# SERVICE MANUAL

EXCAVATOR

**JS300, JS330, JS370**

EN - 9813/7500 - ISSUE 2 - 10/2017

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

# 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.

## Contents

## 00 - General



## Introduction

The crankcase ventilation filter is built into the underside of the rocker cover. The filter separates engine oil from the blow by gas. The engine oil drains back into the rocker arm housing.

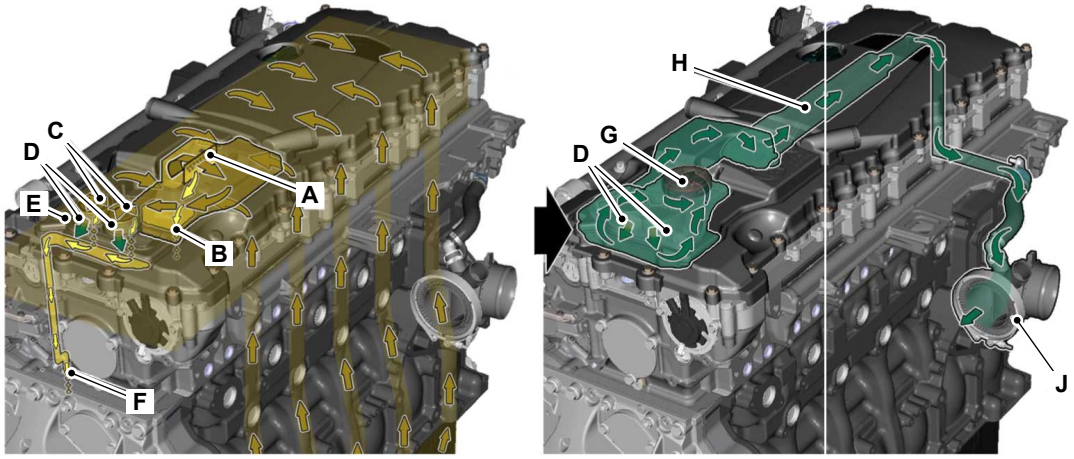
No routine maintenance is required.

## Operation

The engine oil is separated from the blow-by gas in the oil mist separator in two phases:

1. The blow-by gas is accelerated through the holes in the nozzle plate. This accelerated blow-by gas hits a wall in the oil mist separator housing central section and the engine oil droplets contained in the blow-by gas are separated. The vertical fins on the wall improve the separation of the engine oil from the blow-by gases and also help engine oil to drain downwards. Once enough separated engine oil gets collected to open the check valve which is installed in the oil drainage duct the separated engine oil flows via the oil drainage duct back into the rocker arm housing. The check valve also prevents the blow-by gases in the rocker arm housing from entering the oil mist separator via the oil drainage duct.

**Figure 129.**




**A** Nozzle plate
**B** Oil drain duct
**C** Impactors
**D** Fleece elements
**E** Oil drain valve
**F** Crankcase ventilation non-return valve
**G** Pressure regulating valve
**H** Vent line
**J** Air intake pipe

2. The blow-by gas is accelerated through the holes in the nozzle plate. This accelerated blow-by gas hits a wall in the oil mist separator housing central section and the engine oil droplets contained in the blow-by gas are separated. The vertical fins on the wall improve the separation of the engine oil from the blow-by gases and also help engine oil to drain downwards. Once enough separated engine oil gets collected to open the check valve which is installed in the oil drainage duct the separated engine oil flows via the oil drainage duct back to the rocker arm housing. The check valve also prevents the blow-by gases in the rocker arm housing from entering the oil mist separator via the oil drainage duct.

# 00 - General

## Adjust

**Special Tools**

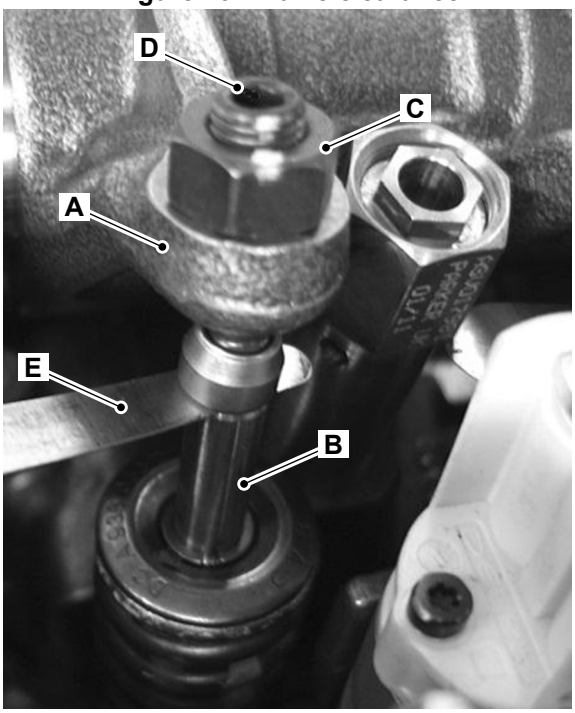
| Description | Part No. | Qty. |
|---|---|---|
| Crankshaft Turning Tool (123.5mm PCD)- MTU | 334/V7497 | 1 |

1. Make the machine safe with the lift arm lowered.
   Refer to: PIL 01-03.
2. Make sure that the engine is safe to work on. If the engine has been running, make sure the engine has cooled sufficiently before you start the adjustment.
   2.1. For accurate valve clearance measurement the engine must be cold. The engine must have been stopped for the minimum specified time period.
   Duration: 30min
3. Open the engine cover.
   Refer to: PIL 06-06-06.
4. Remove the rocker cover.
   Refer to: PIL 15-42-06.

**Figure 130.**


5. Check the TDC (Top Dead Centre) position of piston in cylinder 1. Refer to Figure 130.
   5.1. If the rocker arms are unloaded on cylinder 1, the piston is at firing TDC.
   5.2. If the rocker arms are under load on cylinder 1, the piston is at overlap TDC.
   5.3. If necessary rotate the crankshaft with the recommended tool.
   Special Tool: Crankshaft Turning Tool (123.5mm PCD)- MTU (Qty.: 1)
6. Make sure that the piston in cylinder 1 is at overlap TDC.
7. Measure the following valve clearances valves with the feeler gauge: Refer to Figure 131.
   7.1. Exhaust valves on cylinder 2
   7.2. Intake valves on cylinder 3
   7.3. Exhaust valves on cylinder 4
   7.4. Intake valves on cylinder 5
   7.5. Intake valves, exhaust valves on cylinder 6
8. The engine brake valve clearance must be adjusted after checking or adjusting the exhaust valve clearances. 14

**Figure 131. Valve clearance**




**A** Rocker arm
**B** Valve
**C** Locknut
**D** Adjusting screw 1
**E** Feeler gauge

9. Make sure that the piston in cylinder 6 is at overlap TDC.
10. Measure the valve clearances for the below mentioned valves with the feeler gauge: Refer to Figure 131.

10.1. Intake valves on cylinder 2.

10.2. Exhaust valves on cylinder 3.

10.3. Intake valves on cylinder4.

10.4. Exhaust valves on cylinder 5.

10.5. Both intake and exhaust valves on cylinder 1.

11. The engine brake valve clearance must be adjusted after checking or adjusting the exhaust valve clearances. 14

12. Make sure that the valve clearances on a cold engine are within specified limits.

12.1. For intake valve

Distance: 0.3 ± 0.05mm

12.2. For exhaust valve

Distance: 0.6 ± 0.05mm

13. If the valve clearance is not within permitted limits, adjust the clearance as follows: Refer to Figure 131.

13.1. Release the locknut 1 and turn out the adjusting screw 1 a few turns.

13.2. Insert a feeler gauge between the valve and the rocker arm.

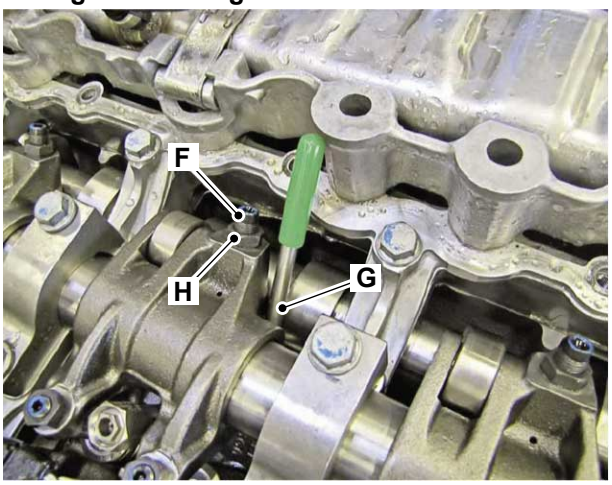
13.3. Adjust the adjusting screw 1 again until the feeler gauge can just pass.

13.4. Tighten the locknut 1 to the correct torque value.

13.5. Measure the valve clearance again with the feeler gauge.

14. Adjust the engine brake valve clearance after checking or adjusting the associated exhaust valve clearances. The engine brake valve clearance cannot be checked, it must be adjusted.

**Figure 132. Engine brake valve clearance**




**F** Adjusting screw 2
**G** Feeler gauge 0.5mm
**H** Locknut 2

14.1. Release the locknut 2 and turn out the adjusting screw 2 a few turns.

14.2. Insert the specified thickness feeler gauge between the engine brake valve and the rocker arm.

Length/Dimension/Distance: 0.5mm

14.3. Adjust the adjusting screw again until the feeler gauge can just pass.

14.4. Tighten the locknut 2 to the correct torque value.

**Table 39. Torque Values**

| Item | Description | Nm |
|---|---|---|
| C | Locknut 1 | 30 |
| H | Locknut 2 | 27 |

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