OPERATOR'S MANUAL



EXCAVATOR

JS140, JS205, JS215

EN - 9831/7950 ISSUE 1 - 01/2018

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

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Contents **Page No.**

Acronyms Glossary vii

Introduction
About this Manual
Model and Serial Number 1
Using the Manual 1
Left-Hand Side, Right-Hand Side 1
Cross References 1
Safety
Safety - Yours and Others 2
Safety Warnings 2
General Safety 3
Clothing and Personal Protective Equipment (PPE) 4

About the Product
Introduction
General 5
Name and Address of the Manufacturer 5
Product Compliance 5
Description
General 6
Intended Use 6
Log Moving/Object Handling 6
Optional Equipment and Attachments 6
Danger Zone 6
Main Component Locations 7
Product and Component Identification
Machine 8
Engine 9
Safety Labels
General 10
Safety Label Identification 10
Operator Station
Component Locations 12
Interior Switches
Ignition Switch 14
Cab Interior Light 14
Console Switches
General 15
Work Lights 15
Control Locks 15
Slew Lock 15
Window Washer 15
Window Wipers 16
Two Speed Range 16
Power Mode 16

Operation
Introduction
General 17

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Safety

Safety - Yours and Others

All machinery can be hazardous. When a machine is correctly operated and maintained, it is a safe machine to work with. When it is carelessly operated or poorly maintained it can become a danger to you (the operator) and others.

In this manual and on the machine you will find warning messages, you must read and understand them. They inform you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB dealer to explain them.

Safety is not just a matter of responding to the warnings. All the time you are working on or with the machine you must be thinking of what hazards there might be and how to avoid them.

Do not work with the machine until you are sure that you can control it.

Do not start any work until you are sure that you and those around you will be safe.

If you are not sure of anything, about the machine or the work, ask someone who knows. Do not assume anything.

Remember:

- Be careful
- Be alert
- Be safe.

Safety Warnings

In this manual there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

The signal word 'DANGER' indicates a hazardous situation which, if not avoided, will result in death or serious injury.

The signal word 'WARNING' indicates a hazardous situation which, if not avoided, could result in death or serious injury.

The signal word 'CAUTION' indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

The signal word 'Notice' indicates a hazardous situation which, if not avoided, could result in machine damage.

The safety alert system symbol (shown) also helps to identify important safety messages in this manual. When you see this symbol your safety is involved, carefully read the message that follows.

Figure 2. The safety alert system symbol



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Introduction
About this Manual

Model and Serial Number

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

Model	From:	To:
JS140	2575981	
JS205	2053250	
JS215	2236650	

Using the Manual

This operator's manual is arranged to give you a good understanding of the machine and its safe operation. It also contains maintenance and technical data.

Read this manual from the front to the back before you use the machine for the first time, even if you have used machines of a similar/same type before as the technical specification, systems and controls of the machine may have changed. 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 dealer or employer. Do not guess, you or others could be killed or seriously injured.

The general and specific warnings in this section are repeated throughout the manual. 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 are different, the text and or the illustration will specify.

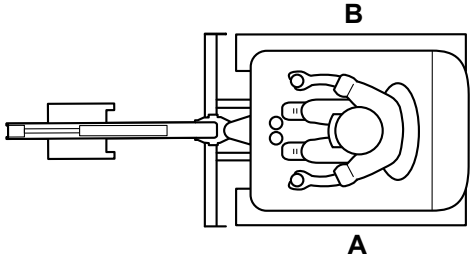
The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this manual.

All of the optional equipment included in this manual may not be available in all territories

Left-Hand Side, Right-Hand Side

In this manual, 'left' and 'right' mean your left and right when you are seated correctly in the machine.

Figure 1.



A Left **B** Right

Cross References

In this manual, cross references are made by presenting the subject title in blue (electronic copy only). The number of the page upon which the subject begins is indicated within the brackets. For example: Refer to: Cross References (Page 1).

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Operation
Introduction

General

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.

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.

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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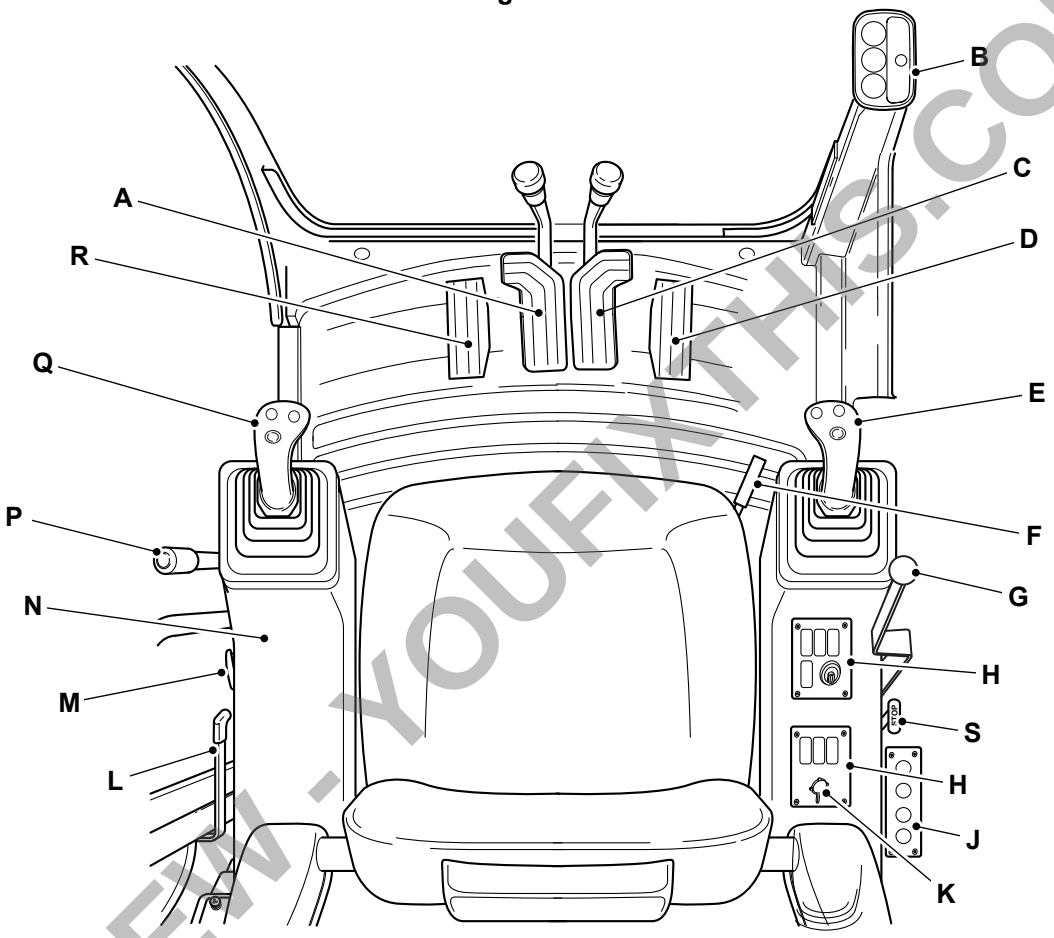
Operator Station

Component Locations

For: JS140 ..... Page 12
For: JS205, JS215 ..... Page 13

(For: JS140)

Figure 9.



A Left hand track control, Refer to: Track Controls (Page 51).
B Instruments, display monitor, Refer to: Instruments (Page 53).
C Right hand track control, Refer to: Track Controls (Page 51).
D Optional circuit pedal, Refer to: Auxiliary Circuit Controls (Page 69).
E Right joystick, Refer to: Excavator End Controls (Page 64).
F Seat/console slide lever, Refer to: Operator Seat (Page 37).
G Throttle control lever
H Right switch console, Refer to: Console Switches (Page 15).
J HVAC (Heating Ventilation Air Conditioning) controls,Refer to: Heating, Ventilating and Air-Conditioning (HVAC) (Page 80).
K Auxiliary power socketRefer to: Auxiliary Power Socket (Page 83).
L Door lock release lever, Refer to: Doors (Page 27).
M Interior light switch, Refer to: Interior Switches (Page 14).
N Left console, Refer to: Console Switches (Page 15).
P Controls isolation lever, Refer to: Control Lock (Page 49).
Q Left joystick, Refer to: Excavator End Controls (Page 64).
R Footrest pedal
S Engine stop cable (if installed)

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Attachments
Working with Attachments

Introduction

Attachments

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.

Metal Splinters

You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or copper drift to remove and install metal pins. Always wear personal protective equipment.

Attachments

If you have an attachment which is not covered in the Operator's 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.

Some attachments are supplied with the instructions on the safety, installation, removal, operation and maintenance procedures. Read and fully understand these procedures before the attachment is installed, used and serviced. If there is anything you do not understand, ask your JCB dealer.

Before you use an attachment, make sure you understand how the attachment will affect the operational safety.

When an attachment is installed, there may be changes in the machines centre of gravity or overall dimensions. These change can effect for example, the machine stability, the gradients on which it is safe to operate or the safe distance from power lines.

Practice with an attachment off the job before you work with it for the first time.

A JCB attachment is designed and manufactured specifically to suit the machines hydraulic system, mounting components and safe load requirements.

An attachment which is not designed for use with the machine can cause damage and create a safety hazard for which JCB cannot be held responsible. Also the machines warranty and any other legislative compliance can be affected by the use of non JCB approved attachments.

If your machine needs the hydraulic system adapting to use an auxiliary attachment, you must consult your JCB dealer. Only suitably qualified personnel must re-route the hydraulic hoses.

All optional attachments must be used within the limits for the machine and will have limits on their operation, for example, the lifting capacity, speeds, hydraulic flow rates. Always check the instruction supplied with the attachment, or if in doubt check with a JCB Dealer for advice. Some specification limits may also be shown on the data/rating plate on the attachment.

This section of the Operator's Manual includes general information on the operation of the attachment and the procedures for the installation and removal of the attachment.

Attachments for your Machine

⚠ **CAUTION** Operation of this machine with an earth drill or breaker attached will alter machine stability.

Attachments will help increase the productivity of your machine, for more information contact your JCB dealer.

Remember, do not operate an attachment until you have read and fully understand the attachment operating instructions.

Do not operate or work with attachments until the machine hydraulic oil has reached its normal working temperature.

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Transporting the Machine

General

⚠ **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.

WARNING Make sure that the ramp incline does not exceed the machine's operational limits.

CAUTION 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.

Check the condition of the transport vehicle before the machine is loaded on to its trailer.

Make sure that the transport trailer is suitable for the dimensions and weight of your machine. Refer to: Static Dimensions (Page 182).

The bed of the trailer should have a wood surface to aid stability.

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.

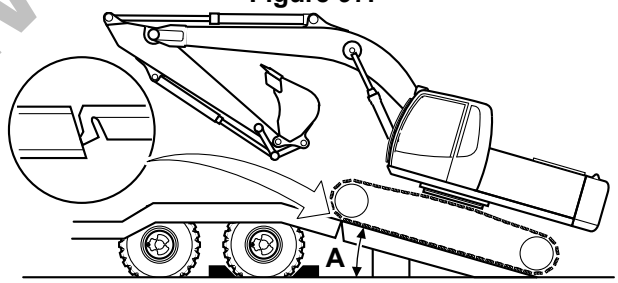
Loading the Machine onto the Transporting Vehicle/Trailer

⚠ **CAUTION** The machine must be securely tied down to the transport vehicle to prevent lateral movement, fore-and-aft movement, and slewing of the superstructure. Failure to do so could cause injury to yourself or others.

1. Stop the transport vehicle on solid, level ground.
2. Apply the park brakes.
3. Lower any stability jacks.
4. Put blocks at the front and rear of the wheels on the transport trailer.
5. Make sure the ramps are in their correct positions and angle, then secure them. The ramps should not be at more than the specified angle:

   Angle: 15°

Figure 97.



A Angle of the ramp

6. Before the machine is driven on to the transport trailer, make sure that the machine will not catch on the ramp/trailer angle. Refer to Figure 97.
7. Start the machine.

   Refer to: Starting the Engine (Page 45).
8. Slew the cab to make sure the excavating equipment is in a position where it will not interfere with your view of the ramp and the transport trailer.

   Refer to: Operating Levers/Pedals (Page 64).

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Preparation

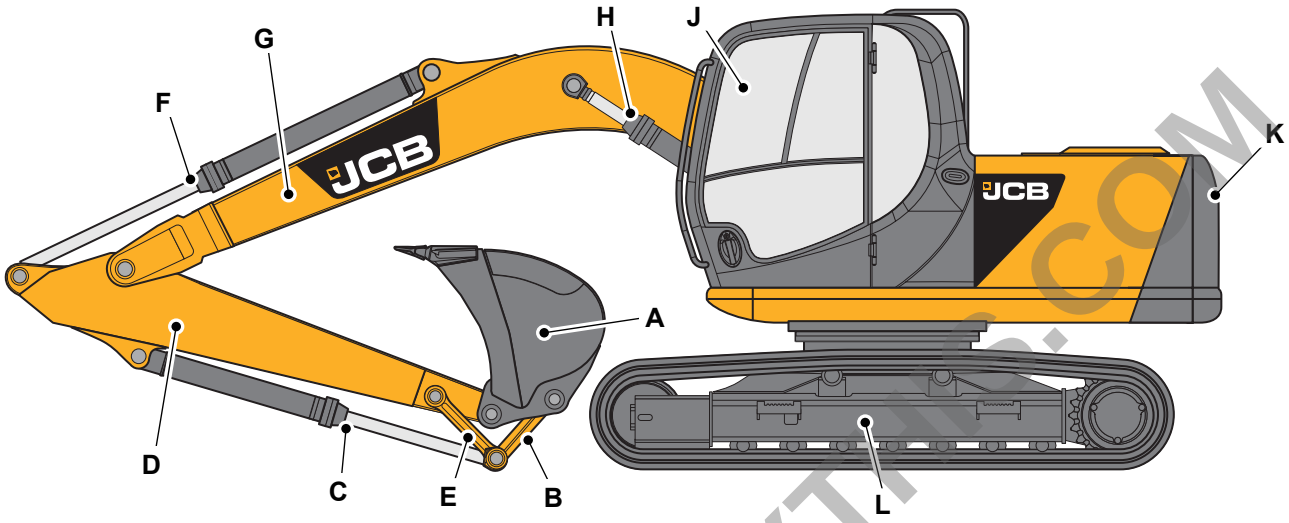
1. Make the machine safe.
   Refer to: Maintenance Positions (Page 137).
2. Stop the engine and let it cool for at least one hour. Do not try to clean any part of the engine while it is running.
3. Make sure that all of the electrical connectors are correctly coupled. If the connectors are open, attach the correct caps or seal with water proof tape.

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Main Component Locations

Figure 3.



A Bucket
B Bucket link
C Bucket ram
D Dipper
E Dipper link
F Dipper ram
G Boom
H Boom ram
J Operators cab
K Counterweight
L Undercarriage

The boom dipper and bucket are collectively referred to as the excavator end, or dig end.

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Fluids, Lubricants and Capacities

General

For: JS140 ..... Page 195
For: JS205, JS215 ..... Page 195

(For: JS140)

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 30. Fluids, Lubricants and Capacities

Item	Capacity	Fluid/Lubricant	JCB Part Number
Fuel Tank	253L	Diesel	-
Engine (Oil)[2]	9L	Above -10°C: JCB Engine MAX 15W40 C14+	4001/3200
Cooling System	19.7L	Castrol Antifreeze HP/Coolant	229/01233
Track Gearbox (each)	3L	JCB Gear Oil	4000/4500
Slew Gearbox	3.2L	JCB Gear Oil	4000/4500
Track Rollers and Idler Wheels		JCB Gear Oil	4000/4500
Recoil Spring Cylinder		JCB Special Grease	4003/2600
Hydraulic System	160L	JCB HVI Hydraulic Fluid	4002/3000
Slew Ring Bearings	As required	JCB Special Grease	4003/2600
Slew Ring Gear Teeth	9kg	JCB Special Grease	4003/2600
All Other Grease	As required	JCB Special Grease	4003/2600

(1) For information about the different container sizes that are available (and their part numbers), contact your local JCB dealer.
(2) Do not use ordinary engine oil.

(For: JS205, JS215)

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 31. Fluids, Lubricants and Capacities

Item	Capacity	Fluid/Lubricant	International Specification
Fuel Tank	343L	Diesel	-
Engine (Oil)[2]	19L	Above -10°C: JCB Engine MAX 15W40 C14+	-
Cooling System	25.5L	JCB HP Coolant/JCB Coolant: Ready to Use	ASTM D - 6210
Track Gearbox (each)	5L	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105
Slew Gearbox	5L	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105
Track Rollers and Idler Wheels		JCB HD90 Gear Oil	API-GL-5, MIL-L-2105

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Fault-Finding

General

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.

(1) Indicates jobs which should be done by a specialist.

Engine and Related Area

Table 46. 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 system	Repair(1)

Table 47. 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	Re-tighten fuel pipe connections and bleed system- Low oil pressure

Table 48. 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

Table 49. Exhaust gas from engine is white or blue

Cause	Remedy
Excessive oil consumption	Disassemble and repair, replace parts(1)
Excessively low oil viscosity	Replace with correct oil
Excessive cooling by radiator	Adjust
Improper fuel injection timing	Adjust or replace if necessary(1)
Low compression	Disassemble and repair, replace parts(1)

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