SERVICE MANUAL

JCB 672 Mechanical Engine

EN - 9806/6900 - ISSUE 3 - 2016-08-22

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

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Foreword

The Operator's Manual

⚠

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
Fuel tank cap vent/breather blocked.	Inspect and rectify as required. Replace cap if necessary.
Fuel is aerated.	Check the fuel system for loose connections and possible air ingress points. Rectify and bleed the fuel system.
Electrical sensor fault.	Check the electrical connections at the sensors.
One or more fuel injectors worn or malfunctioning.	Check the electrical connections at the injectors.
Worn or malfunctioning high pressure fuel pump.	Do all the necessary fault finding checks before removal of the high pressure fuel pump.

Table 18. Engine - Vibration Excessive

Cause	Remedy
Engine not running smoothly/misfiring.	See Also: Table 11. Engine - Poor Running at Idle
Oil level incorrect.	Check oil level.
Fan damaged or accessories faulty.	Check/replace the vibrating component. Refer to the machine's service manual for correct installation and torque figures.
Fan hub faulty.	Inspect/replace the fan hub. Refer to the machine's service manual for correct installation and torque figures.
Engine mounts over-tightened, damaged or loose.	Check/replace engine mounts.
Inlet and exhaust valve clearances set incorrectly.	Set the valve clearances to the recommended clearances.
Engine compression low in one or more cylinders.	Check the engine compression.
Alternator bearing worn or damaged.	Check/replace the alternator.
Flywheel housing misaligned.	Check/repair flywheel alignment.
Electrical sensor fault.	Check the electrical connections at the sensors.
Driveline components worn or unbalanced.	Check and inspect driveline components such as propshafts. Refer to the relevant section of the service manual for correct installation and torque figures.

Table 19. Engine - Exhaust Smoke Excessive (Black Smoke)

Cause	Remedy
Engine being lugged down.	Check for added loading from malfunctioning accessories or driven units, brakes dragging and other changes in vehicle loading. Disengage the hydraulic controls.
Air intake or exhaust system blocked.	Visually check the air intake and exhaust system for blockage or obstruction - remove as required. Check the air filter elements for signs of blocking - replace as required.
Air leak between the turbocharger and the intake manifold.	Check/repair leaks in the air crossover tube, hoses, or manifold cover.
Intercooler faulty.	Check for blocked cooler matrix.
Exhaust leak at the manifold or turbocharger	Check/repair leaks in the manifold or turbocharger gaskets. Look for a cracked manifold.
Turbocharger malfunction.	Replace turbocharger.
Electrical sensor fault.	Check the electrical connections at the sensors.
Engine compression low in one or more cylinders. Smokes under load at all speeds, but mainly low to mid speed range.	Check the engine compression.

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Technical Data

Table 30. Cylinder Head Data

Cylinder head distortion (maximum permissible)[1]	
- End to end	0.05mm
- Side to side	0.03mm
Valve recess depth	
- Inlet	0.85mm
- Exhaust	0.85mm
Valve seat angle	
- Inlet	120(inclusive)
- Exhaust	90(inclusive)
Cylinder head bolts torque[2]	
- First stage	40
- Second stage	75
- Third stage	Repeat75
- Fourth stage	Torque angle + 90
- Final stage	Torque angle + 180
Surface finish for cylinder head joint	Rz < 15 Rmax < 20
Permissible wave profile	wt < 10m 2.5 distance

(1) The crankcase to cylinder head surface may be skimmed and restored using the oversize gaskets (0.25mm and 0.5mm).
(2) Torque information MUST be used in conjunction with the recommended procedures contained in this manual. Failure to use the appropriate and correct remove, install, disassemble and assemble procedure may result in an engine failure in service. Refer also to the procedures for the correct bolt tightening sequence.

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Health and Safety

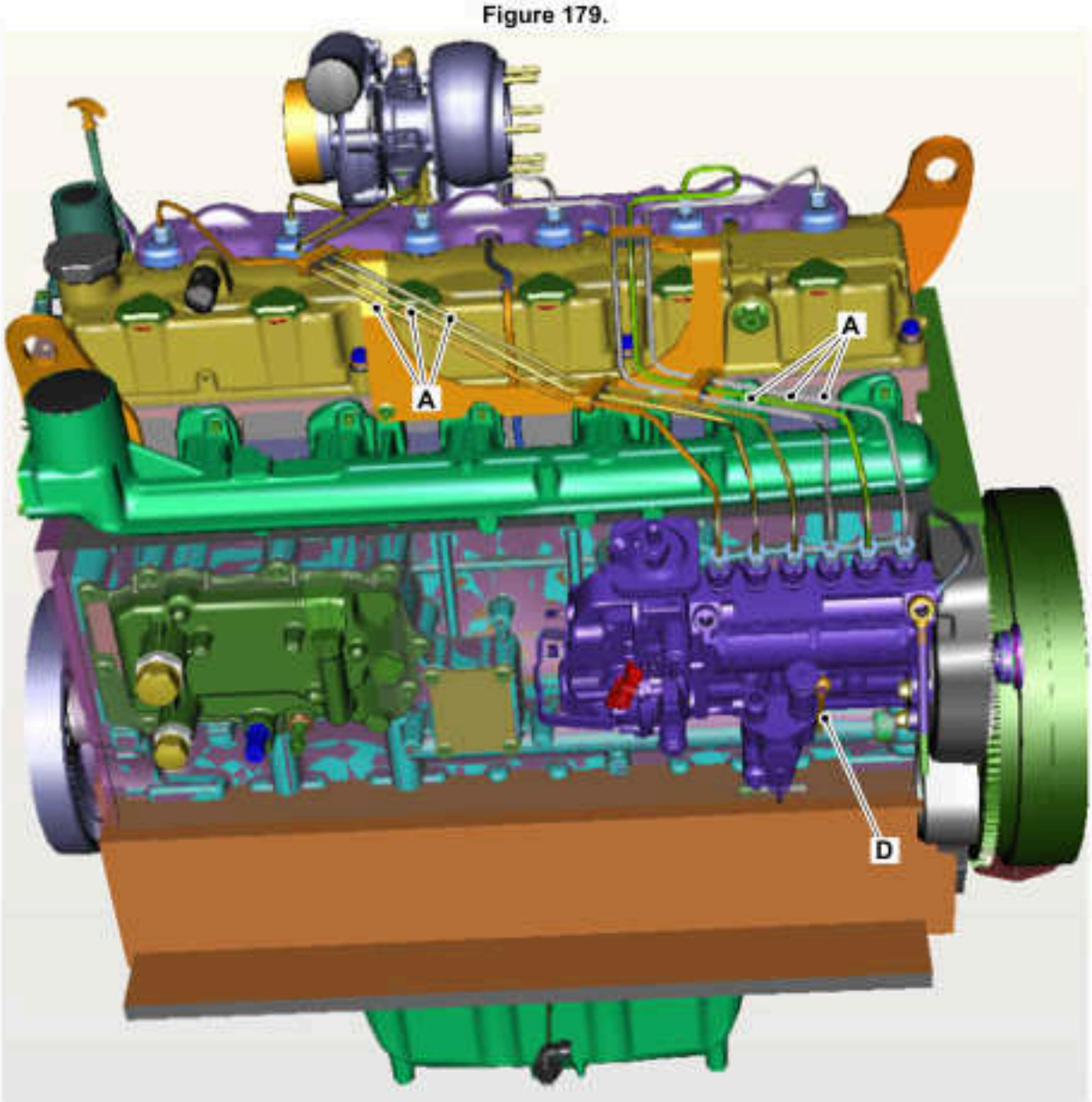
⚠ **Notice:** Do not disconnect the battery while the engine is running, otherwise the electrical circuits may be damaged.

CAUTION Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and/or damage.

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Component Identification

Figure 179.



A Pipe assembly high pressure - Rail to injector (x6)
B Pipe low pressure - Fuel lift pump and pre-filter/ water separator (not shown)
C Pipe low pressure - Fuel filter to high pressure pump (not shown)
D Pipe assembly low pressure - Fuel injectors to tank

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Figure 162.



F Timing pin location

4.2. Reverse the timing pin and install it back to the locking bolt.

4.3. Tighten the timing pin to the correct torque value.Refer to Figure 163. and Refer to Figure 164.

Figure 163.



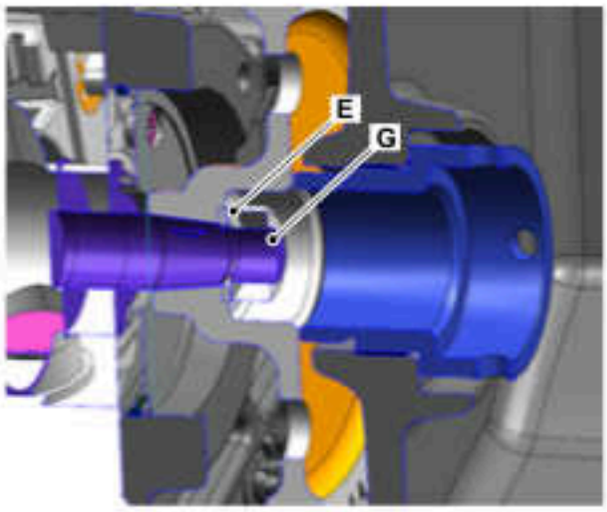
F Timing pin

Figure 164.



5. Tighten the fuel injection pump nut and washer to the correct torque value. Refer to Figure 165.

Figure 165.



6. Install the fuel injection pump gear cover.

After Installation

1. Reconnect the fuel inlet and return pipes.
2. Install the high pressure fuel pipes. Refer to (PIL 18-96).
3. Replace the fuel filters.
4. Bleed the fuel system. Refer to (PIL 18-00).
5. Start the engine and check for any leaks.

Table 72. Torque Values

Item	Nm
B	40
D	25
F	12
G	85
1	40
2	40
3	40
4	40

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