

## LUBRICANTS - HEALTH AND SAFETY

It is most important that you read and understand this information and the publications referred to. Make sure all your colleagues who are concerned with lubricants read it too.

### Hygiene

JCB lubricants are not a health risk when used properly for their intended purposes.

However, excessive or prolonged skin contact can remove the natural fats from your skin, causing dryness and irritation.

Low viscosity oils are more likely to do this, so take special care when handling used oils, which might be diluted with fuel contamination.

Whenever you are handling oil products you should maintain good standards of care and personal and plant hygiene. For details of these precautions we advise you to read the relevant publications issued by your local health authority, plus the following.

### Storage

Always keep lubricants out of the reach of children.

Never store lubricants in open or unlabelled containers.

### Waste Disposal

All waste products should be disposed of in accordance with all the relevant regulations.

The collection and disposal of used engine oil should be in accordance with any local regulations. Never pour used engine oil into sewers, drains or on the ground.

### Handling

#### New Oil

There are no special precautions needed for the handling or use of new oil, beside the normal care and hygiene practices.

#### Used Oil

Used engine crankcase lubricants contain harmful contaminants.

Here are precautions to protect your health when handling used engine oil:

- 1 Avoid prolonged, excessive or repeated skin contact with used engine oils.

- 2 Apply a barrier cream to the skin before handling used engine oil.

- 3 Note the following when removing engine oil from skin:

- a Wash your skin thoroughly with soap and water.
- b Using a nail brush will help.
- c Use special hand cleansers to help clean dirty hands.
- d Never use petrol, diesel fuel, or paraffin for washing.
- e Avoid skin contact with oil soaked clothing.
- f Don't keep oily rags in pockets.
- g Wash dirty clothing before re-use.
- h Throw away oil-soaked shoes.

### First Aid - Oil

#### Eyes

In the case of eye contact, flush with water for 15 minutes. 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 on sand or a locally approved brand of absorbent granules. Scrape up and remove to a chemical disposal area.

### Fires

Extinguish with carbon dioxide, dry chemical or foam extinguishers. **Do not use water.** Fire-fighters should use self-contained breathing apparatus.

## SERVICE REQUIREMENTS

### Introduction

Your machine has been designed and built to give maximum performance, economy and ease of use under a wide variety of operating conditions. Prior to delivery, your machine was inspected both at the Factory and by your Distributor to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble free operation it is important that the routine services, as specified in this Handbook, are carried out by an approved JCB Distributor at the recommended intervals.

### Maintenance

This section of the Handbook gives full details of the service requirements necessary to maintain your JCB machine at peak efficiency.

To further protect your machine's performance it is essential your JCB Distributor carries out an initial service and inspection when the machine is one month old or when it has completed 100 hours of operation (whichever occurs first). You should notify your Distributor in advance to allow the necessary arrangements to be made.

JCB regularly updates its Distributors advising them of any product developments, changes in specifications and procedures. Therefore only a JCB Distributor is fully able to maintain and service your machine.

At the rear of this Handbook is a Service Record Sheet which will enable you to plan your service requirements and keep a service history record. This record sheet should be dated, signed and stamped by your Distributor each time your machine is serviced.

Remember, if your machine has been correctly maintained, not only will it give you improved reliability but its resale value will be greatly enhanced.

### Owner/Operator Support

JCB together with your Distributor wants you to be completely satisfied with your new JCB machine. If you do encounter a problem however, you should contact your Distributor's Service Department which is there to help you!

You will have been given the names of the relevant service contacts at your Distributor when the machine was installed.

To get the most from your Distributor please help the staff to satisfy you by:

- 1 Giving your name, address and telephone number.
- 2 Quoting your machine model and serial number.
- 3 Date of purchase and hours of work.
- 4 Nature of the problem.

Remember, only your JCB Distributor has access to the vast resources available at JCB to help support you. In addition, your Distributor is able to offer a variety of programmes covering Warranty, Fixed Price Servicing, Safety Inspections, including weight tests, covering both legal and insurance requirements:

### Service/Maintenance Agreements

To help plan and spread the costs of maintaining your machine, we strongly recommend you take advantage of the many Service and Maintenance Agreements your Distributor can offer. These can be tailor made to meet your operating conditions, work schedule etc.

Please consult your JCB Distributor for details.

## 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 to correctly gauge service intervals. 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. If it is necessary to work with the boom raised, then the boom safety strut must be installed. See Boom Safety Strut (MAINTENANCE section).**

5-3-1-1

### SERVICE SCHEDULES (continued)

Pre-start Cold Checks Service Points and Fluid Levels		Operation	Daily 10 Hr	Weekly 50 Hr	First 100 Hr	6 Monthly 500 Hr	Yearly 1000 Hr	2 Yearly 2000 Hr
<b>ENGINE</b>								
Engine Air Filter Pre-cleaner	Clean		•	•	•	•	•	•
Oil Level and Condition	Check		•	•	•	•	•	•
Oil and Filter	(1) Change				•	•	•	•
Air Cleaner Dust Valve	Clean				•	•	•	•
Air Cleaner Outer Element	Change					•	•	•
Air Cleaner Inner Element	Change							•
Fuel System For Leaks and Contamination	Check		•	•	•	•	•	•
Fuel Filter	Drain			•	•	•	•	•
Fuel Filter	Change				•	•	•	•
Coolant Level and Antifreeze Strength	Check		•	•	•	•	•	•
Fuel Sedimenter	Drain and clean			•	•	•	•	•
Fan Belt Tension/Condition	Check				•	•	•	•
Valve Clearances (AA - AC codes)	*Check and Adjust							•
Valve Clearances (AJ - AS codes)	*Check and Adjust						•	
Engine Mount Security	Check				•	•	•	•
Rain Cap/Pre-cleaner Installed if fitted	Check				•			
Radiator	Clean					•	•	•
<b>TRANSMISSION AND AXLES</b>								
Transmission Oil Level	Check		•	•	•	•		
Transmission Oil	(2) Change						•	•
Transmission Oil Filter	Change				•	•	•	•
Axle(s) Oil Level	Check			•	•	•	•	•
Axle(s) Oil	Change					•	•	•
Hub Oil Level	Check			•				
Hub Oil	(3) Change				•	•	•	•
Drive Shafts and Universal Joints	Security/Grease				•	•	•	•
Axle Pivots and Linkages	Grease			•	•	•	•	•
Axle Breather(s)	Check				•	•	•	•
Tyre Pressures/Condition	Check		•	•	•	•	•	•
Hub Wheel Bearings	Check				•	•	•	•
Transmission Strainer	Clean						•	•
Wheel Nut Security	Check		•	•	•	•	•	•
Wheel Alignment	Check		•	•		•	•	•
Trunnion Bearings	*Check/Adjust				•	•	•	•
Steering Stops (if fitted)	Security				•	•	•	•
Transmission Mount Security	Check				•			
Axle Mount Security	Check				•			

- (1) In arduous conditions (eg. refuse re-handling, waste paper reclamation etc.) change the oil and filter after every **250 Hours** or three months (whichever comes first).
- (2) After a major transmission repair, the new oil should be run to operating temperature and changed again to remove any contamination which entered during the repair. Change the oil and filter after a further 100 hours if the oil was heavily contaminated because of, or from the failure (eg. water contamination).
- (3) After a hub repair, the new oil should be run to temperature and changed again to remove any contamination which entered during the repair. Change the oil again after a further 100 hours to remove any bedding-in wear. This is particularly important if new brake plates have been fitted.

**Note:** Jobs which should be done by a specialist are shown by \*.  
First 100 hrs service only to be completed by JCB Distributor.

### SERVICE SCHEDULES (continued)

Pre-start Cold Checks Service Points and Fluid Levels		Operation	Daily 10 Hr	Weekly 50 Hr	First 100 Hr	6 Monthly 500 Hr	Yearly 1000 Hr	2 Yearly 2000 Hr
<b>HYDRAULICS</b>								
Oil Level	Check			•	•	•	•	
Oil	*Sample/Change							•
Oil Filter	Change			•	•	•	•	•
Suction Strainer	*Clean							•
<b>BRAKES</b>								
Brake System Fluid	Check Level		•	•	•	•	•	•
Brake System Fluid	Change							•
Brake Plate Condition	Check					•	•	•
<b>ELECTRICS</b>								
Battery Terminals for Condition & Tightness	Check				•	•	•	•
Wiring for Chaffing	Check				•	•	•	•
<b>BODYWORK AND CAB</b>								
Lift/Displacement/Tilt/Steer Ram Pivot Pins	Grease			•		•	•	•
Fire Extinguisher	Check	•	•		•	•	•	•
Wing Mirrors Condition & Security	Check	•	•			•	•	•
ROPS/FOPS Structure	Check	•						
All Pivot Pins	Grease			•	•	•	•	•
Doors and Hinges	Lubricate			•	•	•	•	•
Wear Pad Runways	Waxoyl				•	•	•	•
Inner Boom Hoses	Grease				•	•	•	•
Boom Wear Pad Clearance	Check/Adjust				•	•	•	•
	Replace if required							
Control Lever Linkages	Lubricate			•	•	•	•	•
Wear Pad Condition/Security	Change as required			•	•	•	•	•
Windscreen Washer Fluid Level	Check	•	•	•	•	•	•	•
Cab Heater Filter (if fitted)	Clean				•	•	•	•
<b>ATTACHMENTS</b>								
Carriage Lock Pins	Grease		•		•	•	•	•
Hydraulic Tow Hitch (if fitted)								
Inner Leg	Waxoyl				•	•	•	•
Pivot Pin	Grease				•	•	•	•
Release Cable/Return Spring	Check		•		•	•	•	•

**Note:** Jobs which should be done by a specialist are shown by \*.

## SERVICE SCHEDULES (continued)

Functional Test and Final Inspection	Operation	10 Hr	50 Hr	100 Hr	500 Hr	1000 Hr	2000 Hr
<b>ENGINE</b>							
Idle Speed	*Check and Adjust			•	•	•	•
Torque Converter Stall Speed	*Check			•	•	•	•
Max. No Load Speed	*Check and Adjust			•	•	•	•
Throttle System and Control Cable	Check/Adjust			•	•	•	•
Exhaust Smoke	Check	•	•	•	•	•	•
Exhaust System Security	Check			•	•	•	•
Air Inlet System Security	Check			•	•	•	•
Engine for Vibration/Noise	Check			•	•	•	•
<b>TRANSMISSION, AXLES &amp; STEERING</b>							
Transmission Operation	Check	•	•		•	•	•
Steer Operation/Phasing	Check	•	•	•	•	•	•
Torque Converter Mainline Pressure	*Check			•	•	•	•
Clutch Disconnect/Dump Pedal/Button	Check			•	•	•	•
2WD/4WD Selection (if fitted)	Check			•	•	•	•
Forward/Reverse/Gear - Selection/Operation	Check			•	•	•	•
Neutral Start Operation	Check			•	•	•	•
<b>HYDRAULICS</b>							
Operation Of All Services	Check	•	•	•	•	•	•
Hose Burst Protection Valves (if fitted)	Check			•	•	•	•
MRV Pressure at Max rpm	Check/Adjust			•	•	•	•
ARV Pressure at 750 rpm.	Check/Adjust			•	•	•	•
Steer Circuit MRV Pressure	Check/Adjust			•	•	•	•
Fan Motor Speed (if fitted)	Check/Adjust				•	•	•
Attachment Operation/Remote Servo (if fitted)	Check			•	•	•	•
Piston Rods Chrome	Check			•	•	•	•
Boom Extension/Phasing (3 stage boom)	Check			•	•	•	•
Parallel Lift/Lower	Check			•	•	•	•
Stabiliser Leg & Chassis Levelling (Sway) Cut-Out (if fitted)	Check			•	•	•	•
<b>BRAKES</b>							
Foot Brake Operation	Check	•	•	•	•	•	•
Parking Brake	Check/Adjust	•	•	•	•	•	•
<b>ELECTRICS</b>							
Starter Motor	*Check			•	•	•	•
Alternator	*Check Output			•	•	•	•
All Electrical Equipment Operation (warning lights, beacon, alarms, horn, wipers)	Check	•	•	•	•	•	•
Safe Load Indicator	Check/Calibrate	•	•	•	•	•	•
Stabiliser Indicators	Check	•	•	•	•	•	•
<b>BODYWORK AND CAB</b>							
Inclinometer (if fitted)	Check			•	•	•	•
Glazing for Correct Fit/Leaks	Check			•			
Seat/Seat Belts	Check	•	•	•	•	•	•
Air Conditioning (if fitted)	Check			•	•	•	•
Forks	Fit and Check Security	•	•	•	•		
Generally for damage, leaks & wear	Check	•	•	•	•		

**Note:** Jobs which should be done by a specialist are shown by \*.



## BOOM SAFETY STRUT

### **⚠ WARNING**

You could be killed or injured if the boom drops while you are working under it. Install the safety strut as instructed below before doing any maintenance work with the boom raised.

5-3-1-2

### **⚠ CAUTION**

You will have to climb onto the machine to fit or remove the strut. Take care, especially if the machine is wet. Remove mud and oil before climbing onto the machine. Do not use the exhaust as a handhold. It can burn you.

5-3-1-4/1

### **⚠ WARNING**

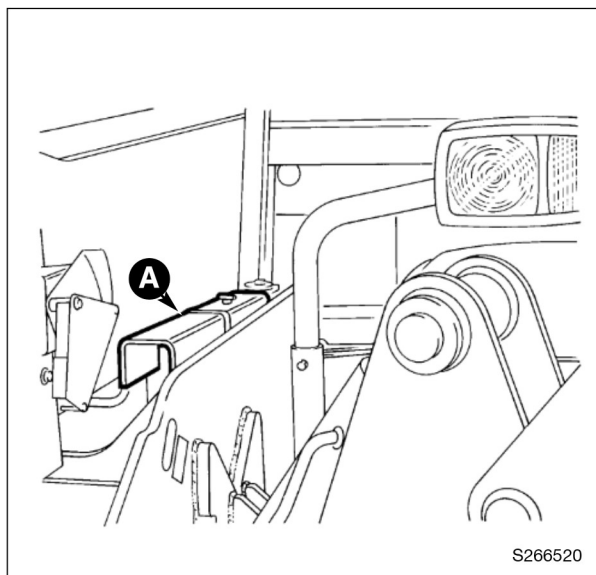
You could be killed or injured if the boom is lowered while you are under it. Keep people away from the machine while you fit or remove the strut.

5-3-1-3/1

Before fitting the safety strut remove any load on the forks and empty buckets or attachments.

### Installing

- 1 Fully retract the boom (unless it needs to be extended for maintenance). Turn the steering wheel to the right to allow access to the stowage position. Raise the boom just far enough to install the strut.
- 2 Stop the engine. Make sure the parking brake is engaged and the transmission is in neutral. Remove the starter key.
- 3 Remove the strut from its stowage position **A**.

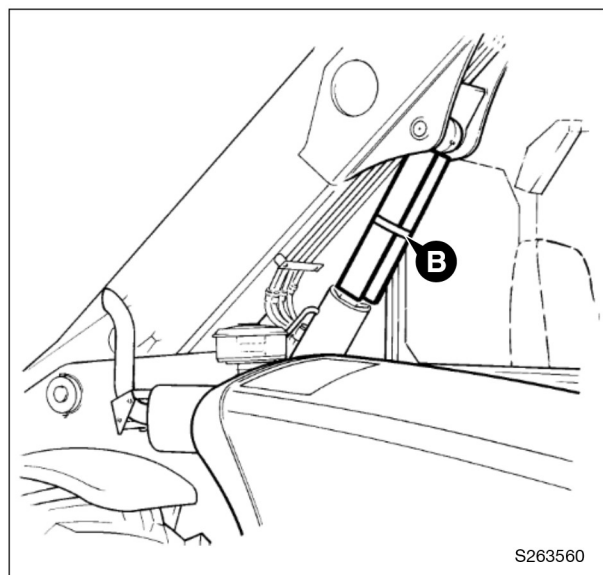


- 4 Place the strut around the lift ram piston rod **B**. Secure it in position.
- 5 To prevent any chance of the boom creeping down and trapping your fingers, the boom should be lowered onto the strut.

*Note: Lower the boom carefully, to prevent possible damage to the strut. Stop as soon as the weight of the boom is on the strut.*

### Removing

- 1 Raise the boom to take the weight off of the strut.
- 2 Stop the engine. Make sure the parking brake is engaged and the transmission is in neutral. Remove the starter key.
- 3 Remove the strut.
- 4 Secure the strut in its stowage position **A**.



## ENGINE COVER

### Opening/Closing the Cover

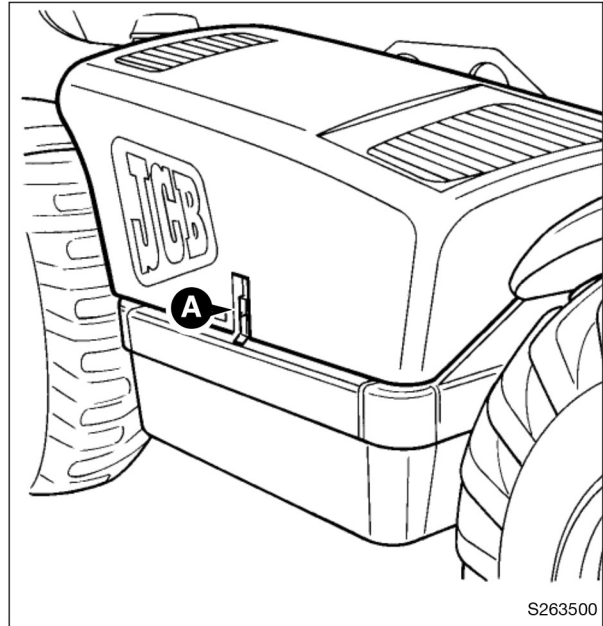
Access to the engine is by opening the cover.

#### **WARNING**

**The engine has exposed rotating parts. Do not open the engine cover while the engine is running. Do not use the machine with the cover open.**

INT-2-1-6/1

- 1** Stop the engine. Make sure the parking brake is engaged and the transmission is in neutral. Remove the starter key.
- 2** Unlock and release catch **A**. Allow the cover to raise on its gas strut. Keep hold of the cover while it rises.
- 3** Pull the cover down and engage catch **A**. We recommend you lock the engine cover



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## CLEANING THE MACHINE

Clean the machine using water and/or steam. Avoid using neat detergent - always dilute detergents as per the manufacturer's recommendations, otherwise damage to the paint finish may occur. **Always grease the machine after pressure washing or steam cleaning.**

**Note:** Excessive power washing can damage seals and bearings. Do not direct high power water jets directly at oil seals or universal joints.

Pay particular attention to the following:

- 1 If the radiator tubes/fins get clogged the radiator will be less efficient.

Brush off all debris from the cooler tubes and fins using a soft bristle brush. Make sure the loosened material is brushed out of the cooler enclosure.

Open the engine cover to clean both sides of radiator **A**.

On machines with air conditioning, release fastener **B** and hinge the condenser away from the radiator. Clean both sides of condenser **C**.

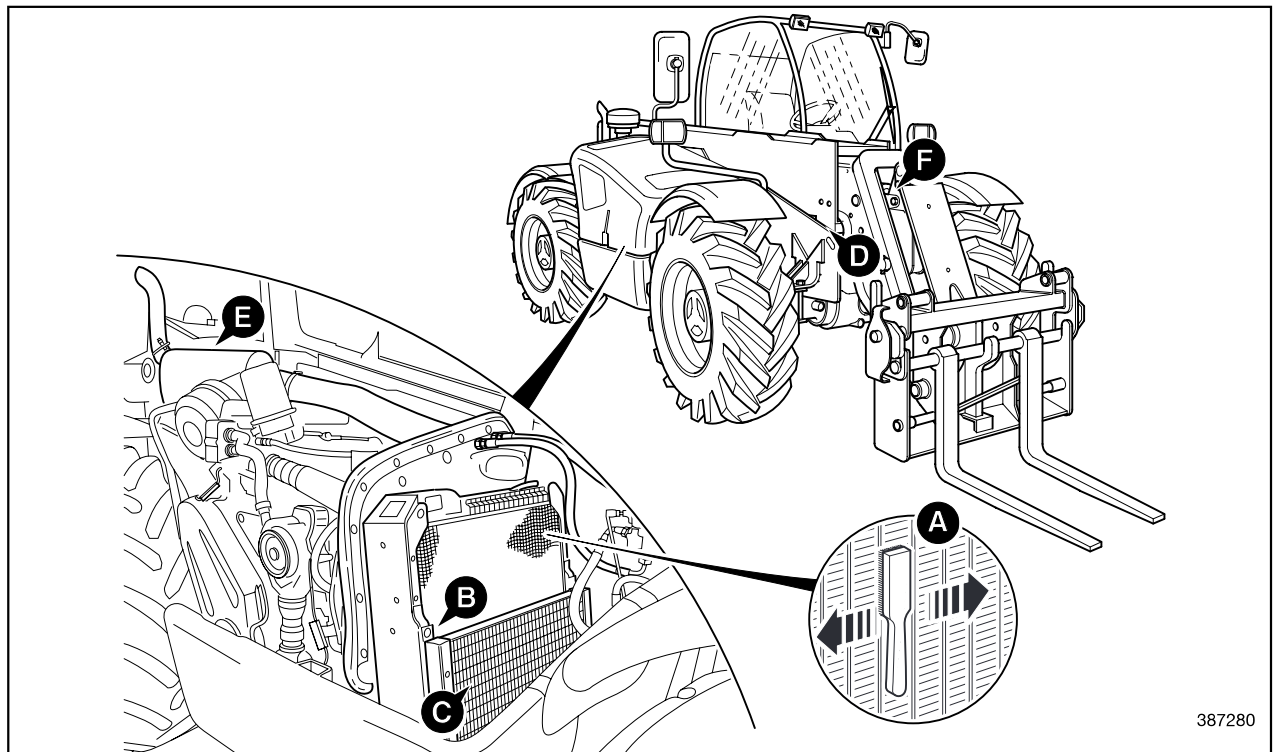
- 2 Debris can collect under the boom **D**. Remove especially all combustible material.

- 3 Do not allow debris to accumulate around the engine, pay particular attention to the exhaust area **E**, remove all combustible material.

- 4 Do not allow debris to accumulate in the cavity **F** at the end of the boom on 530 and 540 machines. Remove and clean away all debris that may have built up around the tilt ram.

### WARNING

**Airborne particles of light combustible material such as straw, grass, wood shavings, etc. must not be allowed to accumulate within the engine compartment or in the propshaft guards (when fitted). Please inspect these areas frequently and clean at the beginning of each work shift or more often if required. Before opening the engine cover, ensure that the top is clear of debris.**  
5-3-1-12/2



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## CHECKING FOR DAMAGE

Inspect steelwork for damage. Note damaged paintwork for future repair.

Make sure all pivot pins are correctly in place and secured by their locking devices.

Ensure that the steps and handrails are undamaged and secure.

Check for broken or cracked window glass. Replace damaged items.

Check all bucket teeth for damage and security.

Check all lamp lenses for damage.

Inspect the tyres for damage and penetration by sharp objects.

Check that all safety decals are in place and undamaged. Fit new decals where necessary see **Safety Decals** (*INTRODUCTION* section).

## SEAT BELT

### Checking the Seat Belt Condition and Security

#### WARNING

**A JCB approved 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 regardless of condition.**

2-3-1-8/1

Inspect the seat belt for signs of fraying and stretching. Check that the stitching is not loose or damaged. Check that the buckle assembly is undamaged and works correctly.

Check that the belt mounting bolts are undamaged, correctly fitted and tightened.

## GREASING

#### WARNING

You must grease the machine regularly to keep it working efficiently, particularly after pressure washing. Regular greasing will also lengthen the machine's working life. Grease the following areas daily. Greasing should be done with a grease gun. Normally, two strokes of the gun should be enough. Stop greasing when fresh grease appears at the joint. Use **JCB HP Grease** or equivalent.

In the following illustrations the grease points are numbered. Count them off as you grease them.

**Note:** Some optional attachments may need greasing more often. See *OPTIONAL ATTACHMENTS* section.

**All 50 hour greasing operations must be carried out at 10 hour intervals if JCB MPL Grease is used.**

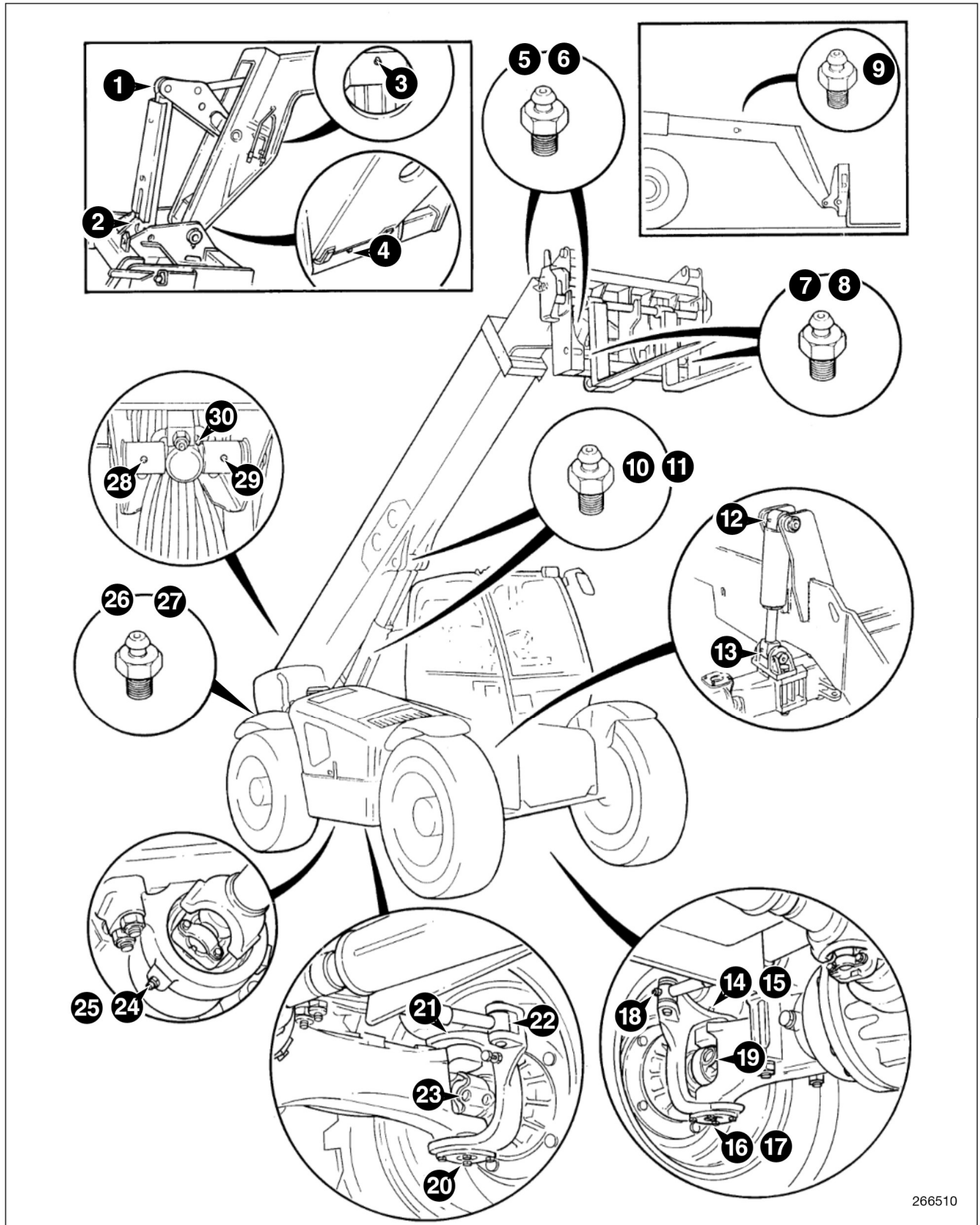
**All 500 hour greasing operations must be carried out at 50 hour intervals if JCB MPL Grease is used.**

**You will be working close into the machine for these jobs. Lower the boom if possible. Remove the starter key and disconnect the battery. This will prevent the engine being started. Make sure the parking brake is engaged.**

**Check all four wheels before getting under the machine.**

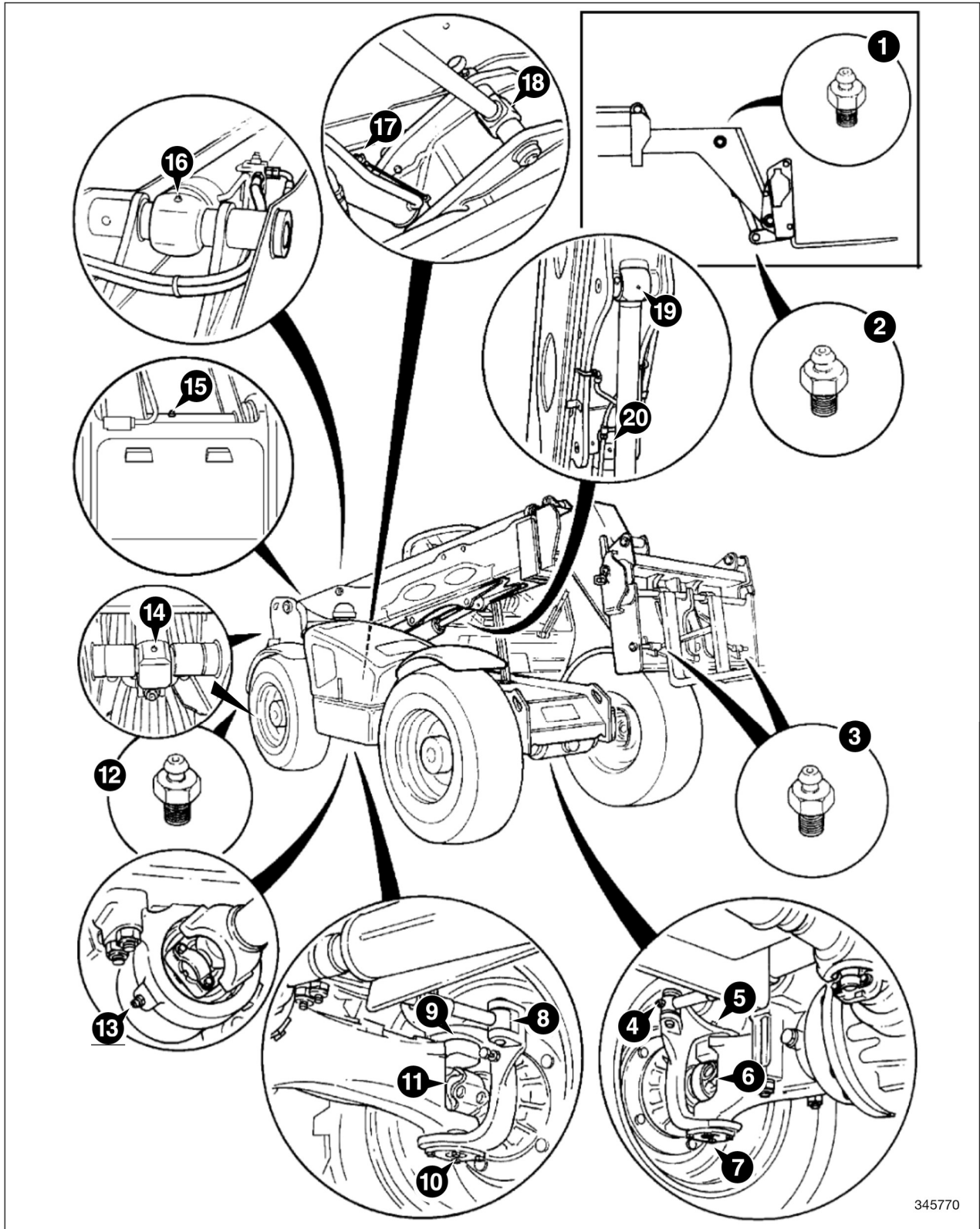
5-3-1-8

GREASING (EVERY 50 HOURS)  
(530, 540)



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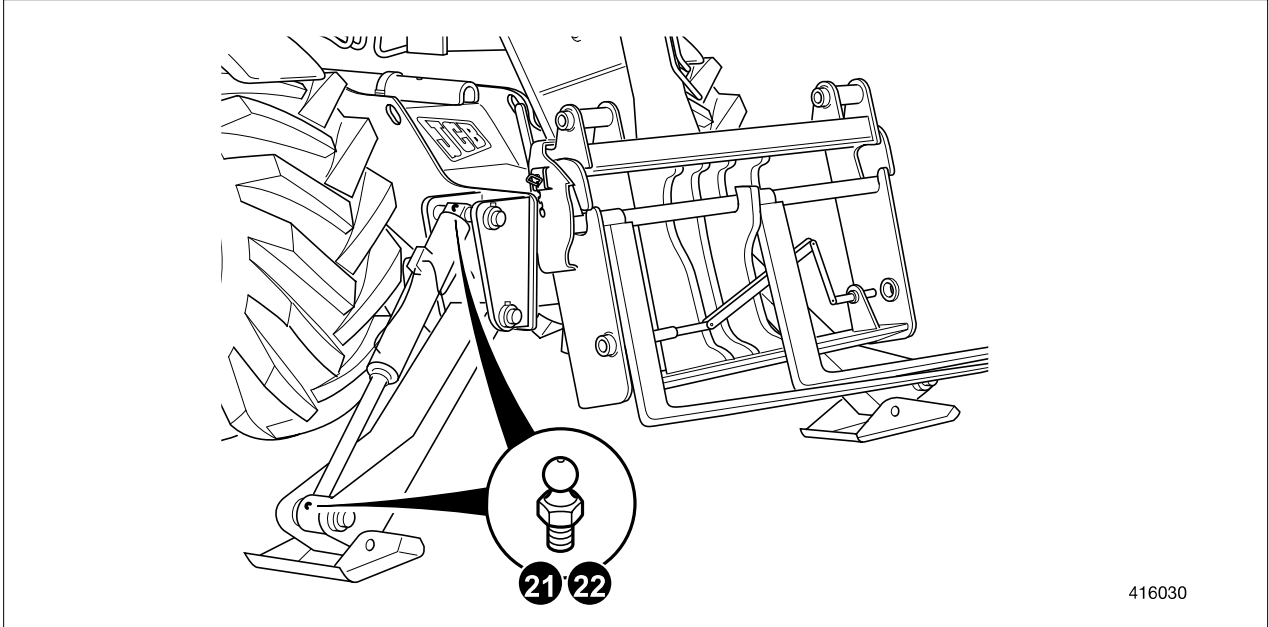
GREASING (EVERY 50 HOURS)  
(535)



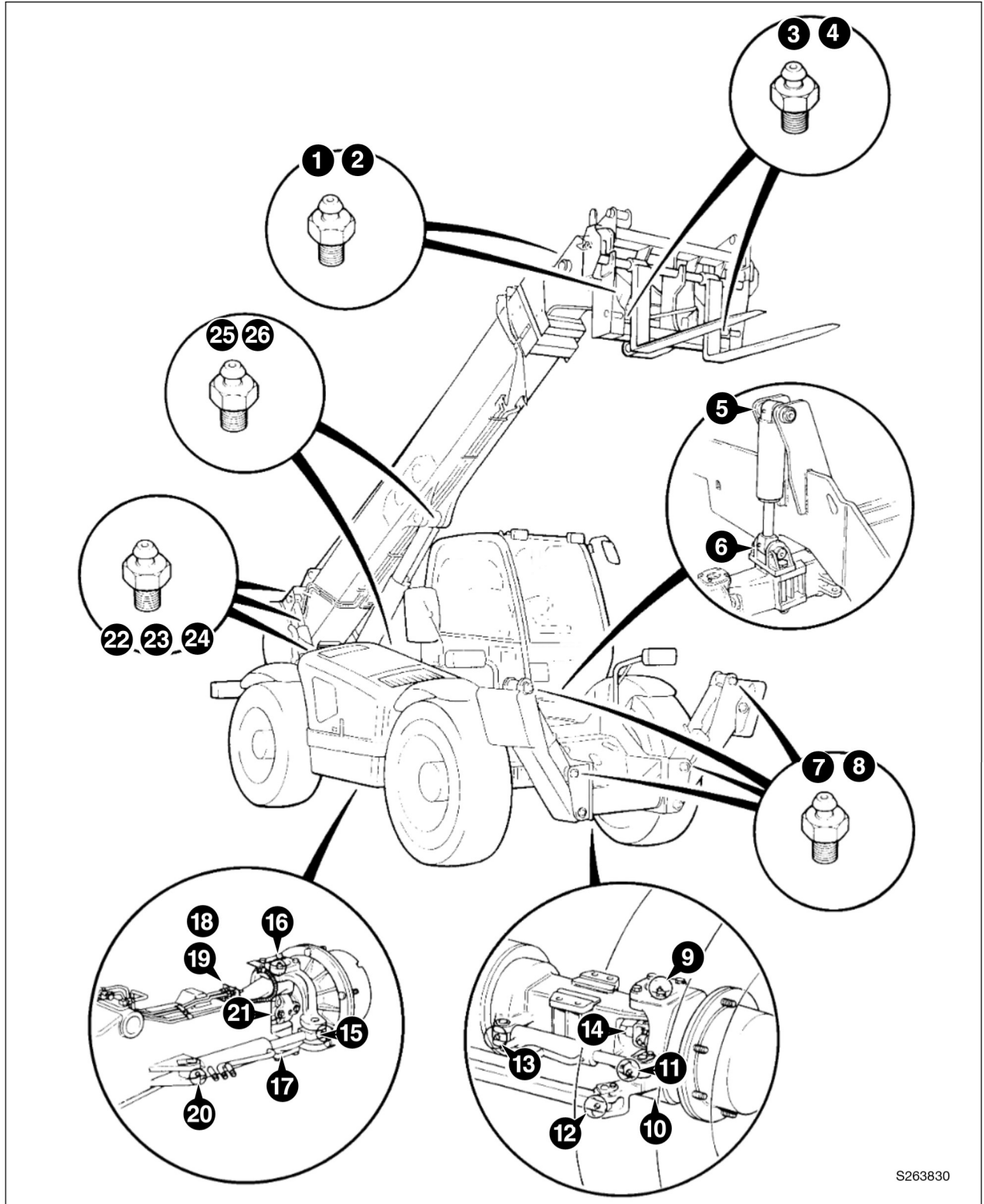
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**GREASING (EVERY 50 HOURS)  
(533)**

Grease as shown for 535 plus the following (on both sides):



**GREASING (EVERY 50 HOURS)  
(532, 537, 540-170)**



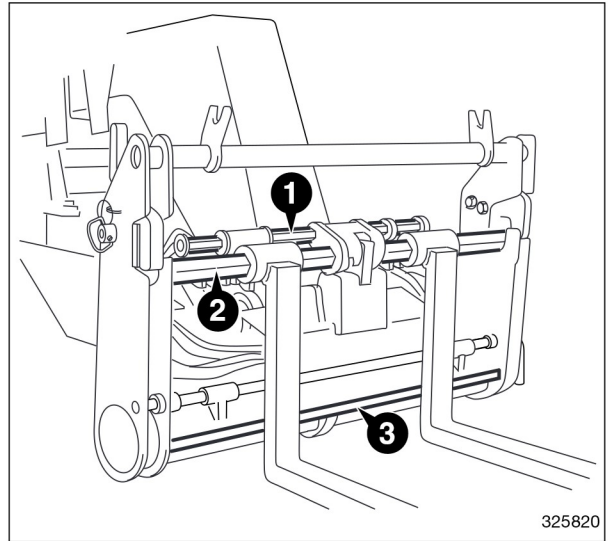
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### GREASING (EVERY 50 HOURS)

#### Greasing the Optional Sideshift Carriage

**Note:** Protective cover removed for clarity.

Grease the side shift carriage in three places. Use **JCB HP Grease** or equivalent.



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### GREASING (EVERY 500 HOURS)

#### **CAUTION**

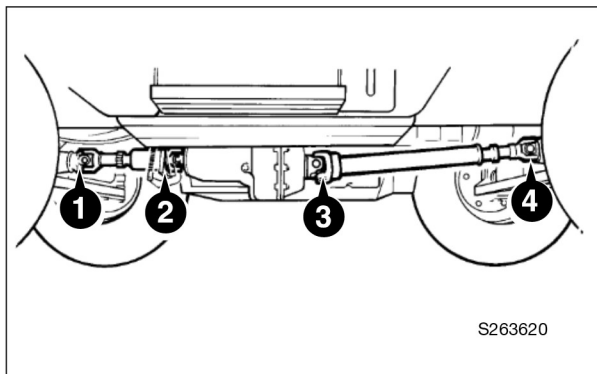
Waxoyl contains turpentine substitute, which is flammable. Keep flames away when applying Waxoyl. Waxoyl can take a few weeks to dry completely. Keep flames away during the drying period.

Do not weld near the affected area during the drying period. Take the same precautions as for oil to keep Waxoyl off your skin. Do not breathe the fumes. Apply in a well-ventilated area.

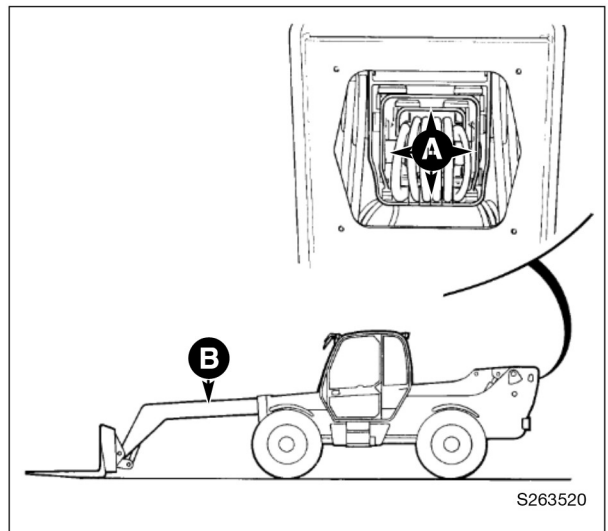
5-3-1-9

See Greasing (Daily) for general information on greasing.

Extend the boom fully. Spray Waxoyl evenly over the surfaces **A** and **B** as shown. Allow 2-3 hours drying time before retracting the boom.



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## GREASING (EVERY 500 HOURS)

### Greasing the Hydraulic Tow Hitch

#### **⚠ CAUTION**

Waxoyl contains turpentine substitute, which is flammable. Keep flames away when applying Waxoyl. Waxoyl can take a few weeks to dry completely. Keep flames away during the drying period.

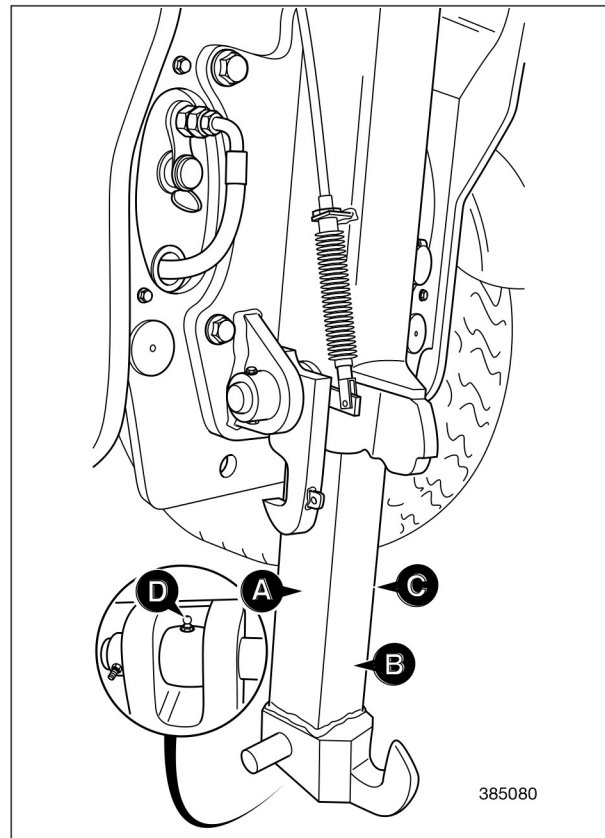
Do not weld near the affected area during the drying period. Take the same precautions as for oil to keep Waxoyl off your skin. Do not breathe the fumes. Apply in a well-ventilated area.

5-3-1-9

See Greasing (Daily) for general information on greasing.

Extend the hydraulic tow hitch fully. Spray Waxoyl evenly over the surfaces **A**, **B** and **C** as shown. Allow 2-3 hours drying time before retracting the hitch.

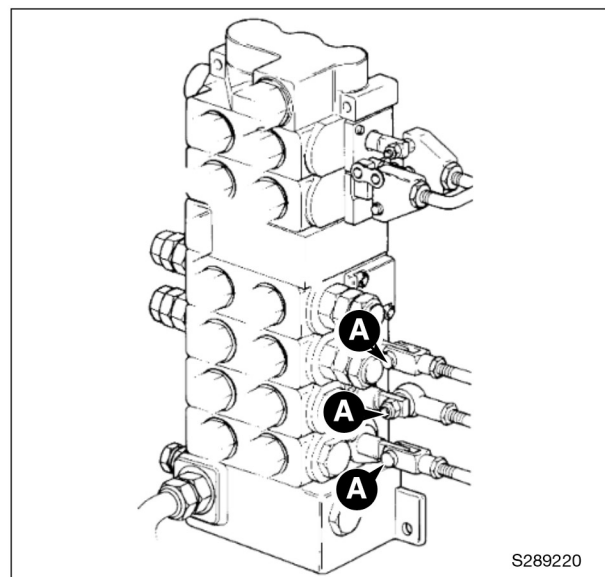
Grease the hitch pivot pin at grease nipple **D**. Use **JCB HP Grease** or equivalent.



## OILING

The following points should be lightly oiled with engine oil at the periods stated in the Service Schedules:

- 1 Lightly oil all hinges.
- 2 Oil the clevis at the bottom of each control lever, as shown at **A**.





## BRAKES

### Checking the Foot Brake Fluid Level

#### **⚠ WARNING**

Faulty brakes can kill. If you have to top up the brake reservoir frequently, get the brake system checked by your JCB distributor. Do not use the machine until the fault has been put right.

2-3-2-5/1

#### **⚠ WARNING**

Using incorrect brake fluid could damage the system. See the Fluids, Capacities and Lubricants chart in this handbook for the correct fluid. The fluid can harm your skin. Wear gloves. Cover cuts and grazes.

2-3-2-6/1

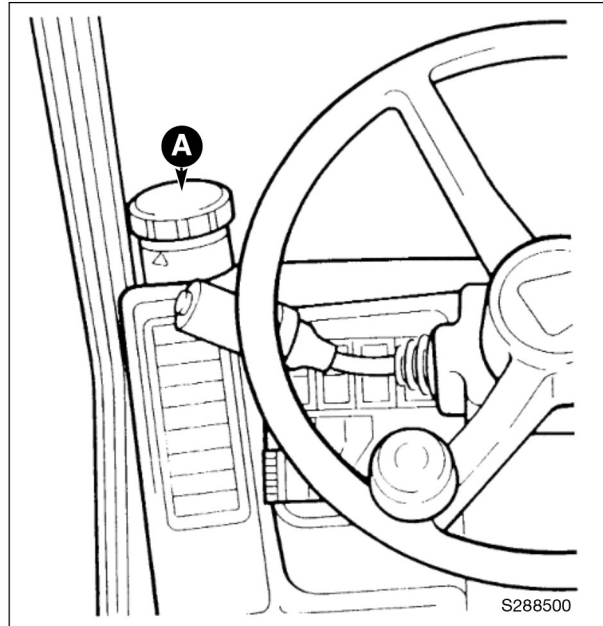
The brake master cylinder is in the cab.

#### **1 Check the fluid level**

The correct fluid level is marked on the reservoir. If necessary, add fluid as in step 2.

#### **2 Add Fluid**

Remove the reservoir cap **A**. DO NOT USE ORDINARY BRAKE FLUID. Carefully pour in the fluid until it reaches the **FLUID LEVEL** mark. Avoid spilling the fluid. Wipe up any spillage.



## BRAKES

### Parking Brake Adjustment

530, 535 & 540 Machines to 772032  
532 & 537 Machines to 778686

If you are not confident or technically qualified to carry out this procedure, contact your JCB distributor.

#### CAUTION

The parking brake must not be used to slow the machine from travelling speed, except in an emergency, otherwise the efficiency of the brake will be reduced.

Whenever the parking brake has been used in an emergency, always renew both brake pads.

4-2-1-1/2

#### WARNING

Before working on the parking brake, make sure that the machine is on level ground. Put chocks each side of all four wheels. Disconnect the battery so that the engine cannot be started. If you do not take these precautions the machine could run over you.

2-3-2-4/1

The parking brake should be fully engaged when the lever is vertical. The parking brake indicator light should light when the brake is engaged with the forward/reverse lever away from neutral (starter switch at IGN).

#### 1 Check and Adjust the Pad Position

Measure the pad thickness. If the friction material **A** is 3mm (0.125in) or less always fit a new set of pads. Check that the pads just touch the disc, shown at **B**, with the parking brake disengaged (lever horizontal).

If necessary, adjust the pad position by turning nut **C**. Turn the nut clockwise to close the pads onto the disc.

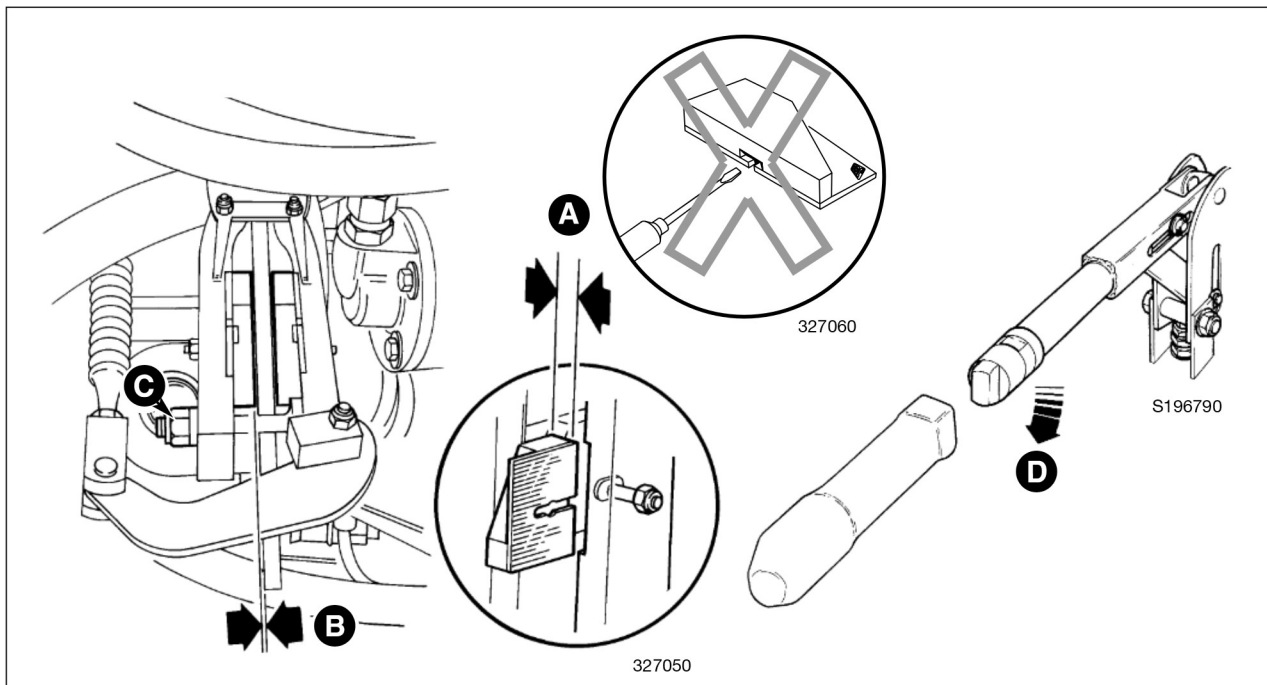
#### 2 Take Up the Cable Slack

- a Disengage the parking brake (lever horizontal).
- b Turn handle grip **D** clockwise, half a turn.
- c Test the parking brake; see **Testing the Parking Brake** (OPERATION section).
- d If the brake fails the test, repeat Steps **2a**, **2b** and **2c**.

#### WARNING

Over adjustment of the parking brake could result in the parking brake not fully releasing.

0011



**BRAKES**

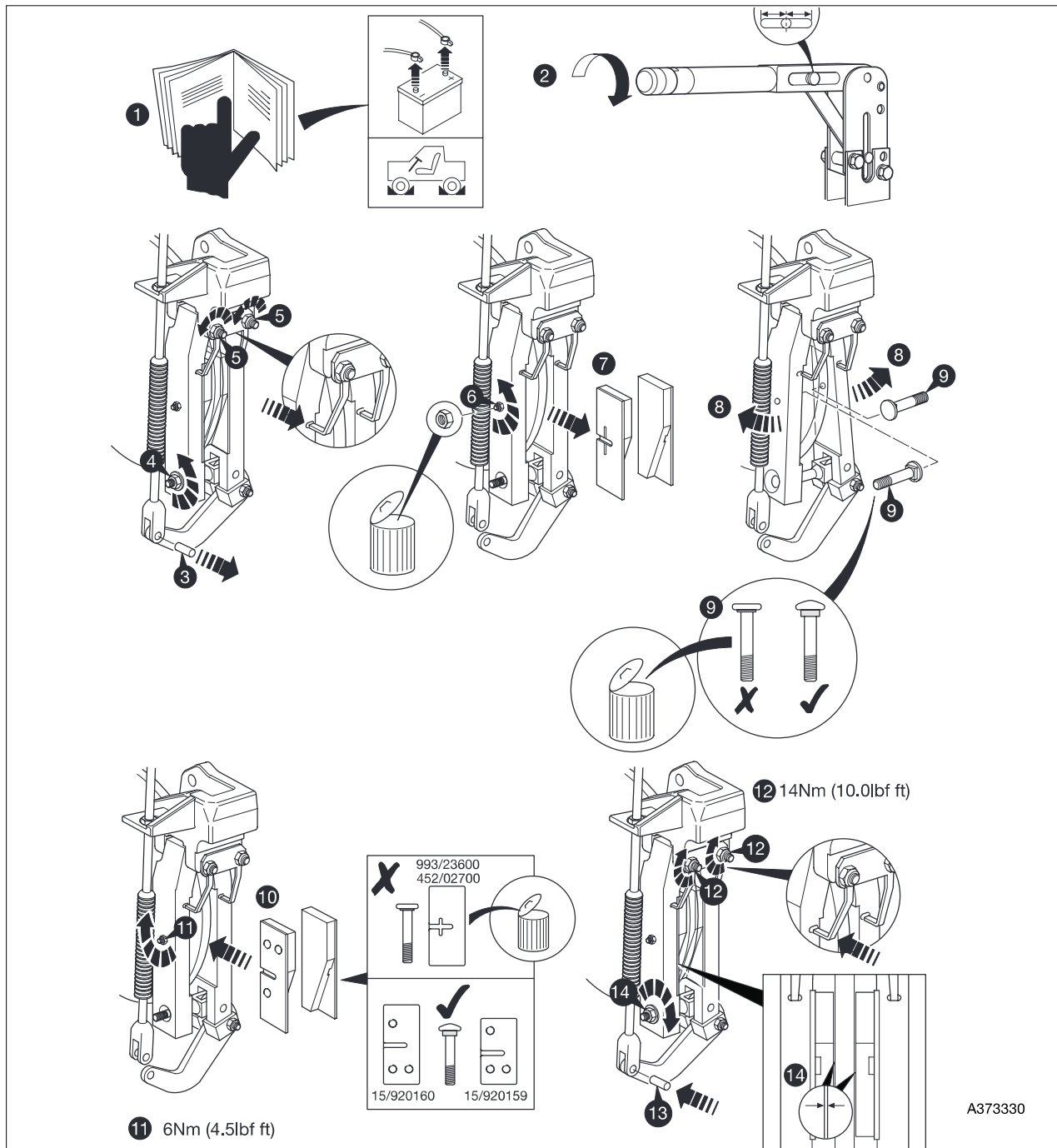
**Parking Brake Adjustment (continued)**

**3 Renewing the Brake Pads**

Change the pads as detailed on the illustrated fitting instructions with each kit or as shown below.

Test the parking brake; see **Testing the Parking Brake** (OPERATION section).

**Note:** If after completing the above steps, the parking brake does not pass the testing procedure, do not use the machine, contact your JCB Distributor.



## BRAKES

### Parking Brake Adjustment (continued)

530 & 540 Machines from 772033  
 532 & 537 Machines from 778687  
 533-105 Machines  
 540-170 Machines  
 530FS Plus Machines  
 540FS Plus Machines  
 530FS Super (530SXL France)  
 540FS Super (540SXL France)

#### **CAUTION**

The parking brake must not be used to slow the machine from travelling speed, except in an emergency, otherwise the efficiency of the brake will be reduced.

Whenever the parking brake has been used in an emergency, always renew both brake pads.

4-2-1-1/2

#### **WARNING**

Over adjustment of the parking brake could result in the parking brake not fully releasing.

0011

The parking brake should be fully engaged when the lever is vertical. The parking brake indicator light should light when the brake is engaged with the forward/reverse lever away from neutral (starter switch at IGN).

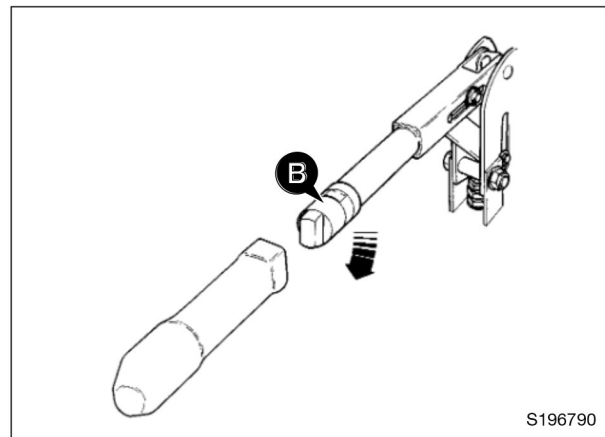
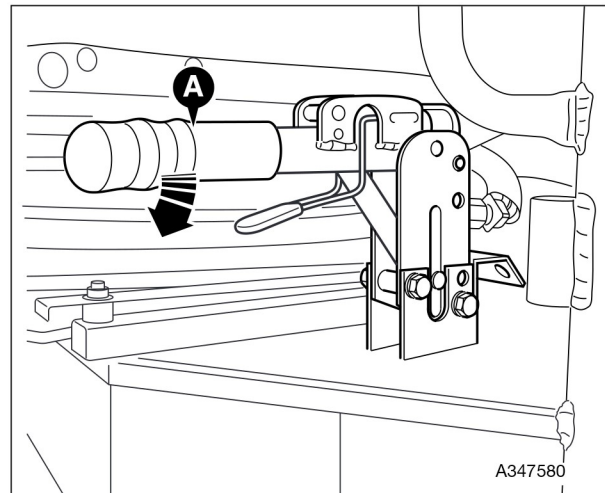
Later machines may be fitted with alternative parking brake lever **A**. Squeeze the release lever under the handgrip and lower the parking brake forward to release.

- 1 Disengage the parking brake (lever horizontal).

**Note: Failure to disengage the parking brake fully will result in excessive wear of the handbrake mechanism.**

- 2 Turn handle grip **A** or **B** half a turn in the direction shown.
- 3 Test the Parking Brake; see **Testing the Parking Brake** (OPERATION section).
- 4 If the brake fails the test, repeat Steps 1, 2 and 3.

**Note: If, after completing the above steps, the parking brake does not pass the testing procedure, do not use the machine, contact your JCB Distributor.**



## TYRES AND WHEELS

### Tyre Inflation

#### **WARNING**

**Over-inflated or overheated tyres can explode. Do not cut or weld the rims. Get a tyre/wheel specialist to do any repair work.**

5-3-2-4

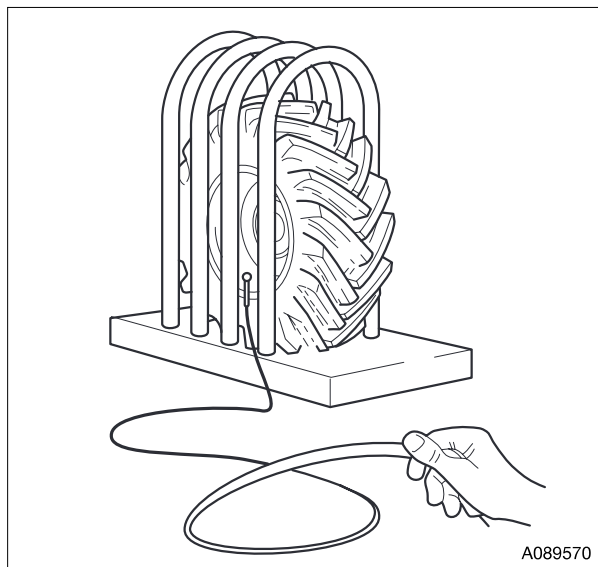
These instructions are for adding air to a tyre which is already inflated. If the tyre has lost all its air pressure, call in a qualified tyre mechanic. The tyre mechanic should use a tyre inflation cage and the correct equipment to do the job.

- 1 Before you add air to the tyre, make sure it is correctly fitted on the machine or installed in a tyre inflation cage.
- 2 Use only an air supply system which includes a pressure regulator. Set the regulator no higher than 1.38 bar (20 lbf/in<sup>2</sup>) above the recommended tyre pressure. See the chart at the end of *MAINTENANCE* section for recommended tyres and pressures for your machine. (The tyre pressures are also given on the Flip Chart mounted in the cab.)

Use an air hose fitted with a self-locking air chuck and remote shut-off valve.

- 3 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.

Inflate the tyre to the recommended pressure. Do not over-inflate.



### Checking Roadwheel Tightness

On new machines, and whenever a wheel has been removed, check the wheel nut torques every two hours until they stay correct.

Every day, before starting work, check that the wheel nuts are tight. If wheelnut torque indicators **A** are fitted, check each day that they have not moved.

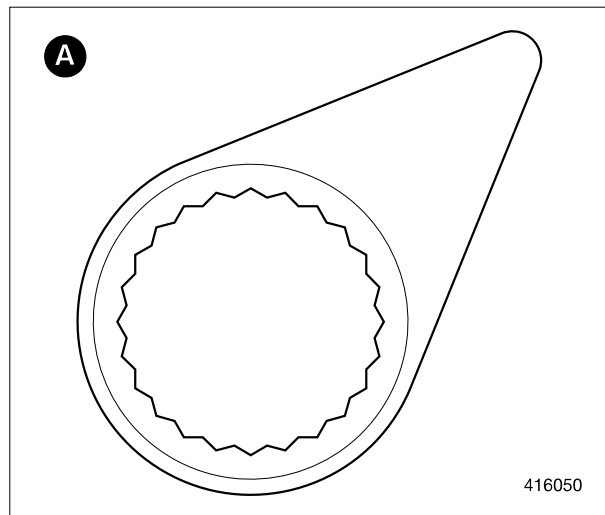
If wheelnut torque indicators are not fitted, check that the torques are correct as shown in the table below.

Front		Rear	
Nm	lbf ft	Nm	lbf ft
680	500	680	500

#### **WARNING**

**If, for whatever reason, a wheel stud is renewed, all the studs for that wheel must be changed as a set, since the remaining studs may have been damaged.**

2-3-2-8



## ENGINE AIR FILTER

## Changing the Elements

**⚠ CAUTION**

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

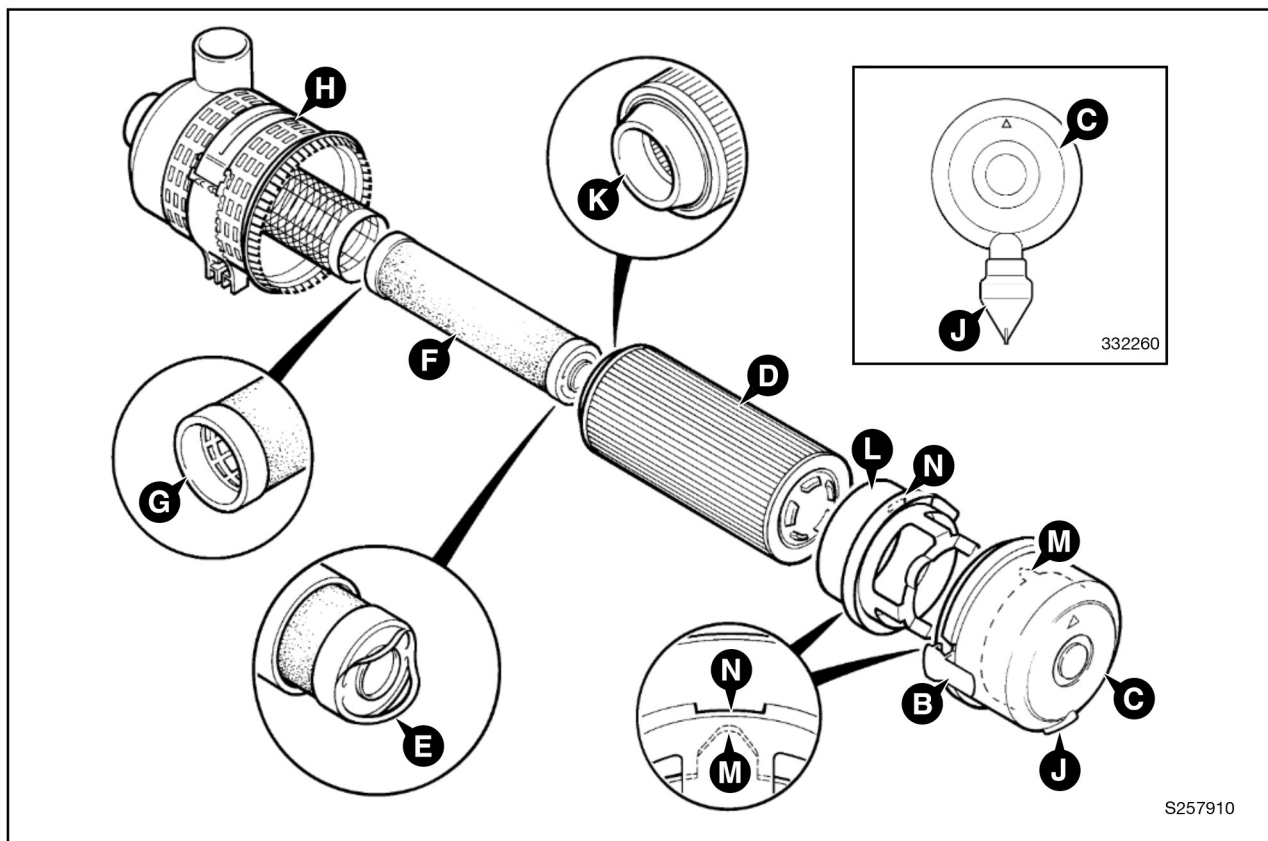
2-3-3-1

**Note:** Do not attempt to wash or clean the elements - they must only be renewed.

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

**Note:** 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.

- 1 Stop the engine.
- 2 Open the engine cover, see **Engine Cover** (this section).
- 3 Depress clips **B** and lift off cover **C**. Remove outer element **D**. Take care not to tap or knock the element. If the inner element is to be changed, lift up pulls **E** and remove inner element **F**. On turbocharged engines, remove pulsation ring **L**.
- 4 Clean inside the canister **H**, pulsation ring **L**, cover **C** and dust valve **J**.
- 5 Insert the new elements into the canister, pushing them firmly in so that seals **G** and **K** are fully seated. On turbocharged engines, assemble the pulsation ring **L** into the cover, making sure that tongue **M** fits into slot **N**. Fit cover **C** with dust valve **J** at the bottom. Push the cover firmly into position and make sure it is secured by clips **B**.
- 6 Make sure that the wire is connected to the **Air Filter Blocked** switch.



## ENGINE OIL AND FILTER

### Checking the Oil Level

- 1 Park the machine on firm level ground. Lower the forks to the ground.
- 2 Remove the starter key and make sure the parking brake is engaged.
- 3 Open the engine cover. See **Engine Cover** (this section).
- 4 Make sure dipstick **A** is fully screwed in before removing it. Check the oil level is between the two marks on the dipstick. Add oil if necessary, through filler **B**. Use only the recommended oil (see **Fluids and Lubricants**). Make sure that the dipstick and filler cap are screwed fully in.

### Changing the Oil and Filter

#### **⚠ WARNING**

Make the machine safe before getting beneath it. Do the following: Park on level ground. Engage the parking brake. Lower the forks to the ground. Stop the engine, remove the starter key. Disconnect the battery. Chock the wheels.

9-3-2-1

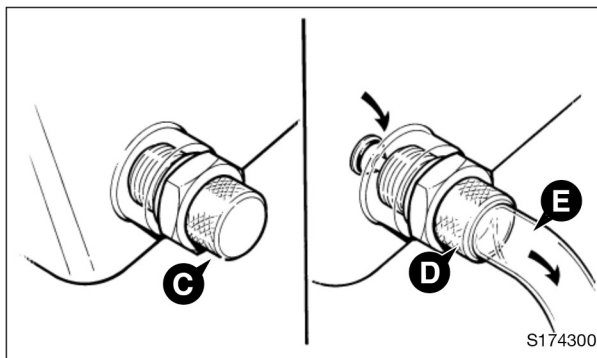
**Note:** Drain the oil when the engine is warm as contaminants held in suspension will be drained with the oil.

- 1 Place a container of suitable size beneath the engine. See the chart at the end of this section for capacity.

#### **⚠ WARNING**

Oil will gush from the hole when the drain plug is removed. Hot oil and engine components can burn you. Keep to one side when you remove the plug.

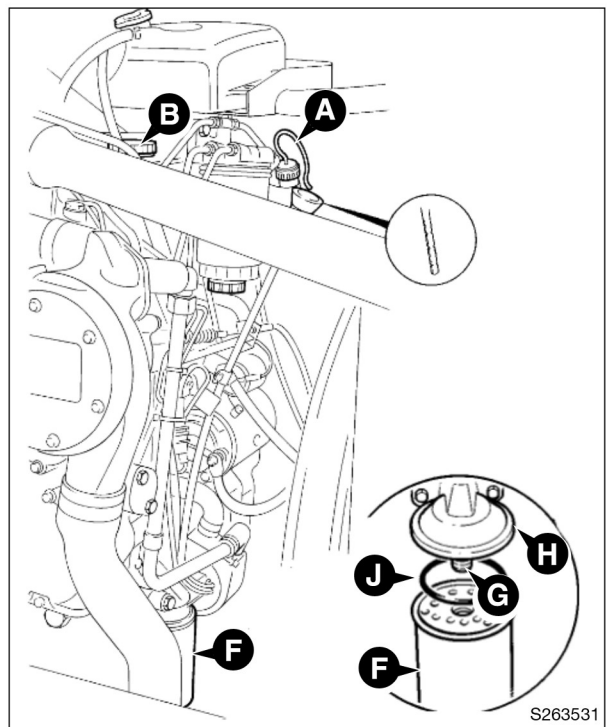
13-3-1-15



- 2 Remove the drain plug and allow oil to flow into the container. Clean and refit the drain plug and new o-ring. Tighten to 34 Nm (25 lbf ft).

Remove dust cap **C** if a drain plug kit is fitted. With the free end of the clear plastic tube in the oil container, screw on the drain coupling **D** and tube **E**. This will open the valve.

- 3 Change the filter:
  - a Unscrew the filter canister **F**. Remember that it will be full of oil.
  - b Check that adaptor **G** is secure.
  - c Clean filter head **H**.
  - d Add clean engine lubricating oil to the new filter canister. Allow enough time for the oil to pass through the filter element.
  - e Smear the seal **J** on the new filter with oil. Screw in the new filter canister - hand tight only.
- 4 Fill the engine, to the upper mark on the dipstick, with new oil through the filler. See the chart in this Section for recommended oil grades. Wipe off any spilt oil. Make sure the filler cap is correctly refitted.
- 5 Start the engine. Check for leaks. When the engine has cooled, check the oil level.



## ENGINE COOLING SYSTEM

### Checking the Coolant Level

#### **⚠ WARNING**

The cooling system is pressurised when the engine is hot. Hot coolant can spray out when you remove the filler cap. Let the system cool before removing the filler cap. To remove the cap; turn it to the first notch and let the system pressure escape, then remove the cap.

INT-3-2-9/1

- 1 Stop the engine. Make sure the parking brake is engaged and the transmission is in neutral. Remove the starter key.
- 2 Open the engine cover, see **Opening the Cover** (this section).
- 3 Check that the coolant level, in expansion bottle **A** is  $\frac{1}{3}$  full.

**Note:** If the level in the expansion bottle is low, then continue with steps 4 to 6.

- 4 Top-up the expansion bottle, through the filler cap **B**, using the necessary mix of clean, soft water and antifreeze. See **Coolant Mixtures**. The bottle should be  $\frac{1}{3}$  full.

**Note:** Check the quality of the antifreeze mixture every year - before the cold weather starts. Change it every two years.

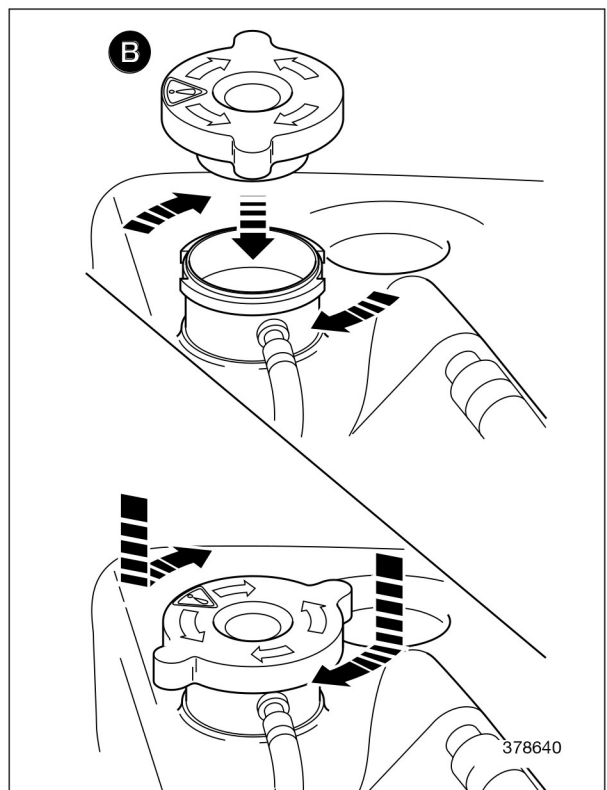
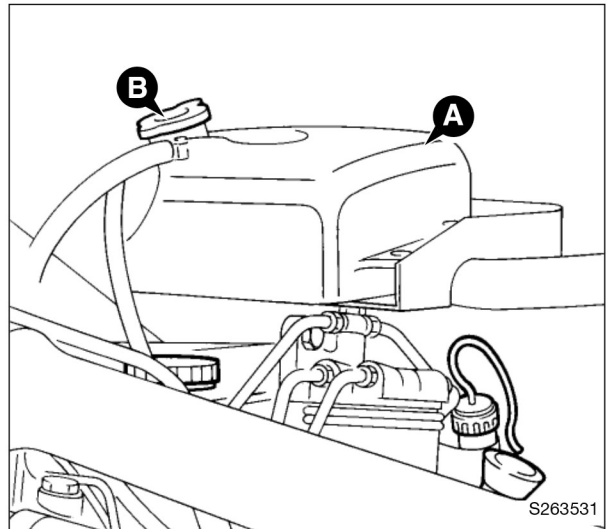
- 5 Refit the filler cap. Make sure the filler cap **B** is tight, see WARNING below.

#### **⚠ WARNING**

When fitting the coolant filler cap, ensure that the cap is correctly fitted. Turn the cap clockwise to the first notch, then press down and continue turning clockwise until the cap is tight. Failure to do this will result in inefficient cooling and may result in injury when the cap is removed.

0059

- 6 Run the engine for a while to raise the coolant to working temperature and pressure. Stop the engine and check for leaks.





## ENGINE COOLING SYSTEM (continued)

### Coolant Mixtures

The protection provided by JCB Four Seasons Anti-freeze and Summer Coolant is shown below. If any other anti-freeze is used, refer to the manufacturer's instructions and ensure that a corrosion inhibitor is included.

DO NOT use solutions of more than 60%, or less than 50% or damage to the cooling system will occur.

Solution	Maintains Circulation Down To	Protects Against Damage Down To
55%	-36°C (-33°F)	-41°C (-42°F)

Check the strength of the antifreeze solution at least once a year, preferably at the start of the cold period.

It is an advantage to leave the anti-freeze in all year round as it gives continuous protection against corrosion. Always renew the antifreeze every two years.

A 50% antifreeze mixture should be used even if frost protection is not needed. This gives protection against corrosion and raises the boiling point of the coolant.

### **⚠** WARNING

Antifreeze can be harmful. Obey the manufacturer's instruction when handling neat or diluted antifreeze.

7-3-4-4

### Changing the Coolant

### **⚠** WARNING

The cooling system is pressurised when the engine is hot. Hot coolant can spray out when you remove the filler cap. Let the system cool before removing the filler cap. To remove the cap; turn it to the first notch and let the system pressure escape, then remove the cap.

INT-3-2-9/1

- 1 Stop the engine. Make sure the parking brake is engaged and the transmission is in neutral. Remove the starter key.
- 2 Open the engine cover, see **Engine Cover** (MAINTENANCE section).
- 3 Carefully loosen filler cap **A**.

### **⚠** CAUTION

Keep your face away from the hose while disconnecting it.

5-3-3-1

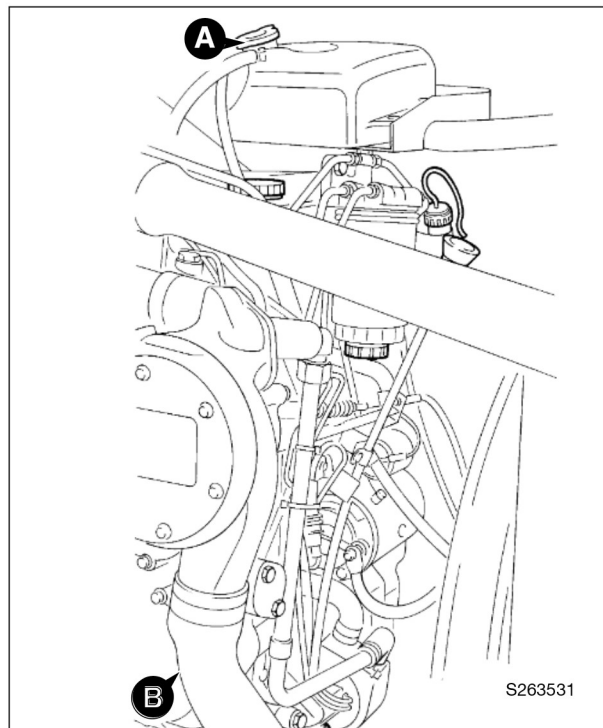
- 4 Disconnect hose **B** and let the coolant drain out.
- 5 Flush the system, if necessary. Use clean water.
- 6 Refit radiator hose **B**.
- 7 Fill the system, using the necessary mix of clean, soft water and antifreeze. See the Chart at the end of MAINTENANCE section.
- 8 Refit the filler cap. Make sure the cap **A** is tight, see WARNING below.

### **⚠** WARNING

When fitting the coolant filler cap, ensure that the cap is correctly fitted. Turn the cap clockwise to the first notch, then press down and continue turning clockwise until the cap is tight. Failure to do this will result in inefficient cooling and may result in injury when the cap is removed.

0059

- 9 Run the engine for a while, to raise the coolant to working temperature and pressure. Stop the engine. Check for leaks.
- 10 Top-up the expansion bottle, through the filler cap **A**. The bottle should be  $\frac{1}{3}$  full.



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## CAB HEATER FILTER

For air conditioning filter, see *Air Conditioning Option* (MAINTENANCE section).

### Cleaning the Cab Heater Filter

#### CAUTION

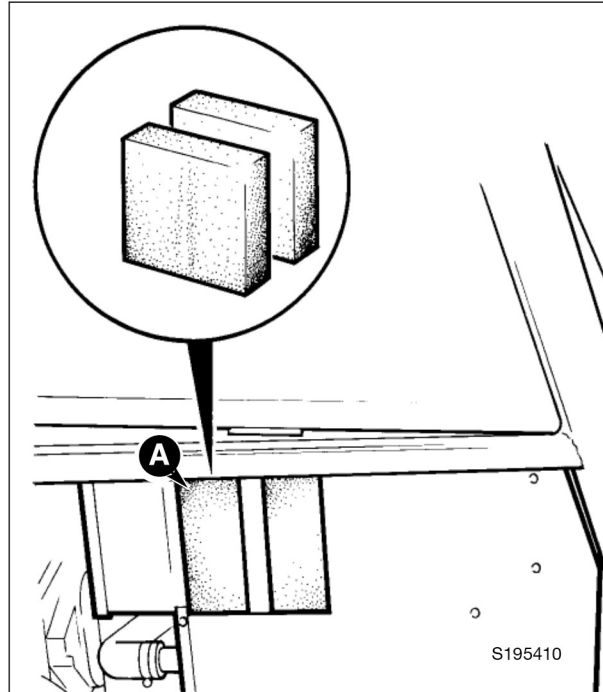
The filter may be filled with dust. Wear goggles and a face mask when removing the filter.

2-3-3-6

- 1 Park the machine on level ground. Engage the parking brake. Raise the boom and fit the safety strut, see *Boom Safety Strut* (MAINTENANCE section). Remove the starter key.
- 2 Isolate the battery, see *Battery Isolator* (MAINTENANCE section).
- 3 Carefully extract the filter **A** from its housing.
- 4 Knock loose dust off the filter. Wash the filter in clean water. Allow to dry.

**Note:** Do not squeeze the filter to dry it. Shake off the bulk of the water, then let the rest drain off. If the filter was clogged, clean it more often.

- 5 Carefully replace the filter into its housing.



## FUEL SYSTEM

### Types of Fuel

Use good quality diesel fuel to get the correct power and performance from your engine. The recommended fuel specification is given below.

<b>Cetane Number:</b>	45 (minimum)
<b>Viscosity:</b>	2.5/4.5 centistokes at 40 °C (104 °F)
<b>Density:</b>	0.835/0.855 kg/litre (0.872/0.904 lb/pint)
<b>Sulphur:</b>	0.5% of mass (maximum)
<b>Distillation:</b>	85% at 350 °C (662 °F)

#### Cetane Number

Indicates ignition performance. Fuel with a low cetane number can cause cold start problems and affect combustion.

#### Viscosity

Is the resistance to flow. If this is outside limits, the engine performance can be affected.

#### Density

Lower density will reduce engine power. Higher density will increase both engine power and exhaust smoke.

#### Sulphur

High sulphur content can cause engine wear. (High sulphur fuel is not normally found in North America, Europe or Australia.) If you have to use high sulphur fuel you must also use a highly alkaline engine lubricating oil; or change the normal oil more frequently.

#### Distillation

This indicates the mixture of different hydrocarbons in the fuel. A high ratio of lightweight hydrocarbons can affect the combustion characteristics.

### Fuel Standards

Consult your fuel supplier or JCB distributor about the suitability of any fuel you are unsure of.

### Low Temperature Fuels

Special winter fuels may be available for engine operation at temperatures below 0°C (32°F). These fuels have a lower viscosity. They also limit wax formation in the fuel at low temperatures. (*Wax forming in the fuel can stop the fuel flowing through the filter.*)

Flow improvers may also be available. These can be added to the fuel to reduce wax formation.

#### Petrol

### WARNING

**Do not use petrol in this machine. Do not mix petrol with the diesel fuel. In storage tanks the petrol could rise to the top and form flammable vapours.**

INT-3-1-6

#### Advice

If you have to use non-standard fuels, contact your JCB distributor for advice on engine adjustments and oil change periods.

### WARNING

**Diesel fuel is flammable; keep naked flames away from the machine. Do not smoke while refuelling the machine or working on the engine. Do not refuel with the engine running. There could be a fire and injury if you do not follow these precautions.**

INT-3-2-2

### Fatty Acid Methyl Ester Fuels as a Replacement for Diesel Fuels

Fuel resources such as Rape Methyl Ester and Soybean Methyl ester, collectively known as Fatty Acid Methyl Esters are being used as alternatives and extenders for mineral oil.

Fatty Acid Methyl Esters must conform to certain standards to be of acceptable quality, just as mineral oils do at present.

Consult your JCB distributor for advice about the use of Fatty Acid Methyl Ester fuels, as improper application may impair engine performance.

## FUEL SYSTEM (continued)

### Filling the Tank

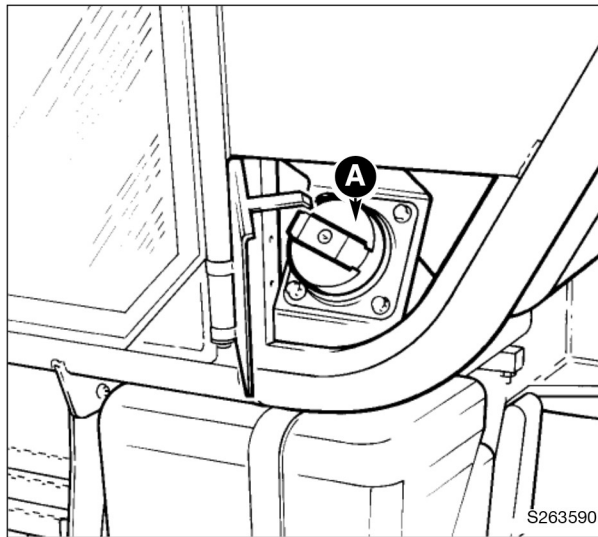
At the end of every working day, remove cap **A** and fill the tank with the correct type of fuel. This will prevent overnight condensation from developing in the fuel.

We recommend that you lock the fuel cap to prevent theft and tampering.

#### **⚠ WARNING**

**Diesel fuel is flammable; keep naked flames away from the machine. Do not smoke while refuelling the machine or working on the engine. Do not refuel with the engine running. There could be a fire and injury if you do not follow these precautions.**

INT-3-2-2



### Prime the System

#### Machines with Type AA or AB Engines

Air in the fuel system could cause misfiring or failure to start. Air will enter the fuel system if any part of the system has been drained or disconnected.

#### **⚠ CAUTION**

**Running the engine with air in the system could damage the fuel injection pump. After maintenance, remove air from the system as detailed below.**

2-3-3-7

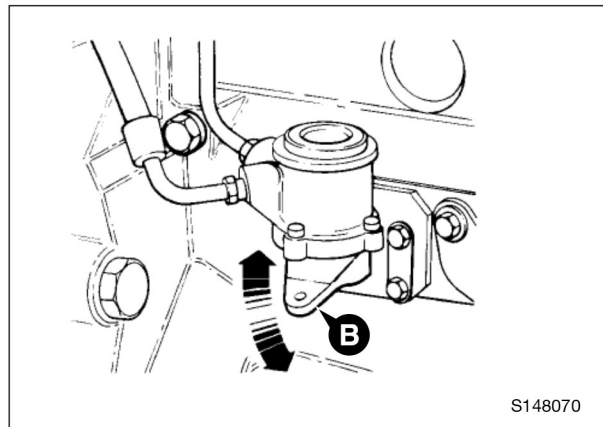
- 1 Park the machine on level ground. Engage the parking brake. Remove the starter key.
- 2 Open the engine cover, see **Engine Cover (MAINTENANCE section)**.

#### **⚠ WARNING**

**Hot oil and engine components can burn you. Make sure the engine is cool before doing this job.**

2-3-3-2

- 3 Prime the fuel system. Operate the fuel lift pump priming lever **B** slowly, for approximately two minutes.



**Note:** If no fuel is moved when the fuel lift pump priming lever **B** is operated, then the pump diaphragm may have rested in a 'maximum lift' position. To move the diaphragm, use the starter key to turn the engine, then try the priming lever again.

- 4 The engine is now ready to start. If the engine runs smoothly for a short time, and then begins to run roughly or stops, check again for air in the fuel system. Check all seals and connections, especially in the low pressure side of the system.

#### Machines with Type AR, AK or AM Engines

These engines are self priming. If just the sedimenter bowl is empty, turn the engine with the starter and the engine will self prime.

If the sedimenter bowl, fuel pipes and fuel filter are empty, turn the engine with the starter for 30 seconds. Wait 60 seconds. Repeat this procedure three or four times and the engine will self prime.

**Note:** Filling the filter element bowl with fuel will greatly reduce the time taken to prime the engine.

## FUEL SYSTEM (continued)

### Draining the Filter

- 1 Park the machine on level ground. Engage the parking brake. Remove the starter key.
- 2 Open the engine cover, see **Engine Cover** (*MAINTENANCE* section).
- 3 Drain off any water in the element **A** by turning tap **B**.

#### CAUTION

Running the engine with air in the system could damage the fuel injection pump. After maintenance, the system must be bled to remove any air.

2-3-3-11

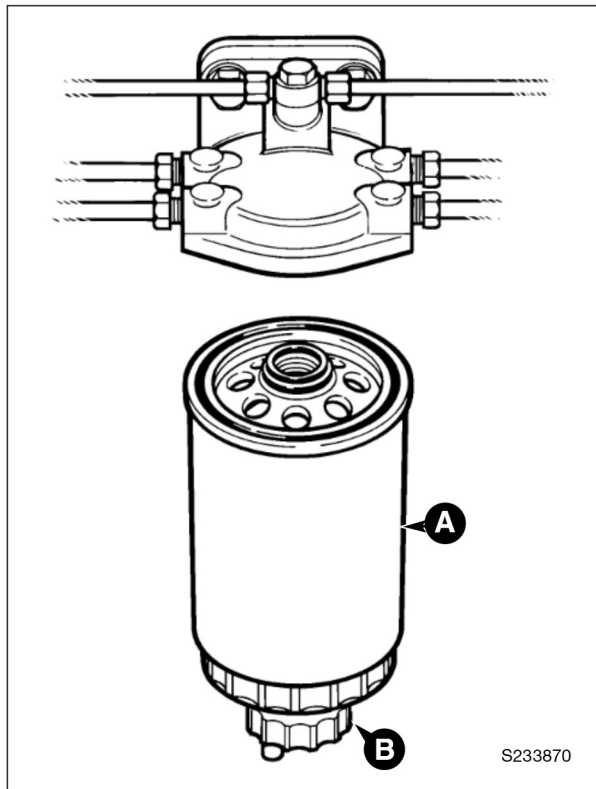
### Changing the Filter Element

- 1 Unscrew the filter element **A**, the element is hand tight but may require a strap wrench to remove. The filter will be full of fuel.
- 2 To assist with bleeding fill the filter element with fuel before fitting. Install filter element **A**, hand tight only. Check for leaks.
- 3 Prime the system.

#### CAUTION

Running the engine with air in the system could damage the fuel injection pump. After maintenance, the system must be bled to remove any air.

2-3-3-11



## FUEL SYSTEM (continued)

### Draining the Sediment Bowl

- 1 Park the machine on level ground. Engage the parking brake. Remove the starter key.
- 2 Look in the bowl **A**. If it contains sediment, see **Cleaning the Sediment Bowl**. If there is water but no sediment, drain off the water by opening tap **B**.

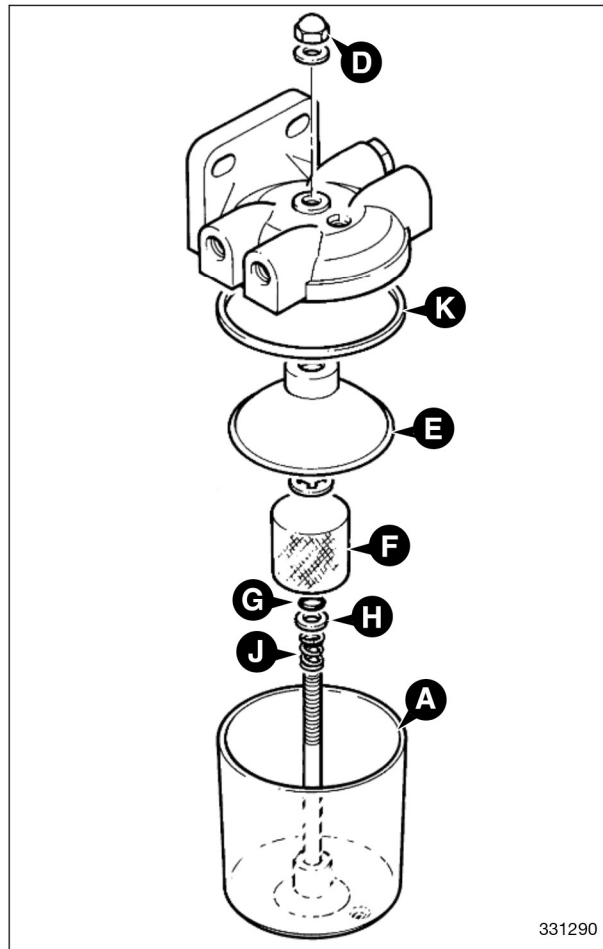
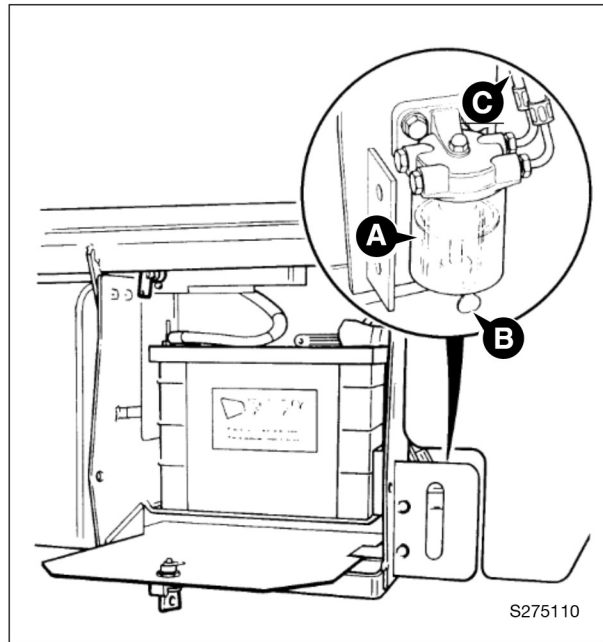
### **⚠ CAUTION**

Running the engine with air in the system could damage the fuel injection pump. After maintenance, remove air from the system.

2-3-3-7/1

### Cleaning the Sediment Bowl

- 1 Raise the engine cover.
- 2 Disconnect the battery.
- 3 Clamp the fuel inlet hose **C** to prevent loss of fuel.
- 4 Support the bowl **A** and unscrew nut **D**. Remove the bowl and element **E**; also strainer **F**, o-ring **G**, washer **H** and spring **J** if these items are fitted.
- 5 Wash the bowl and internal components. Use clean fuel.
- 6 Refit the bowl and element, strainer, o-ring, washer and spring. Make sure gasket **K** is seated correctly. Remove the clamp from fuel inlet hose **C**.
- 7 Prime the system. See **Priming the System** (this section).

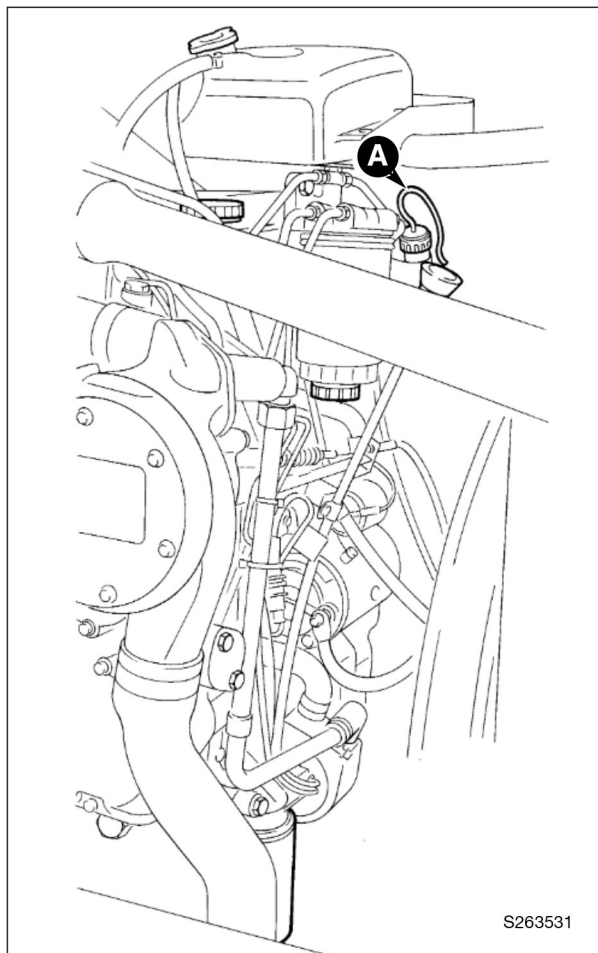


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## TRANSMISSION

### Check Transmission Oil Level

- 1 Stop the machine and remove the starter key. Check oil is above the minimum level on dipstick **A**. Use only the recommended oil.
- 2 Start and run the engine slowly for a period of five minutes. This allows the oil to fill the filter, pump, torque converter, oil cooler and hoses.
- 3 Stop engine, wait one minute. Check oil level and fill to maximum dipstick level.



## TRANSMISSION (continued)

### Changing the Oil and Filter

The transmission oil should be drained through the orifice for the suction strainer. This will flush out any particles which fall off the strainer during its removal.

- 1 Park the machine on level ground. Make sure the parking brake is engaged. Fully retract the boom and lower to the ground. Stop the engine. Remove the starter key. Isolate the battery, see **Battery Isolator (Maintenance section)**, to make sure the engine cannot be started.

#### **⚠ WARNING**

**You will have to get beneath the machine to drain the oil and change the filter. Make sure that the engine cannot be moved or started while you do these jobs.**  
5-3-2-3

- 2 Place a container of suitable size beneath the machine.

#### **⚠ CAUTION**

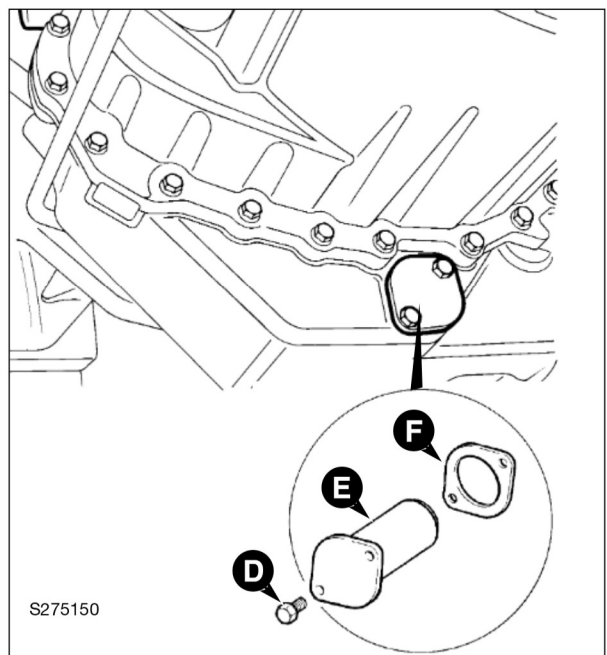
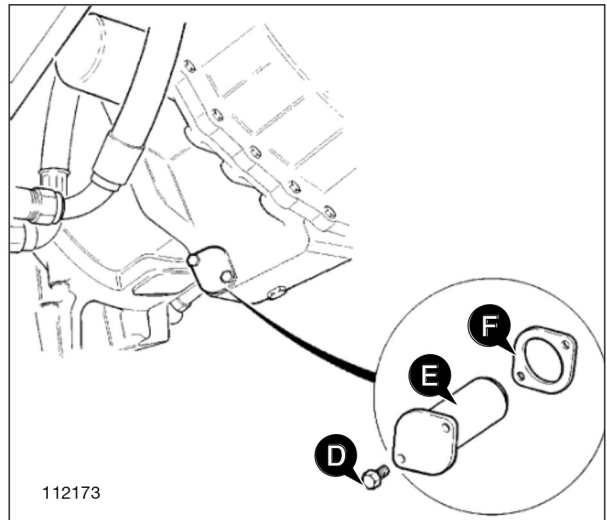
**When the strainer is removed, oil will gush out. Keep to one side when you remove the strainer.**  
2-3-4-1

- 3 Refer to the illustration which shows the filter installation on your machine.

Remove bolts **D**. Pull out the strainer **E** and its gasket **F**.

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

- 5 Fit the strainer and a new gasket **F**. Apply Threadlocker and Sealer to bolts **D** before fitting and tightening them.

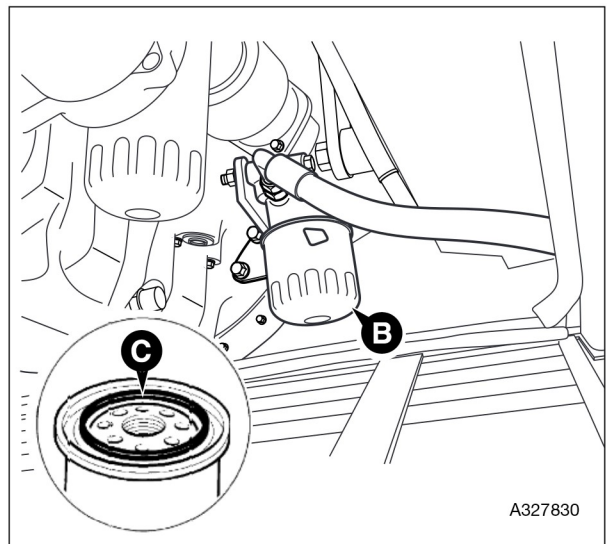
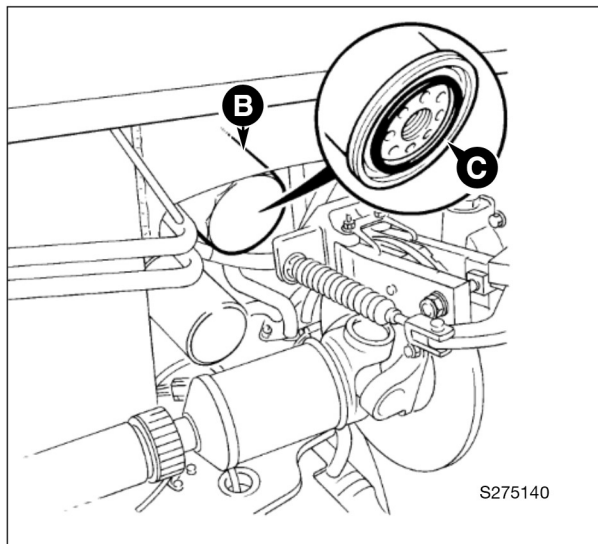
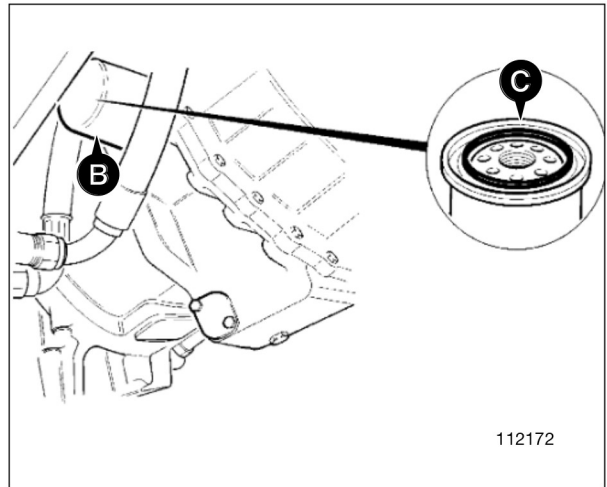




## TRANSMISSION (continued)

### Changing the Oil and Filter (continued)

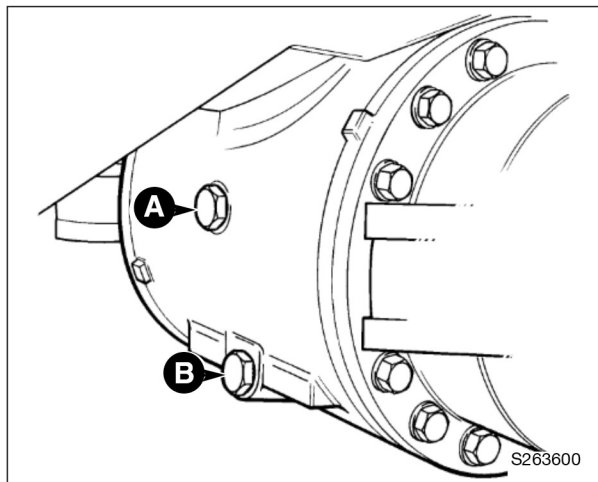
- 6 Renew the filter: refer to the illustration which shows the filter installation on your machine.
  - a Unscrew and remove the filter **B**.
  - b On the new filter, smear seal **C** with transmission oil.
  - c Screw the new filter in place until it just contacts the filter head, screw in a further  $\frac{3}{4}$  of a turn.
  
- 7 Fill the system with new oil through the dipstick/filler. See the chart at the end of *MAINTENANCE* section for recommended oil.



## FRONT AND REAR AXLE

### Checking the Axle Oil Level

- 1 Park the machine on level ground. Engage the parking brake. Remove the starter key.
- 2 Clean the area around the fill/level plug **A**, then remove the plug. Oil should be level with the bottom of the hole. Add recommended oil if necessary. (See the chart at the end of MAINTENANCE section for capacity.) Clean the plug before refitting it.



### Changing the Axle Oil

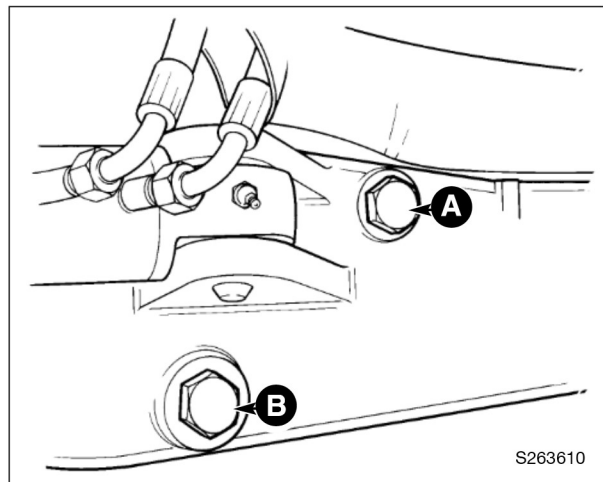
- 1 Park the machine on level ground. Engage the parking brake. Remove the starter key.
- 2 Drain the oil:
  - a Place a container of suitable size beneath plug **B**. (To catch the oil, see the chart at the end of MAINTENANCE section for capacity.)

#### **⚠ CAUTION**

Oil will gush from the hole when the drain plug is removed. Keep to one side when you remove the plug.

2-3-4-2

- b Remove plug **B** and its washer. Allow the oil to drain out. The drain plug is magnetic. Wipe it clean. (Metallic particles should be carefully removed.)
  - c Fit plug **B** and its washer.
- 3 Fill with recommended oil through fill/level hole **A**. (See the chart at the end of MAINTENANCE section.) Clean the plug before refitting it. Tighten to 79 Nm (60 lbf ft).



## FRONT AND REAR HUB

### Checking the Hub Oil Levels

Hubs must be checked separately.

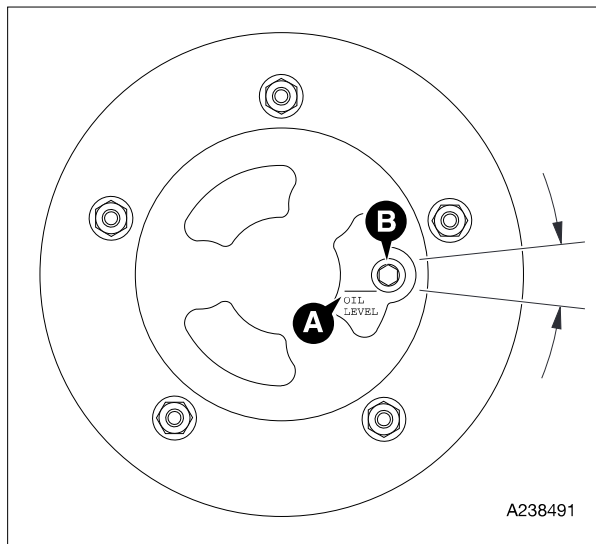
- 1 Park the machine on level ground with the OIL LEVEL mark **A** horizontal as shown. There is a tolerance of 5mm (0.2 in) above or below the horizontal. Engage the parking brake. Lower the forks to the ground. Stop the engine. Remove the starter key.
- 2 Clean the area around plug **B**. Remove the plug. Oil should be level with the bottom of the hole. If necessary add oil, see the chart at the end of MAINTENANCE section for capacity and recommended oil. Clean the plug before refitting it.

### Oil Immersed Brakes

The axle oil is used to lubricate the brake components, and to cool the brake plates.

It is important that the oil is changed regularly as specified in the service schedule - the lubricating properties of the oil will reduce as a result of brake wear.

Consult your JCB Distributor for advice if necessary.



### Changing the Hub Oil

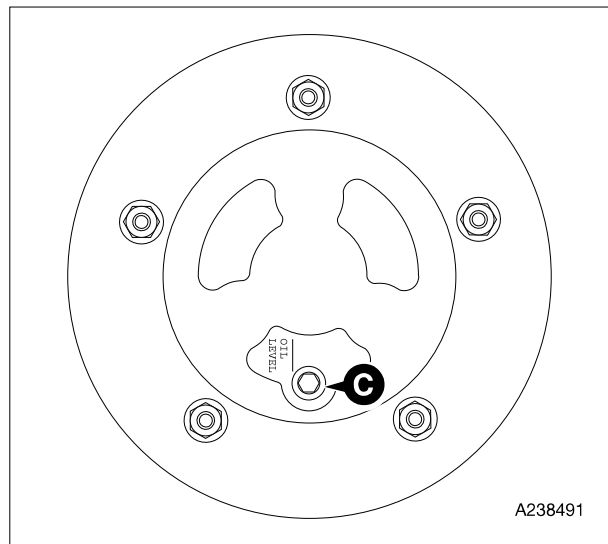
- 1 Park the machine on level ground, with plug **C** at the bottom as shown. Engage the parking brake. Lower the forks to the ground. Stop the engine. Remove the starter key.
- 2 Drain the oil:
  - a Place a container of suitable size beneath plug **C**. (To catch the oil, see the chart at the end of MAINTENANCE section for capacity.)

### ⚠ CAUTION

Oil will gush from the hole when the drain plug is removed. Keep to one side when you remove the plug.

2-3-4-2

- b Remove plug **C**. Allow the oil to drain out. The drain plug is magnetic. Wipe it clean. (Metallic particles should be carefully removed).
- 3 Refit plug **C** and its seal.
  - 4 Fill with new oil, see **Checking the Hub Oil Levels**.



## HYDRAULIC SYSTEM

**⚠ WARNING**

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic fluid. If hydraulic fluid penetrates your skin, get medical help immediately.

INT-3-1-10/1

**Checking the Fluid Level**

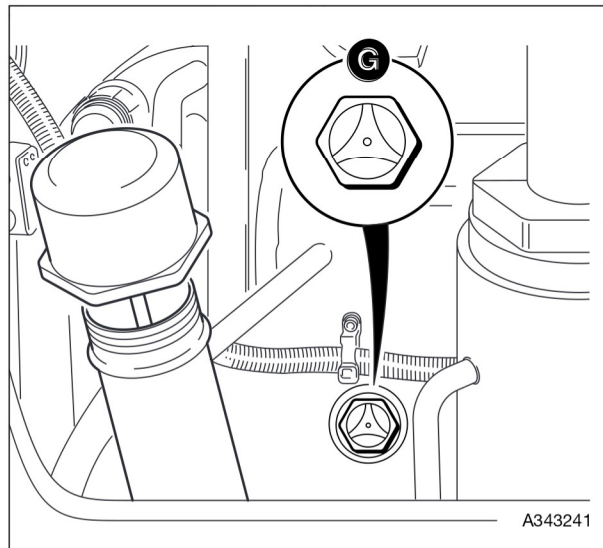
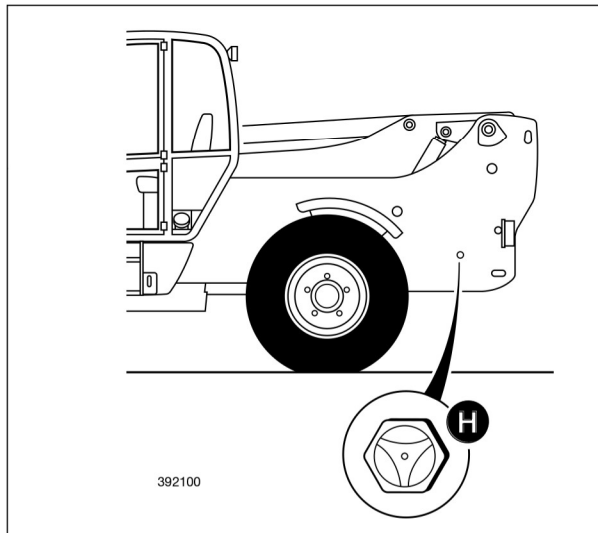
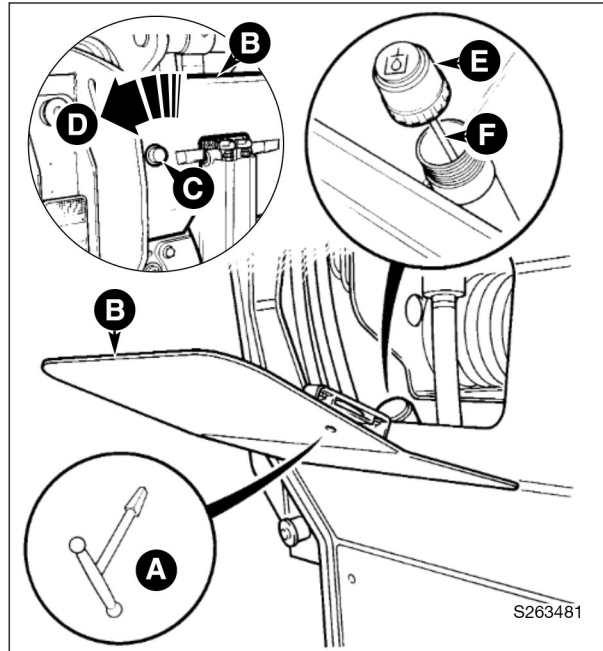
- 1 Park the machine on level ground. Retract the boom. Set the forks on the ground. Stop the engine. Remove the starter key.
- 2 Open rear cover **B**, either use key **A** to unlock and lower carefully to avoid damage, or turn knob **C** one click in direction **D** and pull to open.
- 3 Remove the filler cap **E**. The fluid level should be between the two marks on dipstick **F** or on sight gauge **G** or **H**, if fitted. If necessary, add recommended fluid through the filler. (See the chart at the end of MAINTENANCE section.)

**⚠ CAUTION**

Do not run the engine with the hydraulic tank filler cap removed.

5-3-4-1

- 4 Refit filler cap **E**, either close rear cover **B** and secure with key **A** or push shut.

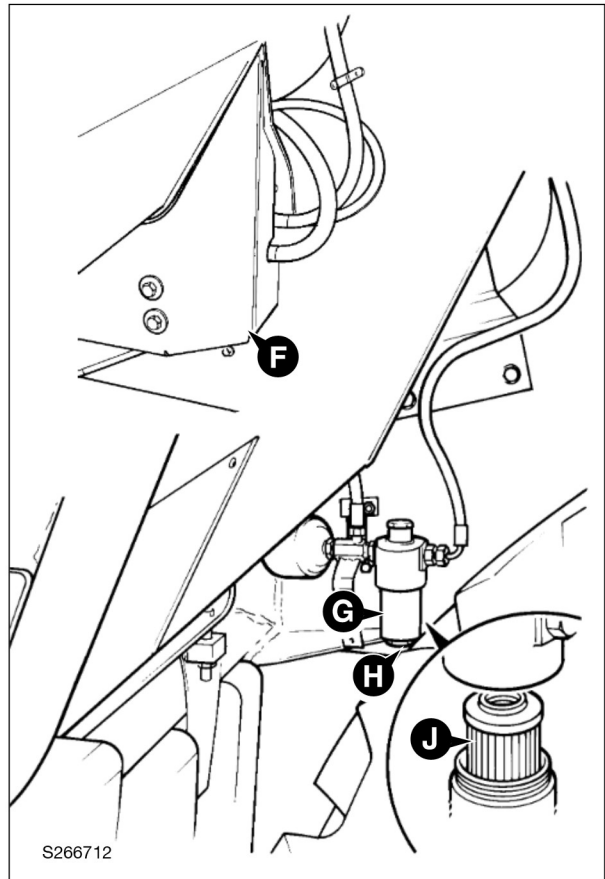


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## HYDRAULIC SYSTEM

### Changing the Pilot Filter Element

- 1 Park the machine on level ground and lower the boom to the ground. Engage the parking brake.
- 2 With the engine stopped, turn the starter switch to ON.
- 3 Operate the auxiliary switch to vent residual pressure, see **Auxiliary Operation** (OPERATION section).
- 4 Turn the starter switch to OFF, remove the starter key and battery isolator key, see **Battery Isolator** (MAINTENANCE section).
- 5 Remove the cover **F**.
- 6 Unscrew filter bowl **G**. The bowl should be hand tight, if necessary use a spanner on flats **H**.
- 7 Remove element **J**, wash the bowl, use clean fuel.
- 8 Fit new element **J**. Screw bowl **G** in place, hand tight only.
- 9 Refit cover **F**.



## HYDRAULIC SYSTEM (continued)

### Changing the Filter Element

There are two types of hydraulic filter, one is mounted on the top of the hydraulic tank while the other is a canister type in the tank return under the chassis. Carry out the procedure that is applicable to your machine.

For tank mounted filter see next page.

Park the machine on level ground. Make sure the parking brake is engaged. Fully retract the boom and lower to the ground. Stop the engine. Remove the starter key. Isolate the battery, see **Battery Isolator** (*Maintenance section*), to make sure the engine cannot be started.

Operate the controls and remove the tank cap to vent residual pressure.

#### **⚠ CAUTION**

Ensure that dirt etc. does not enter the hydraulic system during this job.

5-3-4-4

#### Canister Filter

- 1 Clean the area around the filter body.

#### **⚠ WARNING**

You will have to get beneath the machine to drain the oil and change the filter. Make sure that the engine cannot be moved or started while you do these jobs.

5-3-2-3

- 2 Place a container of suitable size beneath the machine to catch the oil.
- 3 From under the machine, unscrew and remove the element **A**. The element will contain hydraulic fluid; keep your face clear of spilling fluid.

#### **⚠ CAUTION**

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

2-3-4-1

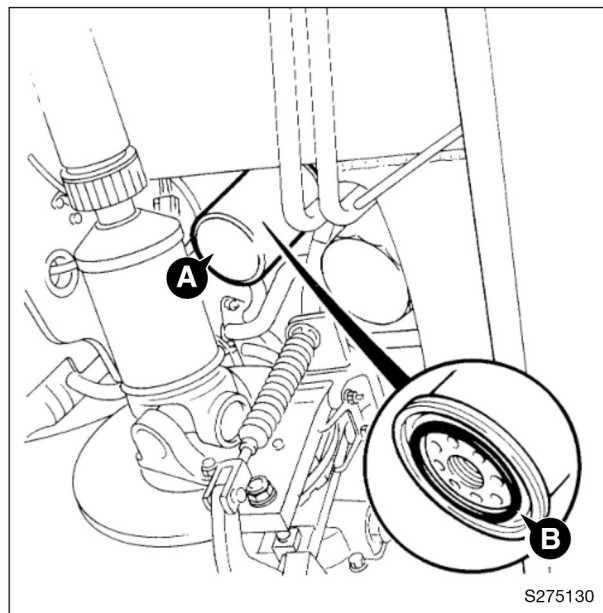
- 4 Fit the new element:
  - a Clean the mating faces on the new element and filter holder.
  - b Smear the seal **B** with hydraulic fluid.
  - c Screw the new element in place, hand-tight only.
- 5 Add hydraulic fluid, see **Checking the Fluid Level**.

#### **⚠ WARNING**

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic fluid. If hydraulic fluid penetrates your skin, get medical help immediately.

INT-3-1-10/1

- 6 Check for leaks:
  - a Make sure the filler cap is replaced, then run the engine for a few minutes.
  - b Make the machine safe.
  - c Check for leaks at the filter.



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## HYDRAULIC SYSTEM (continued)

### Changing the Filter Element (continued)

For canister filter see previous page.

Park the machine on level ground. Make sure the parking brake is engaged. Raise the boom and fit the safety strut, see **Boom Safety Strut** (MAINTENANCE section).

Stop the engine. Remove the starter key. Isolate the battery, see **Battery Isolator** (Maintenance section), to make sure the engine cannot be started.

Operate the controls and remove the tank cap to vent residual pressure.

#### Tank Mounted Filter

- 1 Open the rear cover, see **Checking the Fluid Level**, clean the top of the tank around the filter.

### **⚠ CAUTION**

Ensure that dirt etc. does not enter the hydraulic system during this job.

5-3-4-4

- 2 Either disconnect hose **K** or undo clip **L** to enable cover plate removal.
- 3 Remove the element assembly:
  - a Remove screws **A**. Remove the cover plate **B** and gasket **C**, discard the gasket.
  - b Remove spring **D**.
  - c Hold handle **E** and pull the element assembly from the hydraulic tank.

- 4 Remove the element from its canister:
  - a Hold canister **F**.
  - b Hold handle **E** and rotate the element **G** 90°.
  - c Pull on handle **E**, the element **G** should separate from its canister **F**. Discard the old element.
  - d Remove and discard seal **H**.

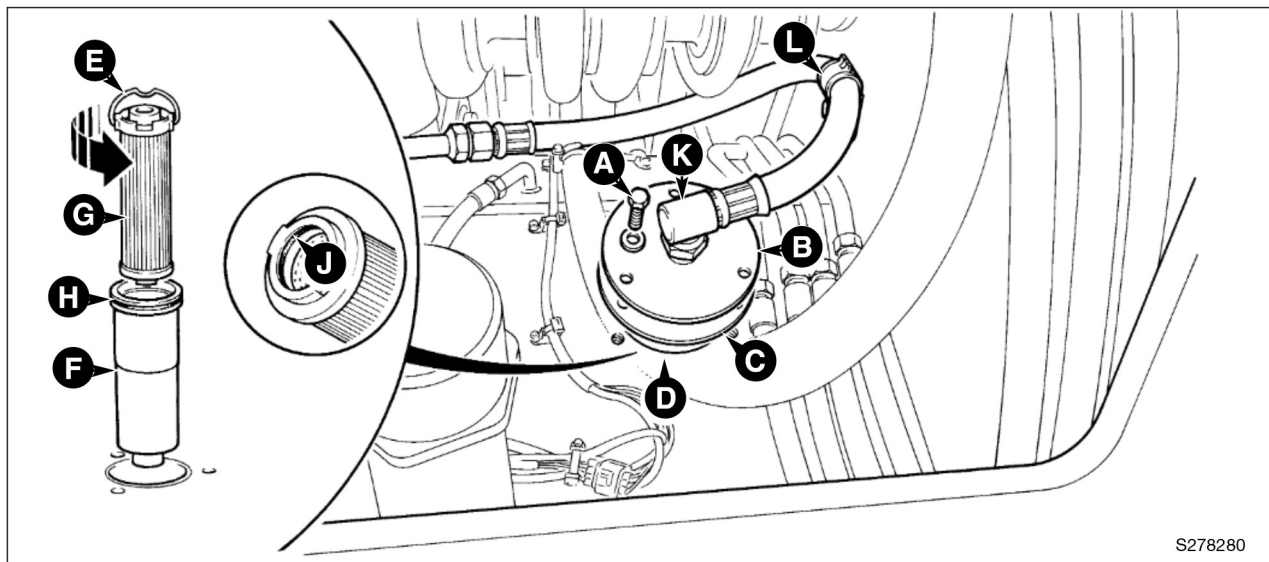
- 5 Fit the new element:
  - a Fit a new seal **H**.
  - b Make sure that seal **J** is fitted in the new element.
  - c Push the element **G** into its canister **F** and rotate the element 90° to lock it into position. Check that the element has locked into position by pulling on handle **E**.
  - d Install the element assembly in the hydraulic tank.
  - e Fit spring **D** and a new gasket **C**.
  - f Fit cover plate **B** and tighten screws **A** to 7 Nm (5 lbf ft).

### **⚠ WARNING**

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic fluid. If hydraulic fluid penetrates your skin, get medical help immediately.

INT-3-1-10/1

- 6 Check for leaks:
  - a Make sure the filler cap is replaced, then run the engine for a few minutes.
  - b Make the machine safe.
  - c Check for leaks at the filter.



S278280

## HOSE BURST PROTECTION VALVES

### Checking the Hose Burst Protection Valves

The hose burst protection valves 'lock' to prevent uncontrolled movement of the ram pistons if hydraulic pressure fails or a hose bursts. The valves are mounted directly on the rams.

#### **WARNING**

**Keep people clear of the machine while you do these checks.**

5-3-4-2

Check each movement in turn.

#### 1 Boom Lift Rams:

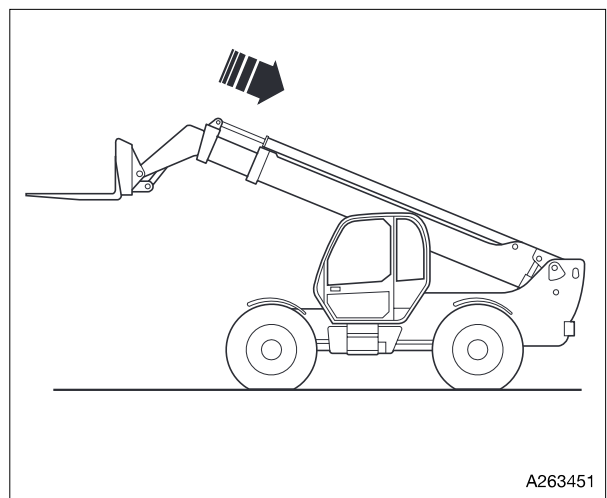
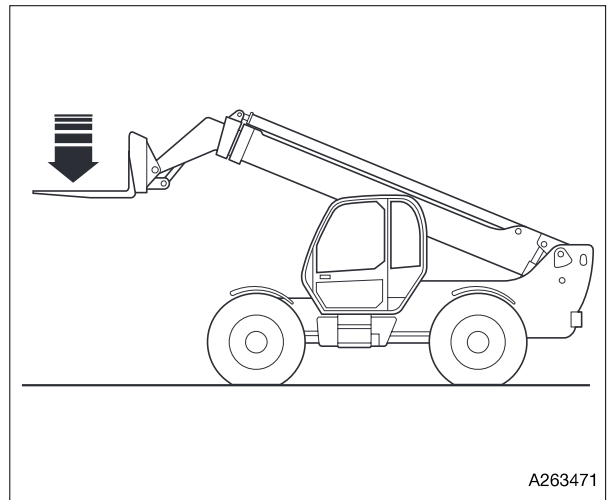
- a Start the engine. Make sure the parking brake is engaged, the transmission is in neutral and the Smooth Ride System (if fitted) is switched off.
- b Raise the boom to about 45°.
- c With the engine running at mid speed, operate the control lever to lower the boom. While the boom is moving, switch off the engine. Boom movement should slow as the engine slows and stop as the engine stops.

If the boom continues moving after the engine has stopped, both boom hose burst protection valves are faulty. Do not use the machine until the fault has been put right.

#### 2 Boom Extension Ram

- a Start the engine. Make sure the parking brake is engaged and the transmission is in neutral.
- b Raise the boom fully. Extend the boom fully.
- c With the engine running at mid speed, operate the control lever to retract the boom. While the boom is retracting, switch off the engine. Boom movement should slow as the engine slows and stop as the engine stops.

If the boom continues moving after the engine has stopped, the hose burst protection valve is faulty. Do not use the machine until the fault has been put right.





## HOSE BURST PROTECTION VALVES (continued)

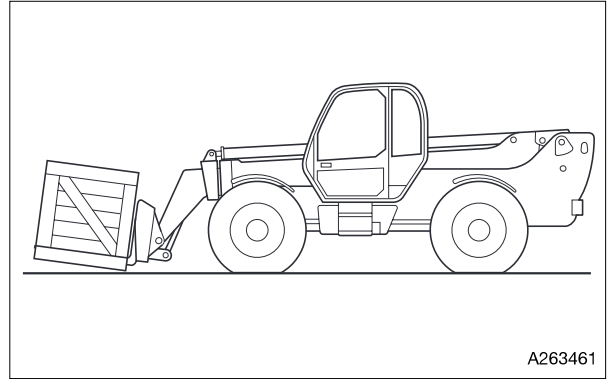
### Checking the Hose Burst Protection Valves (continued)

See previous page for general information on hose burst protection valves.

#### 3 Carriage Tilt Ram:

- a Pick up a load on the forks. (*For example a pack of bricks or some hay bales.*) Tilt the carriage fully back. Make sure the parking brake is engaged and the transmission is in neutral.
- b Position the boom clear of the ground, just far enough to allow the carriage to be tilted forward.
- c With the engine running at mid speed, operate the control lever to tilt the carriage forward. While the carriage is moving, switch off the engine. Carriage movement should slow as the engine slows and stop as the engine stops.

If the carriage continues moving after the engine has stopped, the hose burst protection valve is faulty. Do not use the machine until the fault has been put right.



## BATTERY

### Warning Symbols

The following warning symbols may be found on the battery.

#### Symbol

#### Meaning



A289230

Keep away from children.



A289260

Shield eyes.



A289280

No smoking, no naked flames,  
no sparks.



A289250

Explosive Gas.



A289240

Battery acid.



A289270

Note operating instructions.

### CAUTION

**Do not disconnect the battery while the engine is running, otherwise the electrical circuits may be damaged.**

INT-3-1-14

### WARNING

**Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and/or damage.**

INT-3-1-4

### DANGER

**Battery electrolyte is toxic and corrosive. Do not breathe the gases given off by the battery. Keep the electrolyte away from your clothes, skin, mouth and eyes. Wear safety glasses.**

INT-3-2-1/3

### CAUTION

**Damaged or spent batteries and any residue from fires or spillage should be put in a closed acid proof receptacle and must be disposed of in accordance with local environmental waste regulations.**

INT-3-1-12

### WARNING

**Batteries give off explosive gases. Keep flames and sparks away from the battery. Do not smoke close to the battery. Make sure there is good ventilation in closed areas where batteries are being used or charged. Do not check the battery charge by shorting the terminals with metal; use a hydrometer or voltmeter.**

INT-3-1-8

## BATTERY (continued)

### **⚠ WARNING**

Batteries give off an explosive gas. Do not smoke when handling or working on the battery. Keep the battery away from sparks and flames.

Battery electrolyte contains sulphuric acid. It can burn you if it touches your skin or eyes. Wear goggles. Handle the battery carefully to prevent spillage. Keep metallic items (watches, rings, zips etc) away from the battery terminals. Such items could short the terminals and burn you.

Set all switches in the cab to OFF before disconnecting and connecting the battery. When disconnecting the battery, take off the earth (-) lead first.

When reconnecting, fit the positive (+) lead first.

Re-charge the battery away from the machine, in a well ventilated area. Switch the charging circuit off before connecting or disconnecting the battery. When you have installed the battery in the machine, wait five minutes before connecting it up.

### First Aid - Electrolyte

Do the following if electrolyte:

#### GETS INTO YOUR EYES

Immediately flush with water for 15 minutes, always get medical help.

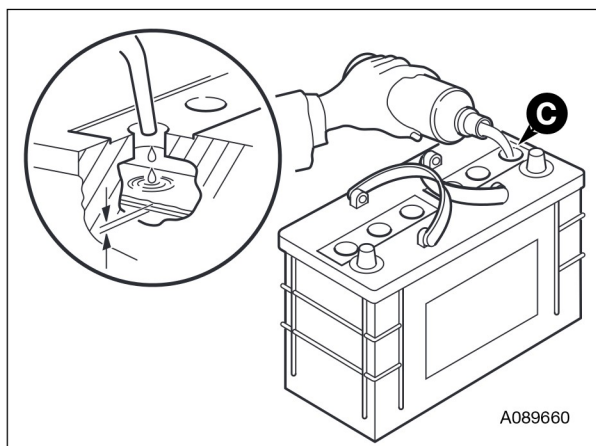
#### IS SWALLOWED

Do not induce vomiting. Drink large quantities of water or milk. Then drink milk of magnesia, beaten egg or vegetable oil. Get medical help.

#### GETS ONTO YOUR SKIN

Flush with water, remove affected clothing. Cover burns with a sterile dressing then get medical help.

5-3-4-3/1



### Checking the Electrolyte Level

Maintenance free batteries used in normal temperate climate applications should not need topping up. However, in certain conditions (such as prolonged operation at tropical temperatures or if the alternator overcharges) the electrolyte level should be checked as described below.

- 1 With key unlock and open the battery compartment cover **B**.

### **⚠ WARNING**

**Keep metal watch straps, and any metal fasteners on your clothes, clear of the positive (+) battery terminal. Such items can short between the terminal and nearby metal work. If this happens you can get burned.**

5-2-2-4

- 2 Disconnect and remove battery.

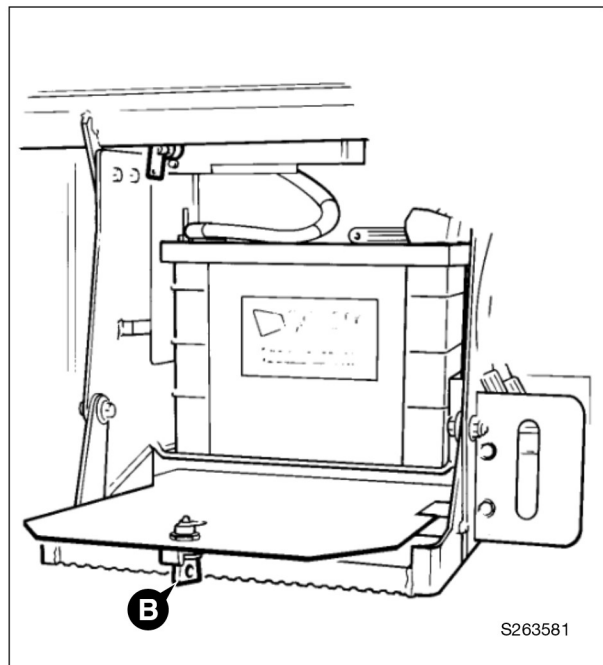
### **⚠ WARNING**

**Do not top the battery up with acid. The electrolyte could boil out and burn you.**

2-3-4-6

- 3 Remove covers **C**. Look at the level in each cell. The electrolyte should be 6 mm ( $\frac{1}{4}$  in) above the plates. Top up if necessary with distilled water or de-ionized water.

- 4 Refit battery, close and lock the battery compartment.



## BATTERY (continued)

### Battery Isolator

To disconnect the battery from the machine electrics a battery isolator has been fitted.

#### **⚠ CAUTION**

**Except in an emergency, do not use the battery isolator to switch OFF the engine. Failure to comply may result in damage to the electrical circuits.**

INT-3-2-13

It is not necessary to isolate the battery at the end of each working cycle. The battery isolator is intended to enhance safety during certain machine maintenance operations, not as an anti-theft device.

**Note:** *If the battery is isolated, the clock will need to be reset and the radio/cassette player may lose its preset memories.*

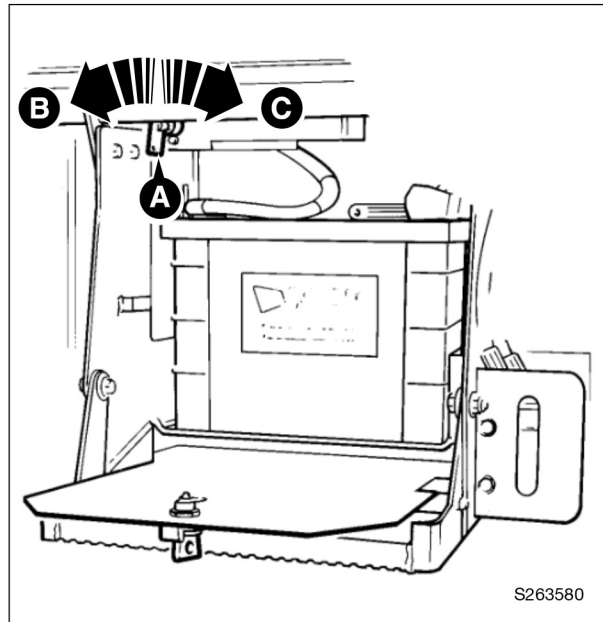
- 1 To isolate the battery turn the battery isolator key **A** in an anti-clockwise direction **B** and remove. Keep the key in a safe place and available for when the machine is next required.
- 2 To connect the battery insert the key **A** and turn in a clockwise direction **C**.

#### **⚠ CAUTION**

**Before carrying out arc welding on the machine disconnect the battery and alternator to protect the circuits and components.**

**The battery must still be disconnected even if the battery isolator is fitted.**

INT-3-1-13



## JUMP-STARTING THE ENGINE

### WARNING

If you try to charge a frozen battery, or jump-start and run the engine, the battery could explode

Do not use a battery if its electrolyte is frozen. To prevent the battery electrolyte from freezing, keep the battery at full charge.

Batteries give off a flammable gas that can explode.

Do not smoke when checking the battery electrolyte levels. When starting from another machine, make sure the two machines do not touch. This prevents any chance of sparks near the battery. Sparks could ignite the battery gas. If that happens the battery could explode.

Even with the starter switch set to off some circuits will be energised when the external power supply is connected. Set all the machine switches to their OFF positions before connecting the external power supply.

Do not connect a booster supply directly across the starter motor. Doing this could bypass the neutral safety switch and the engine can start with the transmission in gear. The machine could then run away and kill or injure bystanders.

Use only booster cables which are in good condition with securely attached connectors. Connect both ends of one booster cable before connecting the other one.

5-2-2-3

**Note:** Follow the instructions to start the engine using booster cables. Your machine has a 12 volt starting system. The negative (-) terminal on the battery is connected to frame earth.

The booster supply should not be higher than 12 volts. Using a welder or higher voltage supply will damage your machine's electrical system.

Do not connect two batteries together to give 24 volts. This could burn out the induction manifold heater and damage the starter motor.

- 1 The parking brake should have been engaged when the machine was last parked. If it is not engaged, engage it now. The engine will not start unless the parking brake is engaged.
- 2 Set all switches in the cab to off.

- 3 Connect the booster cables as follows:

- a Unlock and open the battery cover, see **Battery** (MAINTENANCE section).

### WARNING

Keep metal watch straps, and any metal fasteners on your clothes, clear of the positive (+) battery terminal. Such items can short between the terminal and nearby metal work. If this happens you can get burned.

5-2-2-4

- 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 frame earth on the machine, away from and below the battery.

**Note:** A good frame earth is part of the main frame, free from paint and dirt. Do not use a pivot pin for an earth.

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

- 4 Do the Pre-Start Checks, see **Before Starting the Engine** (OPERATION section).

- 5 Start the engine, see **Starting the Engine** (OPERATION section).

- 6 Disconnect the negative booster cable from the machine frame earth. Then disconnect it from the booster supply.

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

- 7 Close and lock the battery cover, see **Battery** (MAINTENANCE section).

## ELECTRICAL SYSTEM

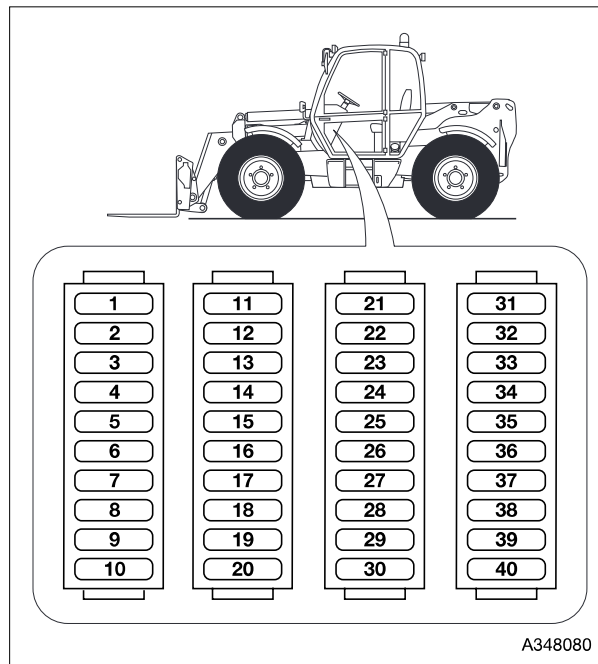
### Fuse Identification

This illustration shows a typical fuse installation.

The electrical circuits are protected by fuses. The fuses are located in a fuse box, as shown. If a fuse blows, find out why before fitting a new one.

Additional fuse links are fitted at the battery positive terminal.

**Note:** The radio fuse may have a higher rating, depending on the type of radio fitted. Check radio fitting instructions.



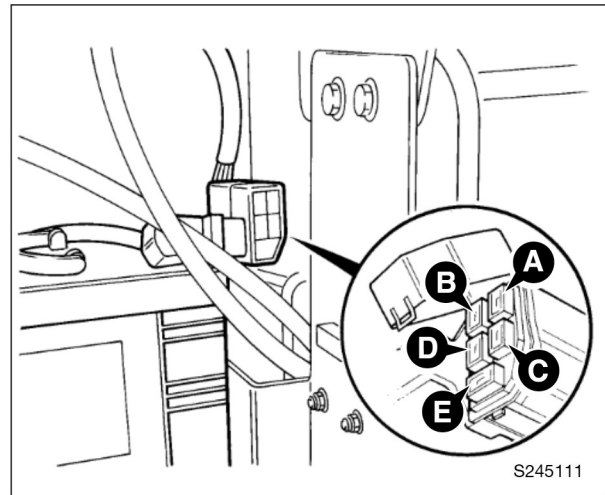
### All Machines Except 540-170:

Circuit	Rating
1 Boom isolator	7.5
2 Auxiliary controls	10
Joystick controls (530, 540)	10
3 Load Moment Indicator (LMI)	5
4 Heater	15
5 Air conditioning, face fan	15
6 Wipers	15
7 Radio, Clock	5
8 Instrument panel	7.5
9 Direction Indicators	10
10 Auxiliary Hydraulics (530, 540)	7.5
11 Starter relay	5
12 Engine shut-off solenoid (ESOS)	5
13 Steer mode selector	7.5
14 Powershift	15
15 2/4 Wheel drive selector	5
2/4 Wheel drive with trailer electrics (if fitted)	10
16 Auxiliary socket	10
17 Brake lights	10
18 Rear work light	7.5
19 Reverse lights & Reverse Alarm	7.5
20 BLANK	
21 Right hand side light	10
22 Left hand side light	10
23 Dip beam lights	10
24 Main beam lights	10
25 Front working light	10
26 Rear fog light	5
27 BLANK	
28 Horn, Headlight flash	10
29 Warning beacon, Interior light	5
30 Hazard lights	15
31 Smooth Ride System (if fitted)	5
32 SPARE	
33 SPARE	
34 Air Suspension Seat (if fitted)	15
35 SPARE	
36 BLANK	
37 BLANK	
38 BLANK	
39 BLANK	
40 BLANK	

## ELECTRICAL SYSTEM

## 540-170 Machines:

Circuit	Rating
1 Boom isolator (sway/stabilizers)	7.5
2 BLANK	
3 Load Moment Indicator (LMI)	5
4 Heater	15
5 Air conditioning, face fan	15
6 Wipers	15
7 Radio, Clock & Heated Seat	5
8 Instrument panel	7.5
9 Direction Indicators	10
10 BLANK	
11 Starter Relays & Road Light Switch Illumination	5
12 Engine shut-off solenoid (ESOS)	5
13 Steer mode selector	7.5
14 Powershift Transmission	15
15 Brake Lights or Two-Wheel Drive	5
16 Auxiliary Power socket	10
17 Two-Wheel Drive Relay Coil	10
18 Rear work light	7.5
19 Reverse lights & Reverse Alarm	7.5
20 BLANK	
21 Right hand side lights & Illumination	10
22 Left hand side lights	10
23 Dip beam lights	10
24 Main beam lights	10
25 Front working lights	10
26 Rear fog light	5
27 BLANK	
28 Horn, Headlight flash	10
29 Warning beacon, Interior light, Clock, Radio	5
30 Hazard lights	15
31 Hydraulics	15
32 BLANK	
33 BLANK	
34 Air Suspension Seat (if fitted)	15
35 BLANK	
36 Boom work light	5
37 BLANK	
38 BLANK	
39 BLANK	
40 BLANK	



## Fuse Links

## From serial number 768700 - 770053

Circuit	Rating
A Horn, Hazard warning lights, Beacon, Interior light	30
B Road lights, Working lights	30
C Not used	
D ESOS, Forward/reverse switch, Brake lights	40
E SLI, Heater, Wipers, Radio, Instruments	80

## From serial number 770054

Circuit	Rating
A Horn, Hazard warning lights, Beacon, Interior light	40
B Road lights, Working lights	40
C SLI, Heater, Wipers, Radio, Instruments	40
D ESOS, Forward/reverse switch, Brake lights	40
E Not used	80

## ELECTRICAL SYSTEM (continued)

### Bulbs

Bulb	Rating
Headlights - main/dip (Great Britain only)	60/37.5 W
Headlights - main/dip	45/40 W
Work lights	55 W Halogen
Front side lights	5 W
Stop/tail lights	21/5 W
Turn indicators	21 W
Warning lights	1.2 W
Interior light	18 W
Beacon	55 W Halogen

### Adjusting the Alternator Drive Belt

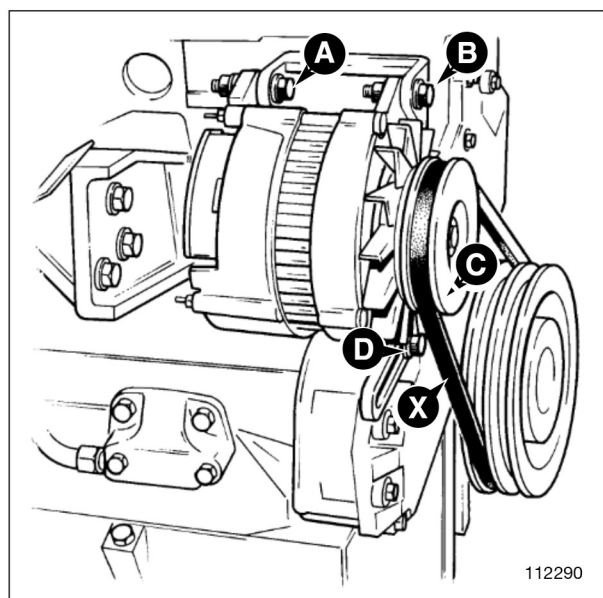
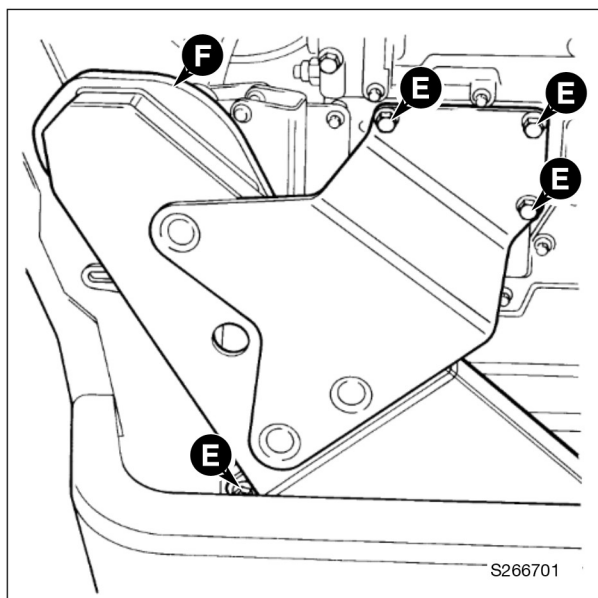
- 1 Park the machine on level ground. Lower the boom to the ground. Engage the parking brake. Remove the starter key.
- 2 Isolate the battery, see **Battery Isolator** (MAINTENANCE section).
- 3 Open the engine cover, see **Engine Cover** (MAINTENANCE section).
- 4 Undo bolts **E** and remove the drive belt cover **F**.
- 5 Loosen pivot fastening bolts **A** and **B**. Loosen adjustment link fastening bolts **C** and **D**.
- 6 Position the alternator so that there is 10 mm ( $\frac{3}{8}$  in) slack at point **X**.
- 7 Secure the alternator, tighten bolts **C** and **D**, then bolts **A** and **B**.
- 8 Refit the drive belt cover **F**, secure with bolts **E**.

### WARNING

You or others could be seriously injured by rotating parts if the alternator drive belt cover plate is not fitted. Always refit the cover plate before starting the engine.

5-3-4-5

**Note:** If a new belt is fitted, the belt tension must be checked again after the first 20 hours of operation.





## AIR CONDITIONING OPTION

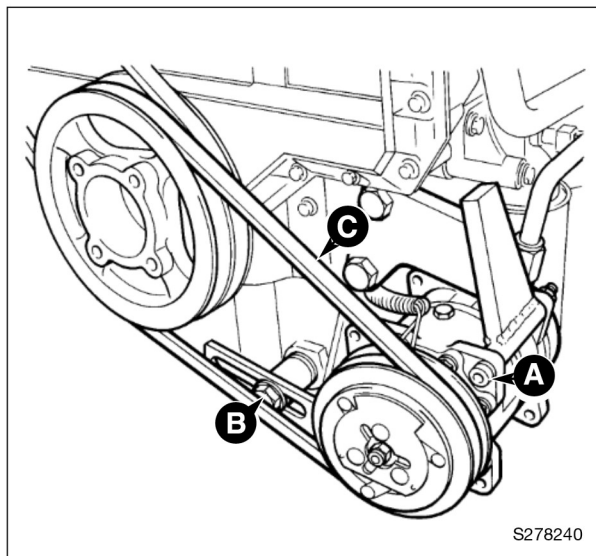
### WARNING

The air conditioning system is a closed loop system and contains pressurised refrigerant. No part of the system must be disconnected except by a qualified refrigeration engineer. You can be severely frostbitten or injured by escaping refrigerant.

4-3-4-1/1

### Adjusting the Air Conditioning Compressor Drive Belt

- 1 Park the machine on level ground. Lower the boom to the ground. Engage the parking brake. Remove the starter key.
- 2 Isolate the battery, see **Battery Isolator** (MAINTENANCE section).
- 3 Open the engine cover, see **Engine Cover** (MAINTENANCE section).
- 4 Loosen bolts **A**, and **B**. Position the compressor so that there is 10 mm ( $\frac{3}{8}$  in) slack at point **C**.
- 5 Tighten bolt **A**, then bolt **B**.



### Cleaning the Air Conditioning Filter

In dusty conditions the filter will require cleaning/changing more often.

### CAUTION

The filter may be filled with dust. Wear goggles and a face mask when removing the filter.

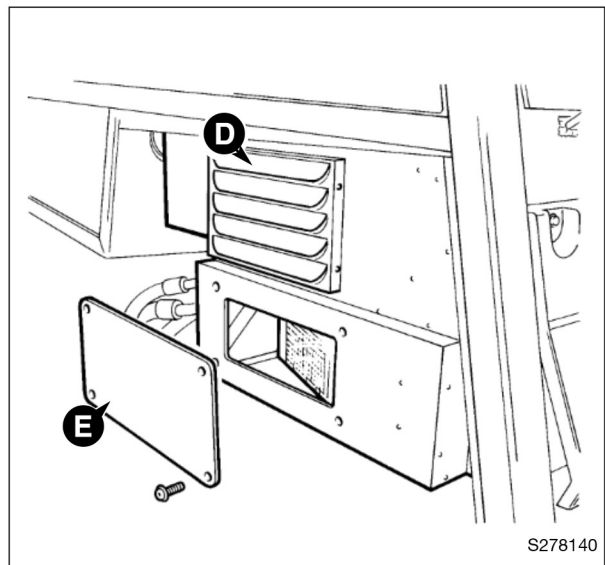
2-3-3-6

- 1 Park the machine on level ground. Engage the parking brake. Raise the boom and fit the safety strut, see **Boom Safety Strut** (MAINTENANCE section). Remove the starter key.
- 2 Isolate the battery, see **Battery Isolator** (MAINTENANCE section).
- 3 Remove cover plate **D**.
- 4 Sponge type filter, knock loose dust off the filter. Wash the filter in clean water. Allow to dry.

**Note:** Do not squeeze the filter to dry it. Shake off the bulk of the water, then let the rest drain off. If the filter was clogged, clean it more often.

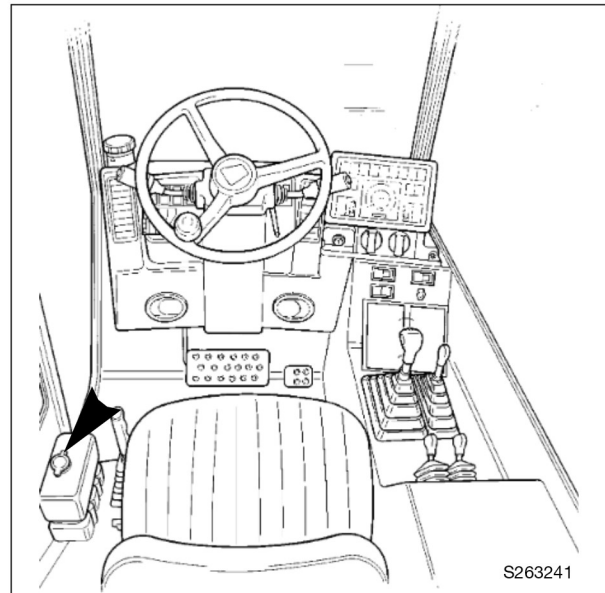
Paper type filter, fit a new filter.

- 5 Remove cover plate **E**, brush debris from the evaporator fins. Make sure loosened material is brushed out of the heater enclosure.
- 6 Refit cover plates **D** and **E**.



## WINDSCREEN WASHER

Fill the windscreen washer bottle with a suitable liquid. The liquid should contain a de-icing fluid to prevent freezing. Do not use engine coolant antifreeze.



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## OBTAINING REPLACEMENT PARTS

**We recommend you fit only JCB Genuine Parts.** A Parts Book will help you to identify parts and order them from your JCB distributor.

Your distributor will need to know the exact model, build and serial number of your machine. (See **Identifying Your Machine** in *INTRODUCTION* section.)

The data plate also shows the serial numbers of the engine, transmission and drive axle(s). But remember if any of these units have been changed, the serial number on the data plate may be wrong. Check on the unit itself.

### **⚠ WARNING**

**Some parts of your machine have Warning Decals attached. Before you fit a replacement part, make sure it has its warning decal, fixed in its correct position. (See *Safety Decals* in *INTRODUCTION* section.) Contact your dealer if the decal is missing.**

2-3-5-2/1

## FLUIDS, LUBRICANTS, CAPACITIES AND SPECIFICATIONS

### 530, 533, 535, 540-70 Machines

**Note:** New engines DO NOT require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores, resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load). Engines of new machines are filled at the factory with JCB 10W/30 Multigrade oil. This oil should be drained after the first 100 hours operation and the engine filled with the appropriate recommended grade as shown in the lubrication chart. JCB 10W/30 Multigrade should also be used for the first 100 hours operation whenever a new or reconditioned engine is fitted to the machine. After the first 100 hours operation, it is essential that the 10W/30 oil is replaced by the lubricant recommended below.

ITEM	CAPACITY Litres (Gal)	FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
<b>Fuel Tank</b>	125 (27.5)	Diesel Oil (See <b>Types of Fuel</b> )	ASTM D975-66T Nos. 1D, 2D
<b>Engine (Oil)</b> Engine Type: AA, AB, AR, AK & AM Builds	10 (2.2)	<b>JCB High Performance Engine Oil 15W40</b> -10 °C to 50 °C (14 °F to 122 °F) <b>JCB High Performance Engine Oil 10W30</b> -15 °C to 40 °C (5 °F to 104 °F)	SAE15W/40 API CF4/SG (ACEA, E2:B2:A2) SAE10W/30 API CF4/SG (ACEA, E2:B2:A2)
Engine Type: AA & AB Builds Only		<b>JCB High Performance Universal Agricultural Oil</b> -15°C to 30°C (5°F to 86°F) <b>JCB High Performance Torque Converter Fluid</b> -18°C to 0°C (0°F to 32°F)	SAE10W/30 API GL4 CE/SF  SAE10W API GL4 CE/SF
<b>Engine (Coolant) System</b> Antifreeze System (AM Build) Antifreeze (AM Build)	23 (5.0) 12.5 (2.75) 23.5 (5.2) 12.9 (2.85)	<b>JCB Four Seasons Antifreeze And Summer Coolant</b> (See <b>Coolant Mixtures</b> )	ASTM D3306-74
<b>Gearbox</b> Wet fill Dry fill 530FS Plus only 540FS Plus	21 (4.6) 23 (5.0) 17 (3.7) Wet 19 (4.2) Dry	<b>JCB Extreme Performance Transmission Oil</b> Friction modified oils MUST NOT be used (eg. Dexron ATF type).	JCB: 4000/2501
<b>Axles Housing Hubs (x4)</b>	18 (3.9) 2.0 (0.4)	<b>JCB High Performance Gear Oil Plus</b> Must be suitable for use with oil immersed brakes and limited slip differentials (LSD)	JCB: 4000/2200
<b>Brake System</b>		<b>JCB High Performance Hydraulic Fluid 15</b> DO NOT USE ORDINARY BRAKE FLUID	ISO VG15
<b>Hydraulic Tank †</b> 530, 540-70 533-105, 535-95	112 (24.6) 121 (26.6)	<b>JCB High Performance Hydraulic Fluid 46</b> (Above 38 °C, 100 °F) <b>JCB High Performance Hydraulic Fluid 32</b> (Below 38 °C, 100 °F)	ISO VG46 ISO VG32
<b>Grease Points ‡</b>		<b>JCB HP Grease</b>  <b>JCB Special MPL-EP Grease</b>	Lithium complex NLGI No. 2 consistency including extreme pressure additives. Lithium based NLGI No. 2 consistency including extreme pressure additives.
<b>Wear Pad Runways</b>		<b>JCB Waxoyl</b>	

† This is a tank capacity. The total hydraulic system capacity depends on the equipment being used. Fill and check with all rams closed. ‡ If JCB MPL Grease is used, all 50 hour greasing operations must be carried out at TEN (10) HOUR intervals; all 500 hour greasing operations must be carried out at 50 HOUR intervals.

## FLUIDS, LUBRICANTS, CAPACITIES AND SPECIFICATIONS 532, 537 & 540-170 Machines

**Note:** New engines DO NOT require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores, resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load). Engines of new machines are filled at the factory with JCB 10W/30 Multigrade oil. This oil should be drained after the first 100 hours operation and the engine filled with the appropriate recommended grade as shown in the lubrication chart. JCB 10W/30 Multigrade should also be used for the first 100 hours operation whenever a new or reconditioned engine is fitted to the machine. After the first 100 hours operation, it is essential that the 10W/30 oil is replaced by the lubricant recommended below.

ITEM	CAPACITY Litres (Gal)	FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
<b>Fuel Tank</b>	125 (27.5)	Diesel Oil (See <b>Types of Fuel</b> )	ASTM D975-66T Nos. 1D, 2D
<b>Engine (Oil)</b> Engine Type: AA, AB, AR & AK Builds	10 (2.2)	<b>JCB High Performance Engine Oil 15W40</b> -10 °C to 50 °C (14 °F to 122 °F) <b>JCB High Performance Engine Oil 10W30</b> -15 °C to 40 °C (5 °F to 104 °F)	SAE15W/40 API CF4/SG (ACEA, E2:B2:A2) SAE10W/30 API CF4/SG (ACEA, E2:B2:A2)
Engine Type: AA & AB Builds Only		<b>JCB High Performance Universal Agricultural Oil</b> -15°C to 30°C (5°F to 86°F) <b>JCB High Performance Torque Converter Fluid</b> -18°C to 0°C (0°F to 32°F)	SAE10W/30 API GL4 CE/SF  SAE10W API GL4 CE/SF
<b>Engine (Coolant) System</b> Antifreeze	23 (5.0) 12.5 (2.75)	<b>JCB Four Seasons Antifreeze And Summer Coolant</b> (See <b>Coolant Mixtures</b> )	ASTM D3306-74
<b>Gearbox</b> Wet fill Dry fill	21 (4.6) 23 (5.0)	<b>JCB Extreme Performance Transmission Oil</b> Friction modified oils MUST NOT be used (eg. Dexron ATF type).	JCB: 4000/2501
<b>Axles Housing Hubs (x4)</b>	18 (3.9) 2.0 (0.4)	<b>JCB High Performance Gear Oil Plus</b> Must be suitable for use with oil immersed brakes and limited slip differentials (LSD)	JCB: 4000/2200
<b>Brake System</b>		<b>JCB High Performance Hydraulic Fluid 15</b> DO NOT USE ORDINARY BRAKE FLUID	ISO VG15
<b>Hydraulic Tank †</b> 532, 537 540-170	131 (28.8) 180 (39)	<b>JCB High Performance Hydraulic Fluid 46</b> (Above 38 °C, 100 °F) <b>JCB High Performance Hydraulic Fluid 32</b> (Below 38 °C, 100 °F)	ISO VG46 ISO VG32
<b>Grease Points ‡</b>		<b>JCB HP Grease</b>  <b>JCB Special MPL-EP Grease</b>	Lithium complex NLGI No. 2 consistency including extreme pressure additives. Lithium based NLGI No. 2 consistency including extreme pressure additives.
<b>Wear Pad Runways</b>		<b>JCB Waxoyl</b>	

†**Note:** This is a tank capacity. The total hydraulic system capacity depends on the equipment being used. Fill and check with all rams closed.

‡**Note:** If JCB MPL Grease is used, all 50 hour greasing operations must be carried out at TEN (10) HOUR intervals; all 500 hour greasing operations must be carried out at 50 HOUR intervals.

**BOOM WEAR PAD CLEARANCE**

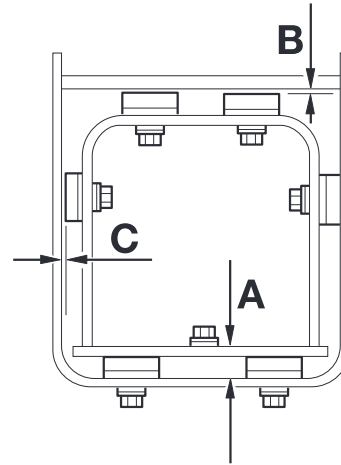
**Wear Limits**

Check the boom wear pad clearances every 500 hours.

Contact your JCB distributor if the wear pad clearances exceed the maximum stated dimensions below.

**530 And 540 Machines**

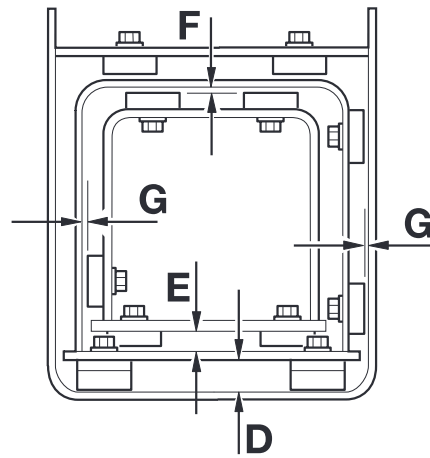
	Maximum Gap (mm)	Maximum Gap (in)	
<b>A</b>	37-41	1.45 to 1.60	
<b>B</b>	3	0.12	Boom Front
	1.5	0.06	Boom Rear
<b>C</b>	3.0	0.12	Boom Front
	1.5	0.06	Boom Rear



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**532, 533, 535 And 537 Machines**

	Maximum Gap (mm)	Maximum Gap (in)
<b>D</b>	37-41	1.45 to 1.60
<b>E</b>	21-25	0.83-0.98
<b>F</b>	3	0.12
<b>G</b>	1.5	0.06

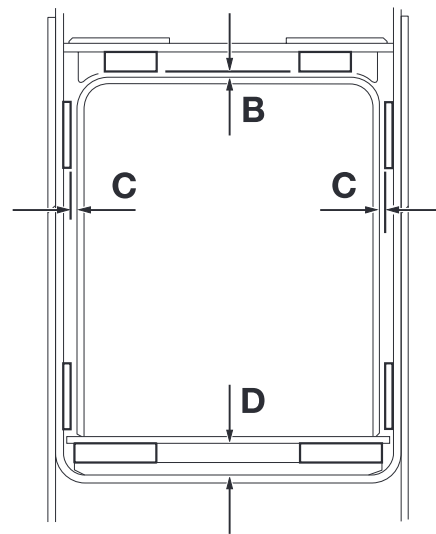
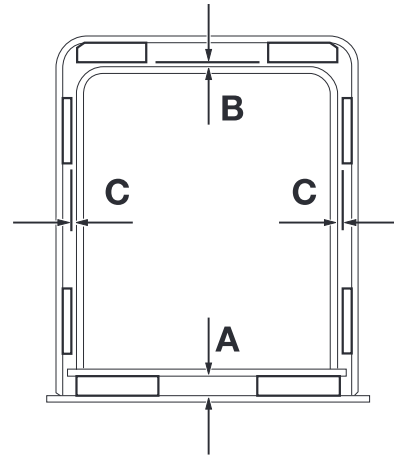
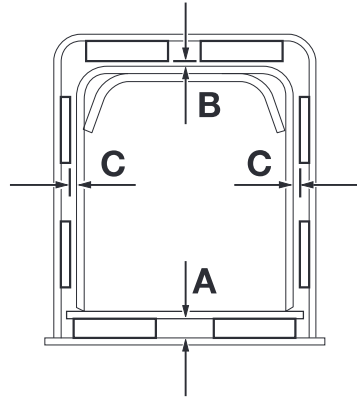


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## BOOM WEAR PAD CLEARANCE (Continued)

### 540-170 Machines

	Maximum Gap (mm)	Maximum Gap (in)	
<b>A</b>	22	0.87	
<b>B</b>	3	0.12	
<b>C</b>	1.5	0.06	
<b>D</b>	37	1.46	



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## INTRODUCTION

### **⚠ CAUTION**

**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.**

2-4-5-2

A wide range of optional attachments is 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.

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, "CE" and any other legislative compliance may be affected by the use of non JCB approved attachments.

2-4-1-13/2

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.

### **⚠ CAUTION**

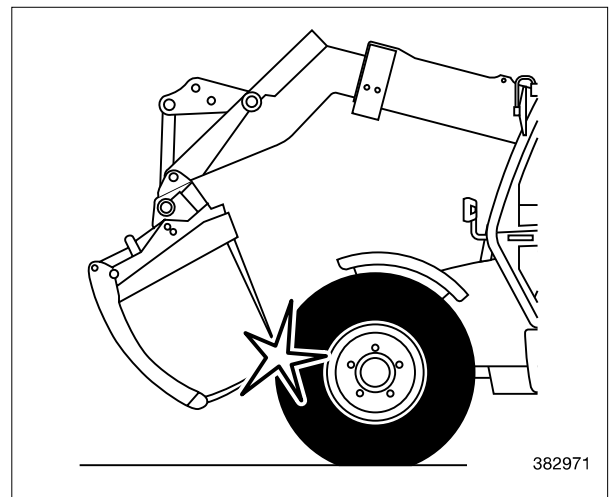
**If you have an attachment which is not covered in this handbook do not install it, use it or remove it until you have obtained, read and understood the pertinent information. Install attachments only on the machines for which they were designed.**

5-5-1-1

### **⚠ CAUTION**

**Some attachments (eg. muck fork/push-off) can cause damage to the front tyres when the boom is lowered and the carriage is tilted forward. Exercise caution when lowering the boom with the carriage tilted forward when a muck fork/push-off type attachment is fitted.**

5-5-1-9



## INTRODUCTION

This part of the handbook deals with the JCB optional attachments which can be fitted to the machine. For the Sideshift Carriage, Fork Mounted Hook, Extension Jib and Roof Truss Jib, the information in this book includes installation/removal, operation and routine maintenance.

For other attachments, please refer to the manufacturer's manual for the attachment (if supplied). General installation and removal procedures for other attachments are, however, included here.

Before installing, using or removing any optional attachment, make sure you read and understand the information provided. If there is anything you do not understand, ask your JCB Distributor.

All standard machines are fitted with a Q-Fit Carriage.

If the Q-Fit Carriage is changed or modified it may alter the setting of the Safe Load Indicator or Load Moment Indicator. Always consult your JCB distributor.

Approved attachments are listed below.

### 530, 533-105, 535-95, 540-70 Machines:

Shovel 6-in-1  
 Shovel General Purpose  
 Shovel Grain/Potato  
 Shovel Slurry/Rehandling  
 Industrial Forks  
 Standard Forks  
 Silage Forks  
 Muck Silage Forks  
 Muck Silage Forks with Push Off  
 Muck Silage Forks with Top Grab and Push Off  
 Round Bale Fork  
 Round Bale Spike  
 Round Bale Spike with Push Off  
 Hesston Bale Grab  
 Manure/Silage Grab  
 Wrapped Bale Clamp  
 Silashear  
 Root Crop Basket  
 Grain Pusher  
 Concrete Skip  
 Crane Hook  
 Extension Jib  
 Sideshift Carriage  
 Sweeper Collector

### 532, 537, 540-170 Machines:

Industrial Forks  
 Standard Forks  
 Crane Hook  
 Extension Jib  
 Roof Truss Jib  
 Shovel General Purpose (1.0 m<sup>3</sup> max. capacity)  
 Concrete Skip  
 Sideshift Carriage  
 Sweeper Collector

**Note:** A sweeper collector must not be used for more than 30 minutes unless high flow auxiliary service connectors are fitted. Allow the hydraulic system to cool for 30 minutes between each period of use.

### CAUTION

**Do not extend the boom whilst an attachment is connected to the high flow auxiliary connectors (if fitted). Severe damage to the hoses will result.**

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Please now read the section Quick Release Couplings.



## QUICK RELEASE COUPLINGS

Flat face quick release couplings allow the operator to remove and install attachments swiftly and efficiently. The standard auxiliary pipework has male and female couplings. The high flow auxiliary circuit (if fitted) has two female couplings. The mating hoses on the attachment must have corresponding couplings.

The quick release couplings should be trouble free and relatively easy to connect and disconnect, provided they are kept clean and used correctly. The recommendations listed below should always apply when using flat face quick release couplings.

Finally, please read the correct fitting and releasing procedures before installing or removing any optional attachment fitted with quick release couplings.

### **⚠ WARNING**

**The external surfaces of the couplings must be clean before connecting or disconnecting. Ingress of dirt will cause fluid leaks and difficulty in connecting or disconnecting. You could be killed or seriously injured by faulty Quick Release Couplings.**

2-4-1-15

### Quick Release Couplings – Do's & Don'ts

**DO** wipe the two faces of the coupling and make sure they are clean before connecting.

**DO** make sure the outside sleeve (female coupling) is pulled back when disconnecting.

**DO** connect and disconnect a new coupling two or three times to 'work' the PTFE seals – sometimes a new coupling will stick if the seals have not been 'worked'.

**DO** use a spanner on the hexagonal flats of the coupling when fitting adaptors.

**DO** use a rubber or hide hammer to disconnect a coupling if it sticks – sticking may occur if there is dirt present in the coupling.

**DON'T** attempt to re-connect a damaged half coupling – this will destroy the seals and necessitate replacing both half couplings.

**DON'T** leave the coupling where it may be run over by a machine or otherwise crushed – this will distort the coupling sleeve and prevent correct connection and disconnection.

**DON'T** clamp on the smooth diameter of the coupling when fitting adaptors – always use the hexagon.

**DON'T** damage the faces of the couplings – this can prevent connection and disconnection, or damage seals and cause leakage.

**DON'T** try to dismantle the couplings – they are non serviceable parts. If a coupling is damaged it should be replaced with a new one.

**DON'T** turn the coupling sleeve when disconnected - this will result in the locking ball jamming under the sleeve.

### Remove Pressure From Service Lines

Hydraulic fluid at pressure can injure you. Before attempting to connect or disconnect attachment couplings remove any residual hydraulic pressure trapped in the service lines:

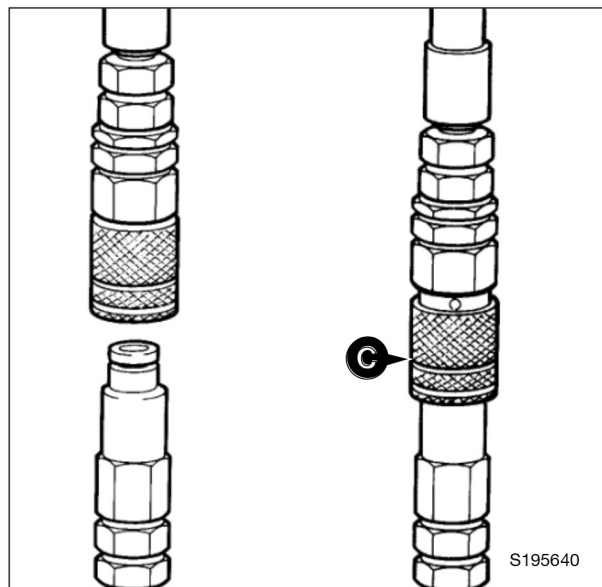
- 1 With the engine stopped, turn the starter switch to ON.
- 2 Select the Auxiliary circuit and operate the controls to vent residual hydraulic pressure.

### Connecting Quick Release Couplings

- 1 Remove any residual hydraulic pressure trapped in the service line hose.
- 2 Wipe the two faces of the male and female couplings and make sure they are clean.
- 3 Fit the male couplings into the female couplings. Make sure that the sleeve on the female coupling snaps into place.

### Disconnecting Quick Release Coupling

- 1 Remove any residual hydraulic pressure trapped in the service line hose.
- 2 Pull back sleeve **C** to release the coupling.



## INSTALLING AND REMOVING Q-FIT ATTACHMENTS

### Installing Attachments

- 1 Read the information given in the following pages or the attachment handbook. Pay particular attention to the safety notices and any specific notes about handling and installing.
- 2 Make sure the attachment is on firm, level ground. Make sure the attachment will not tip over.
- 3 Remove existing attachment, leave the Q-Fit carriage lock pins disengaged.

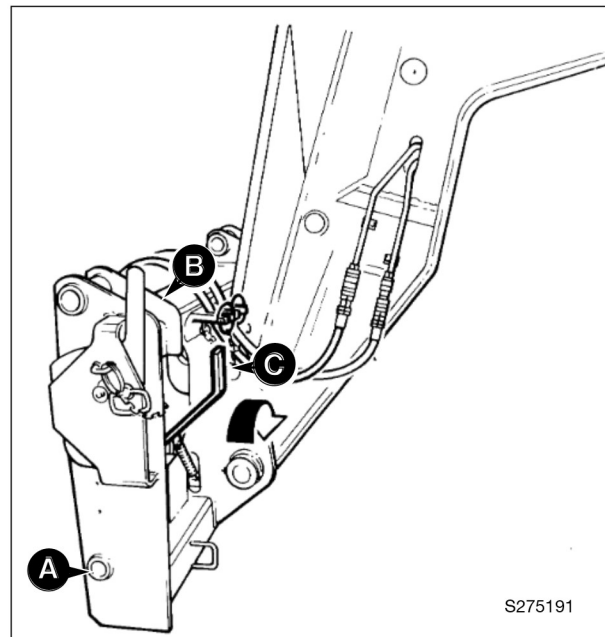
### **⚠ WARNING**

**Keep other people clear of the area while you engage 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. The machine loading limits at different boom positions are shown on the Load Charts in the cab.**

5-5-1-2/1

- 4 Ensure that the carriage lock pins **A** are withdrawn.
- 5 Use the controls to line up the carriage with the attachment and just below the attachment hook plates **B**.
- 6 Engage the parking brake, set the gear lever and forward/reverse lever to neutral.
- 7 Using the boom controls, engage the support bar on the carriage into the hook plates on the attachment. Ensure that both hook plates are engaged equally.
- 8 Lift and tilt the carriage back, to line up the locking holes in the carriage with those in the attachment.
- 9 Ensure that the gear lever and forward/reverse lever are set to neutral, and that the parking brake is on. Stop the engine. Remove the starter key.
- 10 At the carriage, operate the manual locking lever **C** to engage the locking pins. Ensure that the lock pins are fully engaged. If a second person is to do this job keep your hands and feet away from the controls until he is clear of the machine.

For machines with hydraulic pin locking, see **Hydraulic Pin Locking Option** (this section).



## INSTALLING AND REMOVING Q-FIT ATTACHMENTS (continued)

- 11 Connect the hydraulic hose(s), if the attachment is hydraulically operated read **Quick Release Couplings**, then connect the hose(s) as follows:

### ⚠ WARNING

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks. Then inspect the cardboard for signs of hydraulic fluid. If hydraulic fluid penetrates your skin, get medical help quickly.

INT-3-1-10/1

- a Engage the parking brake. Set the forward/reverse lever to neutral. Stop the engine.

### ⚠ WARNING

Always face the machine when entering and leaving the cab. Make sure your shoes and hands are clean and dry. Otherwise you could slip and fall.

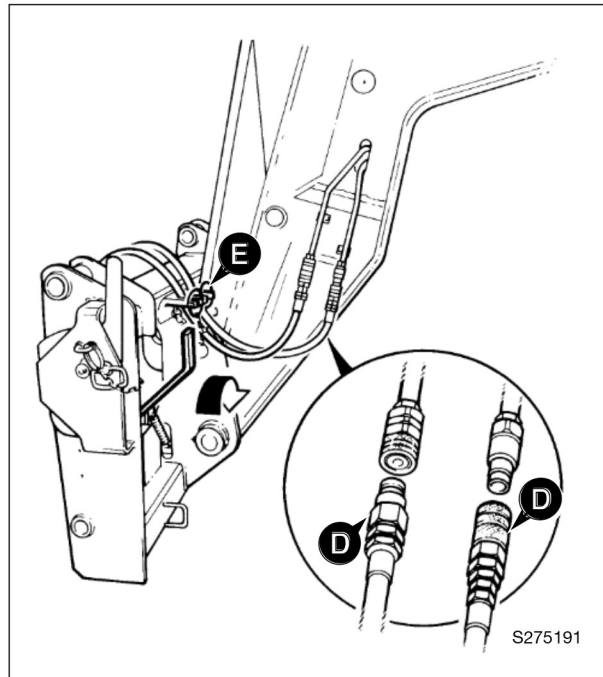
2-2-1-3

### ⚠ WARNING

You or others can be killed or seriously injured if you operate the control levers from outside the cab. Operate the control levers only when you are correctly seated inside the cab.

INT-2-1-3

- b Operate the auxiliary control lever several times in both directions to remove pressure from the service line. See **Auxiliary Controls** (OPERATION section) and **Quick Release Couplings**, (this section).
- c Remove the blanking cap(s) from the hose(s) and attachment coupling(s).
- d Press the hose coupling(s) **D** onto the attachment coupling(s); make sure they lock. (The couplings cannot be cross-connected.)
- e Secure the attachment hydraulic hoses to the carriage with locking pins **E**.



## INSTALLING AND REMOVING Q-FIT ATTACHMENTS (continued)

### Removing Attachments

**Note:** Deposit **Q-Fit** attachments on firm, level ground whenever possible. This will make later refitting easy and safe.

- 1 Lower the attachment to the ground.
- 2 Read the information given in the following pages or the attachment handbook. Pay particular attention to the safety notices and any specific notes about removing the attachment.
- 3 If the attachment is hydraulically operated read Quick Release Couplings, then disconnect the hose(s) as follows:

#### WARNING

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic fluid leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks. Then inspect the cardboard for signs of hydraulic fluid. If hydraulic fluid penetrates your skin, get medical help quickly.

INT-3-1-10/1

- a Engage the parking brake. Set the forward/reverse lever to neutral. Stop the engine.

#### WARNING

Always face the machine when entering and leaving the cab. Make sure your shoes and hands are clean and dry. Otherwise you could slip and fall

2-2-1-3

#### WARNING

You or others can be killed or seriously injured if you operate the control levers from outside the cab. Operate the control levers only when you are correctly seated inside the cab.

INT-2-1-3

- b Operate the auxiliary control lever several times in both directions to remove pressure from the service line. See **Auxiliary Controls** (OPERATION section) and **Quick Release Couplings**, (this section).

- c Disconnect the hose(s) **D**, by pulling up the knurled locking ring(s) and withdrawing the hose coupling(s). Fit the coupling blanking cap(s).

- d Release the attachment hydraulic hoses from the carriage by removing locking pins **E**.

- 4 Move the locking lever to the unlock position **A** to disengage the locking pins.

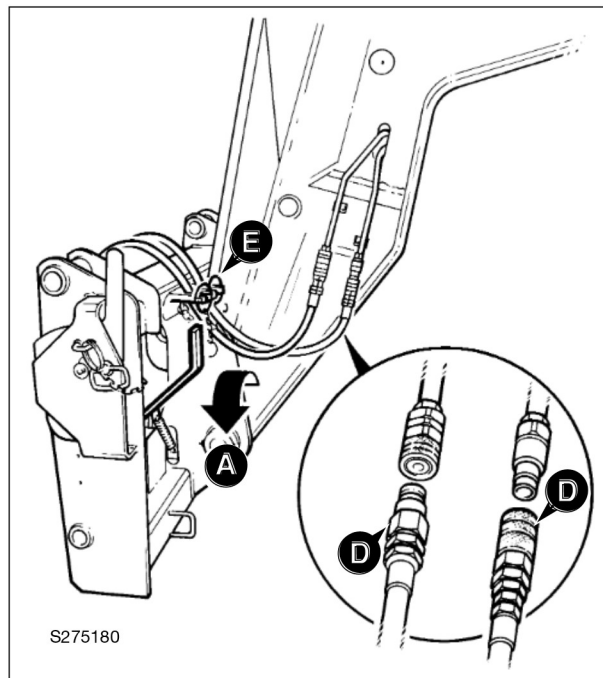
For machines with hydraulic pin locking, see **Hydraulic Pin Locking Option** (this section).

#### WARNING

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

5-5-1-3/1

- 5 Start the engine and tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment. Then lower the boom slowly to withdraw the carriage from the attachment hook plates. Carefully reverse the machine away from the attachment (or retract the boom).





## HYDRAULIC PIN LOCKING OPTION

The hydraulic pin locking option allows attachments to be installed or removed without leaving the cab.

Decals near the levers and switches show by symbols, which levers and switches cause what actions. Before operating control levers and switches, check the decal to make sure you select the desired action.

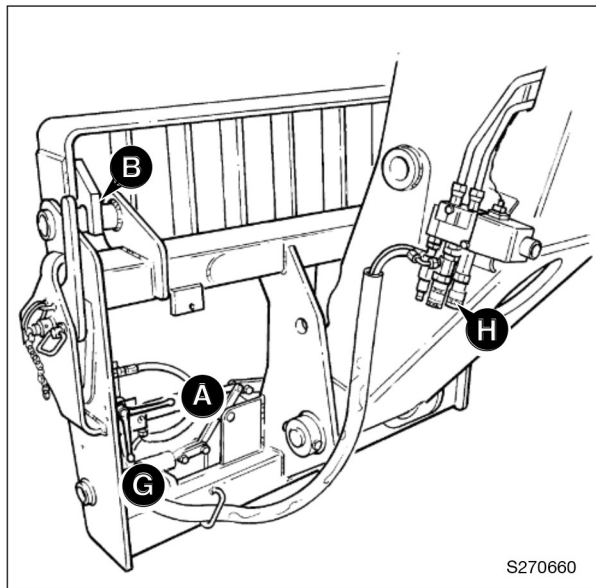
### Installing Attachments

#### **⚠ WARNING**

Keep other people clear of the area while you engage 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.

5-5-1-2/2

- 1 Park the machine on firm level ground, apply the parking brake and select the forward/reverse lever to neutral.



- 2 Lower the boom to the ground. Remove any attachment previously fitted, see **Removing Attachments** (this section).
- 3 Move the lever of the hydraulic pin locking isolation valve (if fitted) to the horizontal position **A**.

#### **⚠ DANGER**

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

5-5-1-8

- 4 Using the boom controls, engage the support bar on the carriage into the hook plates **B** on the attachment. Ensure that both hook plates are engaged equally.
- 5 Lift and tilt the carriage back, to line up the locking holes in the carriage with those in the attachment.
- 6 Hitch/Auxiliary selector switch **C** is fitted on some machines. If fitted, operate to select the auxiliary circuit, the lamp should illuminate.

#### **⚠ WARNING**

Control lever/switch action may vary on machines, decals near the levers/switches show by symbols, which levers/switches cause what actions. Before operating control levers/switches check the decal to make sure you select the desired action.

5-2-2-9

- 7 The auxiliary controls vary according to the type of controls fitted to the machine. Refer to the illustration which shows the controls on your machine.

Operate the auxiliary control as described below.

#### **530, 533, 535 & 540-70 machines:**

Press and hold button **D** to select Aux 2 (if fitted). Operate control **E** to engage the locking pins.

#### **532, 537 & 540-170 machines:**

Operate control **E** or **F** depending on the way the Quick-Release Couplings are connected.

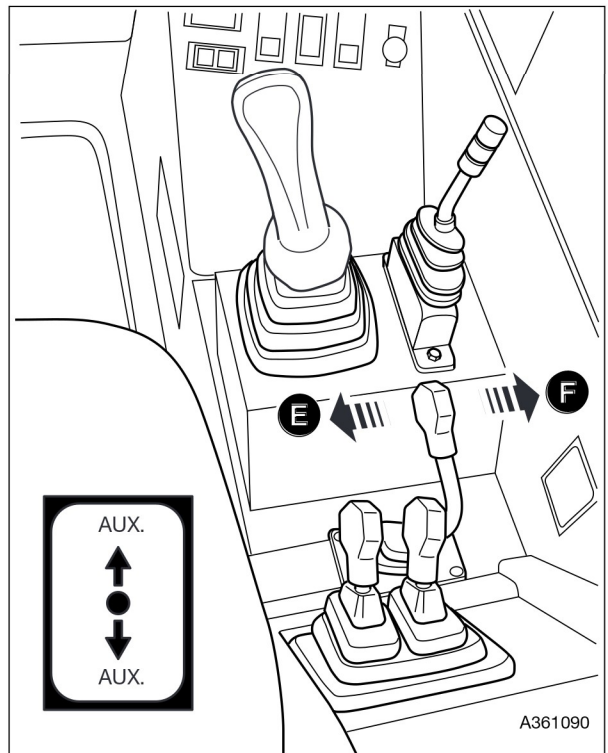
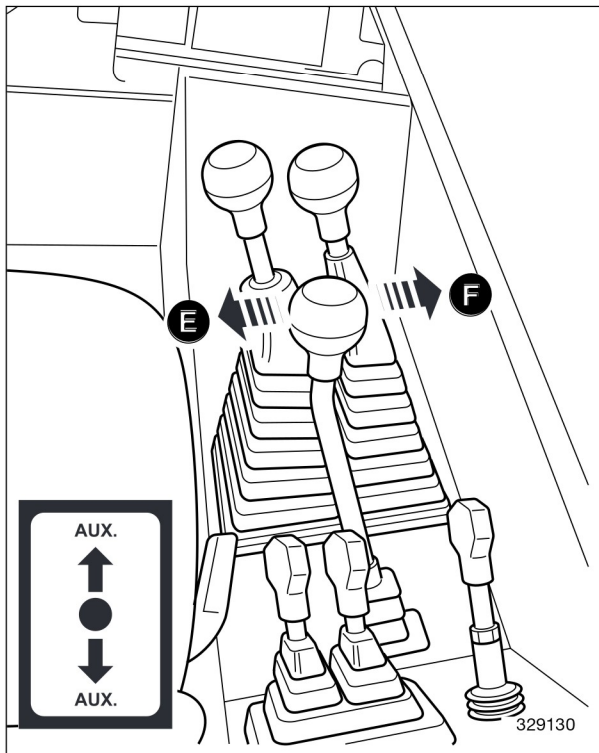
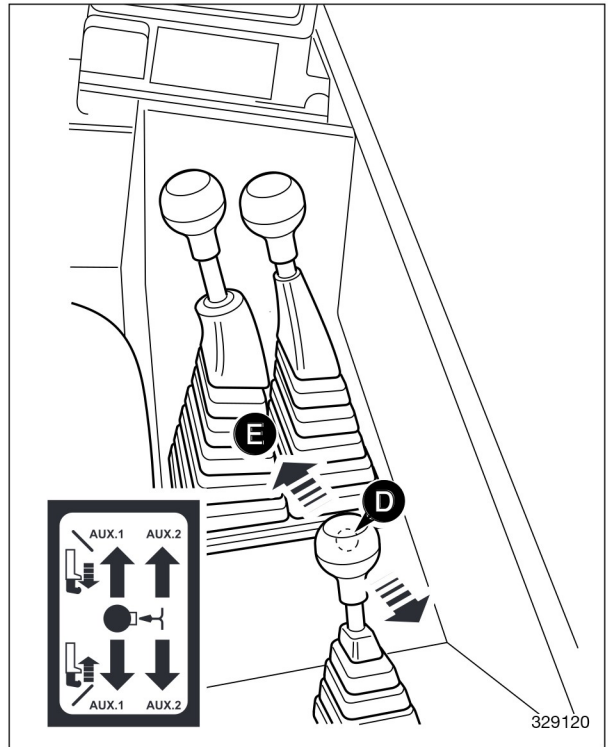
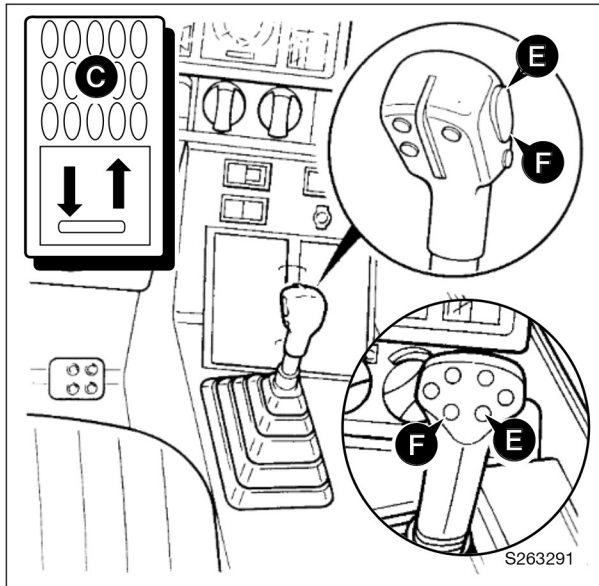
#### **⚠ DANGER**

The hydraulic pin locking isolation valve must be in the fully closed position otherwise the locking pins could be inadvertently disengaged.

5-5-3-7

- 8 Move the lever of the hydraulic pin locking isolation valve (if fitted) to the vertical position **G**, in this position the locking pins are isolated and the auxiliary circuit is active.
- 9 If a hydraulically operated attachment is fitted connect the Quick Release Couplings **H**, see **Installing and Removing Q-Fit Attachments** (this section). The engine will have to be stopped and the pressure in the service lines dissipated.

## HYDRAULIC PIN LOCKING OPTION (continued)



## HYDRAULIC PIN LOCKING OPTION (continued)

### Removing Attachments

Decals near the levers and switches show by symbols, which levers and switches cause what actions. Before operating control levers and switches, check the decal to make sure you select the desired action.

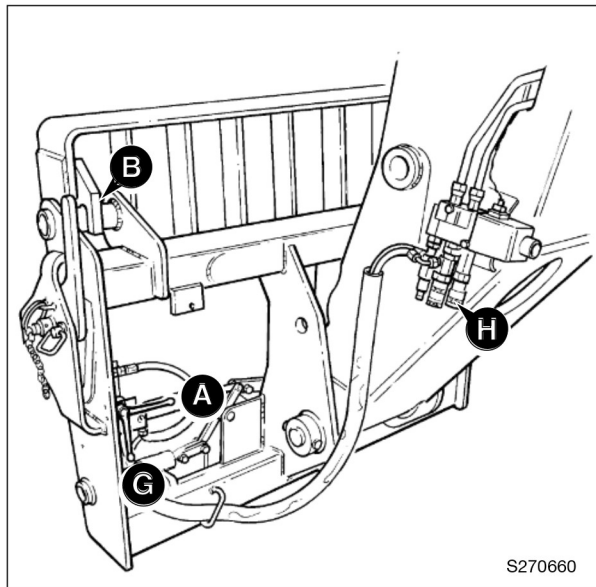
- 1 Park the machine on firm level ground, apply the parking brake and select the forward/reverse lever to neutral.
- 2 Lower the boom to the ground.
- 3 If a hydraulically operated attachment is fitted disconnect the Quick Release Couplings **H**, see *Installing and Removing Q-Fit Attachments* (this section). The engine will have to be stopped and the pressure in the service lines dissipated.

### **⚠ 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.

5-5-1-3/1

- 4 Move the lever of the hydraulic pin locking isolation valve (if fitted) to the horizontal position **A**.



### **⚠ DANGER**

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

5-5-1-8

### **⚠ WARNING**

Control lever/switch action may vary on machines, decals near the levers/switches show by symbols, which levers/switches cause what actions. Before operating control levers/switches check the decal to make sure you select the desired action.

5-2-2-9

- 5 The auxiliary controls vary according to the type of controls fitted to the machine. Refer to the illustration which shows the controls on your machine.

Operate the auxiliary control as described below.

#### **530, 533, 535 & 540-70 machines:**

Press and hold button **D** to select Aux 2 (if fitted). Operate control **F** to disengage the locking pins.

#### **532, 537 & 540-170 machines:**

Operate control **E** or **F** depending on the way the Quick-Release Couplings are connected.

- 6 Tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment. Then lower the boom slowly to withdraw the carriage from the attachment hook plates **B**. Carefully reverse the machine away from the attachment (or retract the boom).

### **⚠ DANGER**

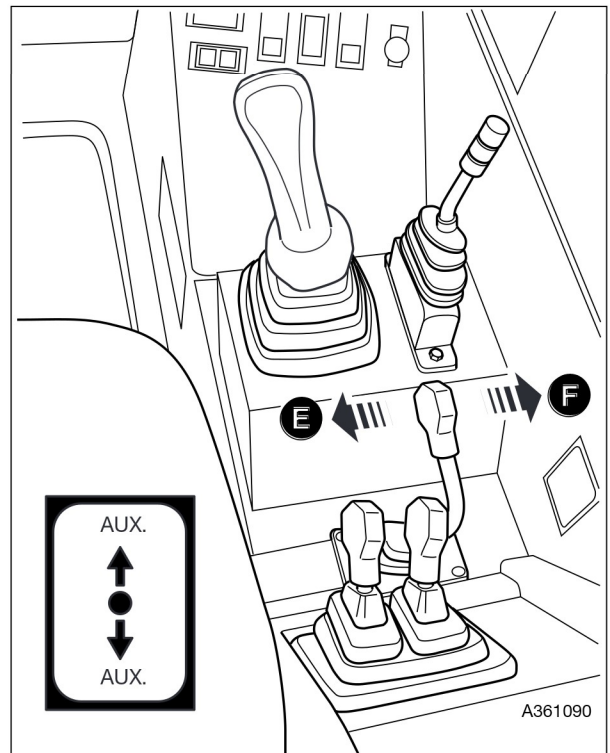
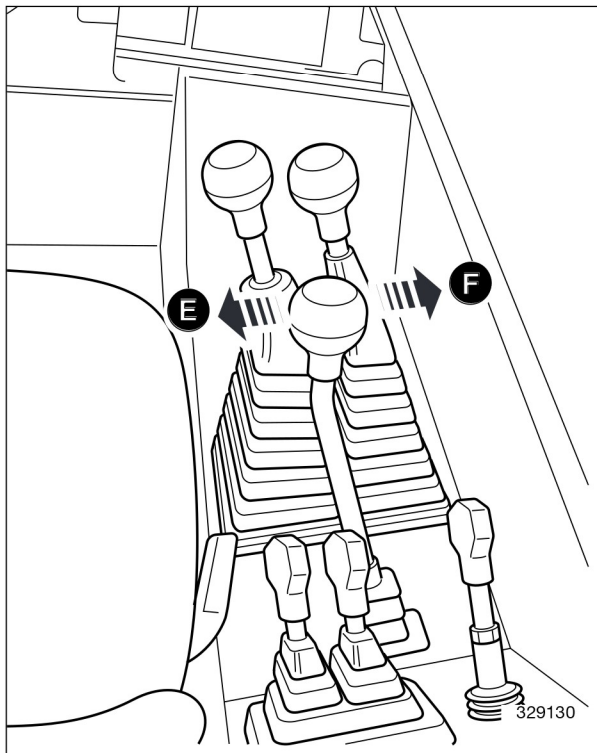
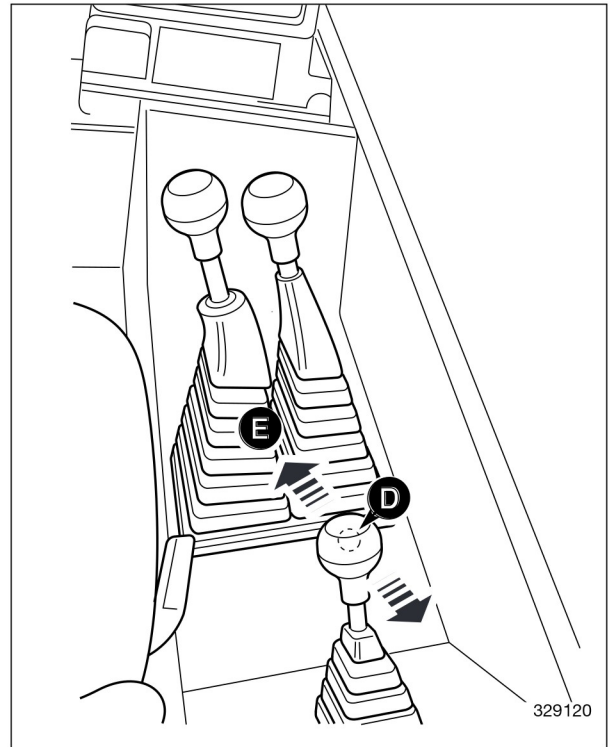
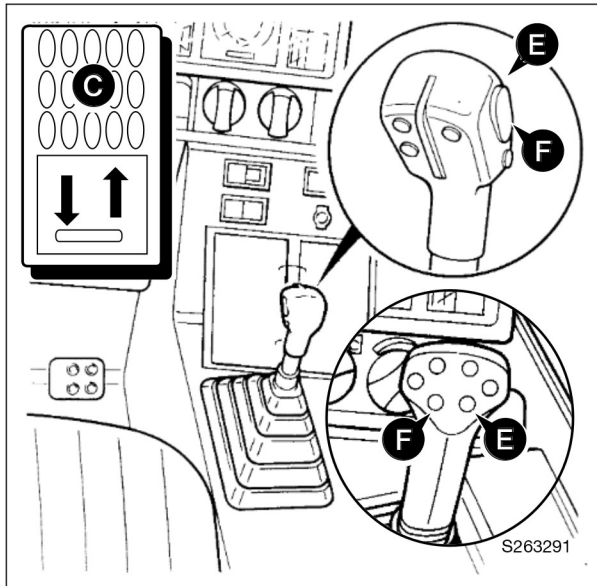
The hydraulic pin locking isolation valve must be in the fully closed position otherwise the locking pins could be inadvertently disengaged.

5-5-3-7

- 7 Move the lever of the hydraulic pin locking isolation valve (if fitted) to the vertical position **G**, in this position the locking pins are isolated and the auxiliary circuit is active.



## HYDRAULIC PIN LOCKING OPTION (continued)



## EXTENSION JIB

This is a **Q-Fit** attachment. It gives your machine greater reach and height. This attachment is supplied with test certificates for its fabrication, its hook and its shackle. Its Safe Working Load is stamped on a plate mounted on the attachment. See *Working With The Machine* (OPERATION Section).

### Safety

Obey all the safety instructions given in the main part of this book, plus the ones given in this section. **USE THIS ATTACHMENT ONLY IF IT CARRIES UP TO DATE TEST CERTIFICATES**

### Installing/Removing

#### WARNING

**This attachment is heavy. Take care when lifting and handling it. Use suitable lifting tackle.**

**Make sure the lifting tackle is in good condition. Make sure the lifting tackle complies with all pertinent regulations.**

**Wear gloves and safety shoes.**

5-5-4-12

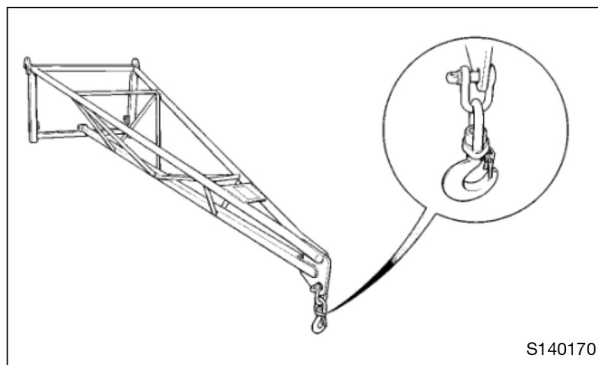
See *Installing and Removing Q-Fit Attachments* at the beginning of this section. Installing will be easier if the Extension Jib is rested on wooden blocks. **Store the attachment carefully to prevent damage and corrosion.**

#### WARNING

**This attachment has a maximum Safe Working Load. Do not exceed the SWL.**

**Do not exceed the machine stability limits shown on the Load Chart(s) in the cab**

5-5-4-11



### Operation

#### CAUTION

**Load and unload on firm, level ground. Always be alert for possible hazards. Take special care when turning or reversing.**

5-2-4-7

Observe the following precautions when using this attachment.

**ALWAYS** check the appropriate flip chart in the cab before lifting or manoeuvring a load with this attachment.

**ALWAYS** level the machine using the sway control or stabilizers (if fitted) before operating the attachment. Reposition the machine if a level position cannot be achieved.

**ALWAYS** use lifting tackle which is suitable for the job, in good condition and proof tested where necessary.

**ALWAYS** sling the load safely and in accordance with any local regulations.

**ALWAYS** ensure that the hook safety catch has sprung back to prevent the sling(s) from slipping off the hook.

**ALWAYS** lift a slung load carefully, to avoid 'snatching' the sling(s).

**ALWAYS** keep yourself and other people clear of a suspended load, especially from beneath the load.

**ALWAYS** check for clearance before manoeuvring the machine with this attachment installed. Remember that the effective length of the boom is increased when this attachment is installed.

**ALWAYS** manoeuvre the machine carefully when carrying a suspended load. Keep the load as low to the ground as possible. If necessary, use guide ropes to prevent the load from swinging.

**ALWAYS** travel in 1st gear at walking speed when carrying a suspended load. Wherever possible, travel on firm, level ground. Avoid rough or excessively bumpy ground.

**NEVER** carry suspended loads on public roads.

**ALWAYS** be aware of the affects of wind velocity on the load being handled.

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## EXTENSION JIB (continued)

### Maintenance

#### Daily

**Clean** with the rest of the machine.

**Check** for damage. Ensure that the hook safety catch is in good working order.

#### As Required or At Least Annually

All lifting equipment including this attachment may need regular inspection and testing by a competent person to ensure they are fit for purpose.

This may be needed every six months or at least annually in many countries to meet and comply with local legislation and for insurance purposes.

Check with your local JCB distributor for further advice.

## FORK MOUNTED HOOK

The Fork Mounted Hook allows the Loadall to carry slung loads with safety. It incorporates a swivel hook with a spring-loaded safety catch. This attachment is supplied with test certificates for its fabrication and its hook. Its Safe Working Load is stamped on a plate mounted on the attachment. See **Working With The Machine** (OPERATION Section).

### Safety

Obey all the safety instructions given in the main part of this book, plus the ones given in this section. USE THIS ATTACHMENT ONLY IF IT CARRIES UP TO DATE TEST CERTIFICATES

### Installing

- 1 Space the forks, equally on either side of the machine centreline, so that the mounting sockets **A** can be slid onto them. Fully tighten the fork clamping screws to prevent movement.
- 2 Install the attachment.

### WARNING

**This attachment is heavy. Take care when lifting and handling it. Use suitable lifting tackle.**

**Make sure the lifting tackle is in good condition. Make sure the lifting tackle complies with all pertinent regulations.**

**Wear gloves and safety shoes.**

5-5-4-12

- a Remove lynch pin **B** and locking bar **C**.
- b Slide the attachment over the forks so that the rear of the attachment butts against the heels of the forks.
- c Refit locking bar **C** and secure with lynch pin **B**.
- d Ensure both mounting brackets are installed securely.

### Removing

- 1 Lower the attachment so that it just clears the ground. Engage the parking brake and stop the engine.
- 2 Remove the attachment.

### WARNING

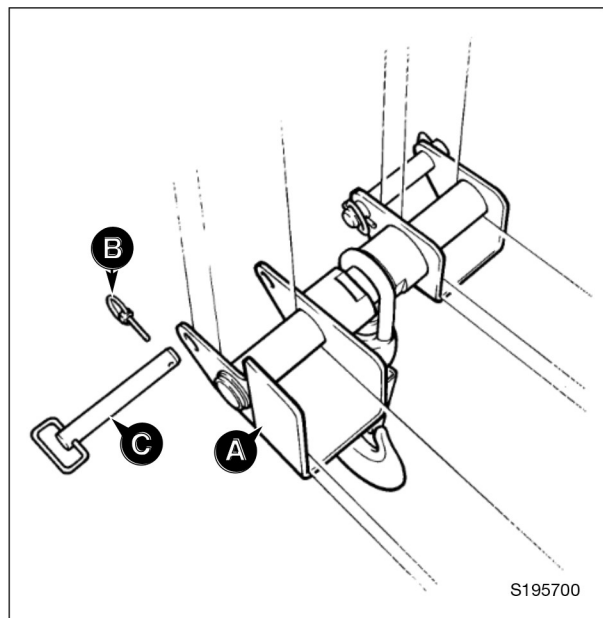
**This attachment is heavy. Take care when lifting and handling it. Use suitable lifting tackle.**

**Make sure the lifting tackle is in good condition. Make sure the lifting tackle complies with all pertinent regulations.**

**Wear gloves and safety shoes.**

5-5-4-12

- a Remove lynch pin **B** and locking bar **C**.
- b Carefully slide the attachment off the forks.
- c Refit locking bar **C** and secure with lynch pin **B**. **Store the attachment carefully to prevent damage and corrosion.**



## FORK MOUNTED HOOK (continued)

### Operation

Observe the following precautions when using this attachment.

#### CAUTION

**Load and unload on firm, level ground. Always be alert for possible hazards. Take special care when turning or reversing.**

5-2-4-7

**ALWAYS** check the appropriate flip chart in the cab before lifting or manoeuvring a load with this attachment.

**ALWAYS** level the machine using the sway control or stabilizers (if fitted) before operating the attachment. Reposition the machine if a level position cannot be achieved.

**ALWAYS** use lifting tackle which is suitable for the job, in good condition and proof tested where necessary.

**ALWAYS** sling the load safely and in accordance with any local regulations.

**ALWAYS** ensure that the hook safety catch has sprung back to prevent the sling(s) from slipping off the hook.

**ALWAYS** lift a slung load carefully, to avoid 'snatching' the sling(s).

**ALWAYS** keep yourself and other people clear of a suspended load, especially from beneath the load.

**ALWAYS** manoeuvre the machine carefully when carrying a suspended load. Keep the load as low to the ground as possible. If necessary, use guide ropes to prevent the load from swinging.

**ALWAYS** travel in 1st gear at walking speed when carrying a suspended load. Wherever possible, travel on firm, level ground. Avoid rough or excessively undulating ground.

**NEVER** carry suspended loads on public roads.

**ALWAYS** be aware of the effects of wind velocity on the load being handled.

#### WARNING

**This attachment has a maximum Safe Working Load. Do not exceed the SWL.**

**Do not exceed the machine stability limits shown on the Load Chart(s) in the cab.**

5-5-4-11

### Maintenance

#### Daily

**Clean** with the rest of the machine.

**Check** for damage. Ensure that the hook safety catch is in good working order.

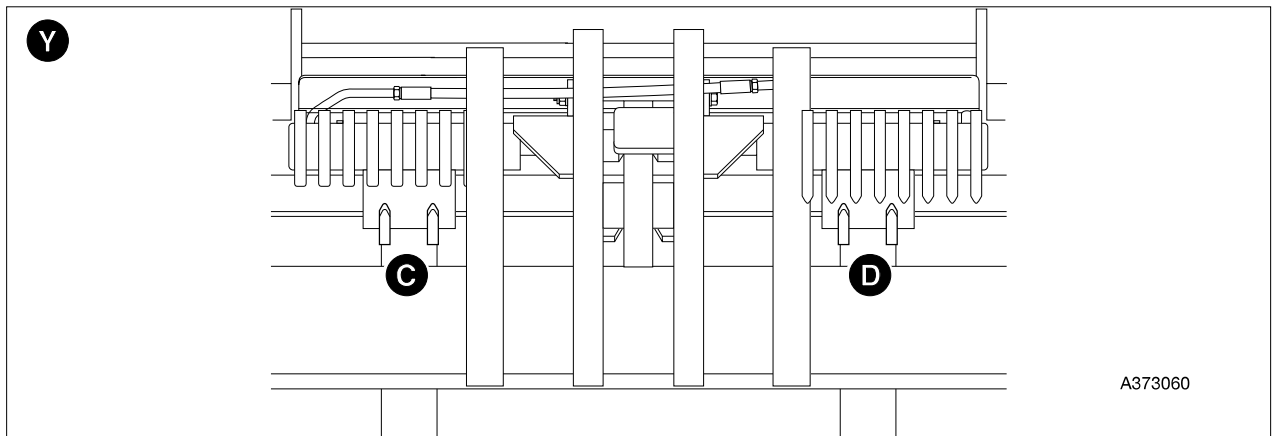
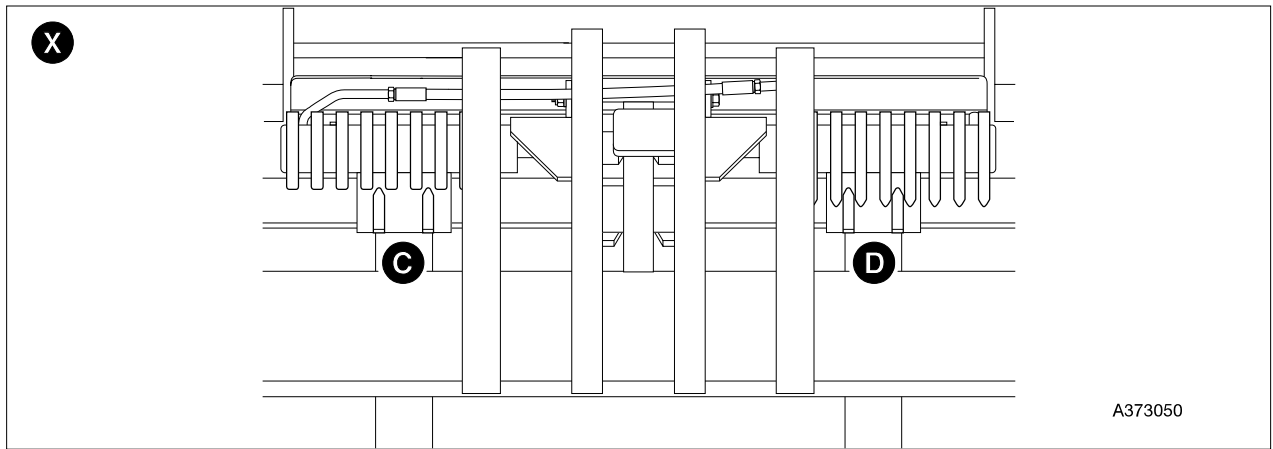
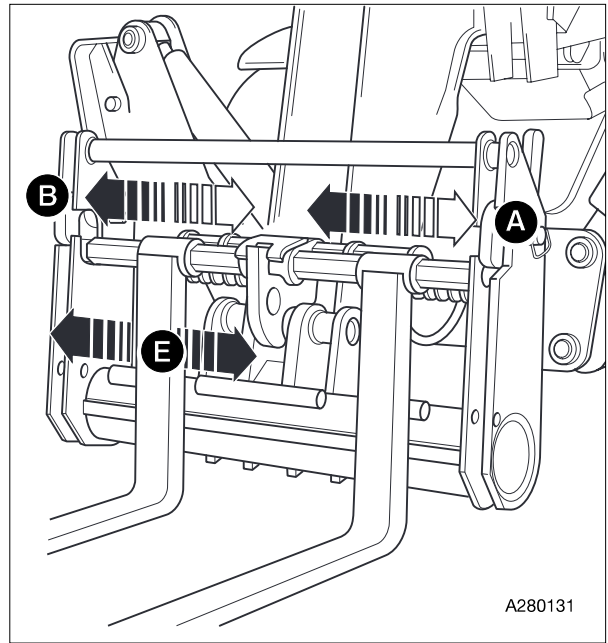
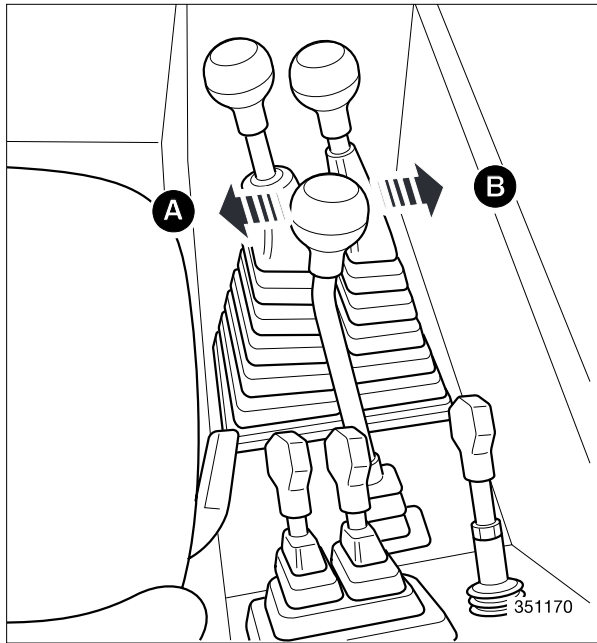
#### As Required or At Least Annually

All lifting equipment including this attachment may need regular inspection and testing by a competent person to ensure they are fit for purpose.

This may be needed every six months or at least annually in many countries to meet and comply with local legislation and for insurance purposes.

Check with your local JCB distributor for further advice.

## SIDESHIFT CARRIAGE



## SIDESHIFT CARRIAGE (continued)

### Operation

The Sideshift carriage allows the operator to accurately position both forks simultaneously with  $\pm 100\text{mm}$  (4in) of sideways movement with a load on the forks. The forks are controlled by the auxiliary control lever in the cab.

Operate the auxiliary lever as required to move the forks.

- A Sideshift Left
- B Sideshift Right

Fork spacing may be adjusted to suit the load either hydraulically, using the auxiliary control lever, or manually.

### WARNING

**Loads can fall off incorrectly spaced forks. Always space the forks correctly for the load. Make sure the forks are completely under the load before lifting.**

0028/1

### Hydraulic Fork Spacing

- 1 Raise the boom and tilt the carriage forward, as shown at **X**, until the left hand fork fingers **C** disengage from the cylinder, leaving the right hand fork fingers **D** engaged. Use the auxiliary control lever to sideshift the right hand fork only, as at **E**, in order to position the forks.
- 2 Tilt the carriage back and make sure the left hand fork re-engages with the cylinder.

### Manual Fork Spacing

### WARNING

**Forks are heavy. Take care when spacing the forks or folding the forks back.**

0002

- 1 Raise the boom and tilt the carriage forward as shown at **Y**, until both left **C** and right **D** forks disengage from the cylinder. Manually position the forks as required.
- 2 Tilt the carriage back and make sure both forks re-engage with the cylinder.

## SIDESHIFT CARRIAGE (continued)

### Installing the Sideshift Carriage

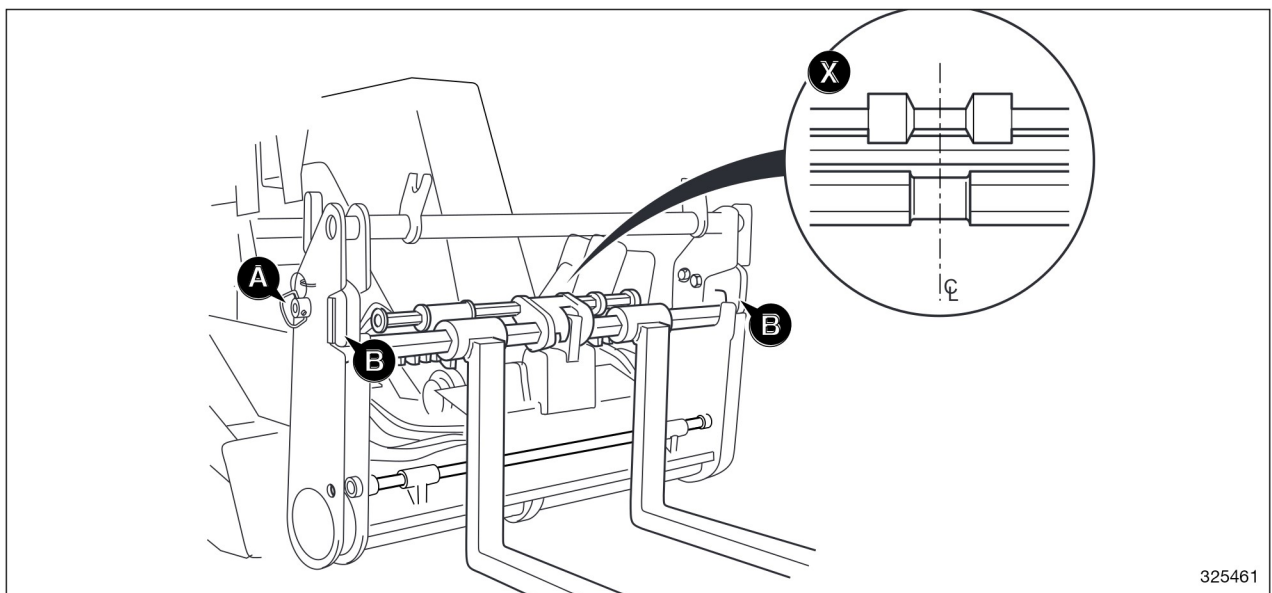
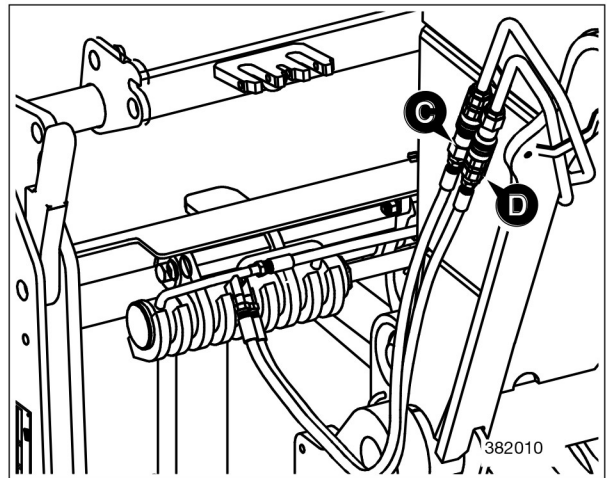
Pay particular attention to the safety notices and any specific notes about handling and installing. See **Installing And Removing Q-Fit Attachments**.

#### **WARNING**

**Keep other people clear of the area while you engage 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. The machine loading limits at different boom positions are shown on the Load Charts in the cab.**

5-5-1-2/1

- 1 Make sure the attachment is on firm, level ground. Make sure the attachment will not tip over.
- 2 Remove existing attachment, leave the Q-Fit carriage lock pin disengaged.
- 3 Withdrawn carriage locking pins **A**.
- 4 Use the controls to line up the carriage with the attachment and just below the attachment hook plates **B**.
- 5 Engage the parking brake, set the gear lever and forward/reverse lever to neutral.
- 6 Align the sections of the Sideshift attachment centrally as shown at **X**. **Note:** Protective cover removed for clarity.
- 7 Use the boom controls to engage the support bar on the attachment into the hook plates **B** on the carriage. Ensure both hook plates engaged equally.
- 8 Ensure that the gear lever and forward/reverse lever are set to neutral, and that the parking brake is on. Stop the engine. Remove the starter key.
- 9 Remove pressure from the service lines. See **Quick Release Couplings**.
- 10 Engage locking pins **A**. Ensure the pins are fully engaged, and secure with locking rings at both sides of the carriage.
- 11 Remove the blanking caps from the hoses and attachment couplings.
- 12 Press the hose couplings **C** and **D** onto the boom couplings; make sure they lock. See **Quick Release Couplings**. (The couplings cannot be cross-connected).





## SIDESHIFT CARRIAGE (continued)

### Removing the Sideshift Carriage

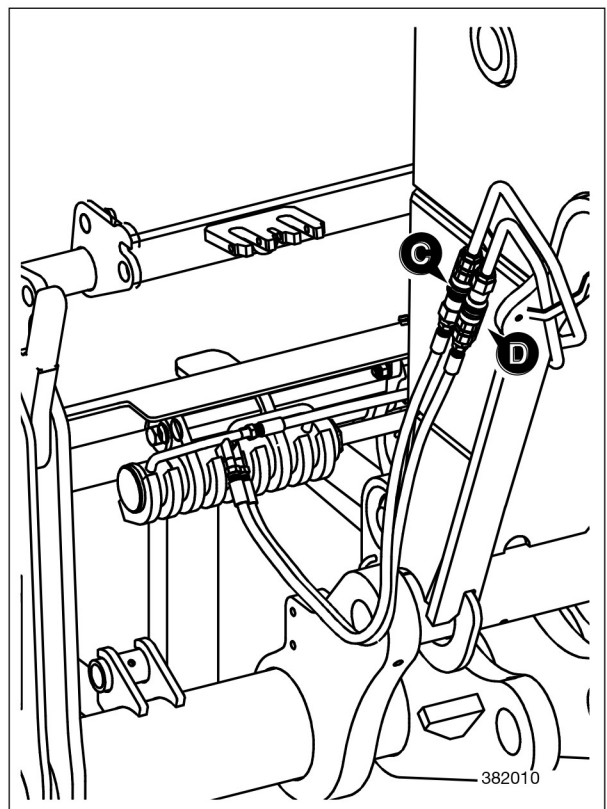
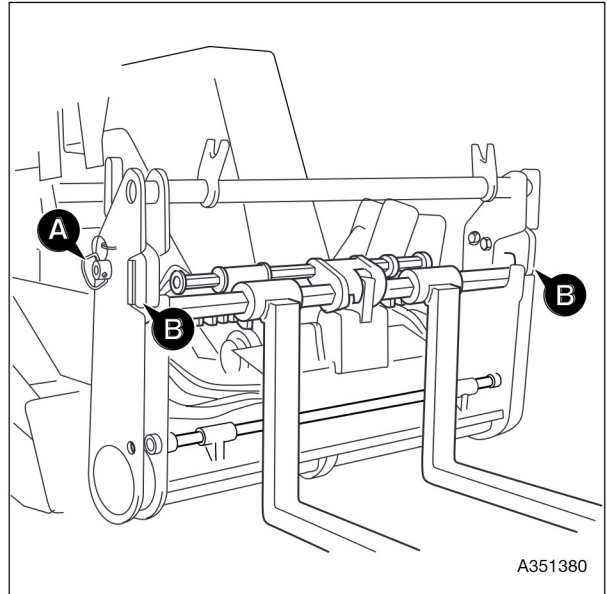
Deposit Q-Fit attachments on firm, level ground whenever possible. This will make later fitting easy and safe.

#### **⚠ WARNING**

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

5-5-1-3/1

- 1 Lower the attachment to the ground.
- 2 Pay particular attention to the safety notices and any specific notes about removing the attachment.
- 3 Engage the parking brake. Set the forward/reverse lever to neutral. Stop the engine.
- 4 Remove pressure from the service lines. See **Quick Release Couplings**.
- 5 Pull up on the knurled locking rings and disconnect the hoses at **C** and **D**. Fit blanking caps to the hoses.
- 6 Remove the lock rings and withdraw locking pins **A** at both sides of the carriage.
- 7 Start the engine and tilt the carriage forward slowly to withdraw the lower end of the carriage from the attachment hook plates **B**. Carefully reverse the machine away from the attachment or retract the boom.



## ROOF TRUSS JIB

This is a **Q-Fit** attachment which gives your machine greater reach and height. This attachment is supplied with test certificates for its fabrication, its hook and its shackle. Its Safe Working Load is stamped on a plate mounted on the attachment. See *Working With The Machine* (OPERATION Section).

### Safety

Obey all the safety instructions given in the main part of this book, plus the ones given in this section. **USE THIS ATTACHMENT ONLY IF IT CARRIES UP TO DATE TEST CERTIFICATES**

### Installing/Removing

#### WARNING

**This attachment is heavy. Take care when lifting and handling it. Use suitable lifting tackle.**

**Make sure the lifting tackle is in good condition. Make sure the lifting tackle complies with all pertinent regulations.**

**Wear gloves and safety shoes.**

5-5-4-12

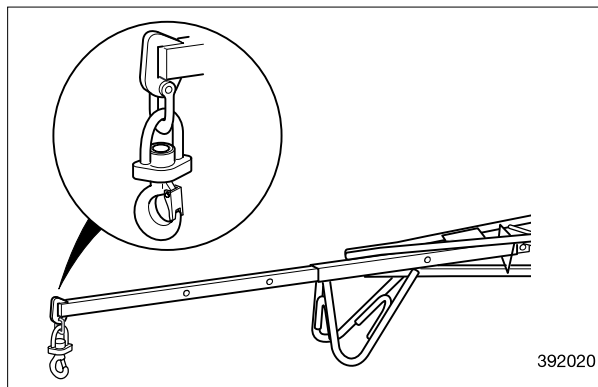
See *Installing and Removing Q-Fit Attachments* at the beginning of this section. Installing will be easier if the Roof Truss Jib is rested on wooden blocks. **Store the attachment carefully to prevent damage and corrosion.**

#### WARNING

**This attachment has a maximum Safe Working Load. Do not exceed the SWL.**

**Do not exceed the machine stability limits shown on the Load Chart(s) in the cab**

5-5-4-11



### Operation

#### CAUTION

**Load and unload on firm, level ground. Always be alert for possible hazards. Take special care when turning or reversing.**

5-2-4-7

Observe the following precautions when using this attachment.

**ALWAYS** check the appropriate flip chart in the cab before lifting or manoeuvring a load with this attachment.

**ALWAYS** level the machine using the sway control or stabilizers (if fitted) before operating the attachment. Reposition the machine if a level position cannot be achieved.

**ALWAYS** use lifting tackle which is suitable for the job, in good condition and proof tested where necessary.

**ALWAYS** sling the load safely and in accordance with any local regulations.

**ALWAYS** ensure that the hook safety catch has sprung back to prevent the sling(s) from slipping off the hook.

**ALWAYS** lift a slung load carefully, to avoid 'snatching' the sling(s).

**ALWAYS** keep yourself and other people clear of a suspended load, especially from beneath the load.

**ALWAYS** check for clearance before manoeuvring the machine with this attachment installed. Remember that the effective length of the boom is increased when this attachment is installed.

**ALWAYS** manoeuvre the machine carefully when carrying a suspended load. Keep the load as low to the ground as possible. If necessary, use guide ropes to prevent the load from swinging.

**ALWAYS** travel in 1st gear at walking speed when carrying a suspended load. Wherever possible, travel on firm, level ground. Avoid rough or excessively bumpy ground.

**ALWAYS** be aware of the affects of wind velocity on the load being handled.

**NEVER** carry suspended loads on public roads.

## ROOF TRUSS JIB (continued)

### Operation (continued)

#### Extending the Jib

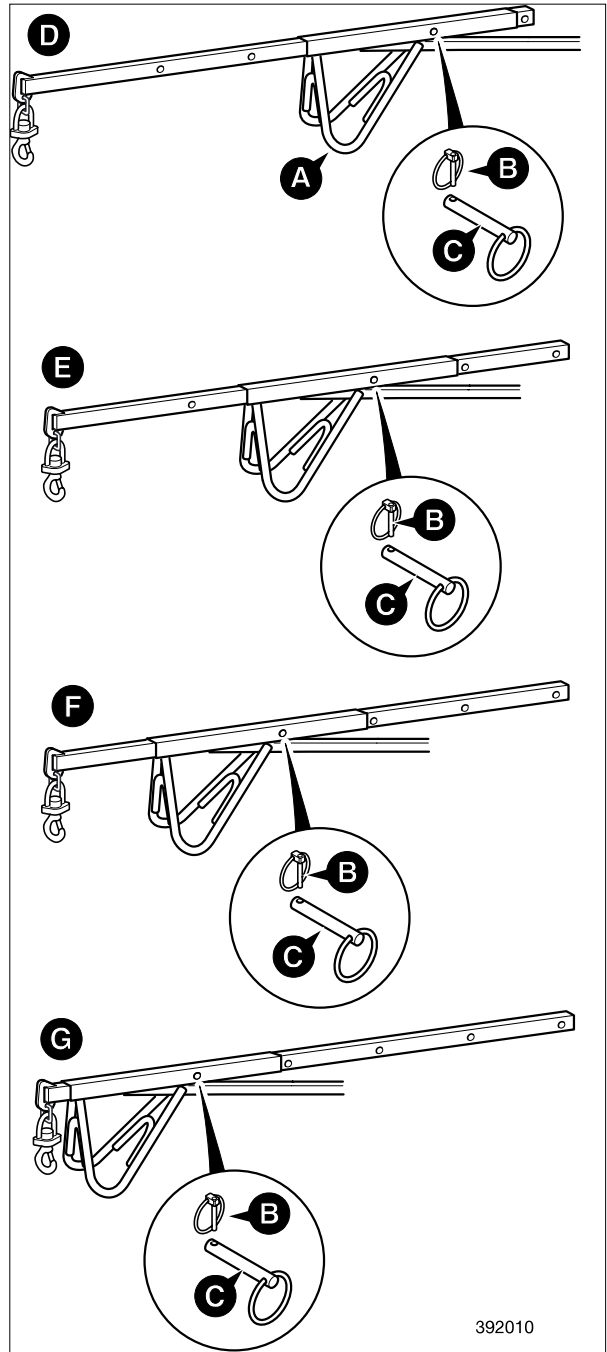
#### **⚠ WARNING**

Refer to the Load Chart in the cab for permissible loading for each position of the jib extension.

0085

The jib may be extended to one of four positions.

- 1 Remove the load and lower the jib to the ground so that the skid **A** is supporting the weight of the jib.
- 2 Remove lynch pin **B**, then pin **C**.
- 3 Move the jib extension to the required position: **D** (fully extended), **E**, **F** or **G** (fully retracted).
- 4 Insert the pin **C** and secure with lynch pin **B**.



## ROOF TRUSS JIB (continued)

### Operation (continued)

#### Changing the Jib Angle

The angle of the jib may be set in one of two positions, placing position as at **H** or travelling position as at **J**.

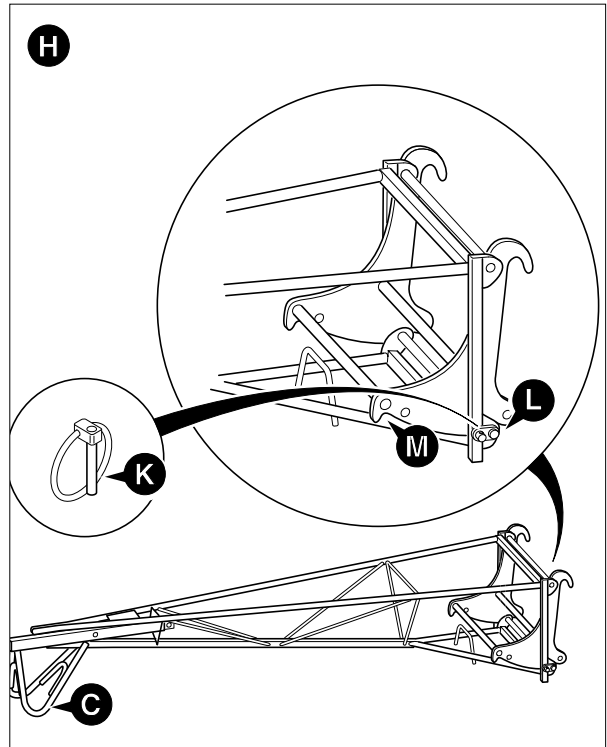
**Note** : When in the transport position, DO NOT extend the boom and DO NOT lift the boom more than 45°. See the flip chart in the cab.

To change the jib position:

- 1 Remove the load and lower the jib to the ground so that the skid **C** is supporting the weight of the jib.
- 2 Remove lynch pin **K**, then bar **L**.
- 3 Using the tilt control in the cab, rotate the carriage until the holes line up in the required position.

**Note:** Stops **M** and **N** prevent excessive movement of the jib.

- 4 Insert the bar **L** and secure with lynch pin **K**.



### Maintenance

#### Daily

**Clean** with the rest of the machine.

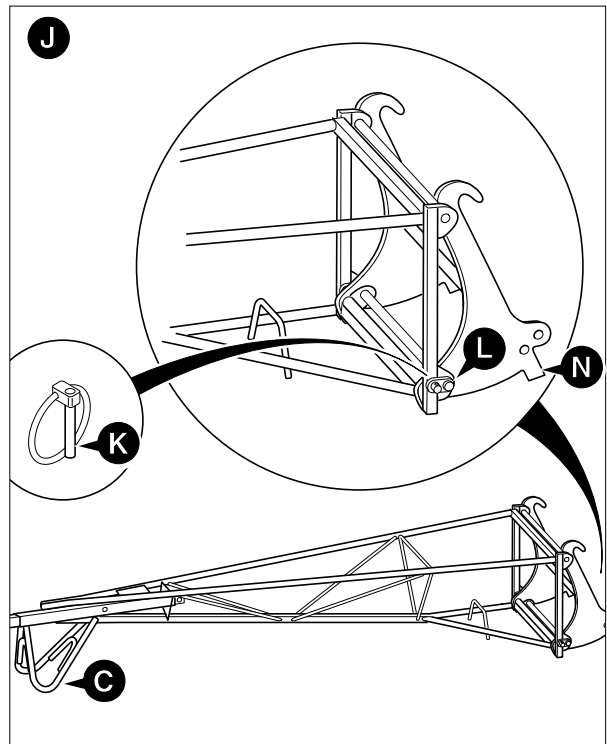
**Check** for damage. Ensure that the hook safety catch is in good working order.

#### As Required or At Least Annually

All lifting equipment including this attachment may need regular inspection and testing by a competent person to ensure they are fit for purpose.

This may be needed every six months or at least annually in many countries to meet and comply with local legislation and for insurance purposes.

Check with your local JCB distributor for further advice.

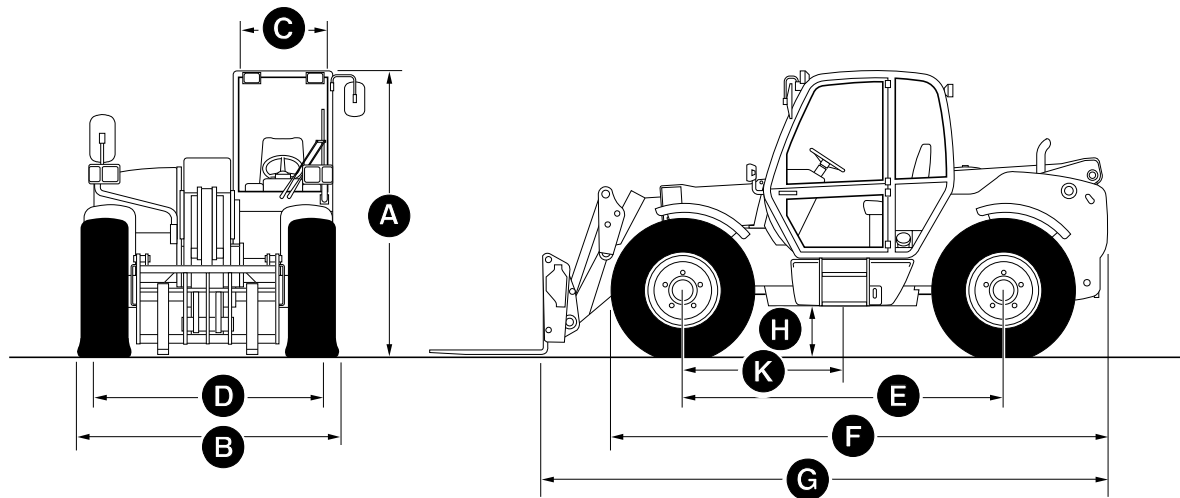


**WORK PLATFORMS**

The CE mark on JCB Loadalls does not cover a machine and work platform combination. Work platforms may be used with JCB Loadalls provided the platform is of such a type and the installation is carried out in such a way that the machine/platform combination satisfies The Essential Health and Safety Requirements for the lifting of persons in the Machinery Directive 98/37/EC or the equivalent local Regulations in your territory. The responsibility for ensuring this rests with the supplier of the combination and the owner/operator and, in the case of any uncertainty, guidance should be sought from the relevant Authority.



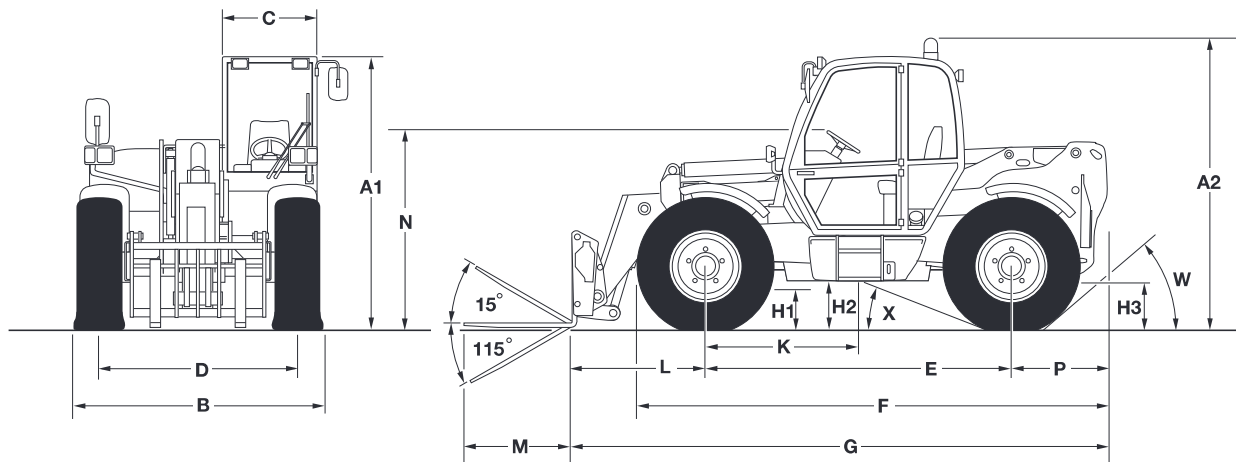
### STATIC DIMENSIONS 530, 540-70



A264240

DESCRIPTION	DIMENSION	
	530	540-70
<b>A</b> Overall height	2480 mm (8ft 1 in)	2490 mm (8ft 2in)
<b>B</b> Overall width	2230 mm (7ft 1 in)	2290 mm (7ft 6in)
<b>C</b> Inside width of cab (between windows)	940 mm (3ft 1in)	940 mm (3ft 1in)
<b>D</b> Track	1794 mm (5ft 10in)	1870 mm (6ft 2in)
<b>E</b> Wheelbase	2750 mm (9ft 0in)	2750 mm (9ft 0in)
<b>F</b> Overall length to front tyres	4380 mm (14ft 4in)	4380 mm (14ft 4in)
<b>G</b> Overall length to front of carriage	4940 mm (16ft 2in)	4990 mm (16ft 4in)
<b>H</b> Ground clearance	390 mm (1ft 2in)	400 mm (1ft 4in)
<b>K</b> Centre of gravity (unladen)	1420 mm (4ft 8in)	1440 mm (4ft 9in)
Weight (unladen)	6475 kg (14,277 lb)	7400 kg (16,314 lb)

### STATIC DIMENSIONS 535



A345760

**DIMENSION**

<b>A1</b>	2465 mm (8ft 1in)
<b>A2</b>	2630 mm (8ft 8in)
<b>B</b>	2290 mm (7ft 6in)
<b>C</b>	960 mm (3ft 2in)
<b>D</b>	1870 mm (6ft 2in)
<b>E</b>	2750 mm (9ft 0in)
<b>F</b>	4410 mm (14ft 6in) - without hitch 4520 mm (14ft 10in) - with hitch
<b>G</b>	4980 mm (16ft 4in)
<b>H1</b>	410 mm (1ft 5in)
<b>H2</b>	380 mm (1ft 4in)
<b>H3</b>	411 mm (1ft 5in)
<b>K</b>	1415 mm (4ft 8in) - Unladen
<b>L</b>	1200 mm (3ft 11in)
<b>M</b>	1067 mm (3ft 6in) 1200 mm (3ft 11in)
<b>N</b>	1830 mm (6ft)

**DIMENSION**

<b>P</b>	1030 mm (3ft 5in)
<b>R1</b>	4585 mm (15 ft 1in) - 1067mm forks
<b>R2</b>	4700 mm (15ft 5in) - 1200mm forks
<b>R3</b>	3700 mm (12ft 2in)
<b>R4</b>	1190 mm (3ft 11in)
<b>S</b>	1226 mm (4ft)
<b>T</b>	103 mm (4 in)
<b>U1</b>	3395 mm (11ft 2in) - 1067mm forks
<b>U2</b>	3510 mm (11 ft 6in) - 1200mm forks
<b>V</b>	7290 mm (23ft 11in) - 1067mm forks
<b>W</b>	30° with hitch 40° without hitch
<b>X</b>	16.3°

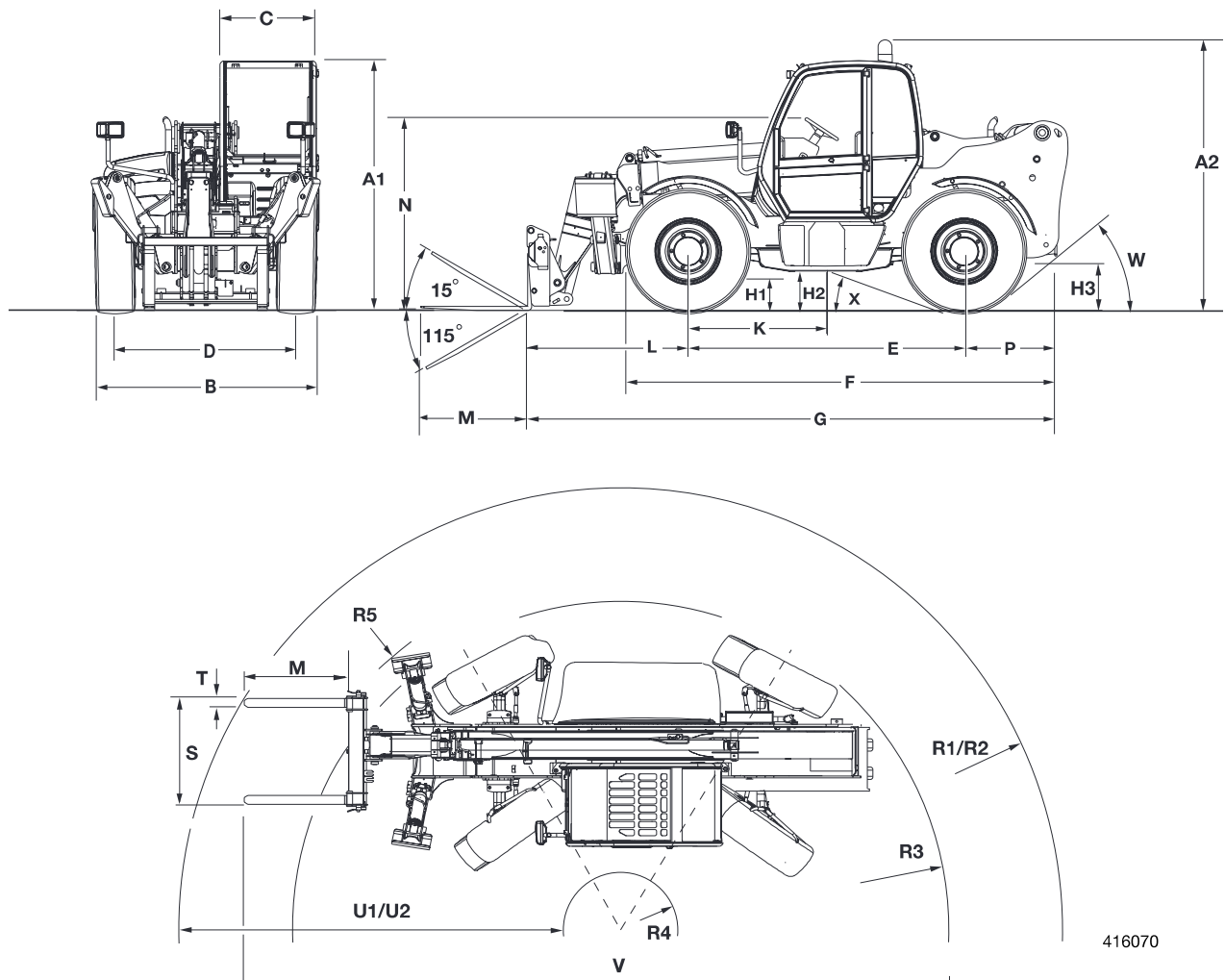
Weight (unladen) 7910 kg (17,438 lb)

Machine tested with 445/70 R24 XM47 tyres



## STATIC DIMENSIONS

533



## DIMENSION

<b>A1</b>	2465 mm (8ft 1in)
<b>A2</b>	2630 mm (8ft 8in)
<b>B</b>	2290 mm (7ft 6in)
<b>C</b>	960 mm (3ft 2in)
<b>D</b>	1870 mm (6ft 2in)
<b>E</b>	2750 mm (9ft 0in)
<b>F</b>	4410 mm (14ft 6in) - without hitch 4520 mm (14ft 10in) - with hitch
<b>G</b>	5384 mm (17ft 8in)
<b>H1</b>	410 mm (1ft 5in)
<b>H2</b>	380 mm (1ft 4in)
<b>H3</b>	411 mm (1ft 5in)
<b>K</b>	1415 mm (4ft 8in) - Unladen
<b>L</b>	1600 mm (5ft 3in)
<b>M</b>	1067 mm (3ft 6in) 1200 mm (3ft 11in)
<b>N</b>	1830 mm (6ft)

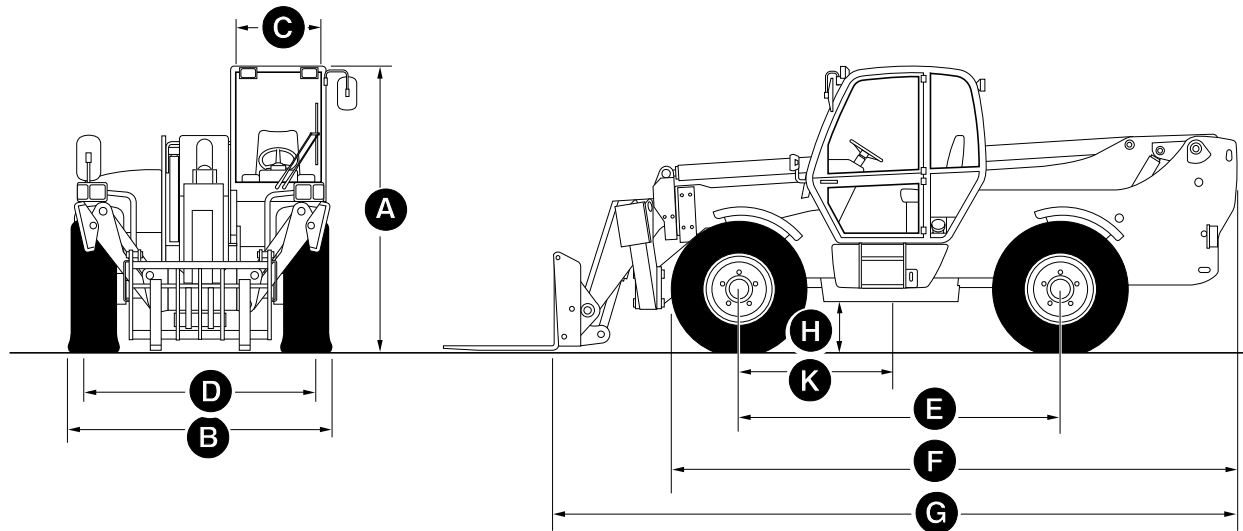
## DIMENSION

<b>P</b>	1030 mm (3ft 5in)
<b>R1</b>	4750 mm (15 ft 7in) - 1067mm forks
<b>R2</b>	4864 mm (16ft 0in) - 1200mm forks
<b>R3</b>	3700 mm (12ft 2in)
<b>R4</b>	1190 mm (3ft 11in)
<b>R5</b>	4040 mm (13ft 3in)
<b>S</b>	1226 mm (4ft)
<b>T</b>	103 mm (4 in)
<b>U1</b>	3560 mm (11ft 8in) - 1067mm forks
<b>U2</b>	3674 mm (12 ft 1in) - 1200mm forks
<b>V</b>	7640 mm (25ft 1in) - 1067mm forks
<b>W</b>	30° with hitch 40° without hitch
<b>X</b>	16.3°

Weight (unladen) 8650 kg (19,070 lb)

Machine tested with 15.5/80 x 24 tyres

### STATIC DIMENSIONS 532, 537 & 540-170



A264250

DESCRIPTION	DIMENSION		
	532	537	540-170
<b>A</b> Overall height	2580 mm (8ft 5in)	2580 mm (8ft 5in)	2690mm (8ft 10in)
<b>B</b> Overall width	2350 mm (7ft 8in)	2350 mm (7ft 8in)	2440mm (8ft 0in)
<b>C</b> Inside width of cab (between windows)	940 mm (3ft 1in)	940 mm (3ft 1in)	940mm (3ft 1in)
<b>D</b> Track	1900 mm (6ft 2in)	1900 mm (6ft 2in)	1900mm (6ft 3in)
<b>E</b> Wheelbase	2750 mm (9ft 0in)	2900 mm (9ft 5in)	2750mm (9ft 0in)
<b>F</b> Overall length to front tyres	4830 mm (15ft 10in)	5180 mm (17ft 0in)	5000mm (16ft 5in)
<b>G</b> Overall length to front of carriage	5800mm (19ft 0in)	6190 mm (20ft 3in)	6280mm (20ft 7in)
<b>H</b> Ground clearance	390 mm (1ft 2in)	390 mm (1ft 2in)	400mm (1ft 4in)
<b>K</b> Centre of gravity (unladen)	1380 mm (4ft 6in)	1660 mm (5ft 5in)	1600mm (5ft 3in)
Weight (unladen)	9430 kg (20,793 lbs)	10,600 kg (23,373 lbs)	12,160 kg (26,807 lbs)

## PERFORMANCE DIMENSIONS

<b>Forklift Performance</b>	<b>530</b>	<b>535</b>	<b>540-70</b>
Maximum lift capacity	3000 kg (6,615 lb)	3500 kg (7,716 lb)	4000 kg (8,818 lb)
Lift capacity to full height	2400 kg (5,291 lb)	1750 kg (3,858 lb)	2500 kg (5,511 lb)
Lift capacity at maximum reach	1250 kg (2,756 lb)	600 kg (1,323 lb)	1500 kg (3,307 lb)
Maximum lift height	7000 mm (22ft 9in)	9500 mm (31ft 2in)	7000 mm (22ft 8in)
Reach at maximum lift height	480 mm (1ft 6in)	2430 mm (7ft 11in)	480 mm (1ft 6in)
Maximum forward reach	3700mm (12ft 2in)	6520 mm (21ft 5in)	3700 mm (12ft 2in)
Reach with 1 tonne load	3700mm (12ft 2in)	5290 mm (17ft 4in)	3700 mm (12ft 2in)

**Based on 500 mm (20 in) Load Centre. See Load Charts.**

<b>Forklift Performance Stabilizers Down</b>	<b>532</b>	<b>533</b>	<b>537</b>
Maximum lift capacity	3200 kg (7,056 lb)	3300 kg (7275 lb)	3700 kg (8158 lb)
Lift capacity to full height	3200 kg (7,056 lb)	3300 kg (7275 lb)	3700 kg (8158 lb)
Lift capacity at maximum reach	1250 kg (2,756 lb)	1000 kg (2204 lb)	1500 kg (3,307 lb)
Maximum lift height	12000 mm (39ft 4 in)	10210 mm (33ft 6in)	13500 mm (44ft 3in)
Reach at maximum lift height	1450 mm (4ft 9 in)	1910 mm (6ft 3in)	1680 mm (5ft 5in)
Maximum forward reach	8010 mm (26ft 3in)	6835 mm (22ft 5in)	9250 mm (30ft 3in)
Reach with 1 tonne load	8010 mm (26ft 3in)	6835 mm (22ft 5in)	9250 mm (30ft 3in)

**Based on 500 mm (20 in) Load Centre. See Load Charts.**

### 540-170

Maximum lift capacity	4000 kg (8818 lbs)
Lift capacity to full height	2500 kg (5511 lbs)
Lift capacity at maximum reach	500 kg (1102 lbs)
Maximum lift height	16700mm (54ft 9in)
Reach at maximum lift height	3120mm (10ft 3in)
Maximum forward reach	12570mm (41ft 3in)
Reach with 1 tonne load	8600 mm (28ft 3in)

**Based on 500 mm (20 in) Load Centre. See Load Charts.**

### Maximum Wading Depth

The maximum wading depth of these machines is 400mm (16in). Water can enter the engine and axles and the cooling fan can be damage if the machine is operated in deeper water.

### AXLE WEIGHT DISTRIBUTION

	UNLADEN			LADEN			Max. Lift Capacity (kg)
	Front Axle Load (kg)	Rear Axle Load (kg)	Machine Weight (kg)	Front Axle Load (kg)	Rear Axle Load (kg)	Machine weight (kg)	
530-70	3280	3580	6860	8351	1509	9806	3000
535-95	3500	4420	7920	9416	2004	11420	3500
540-70	3600	3970	7570	10259	1311	11570	4000
532-120 Sway & Stabilizers	4680	4690	9370	10585	1985	12570	3200
532-120 Stabilizers Only	4360	4490	8850	10265	1785	12050	3200
533-105	4510	4140	8650	10555	1530	12085	3300
537-135	4460	5860	10320	11167	2853	14020	3700
540-170	5090	7100	12190	12788	3402	16190	4000

**Note:** The figures stated above are measured with the boom horizontal and in the retracted position with the forks horizontal, and no operator.

**Conversion:** 1 kg = 2.2 lb

### ENGINE EMISSIONS (AR, AK & AM Engine Builds)

#### Stage 1: g/kW-hr

hp	kW	CO	HC	NOx	PM
50 - 100	37 - 75	6.50	1.30	9.20	0.85
100 - 174	75 - 130	5.00	1.30	9.20	0.70

Emission figures are determined in accordance with European Directive 97/98/EC and US Legislation Directive 40CFR Part 89.

To ensure engine emissions comply with the above regulations, it is important that routine services are carried out by an approved JCB Distributor at the recommended service intervals as specified in this handbook.

## TYRES AND PRESSURES

**Note:** The maximum pressure embossed on the tyre may differ from the pressure stated below. Inflate to pressures below, these are agreed with the tyre manufacturer/s in accordance with the European Tyre and Rim Technical Organisation (ETRTO) standards to satisfy machine stability performance.

**Note:** If the tyres fitted to your machine are not listed, then contact your JCB Distributor for advice, DO NOT guess tyre pressures.

### 530, 530FS Plus (Not Super Models)

Size	Ply	Front		Rear		Type
		Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
17.5 LR 24	--	3.7	53	3.7	53	Traction
15.5/80 x 24	10	4.0	58	4.0	58	Sure Grip/Traction
15.5 - 25	12	4.0	58	4.0	58	Industrial traction
12.00 R24 X MINE D2	--	4.0	58	4.0	58	

### 533, 535, 540-70, 540FS Plus (Not Super Models)

Size	Ply	Front		Rear		Type
		Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
15.5 - 25	12	4.0	58	4.0	58	Industrial traction
15.5/80 x 24	12	4.0	58	4.0	58	Sure Grip/Traction
445/70 R24 XM47	--	4.0	58	4.0	58	Traction
12.00 R24 X MINE D2	--	5.5	80	5.5	80	
15.5R25	--	4.0	58	4.0	58	
495/70R24	--	4.1	59	4.1	59	

**IMPORTANT:** - Ensure the correct tyres are fitted and inflate to the recommended pressures before towing with a 535 Machine. Check the load chart in the cab for the correct tyre and pressure. Contact your JCB Distributor for advice if necessary.

### 530FS Super, 540FS Super

Size	Ply	Front		Rear		Type
		Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
440/70 R24 XM37	--	3.7	54	3.7	54	Traction
445/70 R24 XM47	--	4.1	59	4.1	59	Traction
500/70 R24 XM37	--	3.7	54	3.7	54	Traction
440/70 R24 Super Lug	--	3.7	54	3.7	54	Traction
500/70 R24 Super Lug	--	3.7	54	3.7	54	Traction

**Note:** Because of the increased road speed, tyre options for 'Super' machines differ from standard 530 and 540 machines.

## TYRES AND PRESSURES (continued)

**Note:** The maximum pressure embossed on the tyre may differ from the pressure stated below. Inflate to pressures below, these are agreed with the tyre manufacturer/s in accordance with the European Tyre and Rim Technical Organisation (ETRTO) standards to satisfy machine stability performance.

**Note:** If the tyres fitted to your machine are not listed, then contact your JCB Distributor for advice, DO NOT guess tyre pressures.

<b>532</b>		<b>Front</b>		<b>Rear</b>		<b>Type</b>
Size	Ply	Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
15.5-25	12	4.0	58	4.0	58	Industrial Traction
16.5/85-24	14	4.0	58	4.0	58	Sure Grip/Traction
15.5/80-24	12/16	4.0	58	4.0	58	Sure Grip/Traction
15.5 R 25 (L2/L3)		4.5	65	4.5	65	
12.00 R 24 (L5)		5.8	84	5.8	84	

<b>537</b>		<b>Front</b>		<b>Rear</b>		<b>Type</b>
Size	Ply	Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
15.5-25	12	4.0	58	4.0	58	Industrial Traction
17.5-25	12	4.0	58	4.0	58	
16.5/85-24	14	4.0	58	4.0	58	Sure Grip/Traction
15.5/80-24	16	4.0	58	4.0	58	Sure Grip/Traction
15.5 R 25 (L2/L3)		4.5	65	4.5	65	

<b>540-170</b>		<b>Front</b>		<b>Rear</b>		<b>Type</b>
Size	Ply	Bar	lbf/in <sup>2</sup>	Bar	lbf/in <sup>2</sup>	
15.5-25	12	4.5	65	4.5	65	Industrial Traction
17.5-25	12	4.5	65	4.5	65	
16.5/85-24	14	4.5	65	4.5	65	Sure Grip/Traction
15.5/80-24	16	4.5	65	4.5	65	Sure Grip/Traction
15.5 R 25 (L2/L3)		4.5	65	4.5	65	

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**NOISE AND VIBRATION DATA**
**JCB Diesel Engines - Type AA and AB Builds**

<b>NATURALLY ASPIRATED</b>	<b>530</b>	<b>540-70</b>	<b>532</b>	<b>537</b>
<b>NOISE</b>				
Noise Level at Operator's Ear (LpA)	79	79	77	79
External Noise Level (LwA)	104	104	107	108
<b>VIBRATION</b>				
Weighted rms acceleration: Whole Body (m/s <sup>2</sup> )	1.09	1.09	1.25	1.25
Weighted rms acceleration: Hand/Arm (m/s <sup>2</sup> )	<2.5	<2.5	<2.5	<2.5
<b>TURBO CHARGED</b>	<b>530</b>	<b>540-70</b>	<b>532</b>	<b>537</b>
<b>NOISE</b>				
Noise Level at Operator's Ear (LpA)	77	78	78	77
External Noise Level (LwA)	103	101	103	103
<b>VIBRATION</b>				
Weighted rms acceleration: Whole Body (m/s <sup>2</sup> )	1.09	1.09	1.25	1.25
Weighted rms acceleration: Hand/Arm (m/s <sup>2</sup> )	<2.5	<2.5	<2.5	<2.5

**JCB Diesel Engines - Type AR and AK Builds**

<b>NATURALLY ASPIRATED</b>	<b>530</b>	<b>533</b>	<b>535</b>	<b>540-70</b>	<b>532</b>	<b>537</b>	
<b>NOISE</b>							
Noise Level at Operator's Ear (LpA)	79	79	79	79	77	79	
External Noise Level (LwA)	104	104	104	104	107	108	
<b>VIBRATION</b>							
Weighted rms acceleration: Whole Body (m/s <sup>2</sup> )	1.09	1.09	1.09	1.09	1.25	1.25	
Weighted rms acceleration: Hand/Arm (m/s <sup>2</sup> )	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
<b>TURBO CHARGED</b>	<b>530</b>	<b>533</b>	<b>535</b>	<b>540-70</b>	<b>532</b>	<b>537</b>	<b>540-170</b>
<b>NOISE</b>							
Noise Level at Operator's Ear (LpA)	77	78	78	78	78	77	80
External Noise Level (LwA)	103	101	101	101	103	103	102
<b>VIBRATION</b>							
Weighted rms acceleration: Whole Body (m/s <sup>2</sup> )	1.09	1.09	1.09	1.09	1.25	1.25	0.7
Weighted rms acceleration: Hand/Arm (m/s <sup>2</sup> )	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

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## NOISE AND VIBRATION DATA

### JCB Diesel Engines - Type AM Builds

<b>TURBO CHARGED &amp; INTERCOOLED</b>	<b>530FS Plus</b>	<b>540FS Plus</b>	<b>530FS Super</b>	<b>540FS Super</b>
<b>NOISE</b>				
Noise Level at Operator's Ear (LpA)	77	77	77	77
External Noise Level (LwA)	103	103	103	103
<b>VIBRATION</b>				
Weighted rms acceleration: Whole Body (m/s <sup>2</sup> )	1.09	1.09	1.09	1.09
Weighted rms acceleration: Hand/Arm (m/s <sup>2</sup> )	<2.5	<2.5	<2.5	<2.5

Noise figures are determined in accordance with dynamic test conditions defined in 2000/14/EEC.

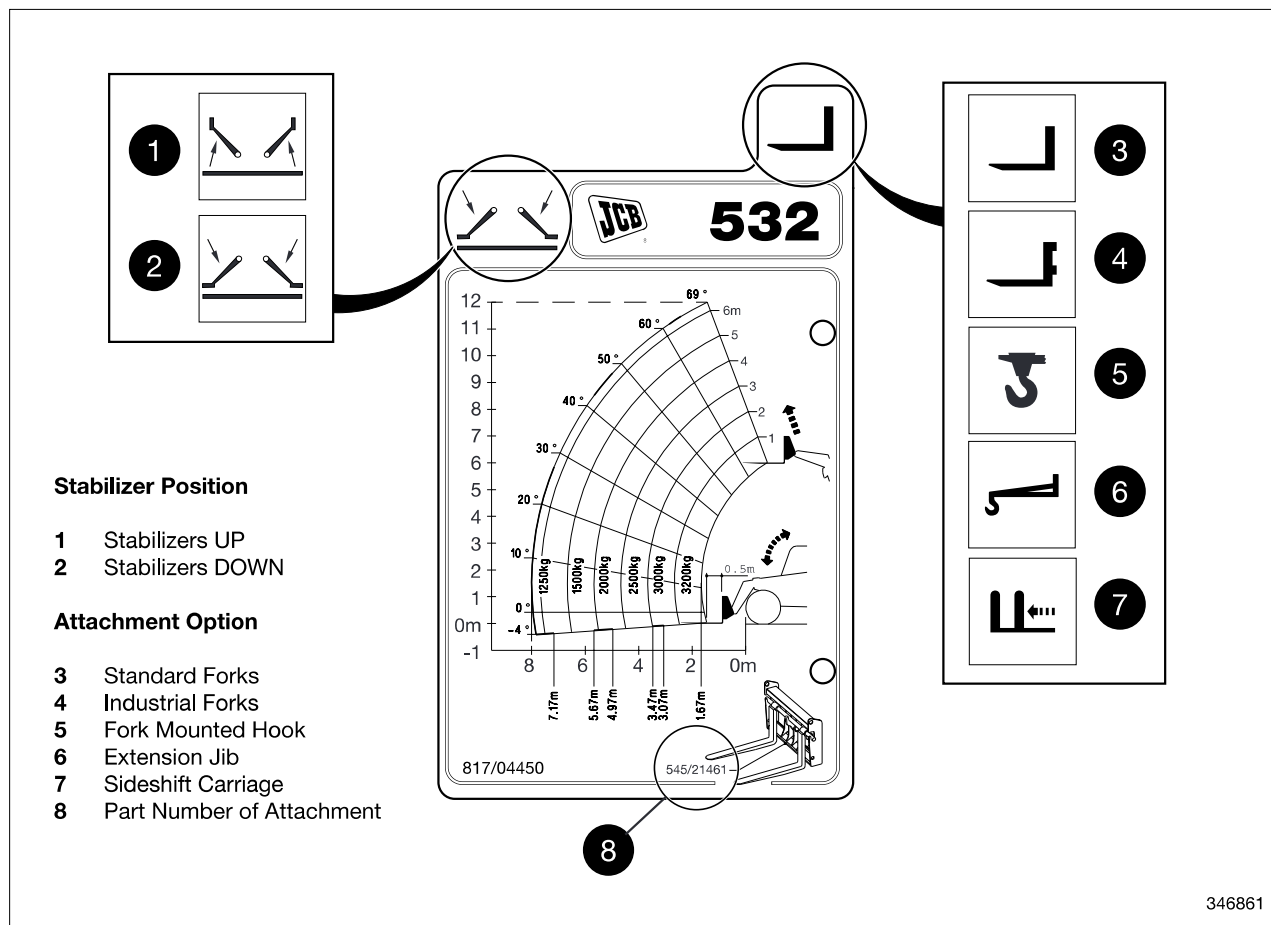
Vibration figures are 'Average Equivalent Values' determined from measurement on machines performing typical duties detailed below, with values weighted in accordance with EN13059. The figures are determined from measurements in three perpendicular planes.

All Values are determined with standard forks fitted to the machine. For information relating to this machine when used with other JCB approved attachments, please refer to the literature accompanying the attachments.

Typical duties for Loadall machine:    Rooding (Tarmac)  
    Rooding (Rough Terrain)  
    Loading cycles



## LOAD CHARTS



## Introduction

The Load Chart shows how far you can raise and extend a load without exceeding the Safe Working Load (SWL). Each model has its own Load Chart for a standard fork carriage. Additional Load Charts are shown for use when certain attachments are fitted to the boom. See **Using The Load Charts And Boom Indicators** (OPERATION section).

Check the relevant load chart is available for any alternative carriage or attachment. Where appropriate, the load chart shows the part number **8** of the carriage or attachment it refers to. If you are unsure of the correct load chart to use, contact your JCB distributor for advice.

**Always refer to the load charts in the cab of the machine before lifting or placing loads.**

**⚠ CAUTION**

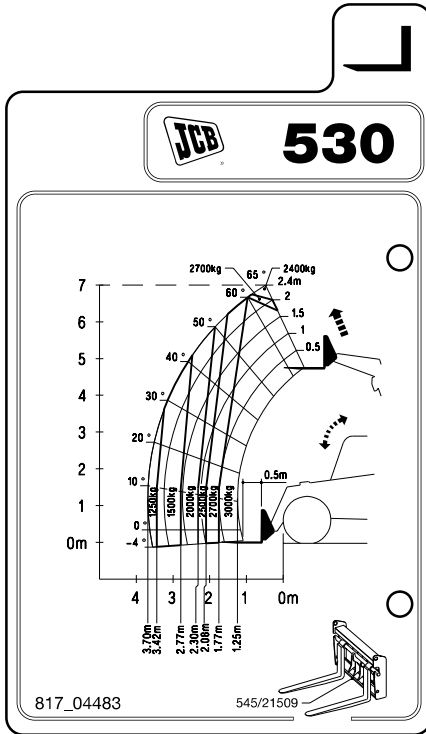
**The limits shown on the Load Charts are for a stationary level machine. Do not raise or extend the boom while the machine is moving. Retract the boom fully and lower it as far as possible before travelling with a load.**

5-2-4-3/1

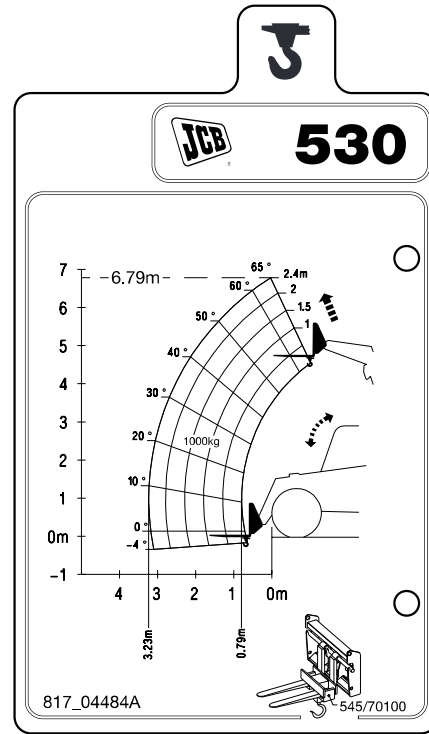
LOAD CHARTS  
(continued)

530 Machines

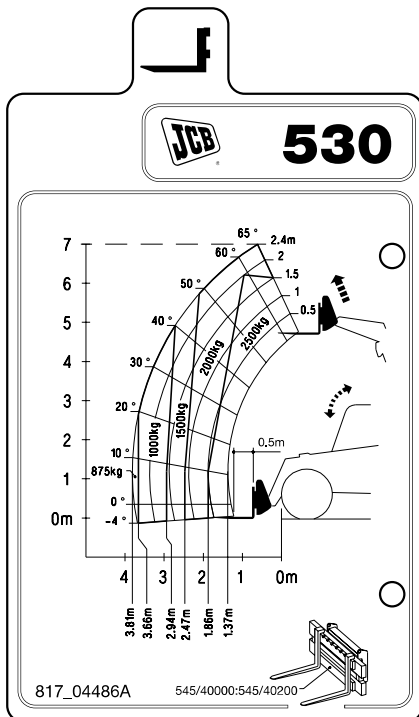
Standard Forks



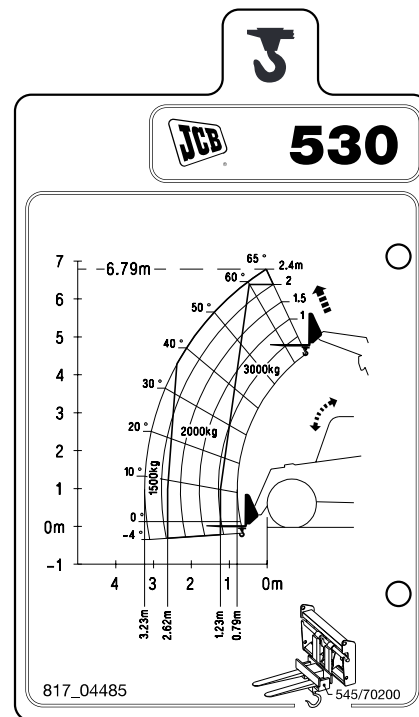
Fork Mounted Hook (UK Only)



Industrial Forks



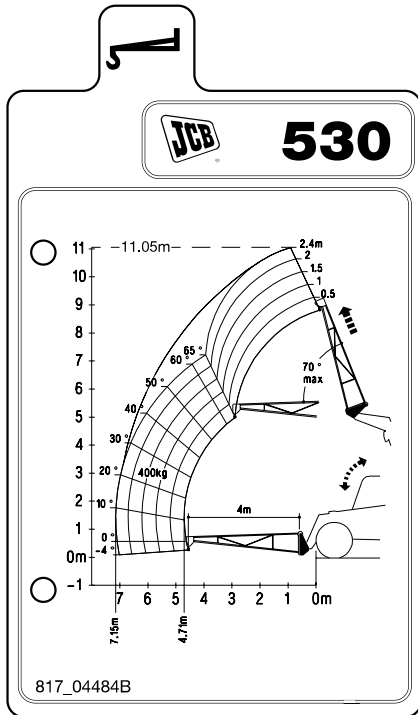
Fork Mounted Hook (Not UK)



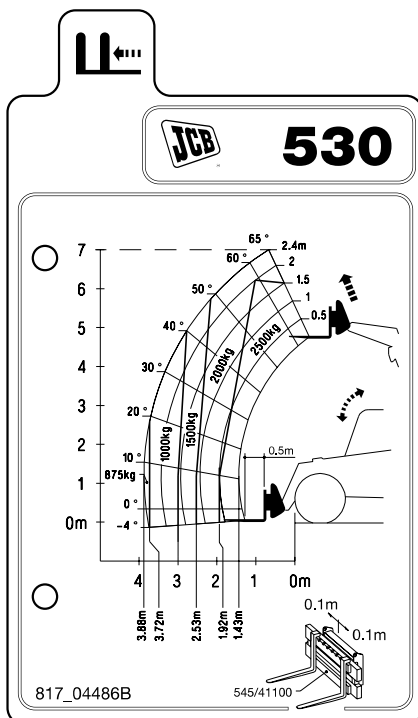
LOAD CHARTS  
(continued)

530 Machines (continued)

Extension Jib (UK Only)



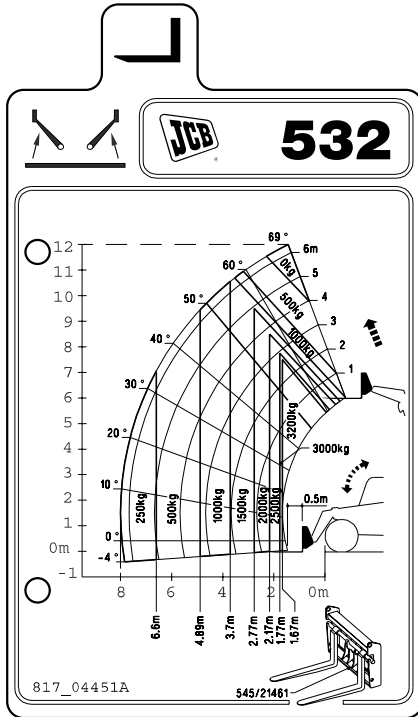
Sideshift Carriage (UK Only)



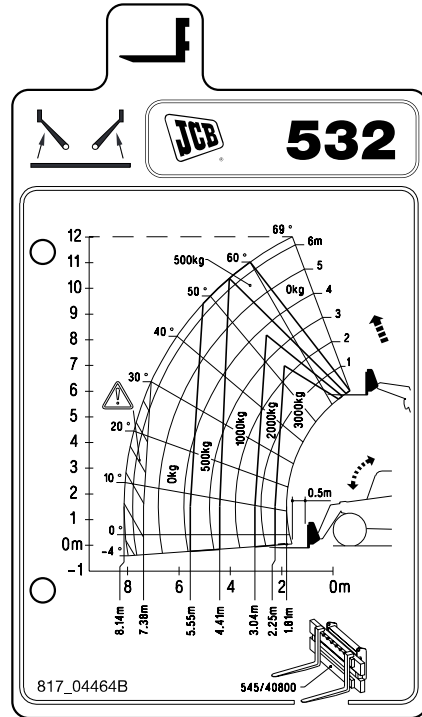
LOAD CHARTS  
(continued)

532 Non Sway Machines

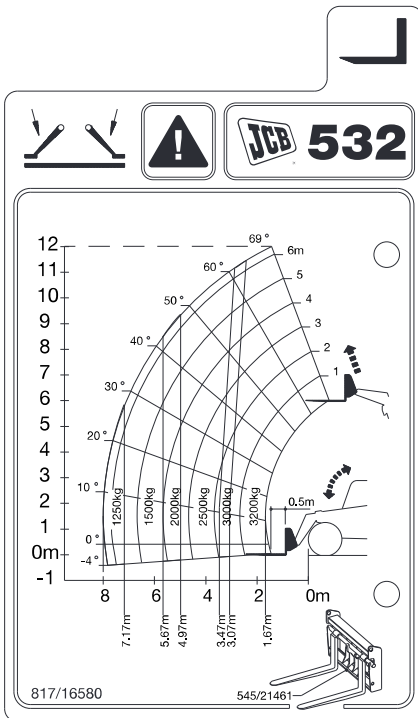
Standard Forks (Stabilisers Up)



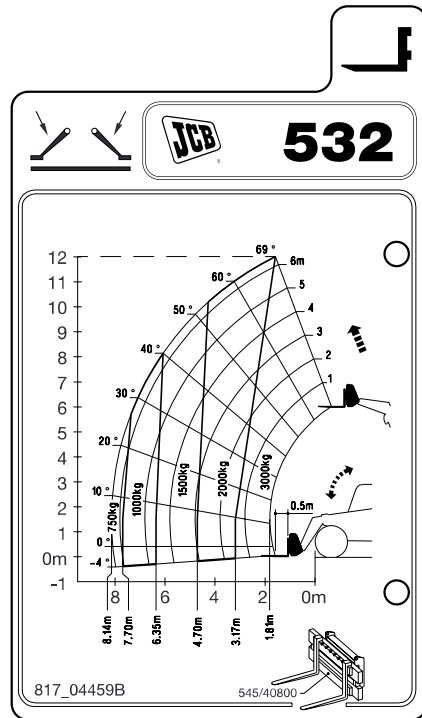
Industrial Forks (Stabilisers Up)



Standard Forks (Stabilisers Down)



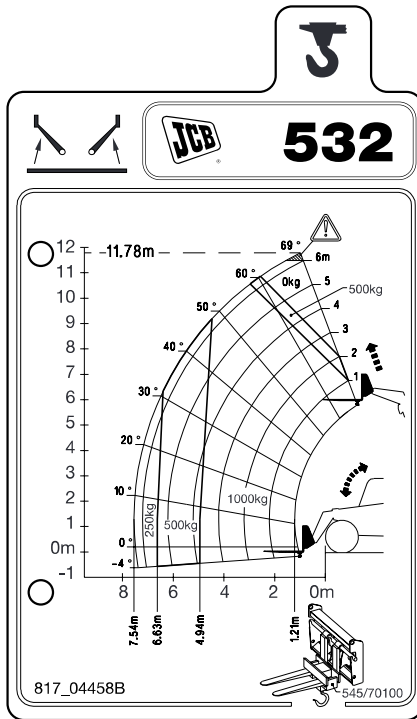
Industrial Forks (Stabilisers Down)



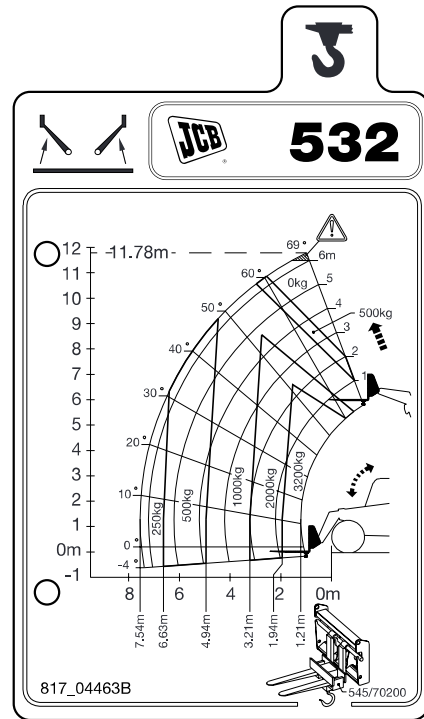
LOAD CHARTS  
(continued)

532 Non Sway Machines (continued)

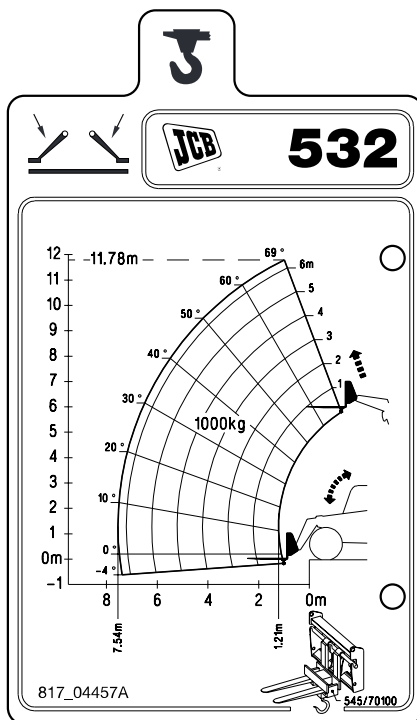
Fork Mounted Hook - UK Only (Stabilisers Up)



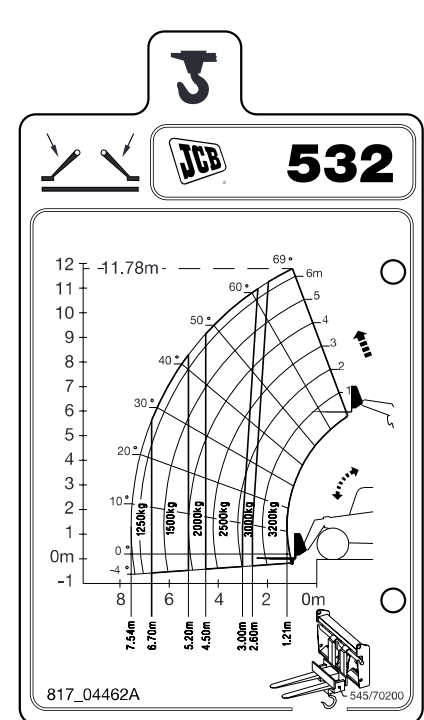
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



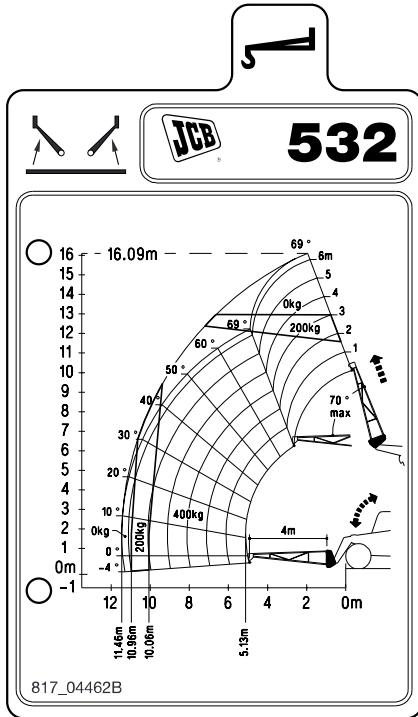
Fork Mounted Hook - Not UK (Stabilisers Down)



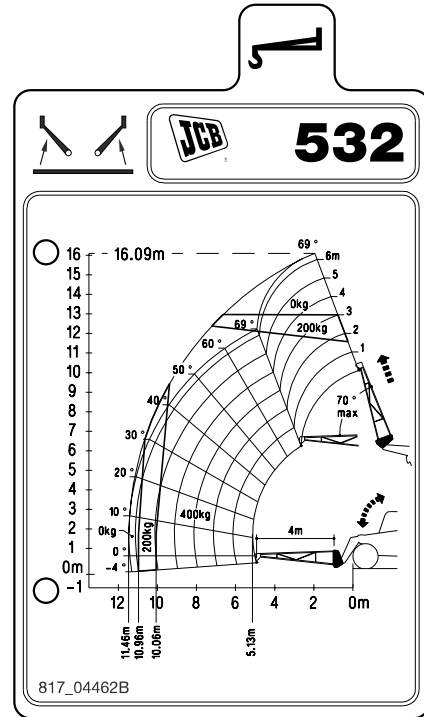
LOAD CHARTS  
(continued)

532 Non Sway Machines (continued)

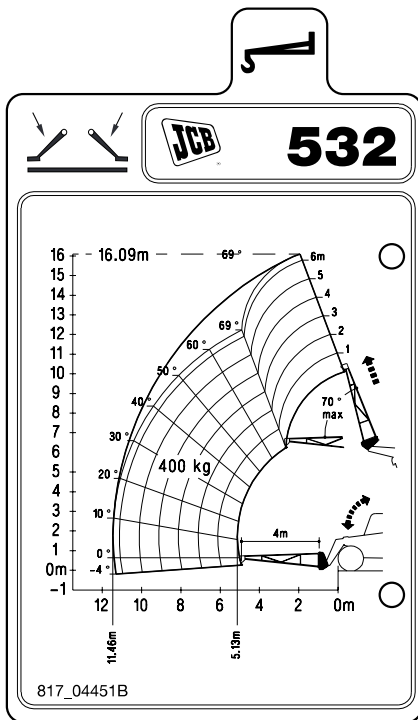
Extension Jib - UK Only (Stabilisers Up)



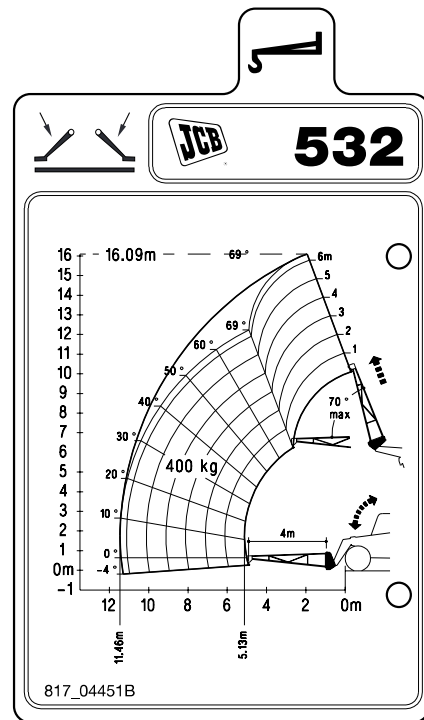
Extension Jib - Not UK (Stabilisers Up)



Extension Jib - UK Only (Stabilisers Down)



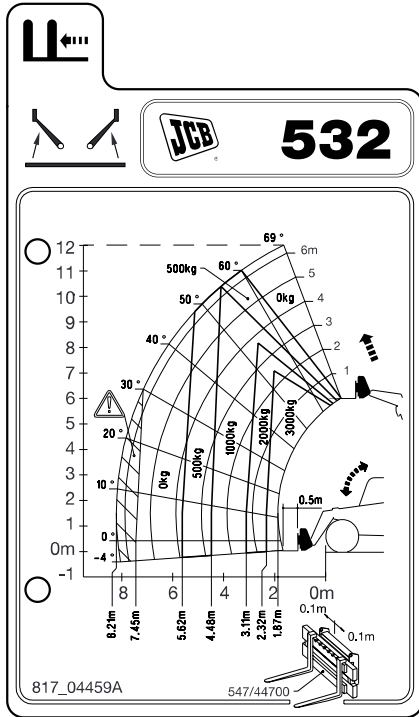
Extension Jib - Not UK (Stabilisers Down)



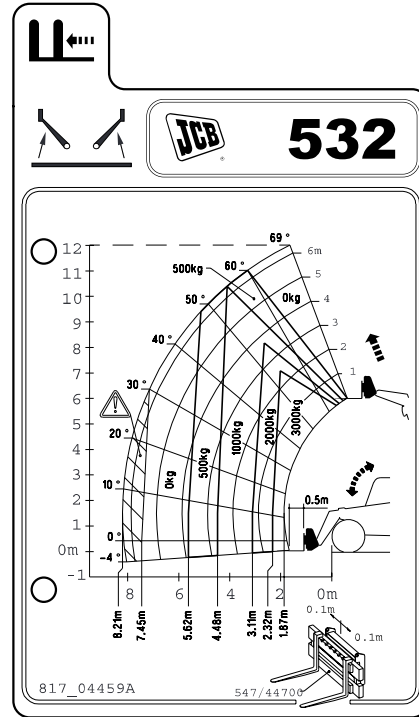
LOAD CHARTS  
(continued)

532 Non Sway Machines (continued)

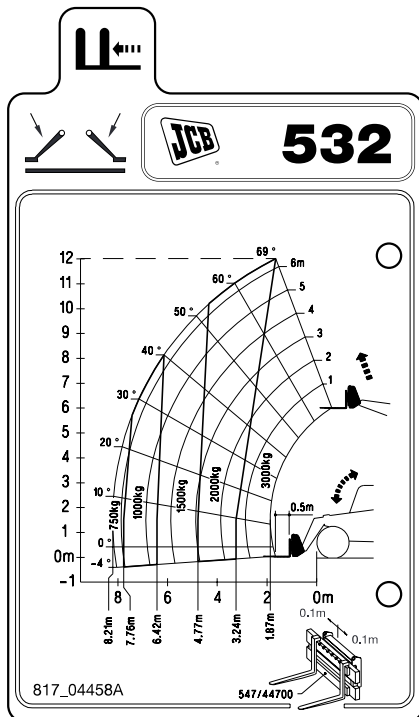
Sideshift Carriage - UK Only (Stabilisers Up)



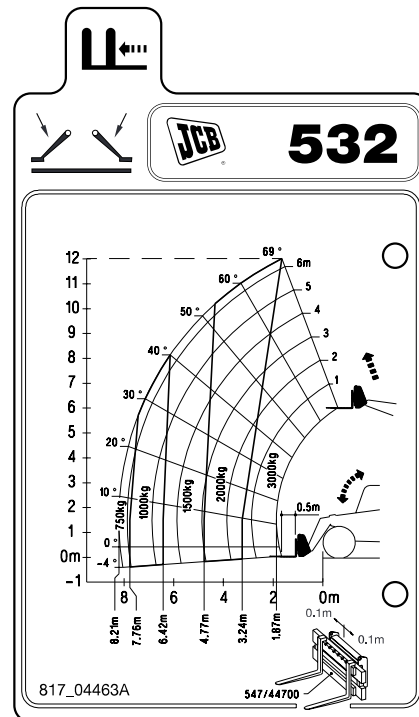
Sideshift Carriage - Not UK (Stabilisers Up)



Sideshift Carriage - UK Only (Stabilisers Down)



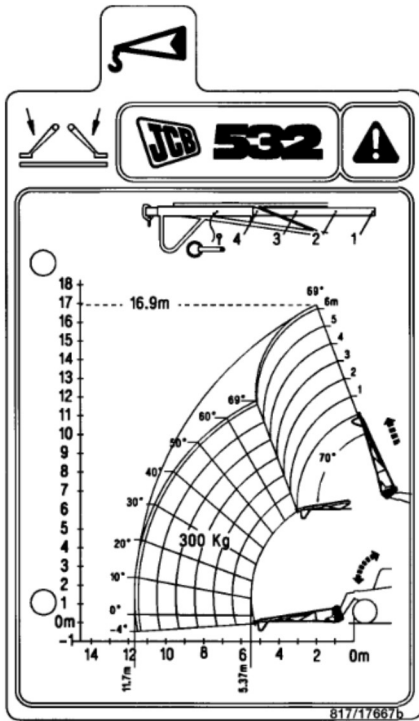
Sideshift Carriage - Not UK (Stabilisers Down)



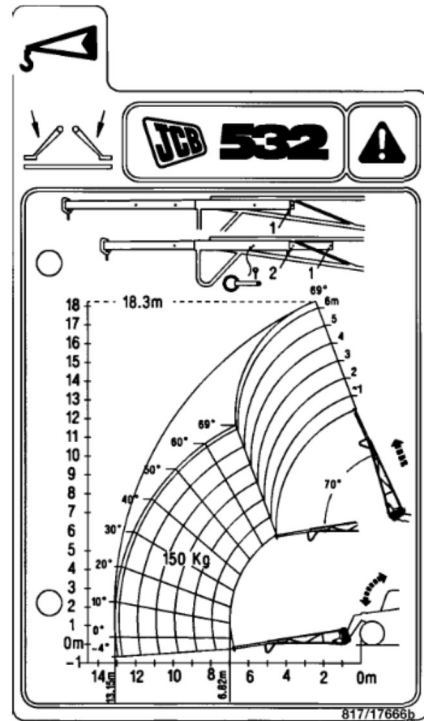
LOAD CHARTS

532 Non Sway Machines (continued)

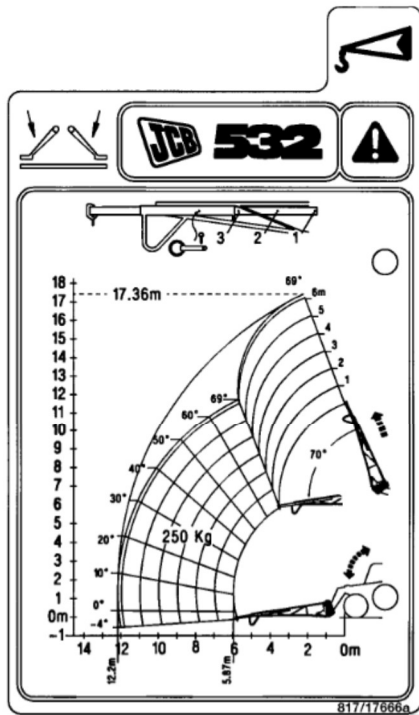
Roof Truss Boom - Position 1 (Fully Retracted)



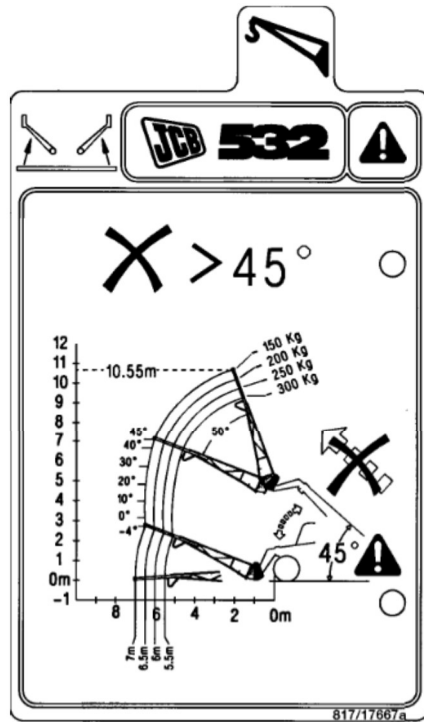
Roof Truss Boom - Positions 3 and 4



Roof Truss Boom - Position 2



Roof Truss Boom - Boom Travel Limits

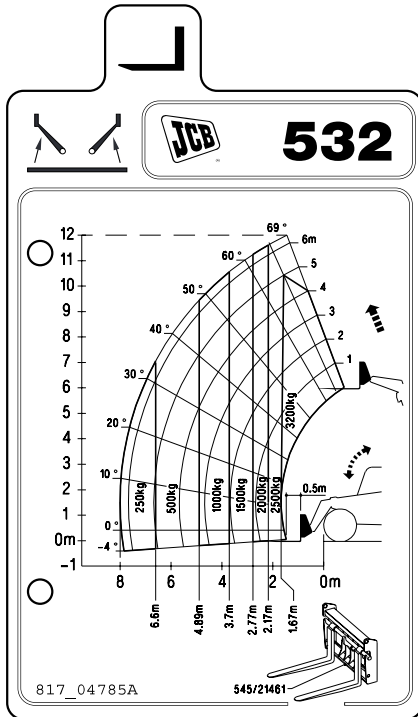




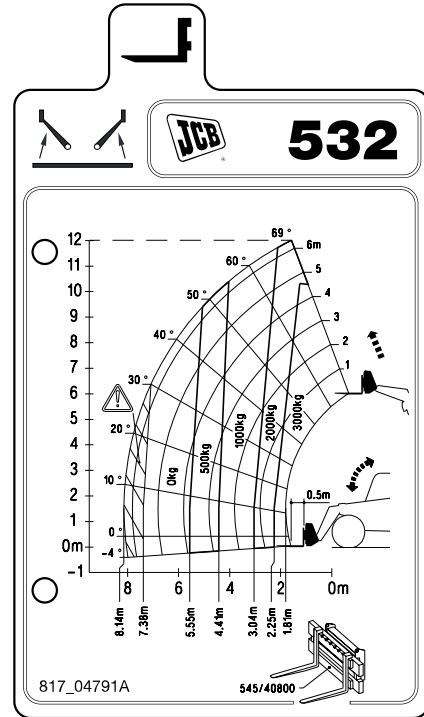
LOAD CHARTS  
(continued)

532 Sway Machines

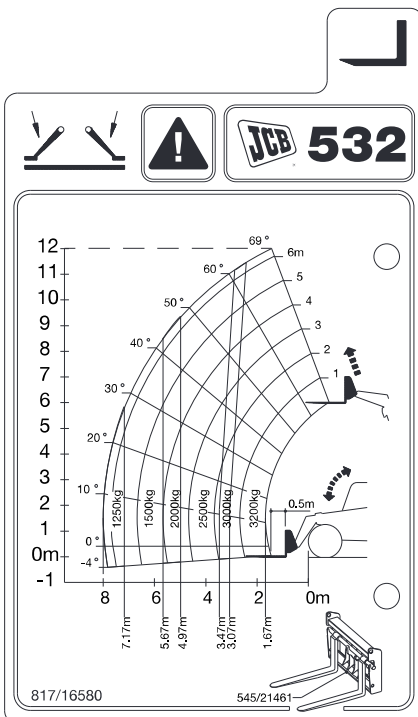
Standard Forks (Stabilisers Up)



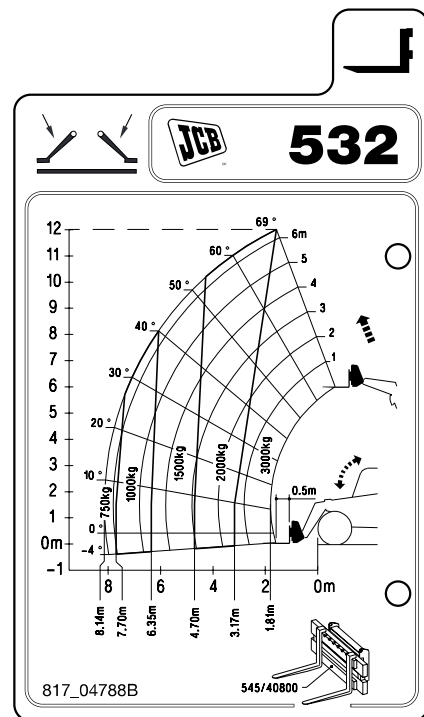
Industrial Forks (Stabilisers Up)



Standard Forks (Stabilisers Down)



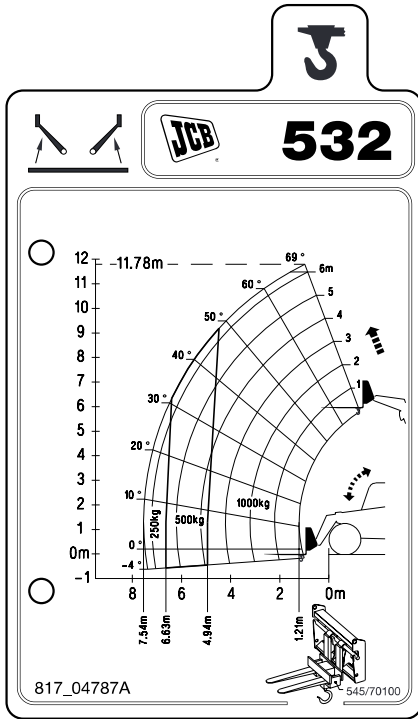
Industrial Forks (Stabilisers Down)



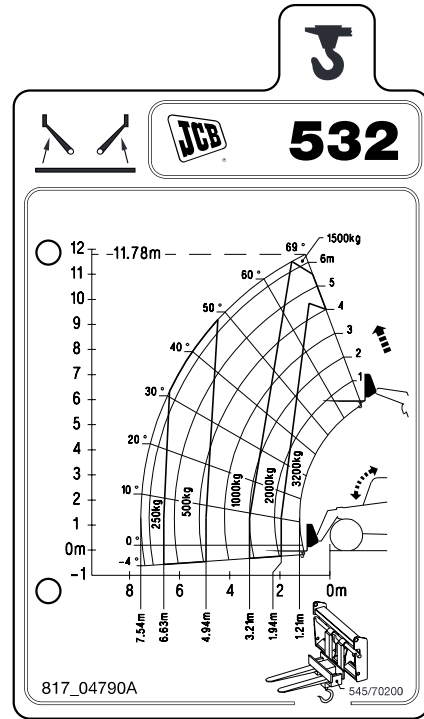
LOAD CHARTS  
(continued)

532 Sway Machines (continued)

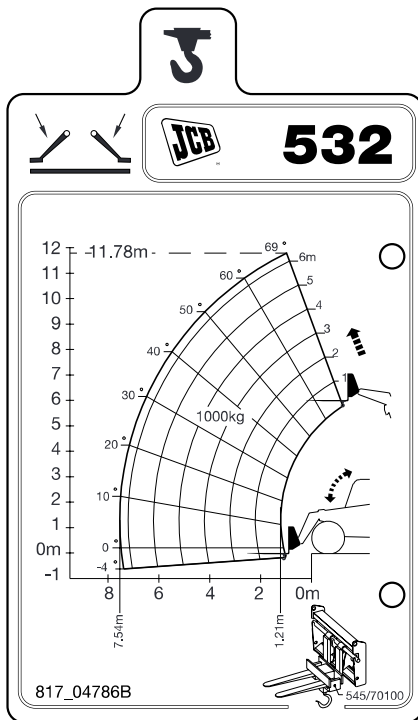
Fork Mounted Hook - UK Only (Stabilisers Up)



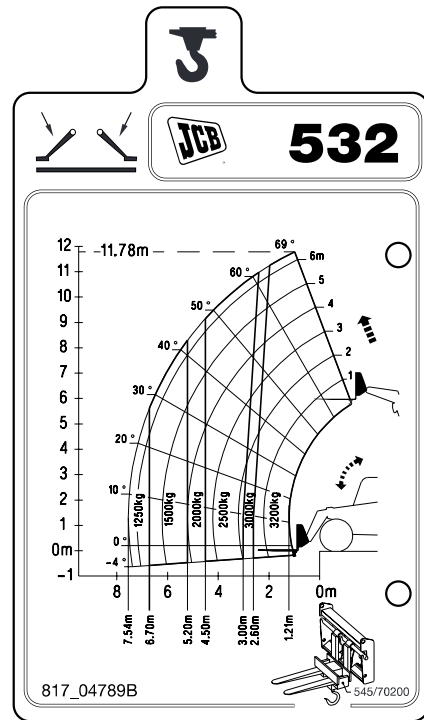
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



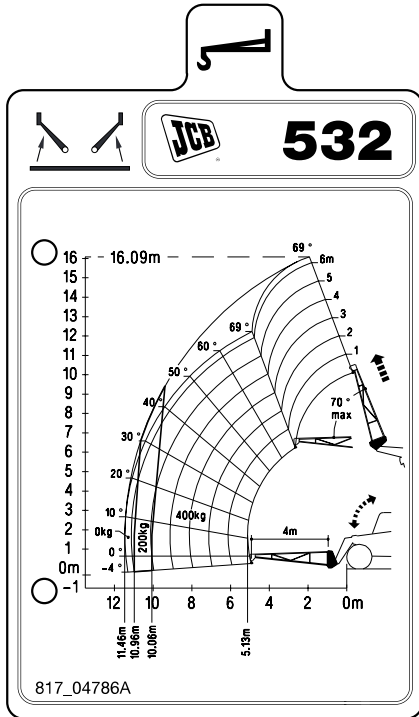
Fork Mounted Hook - Not UK (Stabilisers Down)



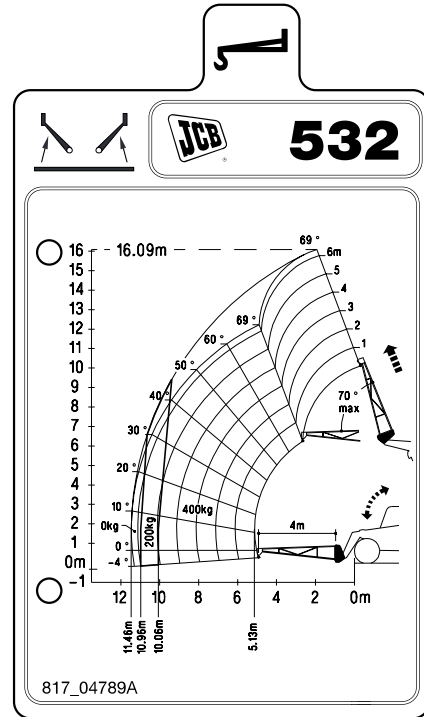
LOAD CHARTS  
(continued)

532 Sway Machines (continued)

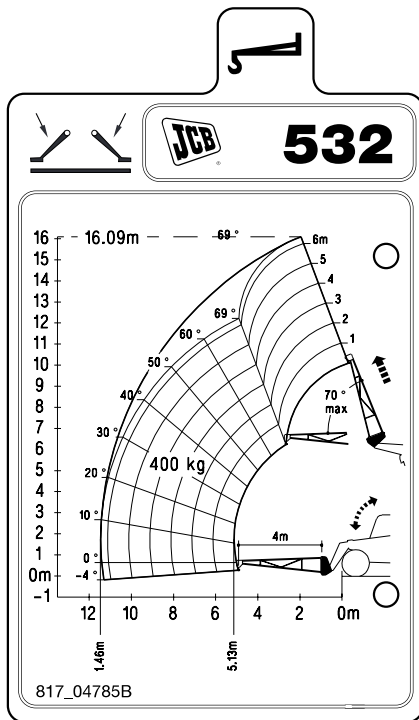
Extension Jib - UK Only (Stabilisers Up)



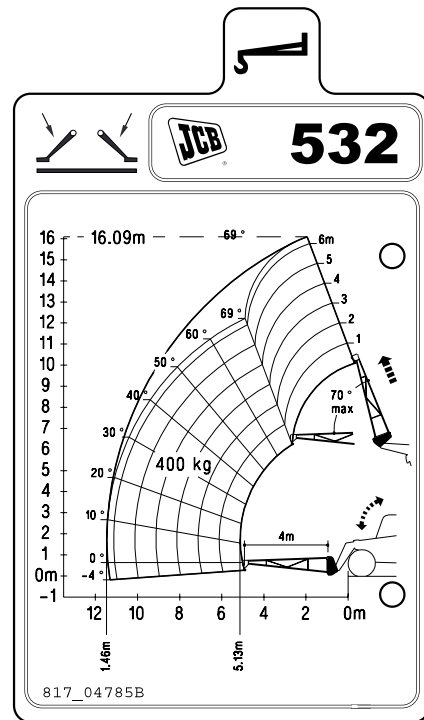
Extension Jib - Not UK (Stabilisers Up)



Extension Jib - UK Only (Stabilisers Down)



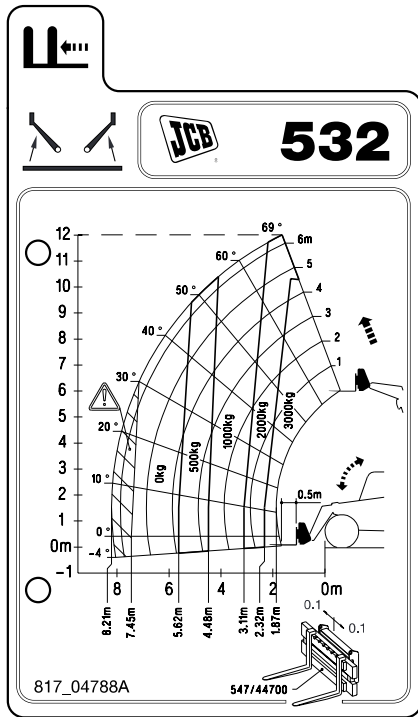
Extension Jib - Not UK (Stabilisers Down)



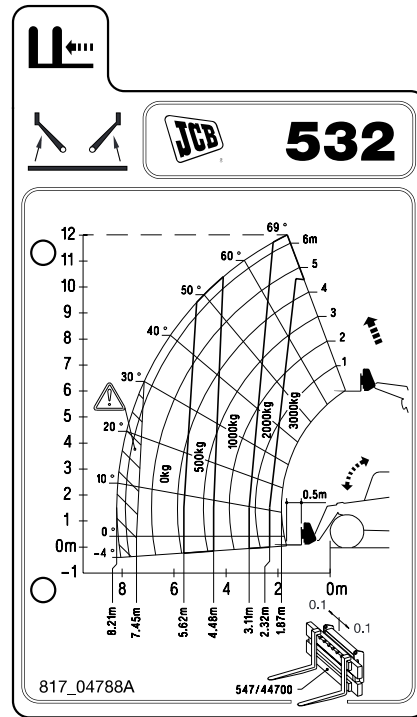
LOAD CHARTS  
(continued)

532 Sway Machines (continued)

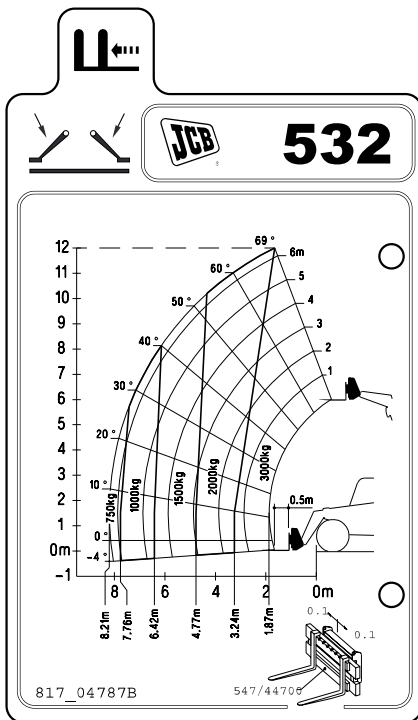
Sideshift Carriage - UK Only (Stabilisers Up)



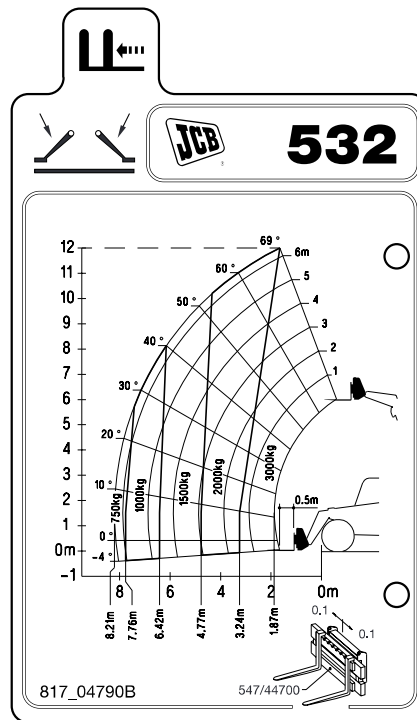
Sideshift Carriage - Not UK (Stabilisers Up)



Sideshift Carriage - UK Only (Stabilisers Down)



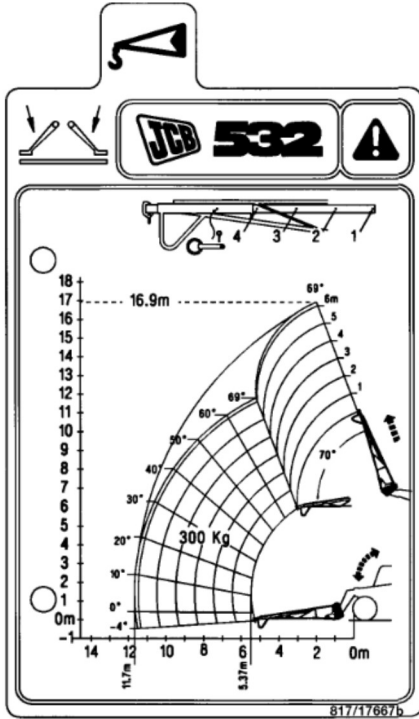
Sideshift Carriage - Not UK (Stabilisers Down)



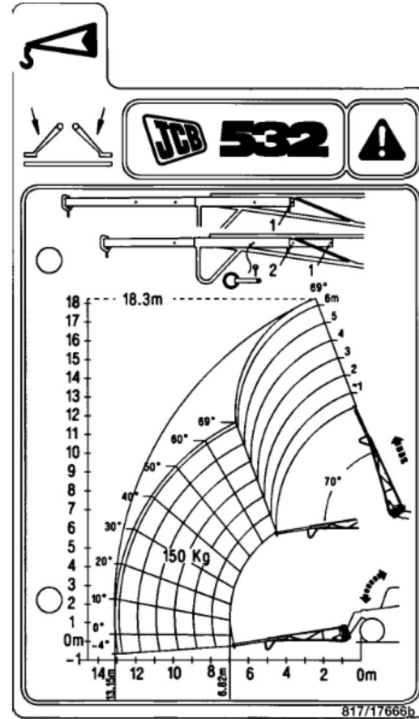
LOAD CHARTS

532 Sway Machines (continued)

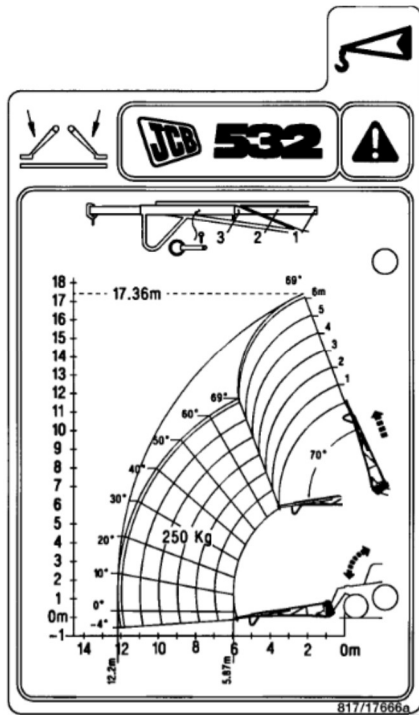
Roof Truss Boom - Position 1 (Fully Retracted)



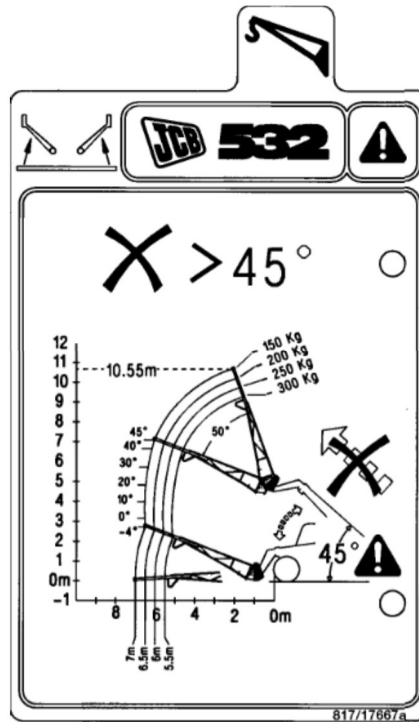
Roof Truss Boom - Positions 3 and 4



Roof Truss Boom - Position 2



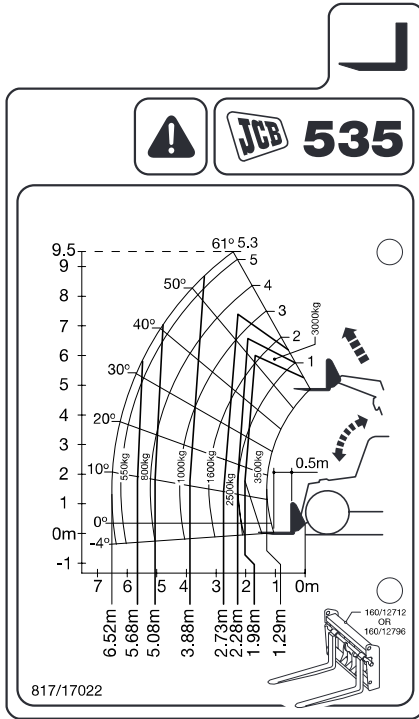
Roof Truss Boom - Boom Travel Limits



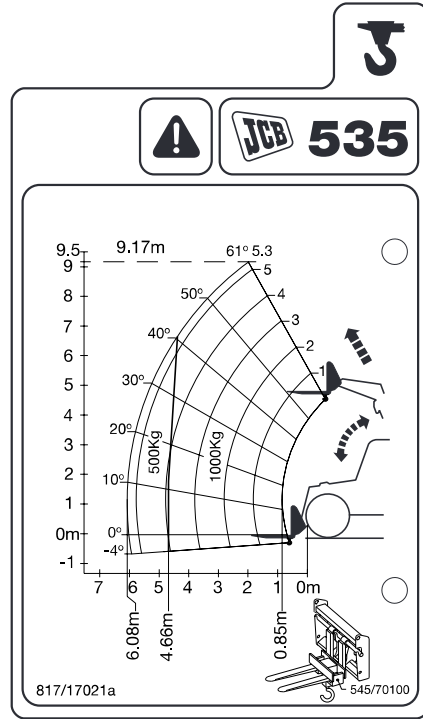
LOAD CHARTS  
(continued)

535 Machines

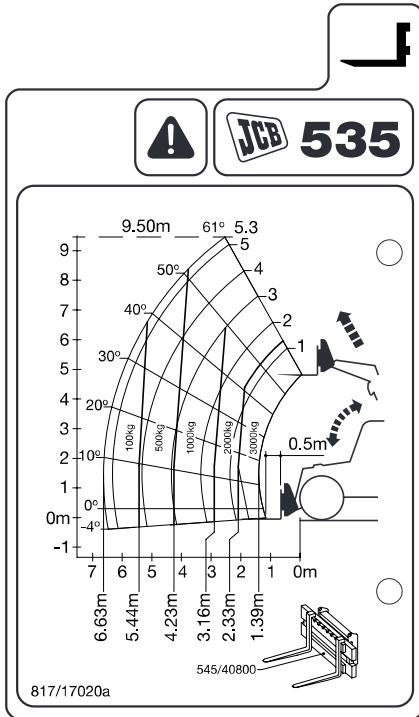
Standard Forks



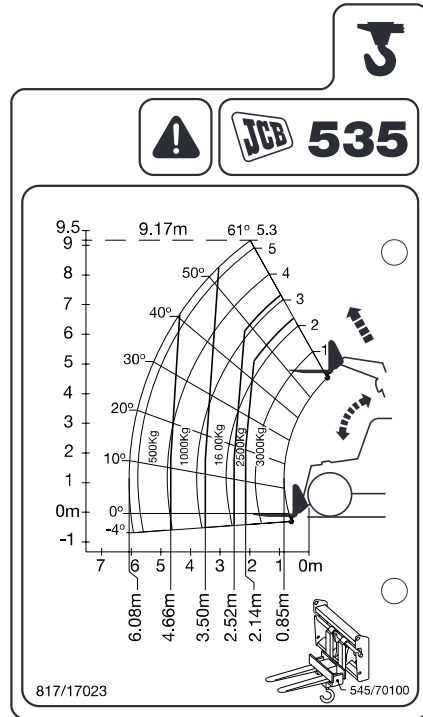
Fork Mounted Hook (UK Only)



Industrial Forks



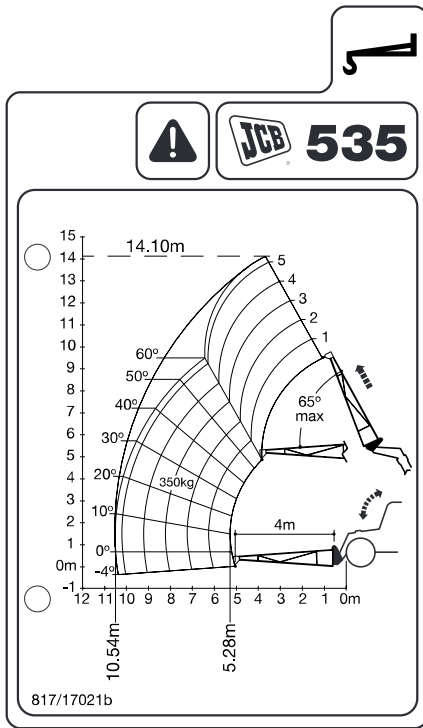
Fork Mounted Hook (Not UK)



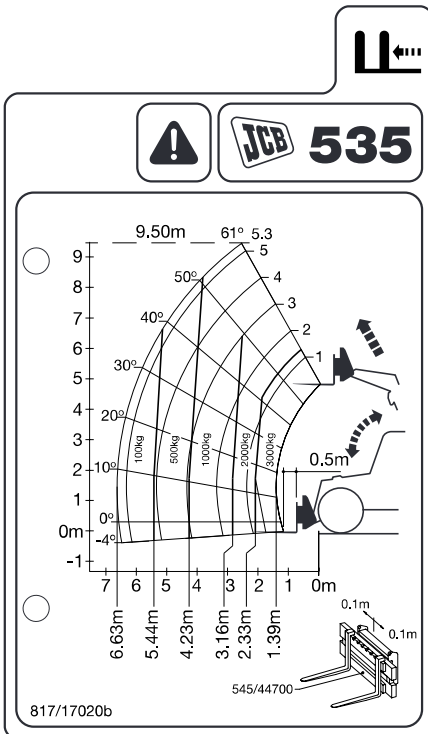
LOAD CHARTS

535 Machines (continued)

Extension Jib (UK Only)



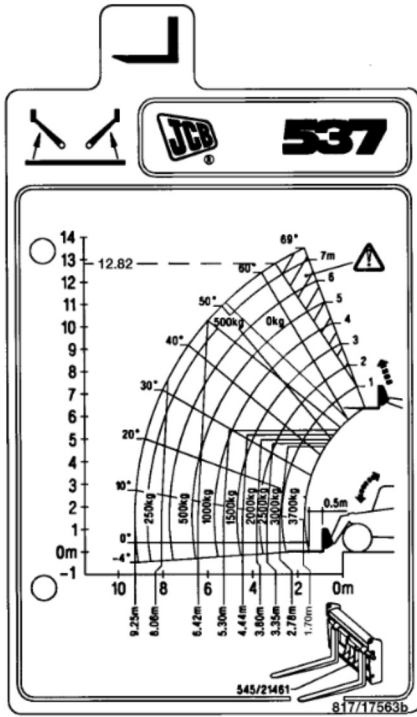
Sideshift Carriage (UK Only)



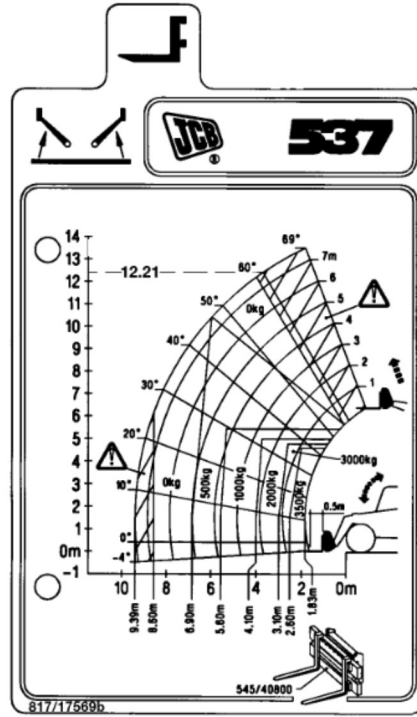
LOAD CHARTS  
(continued)

537 Non Sway Machines

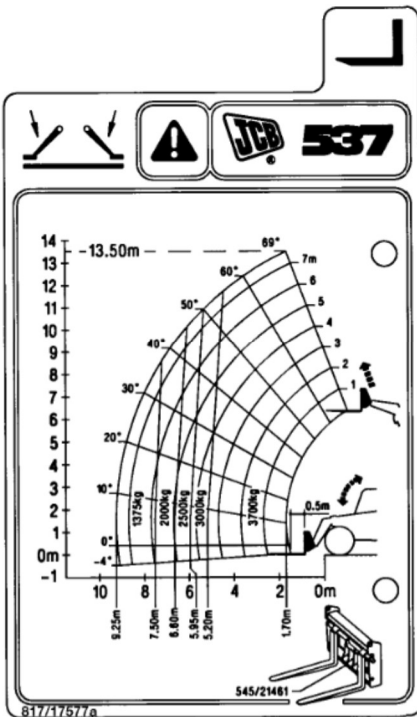
Standard Forks (Stabilisers Up)



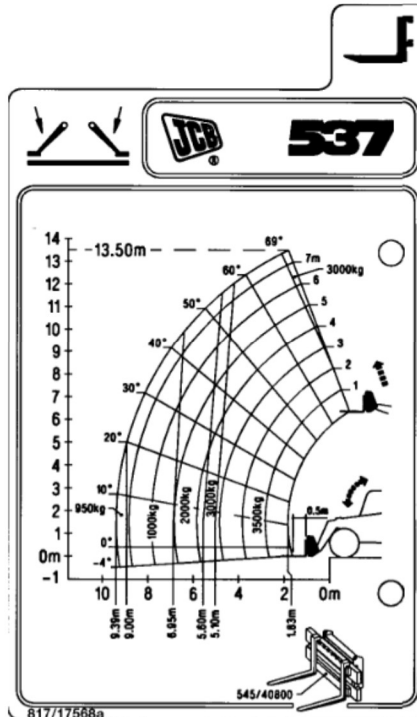
Industrial Forks (Stabilisers Up)



Standard Forks (Stabilisers Down)



Industrial Forks (Stabilisers Down)

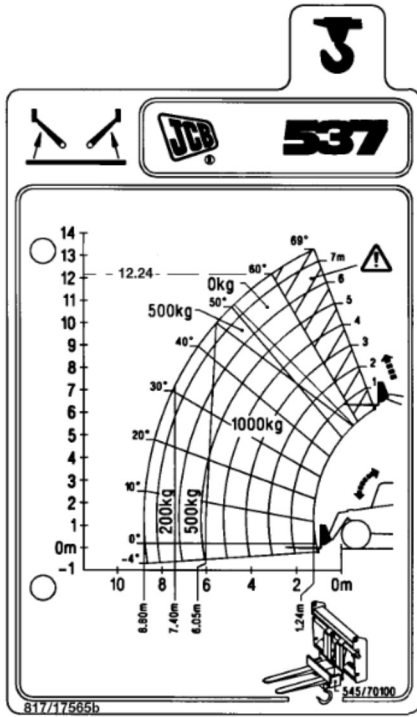




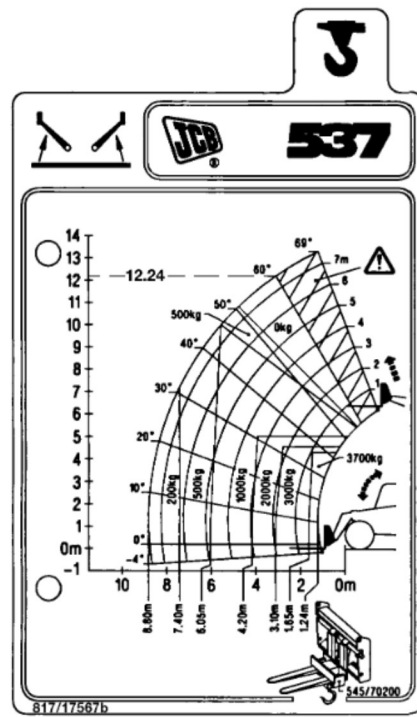
LOAD CHARTS  
(continued)

537 Non Sway Machines (continued)

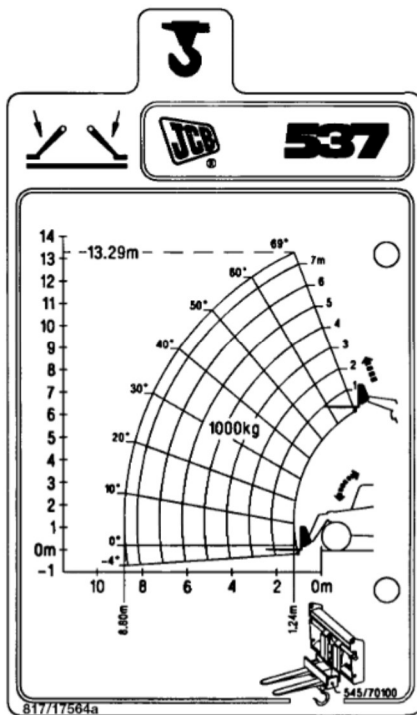
Fork Mounted Hook - UK Only (Stabilisers Up)



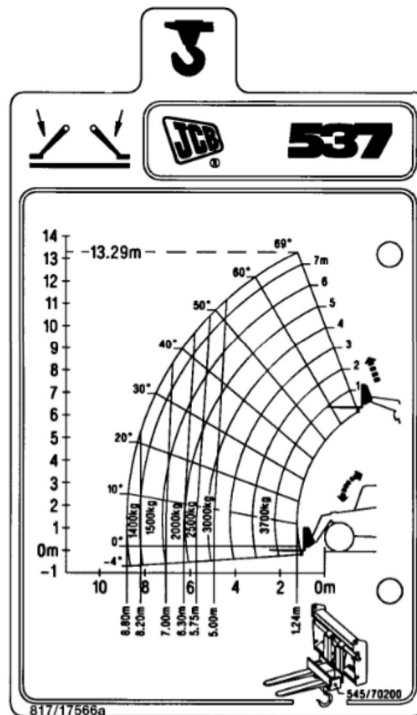
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



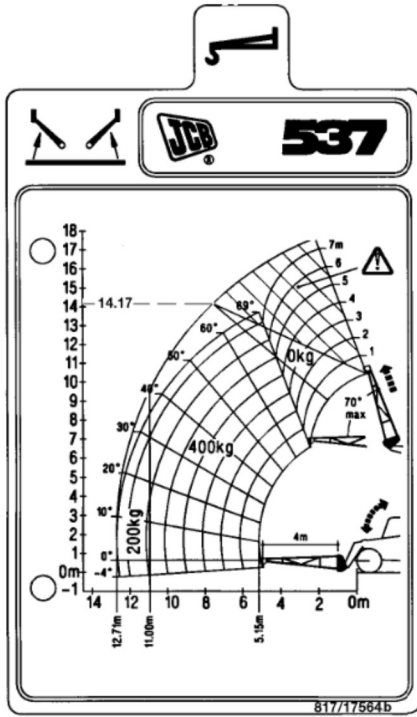
Fork Mounted Hook - Not UK (Stabilisers Down)



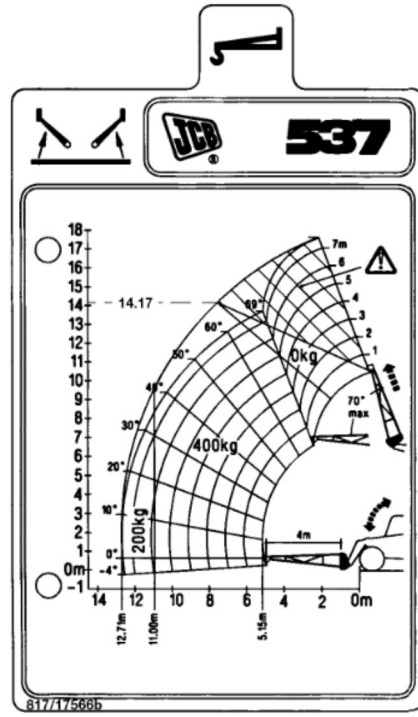
LOAD CHARTS

537 Non Sway Machines (continued)

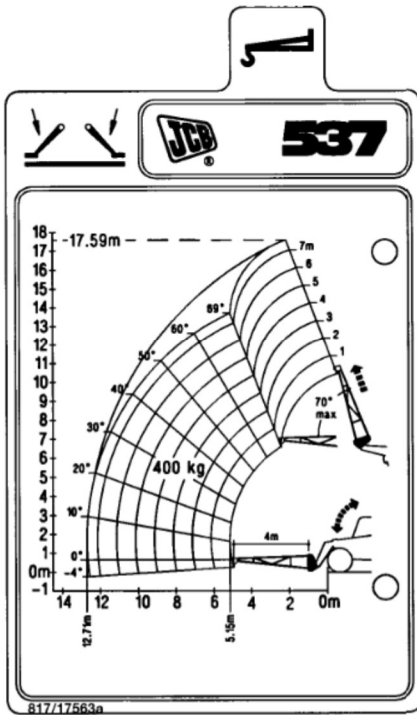
Extension Jib - UK Only (Stabilisers Up)



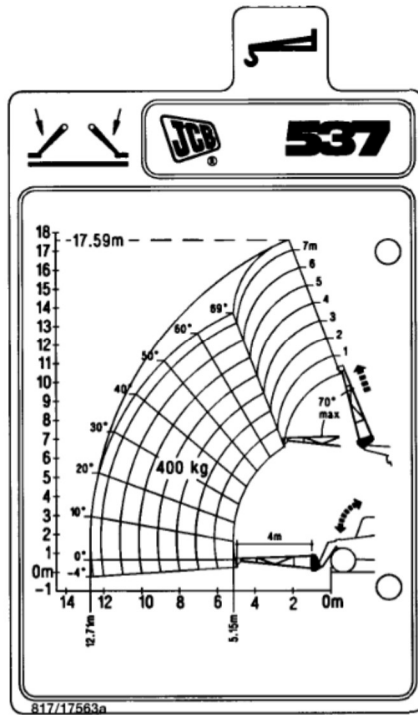
Extension Jib - Not UK (Stabilisers Up)



Extension Jib - UK Only (Stabilisers Down)



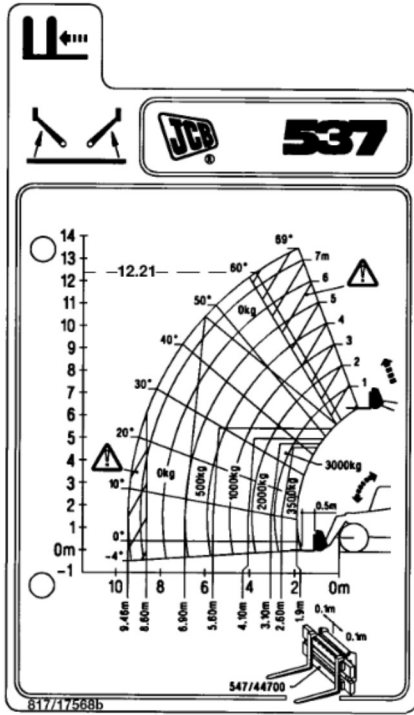
Extension Jib - Not UK (Stabilisers Down)



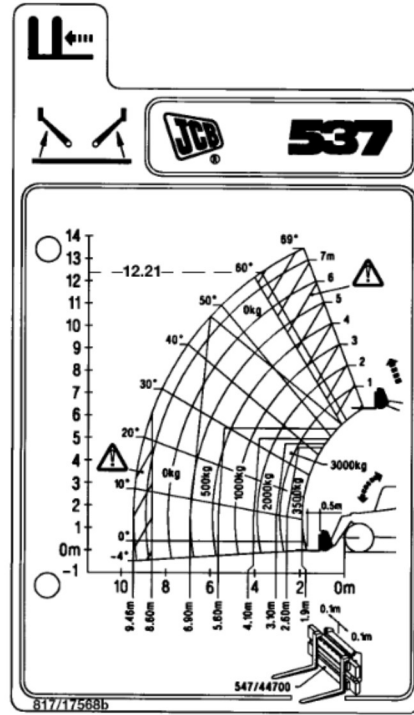
LOAD CHARTS  
(continued)

537 Non Sway Machines (continued)

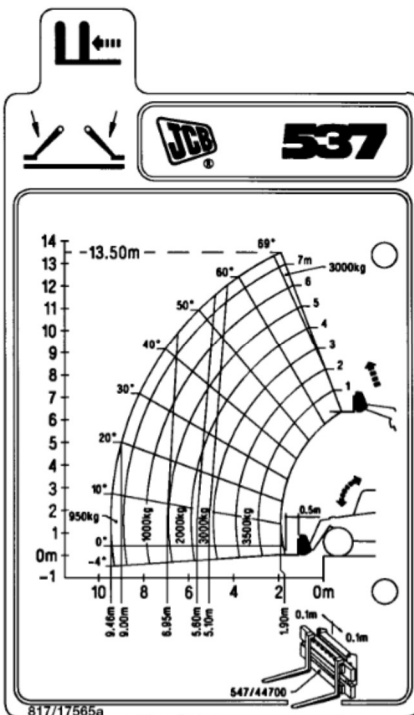
Sideshift Carriage - UK Only (Stabilisers Up)



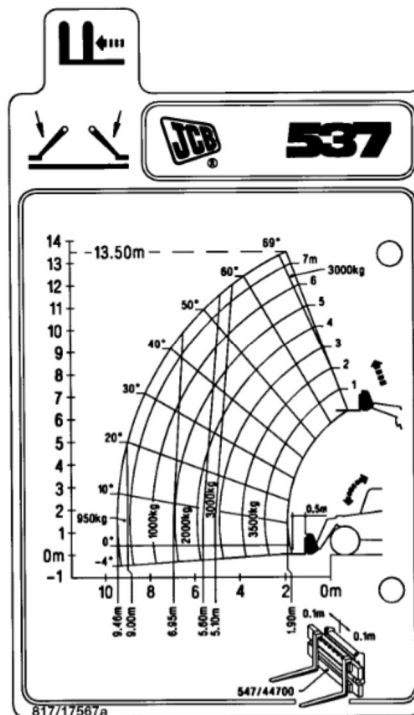
Sideshift Carriage - Not UK (Stabilisers Up)



Sideshift Carriage - UK Only (Stabilisers Down)



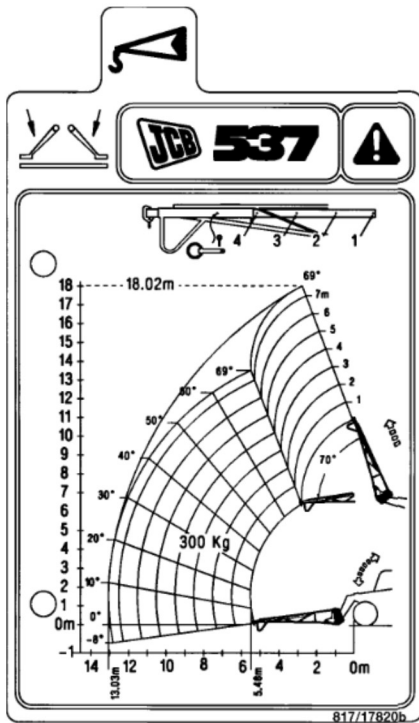
Sideshift Carriage - Not UK (Stabilisers Down)



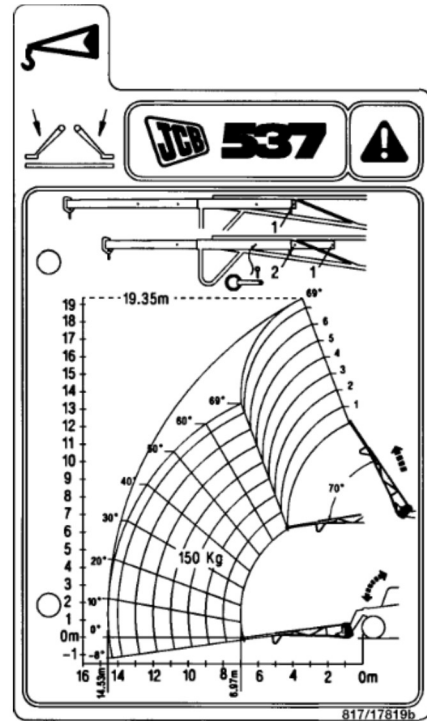
### LOAD CHARTS (continued)

#### 537 Non Sway Machines (continued)

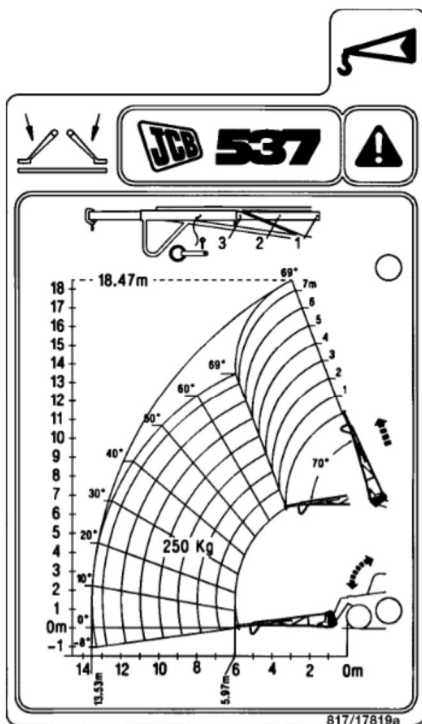
Roof Truss Boom - Position 1 (Fully Retracted)



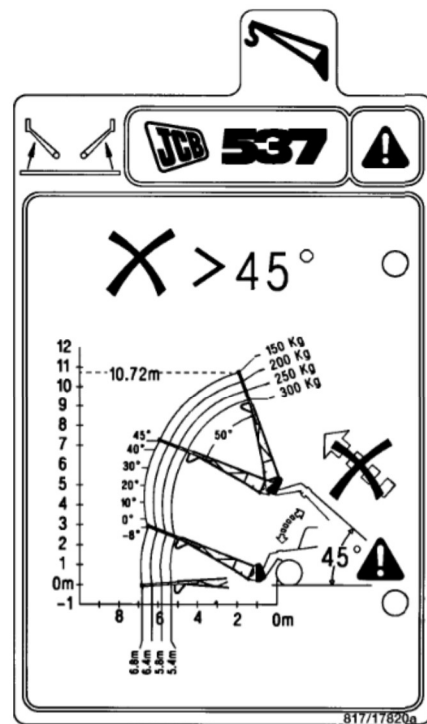
Roof Truss Boom - Positions 3 and 4



Roof Truss Boom - Position 2



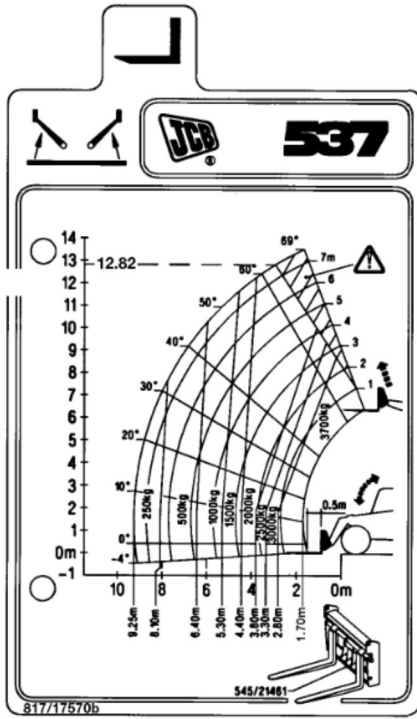
Roof Truss Boom - Boom Travel Limits



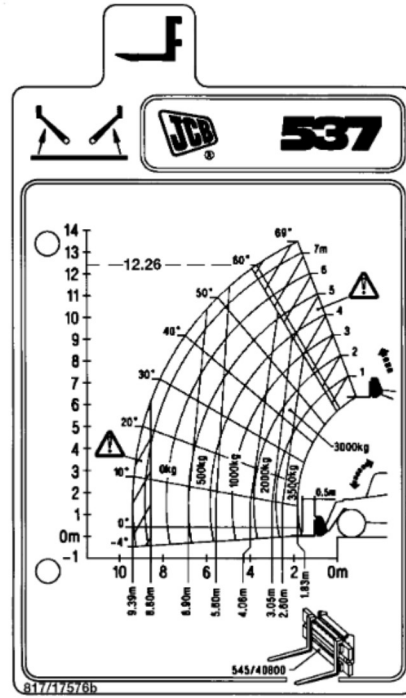
LOAD CHARTS  
(continued)

537 Sway Machines

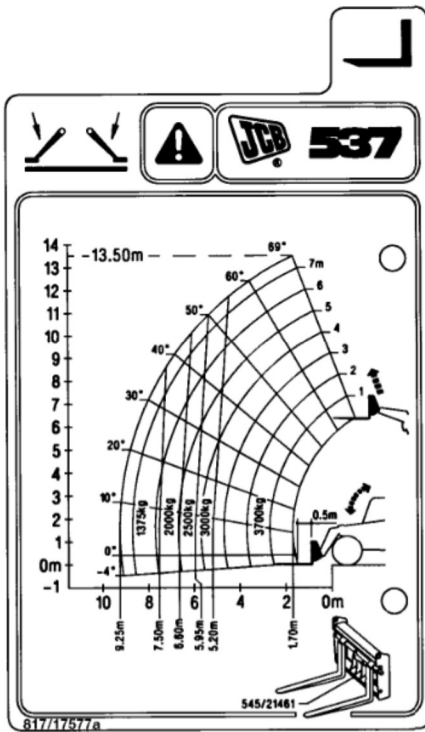
Standard Forks (Stabilisers Up)



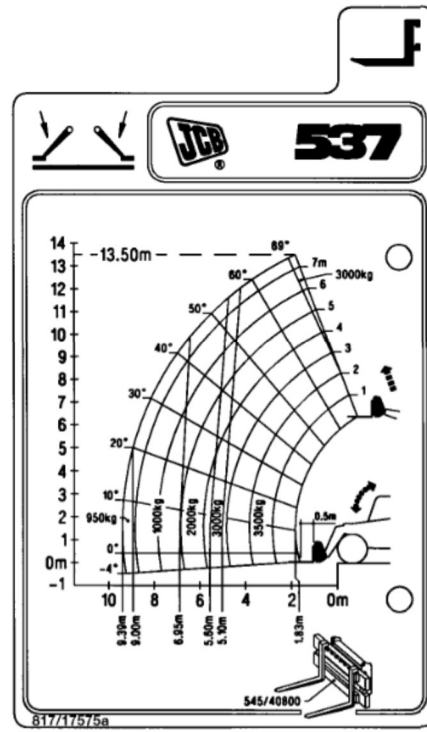
Industrial Forks (Stabilisers Up)



Standard Forks (Stabilisers Down)



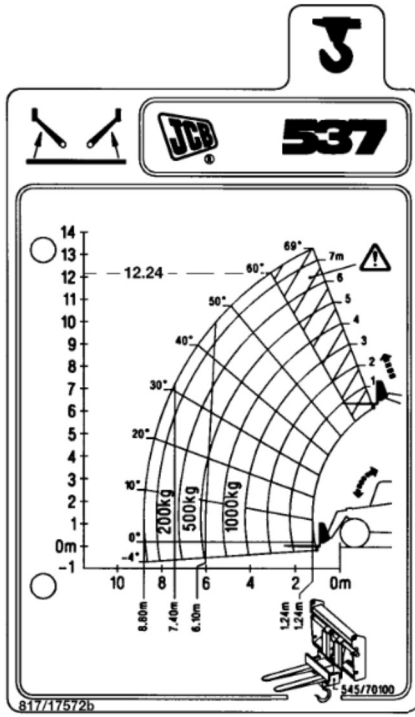
Industrial Forks (Stabilisers Down)



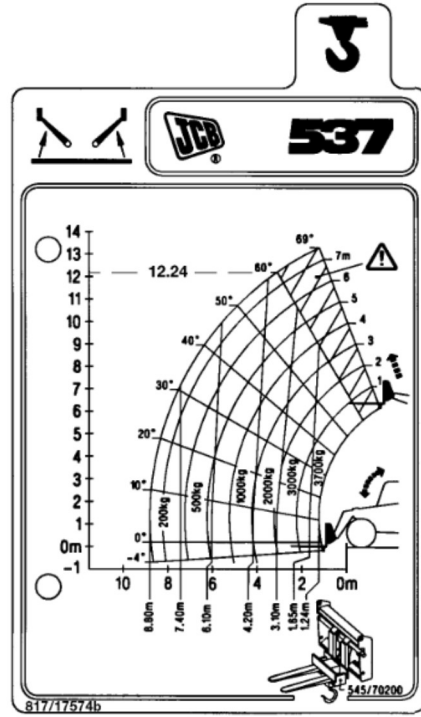
LOAD CHARTS  
(continued)

537 Sway Machines (continued)

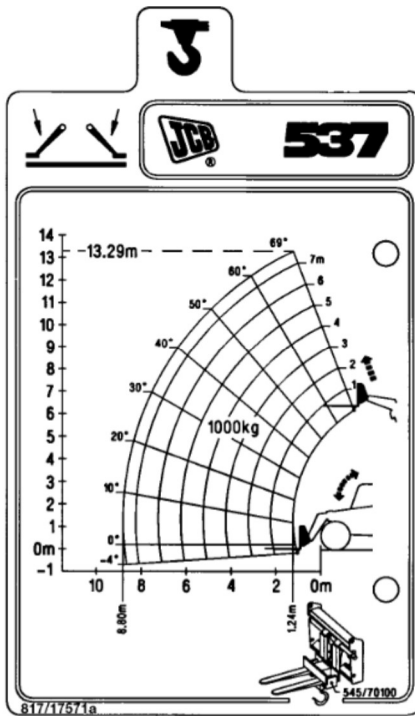
Fork Mounted Hook - UK Only (Stabilisers Up)



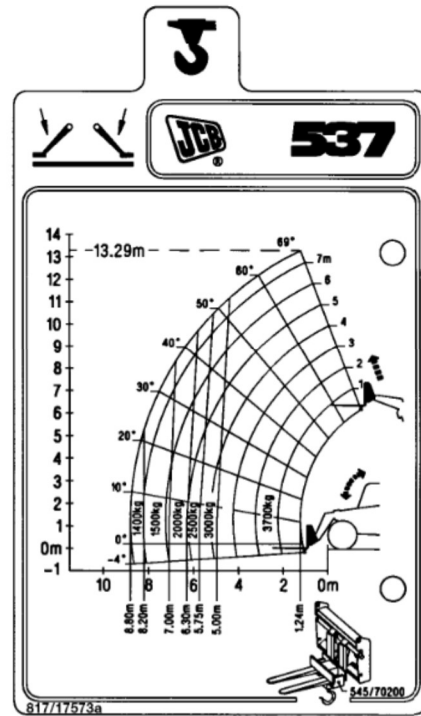
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



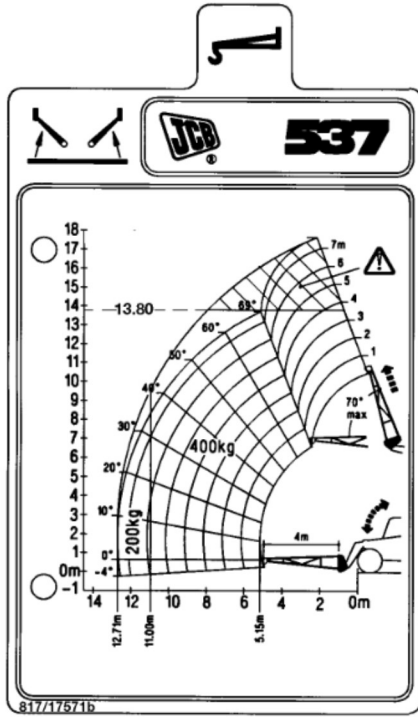
Fork Mounted Hook - Not UK (Stabilisers Down)



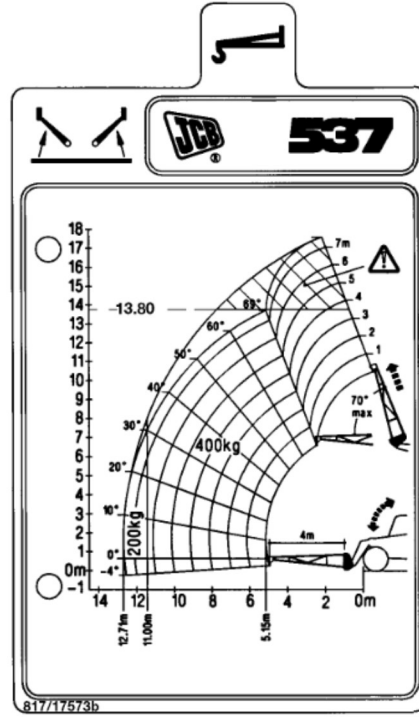
LOAD CHARTS

537 Sway Machines (continued)

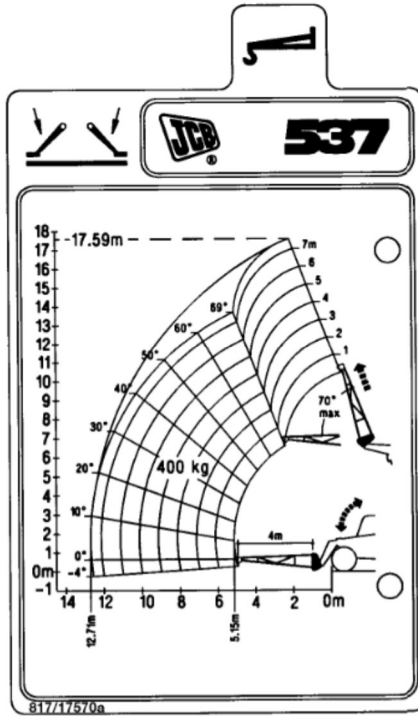
Extension Jib - UK Only (Stabilisers Up)



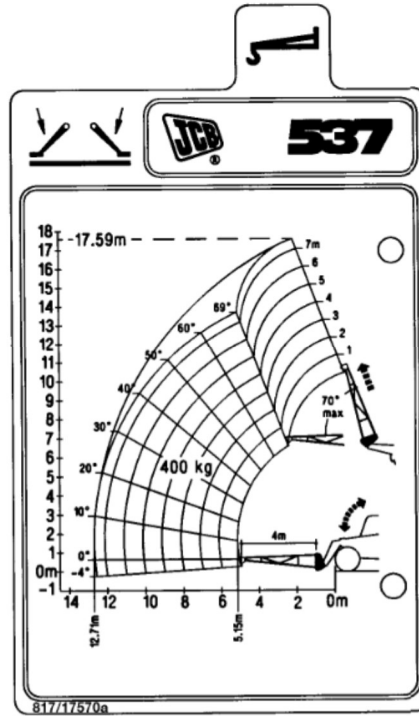
Extension Jib - Not UK (Stabilisers Up)



Extension Jib - UK Only (Stabilisers Down)



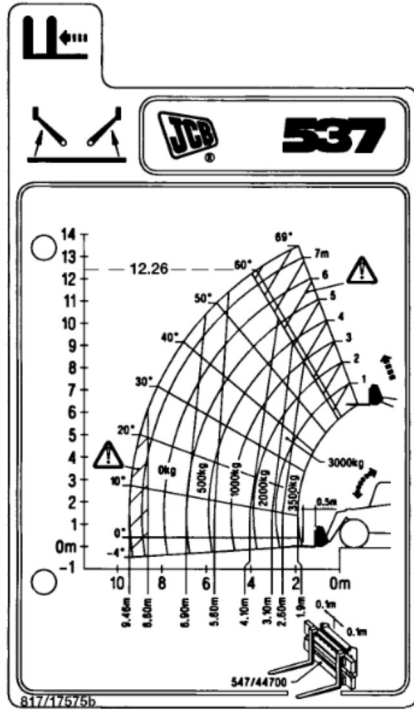
Extension Jib - Not UK (Stabilisers Down)



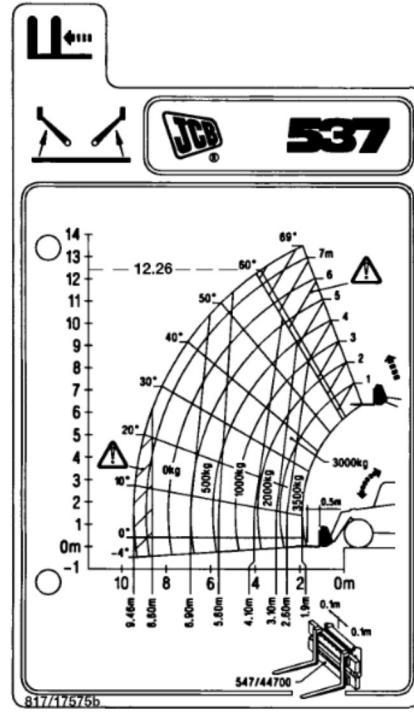
LOAD CHARTS  
(continued)

537 Sway Machines (continued)

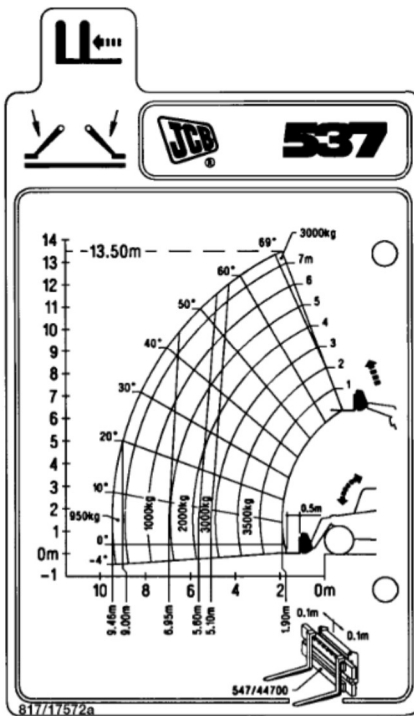
Sideshift Carriage - UK Only (Stabilisers Up)



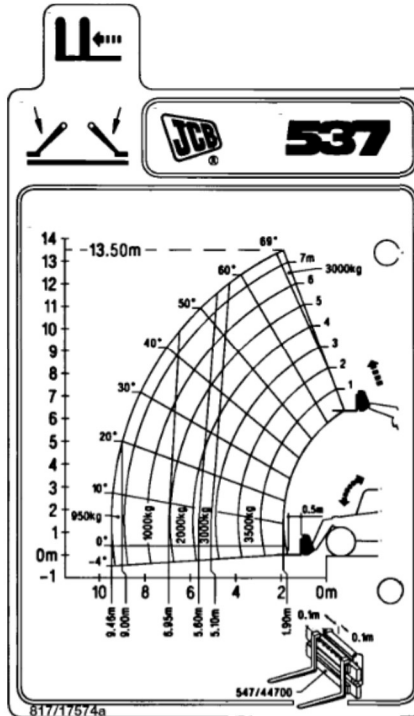
Sideshift Carriage - Not UK (Stabilisers Up)



Sideshift Carriage - UK Only (Stabilisers Down)



Sideshift Carriage - Not UK (Stabilisers Down)

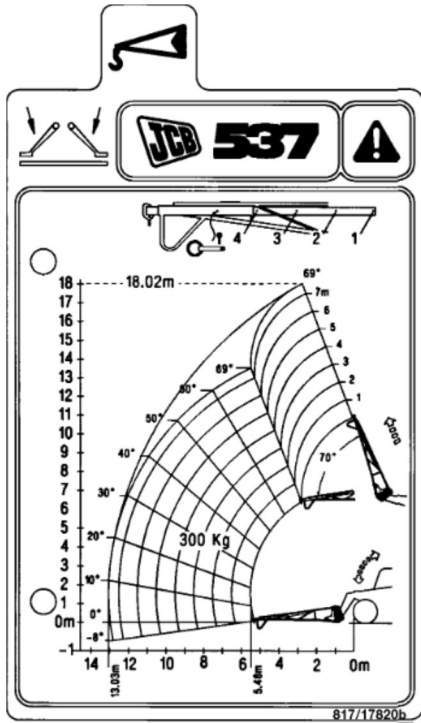




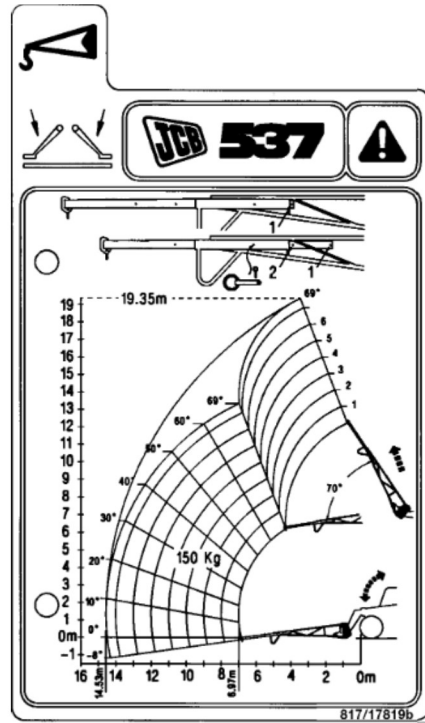
LOAD CHARTS

537 Sway Machines (continued)

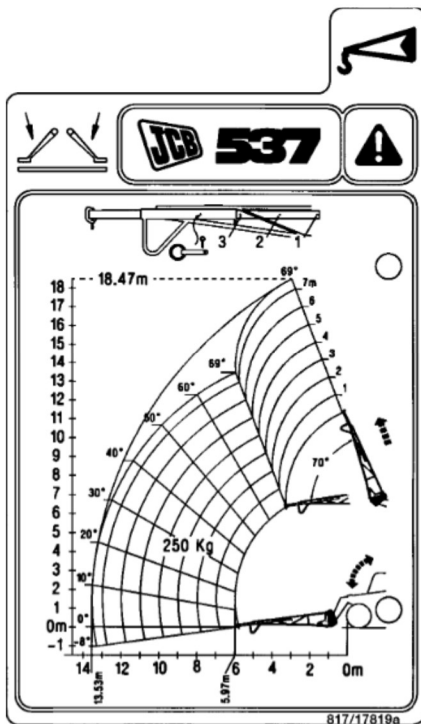
Roof Truss Boom - Position 1 (Fully Retracted)



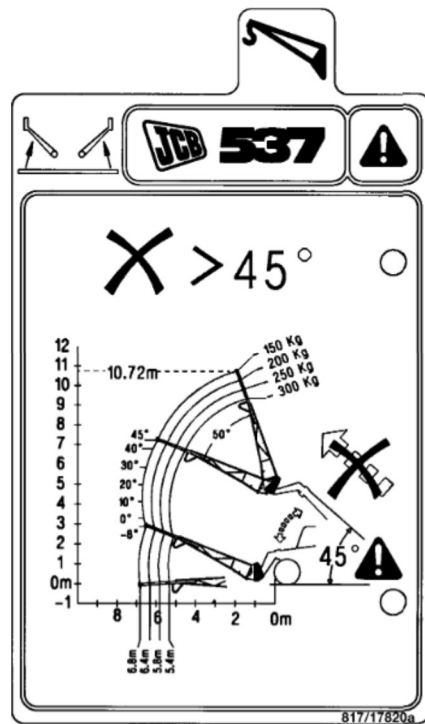
Roof Truss Boom - Positions 3 and 4



Roof Truss Boom - Position 2



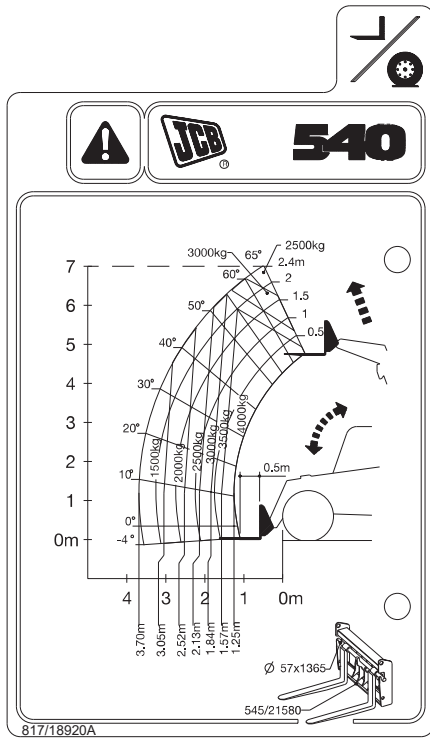
Roof Truss Boom - Boom Travel Limits



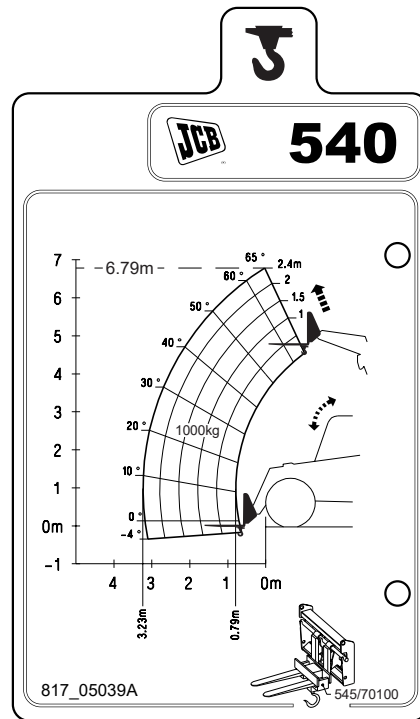
LOAD CHARTS  
(continued)

540 Machines - Not 540-170

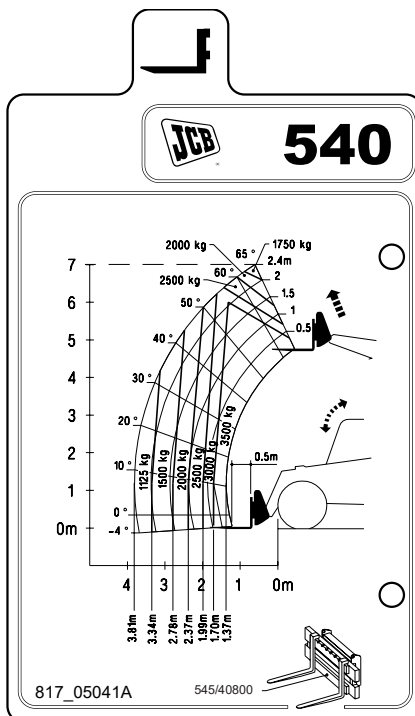
Standard Forks



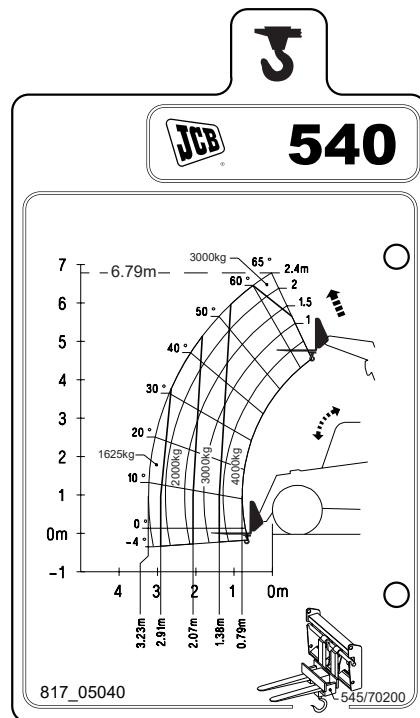
Fork Mounted Hook (UK Only)



Industrial Forks



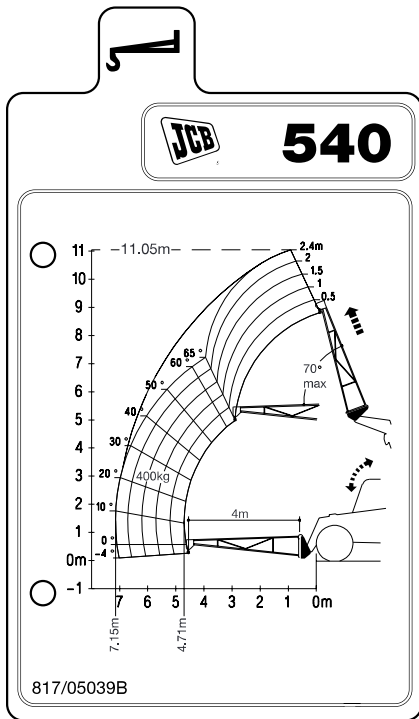
Fork Mounted Hook (Not UK)



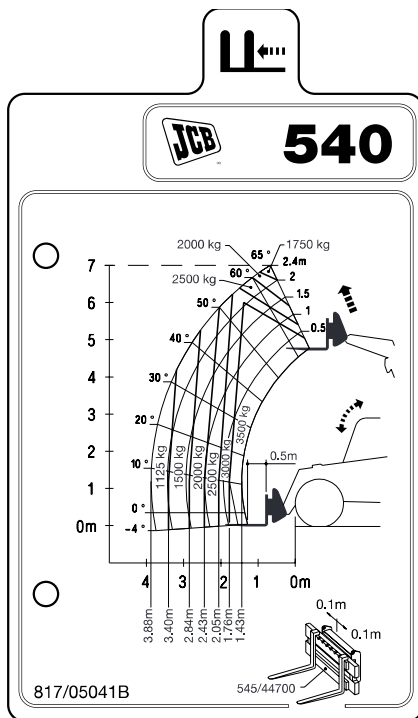
LOAD CHARTS  
(continued)

540 Machines - Not 540-170 (continued)

Extension Jib (UK Only)



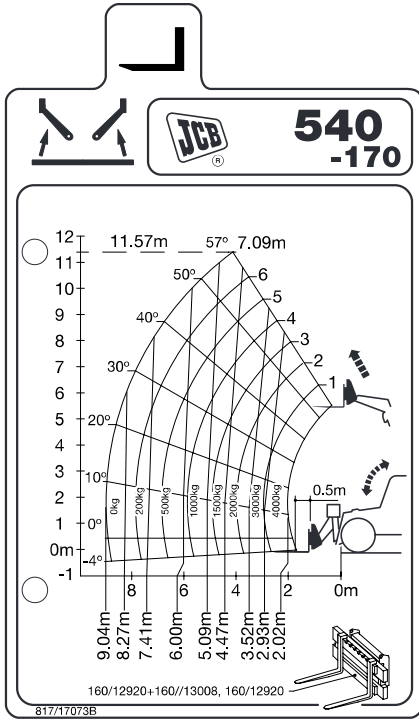
Sideshift Carriage (UK Only)



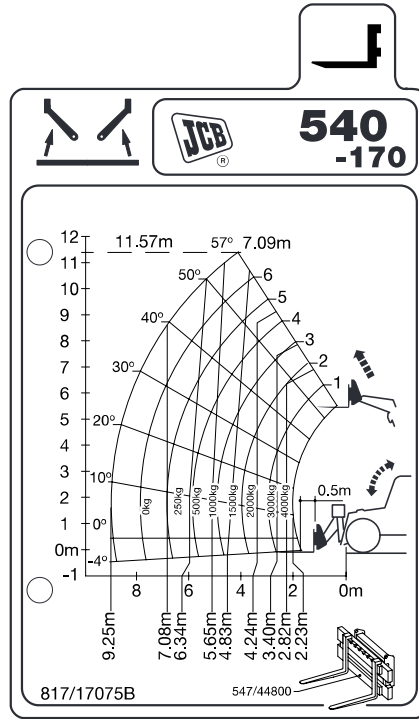
LOAD CHARTS

540-170 Machines

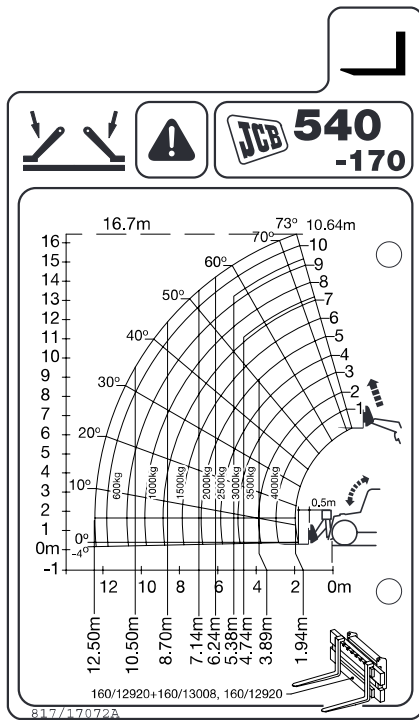
Standard Forks (Stabilisers Up)



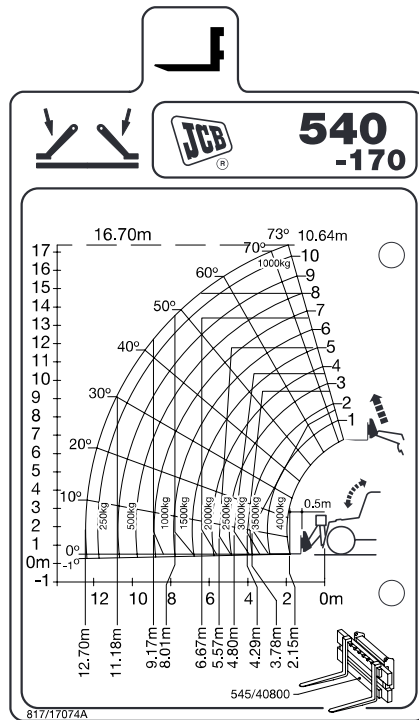
Industrial Forks (Stabilisers Up)



Standard Forks (Stabilisers Down)



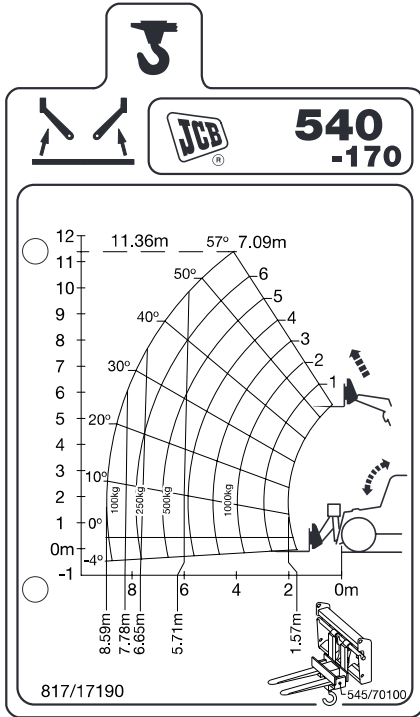
Industrial Forks (Stabilisers Down)



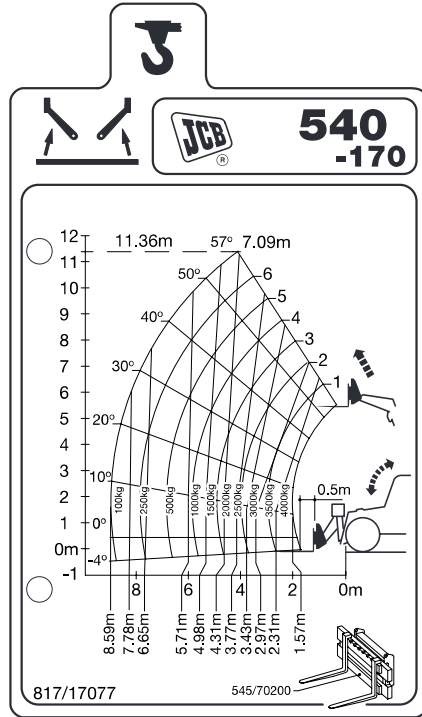
LOAD CHARTS

540-170 Machines (continued)

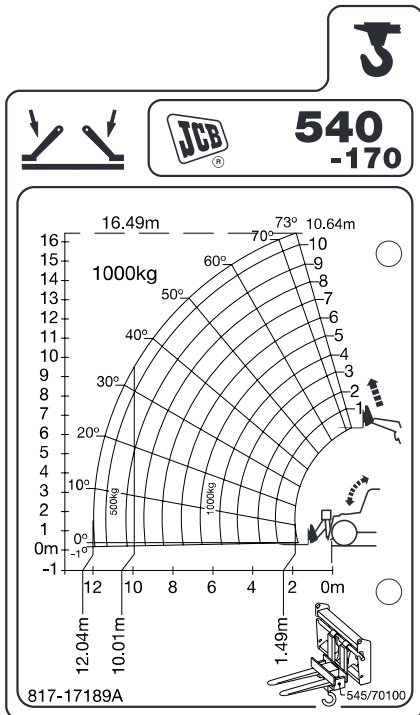
Fork Mounted Hook - UK Only (Stabilisers Up)



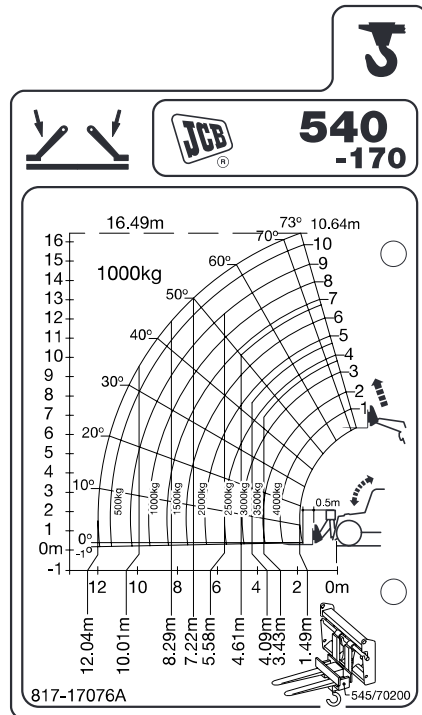
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



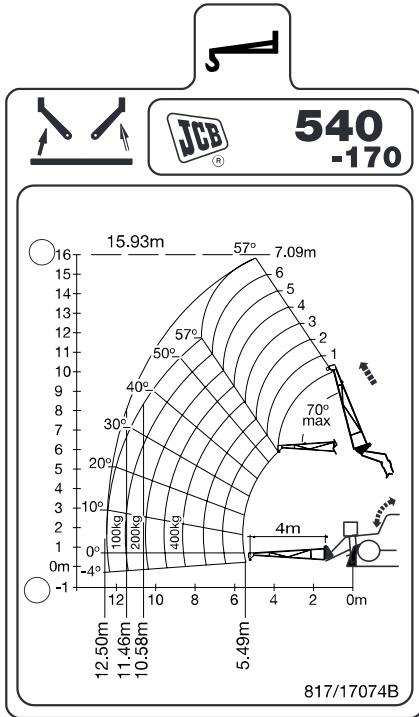
Fork Mounted Hook - Not UK (Stabilisers Down)



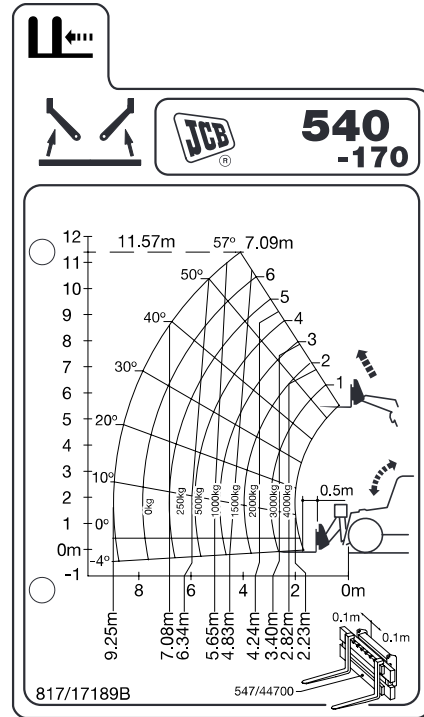
LOAD CHARTS

540-170 Machines (continued)

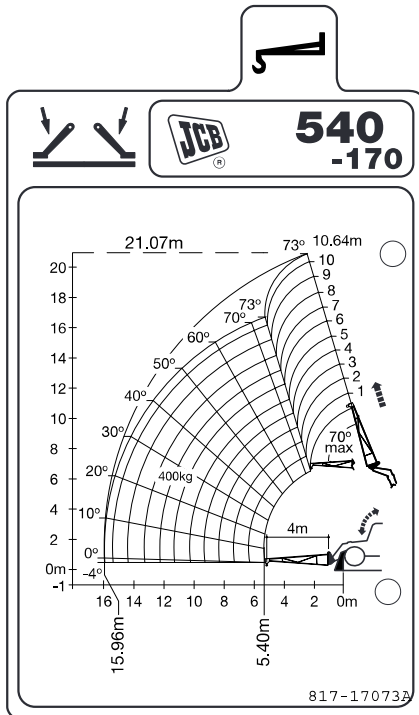
Extension Jib (Stabilisers Up)



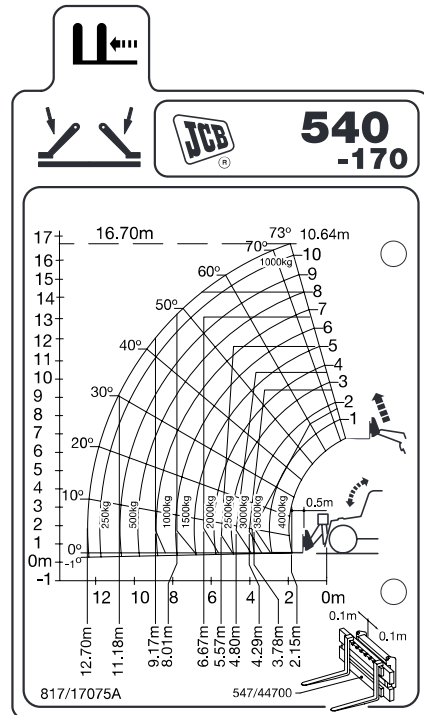
Sideshift Carriage - UK Only (Stabilisers Up)



Extension Jib (Stabilisers Down)



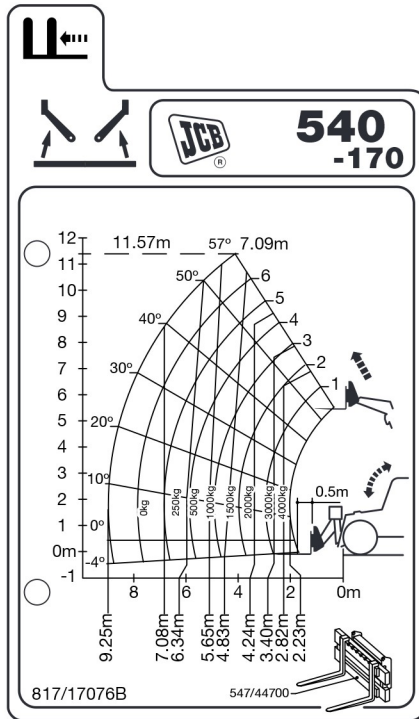
Sideshift Carriage - UK Only (Stabilisers Down)



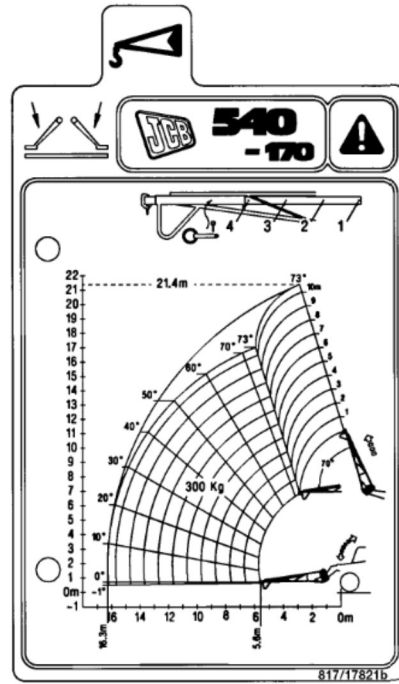
LOAD CHARTS

540-170 Machines (continued)

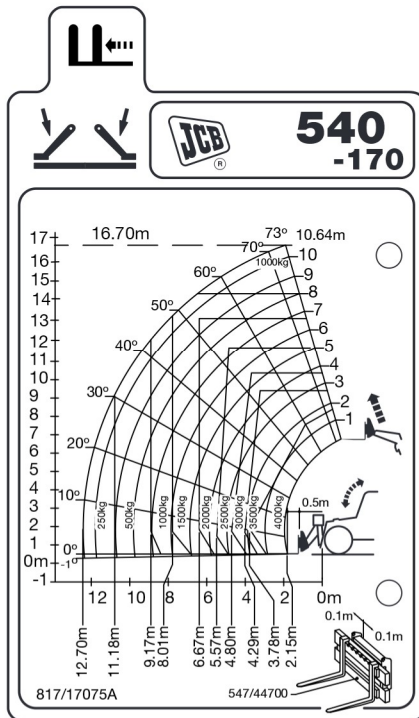
Sideshift Carriage - Not UK (Stabilisers Up)



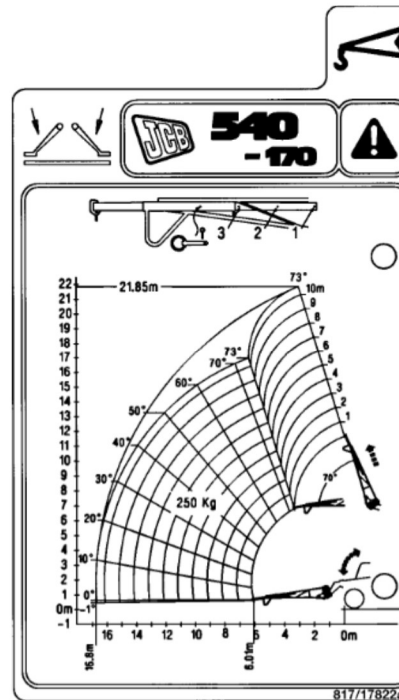
Roof Truss Boom - Position 1 (Fully Retracted)



Sideshift Carriage - Not UK (Stabilisers Down)



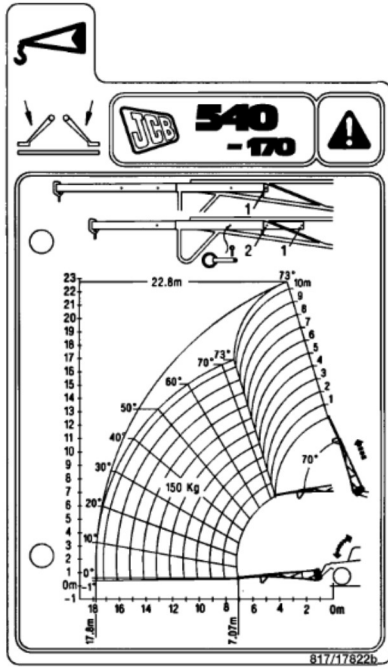
Roof Truss Boom - Position 2



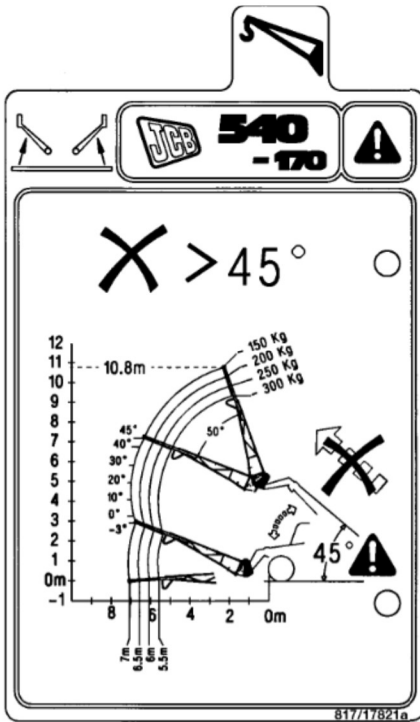
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540-170 Machines (continued)

Roof Truss Boom - Positions 3 and 4



Roof Truss Boom - Boom Travel Limits

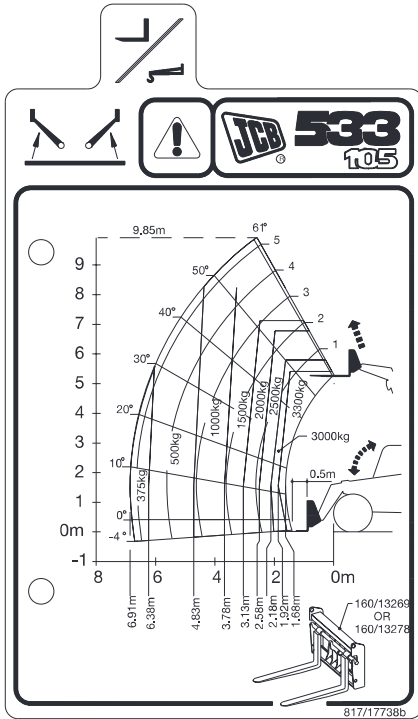




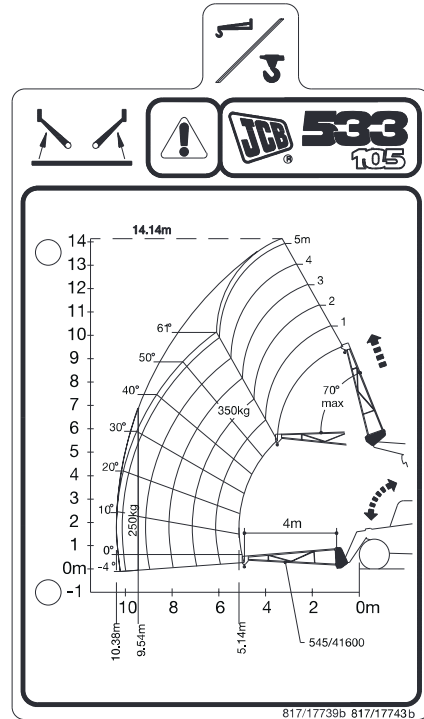
LOAD CHARTS

533-105 Machines

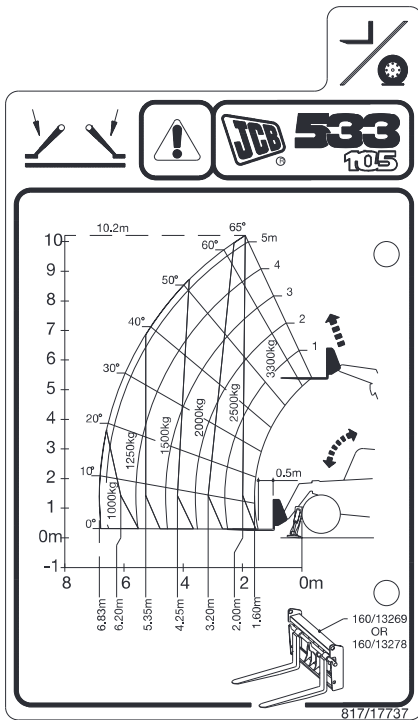
Standard Forks (Stabilisers Up)



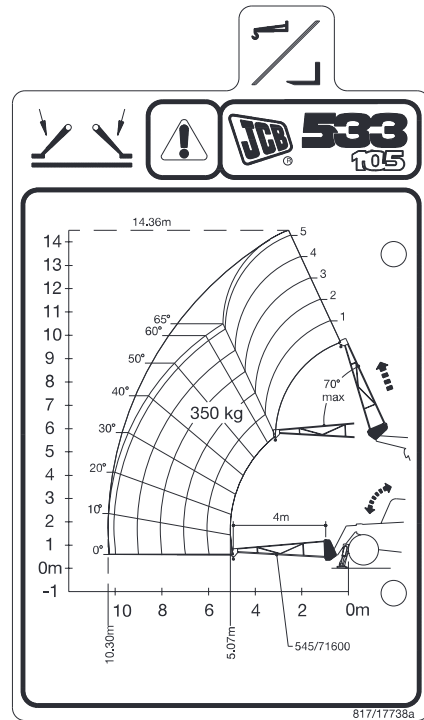
Extension Jib (Stabilisers Up)



Standard Forks (Stabilisers Down)



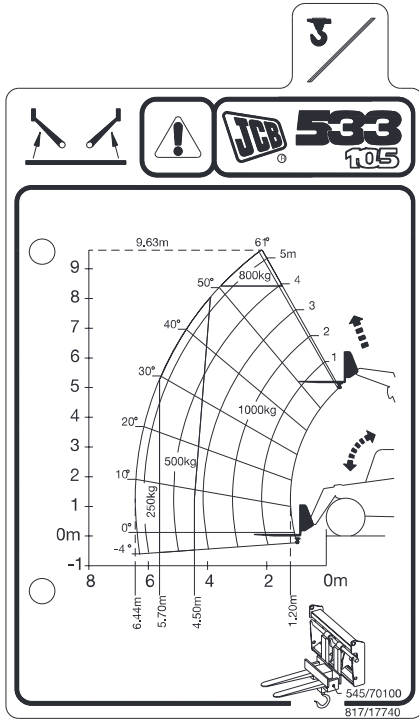
Extension Jib (Stabilisers Down)



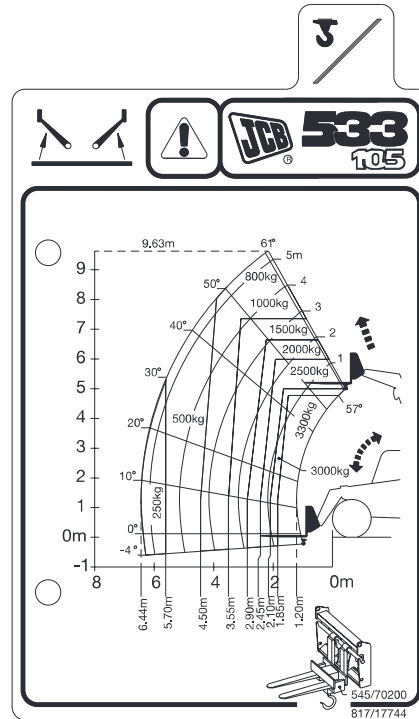
LOAD CHARTS

533-105 Machines (continued)

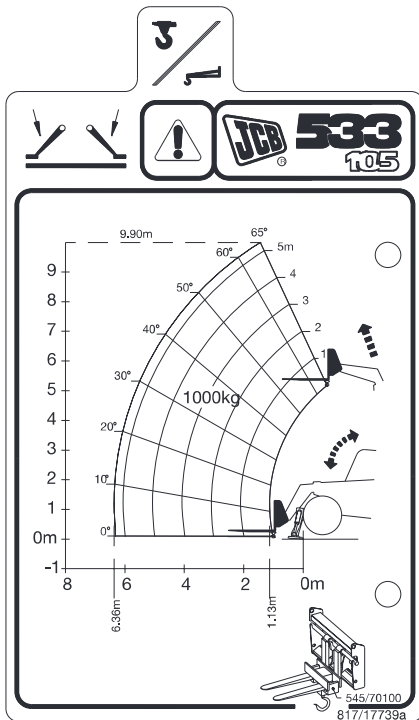
Fork Mounted Hook - UK Only (Stabilisers Up)



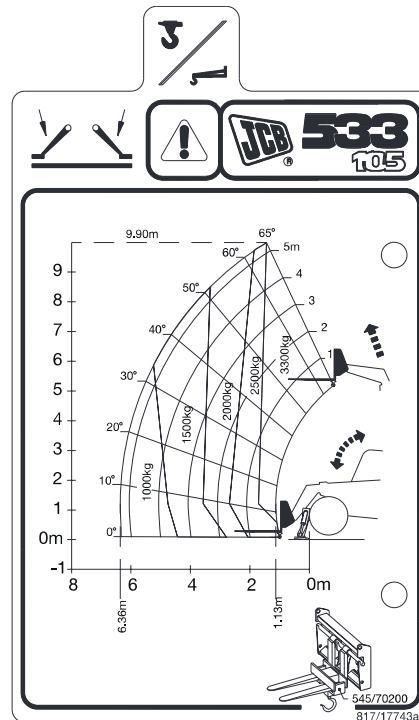
Fork Mounted Hook - Not UK (Stabilisers Up)



Fork Mounted Hook - UK Only (Stabilisers Down)



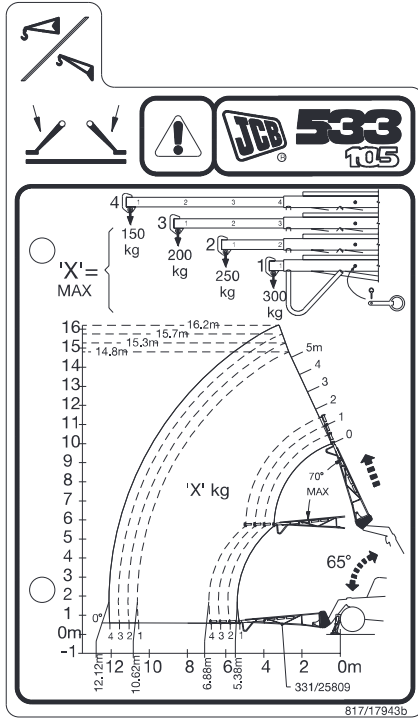
Fork Mounted Hook - Not UK (Stabilisers Down)



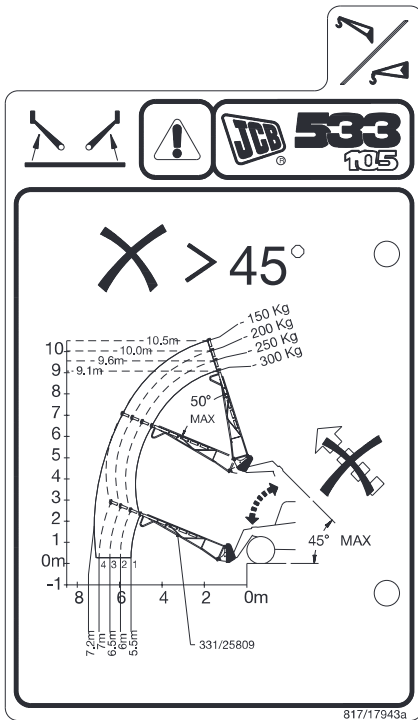
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533-105 Machines (continued)

Roof Truss Boom



Roof Truss Boom - Boom Travel Limits





## SERVICE RECORD SHEET

<b>First 100 Hr.</b> Date ..... Hour Reading .....	<b>4500/Hr./54 Month</b> Date ..... Hour Reading .....
<b>500 Hr./6 Month</b> Date ..... Hour Reading .....	<b>5000 Hr./60 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....
<b>1000 Hr./12 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....	<b>5500/Hr./66 Month</b> Date ..... Hour Reading .....
<b>1500 Hr./18 Month</b> Date ..... Hour Reading .....	<b>6000 Hr./72 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....
<b>2000 Hr./24 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....	<b>6500/Hr./78 Month</b> Date ..... Hour Reading .....
<b>2500 Hr./30 Month</b> Date ..... Hour Reading .....	<b>7000 Hr./84 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....
<b>3000 Hr./36 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....	<b>7500/Hr./90 Month</b> Date ..... Hour Reading .....
<b>3500 Hr./42 Month</b> Date ..... Hour Reading .....	<b>8000 Hr./96 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....
<b>4000 Hr./48 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....	<b>8500/Hr./102 Month</b> Date ..... Hour Reading .....
	<b>9000 Hr./108 Month</b> <b>Annual Insurance Inspection</b> Date ..... Hour Reading .....

**Note: It may be essential to change the Engine Oil and Filter, check Wear Pads or Boom Chains every 250 hours. Check machine service schedule and applications requirements.**





