SERVICE MANUAL

BACKHOE LOADER
3DX Super, 3DX Xtra, 4DX

EN - 9823/0000 - ISSUE 1 - 01/2018

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

Copyright 2018 © JCB SERVICE
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any other means, electronic, mechanical, photocopying or otherwise, without prior permission from JCB SERVICE.

www.jcb.com

Foreword

The Operator's Manual

⚠

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

01 - Machine

03 - Attachments, Couplings and Load Handling

06 - Body and Framework

09 - Operator Station

15 - Engine

18 - Fuel and Exhaust System

21 - Cooling System

24 - Brake System

25 - Steering System

27 - Driveline

30 - Hydraulic System

33 - Electrical System

72 - Fasteners and Fixings

75 - Consumable Products

78 - After Sales

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Publicati... Order the manual at mid-west-tech.com >

01 - Machine

Contents **Page No.**

Acronyms Glossary 01-2

01-03 Safety
- 01-03-03 Safety - Yours and Others 01-3
- 01-03-06 Safety Warnings 01-4
- 01-03-09 General Safety 01-5
- 01-03-12 Maintenance Safety 01-6
- 01-03-18 Operating Safety 01-8
- 01-03-21 Worksite Safety 01-10
- 01-03-24 Risk Assessment 01-11
- 01-03-27 Maintenance Positions 01-12

01-06 About this Manual
- 01-06-00 General 01-17
- 01-06-03 Model and Serial Number 01-18
- 01-06-06 Using the Manual 01-19

01-09 Description
- 01-09-12 Main Component Locations 01-21
- 01-09-15 Service Point Locations 01-23

01-33 Cleaning
- 01-33-00 General 01-27

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

03 - Safety

Contents **Page No.**

01-03-03 Safety - Yours and Others 01-3
01-03-06 Safety Warnings 01-4
01-03-09 General Safety 01-5
01-03-12 Maintenance Safety 01-6
01-03-18 Operating Safety 01-8
01-03-21 Worksite Safety 01-10
01-03-24 Risk Assessment 01-11
01-03-27 Maintenance Positions 01-12

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

03 - Attachments, Couplings and Load Handling

Contents **Page No.**

Acronyms Glossary 03-2

03-00 Attachments
- 03-00-00 General 03-3

03-09 Lift Arm Quickhitch
- 03-09-00 General 03-9

03-10 Excavator End Quickhitch
- 03-10-00 General 03-13

03-27 Bucket
- 03-27-00 General 03-19
- 03-27-90 Teeth 03-22

03-30 Shovel
- 03-30-00 General 03-25

03-33 Fork
- 03-33-00 General 03-31

03-48 Rockbreaker
- 03-48-00 General 03-35
- 03-48-27 Tool 03-43
- 03-48-42 Seal 03-44
- 03-48-48 Side Plate 03-46

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

12.6. Open or short circuited power (stator) windings.

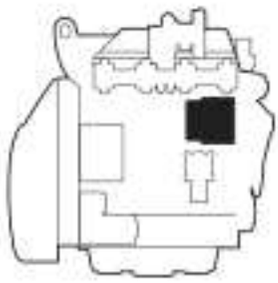
13. To check for a fault, disconnect the capacitor and repeat the charging test. Renew the capacitor if necessary.

14. To check for faults with the slip rings, bushes or regulator, remove the regulator and brush box assembly. Check the condition of the brushes and, if necessary, clean the slip rings using extra-fine glass paper. The regulator may only be renewed.

15. Faults with the rectifier, rotor and stator may be checked only by removing and dismantling the alternator for further testing.

Remove and Install

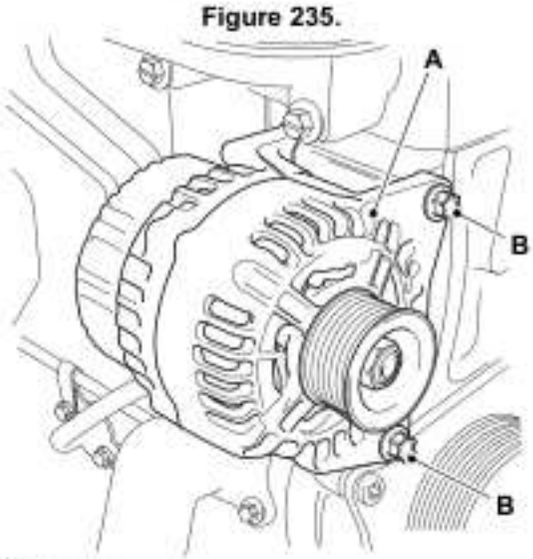
Figure 234. Alternator location



Remove

1. Disconnect the negative (-) lead followed by the positive (+) lead from the battery terminals.
2. Remove the alternator (accessory) drive belt.
3. Disconnect the electrical leads from the alternator terminals. Label the leads to make sure that they are installed in the correct positions on assembly.
4. Undo the alternator securing bolts and lift the alternator away from the cylinder block mounting.

Figure 235.



A Alternator
B Securing bolts

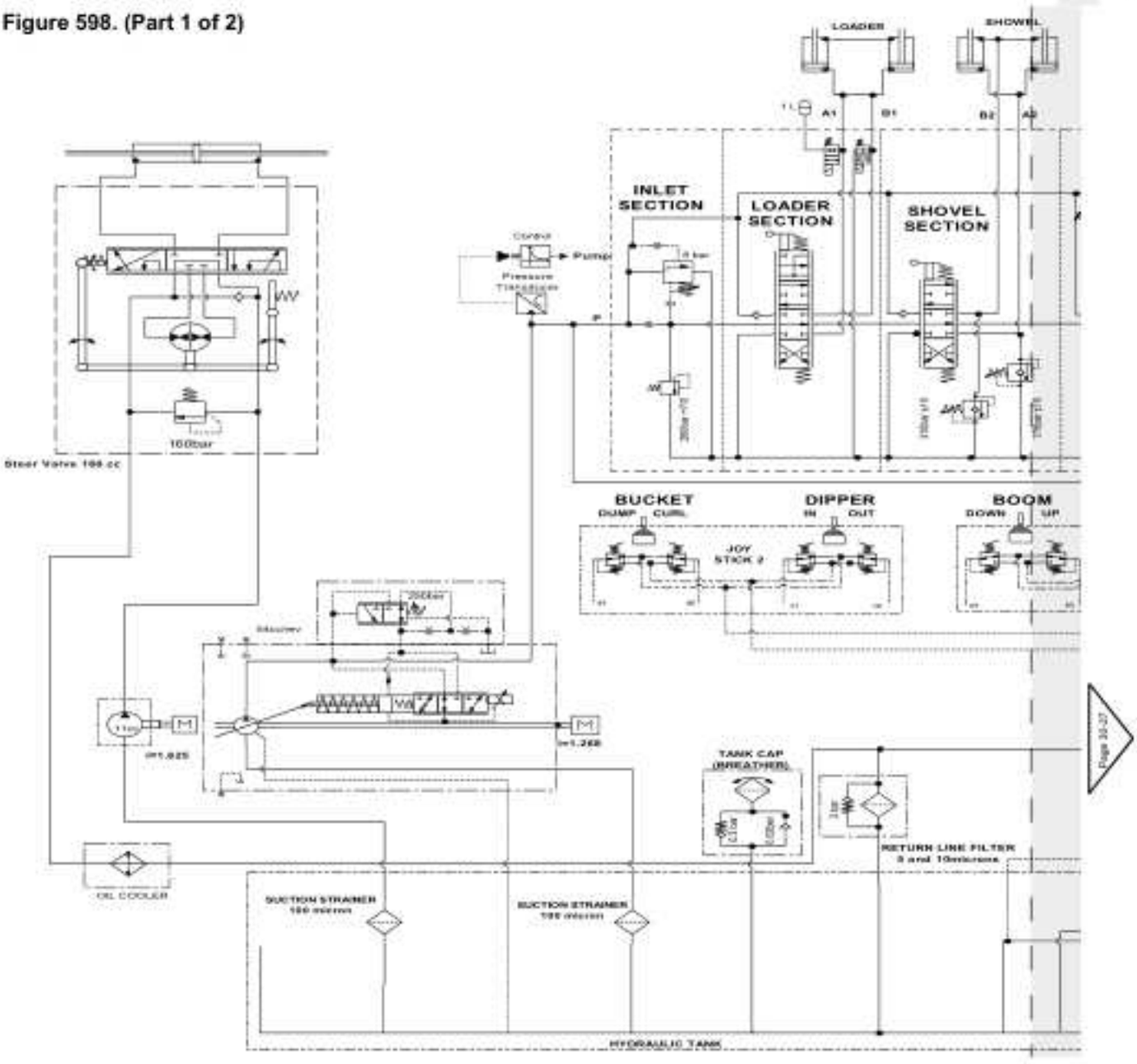
Inspect

1. Check the brushes for wear. Renew the brushes if the length is less than

   Length/Dimension/Distance: 8mm

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

Figure 598. (Part 1 of 2)



MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

Table 250. Electronic Throttle DTCs

Fault Code	Description
UVOLTERR	Under-voltage: voltage < 6.5V for >0.2s
OVOLTERR	Overvoltage: voltage > 33.5V for >0.2s
ADC_VOLT_5V_ERR	Voltage measurement short to 5V
ADC_TEMP_5V_ERR	Temperature measurement short to 5V
ADC_VOLT_0V_ERR	Voltage measurement short to 0V
ADC_TEMP_0V_ERR	Temperature measurement short to 0V
ADC_CURR_5V_ERR	Current measurement short to 5V
ADC_CURR_0V_ERR	Current measurement short to 0V
HALLSENSOR_ERR	Hall sensors inconsistent
HES_000_ERR	Hall sensor are all to 0
HES_111_ERR	Hall sensor are all to 1
HES_ADJACENT_STEP	Hall sensor did not go to the next step
TEMP_MAX	Temperature > hardware temperature protection (150°C (301.8°F))
ERROR_TIMEOUT_ENDSTOP_NOT_FOUND	Timeout during hard stop search
ERROR_LEARN_VALUE_TOO_HIGH	Angle too high during learn
ERROR_CALIB_LEARN_VAL_TOO_HIGH	Angle too high hight during self-calibration
ERROR_LEARN_VALUE_TOO_LOW	Angle too short during learn
ERROR_CALIB_LEARN_VAL_TOO_LOW	Angle too short during self-calibration
EEPROM_ERR	EEPROM checksum error
BUSOFF	CAN (Controller Area Network) bus off
CAN_ERR	CAN timeout
NOCANCMD	CAN command never received
POS_DEVIA	Position deviation of more than 15 steps for more than 2s
TEMP_ALERT	Temperature alert > 150°C (301.8°F)

Table 251. Warning Cluster DTCs

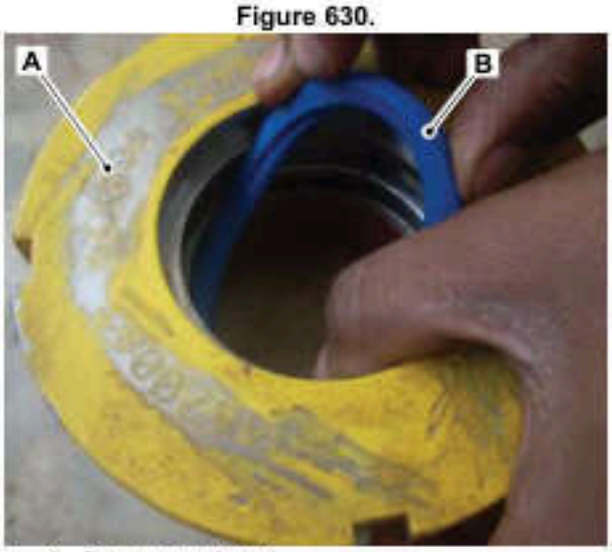
Fault Code	Description
B1240	Machine Speed – Invalid Data Received
B1241	Gear Display – Invalid Data Received
B1242	Missing CAN Messages

Table 252. LiveLink DTCs

Fault Code	Description
U1900-16	Vehicle Battery Voltage below Normal
U1901-16	Internal Voltage below Normal
U1904-85	ECU (Electronic Control Unit) above Temperature Threshold
U1906-96	Accelerometer Internal Failure
U1907-09	Modem Jammed
U1908-09	GPS (Global Positioning System) Antenna Not OK
U1909-96	No communication with GPS module
U190A-09	SIM card failure
U190B-96	No communication with GSM module
U190C-86	GSM network registration failure

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

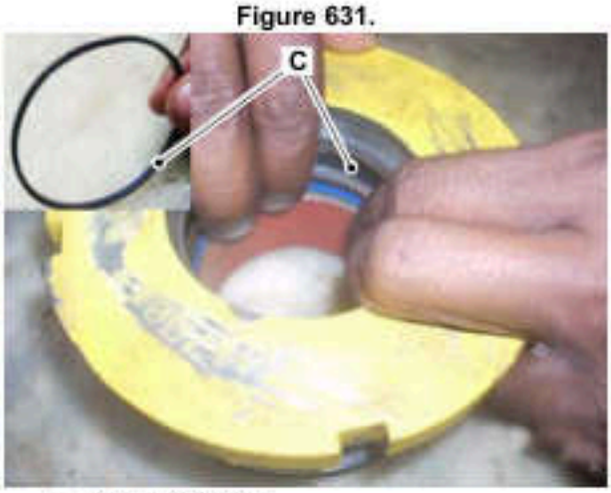
Figure 630.



A Primary rod seal
B Head end cover

5. Put the rod seal guide ring into the head end cover. Refer to Figure 630.

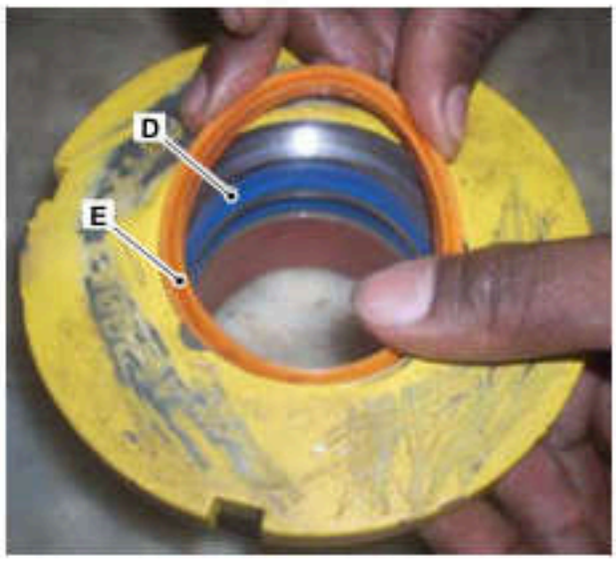
Figure 631.



C Seal guide ring

6. Put the secondary rod seal and the wiper seal into the head end cover. Refer to Figure 632.

Figure 632.



7. Put the piston O-rings into the piston grooves. Refer to Figure 633.

Figure 633.



F O-rings

8. Put the piston seal into the piston groove. Refer to Figure 634.

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >

4. Select and open the "Setup.exe" application.
5. A new window "JCB Servicemaster Setup" will appear on the screen.
   5.1. Click the "Install V10.0.3" option to start the setup application. Refer to Figure 854.

Figure 854.



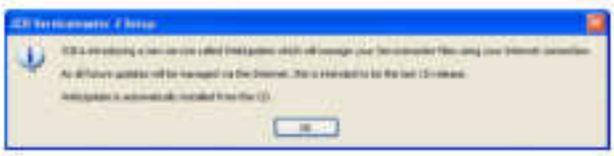
6. A new window "Select Setup Language" will appear on the screen. Refer to Figure 855.
   6.1. Use the drop down option to select the language.
   6.2. Click the "OK" option to confirm selected language.

Figure 855.



7. A warning message window will appear on the screen. Refer to Figure 856.
   7.1. Click the "OK" option.

Figure 856.



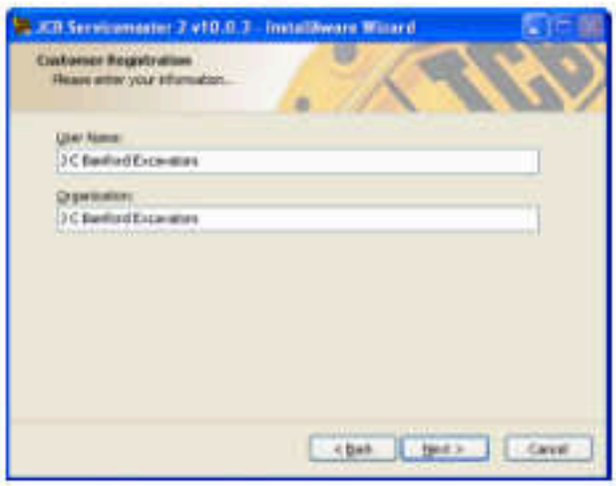
8. A new window "JCB Servicemaster Installation Wizard" will appear on the screen. Refer to Figure 857.
   8.1. Click the "Next" option to proceed.

Figure 857.



9. Put "User Name" and "Organization" details into the "Customer Registration" screen. Refer to Figure 858.
   9.1. Click the "Next" option when you have inserted details.

Figure 858.



10. Select all the "Setup Type" screen options for the complete installation. Refer to Figure 859.

MidWestTech | JCB 3DX Super, 3DX Xtra, 4DX Backhoe Loader Service Manual | Pub... Order the manual at mid-west-tech.com >