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Safety Notices

Important Information

T1-042

The Operator Manual

⚠ WARNING

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator Manual. You must understand and follow the instructions in the Operator Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

INT-1-4-2

Do not operate the machine without an Operator Manual, or if there is anything on the machine you do not understand.

Treat the Operator Manual as part of the machine. Keep it clean and in good condition. Replace the Operator Manual immediately if it is lost, damaged or becomes unreadable.

Safety Warnings



This safety alert system identifies important safety messages in this manual. When you see this symbol, be alert, your safety is involved, carefully read the message that follows, and inform other operators.

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

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Cab Layout

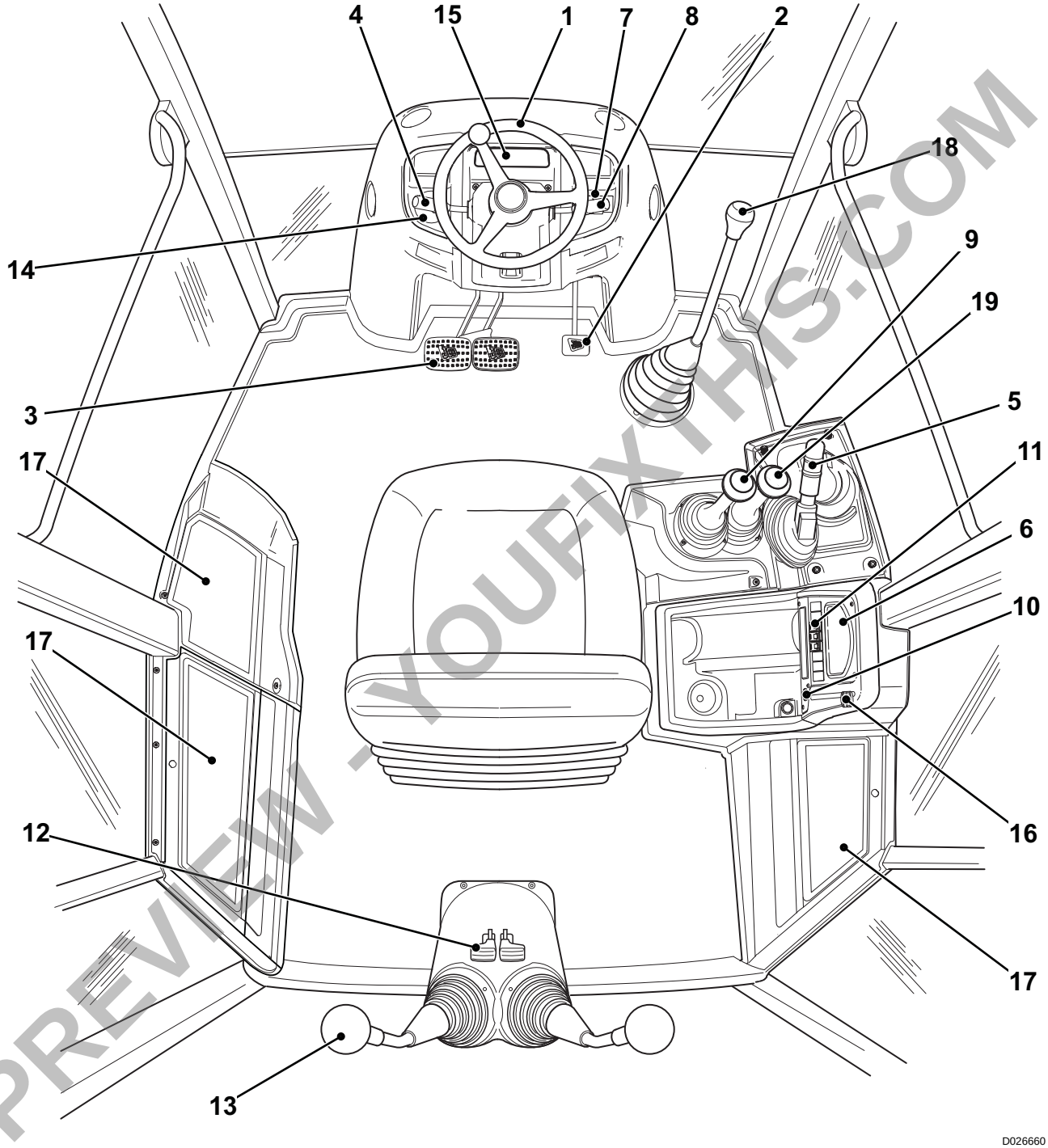


Fig 9.

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Before Starting the Engine

Note: *Read* ***Operating Environment*** *in Operation section if you will be using the machine in very cold or very hot climates.*

Note: *If the fuel tank has been empty or if any part of the fuel system has been drained or disconnected, the fuel system must be primed before attempting to start the engine. See* ***Bleeding the System****, Maintenance section.*

1 The park brake should have been engaged when the machine was last parked. But if it is not already engaged, engage it now.

⚠ DANGER

Before lowering the attachments to the ground, make sure that the machine and the area around it are clear of other people. Anyone on or close to the machine could fall and be crushed by the attachments, or get caught in the linkages.

2-2-3-4

2 Make sure that the attachment is on the ground.

⚠ CAUTION

On machines fitted with hose burst protection valves the attachments cannot be lowered with the engine stopped. On these machines start the engine and lower the attachments before doing the walk round inspection.

2-2-3-5

3 For your own safety (and others) and for a maximum service life of your machine, do a pre-start inspection before starting the engine.

a If you haven't already done it, do a walk round inspection of the outside of the machine. See ***Before Entering the Cab***. Also, complete the daily checks as detailed in the Service Schedules.

b Remove dirt and rubbish from the cab interior, specially around the pedals and control levers.

⚠ WARNING

Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you could lose control of the machine.

2-2-3-6

c Remove oil, grease and mud from the pedals, control levers and the steering wheel.

d Make sure that your hands and shoes are clean and dry.

⚠ WARNING

Loose articles can fall and strike you or roll on the floor. You could be knocked unconscious, or the controls could get jammed. If that happens you could lose control of the machine.

2-2-3-7_1

e Remove or secure all loose articles in the cab - such as lunch boxes, tools etc.

f Inspect the ROPS/FOPS structure for damage. Get your JCB Distributor to repair any damage. Make sure all its securing bolts are fitted and correctly tightened.

g Check around the cab for loose or missing bolts, screws etc. Replace or tighten where necessary.

h Inspect the seat belt and its mountings for damage and excessive wear.

⚠ WARNING

When a seat belt is fitted to your machine replace it with a new one if it is damaged, if the fabric is worn, or if the machine has been in an accident. Fit a new seat belt every three years.

2-3-1-7_1

i Check that the following are in working order:

Lights, Warning Lights, Horn, Indicator Lights, All Switches, Direction Indicators, Hazard Warning Lights, Windscreen Washer and Wipers (if fitted).

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Storage of the Machine

Introduction

T2-074

If you will not use the machine for an extended period, you must store the machine correctly. If you prepare the machine carefully and apply on-going care you can prevent deterioration and damage to the machine while it is in storage.

Note: *JCB Dealers must check stock monthly.*

Storage Area

The machine can be stored in a temperature range of:

-40°C to 54°C (-40°F to 129°F).

When possible, you must keep the machine in a dry building or shelter.

If only an outdoor storage area is available, look for a storage area with good drainage.

If the machine is to be out of use for an extended period, careful preparation and on-going care will minimise the possibility of deterioration and damage while in storage.

Prepare the Machine for Storage

T2-076

1 Clean the machine to remove all unwanted material and corrosive products.

Dry the machine to remove solvents and moisture.

2 Apply grease to the moving parts. Refer to ***Greasing the Machine***.

3 Examine the machine for worn or damaged parts. Replace if necessary.

4 Fill the fuel tank to prevent a build up of condensation in the tank.

5 Examine the coolant condition. Replace if necessary.

6 Examine all fluid levels. Top up if necessary.

Put the Machine into Storage

T2-077

1 Park the machine on level, solid ground.

Park the machine in a position where the machine is easy to get access (in case the machine does not start at the end of the storage period).

Place suitable timbers under the machine to eliminate direct contact with the ground.

2 Retract all rams and lower the attachments to the ground.

3 Vent the hydraulic system.

4 Remove the starter key.

5 Apply a thin layer of grease or petroleum jelly to all exposed ram piston rods.

6 Remove the battery. Charge the battery.

Keep the battery in warm, dry conditions. Charge the battery periodically.

7 If you keep the machine outdoors, cover the machine with tarpaulins or plastic sheets.

During Storage

T2-078

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

1 Clean the machine to remove all unwanted material and corrosives.

Remove the grease or petroleum jelly from the ram piston rods.

2 Install a charged battery.

3 Examine all fluid levels. Top up if necessary.

4 Start the engine.

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Pre-start Cold Checks, Service Points and Fluid Levels

	Operation	10	50	100(1)	500	1000	2000	6000
ENGINE								
Coolant Quality and Level.	- Check	☐	☐	☐	☐	☐		
Cooling System.	- Drain / Refill						☐	☐
Oil level.	- Check	☐	☐	☐	☐	☐	☐	☐
Oil and Filter (2)(3) ⇨ ***Oil and Filter (📄 145)***.	- Change				☐	☐	☐	☐
Air Cleaner Outer Element (4)	- Change					☐	☐	☐
Air Cleaner Inner Element (4).	- Change					☐	☐	☐
Water Separator and Engine Fuel Filter.	- Drain		☐	☐	☐	☐	☐	☐
Water Separator Fuel Filter.	- Change				☐	☐	☐	☐
Engine Fuel Filter(5).	- Change					☐	☐	☐
Front End Accessory Drive (FEAD) Belt Condition ⇨ ***Inspecting the Drive Belt (📄 149)***.	- Check				☐	☐	☐	☐
Front End Accessory Drive (FEAD) Belt ⇨ ***Changing the Drive Belt (📄 149)***.	- Change							☐
Engine Mounting Bolts for Tightness	- Check			☐	☐	☐	☐	☐
All Hoses - Condition ⇨ ***Check the Hydraulic Hoses and Fittings (📄 123)***.	- Check			☐	☐	☐	☐	☐
Radiator(4) ⇨ ***Cleaning the Machine (📄 120)***.	- Clean				☐	☐	☐	☐
Breather Gauze	- Clean						☐	☐
Valve Clearances(5)	- Check / Adjust						☐	☐
Oil Filler and Dipstick Seals(5) ⇨ ***Oil and Filter (📄 145)***.	- Check / Adjust						☐	☐
Rocker Cover and Injector Seals(5)	- Change						☐	☐
Injectors(5)	- Change							☐
Injector(s) Leak Off Rail(5)	- Change							☐
High Pressure Fuel Lines(5)	- Inspect							☐
TRANSMISSION, AXLES AND STEERING								
Transmission Oil Level.	- Check	☐	☐	☐	☐	☐	☐	☐
Transmission Oil(6) ⇨ ***Changing the Oil and Filter (📄 163)***.	- Change			☐		☐	☐	☐
Transmission Filter ⇨ ***Changing the Oil and Filter (📄 163)***	- Change			☐	☐	☐	☐	☐
Axle Oil Level (incl. Hubs when applicable) Front(7)(8)	- Check			☐	☐			
Axle Oil (incl. Hubs when applicable) Rear (7)(8)	- Change			☐		☐	☐	☐
Tyre Pressures and Condition ⇨ ***Tyre Inflation (📄 166)***.	- Check	☐	☐	☐	☐	☐	☐	☐
Wheel Nut Security.	- Check	☐	☐	☐	☐	☐	☐	☐
Front Hub Bearings	- Check			☐	☐	☐	☐	☐

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Machine Description

The JCB Backhoe Loader

P2-1001_3

The Backhoe Loader is a self propelled wheeled machine with a main frame designed to carry both front mounted equipment and rear mounted backhoe equipment with stabilisers.

When used in the backhoe mode, the machine is stationary and normally digs below ground level. A backhoe work cycle normally comprises excavating, elevating, swinging and discharging material

When used in the loader mode (bucket use), the machine loads through forward motion. A loader work cycle normally comprises filling, elevating, transporting and discharge of material.

Intended Use

The machine is intended to be used under normal conditions for the applications described in this manual. If the machine is used for other purposes or in dangerous environments, for example in a flammable atmosphere or in areas with dust containing asbestos, special safety regulations must be followed and the machine must be equipped for use in these environments.

Component List

1 Loader arm

2 Cab

3 Hydraulic oil tank

4 Battery compartment

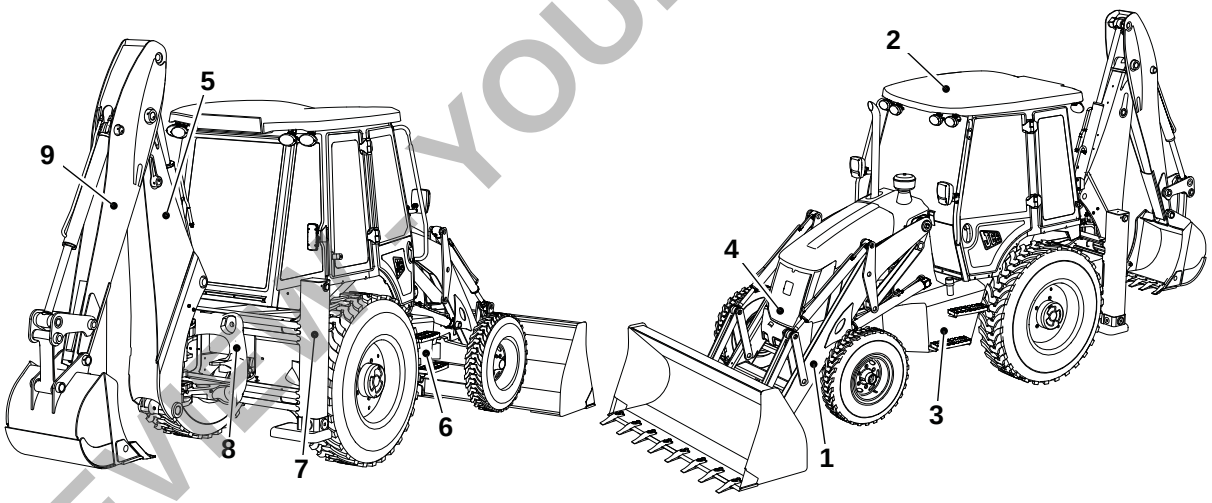
5 Boom

6 Fuel tank

7 Stabilisers

8 Kingpost

9 Dipper



D026650

Fig 2.

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– Damaged hose ends
– Chafed outer covers
– Ballooned outer covers
– Kinked or crushed hoses
– Embedded armouring in outer covers
– Displaced end fittings

Do not use the machine if a hose or hose fitting is damaged. Replace damaged hoses before you use the machine again.

Replacement hoses must be of the same size and standard.

Check the Electrical Circuits

T3-099

Inspect the electrical circuits regularly for:

– Damaged connectors
– Loose connections
– Chafing on wiring harnesses
– Corrosion
– Missing insulation
– Incorrect routing of harness

Do not use the machine if one or more of these faults are found. You must make sure that the electrical circuit is repaired immediately.

Checking The ROPS/FOPS Structure

⚠ WARNING

You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the Roll Over Protection Structure (ROPS)/Falling Objects Protection Structure (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.

INT-2-1-9_6

Check the structure for damage. Check that the mounting bolts are installed and undamaged. Check the bolt torques. ⇒ *Torque Settings (124)*. Tighten them to the correct torque if necessary.

1 Remove the rear wheels to gain access to the rear mounting bolts **A**.

2 Remove the covers **C** and external trim panels **D** to gain access to the front mounting bolts **B**.

Table 4. Torque Settings

Bolts **A** and **B**	205 Nm (150 lbf ft)

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Static Dimensions

3DX Super

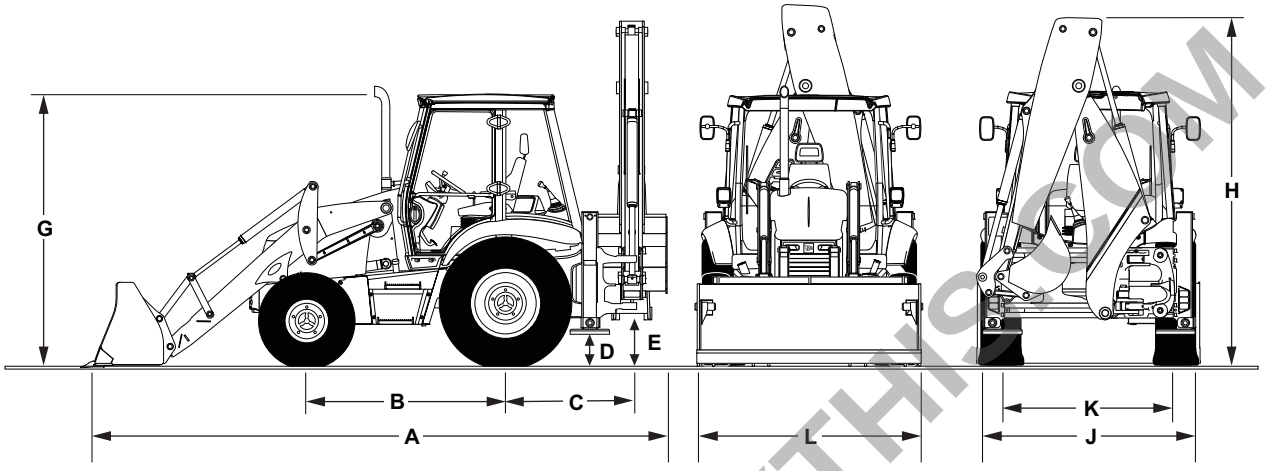


Fig 1.

Table 1. Machine Dimensions

		3DX Super
A	Overall length	5.96 m
B	Wheelbase	2.24 m
C	Slew centre to rear axle centre	1.32 m
D	Minimum ground clearance	0.36 m
E	Slew ground clearance	0.53 m
G	Height to top of cab	2.87 m
H	Overall height	3.61 m
J	Track width-rear	1.73 m
K	Track width-Front	1.91 m
L	Width over bucket	2.23 m

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Optional Attachments

Introduction

T4-002_3

⚠ WARNING

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.

2-4-5-2_1

⚠ CAUTION

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

5-5-1-1_2

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

This part of the manual includes general information on attachment operation and instructions for installation and removal of attachments.

Some attachments are supplied complete with instructions on safety, installing and removing, operation and maintenance. Read and fully understand the information before fitting, using and servicing the attachment. If there is anything you do not understand, ask your JCB Distributor.

Before using any attachment, read again ***Working With The Machine*** in the Operation section and consider how the attachment is going to affect operational safety. With the attachment fitted, there may be changes in the machine's centre of gravity or overall dimensions. This could have an effect on, for example, machine stability, the gradients on which it is safe to operate or the safe distance from power lines.

Practice using attachments off the job before working with them for the first time.

JCB attachments are designed and manufactured specifically to suit the machine's hydraulic system, mounting arrangements and safe load requirements. Attachments which are not designed for use with this machine may cause damage and create safety hazards for which JCB cannot be held responsible. In addition the machine's warranty and any other legislative compliance may be affected by the use of non JCB approved attachments.

If your machine needs the hydraulic system adapting to facilitate the use of auxiliary attachments, you must consult your distributor. Only suitably qualified personnel must re-route hydraulic hoses.

All optional attachments will have limits on their operation. i.e. lifting capacity, speeds, hydraulic flow rates, etc. Always check in the literature supplied with the attachment or in the Specification section of this manual. Some specification limits may also be displayed on the attachments Data/Rating Plate.

⚠ CAUTION

Some attachments may contact parts of the machine when in the fully folded position. Take extra care to avoid damage to the machine.

3-4-1-4

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Digging

P2-2001

To start the dig, reach out with the boom and dipper and position the bucket. ⇨ *Fig 73. (86)*.

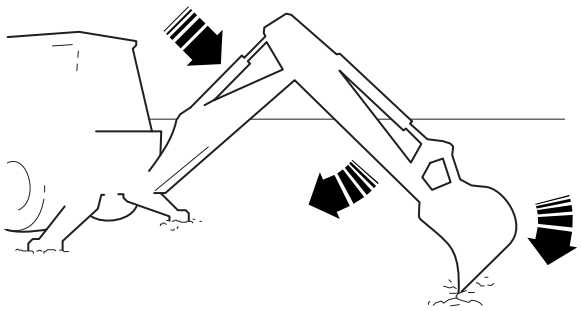


Fig 73.

Slowly close the bucket and at the same time bring the dipper in. Make sure the bucket stays at the same angle to the ground while it travels. If necessary, at the same time apply a downward pressure on the boom, to increase the digging force on the bucket.

When the bucket is full, close it fully and at the same time move the dipper out a little way. ⇨ *Fig 74. (86)*. This will keep soil from building up under the machine.

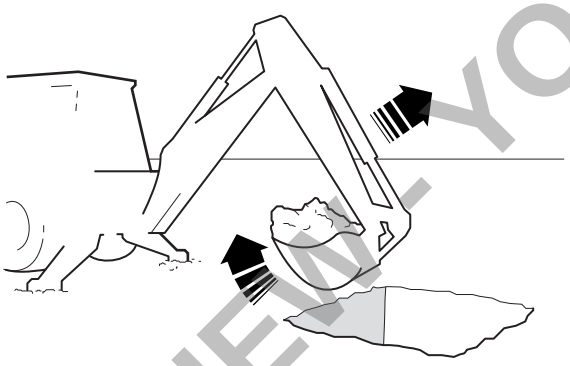


Fig 74.

Swing the bucket towards the dump area. ⇨ *Fig 75. (86)*. Start dumping as the bucket approaches the pile. Do not waste time by dumping too far from the excavation. Dump close to the start dig position. Swing the bucket back to the excavation and start the next dig.

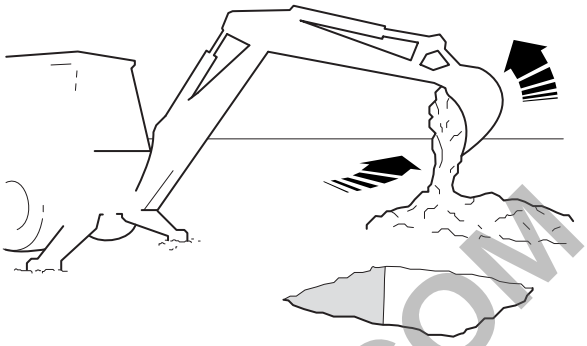


Fig 75.

Note: *Do not use the side of the excavation to stop the bucket. This could damage the machine.*

Backfill the excavation by loading the bucket with soil from the pile. Do not push the soil with the side of the bucket.

Moving the Machine while Digging Down Hill

Note: *When moving the machine downhill make sure you are in the correct driving position. Keep the attachments low to the ground.*

To move the machine when digging down a hill, raise the excavator stabilisers and shovel and carefully drive the machine to its next position in first gear (1).

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