CONTENTS

Page

INTRODUCTION

About this Handbook
Machine Model and Serial Number 2
Using this Handbook 2
Units of Measurement 2
Page Numbering 2
Left Side, Right Side 2
Using the Machine 2
Page Cross References 2

The JCB Loadall
Machine Description 3

Safety - Yours and Other People's 4

Safety Check List
General Safety 4
Operating Safety 5
Maintenance Safety 6

Safety Decals 8

Identifying Your Machine
Identification Plate 10
Typical Machine Identification Number 10
Unit Identification 10
Transmission And Axle Identification..... 11

OPERATION

Introduction 33

Before Entering the Cab 33

Entering & Leaving the Cab, Doors and Windows
Opening and Closing the Door 35
Open and Closing the Upper Door Section 35
Open and Closing the Rear Window 36
Emergency Exit 36

Fire Extinguisher 37

Seat Controls
Adjusting the Seat 38

Seat Belt
Fasten the Seat Belt 39
Release the Seat Belt 39
Adjust the Seat Belt 39

Cab Layout and Controls 40

Steer Mode Selection (526-55, 526 & 526S) 43

Page

Cab Switches and Instruments
Switches 44
Steering Column Switches 45
Instrument Panel Switches 46
Instruments 47
Warnings (Visual only) 48
Warnings (Audible/Visual) 48
Warning Beacon 49
Cab Light 49

Heater (cab versions only) 50

Air Conditioning 51

Boom and Carriage Controls 52
Raise/Lower Boom 52
Extend/Retract Boom 53
Tilt Carriage Forward/Tilt Carriage Back 54

Auxiliary Control 55

Control Lever Lock Options
Tilt Function Lock 56
All Lever Lock 56

Before Starting the Engine 57

Starting the Engine 58

Preparing for Road Travel 59

Preparing for Site Travel 62

Testing the Parking Brake 63

Getting the Machine Moving
Operating Practices 64
Limited Slip Differential (LSD) 64
Use of Independent Braking (RS machines) 64A

Stopping and Parking the Machine 66

Using the Load Charts and Boom Indicators 67

Load Moment Indicator
Checking the Indicator..... 69
Setting the Volume and Brightness 69A
Diagnostic Fault Codes..... 69A

Smooth Ride System 69B

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⚠ WARNING

Study This Handbook Before Starting The Machine

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

INT-1-1-1

⚠ CAUTION

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

8-4-1-6

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

⚠ DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

⚠ WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

⚠ CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

MACHINE SECURITY

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

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

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

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

INT-1-2-4

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INTRODUCTION

This chapter is arranged to guide you step-by-step through the task of learning how to use the machine. Read it through from beginning to end. By the end of the chapter you should have a good understanding of the machine and how to operate it.

Pay particular attention to all safety messages. They are there to warn you of possible hazards. Do not just read them; think about what they mean. Understand the hazards and how to avoid them.

If there is anything you do not understand, ask your JCB distributor. He will be pleased to advise you.

When you have learned where the driving controls are and what they do, practice using them. Practice driving the machine in a safe, open space clear of other people.

Get to know the 'feel' of the machine and its driving controls. Move on to the attachment controls only when you can drive the machine confidently and safely.

Take great care when practising with the attachment controls. Practice in an open space. Keep people clear. Do not jerk the controls; operate them slowly until you understand the effect they have on the machine.

Finally, do not rush the job of learning. Take your time and take it safely.

Remember

BE CAREFUL

BE ALERT

BE SAFE

BEFORE ENTERING THE CAB

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

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

⚠ WARNING

Walking or working under a raised boom can be hazardous. You could be crushed if the boom falls or is inadvertently lowered.

Lower the boom fully before doing these checks. If you are new to this machine, get an experienced operator to lower it for you.

If there is nobody to help you, study this handbook until you have learned how to lower the boom. Also make sure that the parking brake is engaged before doing these checks.

5-2-1-1

1 Check for Cleanliness

a Clean the windows, light lenses and rear view mirrors.

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

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

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

2 Check for Damage

a Inspect the machine generally for damaged and missing parts.

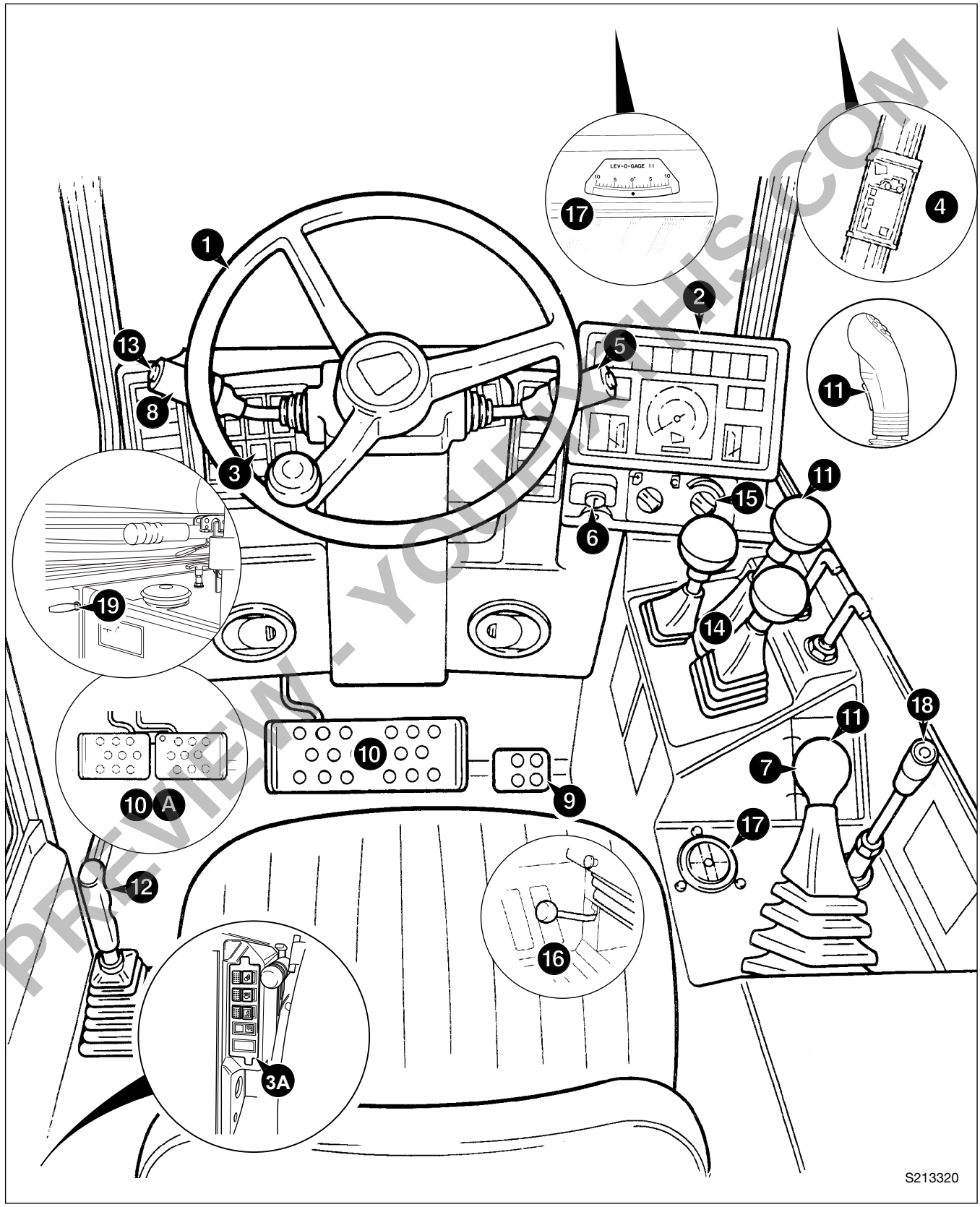
b Make sure that all pivot pins are secured correctly in place.

c Inspect the windows for cracks and damage.

d Check for oil, fuel and coolant leakages beneath the machine.

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CAB LAYOUT AND CONTROLS



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PREPARING FOR ROAD TRAVEL

Make sure you will be obeying all pertinent laws and regulations before you take the machine on public roads.

1 **In certain countries ie. Italy, legislation requires the front windscreen guard (if fitted) is removed before travelling on public roads.**

2 Fully retract the boom. Lower the boom fully then raise it slightly. Tilt the carriage back, to keep the heel of the forks **A** 500 mm (20 in) above the ground.

In certain countries legislation requires the forks to be folded back before travelling on public roads.

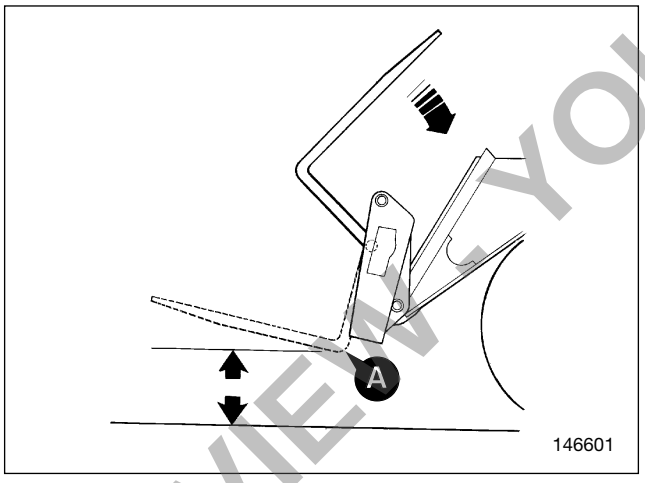
Fit fork retention brackets **B** (as required) and secure with retaining pin **C** and locking pin **D**.

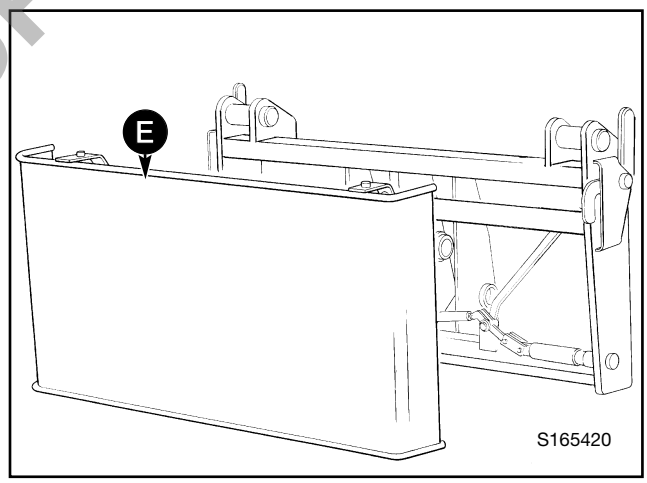
In certain countries ie. Germany, legislation requires the forks to be removed and safety guard E **fitted.**

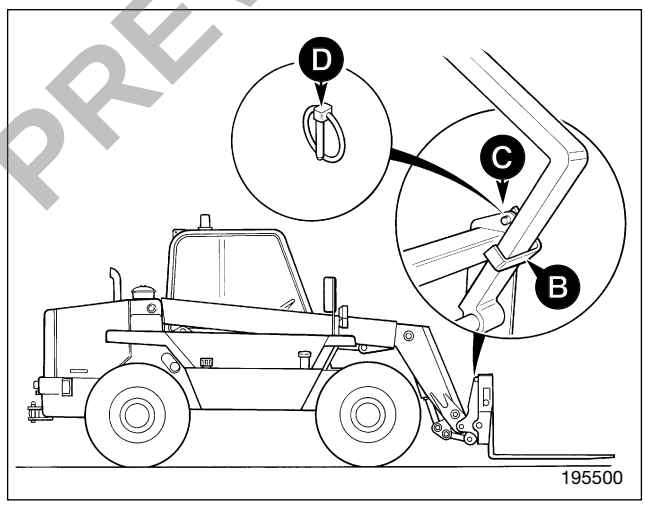
⚠ CAUTION

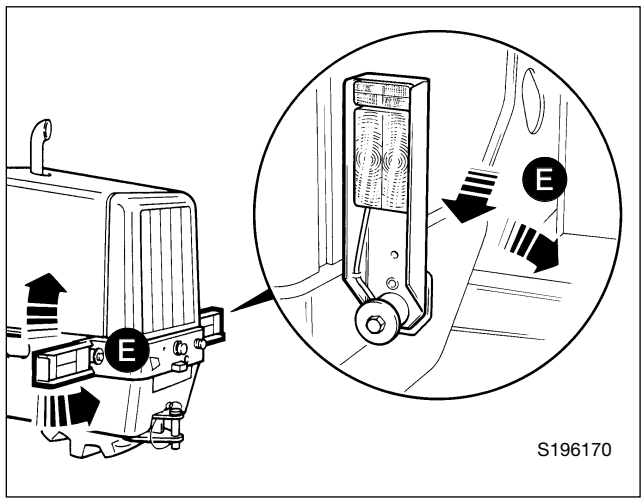
In low visibility or at night, we recommend removing the forks before travelling on public roads. Transport the forks on a suitable vehicle.
5-2-3-2

3 Swing the rear light cluster **E** fully down as shown. The cluster **E** is 'spring-loaded' by its rubber mounting bush. To swing it up or down, pull the cluster slightly rearwards to disengage it, then swing into its new position.









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LOAD MOMENT INDICATOR

Setting the Volume and Brightness

The volume of the audible alarm, and the brightness of the display LEDs can be set by the operator using display button **E**. This allows the volume and brightness to be reduced for night time use. The possible options are:

(a) Full volume and full brightness (default setting)
(b) Reduced volume and full brightness
(c) Full volume and reduced brightness
(d) Reduced volume and reduced brightness

1 Park the machine (unloaded) on level ground with the engine running. Apply the parking brake and place the forward/reverse lever in the neutral position.

2 The green light **D** at the bottom of the display will illuminate to show that the indicator is receiving power.

3 Press and hold the display button **E**.

The display will cycle through the volume and brightness options, pausing for approximately three seconds to demonstrate each option.

4 Release the button during the required demonstration to select the option.

Note: the system will reset to the default setting when the starter key is switched to the off position.

Diagnostic Fault Codes

When the system detects a fault, the audible alarm will sound and various combinations of lights on the display will indicate a fault code for approximately 10 seconds.

The audible alarm and the fault code display cancel after 10 seconds and **ALL** LEDs on the display will flash continuously as long as the fault remains. Press and release display button **E** to show the fault code for a further 10 seconds.

When the fault clears, the display will return to normal.

⚠ WARNING

If the Load Moment Indicator is faulty, contact your JCB distributor. Do not try to repair it yourself.

5-2-4-6

Error Code 1 - Transducer signal fault
Transducer disconnected or wiring damaged.



Error Code 2 - Calibration out of range
System is incorrectly calibrated.



Error Code 3 - Calibration required
System not calibrated.



Error Code 4 - Display unit faulty
The display box has detected an internal error.



Error Code 5 - Low battery voltage
Battery voltage is below 9 Volts.



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If any of the above fault codes are displayed, switch the starter key off and on again. Contact your JCB distributor if the fault does not clear.

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BRAKES

Checking the Foot Brake Fluid Level (if applicable)

⚠ 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 rubber gloves. Cover cuts and grazes.

2-3-2-6/1

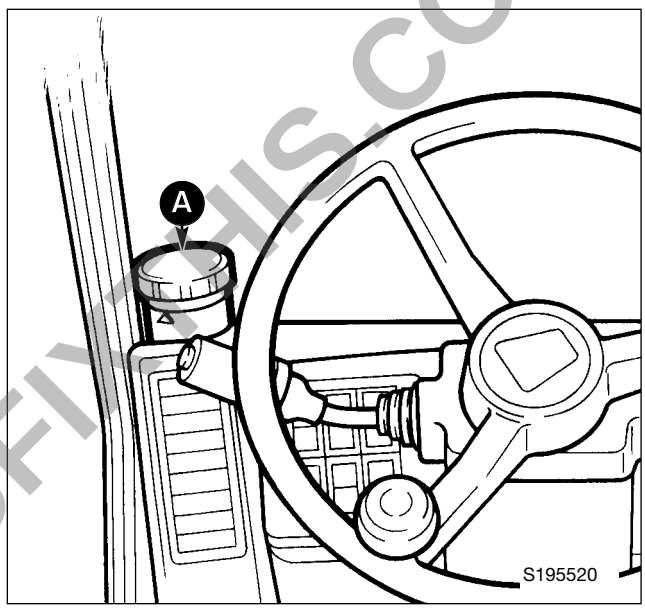
The brake master cylinder is in the cab.

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 it. Wipe up any spillage.



ENGINE AIR FILTER

Cleaning the Pre-Cleaner (if fitted)

***Note**: Do not run the engine with the filter pre-cleaner removed. If the pre-cleaner is more than a third full of dust, empty it.*

1 Remove the Cover

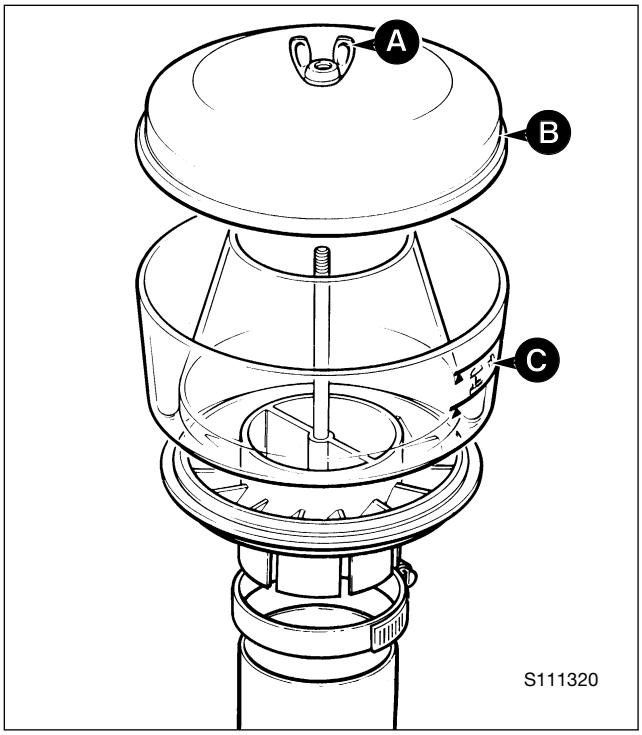
Unscrew the wingnut **A** and lift off the cover **B**.

2 Empty and Clean the Bowl

Carefully remove the dust bowl **C** and empty out the dust. Make sure the dust does not fall into the air filter intake. Wipe the bowl clean. Remove oil or grease by washing in hot water with a little detergent. Dry the bowl before refitting it.

3 Fit the Bowl

Carefully set the bowl in position. Fit and tighten the wingnut **A**.



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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

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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
ENGINE							
Engine Air Filter Pre-cleaner	Clean	•	•	•	•	•	•
Oil Level and Condition	Check	•	•	•	•	•	•
Oil and Filter (A Series engines)	(1) Change			•	•	•	•
Oil and Filter (R Series engines)	(1) Change				•	•	•
Air Cleaner Dust Valve (A Series engines)	Clean				•	•	•
Air Cleaner Dust Valve (R Series engines)	Clean				•	•	•
Air Cleaner Outer Element	Change				•	•	•
Air Cleaner Inner Element	Change						•
Fuel System For Leaks and Contamination	Check	•	•	•	•	•	•
Fuel Filter	Drain		•	•	•	•	•
Fuel Filter (A Series engines)	Change			•	•	•	•
Fuel Filter (R Series engines)	Change				•	•	•
Coolant Level and Antifreeze Strength	Check	•	•	•	•	•	•
Fuel Sedimenter	Drain and clean		•	•	•	•	•
Fan Belt Tension/Condition (A Series engines)	Check		•	•	•	•	•
Fan Belt Tension/Condition (R Series engines)	Check		•	•	•	•	•
Valve Clearances (A Series engines)	*Check and Adjust					•	•
Valve Clearances (R Series engines)	*Check and Adjust					•	•
Engine Mount Security (A Series engines))	Check			•	•	•	•
Engine Mount Security (R Series engines)	Check				•	•	•
Radiator	Clean				•	•	•
TRANSMISSION AND AXLES							
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.

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TYRES AND WHEELS

⚠ 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

Tyre Inflation

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.

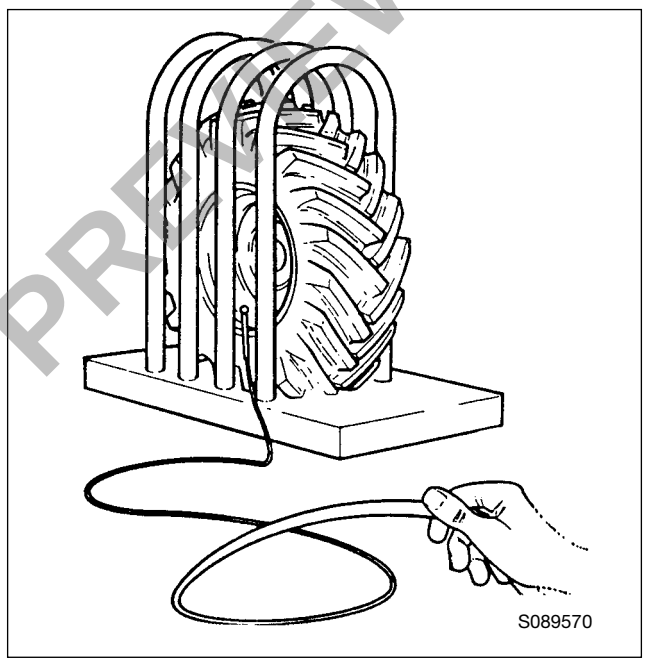
1 Prepare the Wheel

Before you add air to the tyre, make sure it is correctly fitted on the machine or installed in a tyre inflation cage.

2 Prepare the Equipment

Use only an air supply system which includes a pressure regulator. Set the regulator no higher than 1.38 bar (20 lbf/in^2) 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 on the instrument panel.)*

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


S089570

3 Add the Air

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. The correct torques are shown in the table below.

	Front		Rear	
	Nm	lbf ft	Nm	lbf ft
520-55				
8 stud wheels	325	240	325	240
5 stud wheels	680	500	680	500
526-55, 526 and **526S**	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

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FLUIDS, LUBRICANTS, CAPACITIES AND SPECIFICATIONS (520-55 RS 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.*

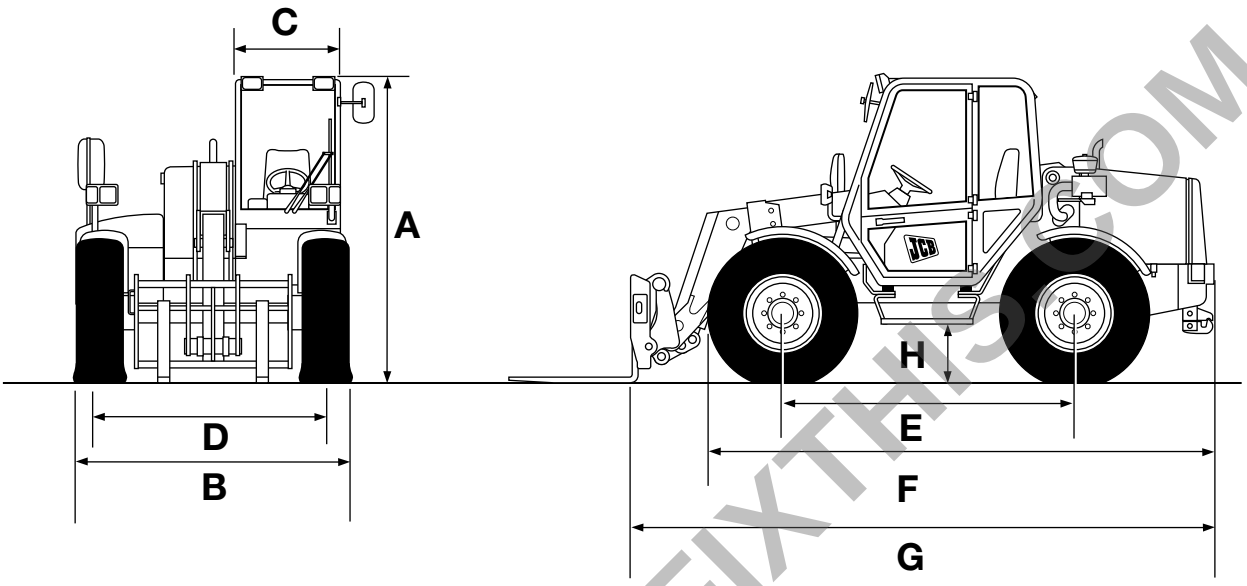
ITEM	CAPACITY Litres (Gal)	FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
Fuel Tank Up to serial No. 279000 From serial No. 279001	 120 (26.4) 160 (35.2)	Diesel Oil (See **Types of Fuel**)	ASTM D975-66T Nos. 1D, 2D
Engine (Oil)	10 (2.2)	**JCB Super Multigrade 15W/40** -10 °C to 50 °C (14 °F to 122 °F) **JCB Super Universal Agricultural** -15 °C to 30 °C (5 °F to 86 °F) **JCB Torque Converter Fluid** -18 °C to 0 °C (0 °F to 32 °F)	SAE15W/40 API CF4/SG SAE10W/30 API CD/SE SAE10W API CD/SE
Engine (Coolant) 55%	20 (4.4) 9.35 (2.04)	**JCB Four Seasons Antifreeze/water And Summer Coolant** Starts to freeze -36 °C (-33 °F)	ASTM D3306-74
Syncro Shuttle	17 (3.7)	**JCB Extreme Performance Transmission Oil**	JCB 4000/2501
Front Axle **Housing** **Hubs (x2)**	 9.7 (2.1) 0.6 (0.1)	**JCB Special Gear Oil Plus**	API GL4
Rear Axle **Housing** **Hubs (x2)**	 5.0 (1.1) 1.5 (0.3)	**JCB Special Gear Oil Plus**	API GL4
Hydraulic Tank Up to serial No. 279000 From serial No. 279001	 *100 (22.0) *110 (24.2)	**JCB High Performance Hydraulic Oil** (Above 38 °C, 100 °F) **JCB Special Hydraulic Fluid** (Below 38 °C, 100 °F) **JCB Light Hydraulic Fluid**	ISO VG46 ISO VG32 ISO VG15
Grease Points		****JCB HP Grease**	Lithium based
Wear Pad Runways		**JCB Waxoyl**	
Boom Hoses		**JCB Special Slide Lubricant**	

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

*****Note:** If JCB Special 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.*

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STATIC DIMENSIONS
520-55



A245130

	DESCRIPTION	DIMENSION
A	Overall height	7 ft 5 in (2.26 m)
B	Overall width	7 ft 1½ in (2.17 m)
C	Inside width of cab	2 ft 11 in (0.88 m)
D	Front track	6 ft 2 in (1.87 m)
E	Wheelbase	7 ft 5 in (2.25 m)
F	Overall length to front tyres	12 ft 4 in (3.76 m)
G	Overall length to front of Q-Fit carriage	14 ft 6 in (4.42 m)
H	Ground clearance	1 ft 1 in (0.32 m)
	Weight (unladen)	10745 lb (4875 kg)

***Note**: The above figures are based on a machine fitted with 12.5/80 X 18" tyres.*

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