SERVICE MANUAL

BACKHOE LOADER
3CX

EN - 9813/7800
ISSUE 1 - 04/2017

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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Table 135. General Fuel System Faults

Cause	Remedy
Fuel supply fault	Check the low pressure circuit connections are secure.
	Check the fuel pressure in low circuit/tank level.
	Check the fuel type (EN590 Specification).
	Check for the external diesel fuel leaks.
	Check the filter is not blocked
	Check the fuel lift pump operation (Refer to ServiceMaster help files).
	Replace/repair as necessary.
	If no faults are found, proceed to "Engine does not start," or "Engine starts," depending on symptoms
Engine does not start	Complete the 'Static Injector Leak Test'.
	If the injector back leak is above the limit, replace injector(s) as necessary.
	If the injector back leak is OK check the rail pressure is above 300 bar, if not, replace the high pressure pump.
	If the rail pressure is OK and back leak is within limits, raise Techweb Helpdesk Call.
Engine starts	Complete the 'Dynamic IMV (Inlet Metering Valve) Test'.
	If the IMV is faulty replace the high pressure pump.
	If the IMV is OK complete the 'Dynamic Injector Back leak Test'
	If the back leak is above the limit, replace the injector(s).
	If the back leak is OK complete the 'Dynamic HPV (High Pressure Valve) test'
	If the pump capacity is below the limit, replace the high pressure pump.
	If the pump capacity is OK, raise Techweb Helpdesk Call.

Table 136. Exhaust Gas Recirculation

Cause	Remedy
Air inlet circuit fault	Check the air inlet circuit: – Valve position using ServiceMaster – Check the EGR (Exhaust Gas Recirculation) linkage – Vane state
	If no fault is found proceed to 'EGR valve connection fault'.
EGR valve connection fault	Check the EGR valve connection. Check that the supply voltage is correct. Repair as necessary.
	Check that the EGR valve position can reach MIN (0%) to MAX position (100%). Use ServiceMaster to launch the learning procedure of the EGR position.

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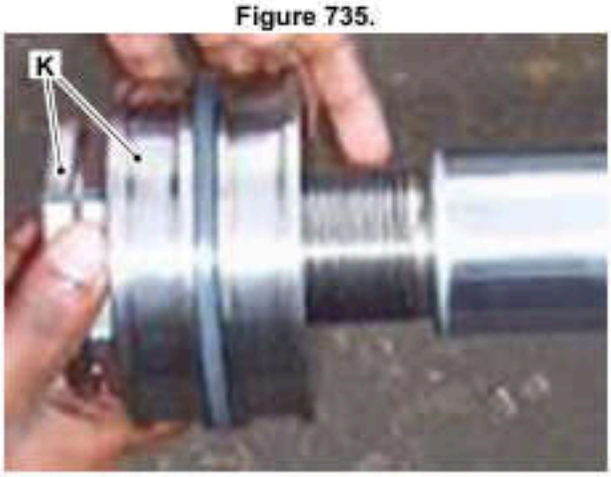
Technical Data

Table 362. Adhesives Approved Product Information

Subsection	Commercial name	Product Number	Colour	Shelf life	Technical data	Comments
High strength	Permabond 5002	4103/3100	Mixed grey	730d	3–5min for handling strength	Two part adhesive mixed in equal parts. A toughened adhesive system which bonds metals, plastics, wood, glass, ceramics and composites; even plated or coated surfaces can be securely fastened.
High strength	Loctite 601	4103/1000	Green fluorescent	365d	16–30bar (231.9–434.8psi) static shear strength	This product is a single component anaerobic adhesive. Used to bond cylindrical fitting parts, particularly where low viscosity is required. Maximum gap fill is 0.15mm.
Cyanoacrylate	Loctite 424	4103/3500	Colourless to straw	-	18–26bar (260.9–376.8psi) shear strength	Suitable for most materials including plastic and rubber. Takes 30s to cure to working strength.
Cyanoacrylate	Loctite 401	4103/2300	Colourless	180d	18–26bar (260.9–376.8psi) tensile strength	Designed for general purpose use. For use on acidic and porous surfaces, reaching handling strength in seconds. Materials include plated metals, composite materials, wood, cork, foam, leather and paper.
Cyanoacrylate	Loctite 406	332/U7899	Colourless	180d	18–26bar (260.9–376.8psi) lap shear strength	Designed for bonding of plastics and elastomeric materials where very fast fixturing is required. Can be used with Loctite 770 as a primer (332/U7901)
Cyanoacrylate	Loctite 410	4103/2400	Black	120d	22bar (318.8psi) lap shear strength	0.2mm, gap fill. A rubber toughened ethyl cyanoacrylate adhesive with enhanced resistance to peel and shock. Bonds rubber, metals and plastics for use in difficult conditions.
Cyanoacrylate	Loctite 480	4103/3800	Black	-	22–30bar (318.8–434.8psi) lap shear strength	A rubber toughened adhesive with increased flexibility and peel strength along with enhanced resistance to shock.
Cyanoacrylate	Loctite 495 Permabond C2	4103/0900	Colourless	270d	12h maximum cure time	High speed bonding, suitable for rubber to itself and other materials reaching handling strength in a matter of seconds. Joint must be waterproofed with Loctite water proofing (4104/0500).
Low strength	Dunlop 1727 British vita company VB 165	4103/1100	Clear to light straw	90d	-	Sprayable adhesive, non-structural applications. For the bonding of flexible foam to themselves, wood, painted metal, chipboard, fibreglass, hessian, felt etc.
Acrylic foam strip adhesive	3M 4941P	4103/3900	Dark grey	730d	Peel adhesion 350N/100mm	High bond acrylic double sided foam tape. Its allows more complete bond contact area when bonding rigid or irregular materials due to its conformability. Its core adhesive composition makes the product well suited to many paints and primers.

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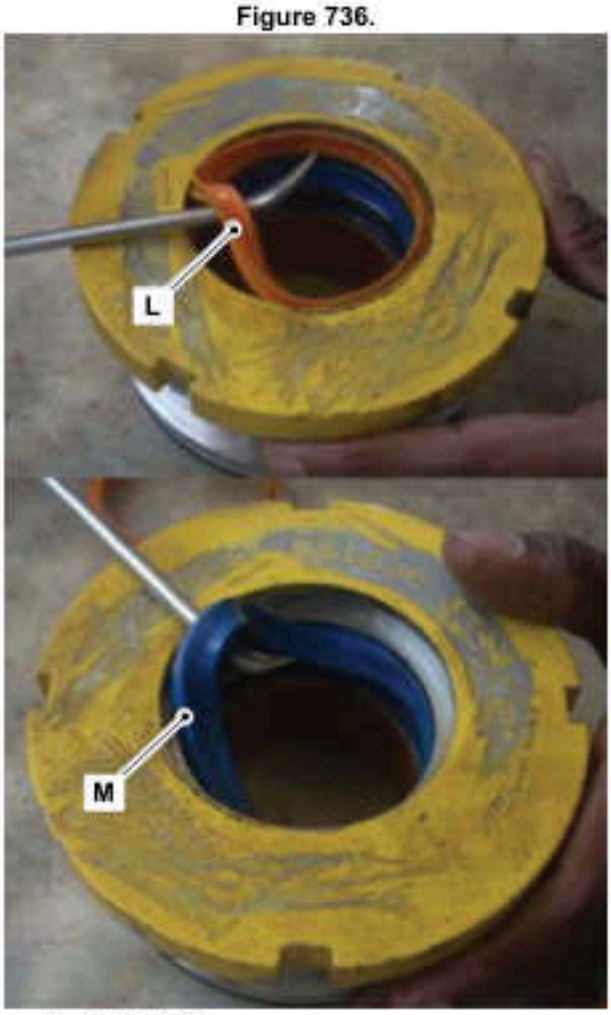
Figure 735.



K Piston

14. Remove the head end cover. Refer to Figure 736.
15. Use a bent screwdriver to remove the wiper seal and the secondary rod seal. Refer to Figure 736.

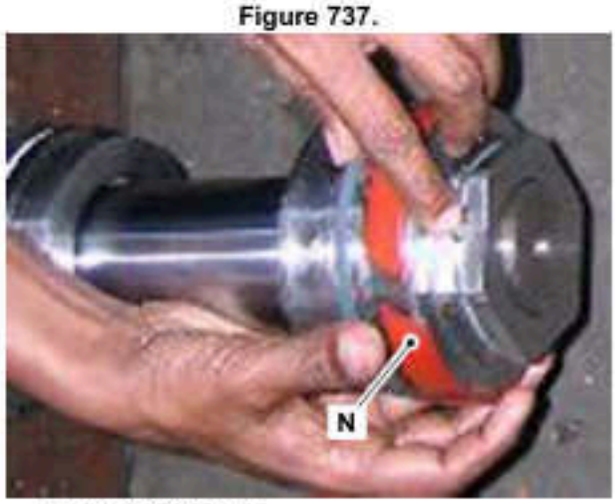
Figure 736.



L Wiper seal
M Secondary rod seal

16. Remove the piston bearing. Refer to Figure 737.

Figure 737.



N Piston bearing

17. Use a bent screwdriver to remove the piston seal. Refer to Figure 738.

Figure 738.

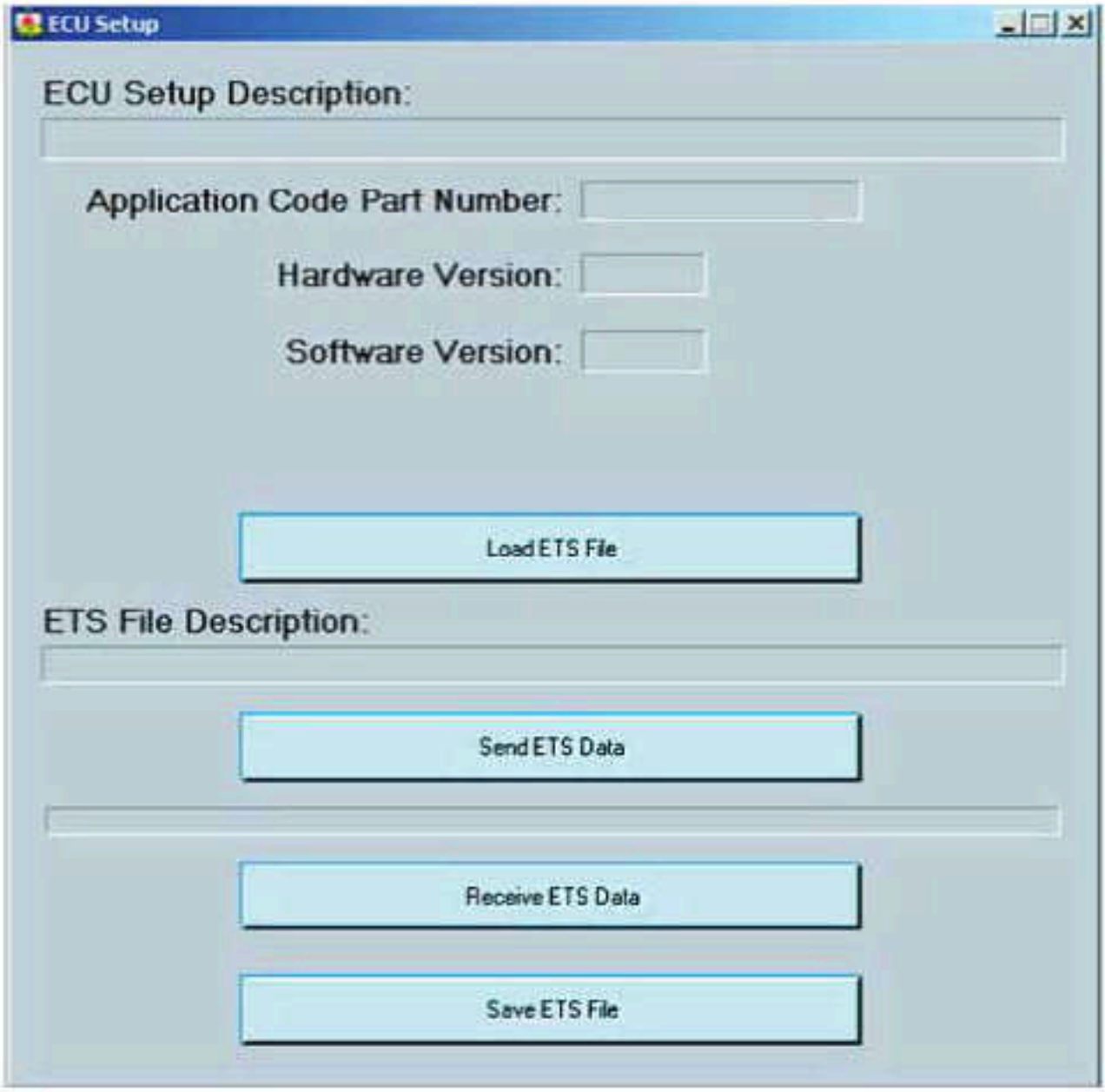


P Piston seal

18. Remove the piston O-ring and the piston backup ring. Refer to Figure 739.

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Figure 992.



ETS Function

The ETS function provides a means of loading and uploading gearbox ECU software setup files between the ECU and the computer. On earlier versions of servicemaster a separate program was required to perform this function. This is now incorporated within shiftmaster diagnostics 2.3. The setup files have a file name extension of.ets.

- Load ETS File: A revision to the gearbox ECU software file may be supplied by JCB for installation on particular ECU models. Store the file on the computer which is to be connected to the gearbox ECU. The shiftmaster diagnostic program needs to open this file and obtain the software version and other applicable information to make sure it is compatible with the ECU connected to the computer.
- Send ETS Data: This allows the computer to send a software setup file to the gearbox ECU.
- Receive ETS Data: This reads the existing setup file from the gearbox ECU.
- Save ETS File: This saves the data received from the ECU onto the computer.

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