Quick-fit Carriage

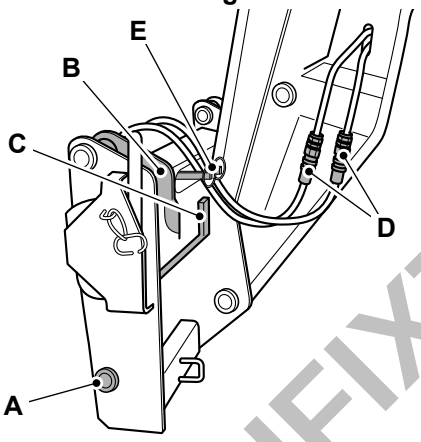
General

⚠ **WARNING** Do not retract the locking pins when the attachment is raised, the attachment could fall and kill or seriously injure someone. Retract the locking pins only after the attachment has been placed on the ground.

WARNING Keep other people clear of the area while you disengage the attachment. If a second person is to be involved in this procedure, ensure that he keeps clear of the machine and attachment until signalled by you to proceed.

Mechanical Pin Locking

Figure 178.



A Carriage lock pins
B Hook plates
C Manual locking lever
D Hoses
E Locking pins - hydraulic hoses

Installing Attachments

1. Make the machine safe.
   Refer to: Stopping and Parking (Page 53).
2. Position the attachment on solid, level ground. Make sure the attachment will not roll over.
3. Remove the existing attachment.
4. Engage the attachment. Refer to Figure 178.
   4.1. Make sure that the carrier lock pin is withdrawn.
   4.2. Use the control levers to align the carrier with the attachment and just below the attachment hook plates.
   4.3. Apply the park brake.
   4.4. Set the transmission to neutral.
   4.5. Use the boom controls to engage the support bar on the carrier into the hook plates on the attachment.
   4.6. Make sure that both hook plates are engaged equally.
   4.7. Lift and tilt the carrier back, to align the locking holes in the carrier with those in the attachment.
5. Lower the attachment to the ground.
6. Stop the engine.
7. Remove the ignition key.
8. At the carriage, operate the manual locking lever to engage the locking pins. Refer to Figure 178.

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Figure 83.



Figure 84.



Figure 85.



Warning/Fault Icons

There are three levels of warnings each is represented by a different colour. Depending on the level of severity it may or may not be acknowledgeable by the operator. Some icons are available at all three levels but are not shown below:

- Yellow - acknowledgeable
- Critical red - not acknowledgeable
- Critical red (50% screen size) - acknowledgeable

Table 19.

	Transmission		Stabilizer		Transmission pressure
	Exhaust treatment		Joystick		
	Telematics		Immobiliser		Brake
	Adblue level		Engine		Engine oil pressure
	Coolant temperature				Steer
			Hydraulics		DEF acknowledgeable
	Transmission temperature		CAN		Foot brake press

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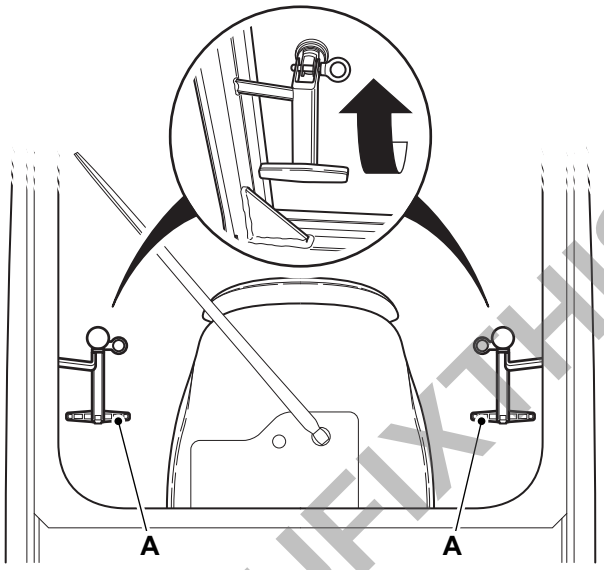
Windows

Rear Window

To open the window, swing the catches in the direction shown, as far as required.

To close the window, swing the catches in the opposite direction until it locks in position.

Figure 22.



A Catches

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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.

No warranty liability will be accepted for engine failures where unacceptable fuel grades (or their equivalent) have been used at any stage.

Table 44.

Item	Capacity	Fluid/Lubricant	JCB Part Number	Container Size[1]
Fuel Tank	146 L	Diesel Oil		See Technical Data, Fluids, Lubricants and Capacities, Fuel.
DEF (Diesel Exhaust Fluid) Tank (minimum to maximum)	13 L	DEF		See Technical Data, Fluids, Lubricants and Capacities, Diesel Exhaust Fluid.
Engine (Oil)[2]	Min 12.5 L - Max 15 L (Except FL engine), Min 11.5 L - Max 14 L (FL engine)	JCB Engine Oil UP 5W30 (API CJ-4) -30 –30 °C (-22.0 – 86.0 °F)	4001/3105	20 L
		(USA Only) JCB Engine Oil UP 5W40 (API CJ-4) -30 –46 °C (-22.0 –114.7 °F)	4001/3405	
		JCB Engine Oil UP 10W30 (API CJ-4) -15 –46 °C (5.0 – 114.7 °F)	4001/3005	
		UN3/GB3 Machines only: JCB Engine Oil EP 5W40 (API CH-4/CG-4/CF-4/ CF/SJ, ACEA E2/B3/A3)- -30 –46 °C (-22.0 –114.7 °F)	4001/2705	
Engine (Coolant)[3]	28 L (Except FL engine), 25.5 L (FL engine)	JCB Antifreeze HP/Coolant + Water	4006/1120	20 L
Transmission (SS750 installed with 81 kW engines)	• Wet fill 11.5 L • Dry fill 13.5 L	JCB Transmission Fluid EP 10W-30, ESP-M2C 33G	4000/2505	20 L
Transmission (PS750 installed with 55 kW engines)	• Wet fill 17 L • Dry fill 19 L	JCB Transmission Fluid EP 10W30, -32 –40 °C (-25.6 – 103.9 °F)[4]	4000/2505	20 L
		JCB Transmission Fluid SAE 30, -5 –46 °C (23.0 –114.7 °F)	4000/2506	20 L
Transmission (PS760 installed with 93 kW and 108 kW engines)	• Wet fill 21 L • Dry fill 23 L	JCB Transmission Fluid EP 10W30, -32 –40 °C (-25.6 – 103.9 °F)	4000/2505	20 L

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Table 28.

Component	Task	10	50	100 (1)	500	1,000	1,500	2,000
ENGINE								
Oil level	Check	O	O	□	□	□	□	□
Oil and Filter (SJ and SL engine)(2, 4)	Replace				□	□	□	□
Oil and Filter (FL engine)(3, 5)	Replace					□		□
Coolant Quality and Level	Check	O	O	□	□	□	□	□
Cooling System	Drain and Refill							□
Coolant, Oil or Fuel Leaks	Check (leaks)	O	O	O	□	□	□	□
Air Cleaner Dust Valve (6)	Clean				□	□	□	□
Air Cleaner Outer Element (6)	Replace					□		□
DEF (Diesel Exhaust Fluid) Filter (SJ engine)(18)	Replace					□		□
Air Cleaner Inner Element	Replace							□
Pre-Cleaner (if fitted)	Check			□	□	□	□	□
Water Separator	Check for contamination and drain		O	□	□	□	□	□
Water Separator Fuel Filter (SJ and SL engine, excludes UN3/GB3 engines)	Replace				□	□	□	□
Water Separator Fuel Filter (FL engine, excludes UN3/GB3 engines)	Replace					□		□
Fuel Filter 30 micron, Fuel Filter 5 micron, Lubricity Filter (UN3/GB3 engines)(19)	Replace							
Engine Fuel Filter	Replace					□		□
Front End Accessory Drive (FEAD) Belt Condition(6)	Check				□	□	□	□
Front End Accessory Drive (FEAD) Belt(16, 20)	Replace							
Powertrain Mounting Bolts for Tightness	Check			□	□	□	□	□
All Hoses - Condition(6)	Check			□	□	□	□	□
Radiator(6)	Clean, Check (condition)				□	□	□	□
Crankcase Ventilation Filter	Replace						□	
Valve Clearances(7)	Check and adjust							□
Oil Filler and Dipstick Seals	Replace							□
Injectors(7, 16)	Replace							
Injector(s) Leak Off Rail(7, 16)	Replace							
High Pressure Fuel Lines(7, 16)	Replace							
TRANSMISSION, AXLES AND STEERING								
Transmission Mount Security	Check			□	□	□	□	□
Transmission Oil Level	Check	O	O	□	□	□	□	□
Transmission Oil(8)	Replace					□		□
Transmission Oil Filter Canister	Replace			□	□	□	□	□

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(For: 540-v140 [T4F])

Figure 254.

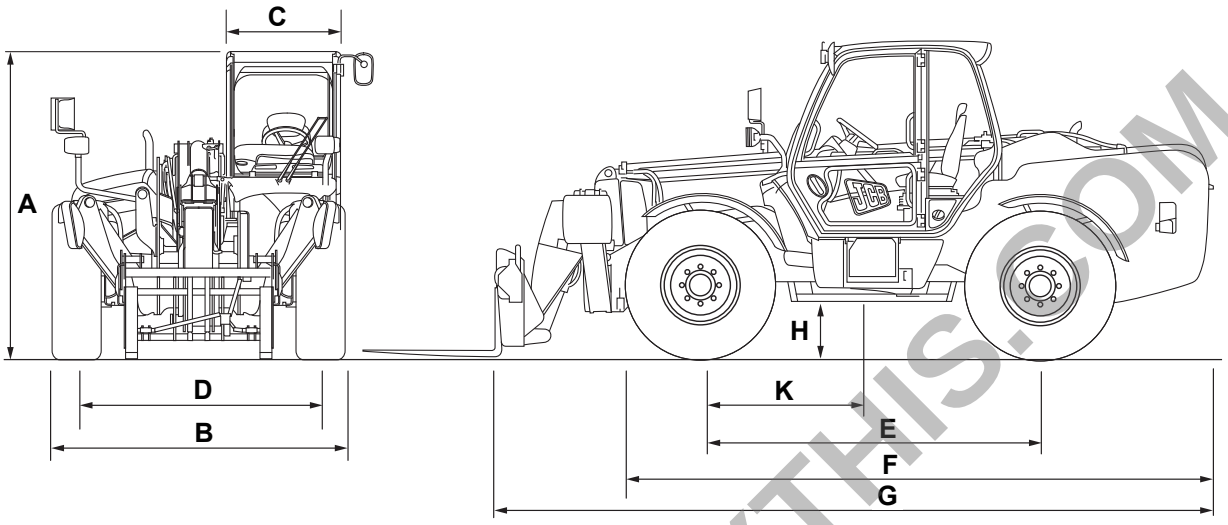


Table 30.

Item	Description	Dimension[1]
A	Overall height	2,590 mm
B	Overall width (over tyres)	2,350 mm
C	Inside width of cab (between windows)	940 mm
D	Front track	1,900 mm
E	Wheelbase	2,750 mm
F	Overall length to front tyres	4,740 mm
G	Overall length to front of carriage	6,230 mm
H	Ground clearance	400 mm
K	Centre of gravity (unladen)	1,511 mm

(1) Dimensions relative to 15.5/80-24 tyres.

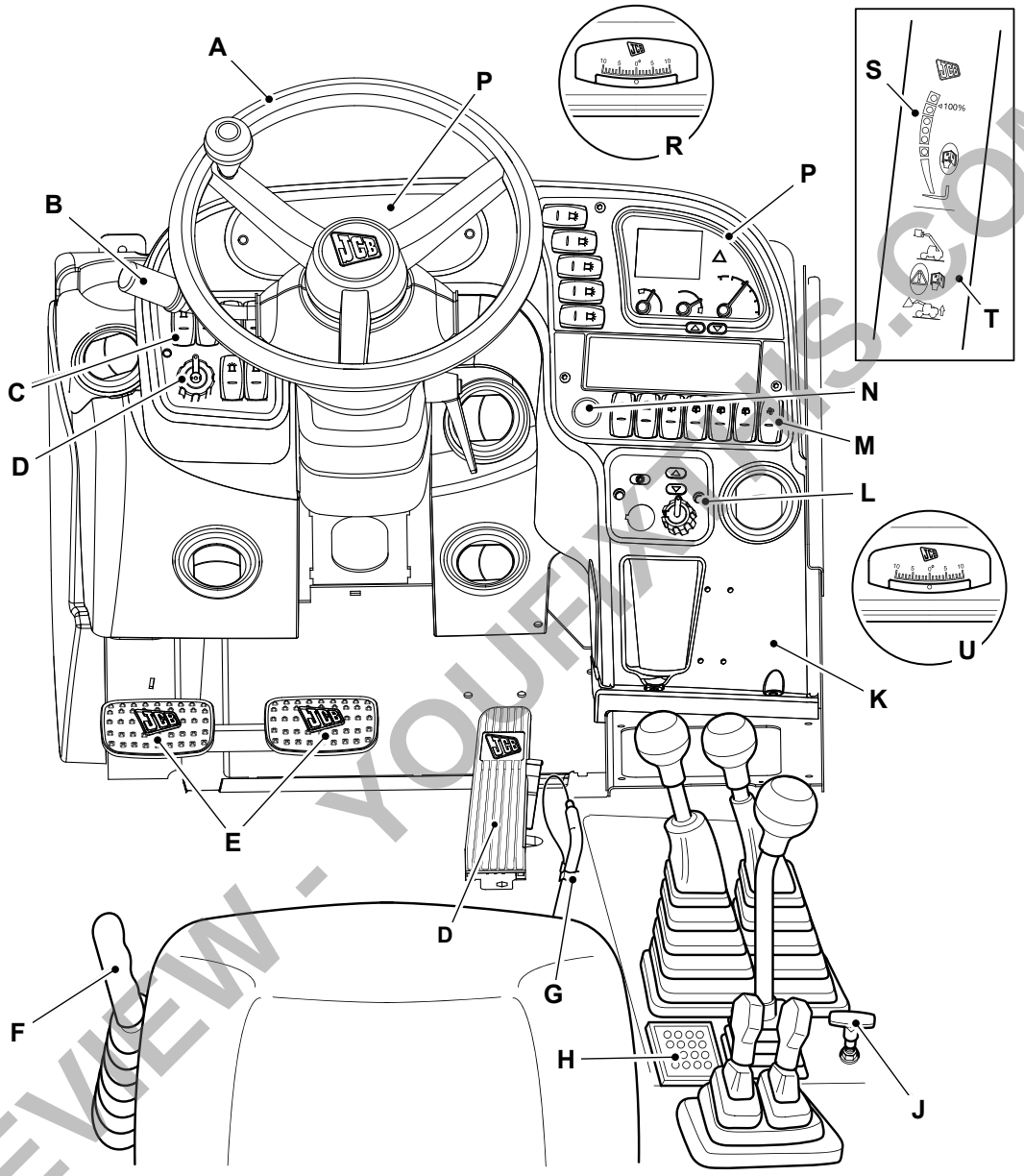
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Operator Station

Component Locations

Figure 11.



A Steering wheelRefer to: Steering Wheel (Page 64).
B Transmission Lever and Gear SelectionRefer to: Steering Wheel (Page 64).
C Console switchesRefer to: Introduction (Page 1).
D Steer mode selectorRefer to: Steer Mode Control (Page 68).
E Service brake pedalRefer to: Service Brake Pedal (Page 64).
F Park brake leverRefer to: Park Brake (Page 65).
G Control locks
H Immobiliser
J Hydraulic tow hitch
K Load charts
L HVAC (Heating Ventilation Air Conditioning) Refer to: Heating, Ventilating and Air-Conditioning (HVAC) (Page 143).
M Console switchesRefer to: Console Switches (Page 21).
N Ignition switchRefer to: Ignition Switch (Page 18).
P Instrument panelRefer to: Instrument Panel (Page 69).
R Lateral Inclinometer
S LLMI (Longitudinal Load Moment Indicator)
T Load control system
U Longitudinal Inclinometer

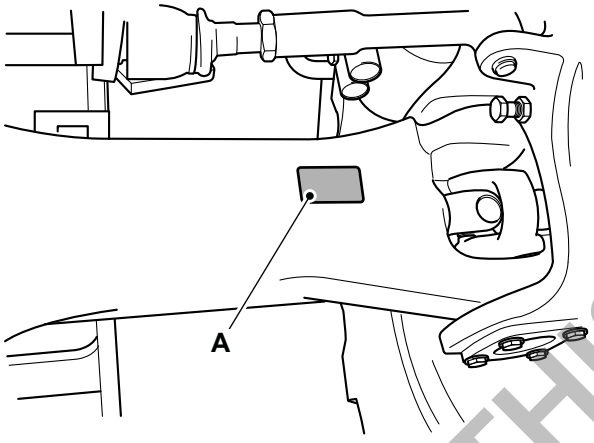
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Axle

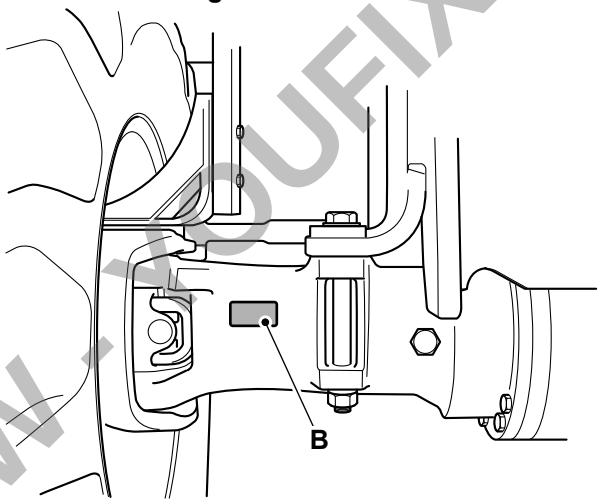
The axles have a serial number stamped on a data plate as shown.

Figure 6. Front axle



A Data plate - front axle

Figure 7. Rear axle



B Data plate - rear axle

Operator Protective Structure

⚠ **WARNING** You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the ROPS/FOPS has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS certification.

WARNING Machines with a ROPS/FOPS are equipped with a seat belt. The ROPS/FOPS is designed to give you protection in an accident. If you do not wear the seat belt you could be thrown off the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

FOPS Data Plate

⚠ **WARNING** Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

If the machine is used in any application where there is a risk of falling objects then a FOPS (Falling Object Protective Structure) must be installed. For further information, contact your JCB dealer.

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Fire Extinguisher

General

Location

The fire extinguisher is stowed in a bracket behind the seat. Keep the fire extinguisher in the bracket until you need to use it.

Operation

⚠ **WARNING** Do not use the fire extinguisher in a confined space. Make sure that the area is well ventilated during and after using the fire extinguisher.

WARNING After any use, the extinguisher must be replaced or serviced.

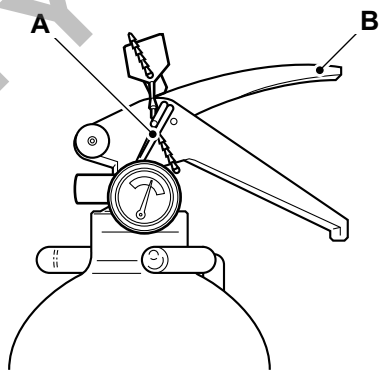
Make sure that you understand how to use the fire extinguisher. If necessary, refer to the instructions found on the fire extinguisher.

Only try to extinguish a fire if the circumstances permit and your safety is not endangered. If necessary, contact your nearest fire department.

Using the fire extinguisher:

1. Move the machine to a safe area to prevent the fire from spreading.
2. Remove the fire extinguisher from its bracket.
3. Remove the safety pin.
4. Aim directly at the fire from an upwind position, if possible.
5. Squeeze the trigger to operate the fire extinguisher, release the trigger to stop the flow.

Figure 166.

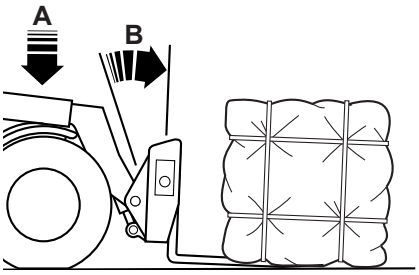


A Safety pin **B** Trigger

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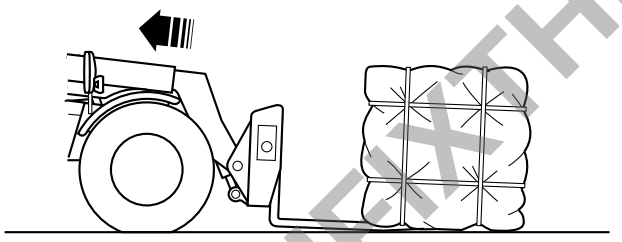
Figure 154.



A Boom lower **B** Carriage extend

3. Retract the boom and withdraw the forks from under the bale.
4. When the forks are clear, return the boom and carriage to the road travel position.

Figure 155.



Working with Irregular Loads

Be careful when you operate the boom and carriage with an uneven load.

1. Find the load's centre of gravity. On packaged loads it may be marked on the box. If you cannot find out the load's centre of gravity:
   1.1. Do trial lifts at different positions until you are sure the load is stable on the forks.
   1.2. Do not raise the load more than a few centimetres when you do a trial lift.
2. Move the machine so that the load's centre of gravity is halfway between the forks.
3. Pick/place the load, this will depend on the type of load.
   3.1. If it is palleted, follow the procedure for palleted loads.
   3.2. If it is not palleted, it may be necessary to secure the load to the forks using suitable chains.
4. Stop the engine before allowing anyone to approach the forks.

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Notes:

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Entering and Leaving the Operator Station

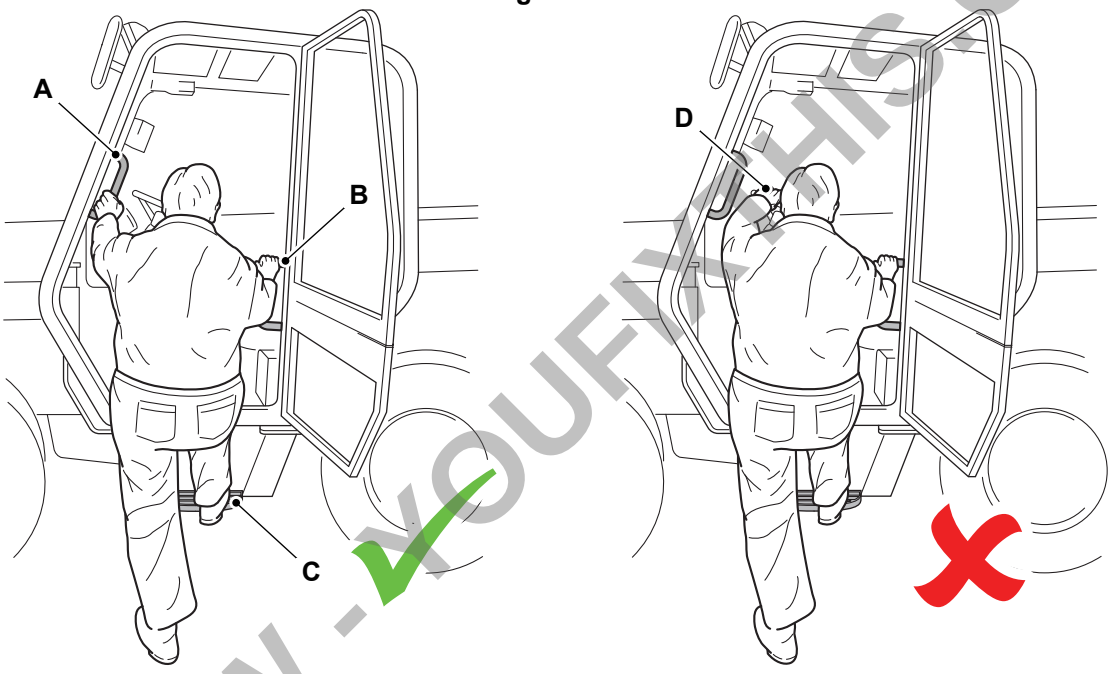
General

⚠ **CAUTION** Entering or leaving the operator station must only be made where steps and handrails are provided. Always face the machine when entering and leaving. Make sure the steps, handrails and your boot soles are clean and dry. Do not jump from the machine. Do not use the machine controls as handholds, only use the handrails.

Make sure the machine is stopped and correctly parked before entering or leaving the cab. Refer to: General (Page 53).

When you get 'on' and 'off' the machine always maintain a three point contact with the handrails and step(s). Do not use the machine controls as handholds.

Figure 16.



A Left handrail
B Right handrail
C Step
D Steering wheel

Emergency Exit

⚠ **WARNING** Do not obstruct the rear cab window, this is an emergency exit.

The rear window can be used as an emergency exit. Make sure the emergency exit is not obstructed.

1. Remove pins and open the window fully.
   1.1. Pins should be removed in the event of an emergency. Do not remove the pins to increase the rear window opening.

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	Torque converter lock up engaged
	2WD active
	Driver not in seat
	Transmission auto mode active

Auto Steer Mode Symbols (if installed)

Displays the active steer mode in the solid grey.

When changing between the steer modes the amber icons will flash at 1 s intervals.

If there is a fault a symbol will flash rapidly, and a notification will be displayed.

Table 15.

	2 Wheel steer mode active
	4 Wheel steer mode active
	Crab steer mode active
	2WS to 4WS (symbol flashes during mode change)
	2WS to crab steer (symbol flashes during mode change)
	4WS to 2WS (symbol flashes during mode change)
	Crab steer to 2WS (symbol flashes during mode change)

Indicated Manual Steer Mode Symbols (if installed)

Displays when the wheels are aligned to straight ahead position.

If there is a fault a symbol will flash rapidly, and a notification will be displayed.

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Load Charts for Suspended Loads

A suspended load is defined as any object that is lifted in such a way that it can swing freely, whilst it is being hoisted lowered and horizontally moved.(e.g. a load attached to a hook or shackle.)

As a result load charts for suspended loads are related to fork mounted hook, extension jib or carriage mounted shackle attachments.

Load charts for these attachments show how far you can raise and extend a load without exceeding the safe working load. A separate load chart for each attachment shows details of the general operation limitations when the machine is in a traveling and static condition.

As per the fixed load charts alternative charts are used to illustrate limitations when the stabilisers or chassis levelling (sway) are used.

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Operating Environment

General

Operating in Dusty or Sandy Areas

1. Air Cleaner. Frequently check, clean or replace the elements regardless of the inspection interval. (Not the safety element).
2. Securely tighten the hydraulic oil tank filler cap to prevent sand and dust from entering the hydraulic system.
3. Check for debris accumulation below the engine.

Operating in Coastal Regions

1. Check that all the plugs, bolts and fasteners are all tightened properly.
2. After daily operations, wash the machine thoroughly and take special care when cleaning the electrical devices and hydraulic cylinders to prevent salt entry and eventual corrosion.

Operating on Wet or Soft Ground

1. Clean the Machine. Moisture or mud will cause the paint, wiring and metallic parts to deteriorate. When operating the machine keep it as dry as possible and regularly grease the machine.
2. Check for debris accumulation below the engine.

Operating in Low Temperatures

⚠ **Notice:** Do not connect two batteries in series to give 24 V for starting as this can cause damage to the electrical circuits.

1. Use the correct viscosity engine lubricating oil.
   Refer to: Fluids, Lubricants and Capacities (Page 282).
2. Use the correct viscosity hydraulic oil.
3. If available, use a low temperature diesel fuel.
4. Use the correct coolant mixture.
5. Keep the battery at full charge.
6. Fill the fuel tank and DEF (Diesel Exhaust Fluid) tank (if applicable) at the end of each work period, this will help to prevent condensation forming on the tank walls. Do not brim the tank in low temperatures, use the DEF level gauge on the instrument panel (ignition on).
7. Protect the machine when its not in use. Park the machine inside a building or cover it with a tarpaulin.
8. Install a cold weather starting aid. In very low temperatures (less than the value shown) additional starting aids may be needed. For example are fuel, oil and coolant heaters. Ask your JCB dealer for advice.
   Temperature: -18 °C (-0.4 °F)
9. Remove snow from the engine compartment before starting otherwise snow could get into the air filter.
10. Always follow the starting procedure applicable to the current ambient temperature.
    Refer to: Starting the Engine (Page 48).

For the machine hydraulic system to work efficiently, the machine hydraulic oil temperature should be a minimum of 10 °C (50.0 °F). If the air temperature is below freezing, do as follows:

1. Park the machine on solid, level ground with the engine running.
2. Apply the park brake and place the forward/reverse lever in the neutral position.

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- Using a nail brush will help
- Use special hand cleansers to help clean dirty hands
- Never use petrol, diesel fuel, or paraffin for washing

- Avoid skin contact with oil soaked clothing
- Don't keep oily rags in pockets
- Wash dirty clothing before re-use
- Throw away oil-soaked shoes

Battery

Warning Symbols

The following warning symbols may be found on the battery.

Figure 192.



A Keep away from children
B Shield eyes
C No smoking, no naked flames, no sparks
D Explosive gas
E Battery acid
F Note operating instructions

First Aid - Oil

Eyes

In the case of eye contact, flush with water for 15min. If irritation persists, get medical attention.

Swallowing

If oil is swallowed do not induce vomiting. Get medical advice.

Skin

In the case of excessive skin contact, wash with soap and water.

Spillage

Absorb with sand or a locally approved brand of absorbent granules. Scrape up and remove to a chemical disposal area.

Fires

⚠ **WARNING** Do not use water to put out an oil fire. This will only spread it because oil floats on water.
Extinguish oil and lubricant fires with carbon dioxide, dry chemical or foam.

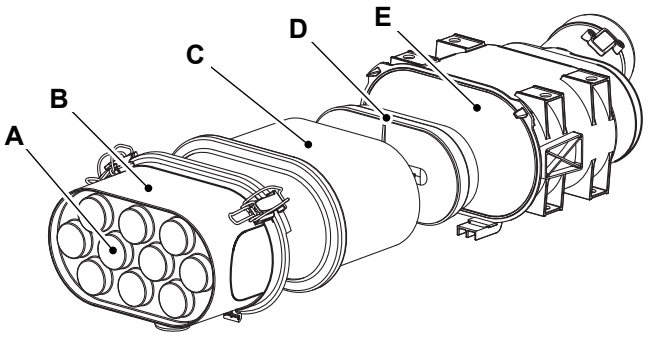
First Aid - Electrolyte

Eyes

In the case of eye contact, flush with water for 15 min. always get medical attention.

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Figure 235.



A Air holes
B Prefilter element
C Main element
D Safety element
E Main housing

Dust Valve

Check (Condition)

- Check the dust valve for rips/tears.
- Check there are no obstructions.
- Check that the dust valve is free of dirt and dust.
- Check that the dust valve securely attached to the air filter housing.

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Performance Dimensions

General

Maximum Wading Depth

The maximum wading depth of the machine is 400 mm. Water can enter the engine and axles and the cooling fan can be damaged if the machine is operated in deeper water.

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