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Safety Notices

Introduction

T1-006

⚠ 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

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 Operator Manual

Machine Model and Serial Number

- This operator manual provides information for the following machines:
- JCB JS115 from serial number 1168000.
- JCB JS130 from serial number 1058100 to 1058999 and from serial number 1179000 to 1180000.
- JCB JS130LC from serial number 1180001 on.
- JCB JS145 from serial number 1289000 to 1289999.
- JCB JS160 - JS180 from serial number 1059000.
- JCB JS190 from serial number 1224000 to 1224499 and from serial number 1238000 to 1238999.
- JCB JS200 - JS235 from serial number 1018001 to 1019999 and from serial number 1202500 to 1203999.
- JCB JS240 - JS260 from serial number 1040000.
- JCB JS330 from serial number 1240500 to 1240999.

Note: *The above machines are available in various configurations which are identified by a model number suffix, e.g. JS200LC. Where appropriate, specific information for these variants is given in this operator manual.*

Using this Manual

INT-1-2-5_2

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

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.

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.

Finally, treat this manual as part of the machine. Keep it clean and in good condition. Do not operate the machine without a manual in the cab. 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.

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.

Units of Measurement

T1-001_2

In this publication, the S.I. system of units is used. For example, liquid capacities are given in litres. The Imperial units follow in parentheses ( ) eg 28 litres (6 gal).

Left Side, Right Side

References in this operator manual to `left' and `right' are as viewed looking forwards from the rear of the machine.

Using the Machine

T1-002_2

To use the machine efficiently and safely you must know the machine and have the skill to use it. You must abide by all relevant laws, health and safety regulations that apply to the country you are operating in. This manual instructs you on the machine, its controls and its safe operation; it is not a training manual. If you are a new operator, get yourself trained in the skills of using a machine before trying to work with it. If you don't, you will not do your job well, and you will be a danger to yourself and others.

Cross References

T1-004_2

In this publication, page cross references are made by presenting the subject title printed in bold, italic and underlined. It is preceeded by the 'go to' symbol. The number of the page upon which the subject begins, is indicated within the brackets. For example: ***Cross References (3)***.

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Machine Description

The JCB Tracked Excavator

The JS excavator is a self propelled machine comprising a tracked undercarriage and a revolving upper structure which incorporates a boom, dipper, bucket and swing mechanism. It is mainly used for digging below ground level with bucket motions towards the machine. The upper structure can swing 360 degrees and discharge material while the tracked undercarriage remains stationary.

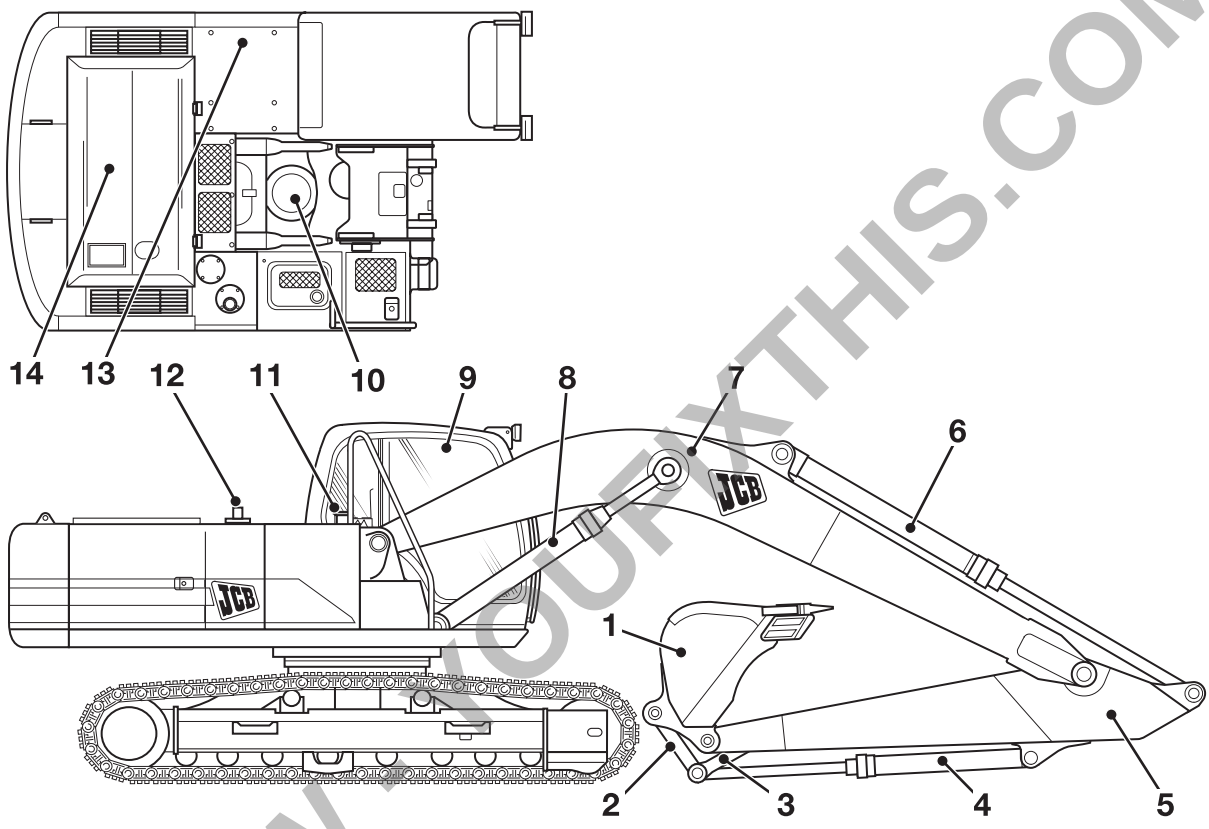


Fig 1.

1 Bucket

2 Bucket Link

3 Dipper Link

4 Bucket Ram

5 Dipper

6 Dipper Ram

7 Boom

8 Boom Ram

9 Operators Cab

10 Slew gearbox

11 Fuel tank

12 Hydraulic Oil Tank

13 Battery

14 Engine and Radiator

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Safety Decal Recognition

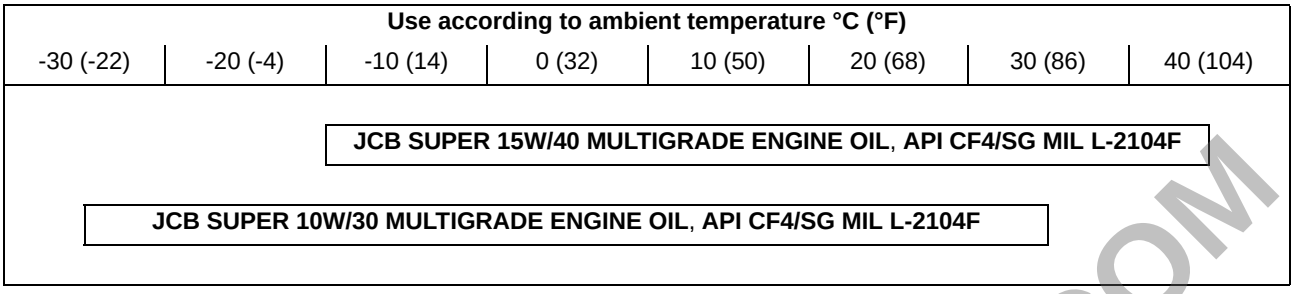
Table 1.

Label	Part No.	Definition
A	817/19470	Warning, Arm or bucket may move; keep clear.
B	JLP0283	Warning, Do not use excavator for lifting loads.
C	817/19660	Instruction, Cold weather conditions. Refer to operators manual.
D	817/18535	1-Warning, Coolant under pressure. 2-Warning, Risk of severing hands/fingers in rotating parts. 3-Warning, Hot surfaces. 4-Remove ignition key and refer to operator manual and maintenance manual.
E	817/18536	Warning, Hot surfaces; Keep hands away.
F	817/18537	Warning, High pressure and hot coolant/system; Keep hands away.
G	817/18538	Warning, Risk of severing finger/hand in rotating parts; Keep hands away.
H	817/18566	Do not walk or place any body weight in this area.
K	817/18528	Warning counterweight or whole machine may move; Keep clear.
L	817/02370	Warning, 24V.
M	817/70003	Warning, Risk of trapping fingers/hand in door; Keep hands away.
N	JHP0111	Warning. No hosing or jet washing in cab.
P	817/70116	Warning, Unexpected movement of part or whole machine; Move lock lever to the lock position.
Q	817/18541	Warning, Read the operation and maintenance manual.
R	817/19960	Warning, High pressure hydraulic system; 1-Stop the engine. 2-Depress the rubber booted pressure relief valve until all the tank pressure is released. 3-Remove filler plug/breather assembly as required.
S	817/18527	Diesel fuel, Warning, Flammable substance; No ignition source.
T		Lubrication chart.Refer to `Chart Definitions' for details.
V		Lifting chart. Refer to `Chart Definitions' for details.
W	817/70117	1-Instruction, Bucket can foul the boom when dipper is swinging inwards. Maintain clearance between bucket and arm. 2-Warning, Danger of collision, Maintain clearance between bucket and cab. 3-Warning, Risk of tripping; raise the control lock lever before exiting. 4-Warning, Risk of injury by crushing; Do not lean out of the front window. 5-Warning, Risk of electrocution; Maintain the minimum clearance recommended by your local electricitysupplier.
X	817/18531	Warning, Edges without protective railings; Keep clear of edges.
Y	817/18532	Warning, Hoses that may eject a high velocity jet capable of penetrating the skin; Remove ignition key and refer to operator manual and maintenance manual.

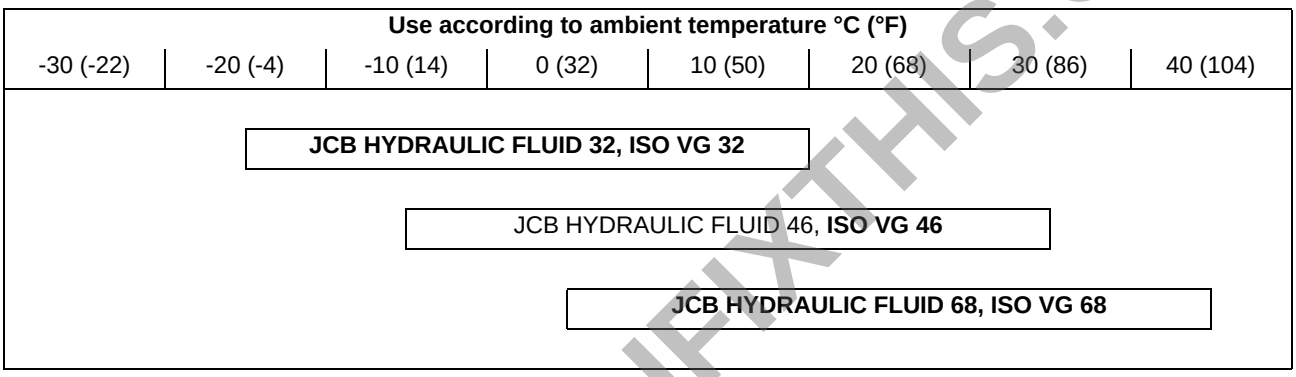
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Engine Lubrication Chart



Hydraulic Oil Chart



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List of Monitor Messages

Message Display	Meaning
LOW IDLE	Engine at low idle (when in auto idle mode or one touch idle on)
SWING LOCK	Swing lock on
OVERLOAD	Warning when machine is lifting greater than capacity
OVERLOAD ON	Overload warning system switched on -warning will be given if lifting load exceeds safe capacity
AUTO WARM	Automatic engine warm up system on (auto warm up is cancelled if the one touch idle switch is pressed, the throttle dial moved or the excavator joysticks operated)
PREHEAT	Engine preheat on. When the temperature is low the engine ECM automatically switches on the preheat.
CHECK Q/H	Visually check quickhitch is connected, alarm will sound. (Press ACK to confirm, alarm will stop)
Q/H DISCON?	Bucket quickhitch disconnect? (Press ACK to confirm)
Q/H DISCON	Bucket quickhitch disconnected
LOW FUEL	Low fuel level in fuel tank
RES FUEL	Reserve level in fuel tank
EMER STOP	Emergency stop (engine is shutdown and switch must be pressed again to allow engine to be restarted)
NO THROTTLE	Fault with engine control system - consult JCB Dealer
LIMP MODE	Machine is in emergency back up mode (⇨ *Emergency back-up switch (📄 43)*)
AUTO	For heavy digging or increased work output and general digging.
ECONOMY	Digging and loading with low fuel consumption.
PRECISION	For precise or light duty work
LIFT	For operations requiring maximum accuracy, including lifting, with extra hydraulic pressure if required.
NO RESTART	**DO NOT SWITCH OFF**. Engine unable to restart due to engine fault. Move machine to a safe location before switching off.
LOW POWER	Engine power reduced due to engine fault.

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Troubleshooting

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.

Engine and Related Area

Table 18. Engine does not start

Cause	Remedy
Defective starter switch	Connect, repair connection
Defective 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(1)
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(1)
Defective fuel injection pump	Repair(1)

Table 19. Engine stops during operation

Cause	Remedy
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

Table 20. Low oil pressure

Cause	Remedy
Low oil	Refill
Defective oil pressure switch	Replace(1)
Oil filter clogged	Replace element
Low oil viscosity	Replace with oil of viscosity matching temperature
Improper operation of oil pump	Replace parts(1)
Oil leakage at connections	Tighten connections

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Pre Start Cold Checks, Service Points and Fluid Levels

	Operation	10	50	250	500	1000	2000	4000	5000
ENGINE									
Oil level	- Check	☐	☐	☐	☐	☐	☐	☐	☐
Oil and Filter	- Change				☐	☐	☐	☐	☐
Oil Bypass Filter (if fitted)	- Change				☐	☐	☐	☐	☐
Oil	- Sample					☐	☐	☐	☐
Pre Cleaner (if fitted)	- Clean			☐	☐	☐	☐	☐	☐
Air Cleaner Outer Element	- Change					☐	☐	☐	☐
Air Cleaner Inner Element	- Change						☐	☐	
Air Cleaner Dust Valve	- Check and Clean			☐	☐	☐	☐	☐	☐
Fuel Level	- Check	☐	☐	☐	☐	☐	☐	☐	☐
Fuel Filter Element	- Change				☐	☐	☐	☐	☐
Fuel Tank - Water and Sediment	- Drain		☐	☐	☐	☐	☐	☐	☐
Lift Pump Strainer (1)	- Clean				☐	☐	☐	☐	☐
Coolant Quality/Level	- Check	☐	☐	☐	☐	☐	☐	☐	☐
Coolant	- Change							☐	
Fuel Sedimenter	- Drain		☐	☐	☐	☐	☐	☐	☐
Fuel Sedimenter	- Clean		☐	☐	☐	☐	☐	☐	☐
Fuel Sedimenter - filter	- Change				☐	☐	☐	☐	☐
Fuel Filler Cap	- Check and Clean			☐	☐	☐	☐	☐	☐
Fuel Filler Cap (Dusty conditions)	- Check and Clean		☐	☐	☐	☐	☐	☐	☐
Fan 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			☐	☐	☐	☐	☐	☐
TRANSMISSION									
Security of Mounting Bolts and Nuts	- Check				☐	☐	☐	☐	☐
Track Gearbox Oil Level	- Check			☐	☐	☐	☐	☐	☐
Slew Gearbox Oil Level	- Check			☐	☐	☐	☐	☐	☐

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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.

Lifting Regulations - Inspections and Tests

T3-003

Only your JCB Distributor can fully meet the requirements of the inspection and test parameters to suit UK Health and Safety Executive (H.S.E.) legal requirements along with providing Annual Inspections to meet your Insurance Company Policy conditions.

Only your JCB Distributor has the ability to meet the definition described covering a "Competent Person" to carry out these necessary tests and inspections. This ensures that only JCB Factory trained, experienced and up-to-date Engineers supported with all of the available data and material provided only to a JCB Distributor will ensure a thorough and reliable standard.

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Chart Definitions

Typical Lubrication Chart

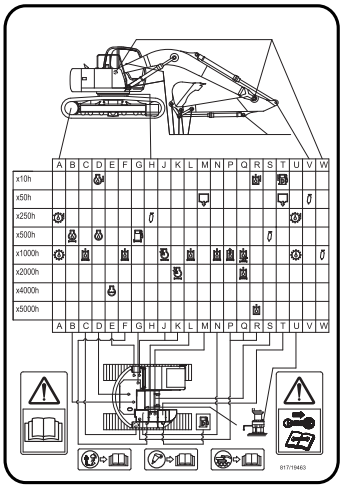
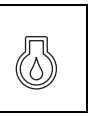
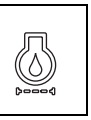
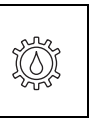
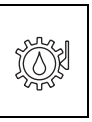
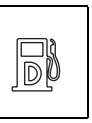
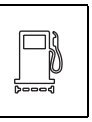
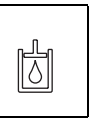


Fig 5.

Table 2. Location Identifier

A	Travel gearbox
B	Engine oil filter
C	Plexus filter
D	Engine oil pan
E	Engine cooling system
F	Servo oil filter
G	Fuel filter
H	Swing ring bearing
J	Air cleaner, outer
K	Air cleaner, inner
L	Drain line filter
M	Fuel separator
N	Hydraulic return filter
P	Hydraulic tank air breather
Q	Suction strainer
R	Hydraulic tank
S	Swing ring gear teeth
T	Fuel tank
U	Slew gearbox
V	Boom/arm grease points
W	Boom/arm grease points

Table 3. Icon Definitions

	Excavator grease
	Engine oil change
	Engine oil filter change
	Engine coolant change
	Engine air filter change
	Engine air filter clean
	Transmission oil change
	Transmission oil level
	Fuel (diesel)
	Fuel filter change
	Hydraulic oil change

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Operation

Introduction

T2-006

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 starting the machine, sit in the drivers seat and familiarise yourself with the layout of the cab. 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 outside the cab as well as inside the cab. Safety must always be the most important feature when operating the machine.

When you have familiarised yourself with 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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