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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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Introduction

About this Manual

Product Compliance

T1-055

Your JCB machine was designed to comply with the laws and regulations applicable at the time of its manufacture for the market in which it was first sold. In many markets, laws and regulations exist that require the owner to maintain the machine at a level of compliance relevant to the machine when first produced. Even in the absence of defined requirements for the machine owner, JCB recommend that the machine compliance be maintained to ensure safety of the operator and exposed persons and to ensure the correct environmental performance. Your machine must not be altered in any way which could affect or invalidate any of these requirements. For advice consult your JCB dealer.

For its compliance as a new machine, your JCB and some of its components may bear approval numbers and marking's, and may have been supplied with a Declaration/ Certificate of Conformity. These marking's and documents are relevant only for the country/region in which the machine was first sold to the extent that the laws and regulations required them.

Re-sales and import/export of machines across territories with different laws and regulations can cause new requirements to become relevant for which the machine was not originally designed or specified. In some cases, pre-owned machines irrespective of their age are considered new for the purposes of compliance and may be required to meet the latest requirements which could present an insurmountable barrier to their sale/use.

Despite the presence of any compliance related marking's on the machine and components, you should not assume that compliance in a new market will be possible. In many cases it is the person responsible for import of a pre-owned machine into a market that becomes responsible for compliance and who is also considered the manufacturer.

JCB may be unable to support any product compliance related enquiry for a machine which has been moved out of the legislative country/region where it was first sold, and in particular where a machine specification change or additional certification would have been required in order for the machine to be in compliance

Machine Model and Serial Number

This manual provides information for the following model(s) in the JCB machine range:

– 406 from machine serial number 2318867 to 2319667.
– 407 from machine serial number 2091868 to 2092868.
– 409 from machine serial number 2092869 to 2093869.

Using this Manual

T1-044

This manual is arranged to give you a good understanding of the machine and its safe operation. It also contains maintenance information and specification data. Read this manual from front to back before using the machine for the first time. Particular attention must be given to all the safety aspects of operating and maintaining the machine.

If there is anything you are not sure about, ask your JCB distributor or employer. Do not guess, you or others could be killed or seriously injured.

General warnings in this chapter are repeated throughout the book, as well as specific warnings. Read all the safety statements regularly, so you do not forget them. Remember that the best operators are the safest operators.

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

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

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.

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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.

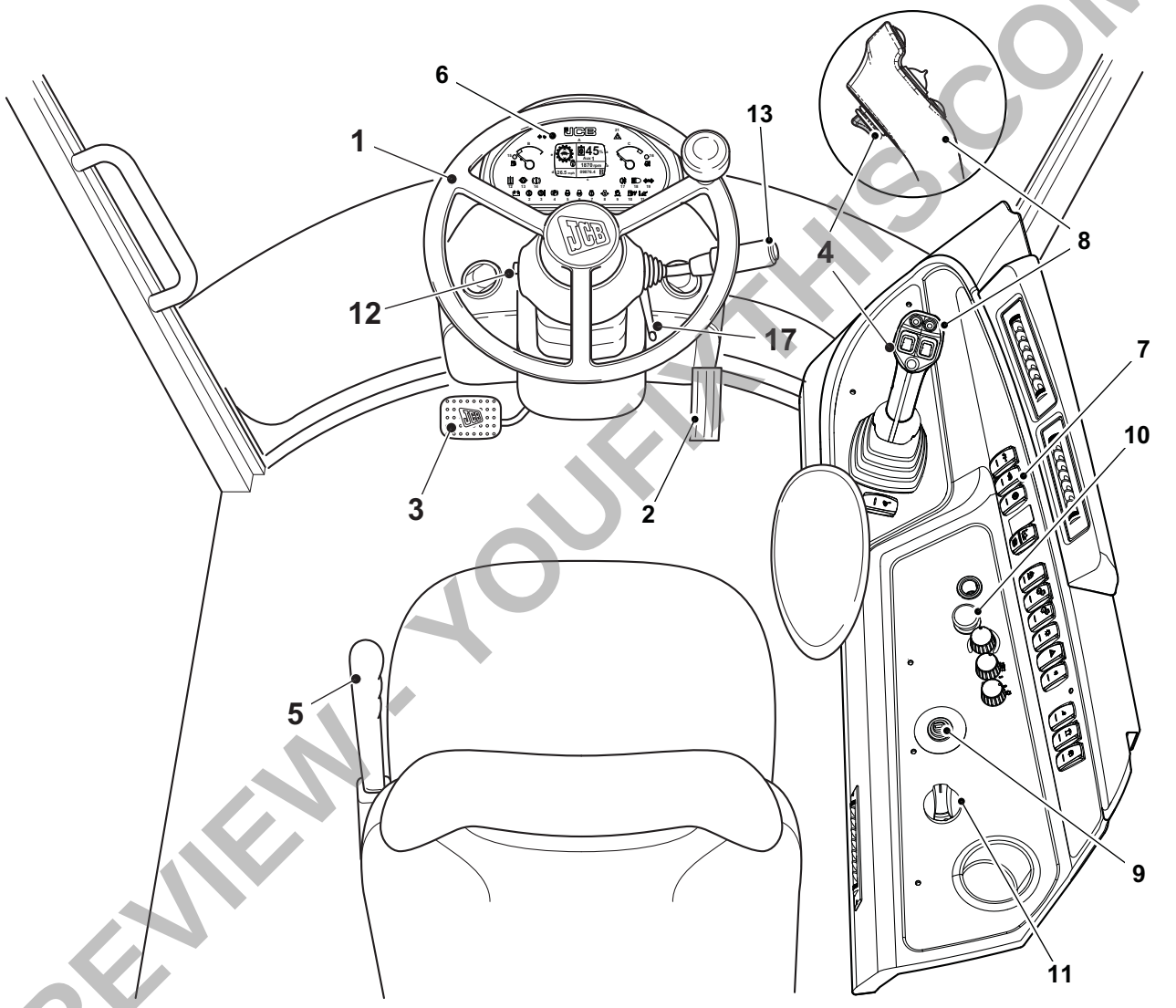


Fig 32.

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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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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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occurs first). You should notify your Distributor in advance to allow the necessary arrangements to be made.

Fit for Purpose Tests for Lifting Equipment

T3-097

All lifting equipment (for example forks, lifting hooks and shackles) need regular inspection and testing by a competent person to ensure they are fit for purpose.

This may be needed every six months or at least annually in some countries to meet and comply with legislation and for insurance purposes.

Check with your local JCB distributor for further advice.

Obtaining Replacement Parts

T3-096

If you use non-genuine JCB parts or consumables, then you can compromise the health and safety of the operator and cause machine failure

A Parts Book for your machine is available from your JCB Distributor. The Parts Book will help you identify parts and order them from your JCB distributor.

Your dealer will need to know the exact model, build and serial number of your machine. See ***Identifying Your Machine (Introduction section)***.

The data plate also shows the serial numbers of the engine, transmission and axle(s), where applicable. But remember if any of these units have been changed, the serial number on the data plate may be wrong. Check on the unit itself.

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Service Schedules

Introduction

T3-036_3

⚠ WARNING

Maintenance must be done only by suitably qualified and competent persons.

Before doing any maintenance make sure the machine is safe, it should be correctly parked on level ground.

To prevent anyone starting the engine, remove the starter key. Disconnect the battery when you are not using electrical power. If you do not take these precautions you could be killed or injured.

8-3-1-1

A badly maintained machine is a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the service schedules are done to keep the machine in a safe and efficient working condition.

Apart from the daily jobs, the schedules are based on machine running hours. Keep a regular check on the hourmeter readings to correctly gauge service intervals. When there is no hourmeter fitted, use the calendar equivalents to determine the service intervals. Refer to ***Calendar Equivalents***. Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are rectified immediately.

How to Use the Service Schedules

T3-012_4

In the example shown, **A** shows all service requirements to be carried out every 10 hours and **B** shows the requirements to be carried out every 500 hours.

Important: *Services should be carried out at either the hourly interval or calendar interval, whichever occurs first. Refer to* ***Calendar Equivalents****.*

Important: *The intervals given in the schedules must not be exceeded. If the machine is operated under severe conditions (high temperature, dust, water, etc.), shorten the intervals.*

Pre-start Cold Checks, Service Points and Fluid Levels

	Operation	A: 10	50	100[1]	B: 500	1000	2000	8000
ENGINE								
Coolant Quality and Level	- Check	□	□	□	□	□		
Cooling System	- Drain and Refill						□	□
Oil level	- Check	□	□					
Oil and Filter[2][3][4]	- Change				□	□	□	□
Air Cleaner Dust Valve[5]	- Change				□	□	□	□
Air Cleaner Outer Element[5]	- Change					□	□	□
Air Cleaner Inner Element	- Change						□	□
Pre-Cleaner (if fitted)	- Check			□				
Water Seperator	- Check for contamination and Drain		□	□	□	□	□	□
Engine Fuel Filter	- 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[5]	- Clean				□	□	□	□
Crankcase Ventilation Filter	- Change					□	□	□

795390-1

Calendar Equivalents

T3-037

Every 10 Hours = Daily

Every 50 Hours = Weekly

Every 500 Hours = Six Months

Every 1000 Hours = Yearly

Every 2000 Hours = 2 Years

Every 8000 Hours = 8 Years

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Status Screen

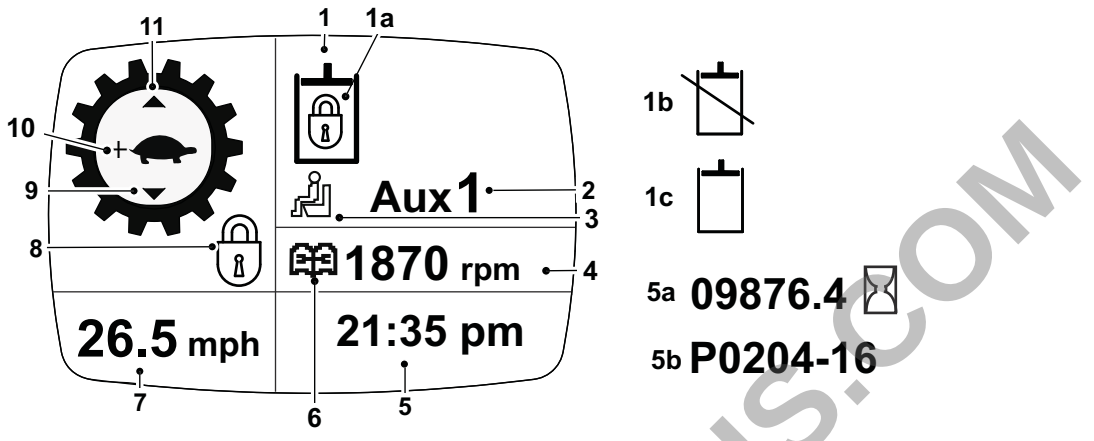


Fig 46.

1 The hydraulics are active.

1a The constant flow is locked.

1b The hydraulics are isolated.

1c Gear shown when engine is running

2 The current auxiliary service (Aux 1 or 2 - depending on machine specification).

3 The operator is out of the seat, it is only On at speeds below 1.5kph.

4 The engine rpm.

---- is shown if the CanBus message is not present.

5 Clock: 12 or 24 hour format (24 hour is shown).

5a The engine hours are shown when the starter key is turned to **IGN**, then after a set time goes to the clock **6** or to an error code **6b** if there is a fault.

5b Error code (J2012 Standard):

P = Powertrain (Engine and Transmission)

B = Body items

C = Chassis items

U = Network.

J2012 Code		Failure Mode Code
P0204	**-**	**01**

Push the enter button to remove the non-critical hydraulic, transmission and engine codes from the status screen. (The codes are entered into the data log.) Contact your JCB dealer for assistance.

If the key is cycled they will re-appear, but can be removed from the status screen in the same way. The respective warning lights will remain on if the code is cleared from the status screen.

6 The service icon is shown if there is less than 20 hours to a service interval **20>0**.

The service icon flashes if the service is overdue **H<0** or if the data log is full.

7 The machine speed.

--- is shown if the shaft speed message is missing.

8 The differential lock is engaged.

9 The machine is in reverse drive.

10 The current gear (Tortoise).

Note: *The gears are indicated by symbols - Snail, Tortoise and Rabbit. On high speed machines only, a motorway symbol is also used.*

On High Speed machines only - In Rabbit Mode, a **"="** displayed to the right indicates that a change up is available.

In High Speed Mode, a "-" to the left indicates that a change down is available.

--- is shown and the auto symbol will flash if the CanBus message is not present.

11 The machine is in forward drive.

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Warning Lights

⚠ CAUTION

If any of the audible/visual warnings operate while the engine is running, stop the engine as soon as it is safe to do so and rectify the fault.

4-2-1-2

The warning lights are On during a fault condition. A warning light that Flashes normally indicates that an error message is missing.

1 Engine Coolant Temperature

Audible/Visual. On and the buzzer will sound if the coolant temperature is too high.

If the temperature continues to rise, a DTC will be displayed as well as the warning light.

2 Engine Air Filter

Visual. On when the filter is blocked.

3 Transmission Oil Temperature

Visual. On if the oil temperature is too high, (the set point is 105^{0}C) for a critical fault the warning light **5** will also come On with an error code (110^{0}C).

4 Transmission Error/Faults

Visual. One mode:

On: non-critical, a service fault with an error code. (Push the enter button **L** to remove the error code from the status screen, but the light will not go Off if there is still a fault.)

5 High Speed Roading

Visual. On when high speed roading is active (If specified on your machine))

6 Operator Out of Seat

Visual. On when operator is not in the operators seat.

7 Trailer Direction Indicators

Visual. Flashes when the trailer direction indicators are On.

8 Rear Fog Light

Visual. On when the fog light is On.

9 Smooth Ride System (If fitted)

Visual. On when the SRS is On.

10 High Speed Warning

Visual. On when high speed is selected (If specified on your machine).

11 Reverse Warning Light

Visual. On when reverse is selected.

12 Battery/Alternator No Charge

Audible/Visual. On and the buzzer will sound if the battery charging circuit fails when the engine is running.

The light should go Off a few seconds after the engine is started.

On when the ignition is On and the engine is not running, but there is no buzzer.

13 Engine Oil Pressure

Audible/Visual. On with warning light **5**, an error code and the buzzer will sound, if the oil pressure is too low when the engine is running.

On with warning light **7**, an error code and the buzzer will sound, if there is a circuit fault when the engine is not running.

Flashes if the status message is missing, when the engine is not running.

On when the ignition is On and the engine is not running, but there is no buzzer.

14 Water in Fuel

Visual. On when there is water in the fuel system.

Drain the water separator and the fuel filter.

Flashes when there is an error or the status message is missing.

15 Engine Pre-Heat

Visual. On when the pre-heat is On.

Wait for the light to go Off before you try to start the engine.

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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 21. Torque Setting

Bolts	Nm	lbf ft
A	200-210	147.5-155

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