SERVICE MANUAL

SKIDSTEER LOADER
135 HD, 155 HD

EN - 9813/4450
ISSUE 2 - 03/2017

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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Cause	Remedy
Dirt or fault in motor flushing circuit	Inspect motor for dirt or damage. Repair as required.
No Drive in any direction	Transmission cut off valve sticking or the electrical system.
Machine veers to one side when travelling-	Refer to Servicemaster, Set-up Tools, Calibration procedure.

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Introduction

A schematic wiring diagram is a simplified pictorial representation of the machines hydraulic circuit. It shows the components of the circuit as simplified hydraulic symbols, and the connections between the different components. The schematic diagram is used to troubleshoot problems and to make sure that all the connections have been made and that everything is present. Detailed schematics for individual systems are given in the relevant PIL section.

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Technical Data

Table 227. Specifications

Thread Diameter	Outside Diameter	Material Thickness	Total Rivet Length	Drill Hole Diameter
mm	mm (inch)	mm (inch)	mm (inch)	mm (inch)
M5	7	0.25–3	14	7.1
M5	7	3–5.5	17	7.1
M6	9	0.5–3	16	9.1
M6	9	3–5.5	19	9.1
M8	11	0.5–3	18	11.1
M8	11	3–5.5	21	11.1
M10	13	1–3.5	23	13.1
M10	13	3.5–6	26	13.1

Remove and Install

Consumables

Description	Part No.	Size
Threaded Insert (M10 x 23mm)	826/01104	-
Threaded Insert (M10 x 26mm)	826/01105A	-
Threaded Insert (M6 x 16mm)	826/01099	-
Threaded Insert (M6 x 19mm)	826/01101	-
Threaded Insert (M8 x 18mm)	826/01102	-
Threaded Insert (M8 x 21mm)	826/01103	-

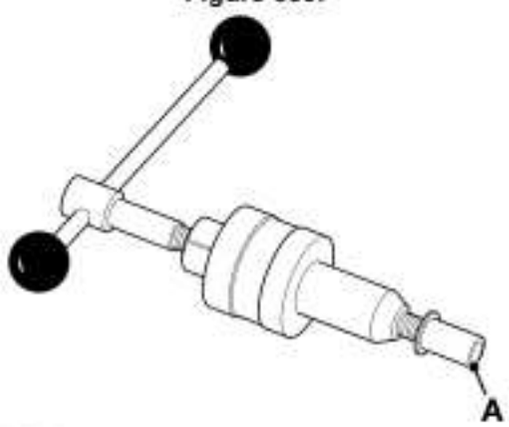
The Threaded insert installation tool is available from Bolhoff Fastenings Ltd. www.bolhoff.com.

Install

1. Drill a hole in the machine body/framework where the threaded insert is to be installed, refer to technical data for the correct size.
2. De-burr the hole edges.
3. Screw the threaded insert on to the mandrel of the installation tool. The bottom of the mandrel should be in line with the bottom of the threaded insert.

   Consumable: Threaded Insert (M6 x 16mm)
   Consumable: Threaded Insert (M6 x 19mm)
   Consumable: Threaded Insert (M8 x 18mm)
   Consumable: Threaded Insert (M8 x 21mm)
   Consumable: Threaded Insert (M10 x 23mm)
   Consumable: Threaded Insert (M10 x 26mm)

Figure 660.

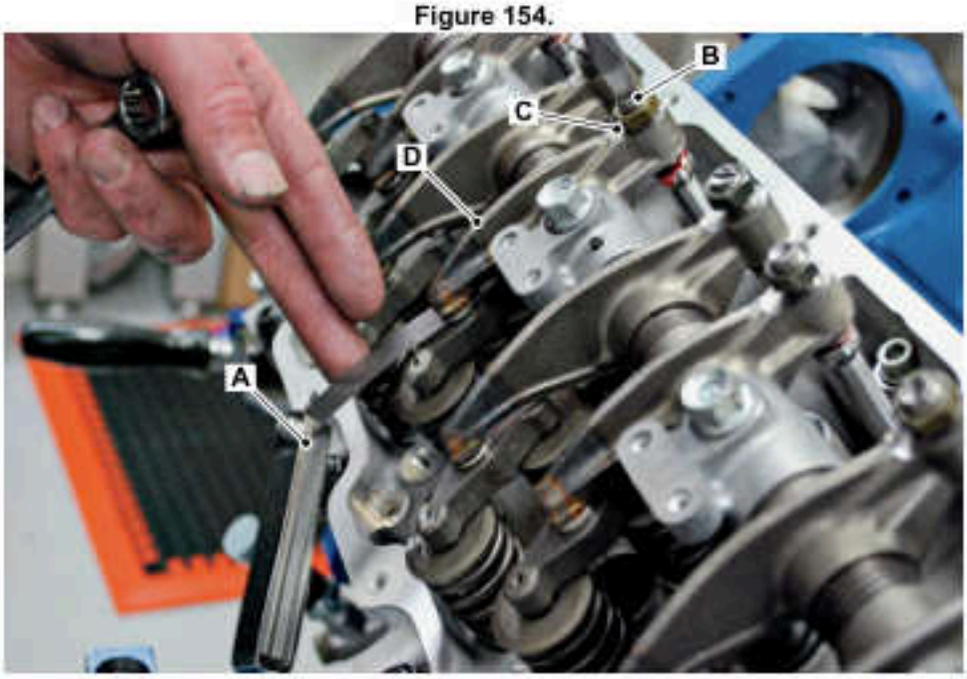


A Threaded insert

4. Wind the body of the installation tool down the threaded mandrel until it touches the head of the threaded insert.

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Figure 154.



A Feeler gauge
B Adjusting screw
C Locknut
D Rocker arm

6.3. Hold the locknut and turn the adjustment screw.

6.4. Adjust the valve lash until the correct specification is achieved.

6.5. After each adjustment, hold the adjusting screw and tighten the locknut.

7. Rotate the crankshaft in a clockwise direction to the specified angle.

   Angle: 180°

8. When the inlet valve of the No. 2 cylinder has started to open and the exhaust valve of the No. 2 cylinder has not completely closed, make sure that the "Top" mark on the timing case aligns with "Middle dot" on the crankshaft pulley.

9. Check the valve lash of the inlet valve and the exhaust valve of the No. 3 cylinder. If necessary, do the step 6

10. Rotate the crankshaft in a clockwise direction to the specified angle.

    Angle: 180°

11. When the inlet valve of the No. 1 cylinder has started to open and the exhaust valve of the No. 1 cylinder has not completely closed, make sure that the "Top" mark on the timing case aligns with "Single dot" on the crankshaft pulley.

12. Check the valve lash of the inlet valve and the exhaust valve of the No. 4 cylinder. If necessary, do the step 6

13. Rotate the crankshaft in a clockwise direction to the specified angle.

    Angle: 180°

14. When the inlet valve of the No. 3 cylinder has started to open and the exhaust valve of the No. 3 cylinder has not completely closed, make sure that the "Top" mark on the timing case aligns with "Middle dot" on the crankshaft pulley.

15. Check the valve lash of the inlet valve and the exhaust valve of the No. 2 cylinder. If necessary, do the step 6

16. Install the timing gear front case. Refer to (PIL 15-51).

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00 - General

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Introduction

The radial piston motor consists of a two part housing, rotary piston group, cam, output shaft and a flow distributor.

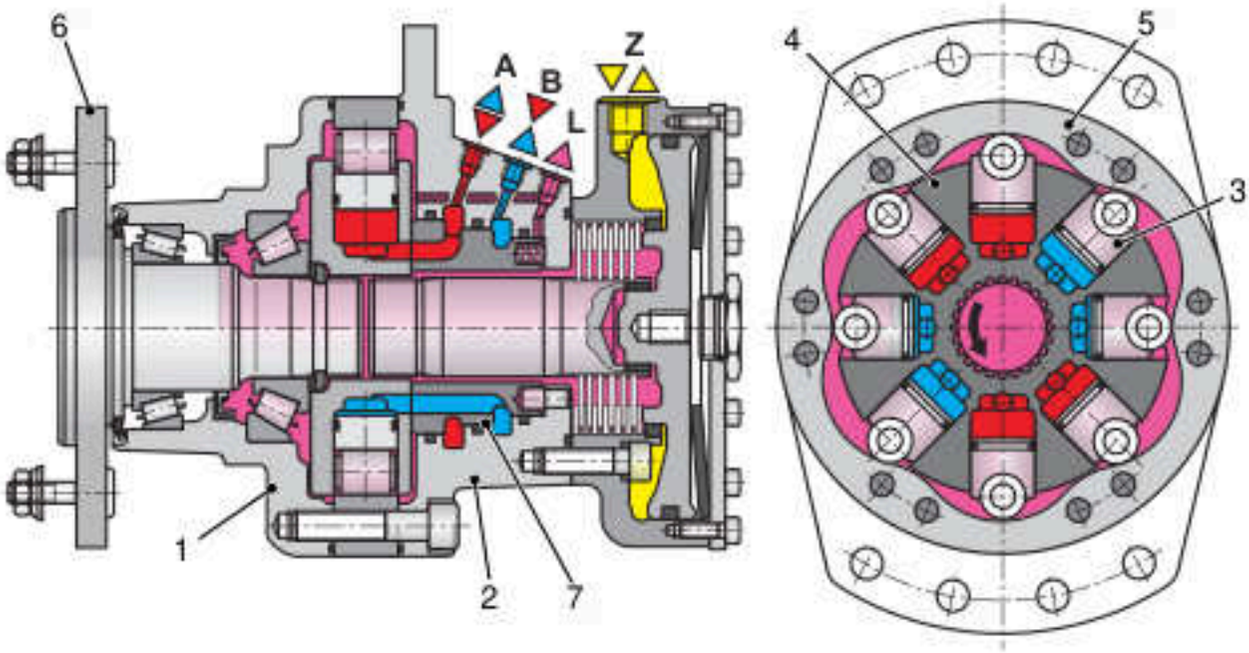
The motor converts hydrostatic energy into mechanical energy.

Hydraulic fluid is directed from the motor inlet port in the rear case via the flow distributor through galleries to the cylinder block. The radially arranged pistons in the cylinder bores face a pressure increase and perform via rollers a stroke movement against the cam ring. The reaction force at the cam ring generates a torque, which is transferred to the output shaft via splines in the cylinder block.

When the torque exceeds the shaft load, the cylinder block turns which causes the pistons to stroke (working stroke). Once the end of a stroke is reached the piston is returned to its bore by the reaction force at the cam (return stroke) and the fluid is fed to the motor outlet port in the rear case.

The output speed depends on the displacement and is proportional to the inward flow. The number of working and return strokes corresponds to the number of lobes on the cam multiplied by the number of pistons.

Figure 392.



1 Front case housing
2 Rear case housing
3 Pistons
4 Cylinder block
5 Cam, Cam ring
6 Output shaft

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