

## 467 Wheeled Loading Shovel

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Publication No.  
**9813/0500-01**



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Issued by JCB Technical Publications, JCB Aftermarket Training, Woodseat, Rocester, Staffordshire, ST14 5BW, England. Tel +44 1889 591300 Fax +44 1889 591400

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# Section 1 - General Information

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# Section 1 - General Information

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# Introduction

## About this Publication

This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic earth moving equipment.

Renewal of oil seals, gaskets, etc., and any component showing obvious signs of wear or damage is expected as a matter of course. It is expected that components will be cleaned and lubricated where appropriate, and that any opened hose or pipe connections will be blanked to prevent excessive loss of hydraulic fluid and ingress of dirt. Finally, please remember above all else **SAFETY MUST COME FIRST!**

The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1 General Information - includes torque settings and service tools.
- 2 Care & Safety - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3 Routine Maintenance - includes service schedules and recommended lubricants for all the machine.

The remaining sections are alphabetically coded and deal with Dismantling, Overhaul etc. of specific components, for example:

- A** Attachments
- B** Body & Framework...etc.

The page numbering in each alphabetically coded section is not continuous. This allows for the insertion of new items in later issues of the manual.

Section contents, technical data, circuit descriptions, operation descriptions etc. are inserted at the beginning of each alphabetically coded section.

All sections are listed on the front cover; tabbed divider cards align directly with individual sections on the front cover for rapid reference.

Where a torque setting is given as a single figure it may be varied by plus or minus 3%. Torque figures indicated are for dry threads, hence for lubricated threads may be reduced by one third.








'Left Hand' and 'Right Hand' are as viewed from the rear of the machine facing forwards.

This Service Manual covers the following machines:

## Schematic Codes

### Colour Codes

The following colour coding, used on illustrations to denote various conditions of oil pressure and flow, is standardised throughout JCB Service Publications.

	<b>Red</b>	<b>Full Pressure:</b> Pressure generated from operation of a service. Depending on application this may be anything between neutral circuit pressure and MRV operating pressure.
	<b>Pink</b>	<b>Pressure:</b> Pressure that is above neutral circuit pressure but lower than that denoted by Red.
	<b>Orange</b>	<b>Servo:</b> Oil pressure used in controlling a device (servo).
	<b>Blue</b>	<b>Neural:</b> Neutral circuit pressure.
	<b>Green</b>	<b>Exhaust:</b>
	<b>Light Green</b>	<b>Cavitation:</b> Oil subjected to a partial vacuum due to a drop in pressure (cavitation).
	<b>Yellow</b>	<b>Lock Up:</b> Oil trapped within a chamber or line, preventing movement of components (lock up).

### Black and White Codes

The following black and white coding, used on illustrations to denote various conditions of oil pressure and flow, is standardised throughout JCB Service Publications.



Neutral Circuit Pressure



Pressure generated by the operation of a service. Depending on application this may be anything between Neutral Circuit Pressure and MRV Operation Pressure.



Oil trapped within a chamber or line preventing movement of components (lock up).



Exhaust.



Pressure that is above Neutral Circuit Pressure but lower than that denoted by the operation of a service.



Oil pressure used in controlling a device (servo).



Oil subject to a partial vacuum due to a drop in pressure (cavitation).



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## Basic Operation

### Moving a Disabled Machine

#### Introduction

P4-2025

The machine can be lifted onto a trailer for transportation. However, you **must** contact the nearest JCB Dealer before you try to tow, winch or push the machine. Towing, winching or pushing the machine without following the correct procedure can damage the transmission. If possible, repair the disabled machine where it stands.

It is not recommended to tow a disabled machine. If the machine becomes disabled, the machine must be made safe, lifted onto a transporter and moved to a location where maintenance can be carried out. If towing the machine to a safe location is unavoidable, do the procedure that follows before you try to move the machine.

#### Preparation for Towing

#### CAUTION

**Towing a machine too far or too fast can damage the transmission. Do not tow the machine further than 10 Km (6 miles). Use a trailer for greater distances. When towing do not travel faster than 16 km/h (10 mph).**

**Use a rigid towbar. If you must use towing chains, then use two vehicles, One towing vehicle should be coupled to the front of the disabled machine. The other towing vehicle should be couple to the rear of the disabled machine, to provide braking power.**

**The towing vehicle(s) must have enough pulling and braking power to move and stop the machine.**

4-2-5-4\_2

- 1 Disengage the park brake.
- 2 Set the transmission to neutral.
- 3 Prepare the loader arm:
  - a If the engine and hydraulic systems are not damaged, lift the shovel to 900mm (3ft) above the ground, then fully 'crowd' the shovel. The machine in this position can have a straight-pull from the recovery point.

- b If the engine does not work, use the applicable equipment to lift the shovel to 900mm (3ft) above the ground and crowd the shovel. Secure the shovel in position.

**Note:** *The procedure for preparing the loader arm will depend on the condition of the machine and its hydraulic circuits. For this reason you should contact your JCB Dealer for help and advice before you do this task.*

- 4 Attach the drawbar (or chain) to the front chassis side plate hole (left or right).
- 5 Attach the chain to the recovery hitch (if chains are used).

Front recovery hitch **A**.

Rear recovery hitch **B**. (The rear chassis lift points)

The machine is now ready for towing. Make sure you understand what the towing driver will be doing. Obey his instructions and all relevant regulations.

**Important:** *Do not use the tow pin **C** as a recovery hitch to move the machine.*

**Note:** *If the machine cannot be driven due to an engine failure, the park brake must be released manually. → [Manually Release the Park Brake \(1-7\)](#).*

If the steering wheel has to be turned when the machine is disabled and the engine is off, push and hold the secondary steer system switch.

When the steering wheel is being turned, the pump can be heard running and the articulation of the chassis is felt. Test the secondary steer system switch once a month.

**Note:** *The full operation of the steering system is only achieved when the machine is moving.*

The machines recovery hitches conform to ISO:10532. Refer to this standard to get a particular machines permitted specifications.

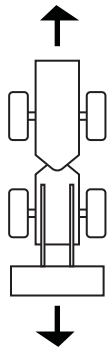


Fig 1.

T033800-2

**Important:** Only pull the machine in the direction of rotation of the wheels.

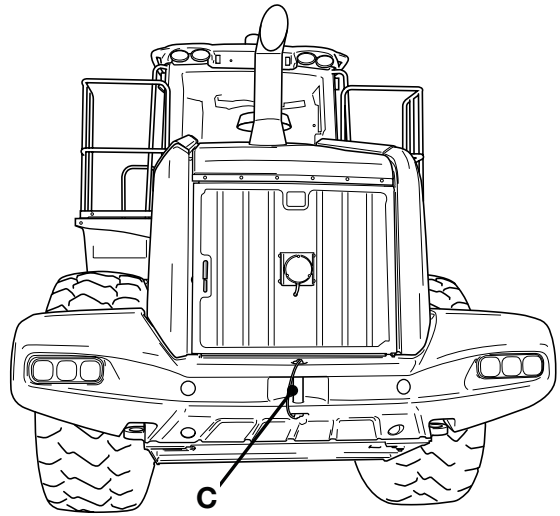


Fig 4.

C083600-1

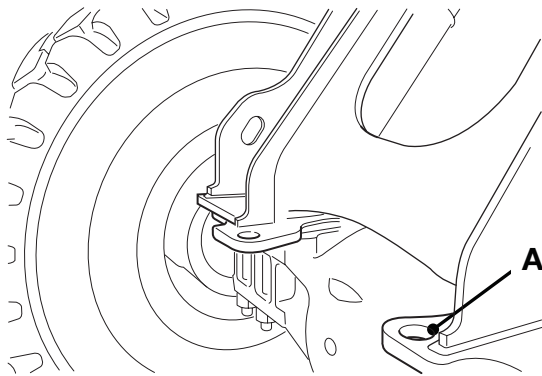


Fig 2.

C084120-C4

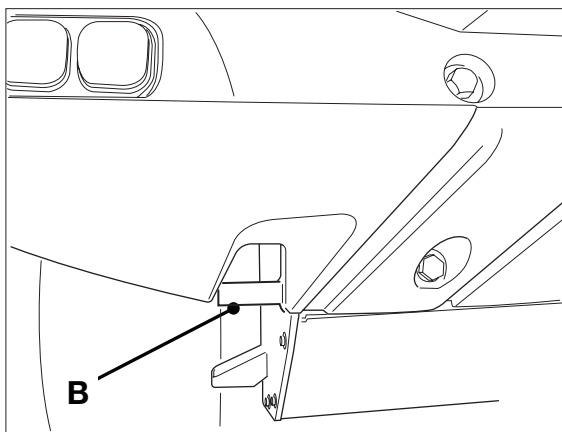


Fig 3.

C083580

## Manually Release the Park Brake

The park brake is released when the engine is running and is automatically engaged when the engine is stopped. If the machine needs to be recovered due to an engine failure the park brake can be released manually.

### WARNING

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

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

GEN-4-1\_1

### WARNING

Make sure the articulation lock is in the transport position before you transport the machine. The articulation lock must also be in the transport position if you are carrying out daily checks or doing any maintenance work in the articulation danger zone.

If the articulation lock is not in the transport position you could be crushed between the two parts of the chassis.

4-3-5-7

### WARNING

#### Fluid Under Pressure

Fine jets of fluid at high pressure can penetrate the skin. Keep face and hands well clear of fluid under pressure and wear protective glasses and gloves. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of fluid. If fluid penetrates your skin, get medical help immediately.

INT-3-1-10\_3

### WARNING

Make sure the vehicle cannot be moved, as it is necessary to work under the machine to do this job.

0027

- 1 Put chocks on each side of the four wheels to stop the machine moving when the park brake is released.

- 2 Working on the right side at the front of the rear chassis, find the screwcap **A**.
- 3 Remove the screwcap **A**. → Fig 5. (□ 1-7).
- 4 Loosen the locknut **B**.
- 5 Use an Allen key to turn the adjusting-screw **C** counter-clockwise until the pads **D** are free from the brake disk **E**.
- 6 Tighten the locknut **B**.
- 7 Attach the screwcap **A** handtight.

**Note:** When the machine is recovered, chock the wheels to stop the machine moving.

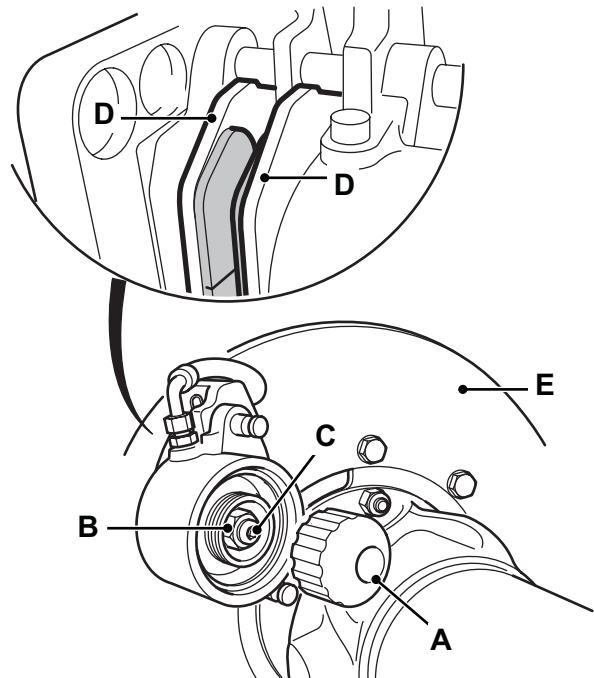


Fig 5.

A354150-V4

### Transporting the Machine

#### WARNING

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

5-2-5-9

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

Make sure that the transporting machine is suitable. See **Static Dimensions (Specifications Section)** for the dimensions of your machine.

#### WARNING

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

2-2-7-5\_1

- 1 Put the trailer in position:
  - If the machine is serviceable, use any available position.
  - If the machine is unserviceable, you must align the trailer with the rear of the machine.
- 2 Put chocks at the front and rear of the trailer wheels.
- 3 Make sure the ramps onto the trailer are in the correct position and are attached securely.
- 4 Set the loader arm to the road travel position. Refer to **Preparing for Road Travel**.
- 5 Move the machine onto the trailer:
  - a Carefully reverse a serviceable machine onto the trailer.
  - b Lift a unserviceable machine into position on the trailer.

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

- 6 Engage the park brake and set the transmission to the neutral position.
- 7 When the machine is safely in position, lower the attachment onto the trailer, then stop the engine.
- 8 Install the articulation lock. Refer to **Articulation Lock**.
- 9 Make sure that the total height of the load is within the regulations, adjust the height if necessary.
- 10 Secure the cab in position.
- 11 Put a cover on the exhaust stack.
- 12 Use the tie-down/lift points **A** to attach the machine to the trailer with chains.

**Note:** The tie-down labels identify the correct positions.

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

**Note:** If the machine cannot be driven because of an engine failure, manually release the park brake. [⇒ Manually Release the Park Brake \(1-7\)](#)

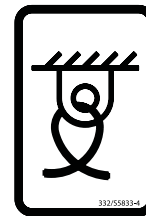
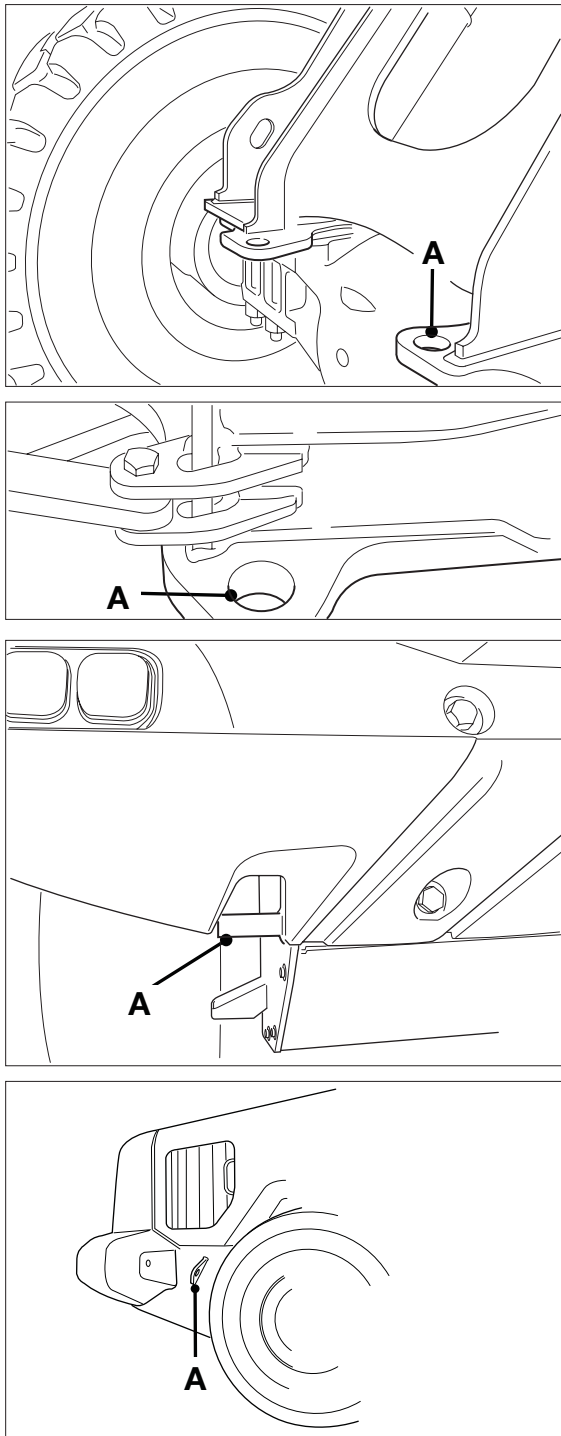


Fig 6. Tie-down labels

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**Fig 7.**

C084120-C5

### Articulation Lock

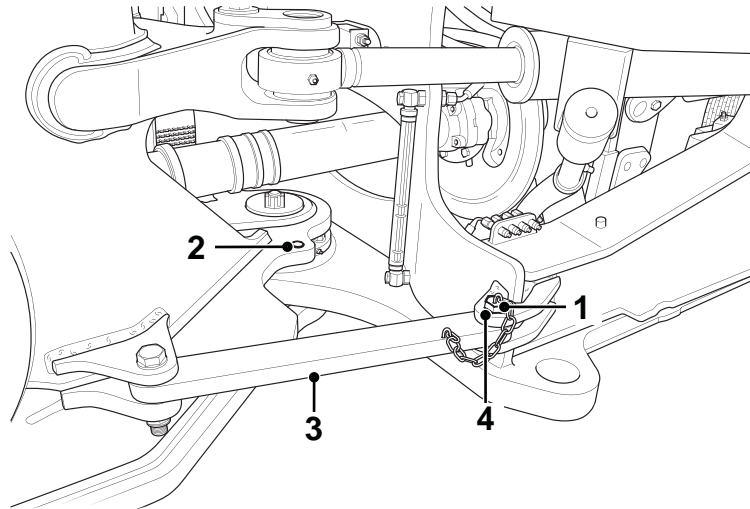


Fig 8.

C083480-1

#### Transport (Maintenance) Position

#### WARNING

Make sure the articulation lock is in the transport position before you transport the machine. The articulation lock must also be in the transport position if you are carrying out daily checks or doing any maintenance work in the articulation danger zone.

If the articulation lock is not in the transport position you could be crushed between the two parts of the chassis.

4-3-5-7

- 1 Steer the machine to put the front and rear wheels in a straight line.
- 2 Stop the machine.
- 3 Remove the locking-pin 1 from position 2 to release the articulation lock 3 from its stowed position.
- 4 Move the articulation lock 3 until the hole in the articulation lock aligns with the holes 4 in the chassis.

- 5 Put the locking-pin 1 through the holes 4 in the chassis and the articulation lock 3, to secure the articulation lock in the position shown.

If the locking-pin does not fit, turn the steering wheel slightly to align the holes.

#### Drive Position

#### WARNING

Always make sure the articulation lock has been removed before attempting to drive the machine. The machine cannot be steered with the articulation lock fitted.

16-3-1-4\_2

- 1 Remove the locking-pin 1.
- 2 Move the articulation lock 3 to its stowed position.
- 3 Put the locking-pin 1 through the articulation lock 3 and position 2 to secure it in the stowed position.

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