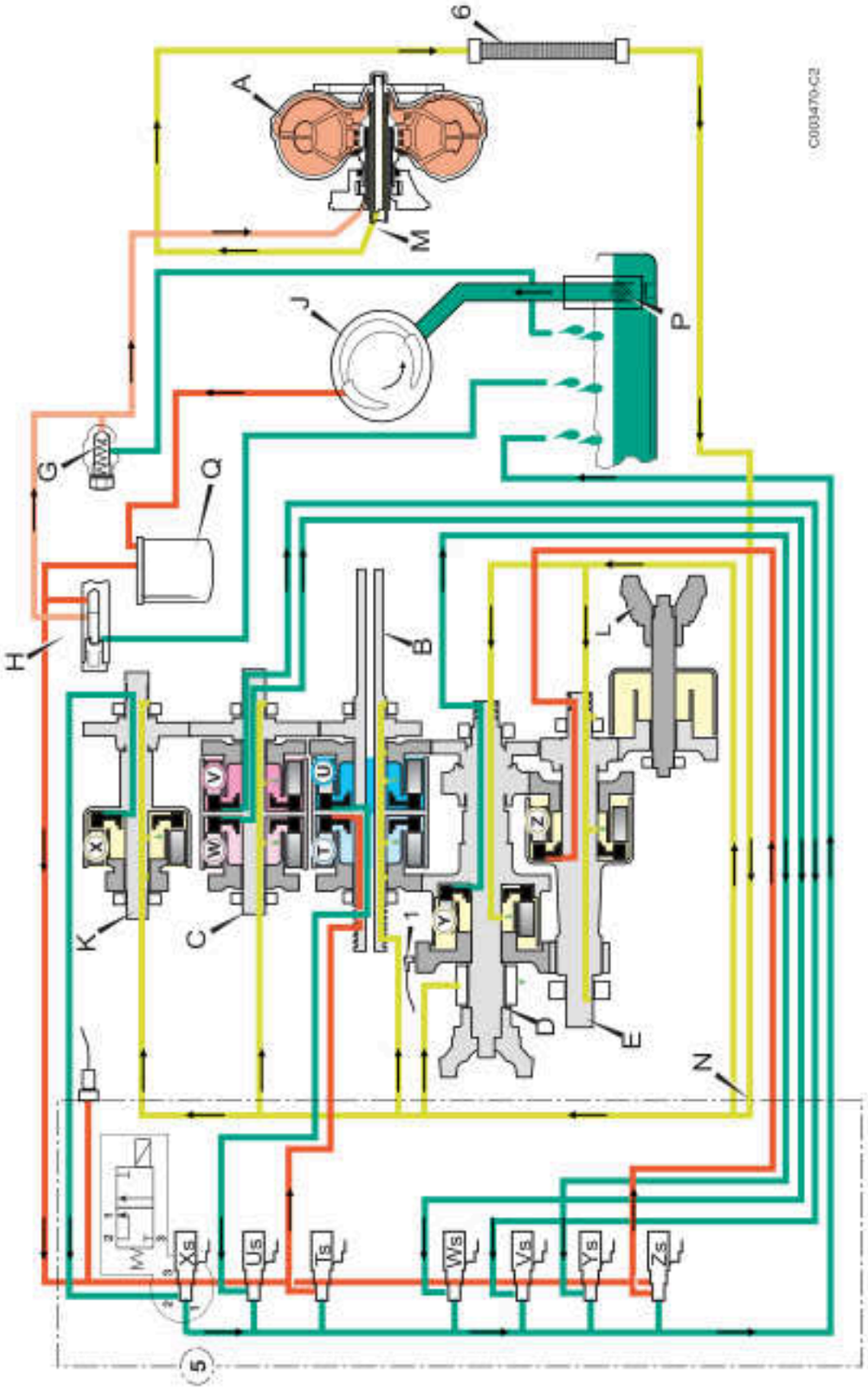


Fig 13. Electrical and Hydraulic Operation

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Starting ShiftMaster Diagnostics

1 Turn ON the machine ignition and additionally start the engine if required (taking normal precautions).

2 Start **JCB Service Master** on the laptop computer.



Fig 46.

3 Make sure that the correct DLA is selected in the chooser. Click on 'Utilities', DLA Setup. The DLA Chooser window opens. Check the button to match to the Current Device. Click 'Apply' ⇨ *Fig 28. (M-35)*.



Fig 47.

4 Select 'Compact Wheeled Loading Shovels' from the drop down list ⇨ *Fig 27. (M-35)* and then start the diagnostics tool running by clicking on the **ShiftMaster Diagnostics** icon ⇨ *Fig 29. (M-35)*.



Fig 48.

5 Warning message appears ⇨ *Fig 49. (M-50)*. Read and understand the Warning message. If you can comply with the requirements press the 'Accept' button.



Fig 49.

6 The **ShiftMaster Diagnostics** tool will then open up displaying the main window ⇨ *Fig 30. (M-35)*.

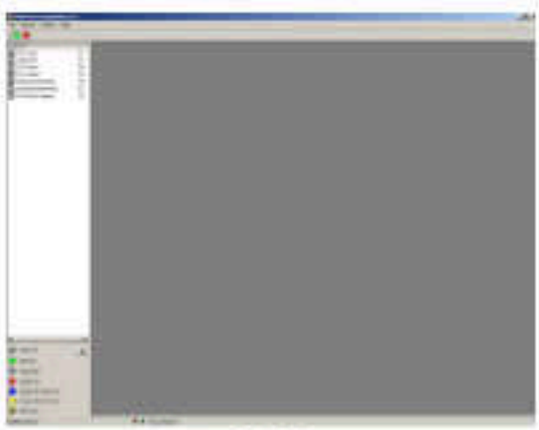


Fig 50.

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