SERVICE MANUAL

ENGINE

JCB T4F 444 Elec Engine (4 Cyl),
JCB T4F 448 Elec Engine (4 Cyl)

EN - 9806/6400 - ISSUE 4 - 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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Technical Data

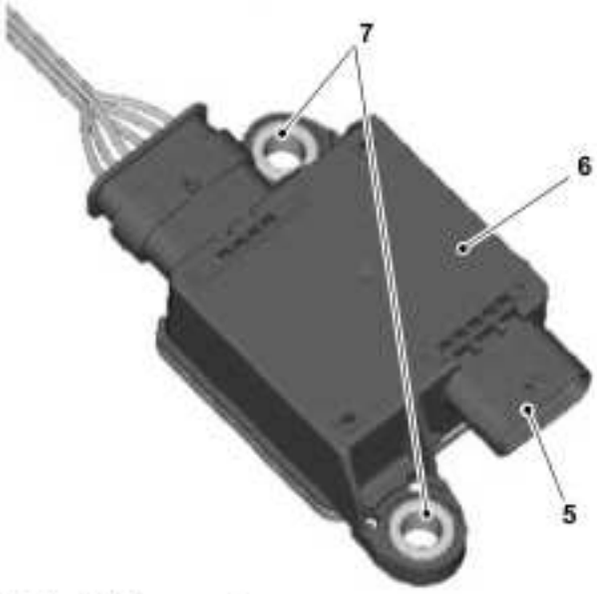
Table 4.

Description	SJ Engine	DJ Engine
Engine Variants	Turbocharged with intercooler and exhaust after treatment system	Turbocharged with intercooler and exhaust after treatment system
Emission compliance	US-EPA Tier 4 Final, EU Stage IV	US-EPA Tier 4 Final, EU Stage IV
Rated speed	2200 rpm	2200 rpm (108 kW), 2050 rpm (129 kW)
Weight (Dry)	(Dry weight-No cooling fan drive) 496 kg	(Dry weight-No cooling fan drive) 496 kg
Number of cylinders	4	4
Nominal bore size	103 mm	106 mm
Stroke	132 mm	135 mm
Cylinder arrangement	In line	In line
Combustion Cycle	4-stroke	4-stroke
Firing order	1-3-4-2	1-3-4-2
Displacement	4.399 L	4.765 L
Compression ratio	16.7: 1	16.7: 1
Engine Compression	Compression variance between each cylinder should be no greater than 3.5 bar	Compression variance between each cylinder should be no greater than 3.5 bar
Direction of rotation (viewed from front {crankshaft pulley} end)	Clockwise	Clockwise
Valves	4 per cylinder	4 per cylinder
Valve clearances measured at the tappet end of the rockers (measured cold)		
- Inlet	0.15 –0.21 mm	0.15 –0.21 mm
- Exhaust	0.43 –0.49 mm	0.43 –0.49 mm
Lubricating oil pressure (Dependent on engine temperature and speed)	1.6 –6.5 bar	1.6 –6.5 bar
Fuel filter type	Screw-on canister (with drain facility)	Screw-on canister (with drain facility)
Oil pressure relief valve setting	6 bar	6 bar
Oil pressure switch setting	0.6 bar falling	0.6 bar falling
Oil pump(1)	Integral unit with relief valve	Integral unit with relief valve
Combustion system	Common rail direct Injection	Common rail direct Injection
High pressure fuel pump	High pressure with electronically controlled fuel metering	High pressure with electronically controlled fuel metering

(1) The oil pump is a non-serviceable part

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Figure 173.



5 Electrical connector
6 Sensor control unit
7 Bolts

1. Disconnect the electrical connector from the Sensor control unit.
2. Remove the cable ties from the harness support brackets.
3. Remove the bolts (x2) that secure the Sensor control unit to the machine.
4. Remove the harness support bracket.
5. Remove the NOx sensor retaining nut.
6. Remove any additional supports or clips.
7. Remove the NOx sensor and the Sensor control unit from the machine.

Install

1. Inspect the sensor for signs of damage. Pay particular attention to the mating faces of the sensor and exhaust system. Clean off any oil or corrosion. Make sure that the faces are flat, smooth and free from damage.
2. Replace the NOx sensor sealing washer.
3. Apply anti-seize compound to the threads of the retaining nut. Make sure the correct anti-seize compound is used to prevent damage to the SCR system.

   Consumable: Graphite/Calcium Fluoride Based Metal Free Anti-Seize Compound
4. Carefully insert the NOx sensor into the exhaust system. Make sure that it is seated correctly. Tighten the retaining nut to the correct torque value.
5. Install the harness support bracket around the NOx sensor.
6. Install the Sensor control unit.
   - 6.1. Install the bolts (x2) finger tight to minimise the strain on the harness.
   - 6.2. Tighten the bolts to the correct torque value.
   - 6.3. Connect the electrical connector.
7. Install the new cable ties around the harness support brackets.
8. Install any additional supports and clips.

Table 88. Torque Values

Item	Nm
3	70
7	10

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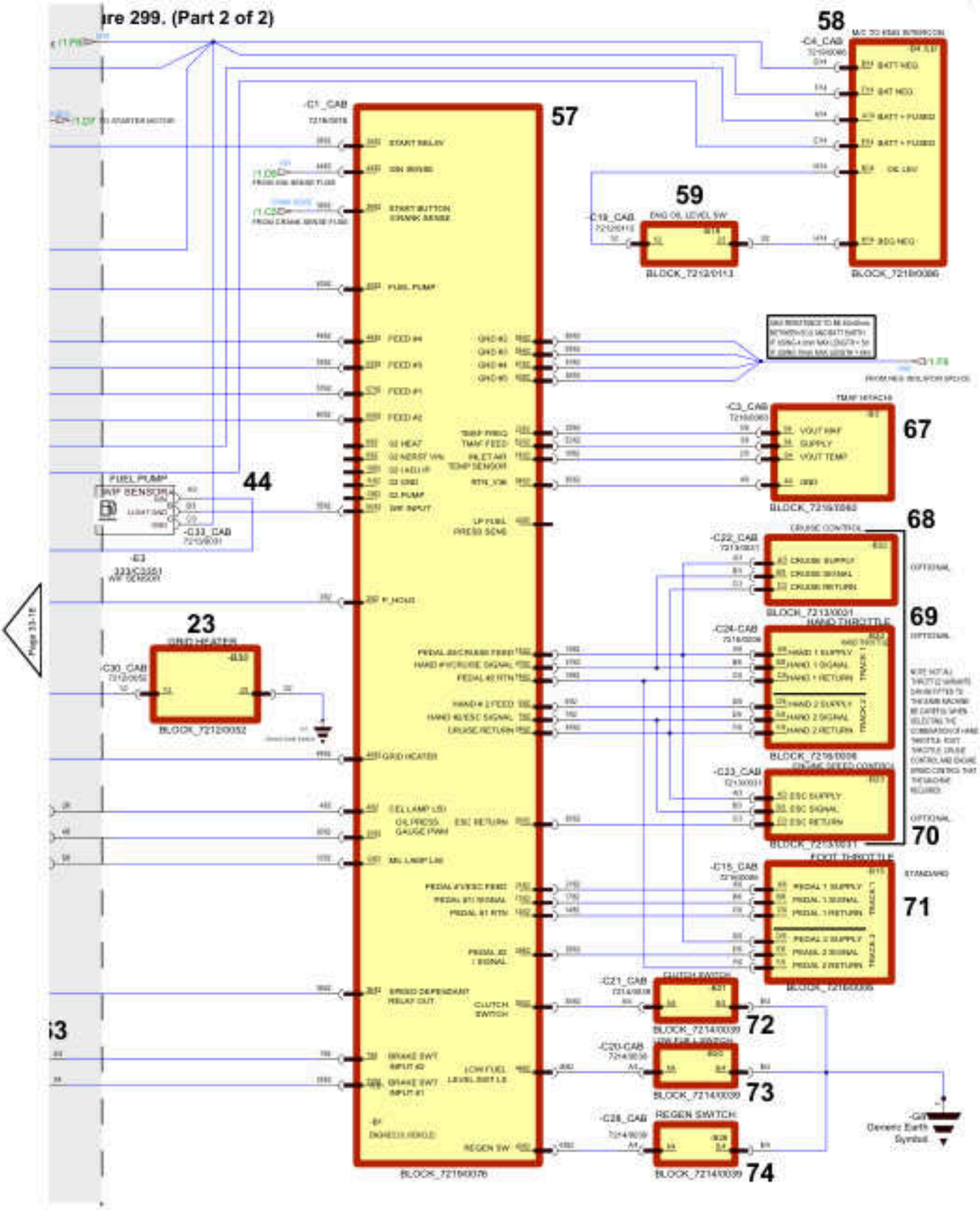
Fault Code log

The fault code log can be read on the instrument panel LCD (Liquid Crystal Display). Alternatively use the JCB Servicemaster diagnostics tool.

Read the fault code log on the instrument panel LCD via the service menu. Use JCB Servicemaster and a laptop computer connected to machine CANbus to see the codes.

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Remove and Install

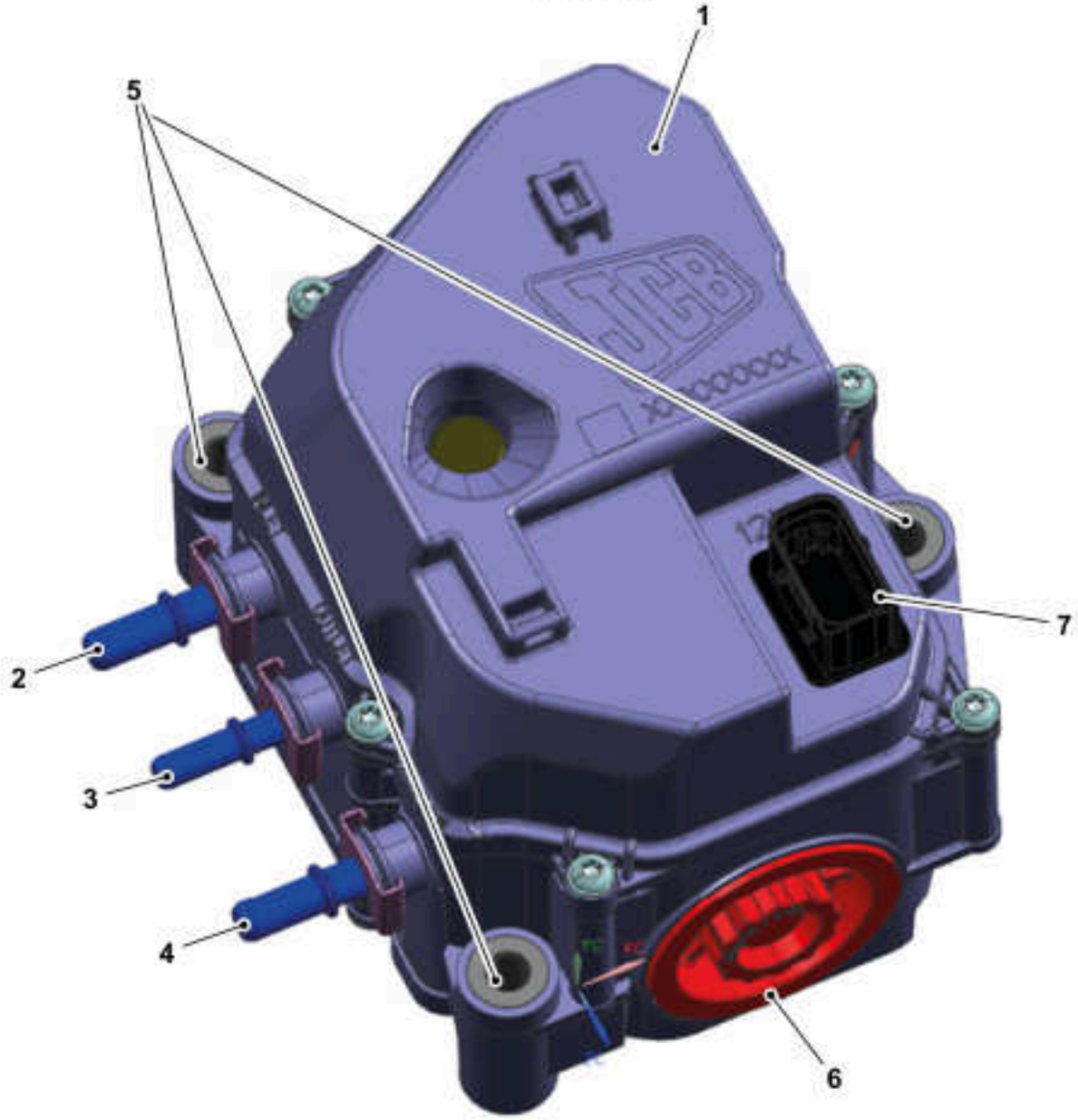
This component is not serviceable, if the component fails replace the complete module.

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 250.



1 Pump supply module

2 DEF (Diesel Exhaust Fluid) inlet spigot

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