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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, 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.

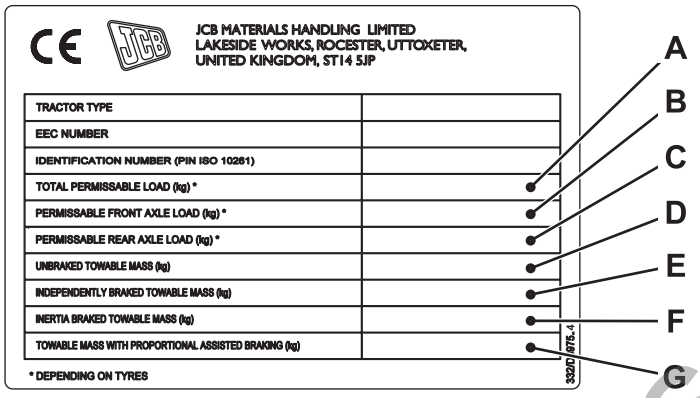
INT-1-2-3

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European Tractor Type Approved Builds

P5-1003_2



332-d6975-4

Fig 10.

Table 1.

Item		531-70	535-95	536-60	536-70	541-70
		kg (lb)	kg (lb)	kg (lb)	kg (lb)	kg (lb)
A	Total Permissible Mass	8200 (18073)	8500 (18734)	8200 (18073)	8350 (18403)	8400 (18513)
B	Permissible Front Axle Load(1)					
	From	2400 (5291)	2400 (5291)	2400 (5291)	2400 (5291)	2400 (5291)
	To	6600 (14550)	7300 (16093)	6200 (13668)	7000 (15432)	7000 (15432)
C	Permissible Rear Axle Load(1)					
	From	2400 (5291)	2400 (5291)	2400 (5291)	2400 (5291)	2400 (5291)
	To	6600 (14550)	7300 (16093)	6200 (13668)	7000 (15432)	7000 (15432)
D	Unbraked Towable Mass	750 (1653)	750 (1653)	750 (1653)	750 (1653)	750 (1653)
E	Independently Braked Towable Mass	6000 (13227)	6000 (13227)	6000 (13227)	6000 (13227)	6000 (13227)
F	Inertia Braked Towable Mass	3500 (7716)	3500 (7716)	3500 (7716)	3500 (7716)	3500 (7716)
G	Towable Mass Fitted with a Proportional Assisted Braking System					
	10 Tonne Hydraulic Hitch	10000 (22040)	10000 (22040)	10000 (22040)	10000 (22040)	10000 (22040)
	Rockinger/Tractor Hitch	17800 (39231)	17100 (37699)	17800 (39231)	17250 (38019)	17200 (37909)

(1) Dependent on tyres option.

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Cab Layout

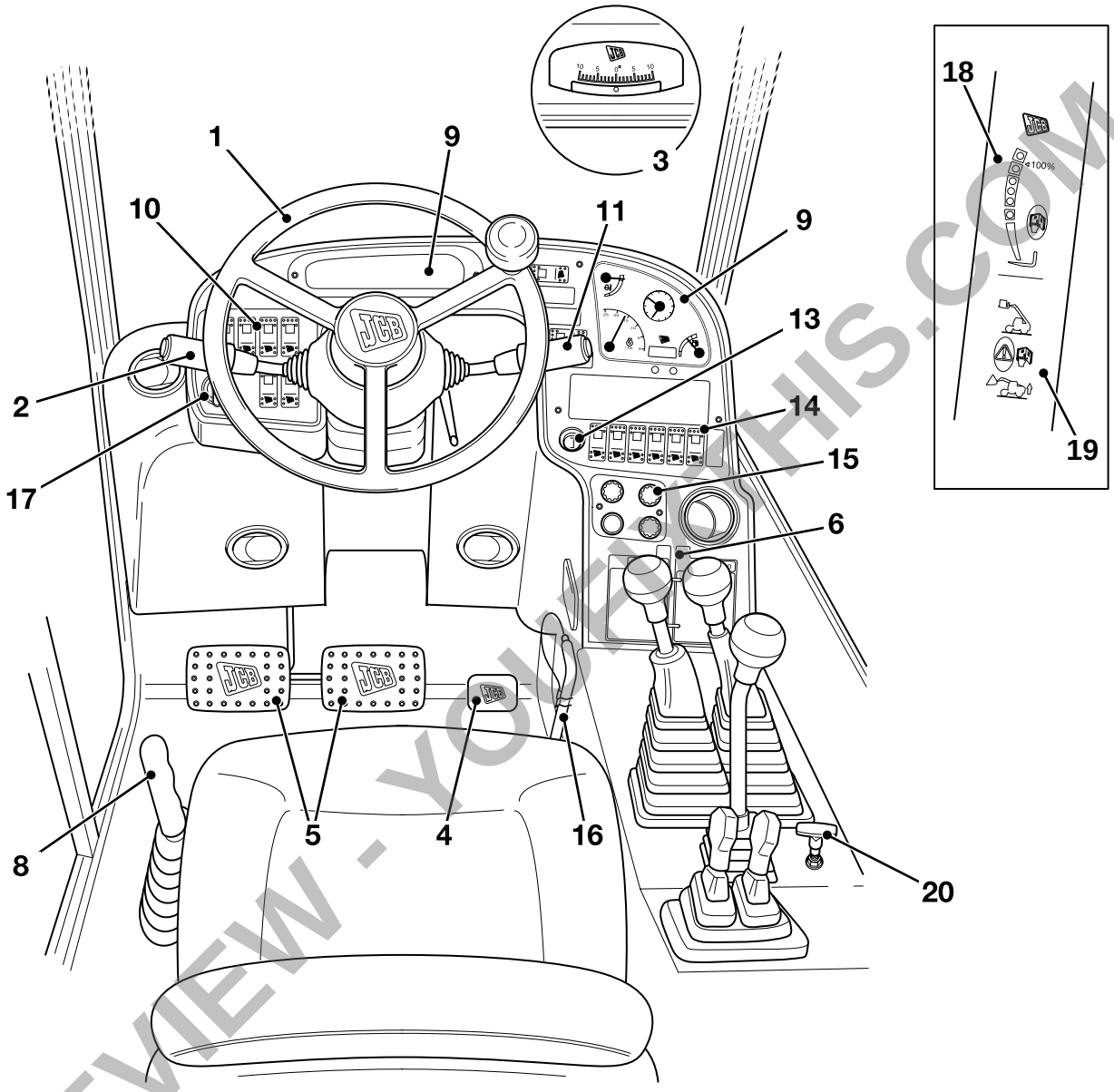


Fig 14.

Note: *The cab layout illustration is of a typical machine, for variations see the relevant page in this manual.*

⇒ ***Component Key (43)***.

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Before Starting the Engine

P5-2033_3

Note: *Read* ***Operating Environment*** *in Operation section if you will be using the machine in very cold or very hot climates.*

Note: *If the fuel tank has been empty or if any part of the fuel system has been drained or disconnected, the fuel system must be primed before attempting to start the engine. See* ***Bleeding the System****, Maintenance section.*

1 The park brake should have been engaged when the machine was last parked. But if it is not already engaged, engage it now.

⚠ DANGER

Before lowering the attachments to the ground, make sure that the machine and the area around it are clear of other people. Anyone on or close to the machine could fall and be crushed by the attachments, or get caught in the linkages.

2-2-3-4

2 Make sure that the attachment is on the ground.

⚠ CAUTION

On machines fitted with hose burst protection valves the attachments cannot be lowered with the engine stopped. On these machines start the engine and lower the attachments before doing the walk round inspection.

2-2-3-5

3 For your own safety (and others) and for a maximum service life of your machine, do a pre-start inspection before starting the engine.

a If you haven't already done it, do a walk round inspection of the outside of the machine. See ***Before Entering the Cab***. Also, complete the daily checks as detailed in the Service Schedules.

b Remove dirt and rubbish from the cab interior, specially around the pedals and control levers.

⚠ WARNING

Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you could lose control of the machine.

2-2-3-6

c Remove oil, grease and mud from the pedals, control levers and the steering wheel.

d Make sure that your hands and shoes are clean and dry.

⚠ WARNING

Loose articles can fall and strike you or roll on the floor. You could be knocked unconscious, or the controls could get jammed. If that happens you could lose control of the machine.

2-2-3-7_1

e Remove or secure all loose articles in the cab - such as lunch boxes, tools etc.

f Inspect the ROPS/FOPS structure for damage. Get your JCB Distributor to repair any damage. Make sure all its securing bolts are fitted and correctly tightened.

g Check around the cab for loose or missing bolts, screws etc. Replace or tighten where necessary.

h Inspect the seat belt and its mountings for damage and excessive wear.

⚠ WARNING

When a seat belt is fitted to your machine replace it with a new one if it is damaged, if the fabric is worn, or if the machine has been in an accident. Fit a new seat belt every three years.

2-3-1-7_1

i Check that the following are in working order:

Lights, Warning Lights, Horn, Indicator Lights, All Switches, Direction Indicators, Hazard Warning Lights, Windscreen Washer and Wipers (if fitted).

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Diagnostic Fault Codes

P5-2014

When the system detects a fault, the audible alarm will sound and various combinations of lights on the display will indicate a fault code for approximately 10 seconds.

The audible alarm and the fault code display cancel after 10 seconds and all LEDs on the display will flash continuously as long as the fault remains. Press and release display button **E** to show the fault code for a further 10 seconds.

When the fault clears, the display will return to normal.

⚠ WARNING

If the Load Moment Indicator is faulty, contact your JCB Distributor. Do not try to repair it yourself.

12-2-1-1

If any of these fault codes are displayed, switch the starter key off and on again. Contact your JCB distributor if the fault does not clear.

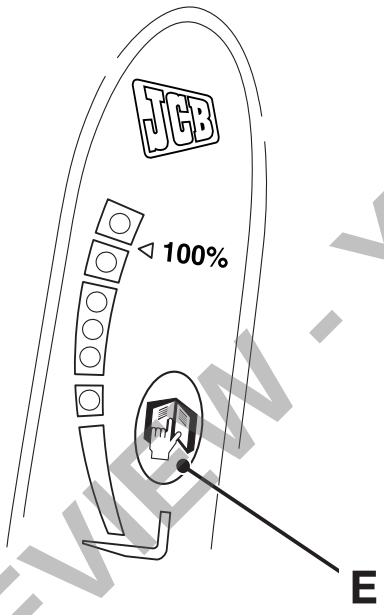


Fig 62.



Error Code 1 - Transducer signal fault

Transducer disconnected or wiring damaged.



Error Code 2 - Calibration out of range

System is incorrectly calibrated.



Error Code 3 - Calibration required

System not calibrated.



Error Code 4 - Display unit faulty

The display box has detected an internal error.



Error Code 5 - Low battery voltage

Battery voltage is below 9 Volts.

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Health and Safety

Lubricants

T3-060_2

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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Service Schedules

Introduction

T3-036-2

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.

⚠ 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

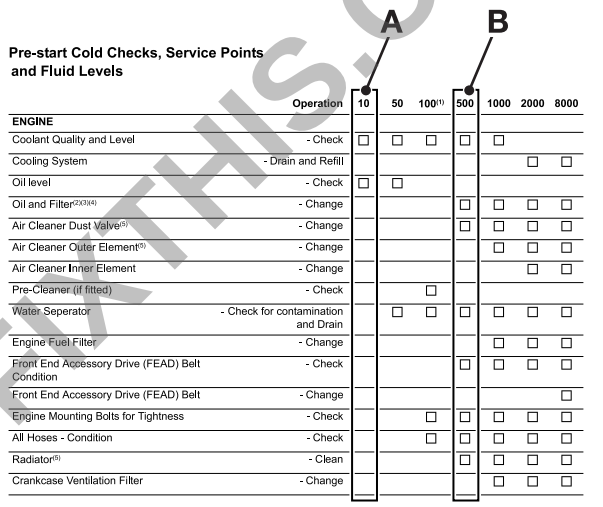
Apart from the daily jobs, the schedules are based on machine running hours. Keep a regular check on the hourmeter readings to correctly gauge service intervals. Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are rectified immediately.

How to Use the Service Schedules

T3-012_3

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****.*



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Calendar Equivalents

T3-051

Every 10 Hours = Daily

Every 50 Hours = Weekly

Every 500 Hours = Six Months

Every 1000 Hours = Yearly

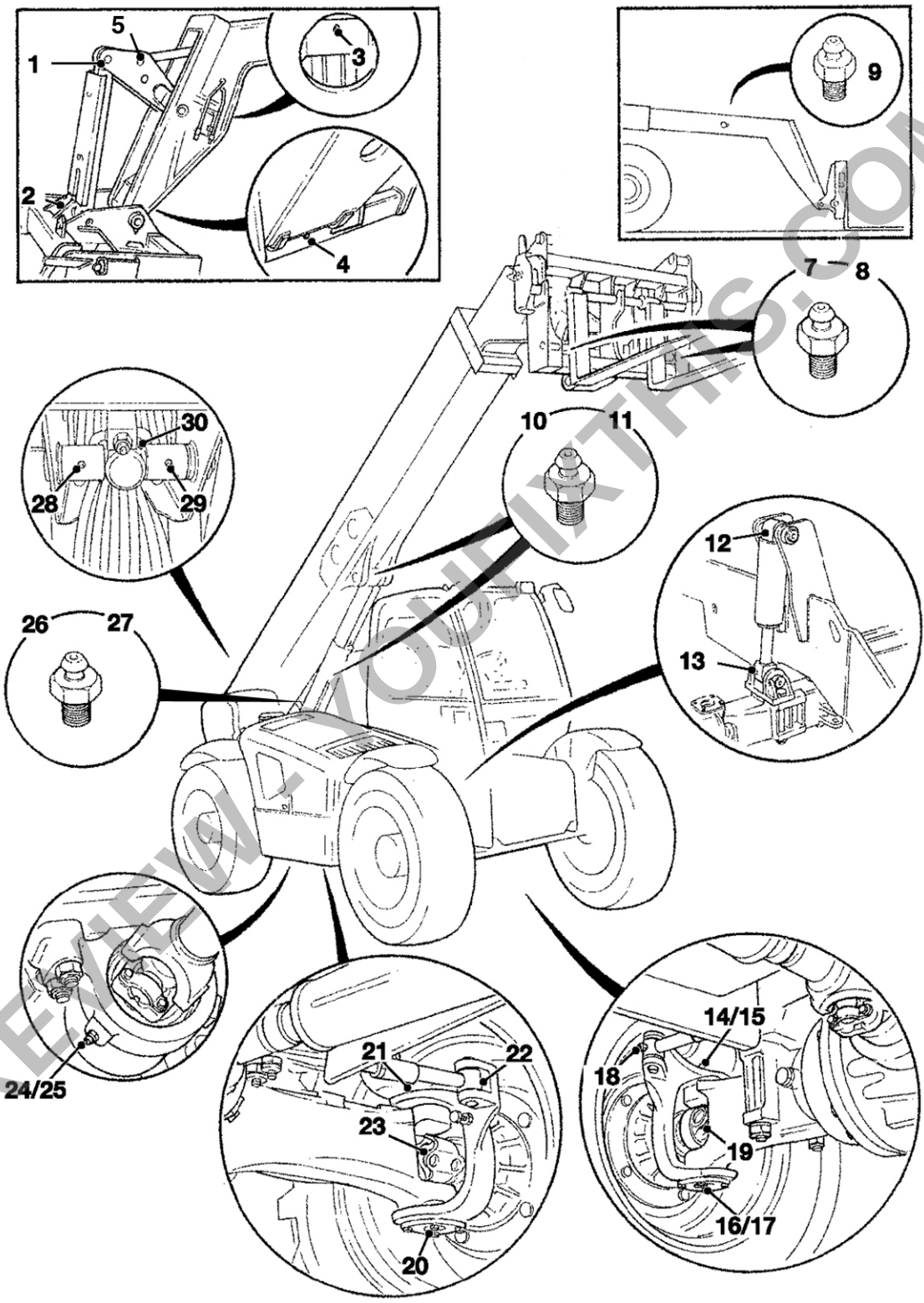
Every 2000 Hours = 2 Years

Every 6000 Hours = 6 Years

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Every 50 Hours



265510-C2

Fig 13. 531-70, 536-70, 541-70

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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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Doors and Windows

Opening and Closing the Door

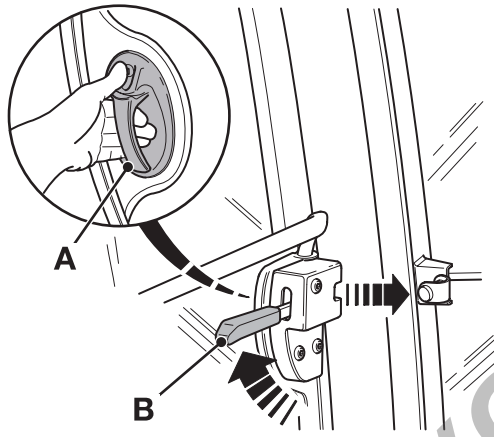
T2-060

To open a door from the outside, unlock it with the key and pull the handle **A**. The door is fitted with an assister which will spring it open and hold it open.

Close the door from the inside by pulling it firmly; it will latch itself.

To open the door from the inside, operate lever **B**.

Note: *Do not drive the machine with the door unlatched.*



770810-3

Fig 3.

Opening and Closing the Upper Door Section

With the door closed, release the upper section by pulling lever **E** to the rear. Swing the door fully open until it latches.

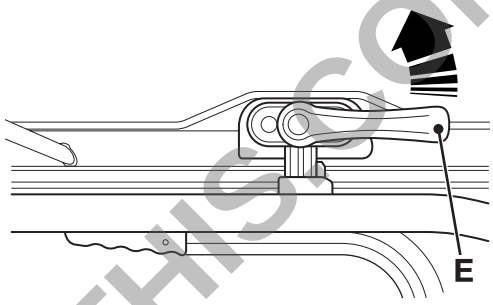
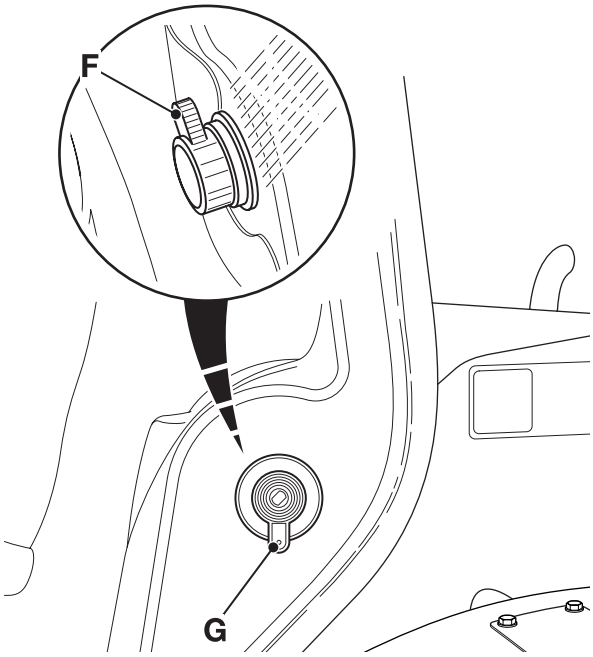


Fig 4.

To close the upper door section, release catch **F** (if inside the cab) or catch **G** (if outside the cab) and swing the door closed. Latch the upper door onto the lower door by pushing lever **E** forward and down.



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Chassis Levelling (Sway) Option

⚠ WARNING

Never operate the chassis levelling (sway) control when the boom is above the horizontal position. Never operate the boom if the machine is not level.

Use the chassis levelling (sway) control to level the machine before operating the boom. Reposition the machine if a level position cannot be achieved.

Never operate chassis levelling (sway) when the machine is moving.

The machine could tip over if you do not obey these safety rules.

5-2-2-5_3

⚠ WARNING

Controls

You or others can be killed or seriously injured if you operate the control levers from outside the machine. Operate the control levers only when you are correctly seated.

0179_2

The chassis levelling (sway) control switch allows the machine to be levelled from side to side before loading and unloading. The switch must also be used to level the machine from side to side before travelling.

The ram will stay in any position until you move it with the switch.

Use inclinometer **A** to check that the machine is level before operating the boom. The machine is level when the inclinometer shows zero degrees (0°).

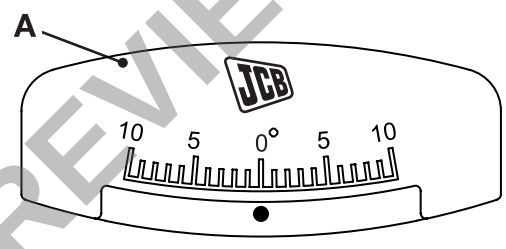


Fig 44.

Use indicator **B** to check that the body of the machine is square to the axles before driving the machine. The machine is square to the axles when rod **C** is level with the top end of tube **D**. When the rod is above the tube, the machine is swayed to the right. When the rod is down inside the tube, the machine is swayed to the left.

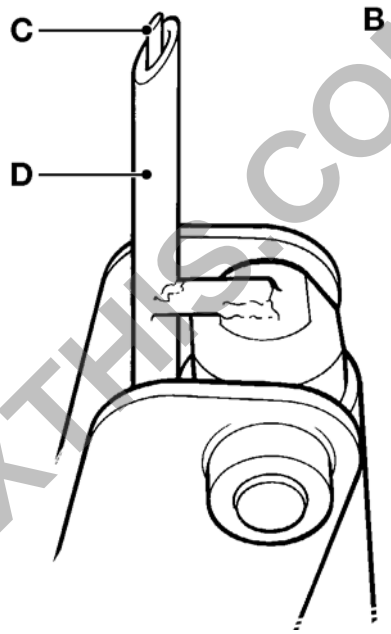


Fig 45.

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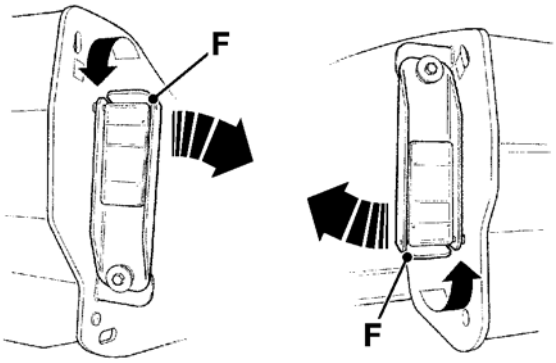


Fig 90.

6 Select the steer mode required.

7 If any optional attachments are fitted, make them safe as detailed in ***Optional Attachments*** section.

8 Switch on Smooth Ride System (if fitted).

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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.

First Aid - Oil

Eyes

In the case of eye contact, flush with water for 15 minutes. If irritation persists, get medical attention.

Swallowing

If oil is swallowed do not induce vomiting. Get medical advice.

Skin

In the case of excessive skin contact, wash with soap and water.

Spillage

Absorb on sand or a locally approved brand of absorbent granules. Scrape up and remove to a chemical disposal area.

Fires

⚠ WARNING

Do not use water to put out an oil fire. This will only spread it because oil floats on water.

Extinguish oil and lubricant fires with carbon dioxide, dry chemical or foam. Fire fighters should use self contained breathing apparatus.

7-3-1-3_1

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Engine Cover

P5-3012_2

Opening and Closing

Get access to the engine by opening the engine cover **A**.

⚠ WARNING

The engine has exposed rotating parts. Switch OFF the engine before working in the engine compartment. Do not use the machine with the engine cover open.

5-2-6-5

⚠ WARNING

Touching hot surfaces can burn skin. The engine and machine components will be hot after the unit has been running. Allow the engine and components to cool before servicing the unit.

10-1-1-40

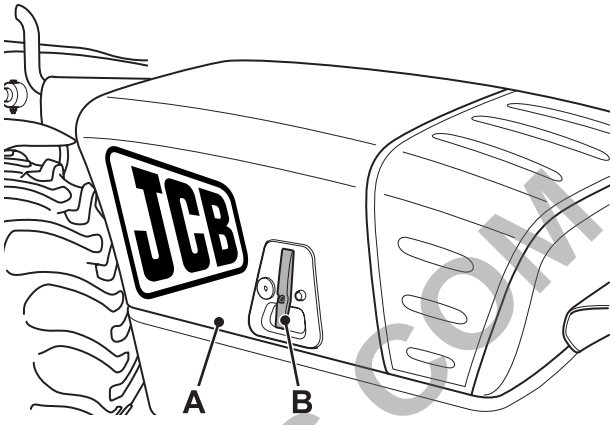
Important: *Before you stop the engine, you must allow the engine to operate at low idle for four minutes. The delay allows the coolant temperature to stabilise before you open the engine cover.*

1 Make the machine safe with the boom lowered. Refer to ***Prepare the Machine for Maintenance***.

2 Unlock and release catch **B**. Allow the cover to raise on its gas strut. Keep hold of the cover while it rises.

3 Pull the cover down and engage catch **B**. We recommend you lock the engine cover.

Note: *We recommend that you lock the engine cover to prevent theft and tampering.*



263500-3

Fig 25.

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Releasing the Hydraulic Pressure

P5-3021_2

1 Make the machine safe with the boom lowered. Refer to ***Prepare the Machine for Maintenance***.

2 Operate the controls to remove the hydraulic pressure from the service hose lines.

a For manually operated services, operate the controls of the service to be disconnected.

b For electrical and servo operated services, turn the starter key to the ON position.

Operate the controls of the service to be disconnected.

Important: *To release the hydraulic pressure from the electrical and servo operated services the battery must be connected while you operate the controls.*

3 If necessary, open rear cover **A** to get access to the filler cap **B**. Refer to ***Access Panels, Rear Cover (if fitted)***.

4 Clean the top of the tank around the filler cap **B**.

⚠ CAUTION

Allow the hydraulic fluid temperature to cool before removing the hydraulic tank filler cap. Open the cap slowly to prevent oil being forced out of the filler neck.

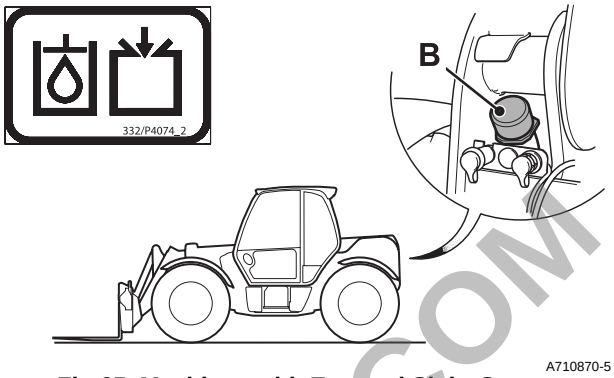
5-3-4-8

⚠ CAUTION

Do not run the engine with the hydraulic tank filler cap removed.

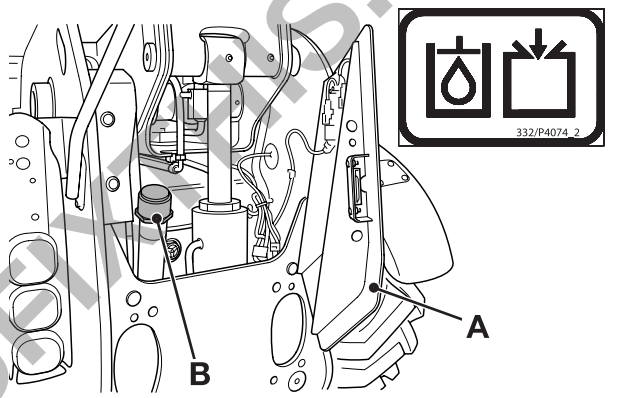
5-3-4-1

5 Slowly remove filler cap **B** to allow the system to vent fully and prevent oil being forced out of the filler neck.



A710870-5

Fig 65. Machines with External Sight Gauge



732370-5

Fig 66. Machines without External Sight Gauge

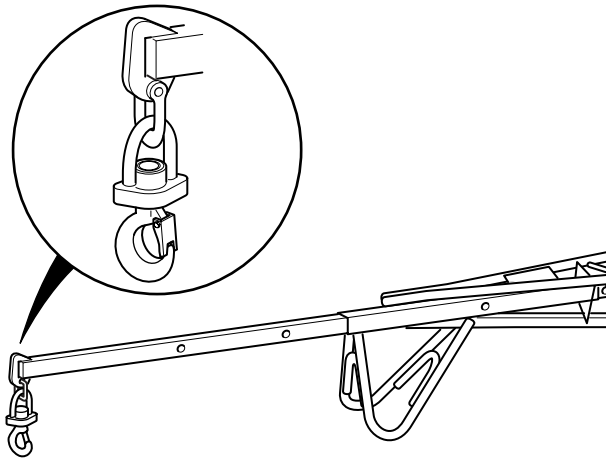
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Roof Truss Jib

P5-4009

This is a Q-Fit attachment which gives your machine greater reach and height. This attachment is supplied with test certificates for its fabrication, its hook and its shackle. Its Safe Working Load is stamped on a plate mounted on the attachment. See ***Working with the Machine*** (OPERATION Section).



392020

Fig 18.

Safety

Obey all the safety instructions given in the main part of this book, plus the ones given in this section. Use this attachment only if it carries up to date test certificates.

Installing/Removing

⚠ WARNING

The attachment is heavy. Take care when lifting and handling it.

Use suitable lifting equipment. Make sure the lifting equipment is in good condition. Make sure the lifting equipment complies with all pertinent regulations.

Wear gloves and safety shoes.

4-4-1-5_1

⚠ WARNING

This attachment has a maximum Safe Working Load. Do not exceed the SWL.

Do not exceed the machine stability limits shown on the Load Chart(s) in the cab.

5-5-4-11

See ***Q-Fit Attachments*** at the beginning of this section. Installing will be easier if the Roof Truss Jib is rested on wooden blocks. Store the attachment carefully to prevent damage and corrosion.

Operation

P5-4002

Observe the following precautions when using this attachment.

⚠ WARNING

This attachment has a maximum Safe Working Load. Do not exceed the SWL.

Do not exceed the machine stability limits shown on the Load Chart(s) in the cab.

5-5-4-11

⚠ CAUTION

Load and unload on firm, level ground. Always be alert for possible hazards. Take special care when turning or reversing.

5-2-4-7

- Always check the appropriate flip chart in the cab before lifting or manoeuvring a load with this attachment.
- Always level the machine using the sway control or stabilizers (if fitted) before operating the attachment.

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