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⚠ WARNING

Study This Handbook Before Starting The Machine

You must understand and follow the instructions in this handbook. You must observe all relevant laws and regulations. If you are unsure about anything, ask your JCB distributor or employer. **Do not guess**, you or others could be killed or seriously injured.

INT-1-1-1

⚠ CAUTION

Do not fit an attachment to this machine which is not JCB approved. Consult your JCB distributor before fitting any non approved attachment.

8-4-1-6

In this handbook and on the machine there are safety notices. Each notice starts with a signal word. The meanings of the signal words 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

MACHINE SECURITY

Vandalism and theft of unattended machines is an ever increasing problem and JCB is doing everything possible to help combat this.

JCB PLANTGUARD is a comprehensive package available to help you safeguard your machine. It includes such devices as vandal proof covers, window etching, immobiliser, concealed serial number, battery isolator, Tracker security system and much more.

Remember that the fitting of any one of these security devices will help to minimise not only the damage or loss of your machine but also subsequent lost productivity. It could also result in reduced insurance premiums.

Your JCB Distributor or Dealer will be pleased to provide information on any of these sensible precautions. ACT NOW!

INT-1-2-4

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INTRODUCTION

The aim of this part of the handbook 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 operator's seat and familiarise yourself with the layout of the cab. Use your handbook 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 Skid Steer Loader.

When you have familiarised yourself with the operating controls, gauges and switches, practise 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

BEFORE ENTERING THE CAB

The following checks should be made each time you return to the machine after leaving it for any period of time. We advise you also to stop the machine occasionally during long work sessions and do the checks again.

All these checks concern the serviceability of the machine. Some concern your safety. Get your service engineer to check and correct any defects.

⚠ WARNING

Walking or working under raised attachments can be hazardous. You could be crushed by the attachments or get caught in the linkages.

Lower the attachments to the ground before doing these checks. If you are new to this machine, get an experienced operator to lower them for you.

If there is nobody to help you, study this handbook until you have learned how to lower the attachments.
3-2-1-6

1 Check for Cleanliness

a Clean the windows and light lenses.

b Remove dirt and debris, especially from around the linkages, rams, pivot points and radiator.

c Make sure the cab step and handholds are clean and dry.

d Clean all safety decals. Replace any that are missing or cannot be read.

e Clean inside cab, remove debris from around control pedals.

2 Check for Damage

a Inspect the machine generally for damaged and missing parts.

b Make sure that the shovel is secure and in good condition.

c Make sure that all pivot pins are secured correctly in place.

d Inspect the windows for cracks and damage. Glass splinters can blind you.

e Check for oil, fuel and coolant leakages.

3 Check the Fuel and Hydraulic Filler Caps

Make sure the caps are tightly closed. *(We also recommend that you lock the fuel filler cap.)*

4 Check the Engine Compartment Rear Panel and Top Cover

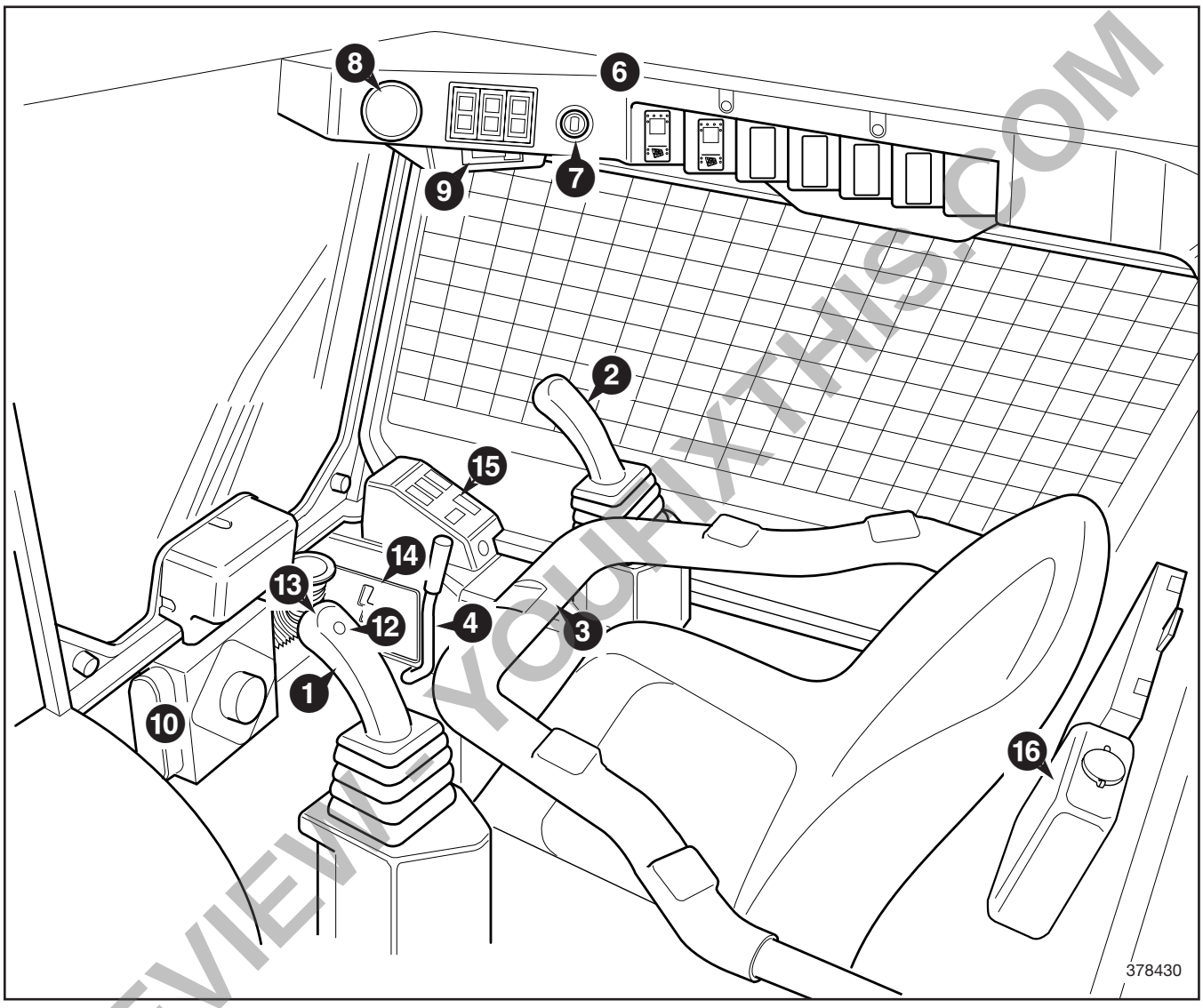
a Make sure the engine compartment rear panel is in position and secure (see *MAINTENANCE section*).

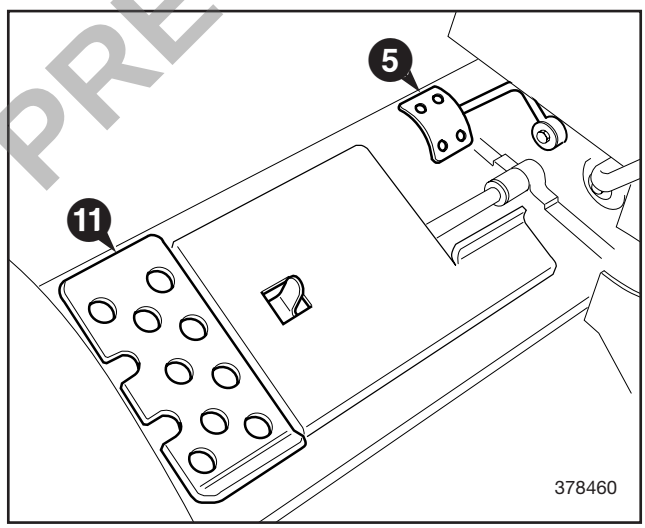
b Make sure the engine top cover is closed and locked (see *MAINTENANCE section*).

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CONTROLS, SWITCHES AND INSTRUMENTS

Cab Layout - Servo Machines





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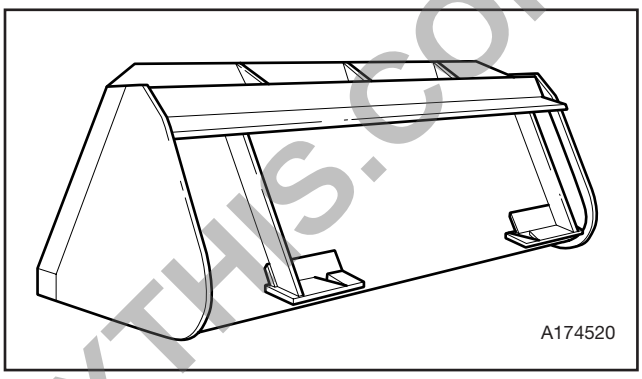
SHOVELS

The following are some of the shovels that are available for the Skid Steer Loader.

General Purpose Shovel	0.50 m^3	(17.66 ft^3)
	0.60 m^3	(21.19 ft^3)
Low Back Shovel	0.50 m^3	(17.66 ft^3)
	0.60 m^3	(21.19 ft^3)
Low Back Dirt Shovel	0.50 m^3	(17.66 ft^3)
	0.60 m^3	(21.19 ft^3)
6-in-1 Shovel	0.36 m^3	(12.71 ft^3)
	0.40 m^3	(14.13 ft^3)

Contact your JCB Distributor for information on additional shovels for special applications.

Most attachments have an integral framework, such as the one shown below, to make them Quickhitch compatible. Others such as the Earth drill, Hammer and compactor require a separate frame, (see ***Attachment Frame***). Consult the relevant attachment literature or your JCB Distributor as to the framework required.



Typical Quickhitch Attachment Framework

6-IN-1 SHOVEL

The 6-in-1 shovel allows you to load, dig, grab, grade, doze and spread without changing attachments.

It is similar to a normal shovel except that it has an opening clam which is operated by hydraulic rams mounted on the bucket frame.

Safety

Obey all the safety instructions given in the main part of this book, plus those given in this section.

Operation

Practise using the 6-in-1 shovel off the job before working with it for the first time.

Preparing for Travel

Close the clam then treat as a standard shovel.

Control

The lift, lower, open and close movements of the 6-in-1 shovel are controlled by the loader control lever(s) (see ***Loader Controls*** *OPERATION section*).

The shovel clam is operated either by a foot pedal, see ***Auxiliary Attachments Control Pedal***, or by the right hand control lever, see ***Auxiliary Attachments Control Lever (optional - manual machines)***.

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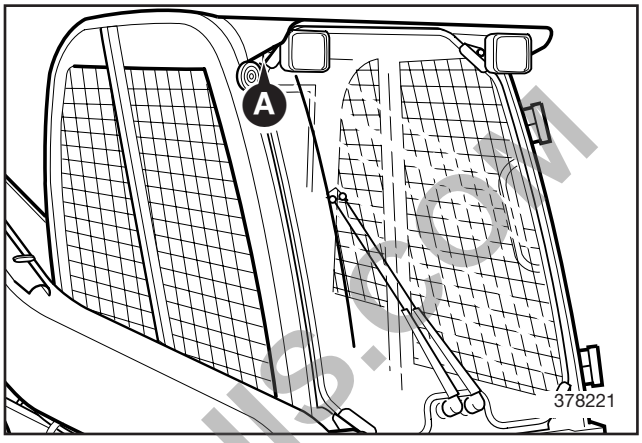
ROTATING BEACON (OPTIONAL)

The rotating beacon has a magnetic base for securing it to the roof of the cab. It plugs into jack socket under the front of the cab roof at **A**.

The socket is protected by a hinged cap which lifts for fitting the jack plug. Press the beacon switch to turn the beacon on or off.

Note: *After removing the plug, the cap will be closed by the spring hinge.*

Note: DO NOT *leave the beacon on the cab roof when not in use. Return it to its storage position.*



TRAVELLING POSITION

⚠ WARNING

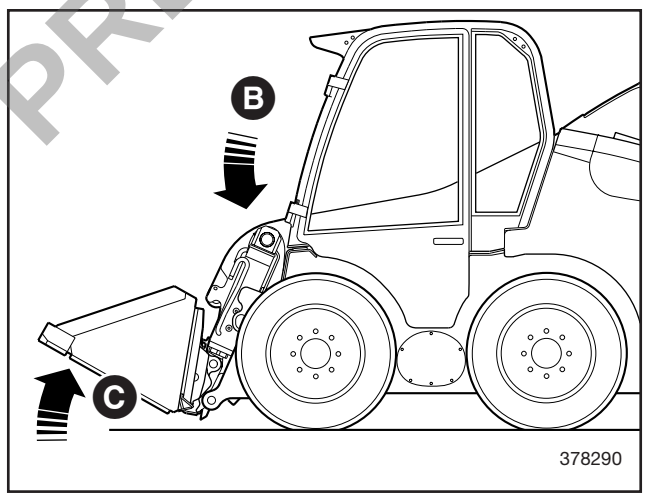
A high loader shovel can block your view and reduce the stability of the machine. Travel with the loader low to the ground. Travel slowly and with caution over rough, muddy or loose surfaces.
2-1-1-3

Note: *Some attachments may require different travel positions to those described below. See OPTIONAL ATTACHMENTS or the instructions supplied with the attachment.*

Travelling on Site

1 Lower the loader arm to its lowest position **B**.

2 Roll back (crowd) the shovel or other attachment **C**.



Travelling on Public Roads

⚠ CAUTION

It is illegal to travel on public highways without proper road lights. DO NOT take the machine on public highways unless it is equipped with the optional road light kit.
3-2-1-1

⚠ WARNING

Do not drive on the road with the work lights switched on. You can dazzle other drivers and cause an accident.
2-2-2-5

1 Carry out Steps 1 and 2 of ***On Site***.

2 Fit and plug-in the rotating beacon, if available.

Note: *In some circumstances a rotating beacon is a legal requirement for travelling on public roads.*

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SERVICE SCHEDULES

A badly maintained machine is a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the service schedules are done to keep the machine in a safe and efficient working condition.

Apart from the daily jobs, the schedules are based on machine running hours. Keep a regular check on the hourmeter readings. Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are rectified immediately.

⚠ WARNING

Maintenance must be done by suitably qualified personnel. Before attempting any maintenance work, make sure the machine is safe. Park on level ground. If it is necessary to work with the loader arm raised, then the loader arm safety strut must be fitted, as shown in Loader Arm Safety Strut in MAINTENANCE section.
2-3-1-1

Operator Schedules

Every 10 Operating Hours or Daily whichever occurs first

Clean
1 Machine generally, including cab interior
2 Radiator matrix and oil cooler
3 Quickhitch locking peg housings

Check (Engine Stopped)
1 Generally for damage, including ROPS/FOPS structure
2 Engine cooling system for leaks
3 Engine coolant level and antifreeze strength
4 Fuel system for leaks and contamination
5 Hydraulic oil level
6 Hydraulic system for leaks
7 Engine oil level and condition
8 Engine generally for leaks
9 Tyre pressures and condition
10 Tightness of wheel nuts
11 Windscreen washer level (if fitted)
12 Seat belt condition and security
13 Operation of horn
14 Operation of roadlights and beacon (if fitted)

Check (Engine Running)
1 Warning lights extinguished
2 Exhaust for excessive smoke
3 Operation of parking brake
4 Operation of reverse alarm (if fitted)

Grease
1 Quickhitch pivot pins

Every 50 Operating Hours or Weekly whichever occurs first

Do the Daily jobs plus:

Check (Engine Stopped)
1 Oil cooler connections
2 Radiator hoses and condition
3 Fuel filter and sedimenter (drain if necessary)
4 Alternator belt tension
5 Hoses and pipework for chafing and damage
6 Track tension (tracked machine only)

Grease
1 Loader arm pivot points
2 Lift ram pivots

Refer to next page for 100 to 2000 Hour Services

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ENGINE AIR FILTER

Changing the Elements

Note: *In a dusty working environment, the outer element may have to be renewed more frequently than the service schedule recommendation. A new inner element must be fitted at least every third time the outer element is changed. As a reminder, mark the inner element with a felt tipped pen each time the outer element is changed. Do not attempt to wash or clean the elements - they must only be renewed.*

⚠ CAUTION

The outer element must be renewed immediately if the warning light on the instrument panel illuminates.
2-3-3-1

⚠ CAUTION

Do not run the engine when the outer element has been removed.
16-3-3-1

1 Stop the engine.

2 Open the engine compartment top cover.

3 Release clips **A** and remove cover **B**.

4 Remove outer element **C**. Take care not to tap or knock the element. If necessary, remove inner element **D**.

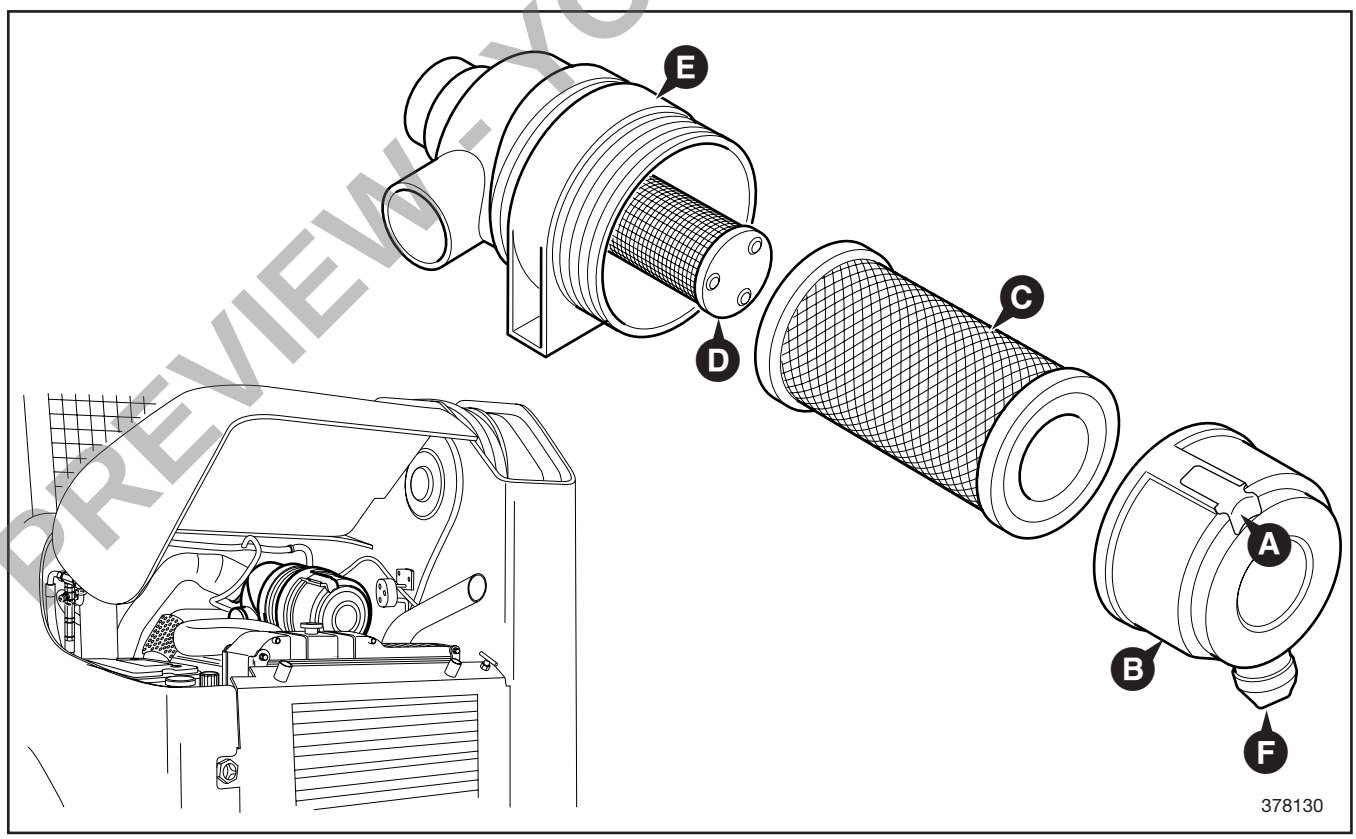
5 Clean inside the canister **E**, cover **B** and dust valve **F**.

6 Carefully insert the new elements into the canister. Ensure they are pushed fully into their spigots. Fit cover **B** with dust valve **F** at the bottom.

7 Make sure that the wire is connected to the **Air Filter Blocked** switch.

8 Close and lock the engine compartment top cover.

Note: *Do not run the engine with the dust valve **F** removed.*



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LIFTING THE MACHINE

Safe Lifting Procedure

⚠ WARNING

You can be injured if you use faulty lifting equipment. Make sure that lifting equipment is in good condition. Make sure that lifting tackle complies with all local regulations and is suitable for the job. Make sure that lifting equipment is strong enough for the job.
INT-1-3-7

Provided a hoist of adequate capacity is available, it is permissible to lift a machine directly onto a suitable transporting vehicle or hoist a machine into a new operating position (eg. onto a ship or down a pit etc.).

Refer to **SPECIFICATION** for machine weight and dimensions.

The machine must be fitted with the four approved lifting brackets, two **A** at the front and two **B** at the rear of the cab, secured by the correct bolts **C** and capscrews **D**. These brackets and fasteners are obtainable only from a JCB Dealer. **Do not use non-genuine substitutes which may not be strong enough for the job.**

Ensure that fasteners are tightened to:

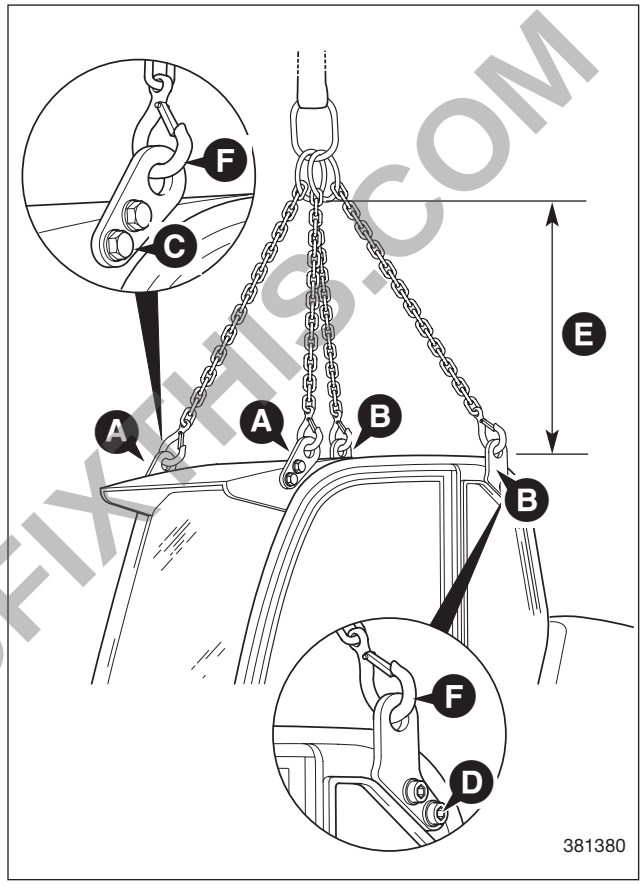
Front brackets (standard bolts **C**)	244 Nm
Rear brackets (socket head capscrews **D**)	395 Nm

Inspect the lifting brackets regularly for signs of fatigue.

Lift the machine using four equal length chains of adequate strength, one from each lifting bracket to a shackle positioned centrally above the cab as shown. To prevent unnecessary strain on the shackles and lifting points, make sure that there is a minimum of 1.2 metres from the cab roof to the lifting shackle as shown at **E**. Make sure that hooks are fully engaged in the brackets as at **F**.

Before lifting the machine into the air, take the strain and ensure that lifting equipment is secure.

Lift and lower the machine smoothly, ensuring that there is no fouling.



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JUMP-STARTING THE ENGINE

⚠ WARNING

In temperatures below freezing, the battery electrolyte may freeze if the battery is discharged or poorly charged. Do not use a battery if its electrolyte is frozen. To prevent the electrolyte from freezing, keep the battery at full charge.

Do not try to charge a frozen battery, or jump-start and run the engine, the battery could explode.

Batteries produce a flammable gas which is explosive; do not smoke when checking the electrolyte levels.

When jump-starting from another vehicle, make sure the two vehicles do not touch each other. This prevents any chance of sparks near the battery.

Switch off all circuits which are not controlled by the starter switch.

Do not connect the booster (slave) supply directly across the starter motor.

Use only sound jump-leads with securely attached connectors. Connect one jump-lead at a time.

The machine has a negative earth electrical system. Check which battery terminal is positive (+) before making any connections.

Keep metal watch straps and jewellery away from the jump-lead connectors and the battery terminals - an accidental short circuit could cause serious burns and damage equipment.

Make sure you know the voltage of the machine. The booster (slave) supply must not be higher than that of the machine. Using a higher voltage supply will damage your machine's electrical system.

If you do not know the voltage of your booster (slave) supply, then contact your JCB dealer for advice. Do not attempt to jump-start the engine until you are sure of the voltage of the booster (slave) supply.

8-2-7-4/1

1 Set all Switches In the Cab to Off

2 Connect the Booster Cables

a Raise the engine compartment top cover.

b Connect the positive booster cable to the positive (+) terminal on the machine battery. Connect the other end of this cable to the positive (+) terminal of the booster supply.

c Connect the negative (-) booster cable to a good earth on the machine, away from the battery (e.g. one of the engine cover hinge brackets).

d Connect the other end of this cable to the negative (-) terminal on the booster supply.

3 Do the Pre-Start Checks

See Steps 2 to 6 of ***Before Starting the Engine***.

4 Start the Engine

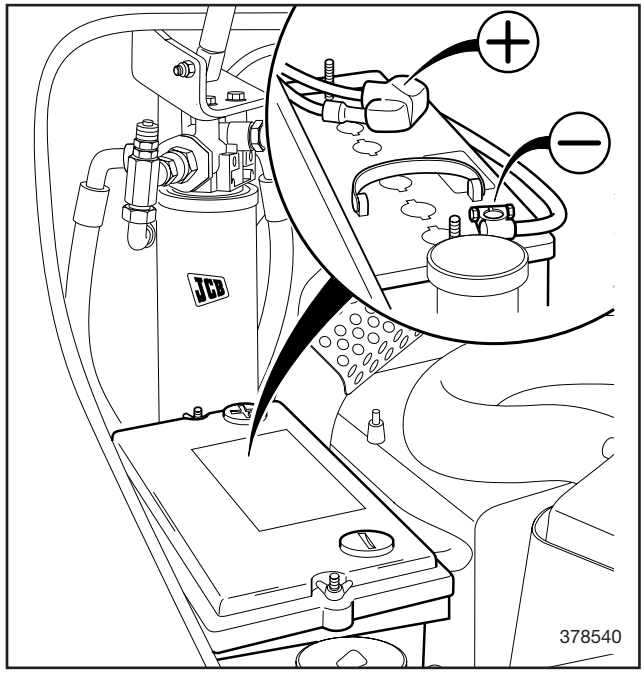
See ***Starting the Engine***.

5 Disconnect the Booster Cables

a Disconnect the negative booster cable from the machine earth. Then disconnect it from the booster supply.

b Disconnect the positive booster cable from the positive (+) terminal on the battery. Then disconnect it from the booster supply.

c Lower and lock the engine compartment top cover.



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GENERAL SPECIFICATION

	190 wheeled kg (lb)	**190 tracked** kg (lb)	**1110 wheeled** kg (lb)	**1110 tracked** kg (lb)
Rated operating capacity with standard bucket	900 (1984)	1320 (2911)	1100 (2425)	1460 (3219)
SAE tipping load with standard bucket	1800 (3969)	2570 (5667)	2200 (4851)	2915 (6428)
Total weight (inc. standard bucket)	3500 (7717)	4400 (9702)	3725 (8214)	4625 (10198)
Weight distribution (unloaded) front/rear %	30/70	30/70	30/70	30/70

TYRE SPECIFICATION

Pneumatic tyres	**size**	**pressure - bar (lbf/in^2)**
Omega HD	12 x 16.5, 10 Ply	3.5 (50)
Omega HD WT	12 x 16.5, 10 Ply	3.5 (50)
Solideal	12 x 16.5, 12 Ply	3.5 (50)
Solideal	33/15.5 x 16.5, 14 Ply	4.0 (60)
Non-inflatable tyres (on special rim)		
Airboss	8.25 x 15 & 12 x 16.5	
Solids	8 x 16	

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