OPERATOR'S MANUAL



EXCAVATOR
210X, 220X

EN - 9831/3750 ISSUE 3 - 03/2018

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Contents **Page No.**

Acronyms Glossary viii

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 7
Danger Zone 7
Main Component Locations 7
Product and Component Identification
Machine 8
Engine 8
Operator Protective Structure 9
Safety Labels
General 12
Safety Label Identification 12
Operator Station
Component Locations 15
Interior Switches
General 17
Ignition Switch 17
Cab Interior Light 18
Engine Stop Switch 18
Service Lights 18
Console Switches
General 19

Operation
Introduction
General 23
Operating Safety
General 24
Worksite Safety 26
Risk Assessment 27

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

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



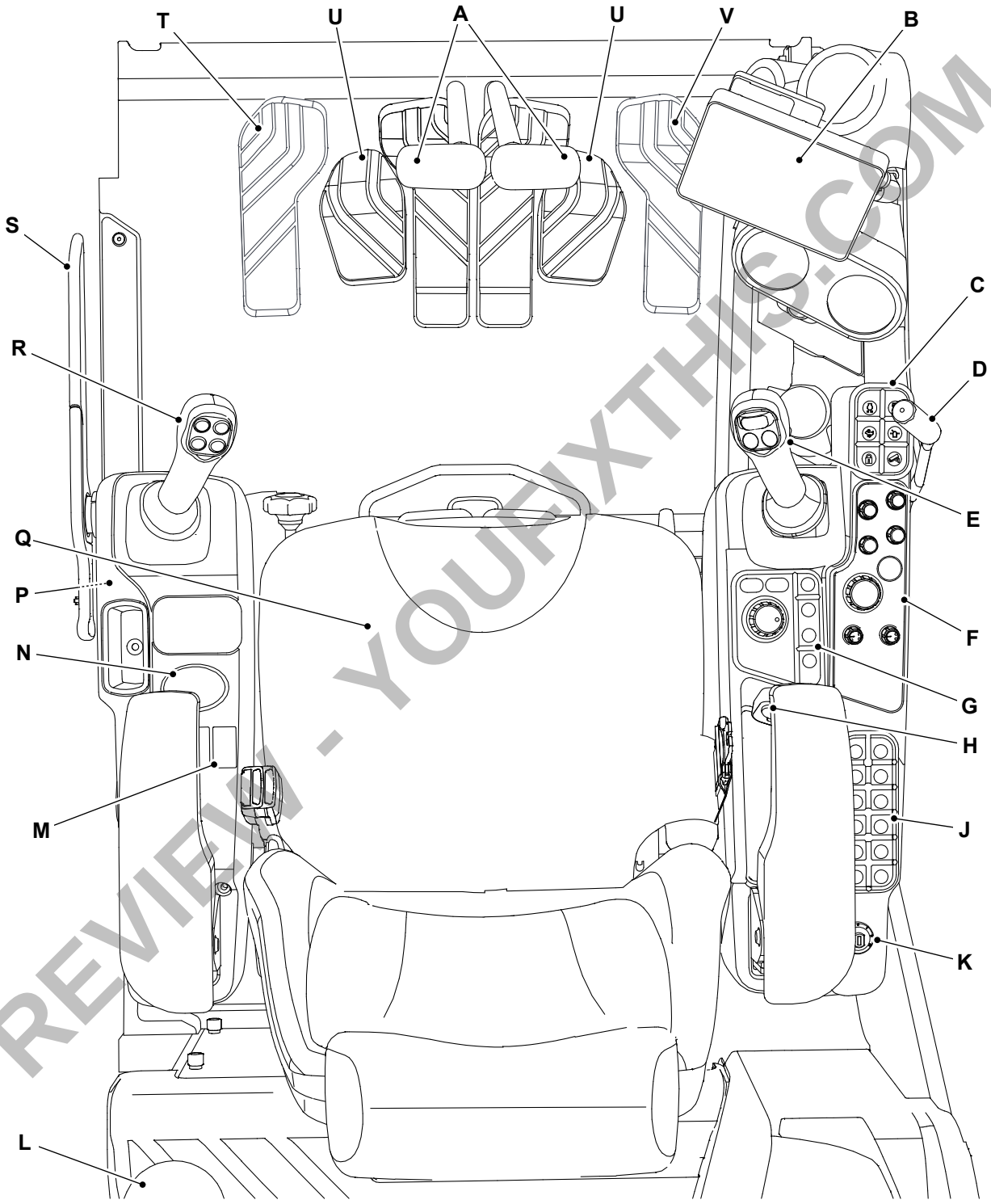
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Operator Station

Component Locations

Figure 11.



A Track controls Refer to: Track Controls (Page 60).
B Display unit Refer to: Instrument Panel (Page 64).
C Switch panel Refer to: General (Page 19).
D Dozer control (option) Refer to: Dozer Blade Controls (Page 93).
E Right joystick Refer to: Excavator End Controls (Page 85).
F Dial control panel Refer to: General (Page 19).

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

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.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

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

⚠ **WARNING** When operating with an attachment greater than 1,300kg the maximum permissible slope is 30°. Always check the weight of the attachment before operating on slopes.

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.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

During Storage

Operate the machine functions each week to prevent a build up of rust in the engine and hydraulic circuits, and to minimise the deterioration of the hydraulic seals.

1. Remove the grease or petroleum jelly from the ram piston rods.
2. Examine all fluid levels. If necessary, add more fuel and DEF (Diesel Exhaust Fluid).
3. Install a charged battery.
4. Start the engine.
5. Operate the hydraulic controls. Make sure that the hydraulic functions operate correctly.
6. Prepare the machine for storage.

Effects of Storage on the DEF System (if applicable)

If the engine has been shutdown correctly and there are no faults with the DEFsystem, the DEF system and engine can remain in a deactivated state under the following conditions:

Table 16.

Storage Period	Storage Actions
Up to 9 months	Fill DEF tank to maximum level with fresh DEF. Do not disconnect any electrical or hydraulic connections. Make sure the ambient temperature is between the values shown. -40°C (-39.9°F) to 30°C (86.0°F)
Longer than 9 months	Carry out recommissioning process

Take out of Storage

1. Examine the coolant condition. Replace if necessary.
2. Examine all fluid levels. If necessary, add more fluid.
3. Clean the machine to remove all unwanted material and corrosive products. Dry the machine to remove solvents and moisture.
4. Remove the grease or petroleum jelly from the ram piston rods.
5. Install a charged battery.
6. Start the engine.
7. Operate the hydraulic controls. Make sure that the hydraulic functions operate correctly.

DEF Recommissioning Process (if applicable)

1. Drain the DEF (Diesel Exhaust Fluid) tank.
2. Refill DEF tank with fresh fluid.
3. If a DEF system failure is detected, contact your JCB dealer for advice.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Fluids, Lubricants and Capacities

General

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 40. Fluids, Lubricants and Capacities

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size [1]	Specification
Fuel Tank	387L	Diesel		-	Refer to 'Fuel'
DEF (Diesel Exhaust Fluid) Tank	47.7L	DEF	4009/0120	20L	Refer to 'DEF'
Engine (Oil)[2]	20.4L	-30°C (-22°F) to 30°C (86.0°F) JCB Engine Oil UP 5W/30	4001/3105	20L	API CJ-4
		-30°C (-22°F) to 46°C (114.7°F) JCB Engine Oil UP 5W/40	4001/3405	20L	
		-15°C (5°F) to 46°C (115°F): JCB Engine Oil UP 10W/30	4001/3005	20L	
Cooling System	38L	JCB Antifreeze HP/Coolant	4006/1120	20L	ASTM D3306, ASTM D4985, ASTM D6210,SAE (Society of Automotive Engineers) J1034, BS6580 (1992), AFNOR NF R15- 60
Track Gearbox (each)	3.5L	JCB HD90 Gear Oil	4000/0301	5L	
Slew Gearbox	8L	JCB HD90 Gear Oil	4000/0305	20L	
Track Rollers and Idler Wheels		JCB HD90 Gear Oil	4000/0305	20L	
Recoil Spring Cylinder		JCB Special HP Grease	4003/2017	0.4kg	
Hydraulic System	250L	JCB Hydraulic Fluid HP32, -20°C (-4°F) to 15°C (59°F)	4002/1024	200L	
		JCB Hydraulic Fluid HP46, -10°C (14°F) to 30°C (86°F)	4002/0803	200L	
		JCB Hydraulic Fluid HP68, 0°C (32°F) to 40°C (104°F)	4002/0701	200L	
Slew Ring Bearings	0.1kg	JCB Special HP Grease	4003/2017	0.4kg	
Slew Ring Gear Teeth	17kg	JCB Special HP Grease	4003/2006	12.5kg	
All Other Grease	As required	JCB Special HP Grease	4003/2006	12.5kg	

(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.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Torque Values

General

Table 47.

Item	Bolt Diameter	Wrench	Tightening Torque	Checking Torque
Track shoe bolt	M20	30mm	840–890N·m	756–801N·m

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Position	Icon	Description
4		Eco mode selected
		After treatment system failure/malfunction (amber icon). Contact your JCB dealer.
		After treatment system critical failure/malfunction (red icon). Contact your JCB dealer.
5		SCR (Selective Catalytic Reduction) plugged, a manual refresh is required (red icon).
		SCR overloaded, a manual refresh may be required (amber icon).
		Plugged/Manual SCR refresh deferring (red icon).
6		Engine shutdown (red icon)
		Engine stop critical, stop the engine as soon as it is safe to do so (red icon). Contact your JCB dealer.
		Engine malfunction (red icon)
		Engine low power due to low DEF level - Refill with DEF as soon as possible.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Optional Equipment and Attachments

A wide range of optional attachments are available to increase the versatility of your machine. Only the JCB approved attachments are recommended for use with your machine. Contact your JCB dealer for the full list of approved attachments available.

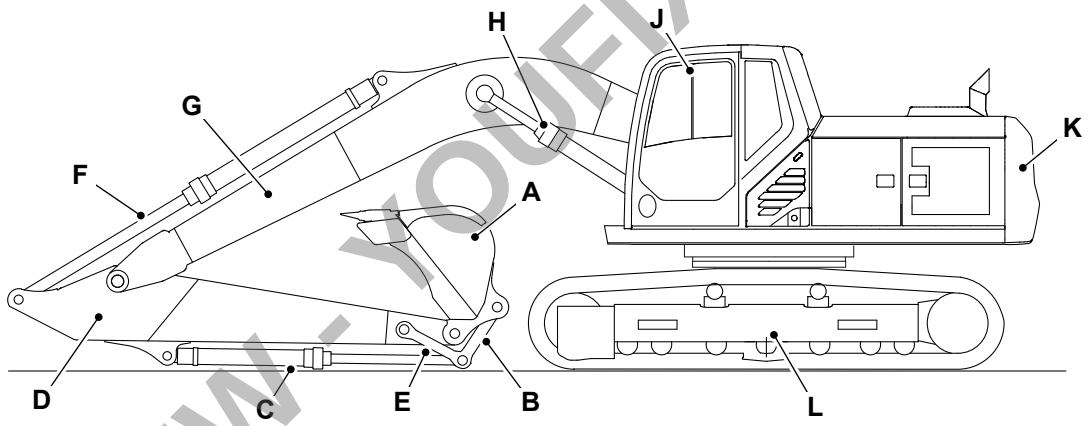
Danger Zone

The danger zone is any zone within and/or around the machinery in which a person is subject to a risk to their health or safety. The danger zone includes the area in immediate proximity to any hazardous moving parts, areas into which working equipment and attachments can be moved to quickly, the machine normal stopping distances and also areas into which the machine can quickly turn under normal conditions of use. Depending on the application at the time, the danger zone could also include the area into which debris, from use of an attachment or working tool, could be projected and any area into which debris could fall from the machine. During the operation of the machine, keep all persons out of the danger zone. Persons in the danger zone could be injured.

Before you do a maintenance task, make the product safe.

Main Component Locations

Figure 3.



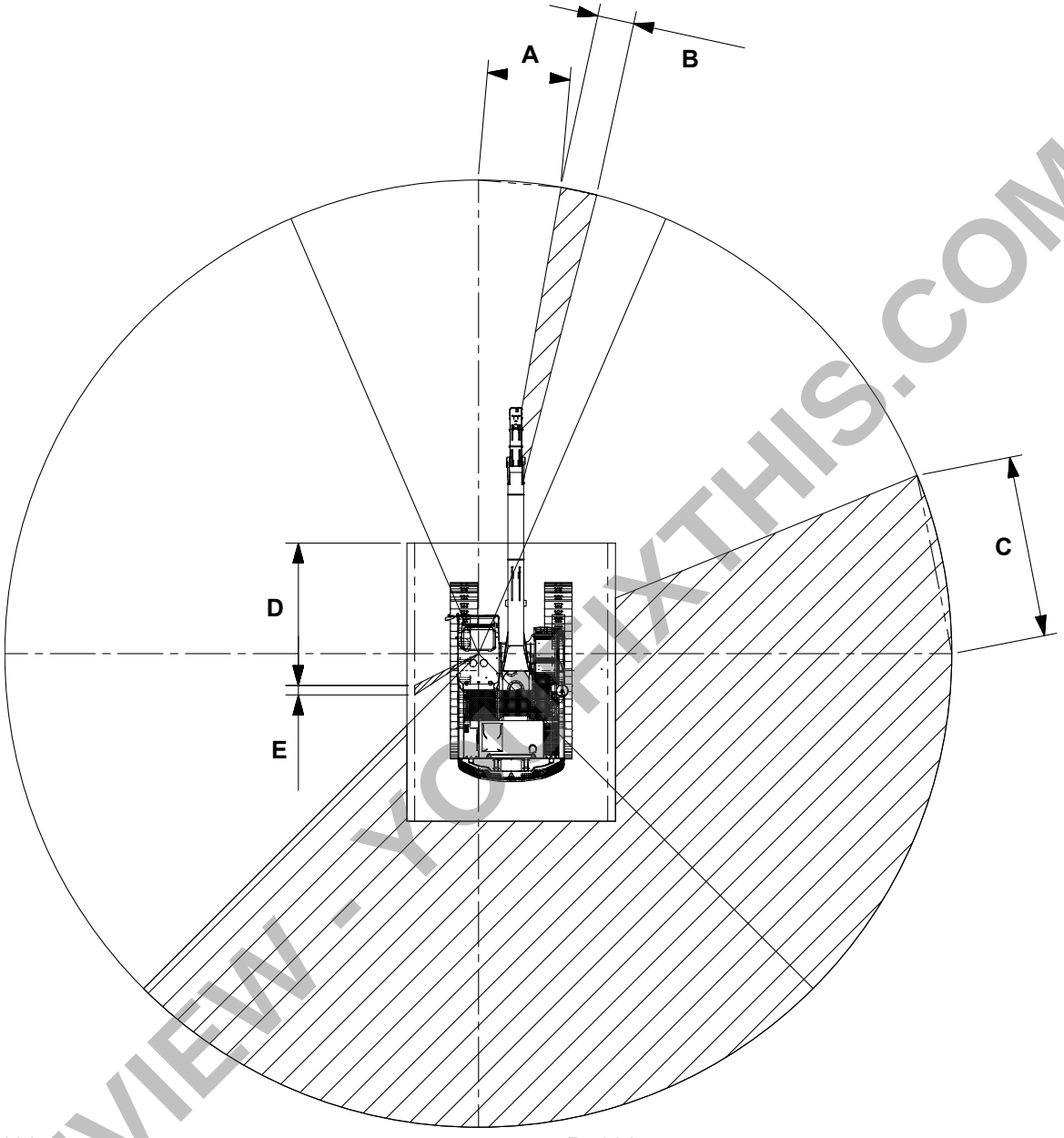
A Bucket
B Bucket link
C Bucket ram
D Dipper
E Dipper link
F Dipper ram
G Boom
H Boom ram
J Operators cab
K Counterweight
L Undercarriage

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

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Figure 201. Direct Visibility



A 2,100mm
B 930mm
C 4,600mm
D 3,160mm
E 240mm

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 298 pages

The full manual includes:

- All 298 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

JCB 210X, 220X Operator Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual