SERVICE MANUAL

EXCAVATOR

JCB305, JS305

EN - 9813/6700 - ISSUE 1 - 12/2016

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 53. Crankcase and Bedplate Data

Cylinder bore[1]	106–106.02mm
Main bearing bolts torque[2]	
First stage	50N·m
Second stage	115N·m
Final stage	Turn a further 180°
Surface finish for cylinder head joint[3]	Rz < 15m, Rmax < 20
Diameter of first oversize bore	106.5–106.52mm
Diameter of second oversize bore	
Main bearing bore (without bearings)	
Numbers 1 to 6	92–92.02mm
Number 7	105–105.02mm
Main bearing bore (with bearings)	
Numbers 1 to 6	88.047–88.09mm
Number 7	100.047–100.09mm
Camshaft bore	
Numbers 1 to 6	60.04–60.07mm
Number 7 (bush)	60.29–60.32mm
Permissible wave profile	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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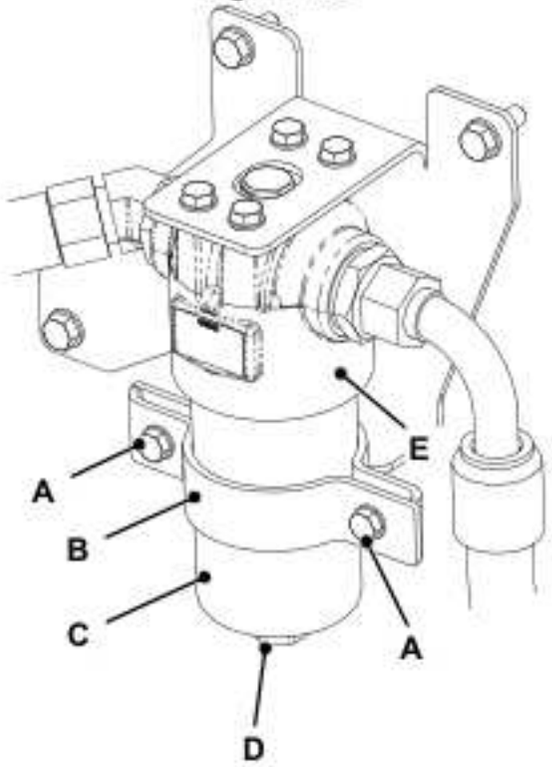
10 - Auxiliary Return Line

Remove and Install

Remove

1. Make the machine safe.
   Refer to: Safety (Page 01-1).
2. Discharge the hydraulic pressure.
   Refer to: General (Page 30-3).
3. Get access to the auxiliary return line filter assembly.
   3.1. Clean the area around the auxiliary return line filter to prevent contamination.
4. Support the filter bowl.
5. Remove the filter bowl securing bolts and bowl securing bracket.
6. Using a wrench on the hexagon at the base of the bowl, unscrew the filter bowl from the filter body. Take care not to spill the hydraulic oil.
7. Discard the O-ring and filter element.

Figure 426.



A Filter bowl securing bolts
B Filter bowl securing bracket
C Filter bowl
D Hexagon
E Filter body

Install

1. Installation is the opposite of the removal procedure.
2. Install a new filter bowl O-ring and lubricate with hydraulic fluid.
3. Install a new filter element into the filter bowl.
4. When refitting the filter bowl, it is important that the filter bowl is tightened carefully to avoid damaging the threads in the filter body.
5. Tighten the filter bowl to the specified torque. Refer to Table 169.
6. Start the engine.
   6.1. Operate the auxiliary services which are installed to the machine.
   6.2. Check the hydraulic oil level.
   Refer to: General (Page 30-47).

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82 - Auxiliary Hydraulic Circuit

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Introduction

Rockbreaker / Bi-direction

The switch has two positions and can be set to operate the auxiliary hydraulic circuit in the following modes.

- Bi-direction normal flow.
- Single direction direct return to tank (rockbreaker operation).

Merge Flow

The switch has two positions.

- Merge flow ON.
- Merge flow OFF.

Merge flow only operates in bi-direction mode. Merge flow defaults to OFF if the rockbreaker / bi-direction switch is set to rockbreaker (single direction) operation.

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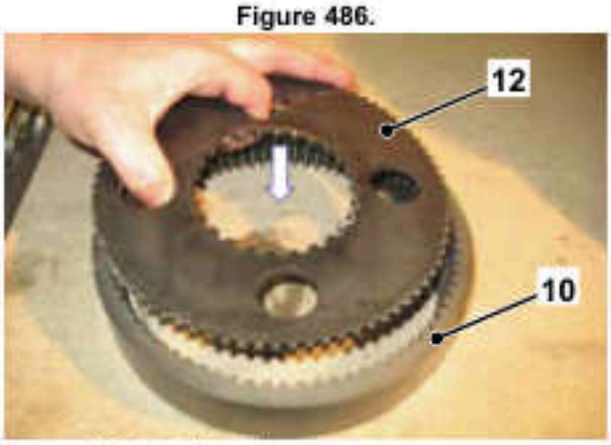
Figure 485.



16 Toothed ring
23 Gearbox housing

29. Assemble the discs in the toothed ring.

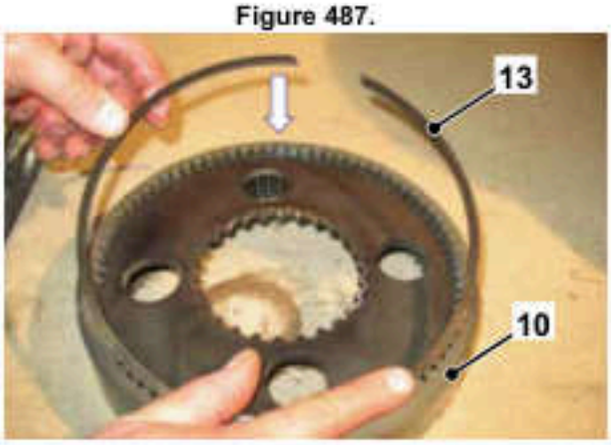
Figure 486.



10 Toothed ring
12 Discs

30. Insert the circlip into its seat in the toothed ring.

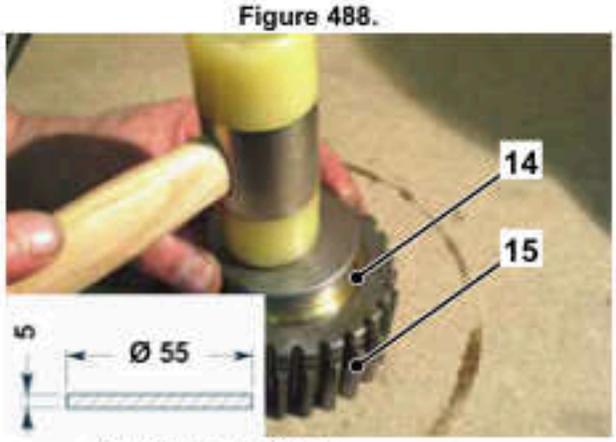
Figure 487.



10 Toothed ring
13 Circlip

31. By using a rubber hammer and a spacer assemble the centering ring into its seat in the sun gear.

Figure 488.



14 Centering ring
15 Sun gear

32. Insert the 2nd reduction sun gear into the toothed ring.

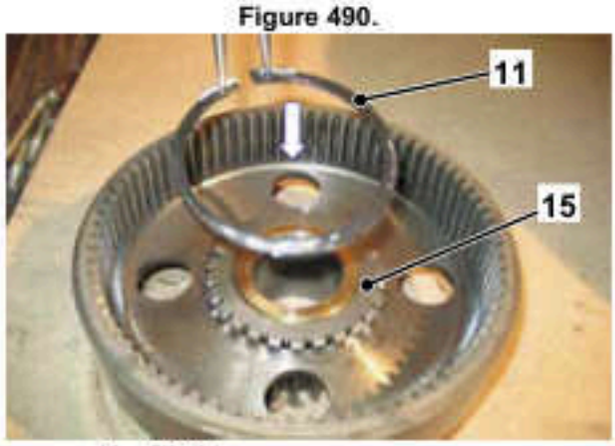
Figure 489.



10 Toothed ring
15 Sun gear

33. By using circlip pliers, assemble the circlip into its seat in the 2nd reduction sun gear.

Figure 490.



11 Circlip
15 Sun gear

34. Insert the toothed ring assembly.

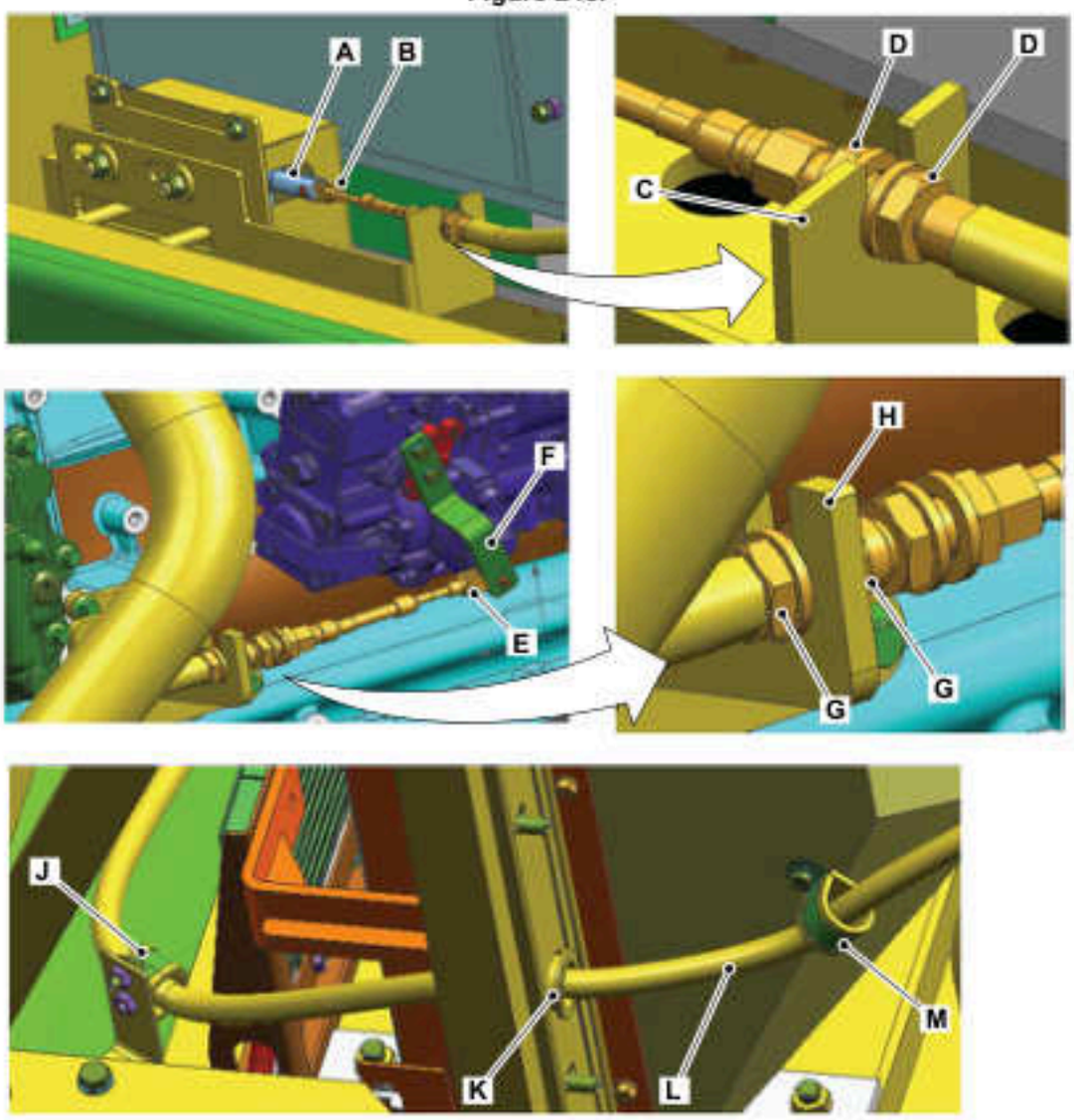
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Remove and Install

Remove - Throttle Cable

1. Make the machine safe, refer to (PIL (Parts Identification List) 01-03).
2. Remove the ignition key.
3. Loosen the bulkhead nuts 2 at the bracket 2.
4. Disconnect the clevis 2 at the fuel injection pump lever.
5. Loosen the bulkhead nuts 1 at the bracket 1.
6. Disconnect the clevis 1 at the throttle actuator.
7. Remove the throttle cable from the machine.

Figure 245.



A Throttle actuator
B Clevis 1
C Bracket 1
D Bulkhead nuts 1
E Clevis 2
F Fuel injection pump lever
G Bulkhead nuts 2
H Bracket 2
J Support clip
K Grommet
L Throttle cable
M Support clip

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