Dear JCB Customer

Even if you have operated this type of equipment before, it is very important that your new machines operations and functions are explained to you by a JCB Dealer Representative following delivery of your new machine.

Following the installation you will know how to gain maximum productivity and performance from your new product.

Please contact your local JCB dealer if the Installation Form has not yet been completed with you.

Your Local JCB Dealer is:

OPERATOR MANUAL

THIS MANUAL SHOULD ALWAYS STAY WITH THE MACHINE

LOADALL - 520-50

ENGLISH - 9821/0500 - ISSUE 3 - APRIL 2012

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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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Specifications

Static Dimensions

520-50

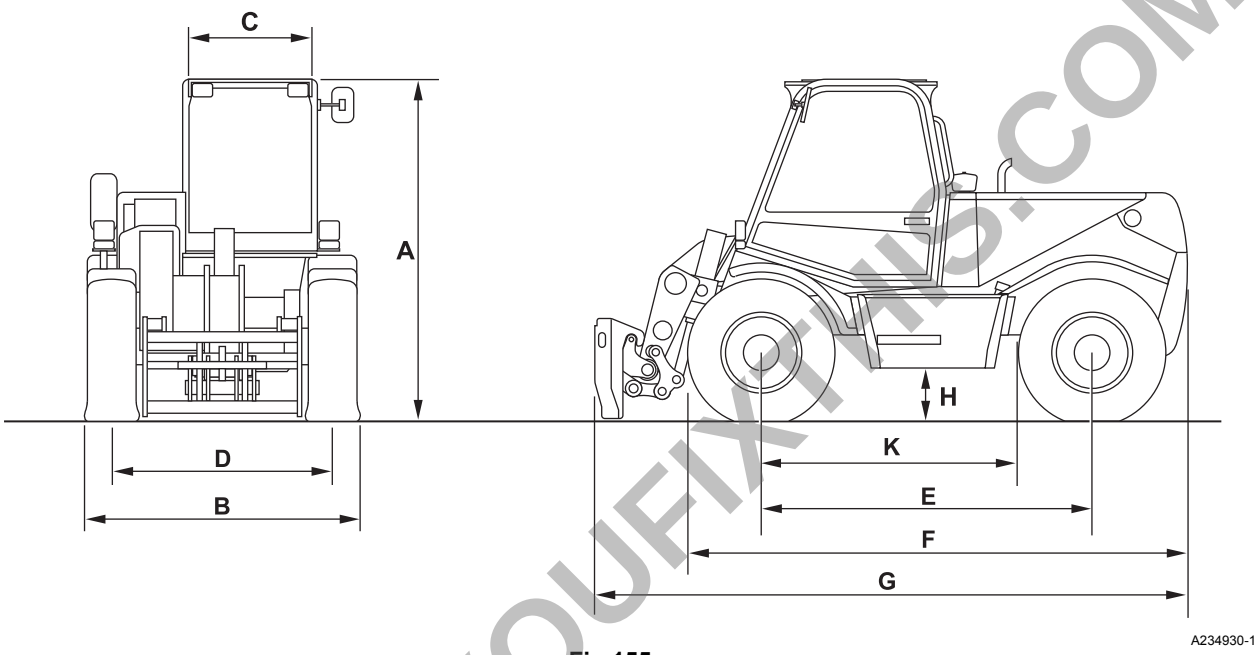


Fig 155.

Table 6.

			520-50
			mm (ft-in)
A	Overall height	- Standard	2120 (6-11)
		- Low cab option	1985 (6-6)
B	Overall width (over tyres)		1800 (5-11)
C	Inside width of cab		830 (2-7)
D	Front track		1530 (5-0)
E	Wheelbase		2000 (6-7)
F	Overall length to front tyres		3080 (10-1)
G	Overall length to front of carriage		3590 (11-9)
H	Ground clearance		300 (1-0)
K	Centre of gravity (unladen)		1020 (3-9)
			kg (lb)
	Weight (unladen)		4700 (10362)

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Cab Layout

Note: *The cab layout illustration is of a typical machine, for variations see the relevant page in this manual.*

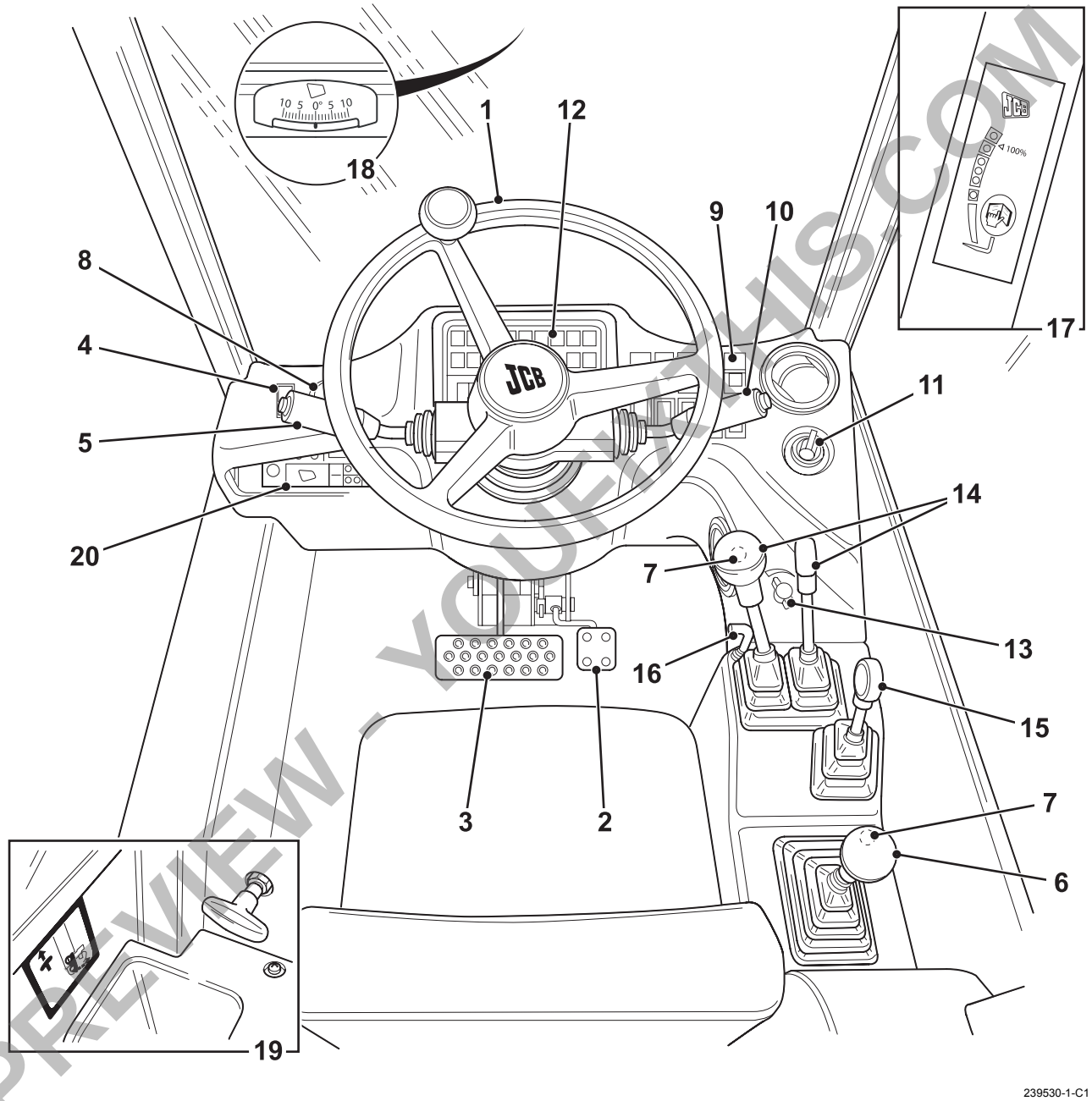


Fig 19.

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– 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.

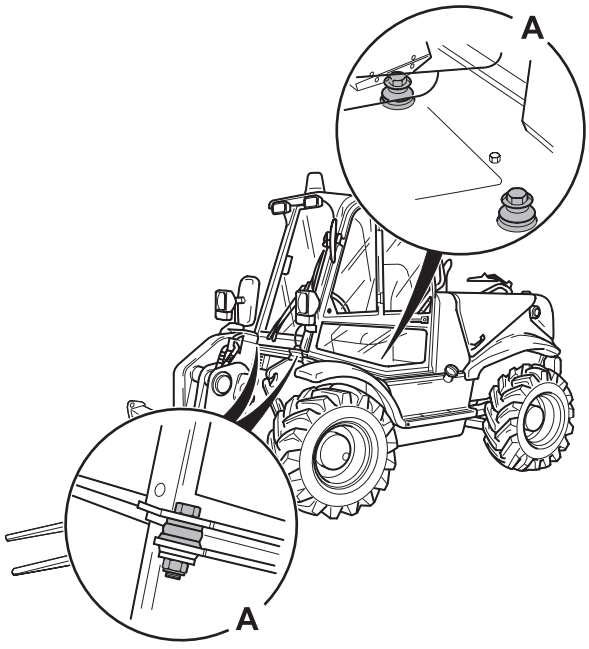
INT-2-1-9_6

For assistance, contact your JCB distributor. Failure to take these precautions could result in death or injury to the operator.

Check the structure for damage. Check that the mounting bolts **A** are installed and undamaged. Check the bolt torques. ⇨ *Table 4. Torque Settings (128)*. Tighten them to the correct torque if necessary.

Table 4. Torque Settings

Item	Nm	lbf ft
A	244	180



S242230-1

Fig 91.

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Longitudinal Load Moment Indicator (LLMI) with Longitudinal Load Motion Control (LLMC) System

Introduction

This section of the manual provides information for the Longitudinal Load Moment Control (LLMC) system which is fitted as standard to European Specification machines and is available as an option on Non European Specification machines.

The following information describes LLMC operation. The LLMI part of the system is as described in Longitudinal Load Moment Indicator (LLMI). ⇨ *Longitudinal Load Moment Indicator (LLMI) (54)*

General Information

The longitudinal load moment (LLM) is a product of the load on the boom and the distance the load is moved forward from the centre of gravity of the machine. As the load is moved forward so the load moment increases to a point where the machine will tip forwards.

The LLMC system slows the operation of hydraulic services as the machine gets closer to its maximum working limit (ie when the load moment could cause the machine to tip forward) when performing loading and placing operations. Automatic isolation of the boom lower and extend services inhibits the operator from exceeding the maximum longitudinal load moment.

Important: *The system does not warn, or prevent the machine tipping or overturning sideways or rearwards. The system is not intended to warn, or prevent tipping or overturning when the machine is travelling, operating on unsuitable ground or subjected to sudden overloading.*

The system is an enhancement to the devices that JCB currently install as standard, for example loadcharts and boom extension markers. The system must not to be relied upon as the primary source of protection for the machine. Duty of care is still with the operator/site agent to:

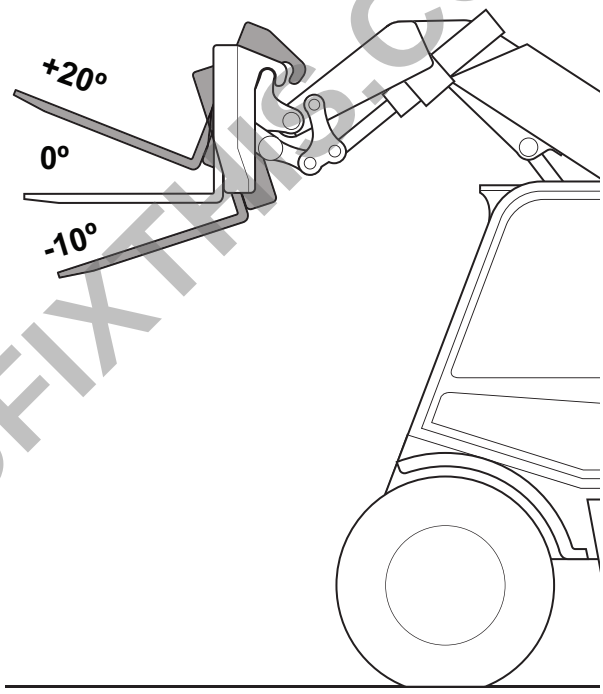
- know the mass and load centre of loads being handled.
- know boom angle and extension that will be required to place the load (this can be checked by doing a dry run first without the load).
- while moving the load, obey lift charts, boom extension markers and LLMI indications.

The LLMC functions at all times except:

- when the boom is fully retracted.
- when the system override is engaged (for a duration of 60 seconds).

The use of handling attachments for unit loads (for example, bales or bulk bags) can cause a significant increase in the overturning moment through use of the crowd and dump operations. Ensure that use of such attachments does not take the machine beyond its stability limit. Refer to machine Load charts.

Only JCB approved attachments shall be used and when laden, the maximum recommended operating angles are between + 20 degrees of crowd and -10 degrees of dump. Operation outside of these limits could lead to loss of load.



C106400

Fig 43.

If operation of crowd or dump exceeds the maximum working limit, the red LED on the LLMI display will illuminate and an audible warning will activate. Stop the operation of crowd/dump immediately. Recover the situation by raising or retracting the load.

⚠ WARNING

Load Control monitors forward machine stability only. Do not use it as a guide to the weight being lifted. Refer to the load charts in the cab. The maximum working load indicated by the Load Control System does not necessarily correspond to the SWL specified on the load charts in the cab.

0184_3

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Transporting the Machine

⚠ WARNING

The safe transit of the load is the responsibility of the transport contractor and driver. Any machine, attachments or parts that may move during transit must be adequately secured.

5-2-5-9

Note: *Before transporting the machine make sure you will be obeying the rules and laws of all the areas that the machine will be carried through.*

Make sure that the transporting vehicle is suitable. See ***Static Dimensions*** (SPECIFICATIONS section) for the dimensions of your machine.

⚠ WARNING

Before moving the machine onto the trailer, make sure that the trailer and ramp are free from oil, grease and ice. Remove oil, grease and ice from the machine tyres. Make sure the machine will not foul on the ramp angle. See Static Dimensions in SPECIFICATION section for the minimum ground clearance of your machine.

2-2-7-5_1

1 Place blocks at the front and rear of the trailer wheels.

2 Move the machine onto the trailer.

- **a** Make sure the ramps are correctly in place and secure.
- **b** Set the boom. Refer to ***Preparing for Road Travel***.
- **c** Carefully drive the machine onto the trailer.
- **d** Make the machine safe with the boom lowered. Refer to ***How to Make the Machine Safe (Boom Lowered)***.

Important: *Put blocks at the front and rear of all four tyres.*

- **e** Check that the overall height of the load is within regulations. Adjust if necessary.
- **f** Secure the cab.
- **g** Cover the exhaust stack.

3 Anchor the machine to the trailer with chains.

Note: *Look for the instructional label **A** to identify the correct tie-down points.*

4 Measure the maximum height of the machine from the ground. Make sure the truck driver knows the clearance height before he drives away.

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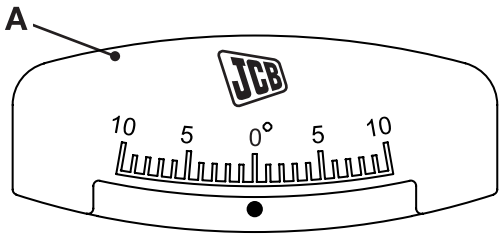
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Inclinometer

P5-2010_3

The lateral position of the machine is indicated by an inclinometer **A** fitted in the cab. Use the inclinometer to check that the machine is level before operating the boom. The machine is level when the inclinometer shows zero degrees (0°). Reposition the machine if a level position cannot be achieved.

For more information, refer to ***Use of Machines on Gradients or Slopes***.



391520-1

Fig 49.

Beacon

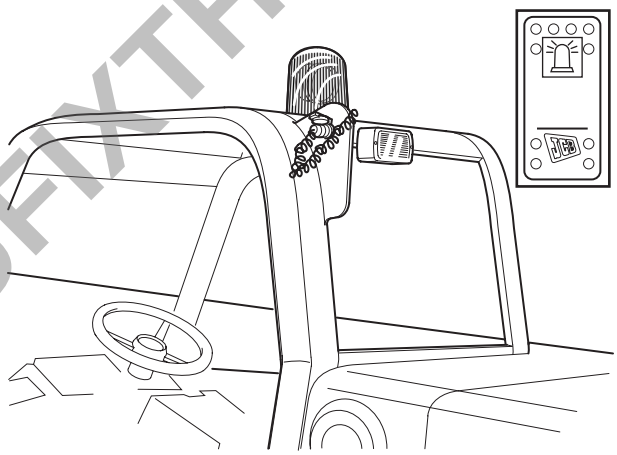
Important: *We recommend that a beacon is fitted if the machine is travelling on public highways. In certain territories you will be breaking the law if you do not fit a beacon when travelling on public highways - make sure you are complying with local laws.*

Fit the Beacon:

1 Fit the beacon **B** to the cab roof and plug the lead **C** into the cab roof socket **D**.

Note: *The beacon has a magnetic base for mounting on the roof.*

2 The beacon will start flashing when switch **E** is pressed on.



C094600

Fig 50.

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Before Entering the Cab

T2-025_3

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 manual until you have learned how to lower the attachments. Also make sure that the park brake is engaged before doing these checks.

2-2-1-1

1 Check for cleanliness.

- **a** Clean the windows, light lenses and rear view mirrors.
- **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 and instructional labels. Replace any that are missing or cannot be read.

2 Check for damage.

- **a** Inspect the machine generally for damaged and missing parts.
- **b** Make sure that the attachment 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.
- **e** Check for oil, fuel and coolant leakages underneath the machine.

⚠ WARNING

You could be killed or injured if a machine tyre bursts. Do not use the machine with damaged, incorrectly inflated or excessively worn tyres.

2-2-1-2

3 Make sure the tyres are correctly inflated.

Check for cut rubber and penetration by sharp objects. Do not use a machine with damaged tyres.

4 Make sure that all of the filler caps are installed correctly.

5 Make sure that all of the access panels are closed and secure.

Note: *If the filler caps and access panels are fitted with locks, we recommend that you lock them to prevent theft or tampering.*

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Changing the Oil and Filter

4-Speed Syncro Shuttle Transmission

The transmission oil should be drained through the suction strainer aperture to flush out any particles which fall off the strainer during its removal.

⚠ WARNING

Make the machine safe before working underneath it. Park the machine on level ground, lower the attachments to the ground. Apply the park brake, put the transmission in neutral and stop the engine. Block both sides of all four wheels.

Disconnect the battery, to prevent the engine being started while you are beneath the machine.

GEN-4-1_1

1 Make the machine safe with the boom lowered. Refer to ***Prepare the Machine for Maintenance***.

⚠ CAUTION

When the strainer is removed, oil will gush out. Keep to one side when you remove the strainer.

2-3-4-1

2 Place a container, of suitable size beneath the suction strainer. Remove bolts **D**. Pull out the strainer **E** and its gasket **F**. Allow the oil to drain into the container. Be aware that the oil may be hot.

3 Clean the strainer with a suitable solvent. Follow the solvent manufacturer's instructions on safety.

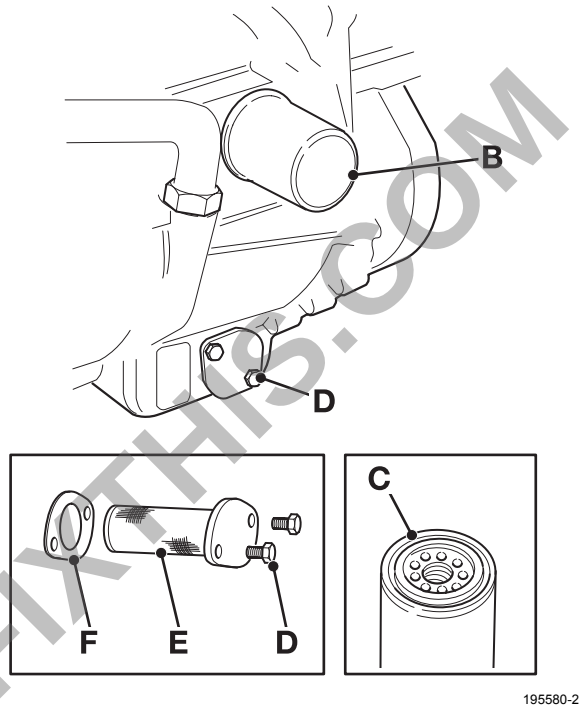
4 Fit the strainer **E** and a new gasket **F**. Apply JCB Threadlocker and Sealer to bolts **D** before fitting and tightening them. Torque tighten the bolts to 10 Nm (7 lbf ft).

5 Unscrew and remove the filter **B**. Fit the new filter:

- **a** Smear seal **C** with transmission oil.
- **b** Screw the filter on until it just contacts the filter head.
- **c** Turn the filter at least another 3/4 of a turn.

6 Fill the system with new oil through the dipstick/filler. Do not fill past the top mark on the dipstick.

Note: *Fit only a genuine supplied JCB filter, otherwise damage to the system may be incurred through contamination.*



195580-2

Fig 131.

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Driving Across Gradients

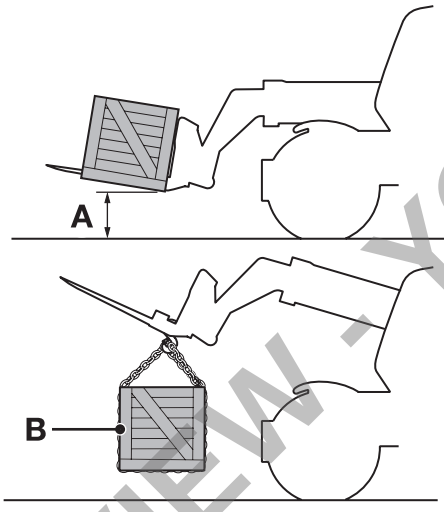
Read and understand the instructions in this manual before you travel across a gradient.

Maximum stability is achieved when the machine is operated on firm level ground. Stability will be reduced when the machine is operated on a cross gradient.

When you travel across a gradient, fully retract the boom and travel slowly at walking pace.

Do not raise the carriage higher than necessary. This would normally be that the lowest point of the load is not more than 500mm (20in) above the ground, with a load which is carried on top of the forks, as shown at **A**. Some loads may be carried suspended below the forks, as shown at **B**. In this case, assess the risk involved before raising the carriage sufficiently to achieve ground clearance.

Remember, be careful, be safe. Your life, or the lives of others could be in danger if you take unnecessary risks.



A348341-5

Fig 76.

Lifting Operations on Gradients

⚠ WARNING

Conducting lifting operations on gradients can be dangerous. The machine can become laterally unstable and tip over if the instructions in this section are not followed and understood. You and others can be seriously injured or killed. Ensure you follow and fully understand the guidelines given in this manual.

0019

Lifting operations should not be undertaken on gradients unless the machine is level across its width (i.e. laterally level).

⚠ WARNING

Stop the machine and apply the park brake before conducting any lifting operations.

0020

Longitudinal and lateral stability are two important safety factors that must be considered if the boom is to be extended, or raised by more than 500mm (20in) above the ground with the machine on a gradient.

Longitudinal Stability

P5-2040_2

Longitudinal (forward) stability is measured and shown by the Longitudinal Load Moment Indicator (LLMI), if fitted, in the cab. Read and understand the section describing the operation of the LLMI before lifting with the machine. See ***Longitudinal Load Moment Indicator*** (OPERATION section).

Always operate the machine within the longitudinal stability limits indicated by the longitudinal load moment indicator (if fitted) or load chart.

Lateral Stability

P5-2042

Ensure you have taken into account all factors that may affect machine stability before a lifting operation is started when working on a gradient. See ***Use of Machines on Gradients And Slopes*** (OPERATION section). Make sure the machine is level across its width to maintain lateral (sideways) stability.

Inclinometer **A** can be used to check if the machine is level.

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