

Backhoe Loader

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Notes:

Section 1



General Information

Service Manual - Backhoe Loader

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Section 1 - General Information

Contents

Page No.

Introduction

About this Publication

This publication contains topics that relate to JCB 3C, 3CX and 4CX Backhoe Loaders described below:

- Machines from serial no. 960001 to 989999; 1327000 to 1349999; and 1616000 to 1625999.
- North American machines from serial no. 907001 to 919999.
- Chinese machines from serial no. 1297000 to 1349999.

Using the Service Manual

T11-004

This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic earthmoving equipment.

The illustrations in this publication are for guidance only. Where the machines differ, the text and/or the illustration will specify.

General warnings in Section 2 are repeated throughout the manual, as well as specific warnings. Read all safety statements regularly, so you do not forget them.

Renewal of oil seals, gaskets, etc., and any component showing obvious signs of wear or damage is expected as a matter of course. It is expected that components will be cleaned and lubricated where appropriate, and that any opened hose or pipe connections will be blanked to prevent excessive loss of hydraulic fluid and ingress of dirt.

Where a torque setting is given as a single figure it may be varied by plus or minus 3%. Torque figures indicated are for dry threads, hence for lubricated threads may be reduced by one third.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between

specifications of the machine and the descriptions contained in this publication.

Finally, please remember above all else safety must come first!

Section Numbering

T11-005

The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1** General Information - includes torque settings and service tools.
- 2** Care and Safety - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3** Maintenance - includes service schedules and recommended lubricants for all the machine.

The remaining sections are alphabetically coded and deal with Dismantling, Overhaul etc. of specific components, for example:

- A** Attachments
- B** Body and Framework, etc.

Section contents, technical data, circuit descriptions, operation descriptions etc. are inserted at the beginning of each alphabetically coded section.

Units of Measurement

T1-001.2

In this publication, the S.I. system of units is used. For example, liquid capacities are given in litres. The Imperial units follow in parentheses () eg 28 litres (6 gal).

Left Side, Right Side

P2-1002

In this manual, 'left' **A** and 'right' **B** mean your left and right when you are seated correctly in the machine.

This is so whether you are facing the loader (front) or the backhoe (rear).

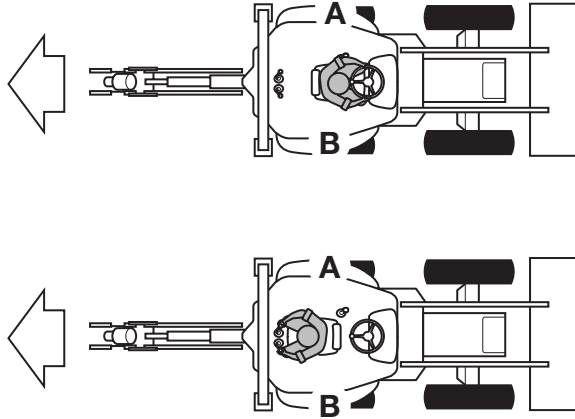


Fig 1.

C003690

Machine Nomenclature

In this Service Manual, reference is made to machine models, e.g. 3CX, 4CX, these are European machine model names. North American machine models have different names, the tables below show the European and the equivalent North American nomenclature.

Table 1. Up to March 2006

European:	North American:
3CX	214, 215, 217
4CX	214S, 215S, 217S
-	214e, 214e LL (Landscape), 215E

Table 2. From March 2006

European:	North American:
3CX	3CX 14, 3CX 15, 3CX 17
4CX	4CX 14, 4CX 15, 4CX 17
3C	3C 14, 3C LL, 3C 15

Cab/Canopy

T1-003_2

This manual frequently makes references to the cab. For instance, 'do not operate the machine without a manual in the cab'. It should be noted that these statements also apply to canopy build machines.

Cross References

T1-004_2

In this publication, page cross references are made by presenting the subject title printed in bold, italic and underlined. It is preceded by the 'go to' symbol. The number of the page upon which the subject begins, is indicated within the brackets. For example: ➔ **Cross References** (1-2).

Identifying the Machine

Machine Identification Plate

The machine has an identification plate mounted on the loader tower. The serial numbers of the machine and its major units are stamped on the plate.

The serial number of each major unit is also stamped on the unit itself. If a major unit is replaced by a new one, the serial number on the identification plate will be wrong. Either stamp the new number of the unit on the identification plate, or simply stamp out the old number. This will prevent the wrong unit number being quoted when replacement parts are ordered.

The machine and engine serial numbers can help identify exactly the type of equipment you have.

Typical Product Identification Number (PIN)

P2-1006

J	C	B	3	C	X	P	C	C	1	2	3	4	5	6	7	8
1			2			3			4							

T016220-8

Fig 2.

- 1 World Manufacturer Identification (3 Digits)
- 2 Machine Model (5 Digits)
- 3 Check Letter (1 Digit)

The Check Letter is used to verify the authenticity of a machine's PIN.

- 4 Machine Serial Number (8 Digits)

Each machine has a unique serial number.

Typical Vehicle Identification Number (VIN)

SLP	3CX	T	S	2	E	0960001
1	2	3	4	5	6	7

- 1 World Manufacturer Identification
- 2 Machine Model
- 3 Steer Type (T= 2WS, F= 4WS)
- 4 Build Type (S=Sideshift, C=Centremount, L=Loader)

- 5 Year of Manufacture:

4 = 2004

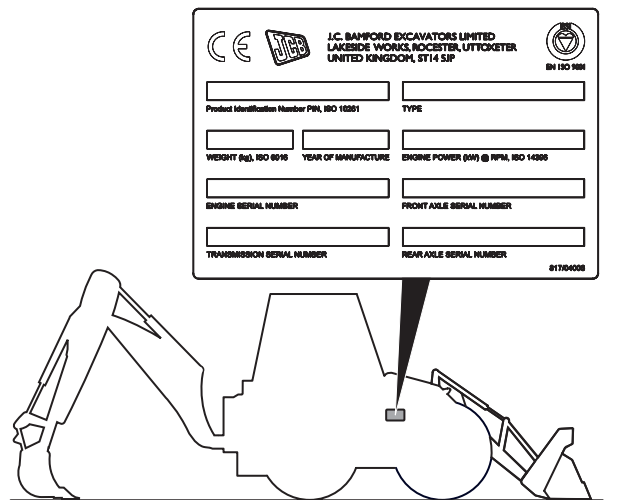
5 = 2005

6 = 2006

7 = 2007

- 6 Manufacturer Location (E = England)

- 7 Machine Serial Number



T025210-1

Fig 3. U.K and R.O.W

MADE IN USA		JCB, INC. GEORGIA 2000 BAMFORD BOULEVARD SAVANNAH, GA 31322. CONSTRUCTOR	
VIN Vehicle Identification Number		PIN Product Identification Number	
ENGINE SERIAL NUMBER		FRONT AXLE SERIAL NUMBER	
TRANSMISSION SERIAL NUMBER		REAR AXLE SERIAL NUMBER	
ENGINE POWER kW @ RPM			
JCB NORTH AMERICAN SERVICE 2000 BAMFORD BOULEVARD SAVANNAH, GA 31322 TEL : 912 447 2000 FAX : 912 447 2246			
PARTS AND SERVICE ARE OBTAINABLE FROM YOUR JCB DISTRIBUTOR			

Fig 4. North America

Component Identification Plates

Typical Engine Identification Number

T1-005_3

Engine data labels **A** are located on the cylinder block at position **C** and rocker cover **D** (if fitted). → [Fig 5. \(1-4\)](#). The data label contains important engine information and includes the engine identification number **E**.

A typical engine identification number is explained as follows:

SA 320/40001 U 00001 04
1 2 3 4 5

1 Engine Type

S = 4.4 litre series.

JCB Dieselmax (Tier 2)

A = Naturally aspirated

B = Turbocharged

C = Turbocharged and intercooled

JCB Dieselmax (Tier 3)

D = Turbocharged

E = Electronic common rail fuel injection

F = Turbocharged and after-cooled

2 Engine part number

3 Country of manufacture

U = United Kingdom

4 Engine Serial Number

5 Year of Manufacture

The last three parts of the engine identification number are stamped on the cylinder block at position **B**.

U 00001 04

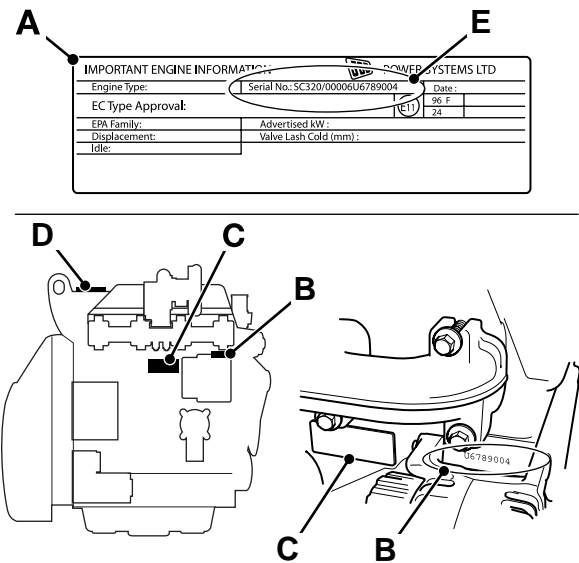


Fig 5. Engine

C007820-C2

Transmission Identification Numbers

Axles

The axles have a serial number stamped on a data plate as shown.

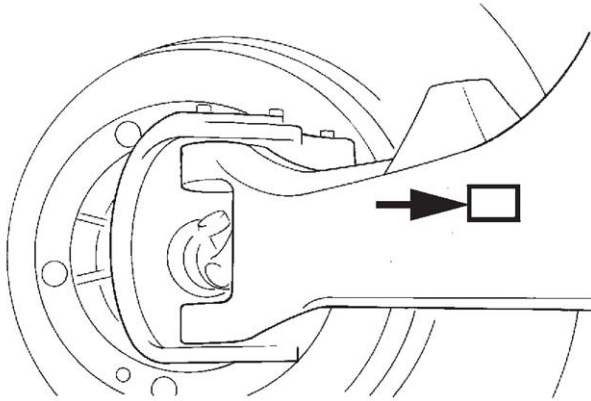


Fig 6. Front Axle (2WS machine)

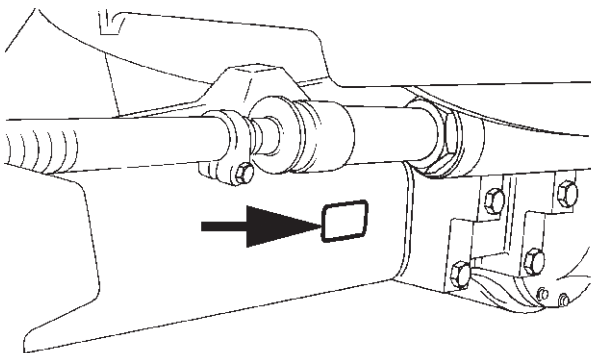


Fig 7. Front Axle (4WS machine)

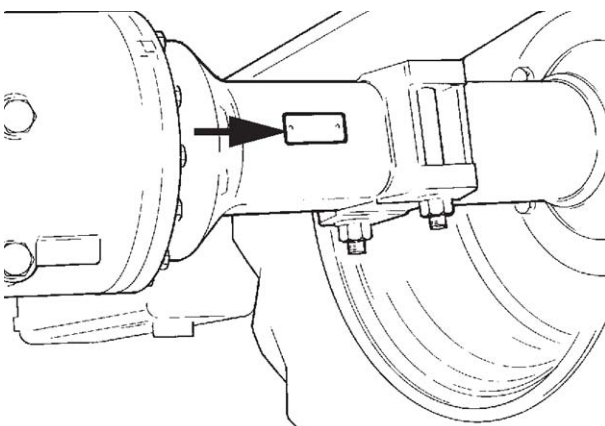


Fig 8. Rear Axle (2WS machine)

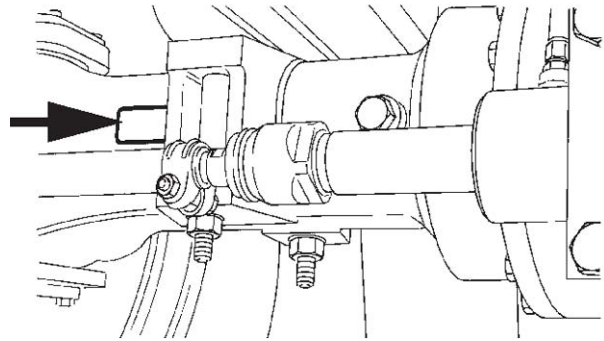


Fig 9. Rear Axle (4WS machine)

Gearbox

The gearbox has a serial number stamped on a data plate as shown.

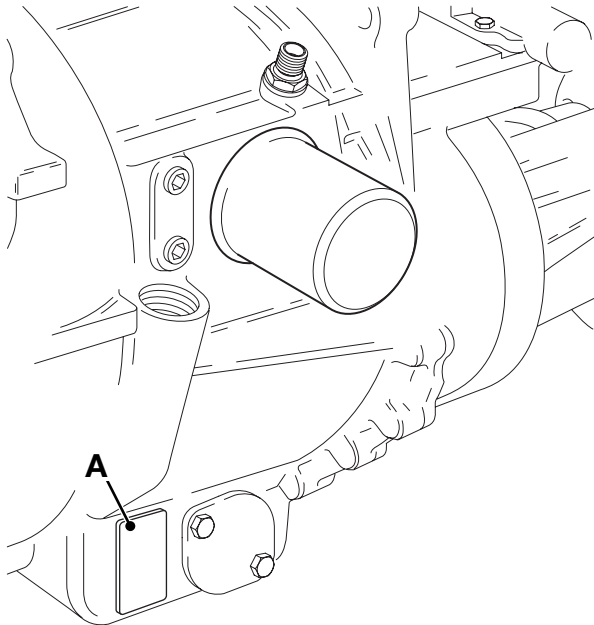


Fig 10. Synchro Shuttle Transmission

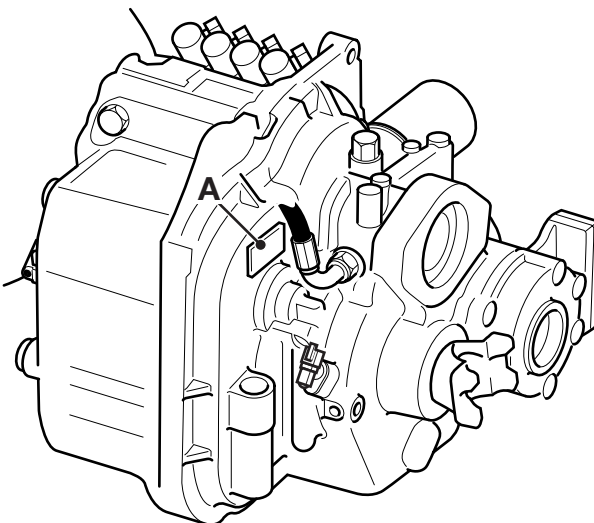


Fig 11. Powershift Transmission

ROPS/FOPS Certification plate

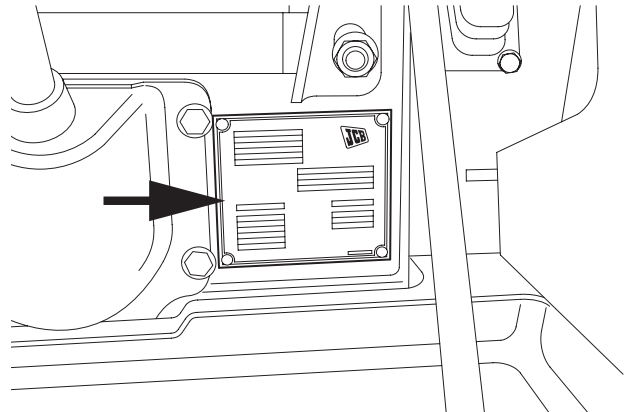


Fig 12. Cab

Machines built to ROPS/FOPS standards have an identification label fitted to the inside of the cab.
[⇒ Fig 12. \(1-6\)](#)

The FOPS structure provides Level II Impact Protection against falling objects (as defined in ISO 3449:2005).

Definition of terms:

- ROPS Roll Over Protection Structure
- FOPS Falling Objects Protection Structure

FOPS Data Plate

WARNING

Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

8-2-8-17

If the machine is used in any application where there is a risk of falling objects then a falling-objects protective structure (FOPS) must be installed. For further information contact your JCB Dealer

The falling objects protection structure (FOPS) is fitted with a dataplate. The dataplate indicates what level protection the structure provides.

There are two levels of FOPS:

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