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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

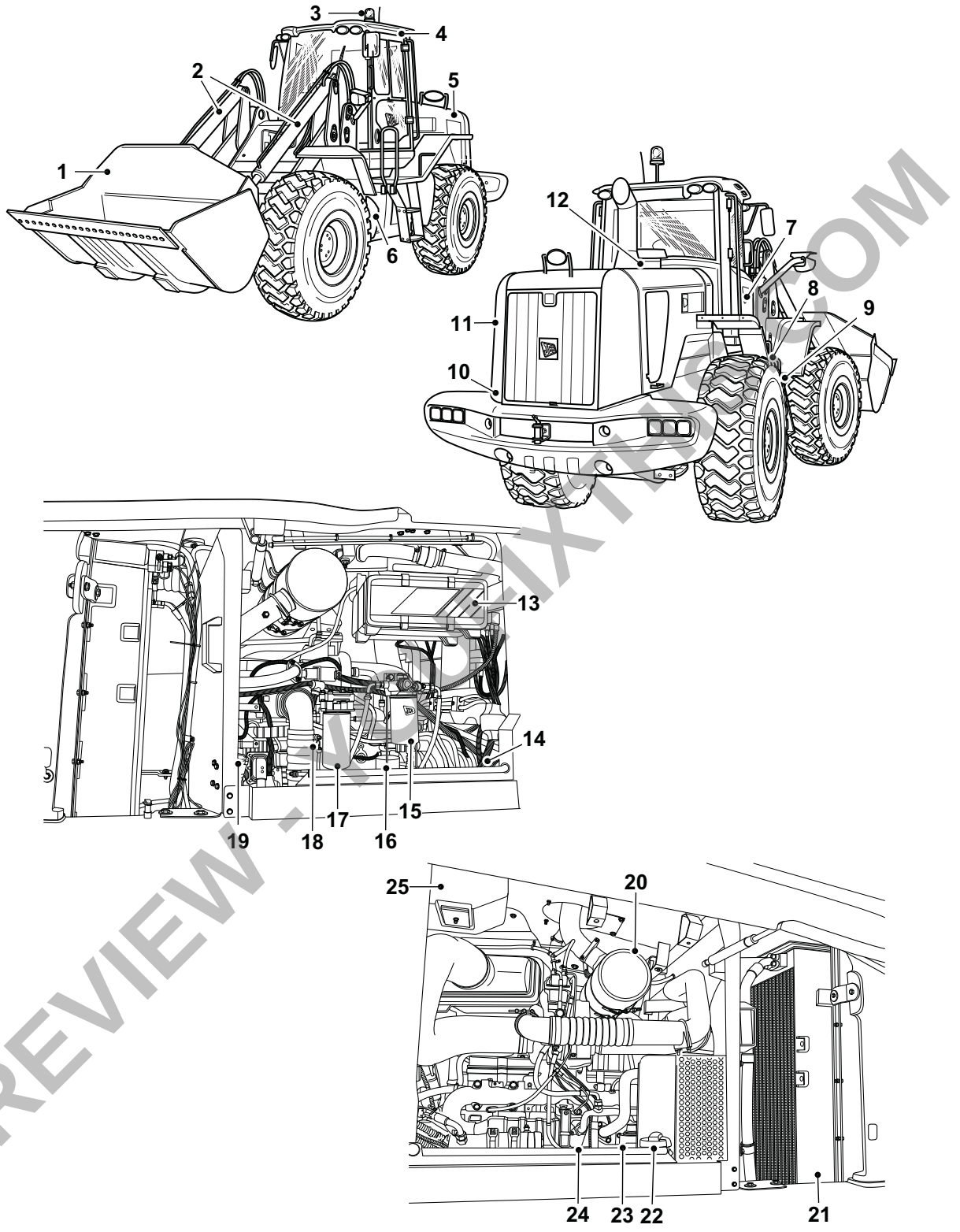
⚠ CAUTION

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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T066060-10

Fig 2.

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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.

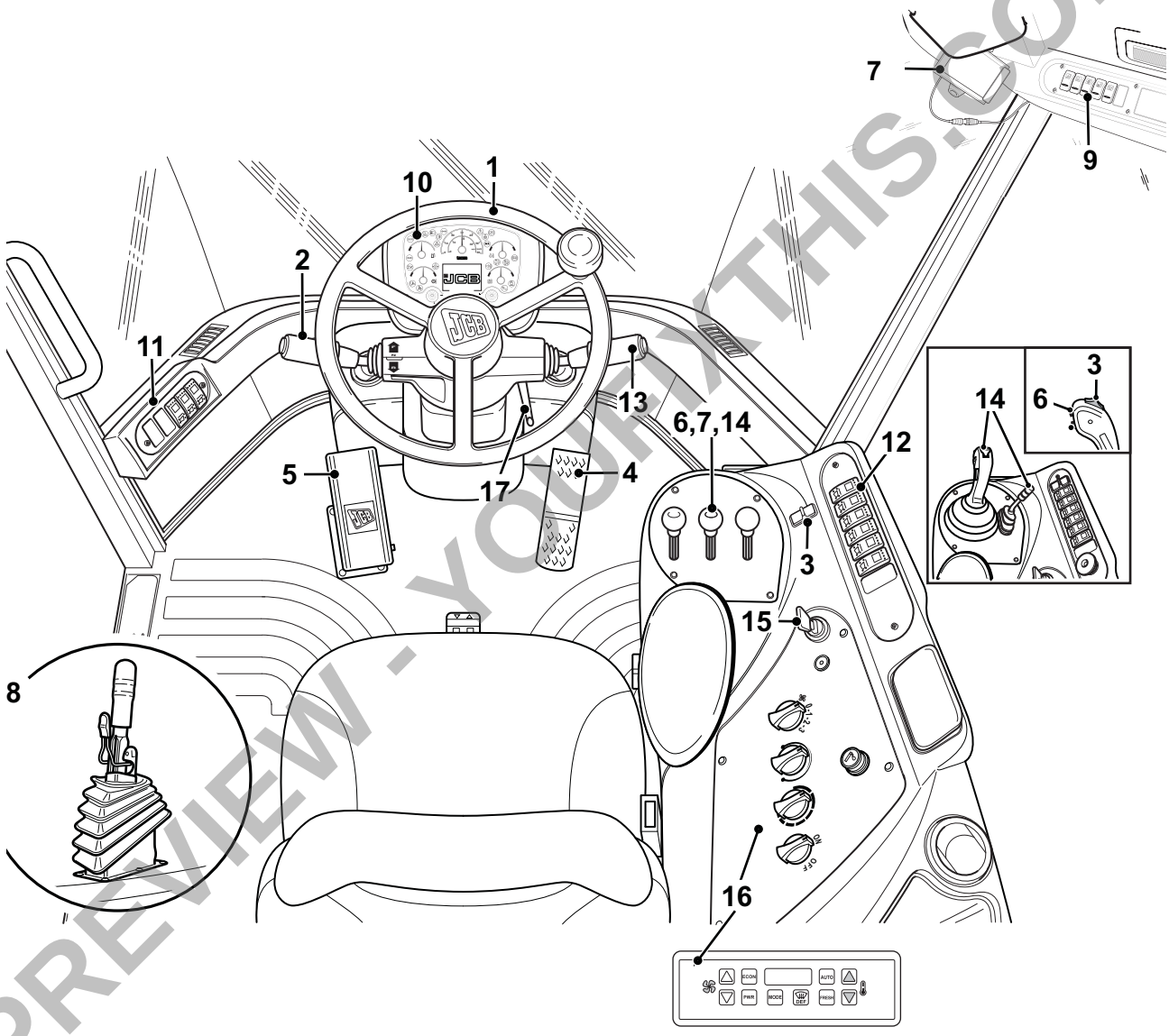
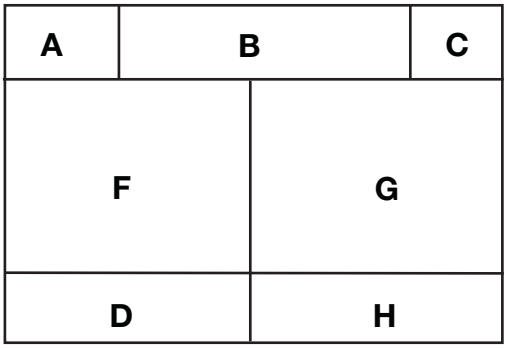


Fig 23.

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Fault Mode



T059530-4

Fig 39. Fault Mode Screen

- **A** FNR field
- **B** Current gear field
- **C** Auto field
- **D** Clock
- **E** Information field ⇒ *Fig 38. (60)*
- **F** Current engine speed field
- **G** Fault symbol field
- **H** Fault code field

The fault symbol field **G** and the fault code field **H** alert the operator to specific faults with the machine.

- **Y** = Is a currently active fault code.
- **Z** = ‘‘Text’’.

Table 13. Fault Symbols and Codes

Fault Symbol	Description/Symbol Colour	Fault Code
	Engine Malfunction/Amber	**Y**
	Engine Stop/Red	**Y**
	Engine Start/Green	**Z:** Ok
	Transmission Malfunction/Red	**Y**
	Hydraulic System Malfunction - High Severity/Red	**Y**
	General Fault - Low Severity/ Amber	**Y**
	General Fault - High Severity/ Red	**Y**
	Park Brake/Red	**Z:** Park Brake
	Low Fuel Level/Amber	**Z:** Low
	Engine CAN Fault/Red	**Z:** CAN
	Transmission CAN Fault/Red	**Z:** CAN
ECU	Management ECU CAN Fault/ Red	**Z:** CAN
?	No Set-Up Data/Red	**Z:** No Set-Up
	Service Imminent/Amber	Hours Remaining
	Park Brake off when operator out of seat.	**N**

If there is more than one active fault, the field will show the highest severity fault symbol only. (Unless there is more than one high severity fault).

The park brake off and operator out of seat warning will display 0.5 seconds after the operator leaves the seat if the park brake is off. The buzzer will also sound. To cancel the fault and buzzer apply the park brake.

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Fluids, Lubricants and Capacities

Specifications

JCB recommend that you use the JCB lubricants shown as they have been verified by JCB for use on JCB machines. However, you could use other lubricants that are equivalent to the JCB standards and quality or offer the same machine component protection.

Table 28.

Item	Capacity L	Capacity Gal	Fluid/Lubricant	JCB Part Number	Size(1)
Fuel System			Diesel ⇨ *Fuels (📄 121)*		
- 427, 435S (Main), 437	220	46.3			
- 435S (Aux)	140	31			
Engine (Oil)			JCB UP 15W/40	4001/2905	20 L
- 435S, 427, 437	18	3.95	-10 to 50^{0}C (-4^{0}F to 122^{0}F)		
Engine (Coolant)			JCB Antifreeze HP/Coolant	4006/1120	20 L
- 427, 437	35	7.7			
- 435S	35	7.7			
Gearbox(2)			JCB HP Universal ATF	4000/2305	20 L
- 427	30	6.6			
- 435S, 437	36	7.9			
Axles(3)			JCB Gear Oil HP Plus	4000/2205	20 L
- 427(4) (Both), 435S and 437 (Rear)	23	5.1			
- 435S, 437 (Front)	35	7.7			
Hydraulic System(5)(6)			JCB Hydraulic Fluid EP 46	4002/1605	20 L
- 427, 435S, 437	210	46.2			
Grease Points			JCB Special HP Grease(7)	4003/2017	400g x24
Auto Greasing System (Option)			JCB Special MPL EP Grease	4003/1501	400g x24
Electrical Connections			As a corrosion and moisture inhibitor all of the exposed connections should be liberally coated with petroleum jelly.		

(1) For information about the different container sizes that are available (and their part numbers), contact your local JCB Dealer.
(2) The figure quoted is the total system capacity. Use the 'MAX' and 'MIN' marks on the dipstick when you fill the system.
(3) 427 machines: Check which axles are fitted, as there is an option for heavy duty axles, which are the 437 axles. These axles are used for the solid tyres, 6-speed transmission and High-Lift loader arm options.
(4) Check your machine, it may have the 437 option installed.
(5) The total hydraulic system capacity depends on the equipment being used. Fill the system with all of the rams closed and watch the level indicator.
(6) Biodegradable Hydraulic Fluid is a factory option Only. Replenish with JCB Biodegradable Multigrade Hydraulic Fluid. For further information, contact Wheeled Loader Technical Service.
(7) If JCB Special MPL Grease is used for normal greasing, all 100 hour greasing operations must be carried out at ten (10) hour intervals.

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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

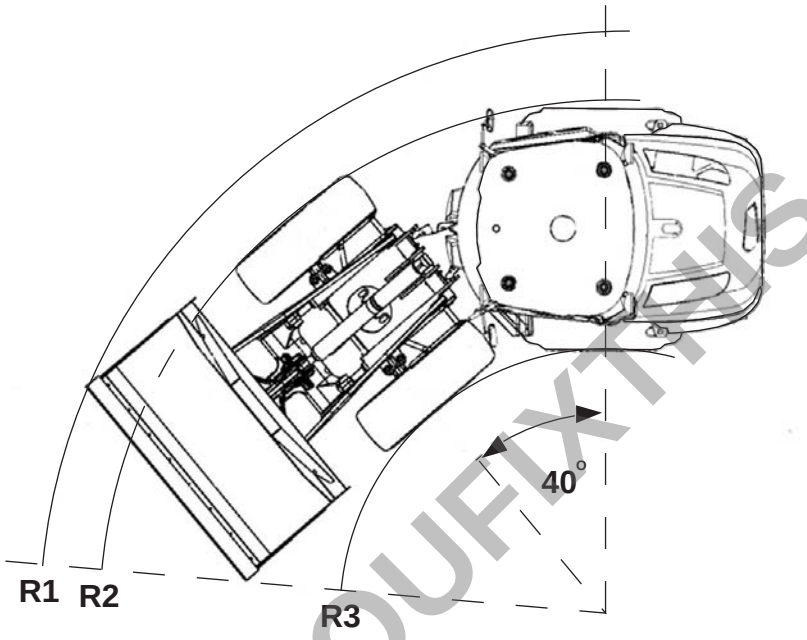
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Specifications

Static Dimensions

Turning Circles



T034500

Fig 149.

Note: *Your machine may look different from the model shown.*

Machine	Tyre	Shovel	R1 (Outer Shovel Radius)	R2 (Outer Tyre Radius)	R3 (Inner Tyre Radius)
			mm (ft-in)	mm (ft-in)	mm (ft-in)
427	20.5R25 XHA L3	1.9m³	5985 (19-7)	5422 (17-9)	2825 (9-3)
435S	620/75R26	1.9m³	5985 (19-7)	5531 (18-2)	2791 (9-2)
437	20.5R25 XHA L3	2.4m³	6196 (20-4)	5422 (17-9)	2825 (9-3)

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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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Optional Attachments

Introduction

⚠ WARNING

Machines fitted with a lock-up transmission will have different operating characteristics than a standard none lock-up transmission. Operators must familiarise themselves with the feel and operating characteristics of the machine when carrying out an application for the first time.

TRANS-8-6

⚠ 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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Check the Hydraulic Hoses and Fittings

T3-072

⚠ WARNING

Hydraulic Hoses

Damaged hoses can cause fatal accidents. Inspect the hoses regularly. Do not use the machine if a hose or hose fitting is damaged.

INT-3-3-2_4

Inspect the hoses regularly for:

- Damaged hose ends
- Chafed outer covers
- Ballooned outer covers
- Kinked or crushed hoses
- Embedded armouring in outer covers
- Displaced end fittings

Do not use the machine if a hose or hose fitting is damaged. Replace damaged hoses before you use the machine again.

Replacement hoses must be of the same size and standard.

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.

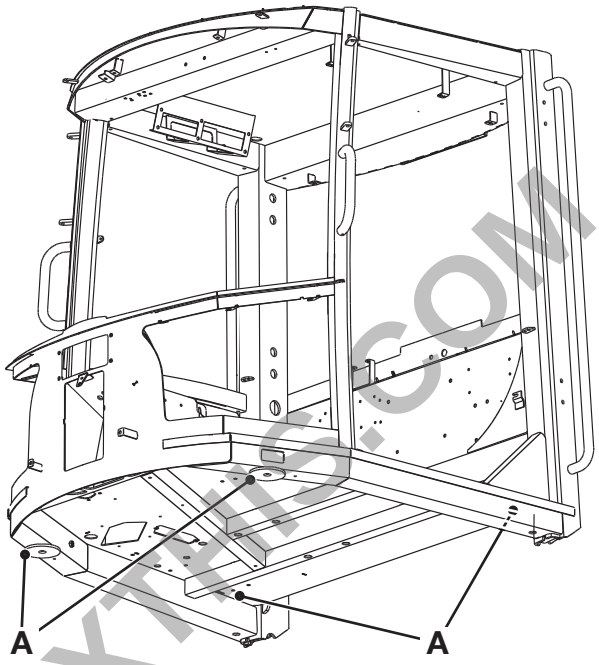
INT-2-1-9_6

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.



801230

Fig 72.

Table 29. Torque Setting

Bolts	Nm	lbf ft
A	330	243

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