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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, 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 and on the machine, 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 (shown) also helps to identify important safety messages in this manual and on the machine. When you see this symbol, be alert, your safety is involved, carefully read the message that follows, and inform other operators.

Figure 2. The safety alert system



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Notes:

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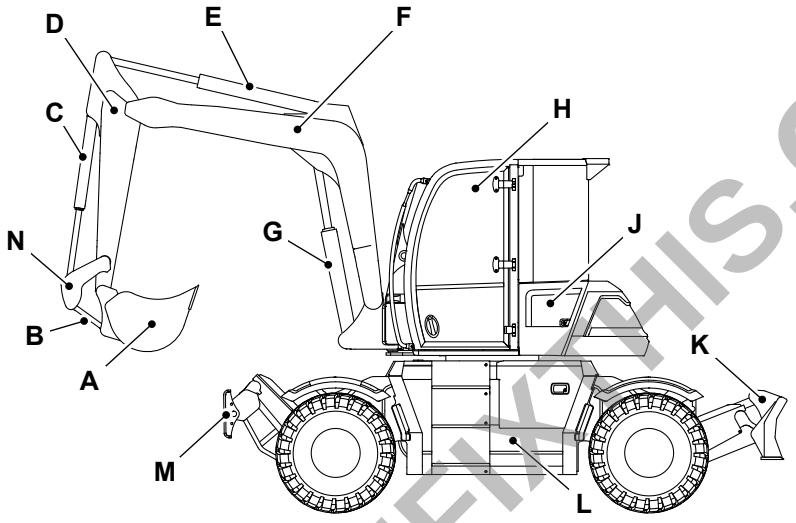
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During the operation of the machine, keep all persons out of the danger zone. Persons in the danger zone could be injured.

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

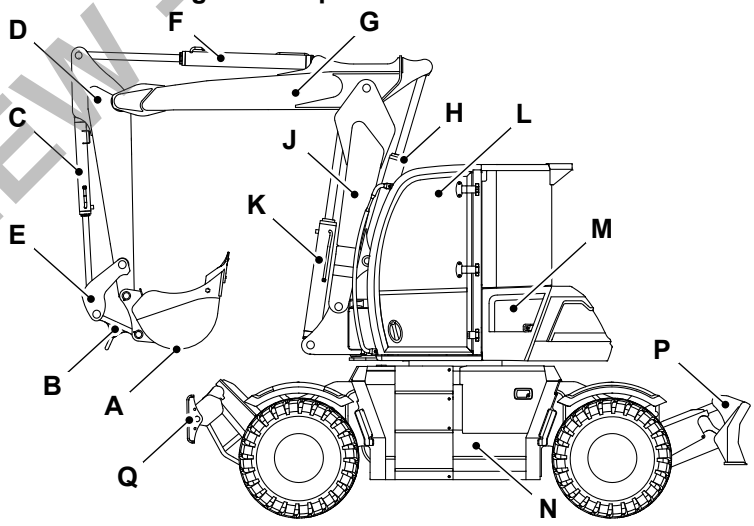
Main Component Locations

Figure 3. Monoboom



A Bucket
B Bucket link
C Bucket ram
D Dipper
E Dipper ram
F Boom
G Boom ram
H Operators cab
J Upper structure
K Dozer blade - optional front/rear
L Under carriage
M Stabilisers - optional front/rear
N Dipper link

Figure 4. Triple Articulated Boom



A Bucket
B Bucket link
C Bucket ram
D Dipper
E Dipper link
F Dipper ram
G Upper boom
H Upper boom ram
J Lower boom
K Lower boom ram
L Operators cab
M Upper structure
N Under carriage
P Dozer blade - optional front/rear

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Immobiliser

Introduction

There are two different JCB immobiliser systems, one uses the instrument panel and console switches, the other uses a unique key system.

If your machine has an immobiliser system installed, then your JCB dealer should enable the system as part of the standard machine installation. If you prefer that the system is not enabled, then you must tell your JCB dealer. Your JCB dealer can enable the system at a later date. Machines with immobilisers installed should always be parked as per the instructions in the operator's manual.

Instrument Panel and Console Switches System

Before attempting to disarm the immobiliser check that the machine is ready to start and that you have your four digit pin code available.

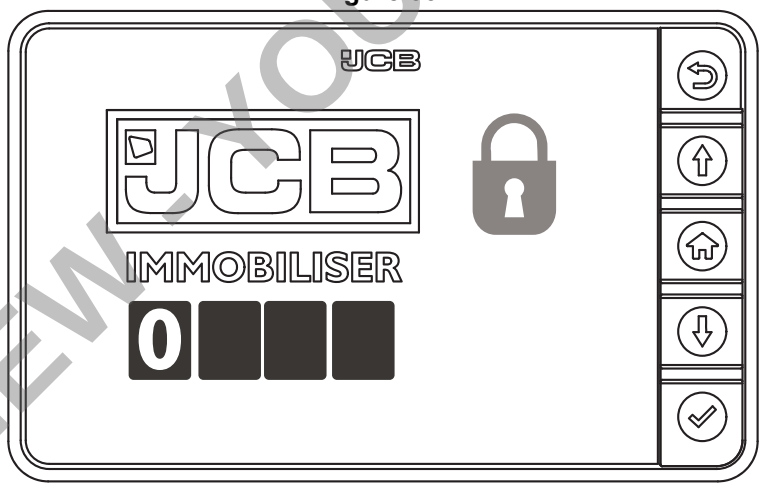
Do not operate buttons with sharp objects, they may damage and disable the keypad.

If you make an error entering your pin code and you realise this before pressing the confirm button then pressing the back button cancels inputs and allows you to re-commence.

If the pin code is incorrectly entered five times the immobiliser will lock for 15min. In this event it is recommended that you contact the machine owner for confirmation of the pin code.

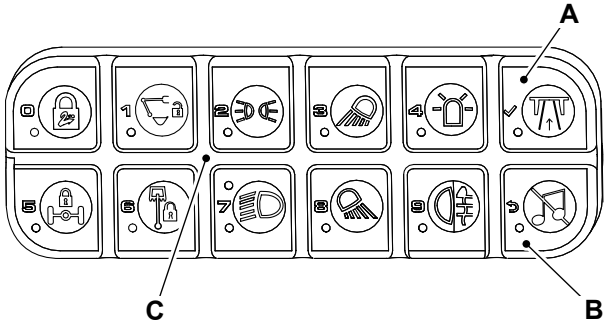
The pin code will have to be entered every time that the ignition is switched off for longer than two minutes.

Figure 33.



LCD (Liquid Crystal Display)

Figure 34.



A Confirm button

B Back button

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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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Starting the Engine

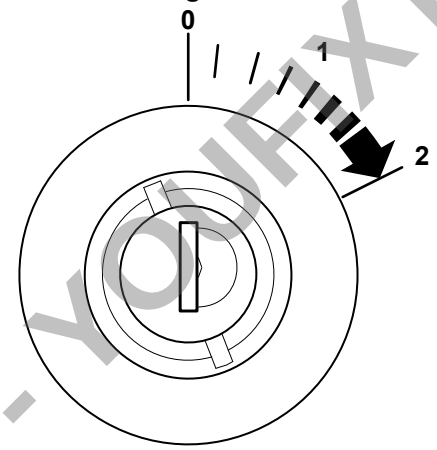
General

⚠ **Notice:** Do not use ether or other starting fluids to assist cold starting. Using these fluids may result in an explosion causing possible injury and/or damage to the engine.

The engine noise and or tone may be louder than usual when cold. The engine will become quieter when the engine reaches normal operating temperature.

1. Make sure that the machine is ready to start.
   Refer to: Before Starting the Engine (Page 40).
2. Make sure the isolator key is on.
3. Make sure the foot brake is latched on.
4. Make sure the forward- neutral- reverse switch is in the neutral position.
5. If the machine has an immobiliser then you must disarm the immobiliser before you can start the engine.
6. Turn the ignition key to the on position.

Figure 32.



0 Ignition off/engine stop position
1 Ignition on position
2 Start position

7. Check the instrument panel for error messages. Correct any critical faults before starting the engine.
8. Sound the horn as a warning.
9. Turn the ignition key to the start position and hold it there until the engine starts. Do not operate the starter motor for more than:
   Duration: 15s
10. If the engine does not start, turn the ignition key to the off position.
11. Let the starter motor cool for a few minutes before you repeat the steps 9 and 10.
12. When the engine has started, check the instrument panel for critical faults. If any critical faults are displayed, stop the engine as soon as it is safe to do so.
13. Warm the engine and hydraulics.
    Refer to: Warming Up (Page 51).

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Heating, Ventilating and Air-Conditioning (HVAC)

General

The operator must set the controls to obtain the best working environment in the operator station.

Close doors and windows for best HVAC (Heating Ventilation Air Conditioning) performance and in dusty conditions.

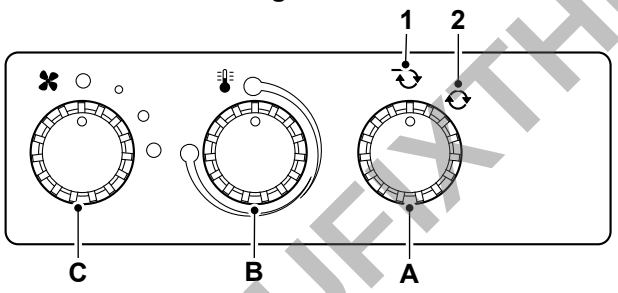
Poor ventilated air can cause tiredness. Do not operate the machine for long periods without ventilation or with the operator station fully closed and the fan turned off.

Air-Conditioning Controls

Heater Only Controls

Introduction

Figure 74.



A Recirculation switch
B Temperature control switch
C 3-speed fan switch
1 Recirculation switch - position '1'
2 Recirculation switch - position '2'

The heater control panel is installed on the right console.

The temperature is adjusted by the recirculation switch, a 3-speed heater fan switch and the temperature control switch.

Adjust the air vents to direct the hot air flow to the front window (for demisting) and/or the cab floor.

Air Control

Turn the recirculation switch to position '1' to let fresh air enter the cab.

Turn the recirculation switch to position '2' to recirculate the air, this should be used when you operate in a dusty working environment. Position '2' can also be used to increase the heater performance during cab warm-up and when machine coolant temperatures are below optimum.

Heat Control

Turn the temperature control switch clockwise to increase the temperature.

Turn the temperature control switch counterclockwise to decrease the temperature.

Heater Fan

Turn the 3-speed fan switch to adjust the speed of the heater fan. This functions only when the ignition key is in position I.

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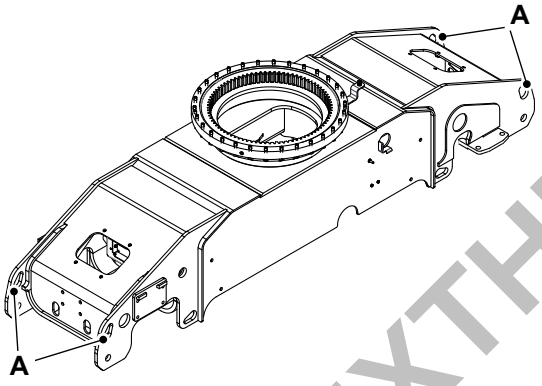
Lifting the Machine

General

The chassis is equipped with 4 lifting points, 2 at the front and 2 at the rear. These points are also used as tie down points.

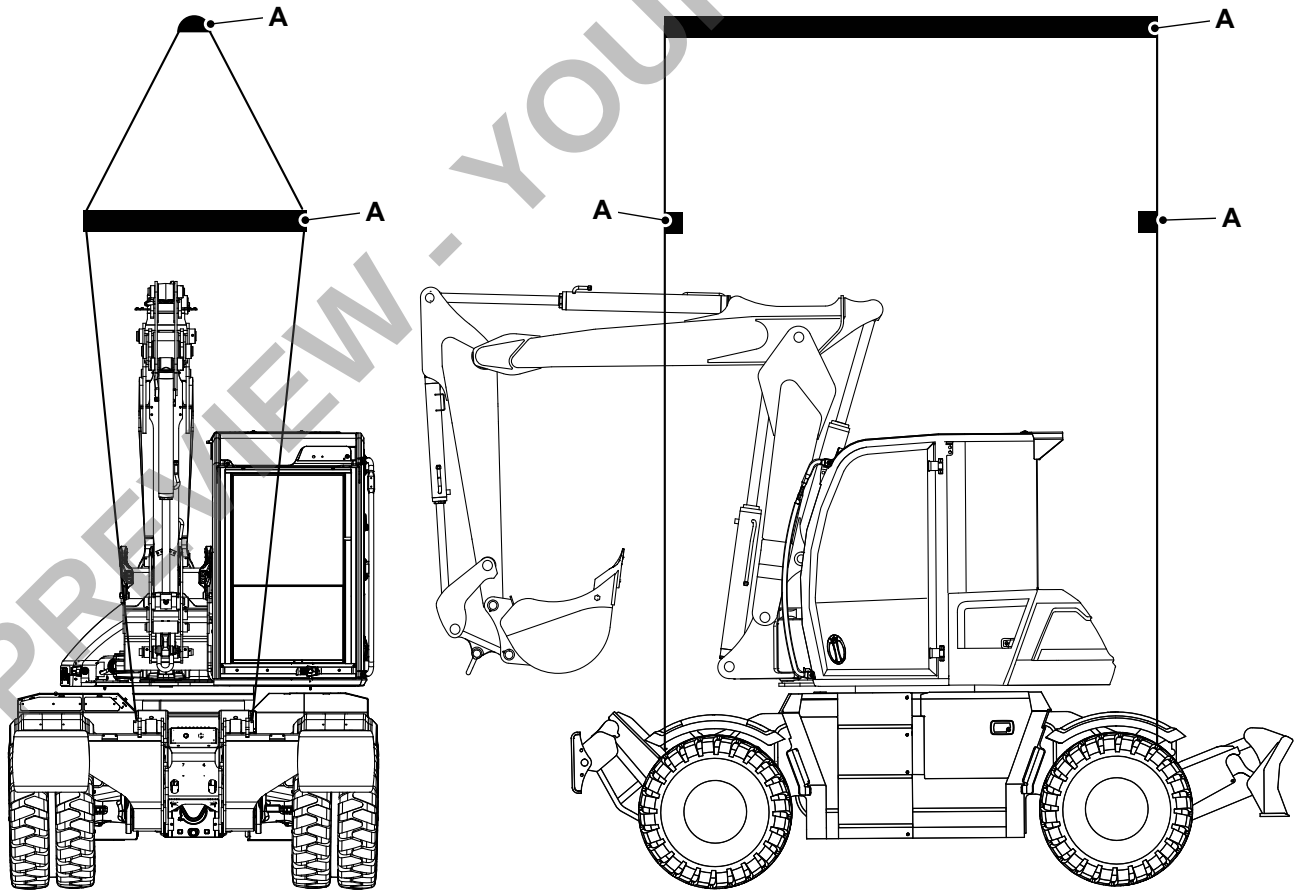
The centre of gravity position is approximately 76mm forward of the slew centre, 1,320mm from the ground and on the machine centre line. It will vary slightly according the position of the upper structure, machine specification and condition (tyres, fuel level, options, attachment etc)

Figure 82.



A Lift points

Figure 83. Typical Lifting Arrangement



A Spacer bars

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Auxiliary Circuits

Handheld Hydraulic Tool Circuits

The Hydraulic Hand Tool Circuit is a Category C. Its will deliver 18–22L/min to a maximum pressure of 138bar (2,000.0psi).

1. Wear gloves as the quick release coupling may be hot.
2. With the machine turned off, connect the return line from the attachment to the right hand port when facing the front of the machine.
3. Connect the flow delivery / pressure line to the left hand quick release coupling when looking at the front of the machine.
4. Make sure that the hydraulic lines are clear of the dozer or stabiliser legs if fitted.
5. Make sure that the trigger / activation button is in neutral / deactivated.
6. Follow the usual start sequence of the machine and leave the engine speed control at idle.
7. Lower the pod.
8. Select the HTC (Hydraulic Tool Carrier) button. This will increase the engine speed to a specified 900 RPM (Revolutions Per Minute). No other machine hydraulic functions will be available nor will you be able to alter the engine speed.
9. Safely exit the machine. The pod can be lifted or lowered and will not effect the operation of the HTC circuit.
10. Use the Hydraulic Hand Tool following attachment specific guidelines.
11. Once use of the hydraulic hand tool has finished, enter the cab and deselect the HTC button.
12. Turn off the machine.
13. Safely vent any locked in pressure in the tool by selecting the trigger lever.
14. Wearing gloves, disconnect the left hand quick release coupling.
15. Disconnect right hand quick release coupling.
16. Stow away Hydraulic attachment and extension lines (may use something from Beaver manual).

No further hydraulic performance will be achieved with attempting to increase the engine speed as this control is disabled during HTC use.

The Hydraulic Hand Tool should be disconnected before attempting to reposition the machine.

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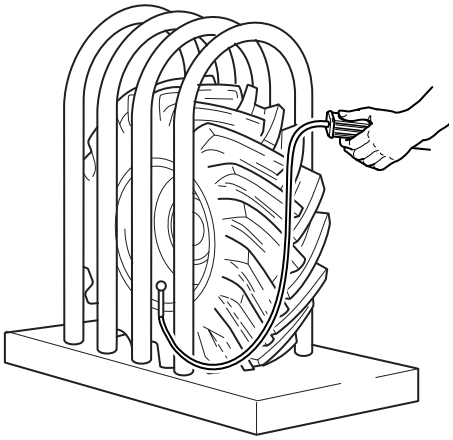
Preparation

1. Make the machine safe.
   Refer to: Maintenance Positions (Page 164).
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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Figure 131.



2. Prepare the equipment.
   2.1. Use only an air supply system which includes a pressure regulator. Set the regulator no higher than 1.38 bar (20 psi) above the recommended tyre pressure.
   Refer to: Wheels and Tyres (Page 262).
   2.2. Use an air hose fitted with a self-locking air chuck and remote shut-off valve.
3. Add the air.
   3.1. Make sure that the air hose is correctly connected to the tyre valve. Clear other people from the area. Stand behind the tread of the tyre while adding the air.
   3.2. Inflate the tyre to the recommended pressure. Do not over-inflate.

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