SERVICE MANUAL

BACKHOE LOADER
3CX, 4CX, 5CX

EN - 9813/6950 - ISSUE 3 - 01/2018

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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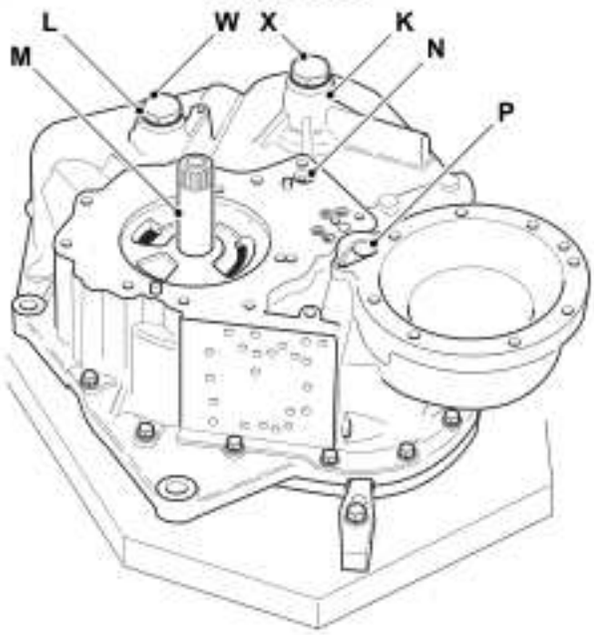
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6. Measure the end float of the clutch shafts except the input shaft as follows: Refer to Figure 1076.
   - 6.1. For 4x4 gearbox: Remove the plug 1.
   - 6.2. For 6x4 gearbox: Remove plug 1 and plug 2.
   - 6.3. Install a bolt to the threaded hole in the end of the shaft.
   - 6.4. Pull the bolt to detect excessive end float. Remove the bolt.
   - 6.5. The end float of the shafts should be within the specified range.

     Length/Dimension/Distance: 0.02–0.16mm
   - 6.6. Apply sealant to the plug 1 and plug 2 (for 6x4 gearbox only).

     Consumable: JCB Threadlocker and Sealer (Medium Strength)
   - 6.7. Tighten the applicable plugs to the correct torque value.

Figure 1076.

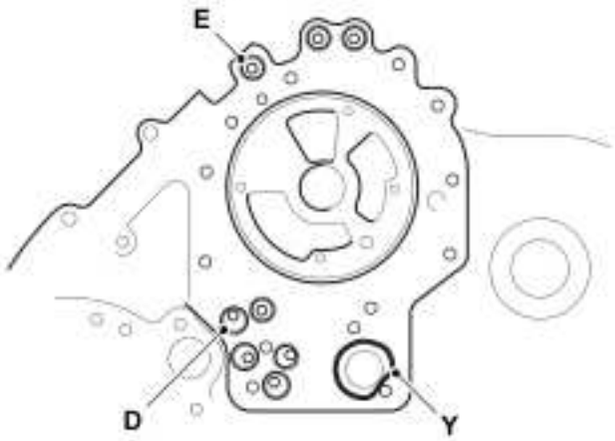


K 6 Speed clutch (not installed on 4x4 gearbox)
L Reverse clutch unit
M Forward/Input clutch shaft
N Layshaft clutch
P Main shaft clutch
W Plug 1
X Plug 2

7. Measure the end float of the input shaft as follows: Refer to Figure 1076.
   - 7.1. Pull the input shaft to detect excessive end float.
   - 7.2. The end float of the shaft should be within the specified range.

     Length/Dimension/Distance: 0.02–0.16mm
8. Provided components are assembled correctly the end float will be within the limits given. Check that the shafts can be rotated by hand (turn the input shaft and output yoke). The shafts should rotate smoothly. The end floats can be checked to confirm correct assembly.
9. Install the 4WD clutch assembly.
10. Install the gearbox oil pump.
11. Install the torque converter housing as follows: Refer to Figure 1077.
    - 11.1. Make sure that the front case and torque converter housing mating faces are clean, dry and not damaged.
    - 11.2. Install the O-rings 1 (x5) to the front case.
    - 11.3. For gearboxes installed with lock up torque converter: Install the O-rings 2 (x3) to the front case.

Figure 1077.



D O-ring 1 (x5)
E O-ring 2 (x3): Only for Lock up torque converter variants
W Loctite 509

    - 11.4. Apply a bead of Loctite 509 of the specified thickness to the front case.

      Dimension: 3mm
    - 11.5. According to the gearbox configuration Install the 13 or 14 bolts 2. Refer to Figure 1078. or Refer to Figure 1079.

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Table 420. One hydraulic service fails to operate or is slow to operate.

Cause	Remedy
Associated service pipe lines leaking, damaged, trapped or kinked.	Check hoses, replace as required.
Associated ram leaking.	Complete ram leakage check, replace seals as required.
ARV (Auxiliary Relief Valve) setting incorrect.	Check and adjust as required.
Associated valve block section leaking or not operating.	Check for leaks, rectify as required. See also 'Leaking Oil Seal (Control Valves)'. Check that the control lever and associated linkage is operating the spool, rectify as required. See also 'A Spool is Sticking'.
Check valve malfunctioning (if installed), e.g. stabiliser circuit.	Test check valve, rectify as required.
HBCV (Hose Burst Check Valve) malfunctioning (if installed).	Test HBCV, service as required.
Piston rod is bent.	Replace piston rod, check pressure settings of MRV and ARV. Check that associated pivot points are adequately greased.

Table 421. The engine tends to stall when hydraulics are under load.

Cause	Remedy
MRV setting is incorrect	Check and adjust as required.
Poor engine performance.	Check engine performance, see transmission section for stall speed test procedure.
Unloader valve pressure setting too high.	Check pressure setting of the unloader valve.

Table 422. A spool is sticking.

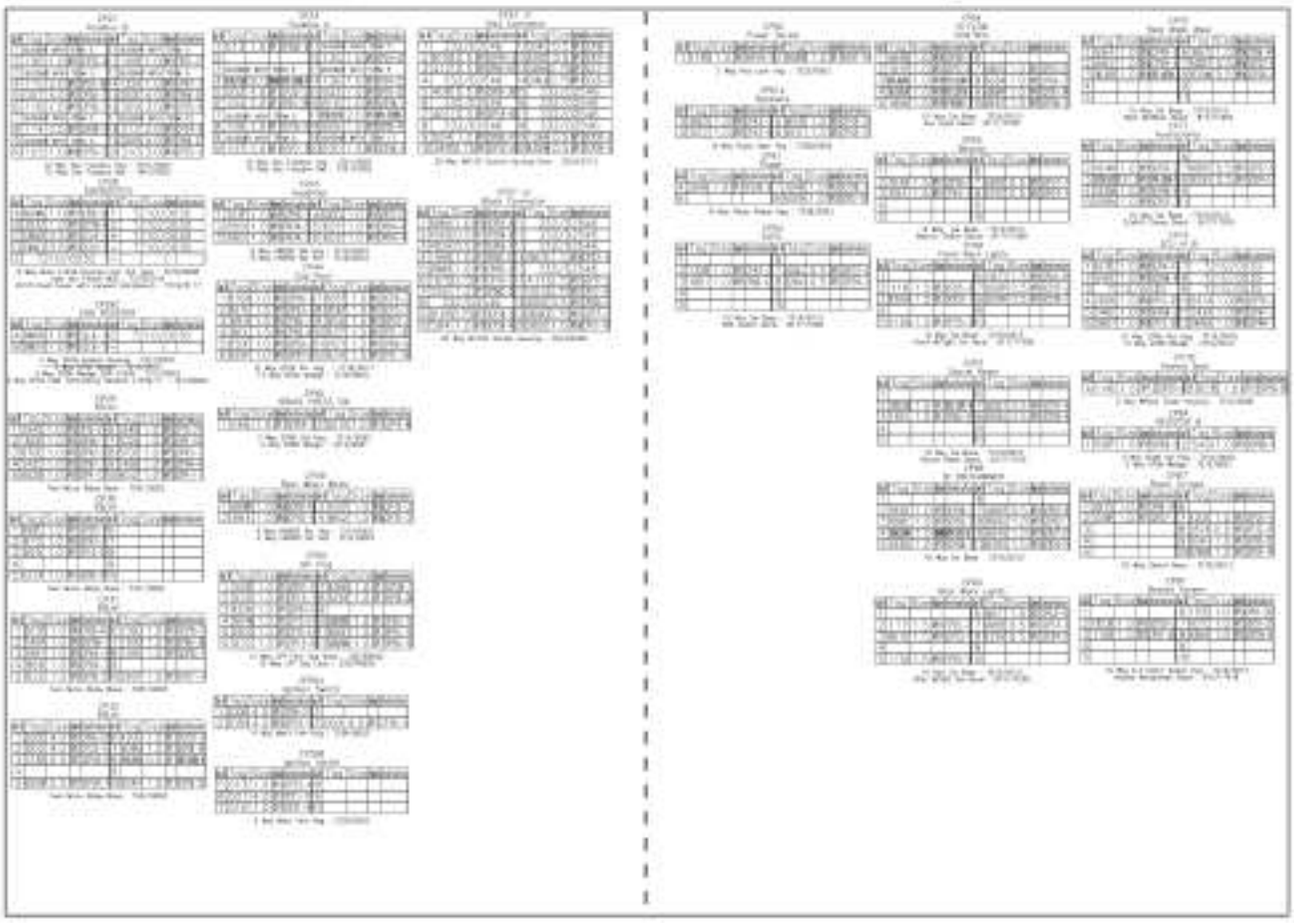
Cause	Remedy
Oil temperature abnormally high.	Check for correct fluid, see lubricants and capacities. Check oil cooler and grille for blockage.
The hydraulic fluid is dirty.	Clean the tank strainer. If strainer badly clogged, drain and flush hydraulic system. Fill with clean hydraulic fluid.
The service pipe connection is over tightened.	Check the torque value.
The valve housing was twisted during installation.	Loosen retaining bolts and tighten to correct torque values.
A control linkage is bent.	Disconnect the linkage. Repair the linkage if possible, or install a new one.
A spool is bent	Disassemble the control valve. Replace the spool as necessary.
A return spring or cap is out of alignment.	Remove the cap, check that the spring is in the correct position. Install the cap and tighten the bolts to the correct torque value.
Temperature distribution within control valve not uniform.	Warm the entire system up before servicing.

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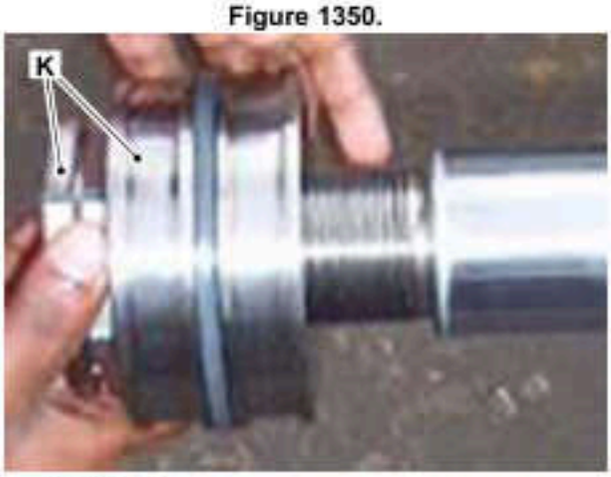
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Figure 1350.

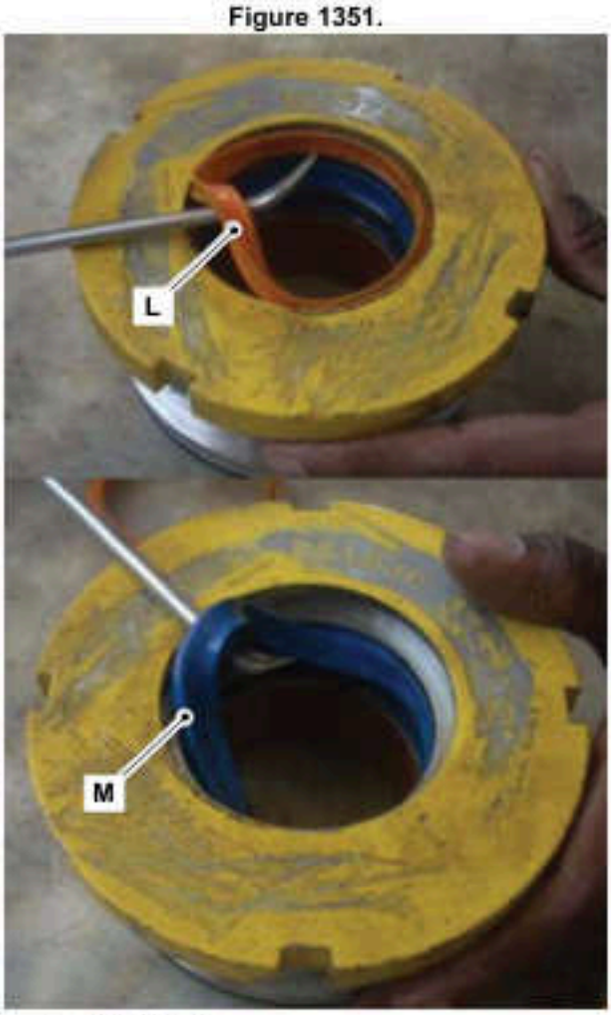


K Piston

14. Remove the head end cover. Refer to Figure 1351.

15. Use a bent screwdriver to remove the wiper seal and the secondary rod seal. Refer to Figure 1351.

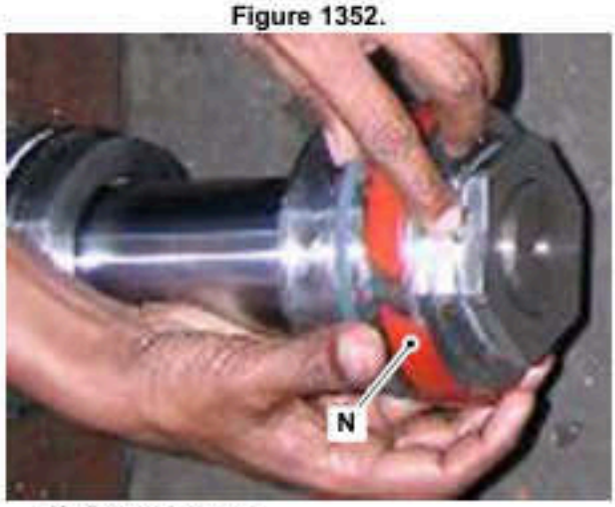
Figure 1351.



L Wiper seal
M Secondary rod seal

16. Remove the piston bearing. Refer to Figure 1352.

Figure 1352.



N Piston bearing

17. Use a bent screwdriver to remove the piston seal. Refer to Figure 1353.

Figure 1353.



P Piston seal

18. Remove the piston O-ring and the piston backup ring. Refer to Figure 1354.

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(For: Advanced Easy Controls, Easy Controls, EasyControl-Variable, Manual Control-Variable, Manual Controls, JCB Tier 4i /T4F <55kW Engine 4 Cyl)

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