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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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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

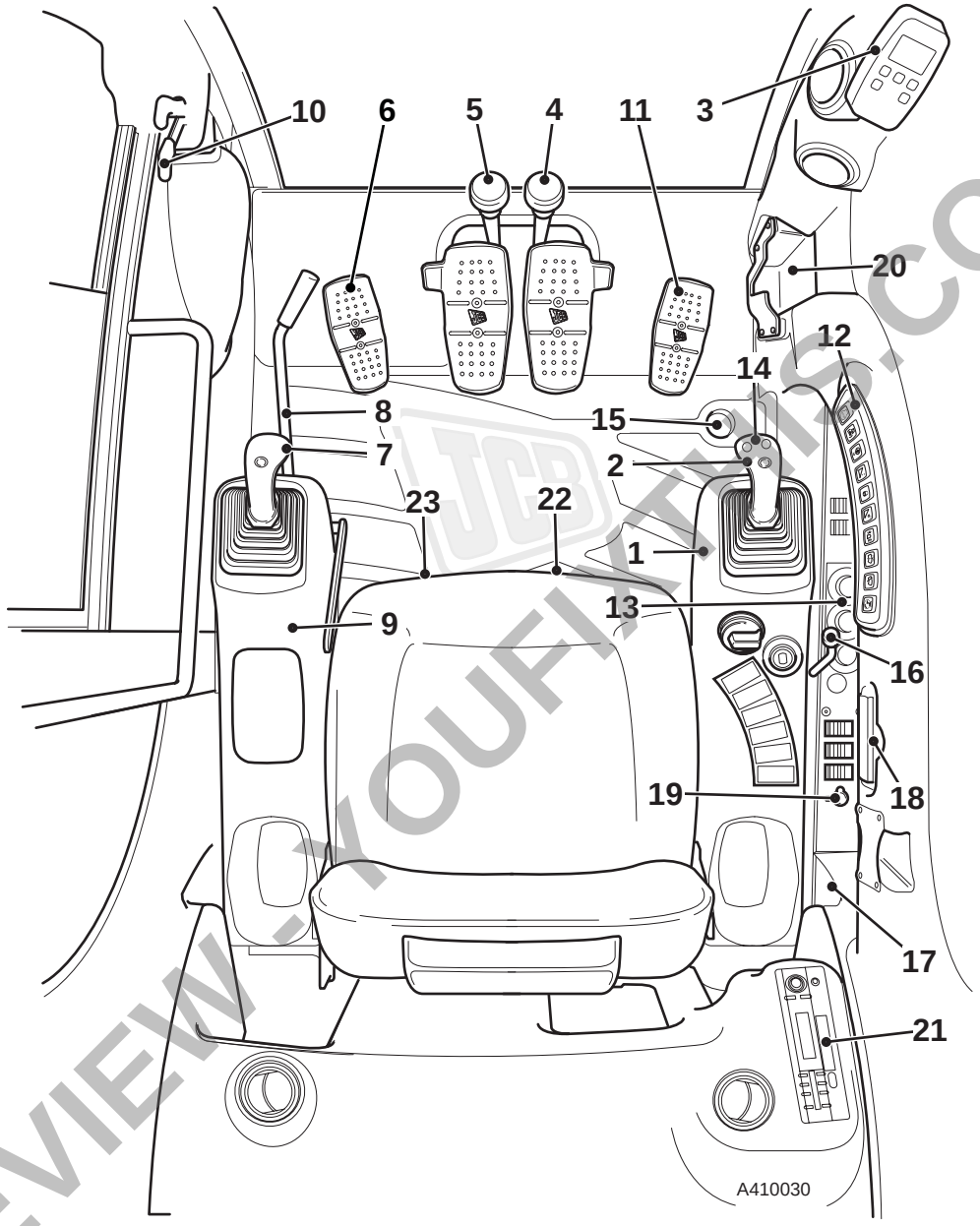


Fig 20.

Note: *The Cab layout illustration is of a typical machine, for variations see the relevant page in this manual.*
⇒ Component Key (📄 34)

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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 is 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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Transporting the Machine

P11-2003-2

Preparing for Road Travel

Before loading the machine on to its trailer remove all loose dirt that may otherwise come off and obstruct the highway and damage other vehicles.

Note: *Before transporting the machine make sure you will be obeying the local rules and laws regarding machine transportation of all the areas that the machine will be carried through.*

Make sure that the transporting vehicle is suitable. See ***Maintenance Section*** for the dimensions and weight of your machine. There is a travel height label fitted to the cab.

Try to make sure that the truck driver knows the clearance height before he drives away. See ***Specification Section*** for machine height figures.

Note: *The transport position height does not include the truck/trailer height, add the two figures together for the clearance height.* ⇒ ***Fig 70. (86)***.

⚠ WARNING

Low speed must always be selected when unloading the machine from a vehicle or tracking down steep slopes. The machine will take longer to stop when the levers are released if high speed is selected.

0076

Before Using the Trailer/Transporter

⚠ WARNING

Before moving the machine onto the trailer, make sure that the trailer and ramp are free from oil, grease and ice. Remove oil, grease and ice from the machine tracks. Make sure the machine will not foul on the ramp angle.

8-2-9-33

1 Remove any dirt or debris from the trailer.

2 Check the operation of the park brake.

3 Check the trailer bodywork for signs of damage.

4 Check the tyre pressures are correct (consult the Manufacturer's manual).

5 Check the lights are working and are the correct voltage for the towing vehicle (consult the Manufacturer's manual).

6 Check the breakaway cable is serviceable.

⚠ WARNING

The safe transit of the load is the responsibility of the transport contractor and driver. Any machine, attachments or parts that may move during transit must be adequately secured.

5-2-5-9

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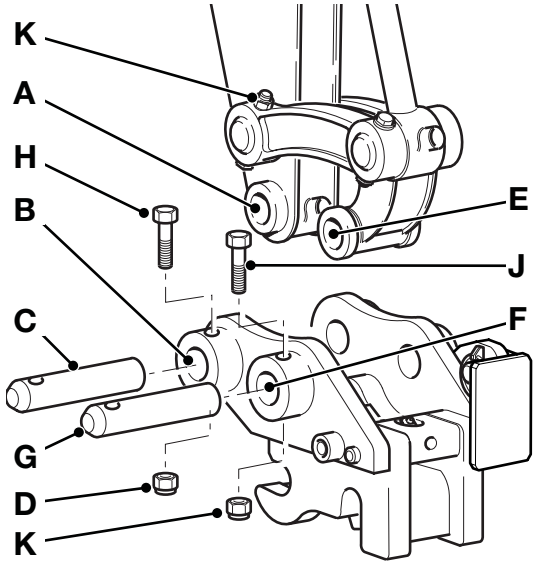


Fig 109.

Removal

The removal of the Quickhitch is a reversal of the installation procedure. Pay particular attention to safety notices.

Maintenance

Examine the Quickhitch daily for broken or missing parts.

Remove any debris from the latch hook locking mechanism.

If the Quickhitch is cleaned by high pressure water, always grease the latch hook pivot pin. Always grease the latch hook pin every week.

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Safety Decal Recognition

Label	Part No.	Definition
A	817/70112	Crush Hazard - Keep a safe distance.
B	817/70006	Unexpected machine movement due to accidental contact with controls when hydraulics are not isolated
C	332/T9356	Risk of tripping. Lift lever lock before exiting.
D	332/V3761	Flying Debris. Read the operator’s manual.
E	817/70018	Do not operate controls from outside of the machine.
F	817/70029	Wear seat belt
G	817/70014	Read the operator’s manual before operating the machine.
H	817/70100	Enter and dismount safely. Read the operator’s manual.
J	817/70102	Moving parts inside.
K	817/70009	Keep clear of / do not reach into rotating parts
L	817/70004	Stay a safe distance away
M	817/70012	Start engine from operator's seat only
N	817/70005	Hot fluid under pressure. Do not touch, consult operator's manual
O	817/70106	Keep a safe distance.
P	332/S5833	Tie Down Points
Q	817/01803	Lift points

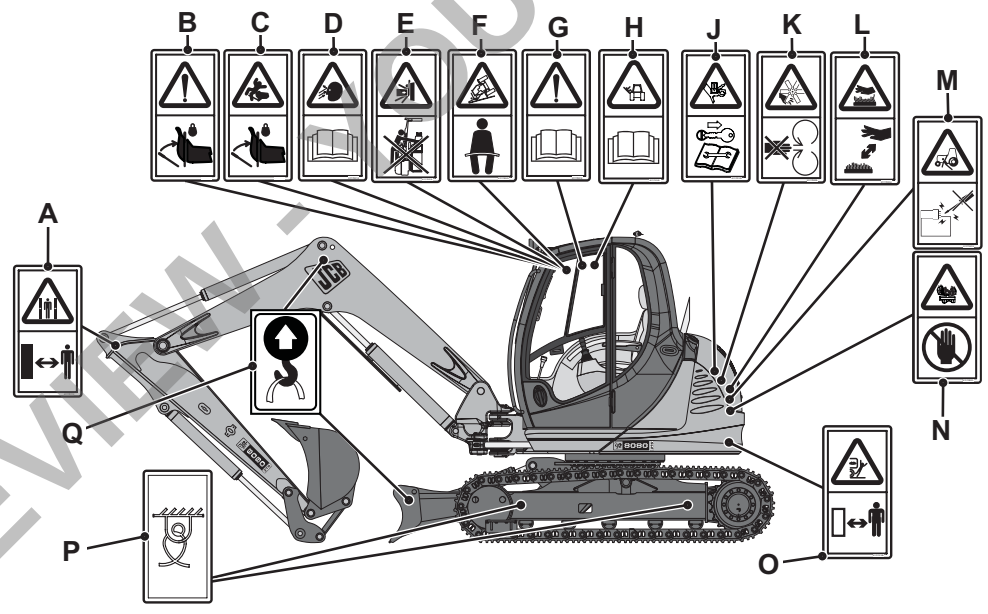


Fig 3.

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Monitor Messages (Repetitive Messages)

The following messages are repetitive, i.e. they will be displayed for as long as the source of the message still requires it to be displayed. The table shows which messages have buzzers. The 'ACK' column indicates whether or not the buzzer can be silenced by pressing the "ACK" button. In some cases, the fact that a message has been triggered is stored into the EMS memory. Contact your dealer if any of these messages occur.

Message	Meaning	Buzzer	ACK
ALTERNATOR	The engine is running and the alternator is not charging.	YES	YES
AUTO IDLE	The auto idle feature is active and therefore the system has been dropped to low idle.	NO	N/A
BATT VOLTS	The battery voltage is out of range.	YES	NO
NO THROTTLE	This will be displayed whenever there is a throttle related error.	YES	YES
OIL PRESS	The engine is running with no oil pressure.	YES	NO
RECALIBRATE	The ECU-MIDI has not had is throttle calibrated.	YES	YES
SENSOR VOLT	The sensor voltage is less than 4 V.	YES	YES
SETUP REQD	Either the EMS or the ECU-MIDI requires set-up.	YES	YES

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Fault Finding

To extend the service life and improve the operation of the machine, daily inspection and lubrication are necessary as well as immediately isolating any problem found and dealing with it. If the machine is operated with the problem uncorrected, it may lead to larger trouble and possibly to a big accident. If trouble occurs, search for the cause in the items below and make adjustments, repairs, etc. as necessary. If the cause cannot be isolated, contact your JCB distributor.* Indicates jobs which should be done by a specialist. Refer to Engine Service Manual.

Engine and Related Area

Problem	Cause	Remedy
Engine does not start	– Defective starter switch (Starter does not run)	– Connect, repair connection
	– Detective rotation of starter (Starter rotates slowly	– Discharged battery, starter problems, contaminated or loose wiring connection
	– Improper viscosity of engine oil	– Inspect and replace as necessary
	– Excessive cooling of engine (Cold weather)	– Preheat with air heater, Warm up the coolant (add hot water)
	– Possible seizure in engine	– *Repair
	– Incomplete air bleeding of fuel system	– Completely bleed air
	– No fuel in fuel tank	– Refill
	– Fuel quality unsuitable	– Inspect and replace as necessary
	– Fuel filter clogged	– Clean or replace
	– Low compression	– *Repair
	– Defective fuel injection pump	– *Repair
Engine stops during operation	– No fuel in fuel tank	– Refill
	– Fuel filter clogged	– Clean and replace
	– Air is mixed in the fuel system	– Retighten fuel pipe connections and bleed system
Low oil pressure	– Low oil	– Refill
	– Defective oil pressure switch	– *Replace
	– Oil filter clogged	– Replace element
	– Low oil viscosity	– Replace with oil of viscosity matching temperature
	– Improper operation of oil pump	– *Replace parts
	– Oil leakage at connections	– Tighten connections
Exhaust gas from engine is white or blue	– Excessive oil consumption	– *Disassemble and repair, replace parts
	– Excessively low oil viscosity	– Replace with correct oil
	– Excessive cooling by radiator	– Adjust
	– Improper fuel injection timing	– *Adjust or replace if necessary
	– Low compression	– *Disassemble and repair, replace parts

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Fluids, Lubricants and Capacities

Table 7.

Item	Capacity Litres (UK Gal)	Fluid / Lubricant	International Specification
Fuel Tank	103 (22.7)	See Fuel System, Types of Fuel	⇨ *Types of Fuel (128)*
Engine (Oil)	6.8 (1.49)	JCB Extreme performance 15W/40	ACEA E5:B3:A3, API CH4/SJ
		-15°C to +50°C(14°F to 122°F)	
Engine Coolant	14.2 (3.1)	JCB High Performance Antifreeze and Inhibitor/Water ⇨ *Coolant Mixtures (105)*	ASTM D3306-74
Track Gearbox (each)	2 x 1.7 (0.37)	JCB SAE 30 Engine Oil (Not Multigrade)	API CD/SF, MIL-L-46152, MIL-L-2104D
Track Idler Wheels	-	Engine Oil (See Above)	-
Track Roller (top)	-	Engine Oil (See Above)	-
Track Rollers (bottom)	-	Engine Oil (See Above)	-
Hydraulic System	105 (23)	JCB Special Hydraulic Fluid HP46	Vickers 35VQ25/V104C: Sundstrand, Denison and FZG Approval Tests
Slew Ring Bearings		JCB HP Grease	Lithium Complex (NLGI) inc. extreme measure additives
Slew Ring Gear Teeth	3.2kg (7.14lb)	JCB HP Grease	Lithium Complex (NLGI) inc. extreme measure additives
All Other Grease		JCB HP Grease	Lithium Complex (NLGI) inc. extreme measure additives

⚠ WARNING

Slew Pinion Grease

JCB Slew Pinion Grease is harmful as it contains bitumen compounds 2811. Excessive contact may lead to dermatitis or skin cancer. Always use a barrier cream or wear gloves; wash contaminated skin thoroughly with soap and water. In the event of eye contact, immediately wash with plenty of water and seek medical advice.

8-1-1-7

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Pre-Start Cold Checks, Service Points and Fluid Levels

	Operation	10	50	500	1000	2000	4000	5000
ENGINE								
Oil level	- Check	☐	☐	☐	☐	☐	☐	☐
Oil and Filter (1)	- Change			☐	☐	☐	☐	☐
Air Cleaner Element (Dusty Conditions)	- Clean			☐	☐	☐	☐	☐
Air Cleaner Outer Element	- Change				☐	☐	☐	☐
Air Cleaner Inner Element	- Change					☐	☐	
Air Cleaner Dust Valve	- Check and Clean			☐	☐	☐	☐	☐
Fuel Level	- Check	☐	☐	☐	☐	☐	☐	☐
Coolant Quality/Level	- Check	☐	☐	☐	☐	☐	☐	☐
Coolant	- Change						☐	
Fuel Pump Filter Element	- Change			☐	☐	☐	☐	☐
Primary Fuel Filter/Sedimenter	- Drain and Clean		☐	☐	☐	☐	☐	☐
Primary Fuel Filter/Sedimenter-filter	- Change			☐	☐	☐	☐	☐
Main Fuel Filter/Sedimenter	- Drain and Clean		☐	☐	☐	☐	☐	☐
Main Fuel Filter/Sedimenter-filter	- Change			☐	☐	☐	☐	☐
Fuel Filler Cap	- Check and Clean			☐	☐	☐	☐	☐
Fuel Filler Cap (Dusty Conditions)	- Check and Clean		☐	☐	☐	☐	☐	☐
Fan Belt Tension/Condition	- Check			☐	☐	☐	☐	☐
Compressor Belt Tension/Condition	- Check			☐	☐	☐	☐	☐
Valve Clearances	- Check and Adjust					☐	☐	☐
Engine Mounting Bolts for Tightness	- Check			☐	☐	☐	☐	☐
Exhaust System Security	- Check			☐	☐	☐	☐	☐
Air Inlet System Security	- Check			☐	☐	☐	☐	☐
Radiator	- Clean and Check	☐	☐	☐	☐	☐	☐	☐
Condenser	- Check for Damage	☐	☐	☐	☐	☐	☐	☐
TRANSMISSION								
Security of Mounting Bolts and Nuts	- Check			☐	☐	☐	☐	☐
Sprocket Mounting Bolts	- Check			☐	☐	☐	☐	☐
Track Motor Mounting Bolts	- Check			☐	☐	☐	☐	☐
Slew Ring Mounting Bolts	- Check			☐	☐	☐	☐	☐

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