SERVICE MANUAL

ENGINE

JCB T2/3 Mech Engine 4 Cyl

EN - 9806/7050 - ISSUE 2 - 10/2017

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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Technical Data

Table 30. Crankcase and Bedplate Data

	4.4L	4.8L
Cylinder bore[1]	103–103.02mm	106–106.02mm
Main bearing bolts torque[2]		
First stage	50N·m	50N·m
Second stage	115N·m	115N·m
Final stage	Turn a further 180°	Turn a further 180°
Surface finish for cylinder head joint[3]	Rz < 15m, Rmax < 20	Rz < 15m, Rmax < 20
Diameter of first oversize bore	103.5–103.52mm	106.5–106.52mm
Diameter of second oversize bore	104–104.02mm	
Main bearing bore (without bearings)		
Numbers 1 to 4	92–92.02mm	92–92.02mm
Number 5	105–105.02mm	105–105.02mm
Main bearing bore (with bearings)		
Numbers 1 to 4	88.047–88.09mm	88.047–88.09mm
Number 5	100.047–100.09mm	100.047–100.09mm
Camshaft bore		
Numbers 1 to 4	60.04–60.07mm	60.04–60.07mm
Number 5 (bush)	60.29–60.32mm	60.29–60.32mm
Permissible wave profile	wt < 10m (2.5 distance)	wt < 10m (2.5 distance)

(1) Nominal diameter to be measured 63mm below the cylinder head face.
(2) Torque information MUST be used in conjunction with the recommended procedures contained in this manual. Failure to use the appropriate and correct removal, replacement, dismantle and assembly procedures may result in an engine failure in service. Refer also to the procedures for the correct bolt tightening sequence.
(3) The crankcase to cylinder head surface may be skimmed and restored using the oversize gaskets (0.25mm and 0.5mm).

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Remove

1. Remove the flywheel hub fixing bolt.
2. Remove the flywheel hub. DO NOT remove the crankshaft gear.
3. Remove the oil pump fixing bolts and lift the oil pump away from the timing gear case.

The oil pump is a non-serviceable item. If the oil pump is damaged or worn it must be renewed as a complete assembly.

Install

1. The installation procedure is the opposite of the removal procedure. Additionally do the following steps.
2. Make sure that all parts are clean and free from damage and corrosion.
3. Lubricate the pump rotor with clean engine oil.
4. Make sure that the oil pump location dowel locates into the hole in the gear timing case.
5. Install the flywheel hub into the crankshaft gear, locating on the dowel. Tighten the bolts to the correct torque value.

   Special Tool: Torque Wrench (10-100Nm) (Qty.: 1)

After Replacement

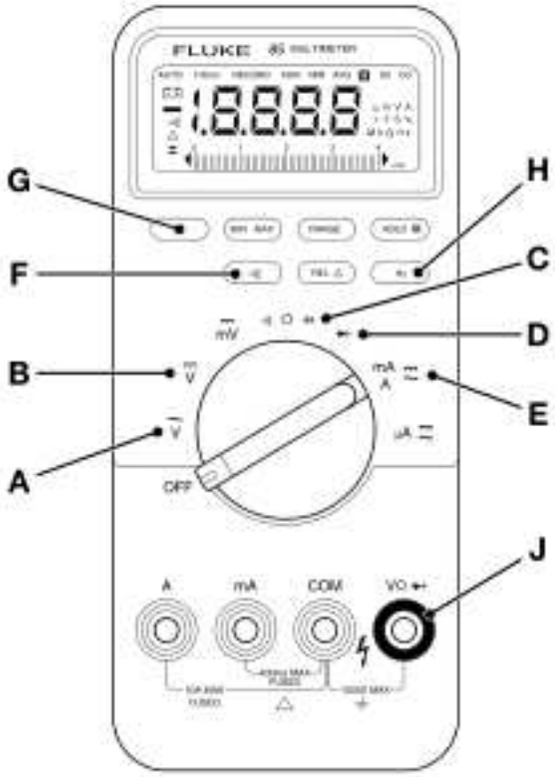
1. Install the flywheel housing, refer to (PIL 15-54).
2. Install the flywheel to the crankshaft hub, refer to (PIL 15-54).
3. Install the starter motor, refer to (PIL 15-75).
4. Fill the engine with engine oil, refer to (PIL 15-21).

Table 53. Torque Values

Item	Nm
2	24
4	47

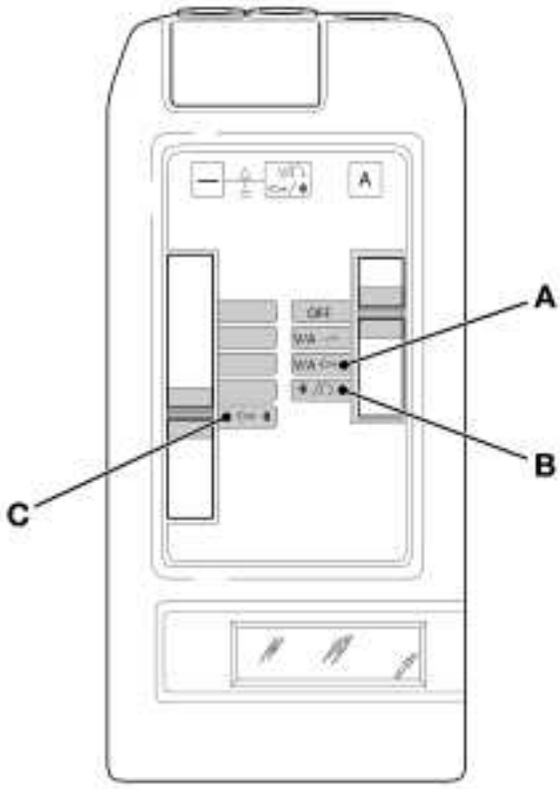
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Figure 221. Fluke 85 Multimeter



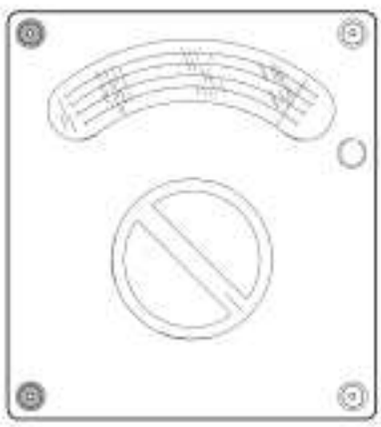
1.2. On the AV0 meter, move the right slider switch to position A, and the left hand slider switch to the appropriate range.

Figure 222. AVO 2003 Multimeter



1.3. On an analogue meter, turn the dial to the appropriate DC Volts range.

Figure 223. Typical Analogue Multimeter

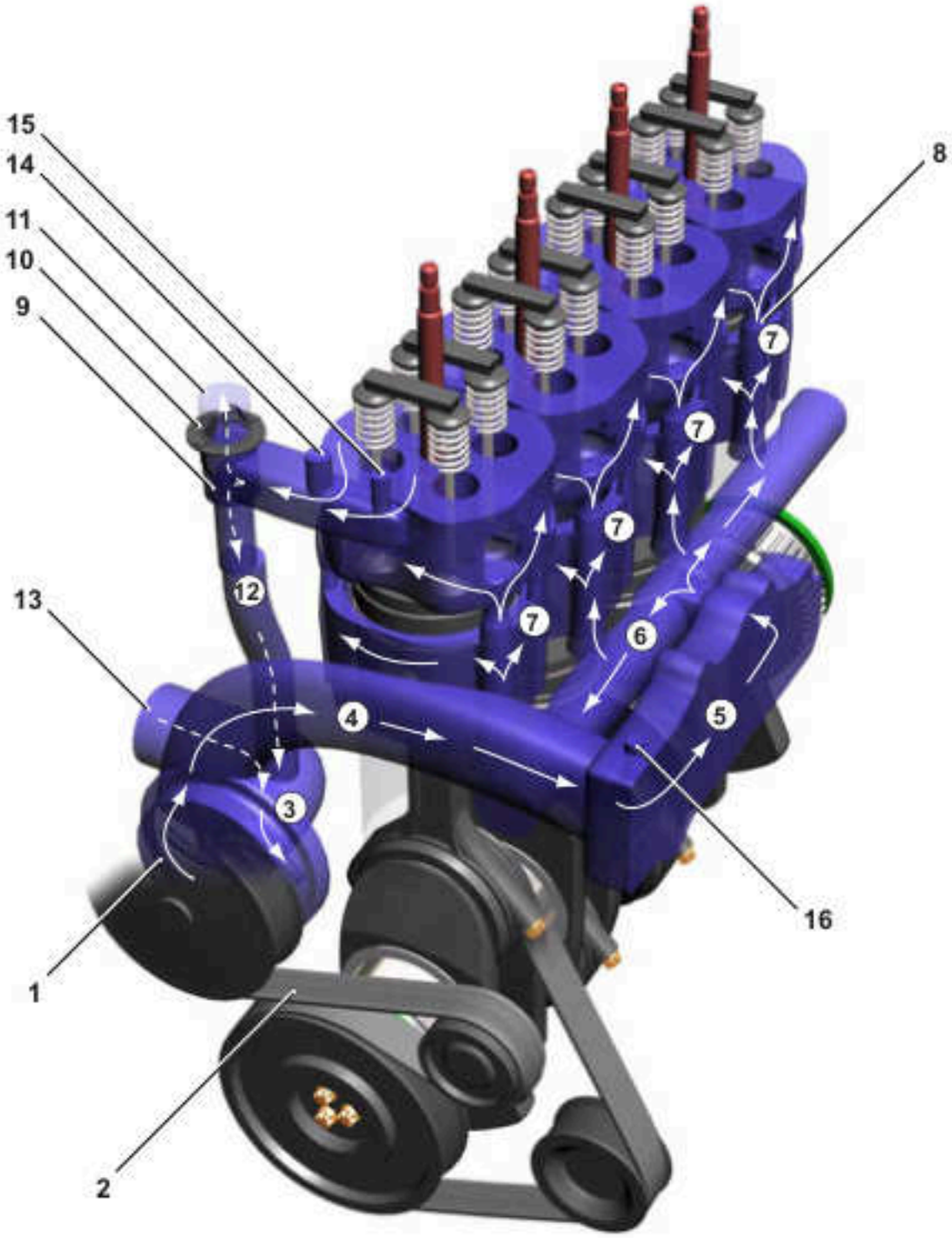


2. Connect the black probe to the nearest available suitable earth point, usually this will be the starter motor earth, the battery negative, or the chassis. Connect the red probe to the wire or contact from which you are measuring the voltage.

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Component Identification

Figure 194.

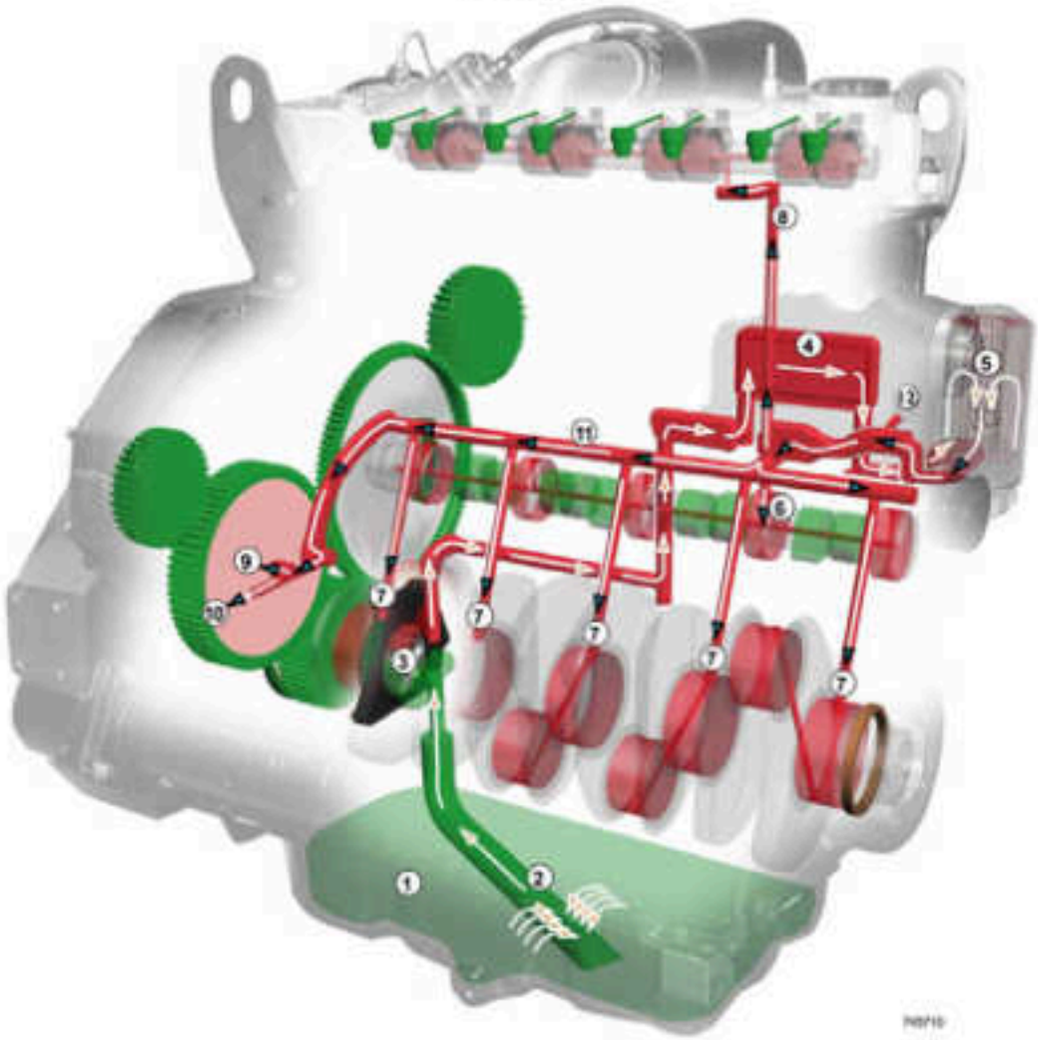


1	Coolant pump	2	Drive belt

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Component Identification

Figure 96.



1	Oil sump	2	Suction strainer
3	Oil pump	4	Oil cooler
5	Filter	6	Camshaft - high pressure oil feed
7	Crankshaft main bearings - high pressure oil feed	8	Rocker assembly - high pressure oil feed
9	PTO (Power Take-Off) idler gear bearing/ timing case - high pressure oil feed	10	External high pressure oil feed connection (crankcase) - Turbocharger (if installed)
11	Main high pressure oil feed gallery (crankcase) Green- Oil at sump pressure Pink- Oil at lower pressure but higher than sump pressure	12	Oil pressure switch Red- Oil at high pressure

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