Dear JCB Customer

Even if you have operated this type of equipment before, it is very important that your new machines operations and functions are explained to you by a JCB Dealer Representative following delivery of your new machine.

Following the installation you will know how to gain maximum productivity and performance from your new product.

Please contact your local JCB dealer if the Installation Form has not yet been completed with you.

Your Local JCB Dealer is:

OPERATOR MANUAL

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

BACKHOE LOADER - 3CX, 4CX

ENGLISH - 9811/1720 - ISSUE 3 - NOVEMBER 2007

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Safety Notices

Important Information

T1-015

The Operator Manual

⚠ WARNING

Study the Operator Manual before starting the machine. You must understand and follow the instructions in the Operator Manual. You must observe all relevant laws and regulations. If you are unsure about anything, ask your JCB dealer or employer. Do not guess, you or others could be killed or seriously injured.

INT-1-1-1_2

Do not operate the machine without an Operator Manual.

Treat the Operator Manual as part of the machine. Keep it clean and in good condition. Replace the Operator Manual immediately if it is lost, damaged or becomes unreadable.

Safety Warnings



This safety alert system identifies important safety messages in this manual. When you see this symbol, be alert, your safety is involved, carefuly read the message that follows, and inform other operators.

In this publication and on the machine, there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

⚠ DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

⚠ WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

⚠ CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

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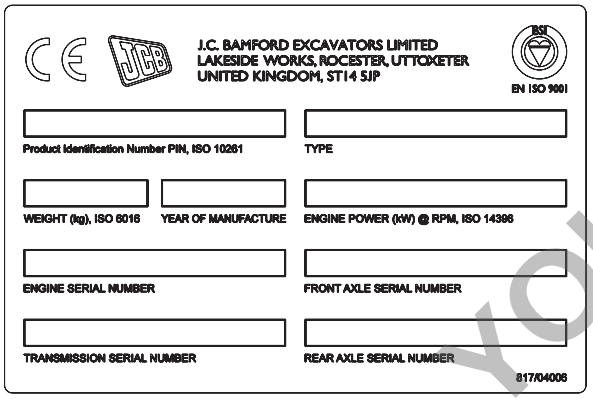
Identifying Your Machine

Machine Identification Plate

Your 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.



T017390

Fig 4.

Typical Product Identification Number (PIN)

JCB	3CX	T	S	2	E	1234567
1	2	3	4	5	6	7

1 World Manufacturer Identification

2 Machine Model

3 Engine Type

JCB Dieselmax:

J = SA Build	L = SC Build
K = SB Build	R = SE Build

4 Gearbox Model

G = 4 Speed Syncro Shuttle	J = 6 Speed Powershift
H = 4 Speed Powershift	

5 Randomly generated check letter

6 Year of Manufacture:

7 = 2007	A = 2010
8 = 2008	B = 2011
9 = 2009	C = 2012

7 Machine Serial Number

Each machine has a unique serial number.

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Machine Description

The JCB Backhoe Loader

P2-1001_2

The Backhoe Loader is a self propelled wheeled machine with a main frame designed to carry both front mounted equipment and rear mounted backhoe equipment with stabilisers.

When used in the backhoe mode, the machine is stationary and normally digs below ground level. A backhoe work cycle normally comprises excavating, elevating, swinging and discharging material

When used in the loader mode (bucket use), the machine loads through forward motion. A loader work cycle normally comprises filling, elevating, transporting and discharge of material.

Note: *The illustration(s) show a typical machine model; your machine may look different from the model shown.*

Component List

1 Loader arm

2 ROPS/FOPS cab

3 Hydraulic oil tank

4 Battery compartment

5 Boom

6 Fuel tank

7 Stabilisers

8 Kingpost

9 Dipper

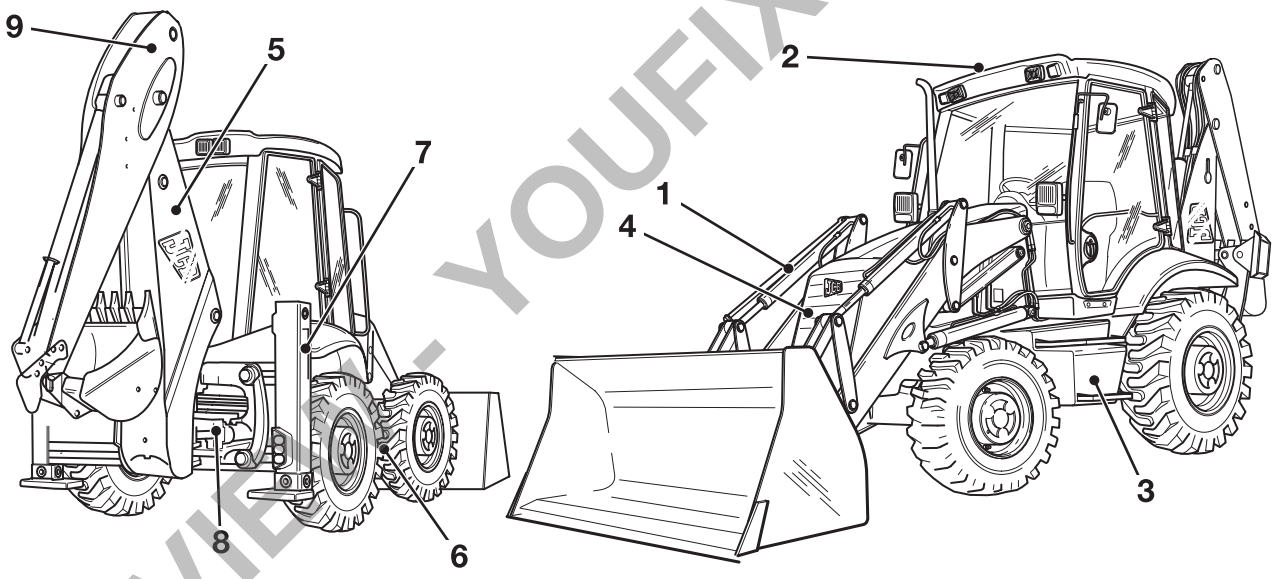


Fig 2.

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Health and Safety

T3-001_3

Lubricants

Introduction

It is most important that you read and understand this information and the publications referred to. Make sure all your colleagues who are concerned with lubricants read it too.

Hygiene

JCB lubricants are not a health risk when used properly for their intended purposes.

However, excessive or prolonged skin contact can remove the natural fats from your skin, causing dryness and irritation.

Low viscosity oils are more likely to do this, so take special care when handling used oils, which might be diluted with fuel contamination.

Whenever you are handling oil products you should maintain good standards of care and personal and plant hygiene. For details of these precautions we advise you to read the relevant publications issued by your local health authority, plus the following.

Storage

Always keep lubricants out of the reach of children.

Never store lubricants in open or unlabelled containers.

Waste Disposal

⚠ CAUTION

It is illegal to pollute drains, sewers or the ground. Clean up all spilt fluids and/or lubricants.

Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use authorised waste disposal sites.

INT-3-2-14

All waste products should be disposed of in accordance with all the relevant regulations.

The collection and disposal of used oil should be in accordance with any local regulations. Never pour used engine oil into sewers, drains or on the ground.

Handling

New Oil

There are no special precautions needed for the handling or use of new oil, beside the normal care and hygiene practices.

Used Oil

Used engine crankcase lubricants contain harmful contaminants.

Here are precautions to protect your health when handling used engine oil:

1 Avoid prolonged, excessive or repeated skin contact with used oil.

2 Apply a barrier cream to the skin before handling used oil. Note the following when removing engine oil from skin:

- **a** Wash your skin thoroughly with soap and water.
- **b** Using a nail brush will help.
- **c** Use special hand cleansers to help clean dirty hands.
- **d** Never use petrol, diesel fuel, or paraffin for washing.

3 Avoid skin contact with oil soaked clothing.

4 Don't keep oily rags in pockets.

5 Wash dirty clothing before re-use.

6 Throw away oil-soaked shoes.

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Pre-start Cold Checks, Service Points and Fluid Levels

	Operation	10	50	100(1)	500	1000	2000	6000
ENGINE								
Coolant Quality and Level	- Check	☐	☐	☐	☐	☐		
Cooling System	- Drain and Refill						☐	☐
Oil level	- Check	☐	☐					
Oil and Filter (2)(3)	- Change				☐	☐	☐	☐
Air Cleaner Outer Element(4)	- Change					☐	☐	☐
Air Cleaner Inner Element	- Change						☐	☐
Water Separator and Engine Fuel Filter	- Drain		☐	☐	☐	☐	☐	☐
Water Separator Fuel Filter(5)	- Change				☐	☐	☐	☐
Engine Fuel Filter(5)	- Change					☐	☐	☐
Front End Accessory Drive (FEAD) Belt Condition	- Check				☐	☐	☐	☐
Front End Accessory Drive (FEAD) Belt	- Change							☐
Engine Mounting Bolts for Tightness	- Check			☐	☐	☐	☐	☐
All Hoses - Condition	- Check			☐	☐	☐	☐	☐
Radiator(4)	- Clean				☐	☐	☐	☐
Breather Gauze	- Clean						☐	☐
Valve Clearances(6)	- Check and Adjust						☐	☐
Oil Filler and Dipstick Seals(6)	- Check and Adjust						☐	☐
Rocker Cover and Injector Seals(6)	- Change						☐	☐
Injectors(6)	- Change							☐
Injector(s) Leak Off Rail(6)	- Change							☐
High Pressure Fuel Lines(6)	- Inspect							☐
TRANSMISSION, AXLES AND STEERING								
Transmission Oil Level	- Check	☐	☐	☐	☐			
Transmission Oil(7)	- Change					☐	☐	☐
Transmission Filter	- Change			☐	☐	☐	☐	☐
Axle Oil Level (incl. Hubs when applicable)(8)	- Check			☐	☐			
Axle Oil (incl. Hubs when applicable)(9)	- Change					☐	☐	☐
Axle Oil - Limited Slip Differential	- Change				☐	☐	☐	☐
Tyre Pressures and Condition	- Check	☐	☐	☐	☐	☐	☐	☐

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Changing the Air Filter Elements

CAUTION

The outer element must be renewed immediately if the warning light on the instrument panel illuminates.

2-3-3-1

Note: *Do not attempt to wash or clean the elements - they must only be renewed.*

Note: *A new inner element must be fitted at least every third time the outer element is changed. As a reminder, mark the inner element with a felt tipped pen each time the outer element is changed.*

1 Make sure the park brake is engaged and the transmission set to neutral. Raise the loader arms and fit the safety strut. ⇨ ***Loader Arm Safety Strut (129)***.

2 Lower the backhoe to the ground, switch OFF the engine and remove the starter key.

3 Open the engine cover. ⇨ ***Engine Cover (139)***.

4 Depress clips **B** and lift off cover **C**. Remove outer element **D**. Take care not to tap or knock the element.

5 If the inner element **E** is to be changed, lift up pulls and remove inner element **E**.

6 Clean inside the housing **F**, and cover **C** make sure the air holes **G** are clear. Make sure the drain hole **K** is clear.

7 Clean and inspect the condition of dust valve **L**.

8 Insert the new elements **E** and **D** into the housing, pushing them firmly in so that they are fully seated.

9 Fit cover **C**, engage cover clips **H** with housing clips **J** and close cover, secure with clips **B**.

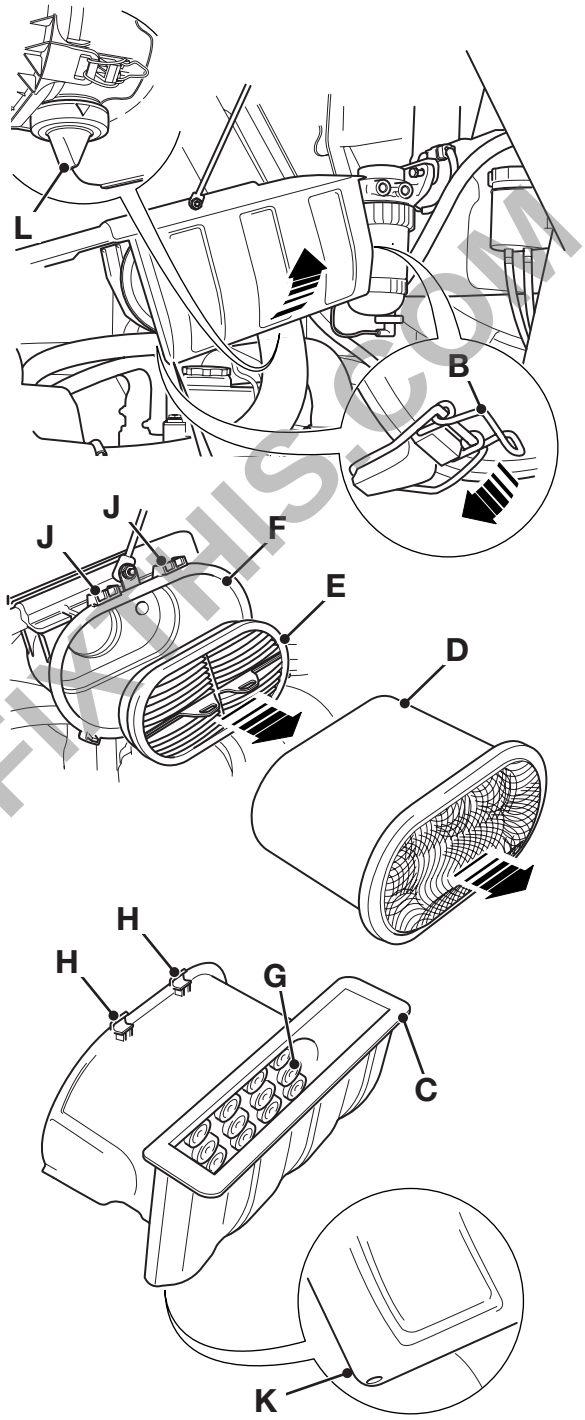


Fig 172.

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ROPS/FOPS Structure

Checking The ROPS/FOPS Structure

⚠ WARNING

You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the Roll Over Protection Structure (ROPS)/Falling Objects Protection Structure (FOPS) has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS certification.

INT-2-1-9_6

Check the structure for damage. Check that the mounting bolts are installed and undamaged. Check the bolt torques. ⇨ *Torque Settings (128)*. Tighten them to the correct torque if necessary.

1 Remove the rear wheels to gain access to the rear mounting bolts **A**.

2 Remove the covers **C** and external trim panels **D** to gain access to the front mounting bolts **B**.

Table 3. Torque Settings

Bolts **A** and **B**	205 Nm (150 lbf ft)

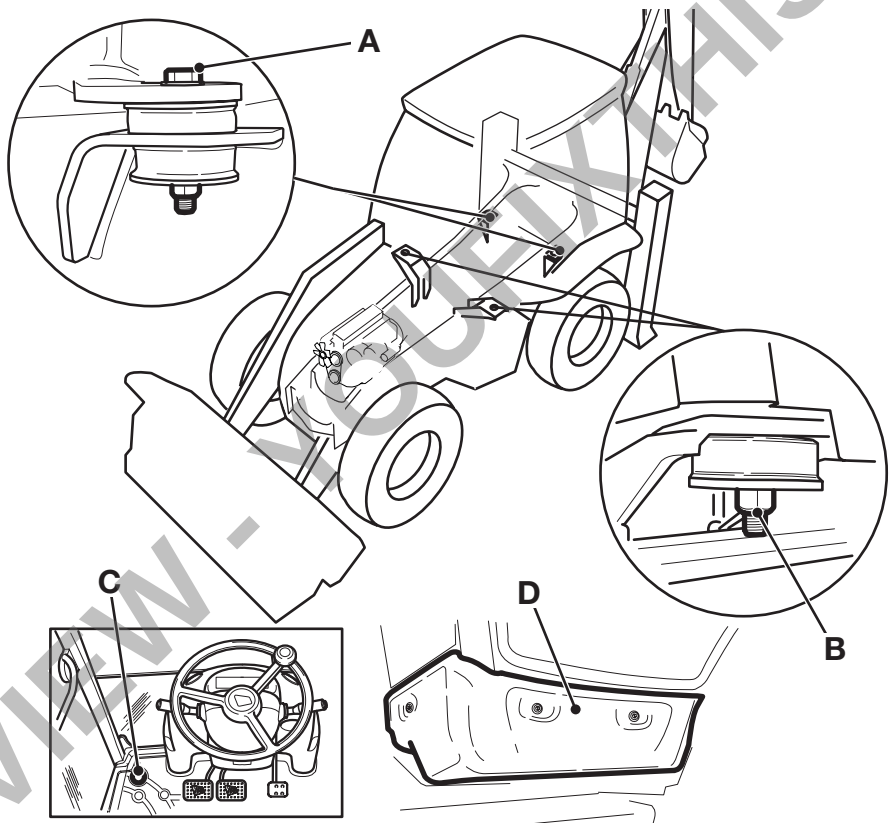


Fig 136.

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Specifications

Lifting (Craning) And Safe Working Loads

Introduction

The owner and/or operator must make sure that he fully understands the laws and regulations concerning the use of the JCB Backhoe Loader as an earthmover and as a crane. Consult your JCB distributor for further information.

If your machine has not been fitted with an approved lifting point such as a hook or shackle then it must not be used as a crane. Use the machine for earthmoving purposes only.

Your machine may be used as a crane if it has been fitted with an approved lifting point such as a hook or shackle, if it has been tested, plated and certified for its safe working load, and if all other regulation requirements have been met (consult your JCB distributor).

Safe Working Loads

⚠ WARNING

The safe working load indicated on lifting accessories such as chains etc. is not the safe working load of the machine. Consult your manual for the safe working load of the machine.

4-5-1-1

Backhoe Unit

When loads are to be lifted by the backhoe unit, a bucket must be fitted.

To obtain the safe working load of the backhoe unit, subtract the weight of the bucket and the excavator quick hitch if fitted, ⇨ ***Backhoe Bucket Weights And Dimensions (🗋 223)*** from the safe working load - no bucket fitted. ⇨ ***Safe Working Loads - Craning (🗋 221)***.

Note: *Even if the 'Extra-Dig' is only partially extended, then the lower of the two safe working load figures must be used.*

Loader Unit

In all cases the maximum load to be lifted by the loader unit when used as a crane is 1000kg (1 tonne, 2205lb).

The maximum safe working load of the fork lift attachment is 1060kg (1.06 tonne, 2336lb) at 600mm (23.5in) load centres.

The maximum safe working load of the fork lift mounted crane hook attachment is 1000kg (1 tonne, 2205lb).

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Operation

Introduction

T2-006

The aim of this part of the manual is to guide the operator step-by-step through the task of learning how to operate the machine efficiently and safely. Read the OPERATION section through from beginning to end.

Before starting the machine, sit in the drivers seat and familiarise yourself with the layout of the cab. Use your manual to identify each control lever, switch, gauge, button and pedal. Do not guess. If there is anything you do not understand, ask your JCB distributor.

The operator must always be aware of events happening outside the cab as well as inside the cab. Safety must always be the most important feature when operating the machine.

When you have familiarised yourself with the operating controls, gauges and switches, practice using them. Drive the machine in an open space, clear of people. Get to know the 'feel' of the machine and its driving controls.

Finally, do not rush the job of learning, make sure you fully understand everything in the OPERATION section. Take your time and work efficiently and safely.

Remember

- **BE CAREFUL**
- **BE ALERT**
- **BE SAFE**

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Cab Layout

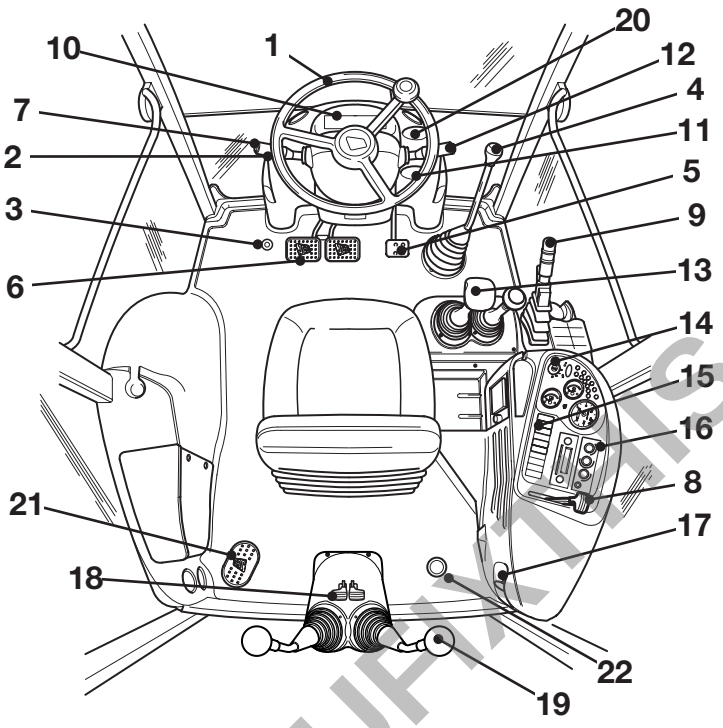


Fig 22.

1 ⇒ *Steering Wheel (31)*.

2 ⇒ *Gear Select Switch (Powershift Machines Only) (32)*.

3 ⇒ *Kickdown Switch (Powershift 6 Speed Only) (33)*.

4 ⇒ *Gear Lever (Syncro Shuttle Machines Only) (33)*.

5 ⇒ *Accelerator Pedal (33)*.

6 ⇒ *Brake Pedals (33)*.

7 ⇒ *Forward, Reverse Lever and Horn (34)*.

8 ⇒ *Hand Throttle Lever (34)*.

9 ⇒ *Park Brake Lever (34)*.

10 ⇒ *Instruments (42)*.

11 ⇒ *Front Console Switches (35)*.

12 ⇒ *Multi-Purpose Steering Column Switch (36)*.

13 ⇒ *Loader Controls (51)*.

14 ⇒ *Starter Switch (41)*.

15 ⇒ *Side Console Switches (35)*.

16 ⇒ *Heater Controls (50)*.

17 ⇒ *Boom and Slew Locks (67)*.

18 ⇒ *Stabiliser Controls (55)*

19 ⇒ *Backhoe Controls (57)*.

20 ⇒ *Speedometer Option (43)*

21 ⇒ *Backhoe Foot Pedal Control (66)*.

22 ⇒ *Hammer Operation (210)*.

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