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

406, 409 (TIER 3)

ENGLISH - 9811-6900 - ISSUE 2 - DECEMBER 2011

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Contents **Page No.**

Safety Notices
Important Information vi
The Operator Manual vi
Safety Warnings vi

Introduction
About this Manual 1
Machine Model and Serial Number 1
Using this Manual 1
Left Side, Right Side 1
Cab/Canopy 1
Cross References 1
Machine Description 2
The JCB Wheeled Loader 2
Intended Use 2
Component Location 2
Safety Check List 4
Safety - Yours and Others 4
General Safety 4
Operating Safety 6
Maintenance Safety 9
Safety Labels 14
Introduction 14
Safety Label Identification 15
Part Numbers and Description 16
Identifying Your Machine 17
Machine Identification Plate 17
Component Identification Plates 18
Machine Security 21
Introduction 21
JCB Plantguard 21
Construction Equipment Security And Registration Scheme (CESAR) . 21
LiveLink 21

Operation
Introduction 23
Before Entering the Cab 24
Entering and Leaving the Cab 25
Emergency Exit 26
Doors and Windows 27
Opening and Closing the Door 27
Opening and Closing the Windows 28
Opening and Closing the Door Side Window 28
Seat Controls 29
Introduction 29
Standard Seat 29
Air Suspension Seat 30
Seat Belts 32
Inertia Reel Seat Belt 32
Visibility Aids 33
Mirrors 33
Cab Layout 34
Component Key 34

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Safety Notices

Important Information

T1-042

The Operator Manual

⚠ WARNING

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator Manual. You must understand and follow the instructions in the Operator Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

INT-1-4-2

Do not operate the machine without an Operator Manual, or if there is anything on the machine you do not understand.

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, carefully 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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Operation

Introduction

T2-006_2

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 you start the machine, you must know how the machine operates. 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 in or around the machine. Safety must always be the most important factor when you operate the machine.

When you understand 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

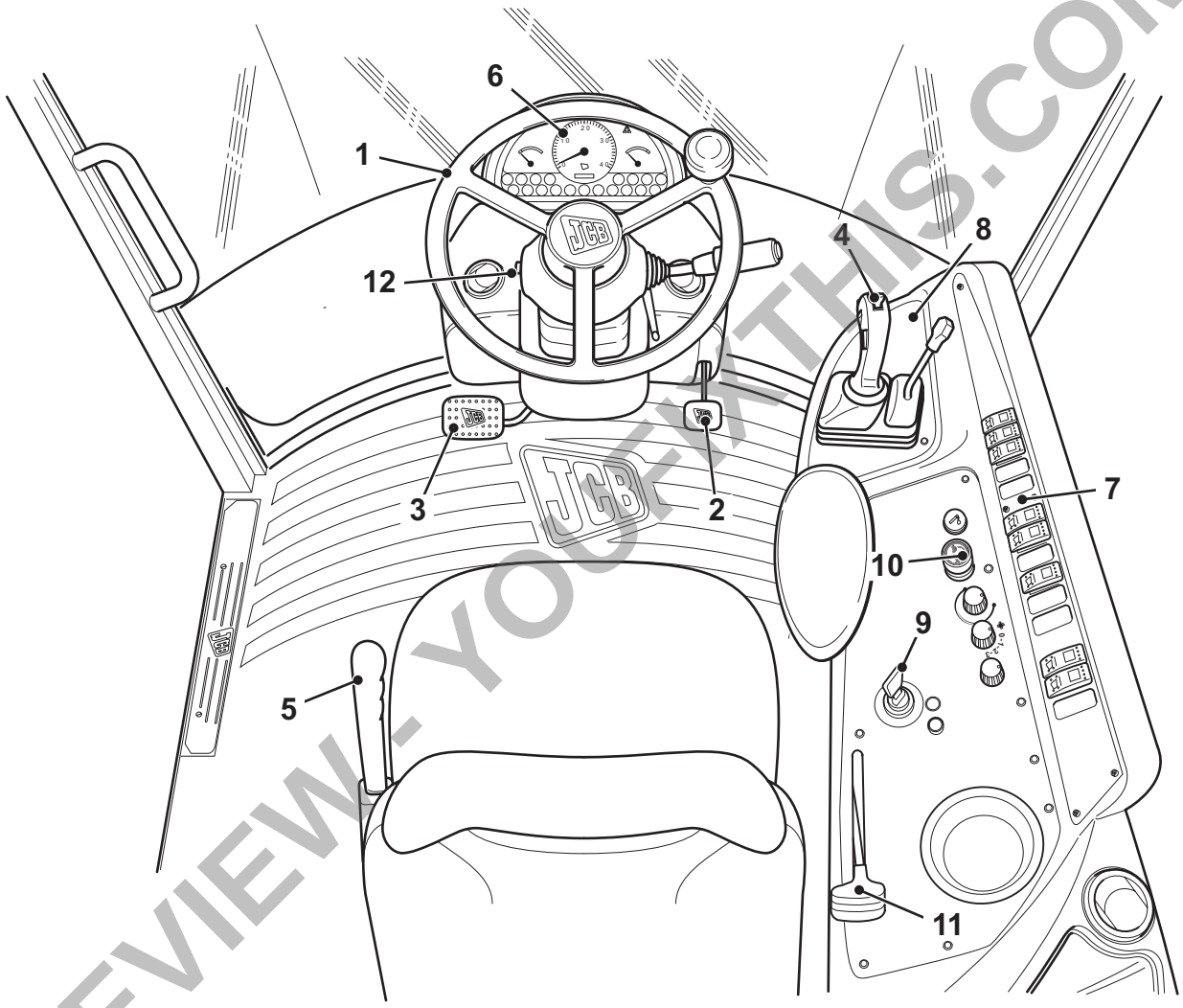
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Cab Layout

Component Key

The cab component layout illustration shows a typical machine. Your machine may look different to the model shown.



T024940-1

Fig 29.

1	⇒ *Steering Wheel (35)*	7	⇒ *Console Switches (39)*
2	⇒ *Accelerator Pedal (35)*	8	⇒ *Operating Levers (47)*
3	⇒ *Foot Brake Pedal (35)*	9	⇒ *Starter Switch (42)*
4	⇒ *Forward/Reverse Switch (36)*	10	⇒ *Creep Speed Control (38)*
5	⇒ *Park Brake Lever (35)*	11	⇒ *Hand Throttle Lever (35)*
6	⇒ *Instruments (43)*	12	⇒ *Horn (36)*

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Optional Attachments

Introduction

T4-002_3

⚠ WARNING

Use only the JCB approved attachments that are specified for your machine. Operating with non-specified attachments can overload the machine, causing possible damage and machine instability which could result in injury to yourself or others.

The use of non-approved attachments could invalidate your warranty.

2-4-5-2_1

⚠ CAUTION

If you have an attachment which is not covered in the Operator Manual do not install it, use it or remove it until you have obtained, read and understood the pertinent information. Install attachments only on the machines for which they were designed.

5-5-1-1_2

A wide range of optional attachments are available to increase the versatility of your machine. Only JCB approved attachments are recommended for use with your machine. Consult your JCB Distributor for the full list of approved attachments available.

This part of the manual includes general information on attachment operation and instructions for installation and removal of attachments.

Some attachments are supplied complete with instructions on safety, installing and removing, operation and maintenance. Read and fully understand the information before fitting, using and servicing the attachment. If there is anything you do not understand, ask your JCB Distributor.

Before using any attachment, read again ***Working With The Machine*** in the Operation section and consider how the attachment is going to affect operational safety. With the attachment fitted, there may be changes in the machine's centre of gravity or overall dimensions. This could have an effect on, for example, machine stability, the gradients on which it is safe to operate or the safe distance from power lines.

Practice using attachments off the job before working with them for the first time.

JCB attachments are designed and manufactured specifically to suit the machine's hydraulic system, mounting arrangements and safe load requirements. Attachments which are not designed for use with this machine may cause damage and create safety hazards for which JCB cannot be held responsible. In addition the machine's warranty and any other legislative compliance may be affected by the use of non JCB approved attachments.

If your machine needs the hydraulic system adapting to facilitate the use of auxiliary attachments, you must consult your distributor. Only suitably qualified personnel must re-route hydraulic hoses.

All optional attachments will have limits on their operation. i.e. lifting capacity, speeds, hydraulic flow rates, etc. Always check in the literature supplied with the attachment or in the Specification section of this manual. Some specification limits may also be displayed on the attachments Data/Rating Plate.

⚠ CAUTION

Some attachments may contact parts of the machine when in the fully folded position. Take extra care to avoid damage to the machine.

3-4-1-4

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Loading a Truck

T2-004_2

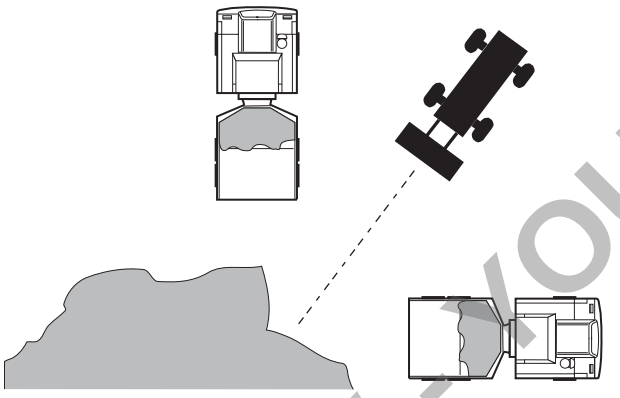
Put the truck(s) at an angle of about 45° to the pile, as shown. This cuts out unnecessary manoeuvring. Allow enough distance for the shovel to reach its unloading height while you are travelling, without slowing down.

Keep the wind on your back. This keeps dust away from you and your machine.

Move your machine as close as possible to the truck before unloading.

If the truck body is about as long as a shovel's width, tip the load into the centre of the truck. If the truck is two shovel-widths long or more, load the front of the truck first.

Do not dump the material in one sudden movement. Roll the shovel forward in stages until it is empty. Use the control lever to rock the shovel back and forth to loosen any sticky material.



145500-2

Fig 50.

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Routine Maintenance

Service Requirements

Introduction

T3-095

Your machine has been designed and built to give maximum performance, economy and ease of use under a wide variety of operating conditions. Prior to delivery, your machine was inspected both at the Factory and by your Distributor to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble free operation it is important that the routine services, as specified in this Manual, are carried out by an approved JCB Distributor at the recommended intervals.

This section of the Manual gives full details of the service requirements necessary to maintain your JCB machine at peak efficiency.

A Service Manual for your machine is available from your JCB Distributor. The Service Manual contains information on how to repair, dismantle and assemble your machine correctly.

It can be seen from the Service Schedules on the following pages that many essential service checks should only be carried out by a JCB trained specialist. Only JCB Distributor Service Engineers have been trained by JCB to carry out such specialist tasks, and only JCB Distributor Service Engineers are equipped with the necessary special tools and test equipment to perform such tasks, thoroughly, safely, accurately and efficiently.

JCB regularly updates its Distributors advising them of any product developments, changes in specifications and procedures. Therefore only a JCB Distributor is fully able to maintain and service your machine.

A Service Record Sheet or Book is provided which will enable you to plan your service requirements and keep a service history record. It should be dated, signed and stamped by your Distributor each time your machine is serviced.

Remember, if your machine has been correctly maintained, not only will it give you improved reliability but its resale value will be greatly enhanced.

Owner/Operator Support

JCB together with your Distributor wants you to be completely satisfied with your new JCB machine. If you do encounter a problem however, you should contact your Distributor's Service Department who are there to help you!

You will have been given the names of the relevant service contacts at your Distributor when the machine was installed.

To get the most from your Distributor please help them to satisfy you by:

1 Giving your name, address and telephone number.

2 Quoting your machine model and serial number.

3 Date of purchase and hours of work.

4 Nature of the problem.

Remember, only your JCB Distributor has access to the vast resources available at JCB to help support you. In addition, your Distributor is able to offer a variety of programmes covering Warranty, Fixed Price Servicing, Safety Inspections, including weight tests, covering both legal and insurance requirements.

Service/Maintenance Agreements

To help plan and spread the costs of maintaining your machine, we strongly recommend you take advantage of the many Service and Maintenance Agreements your Distributor can offer. These can be tailor made to meet your operating conditions, work schedule etc.

Please consult your JCB Distributor for details.

Initial Service and Inspection

T3-005_2

To further protect your machine's performance it is essential your JCB Distributor carries out an initial service and inspection when the machine is one month old or when it has completed 100 hours of operation (whichever

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Health and Safety

Lubricants

T3-060_3

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

⚠ WARNING

Oil

Oil is toxic. If you swallow any oil, do not induce vomiting, seek medical advice. Used engine oil contains harmful contaminants which can cause skin cancer. Do not handle used engine oil more than necessary. Always use barrier cream or wear gloves to prevent skin contact. Wash skin contaminated with oil thoroughly in warm soapy water. Do not use petrol, diesel fuel or paraffin to clean your skin.

INT-3-2-3

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.

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Pre-Start Cold Checks, Service Points and Fluid Levels

Table 3. Engine

	Operation	10	50	100(1)	500	1000	2000
Oil Level (406 Naturally Aspirated Engine)	- Check	☐	☐	☐	☐	☐	☐
Oil and Filter (406)(2)	- Change					☐	☐
Oil Level (409 Turbo Charged Engine)	- Check	☐	☐	☐	☐	☐	☐
Oil and Filter (409)(2)	- Change				☐	☐	☐
Air Cleaner - Dust Valve(3)	- Clean			☐	☐	☐	☐
Air Cleaner - Outer Element(4)	- Change					☐	☐
Air Cleaner - Inner Element	- Change						☐
Fuel Filter	- Change					☐	☐
Fuel Sedimenter	- Drain and Clean			☐	☐	☐	☐
Fuel Strainer	- Check/Clean					☐	☐
Fan Belt - Tension/Condition	- Check			☐	☐	☐	☐
Fan Belt	- Change					☐	☐
Valve Clearances(5)	- Check/Adjust					☐	☐
Engine Timing Belt	- Check				☐	☐	☐
Engine Timing Belt(5)(6)	- Change						
Engine Cooling System(7)(8)	- Clean				☐	☐	☐

(1) First 100 Hours Service only, to be completed by your JCB Distributor.
(2) In arduous conditions, change the engine oil and filter after every 250 hours or three months (whichever comes first).
(3) More frequently if operating in dusty working environments.
(4) Change outer element more frequently in dusty operating environments.
(5) This task should be done be a JCB Engineer.
(6) Replace every 3000 hours or 5 years.
(7) Clean more frequently if operating the machine in a dirty/dusty environment.
(8) Clean every 100 hours.

Table 4. Brakes

	Operation	10	50	100(1)	500	1000	2000
Foot Brake	- Check	☐	☐	☐	☐	☐	☐
Park Brake	- Check/Adjust	☐	☐	☐	☐	☐	☐

(1) First 100 Hours Service only, to be completed by your JCB Distributor.

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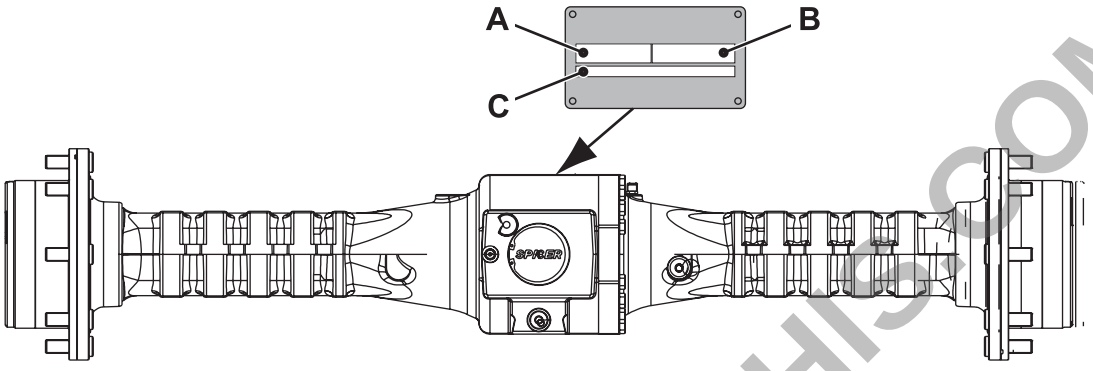
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Typical Axle Identification Plates

The axles have a serial number stamped on an identification plate, attached in the locations shown. The location depends on the axle model.

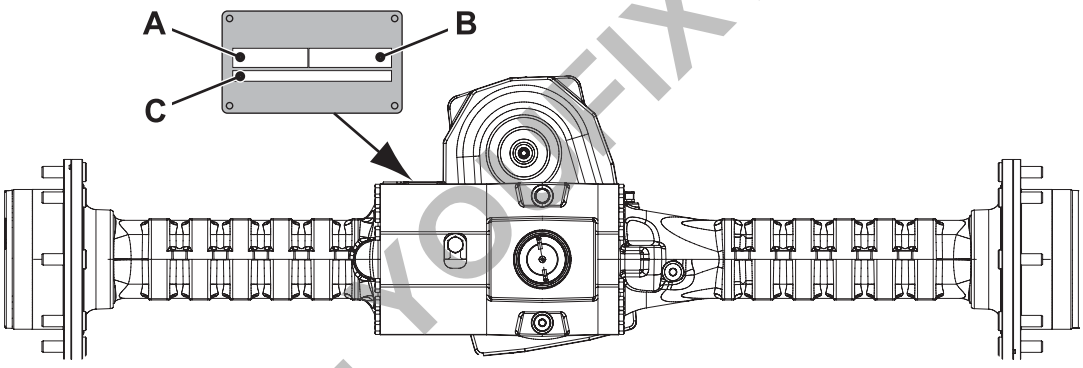
The identification plate gives the:

- Type and model number **A**
- Serial number **B**
- Lubricant **C**.



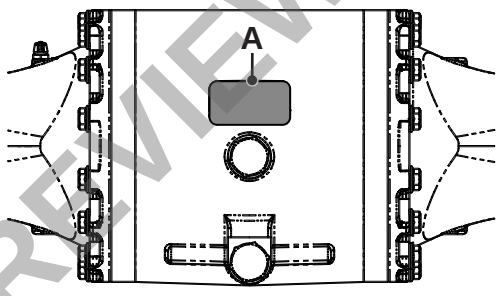
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Fig 10. Front Axle



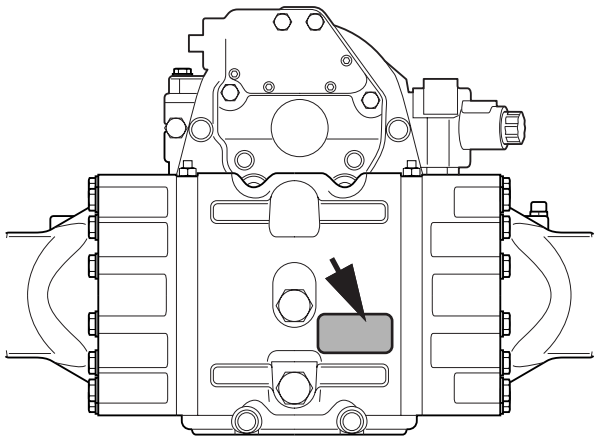
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Fig 11. Rear Axle



C033830-1

Fig 12. Front Axle



C033840

Fig 13. Rear Axle

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Check the Tyres

T3-065_2

⚠ WARNING

You could be killed or injured if a machine tyre bursts. Do not use the machine with damaged, incorrectly inflated or excessively worn tyres. Recognise the speed limitation of the tyres fitted and do not operate at more than their recommended maximum speed.

13-2-1-2

Always drive with consideration for the condition of the tyres. Incorrect tyre pressures will affect the stability of the machine. Check the tyres daily for the correct tyre pressure and signs of damage. For example:

- Signs of distortion (bulges)
- Cuts or wear
- Embedded objects (nails, etc.)

Install the valve caps firmly to prevent dirt from entering the valve. Inspect for leaks when you check the tyre pressures.

Inspect the tyre valve for leaks, when you check the tyre pressures.

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

For assistance, contact your JCB distributor. Failure to take these precautions could result in death or injury to the operator.

1 Check the structure for damage.

2 Make sure that all the ROPS/FOPS mounting bolts **A** are in place and are undamaged.

3 Make sure that the ROPS/FOPS mounting bolts **A** are tightened to the correct torque setting.

Table 19. Torque Setting

Bolts	Nm	lbf ft
A	135	99.5

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