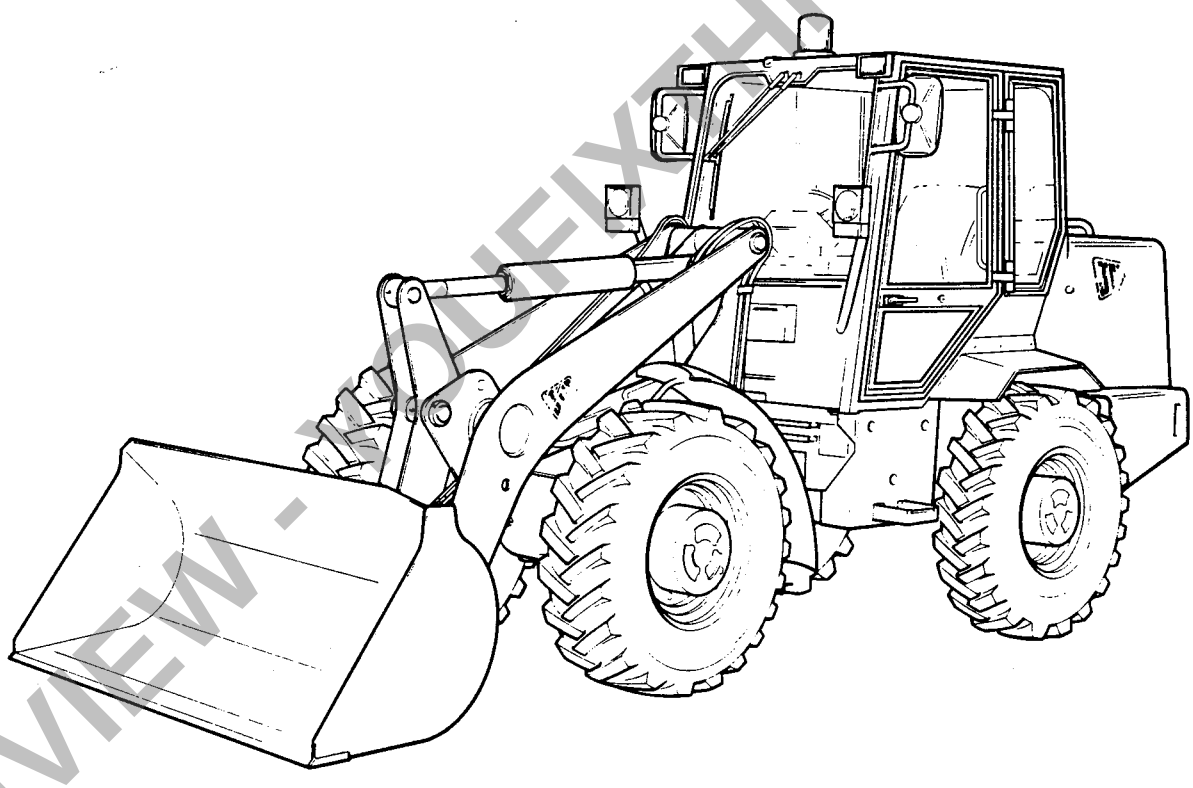
Operator Handbook

JCB Service
Rocester
Staffordshire
ST14 5LS, England
Tel. 0889 - 590312

Produced by the Technical Publications department of JCB Service

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406, 408

⚠ THIS HANDBOOK MUST BE KEPT IN THE MACHINE AT ALL TIMES ⚠

Publication Number 9801/7680

Issue 7

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ABOUT THIS HANDBOOK

Machine Model and Serial Number

This handbook provides information for the following models in the JCB Wheeled Loader range from machine serial number 631000:

406 Industrial
406 Farm Master
408 Industrial
408 Farm Master

Using this Handbook

This handbook is arranged to give you a good understanding of the machine and its safe operation. It also contains maintenance information and specification data. Read this handbook from front to back before using the machine for the first time. Particular attention must be given to all the safety aspects of operating and maintaining the machine.

General warnings in this chapter are repeated throughout the book, as well as specific warnings. Read all the safety statements regularly, so you do not forget them. Remember that the best operators are the safest operators.

Finally, treat this handbook as part of the machine. Keep it clean and in good condition. Do not operate the machine without a handbook in the cab. If there is anything you are not sure about, ask your JCB distributor or employer. Do not guess, you or others could be killed or seriously injured.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this publication.

Units of Measurement

In this handbook, the S.I. system of units is used. For example, liquid capacities are given in litres. The Imperial units follow in parenthesis () eg 28 lites (6 gal).

Page Numbering

The page numbering system in this handbook is not continuous. There is a gap of about ten pages between sections. This allows for the insertion of new pages in later issues of the handbook.

Left Side, Right Side

In this handbook, 'left' **A** and 'right' **B** mean your left and right when you are seated correctly in the machine.

Using the Machine

To use the Wheeled Loader efficiently **and safely** you must know the machine and have the skill to use it. This handbook instructs you on the machine, its controls and its safe operation. It is not a training manual on the art of loading. If you are a new operator, get yourself trained in the skills of using a Wheeled Loader before trying to work with it. If you don't, you will not do your job well, **and you will be a danger to yourself and others.**

Warranty

A copy of the manufacturer's warranty is provided at the rear of this handbook. We advise you to read and understand the warranty before using the machine.

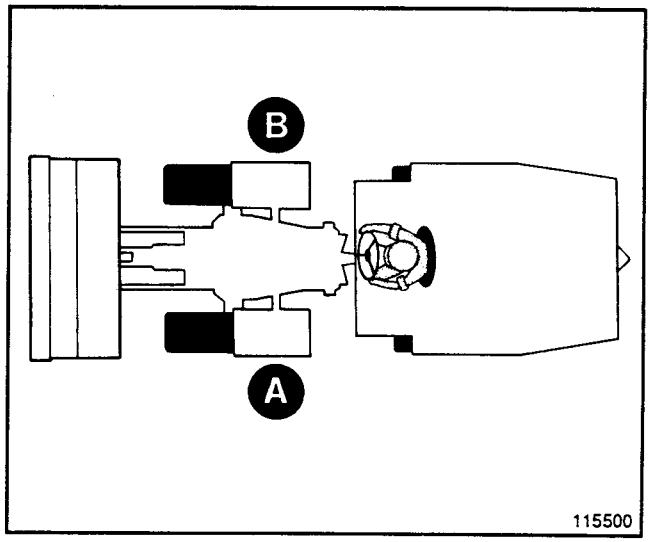
Page Cross References

In this handbook, page cross references are made by presenting the subject (being refered to), followed by the section containing the subject. The letters are printed in bold and italic to signify that they are cross references - for example:

1 Raise and Lock the Loader Arms.

*See **Loader Arm Safety Strut** (MAINTENANCE section).*

Use the contents list at the beginning of each section and/or the index to find the exact page number.



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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.

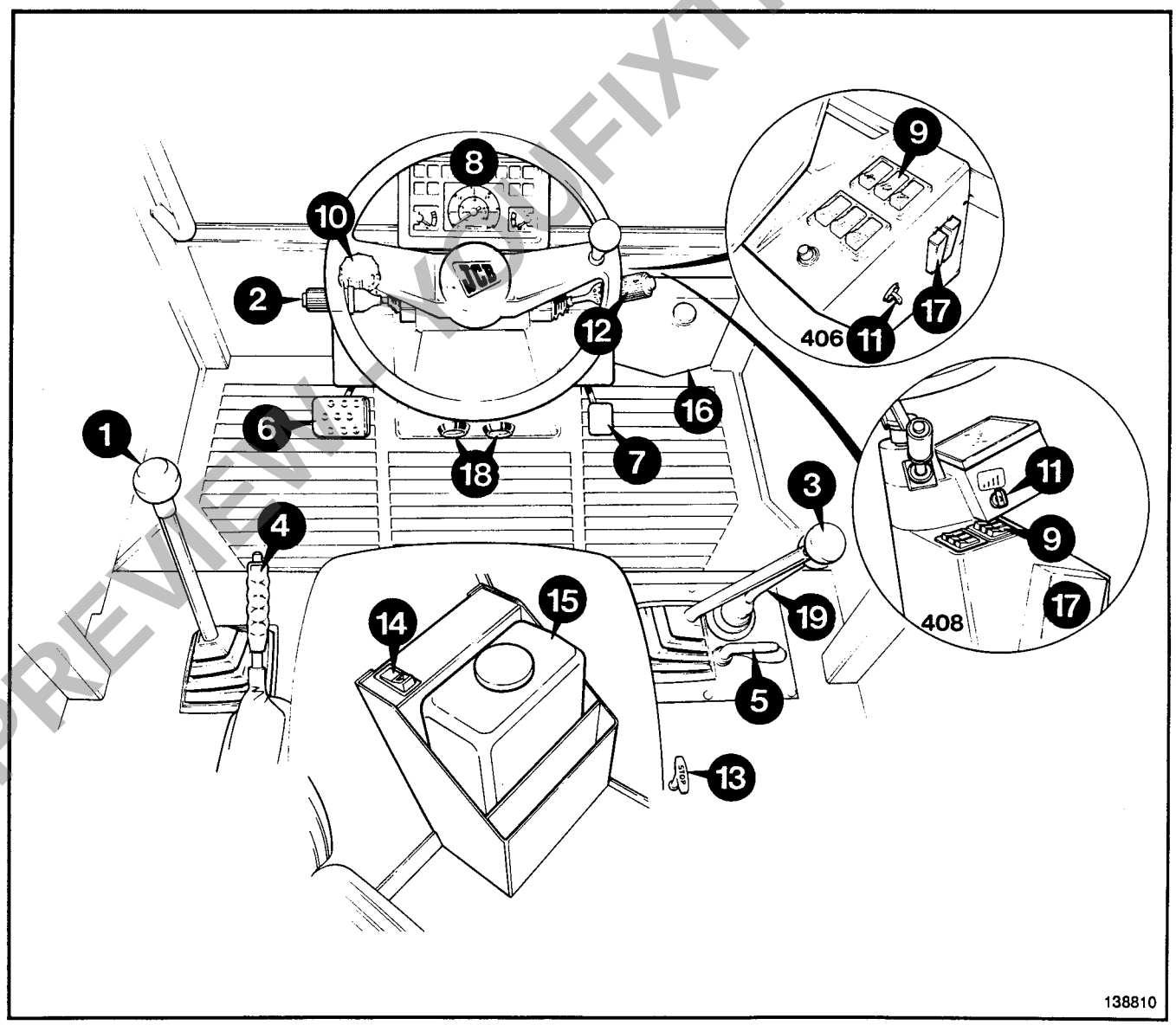
INT-1-1-1

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CAB LAYOUT (TWO LOADER CONTROL LEVERS)
(Early Machines)

1 Gear change lever.
2 Forward, neutral, reverse lever.
3 Loader arm/bucket control lever.
4 Parking brake lever.
5 Hydraulic control levers locking pin.
6 Brake pedal.
7 Accelerator pedal.
8 Instrument panel.
9 Instrument panel switches.
10 Brake fluid reservoir.
11 Starter switch.
12 Steering column stalk switch.
13 Engine stop handle (406 only).
14 Rear windscreen washer/wiper switch (406 only).
15 Windscreen washer bottle (406 only).
16 Windscreen washer bottle (408 only).
17 Fuse box.
18 Air vents.
19 Quick hitch lever.



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CAB LAYOUT (TWO LOADER CONTROL LEVERS)
(Machines with Powershift Transmission)

3 Loader arm/bucket control lever.

4 Parking brake lever.

5 Hydraulic control levers locking pin.

6 Brake pedal.

7 Accelerator pedal.

8 Instrument panel.

9 Instrument panel switches.

10 Brake fluid reservoir.

11 Starter switch.

12 Steering column stalk switch.

13 Engine stop handle (406 only).

14 Screen washer bottle.

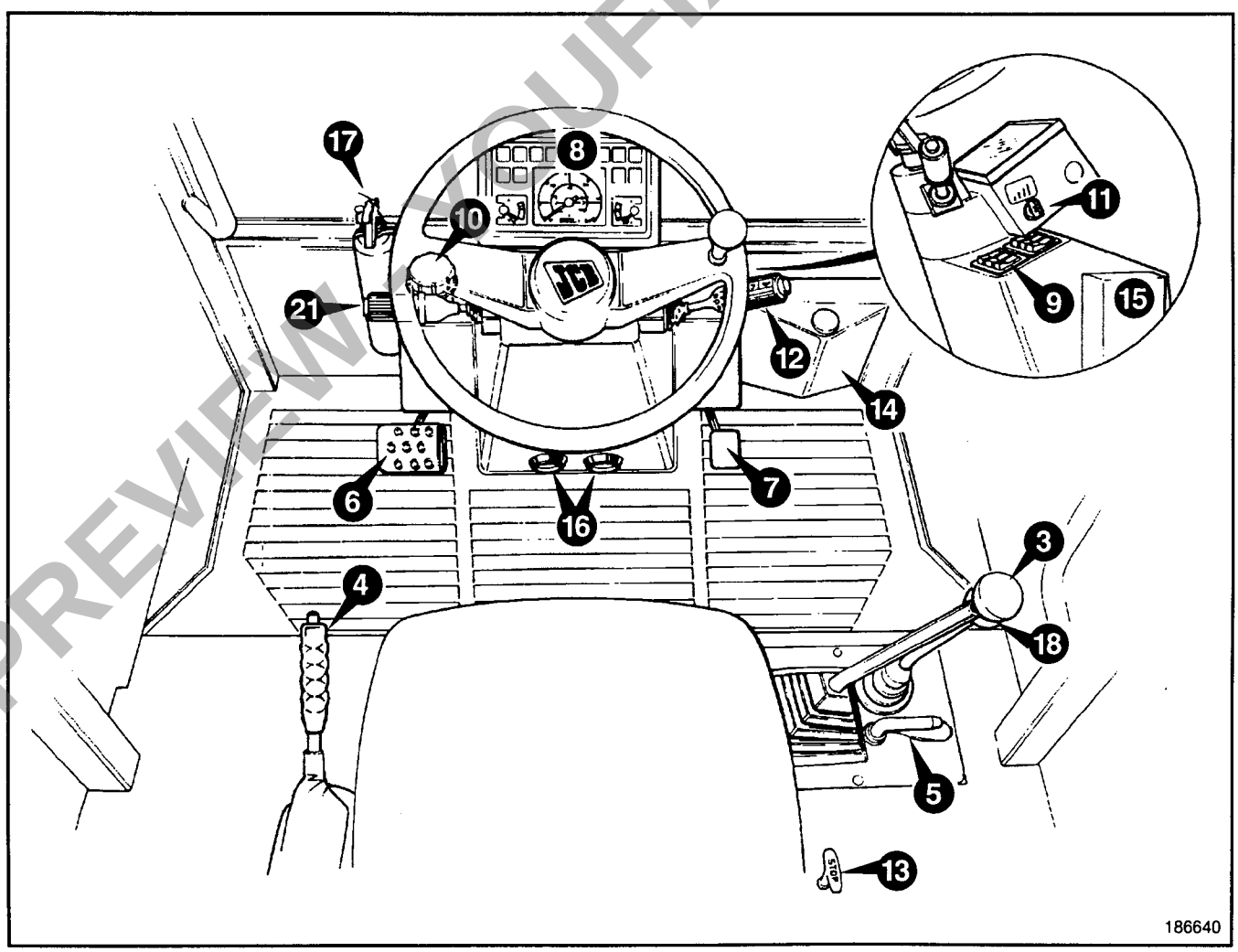
15 Fuse box.

16 Air vents.

17 Fire Extinguisher.

18 Quick hitch lever.

21 Gear select switch, forward, neutral, reverse lever.

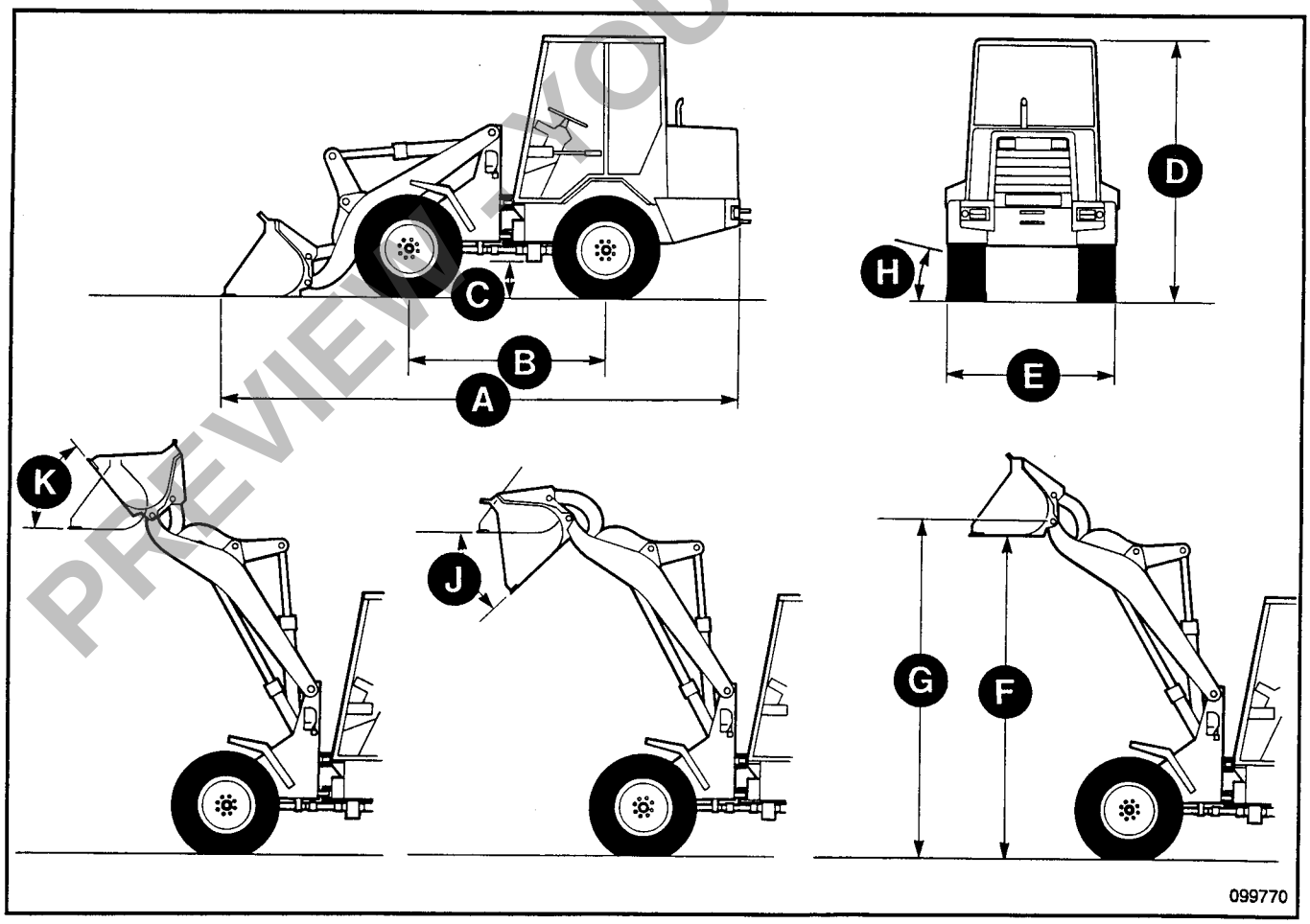


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STATIC DIMENSIONS - 406

		12.5 Tyres			14.5 Tyres		
		mm	ft	In	mm	ft	In
A	Overall length *(including standard bucket)*	4847	15	11	4847	15	11
B	Wheelbase	1900	6	3	1900	6	3
C	Minimum ground clearance (to transfer gearbox)	333	1	1	333	1	1
D	Height over cab (Industrial) (Farm Master)	2466 2391	8 7	1 10	2466 2391	8 7	1 10
E	Width over tyres	1690	5	7	1723	5	8
F	Load over height *(maximum)*	2936	9	9	2936	9	9
G	Pin height	3071	10	1	3071	10	1
H	Chassis oscillation	9°					
J	Dump angle at full height	45°					
K	Roll back angle at full height	50°					
	Articulation angle	40°			(80° inclusive)		



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WORKING WITH THE LOADER

Remember that you will be driving the machine while you are using the loader. Keep alert for bystanders and possible hazards. Stay in the correct driving position. Keep your seat belt fastened and correctly adjusted.

Keep the bucket low to the ground when travelling. This increases your visibility and makes the machine more stable.

⚠ WARNING

When transporting a load on a slope, drive slowly and keep the load uphill of the machine. This will increase stability.
2-1-1-5

Filling the Bucket

⚠ WARNING

When loading with material from a high bank or pile, remove any overhang first. Watch out for sliding material. If overhanging material falls, you and your machine could be buried.
2-2-6-3

On hard surfaces, as the bucket enters the pile, start rolling the bucket back while raising it at the same time. This will sweep the bucket up the pile, gathering material as it goes.

Pressing the transmission dump switch on the gear change lever or the loader arm/bucket control lever will give more power to the loader and speed the operation. Try to fill the bucket in one pass. Half full buckets are less productive.

When moving the load, roll the bucket right back to prevent spillage.

When you are loading from a pile of loose material, start at the bottom and follow up the face as shown at **A**. Approach the pile with the bucket level and skimming the ground.

In tightly packed material, start at the top and work down. When removing material from a stockpile, start at a bucket's height from the base. Once the height of the stockpile has been reduced, begin loading from the base.

Loading a Truck

Put the truck(s) at an angle of about 45° to the pile, as shown at **B**. This cuts out unnecessary manoeuvring. Allow enough distance for the bucket to reach its unloading height while you are travelling, without slowing down.

Keep the wind on your back. This keeps dust away from you and your machine.

Move your machine as close as possible to the truck before unloading.

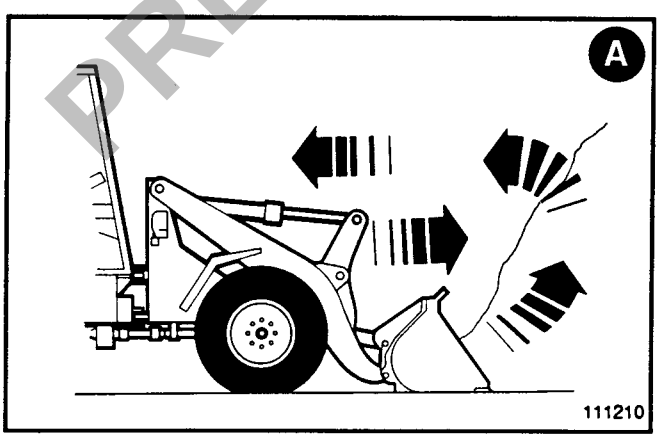
If the truck body is about as long as a bucket's width, tip the load into the centre of the truck. If the truck is two bucket-widths long or more, load the front of the trucks first.

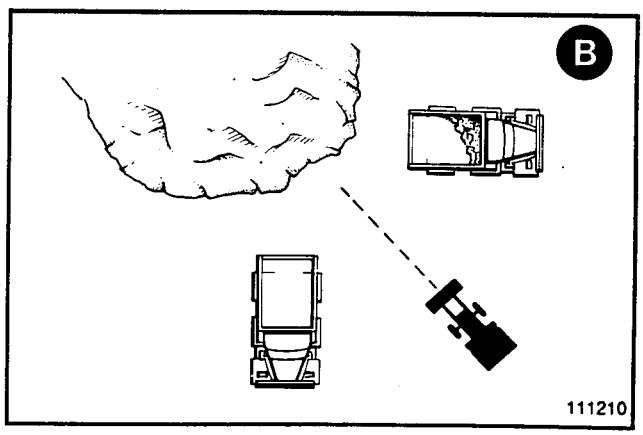
Do not dump the material in one sudden movement. Roll the bucket forward in stages until it is empty. Use the control lever to rock the bucket back and forth to loosen any sticking material.

Scraping and Cutting

If a deep cut is to be made, do it in steps of about 50 mm (2 in). Do not forget to adjust the bucket height up when the machine's front wheels enter the cut.

During the final cut, do not make fine adjustments by altering the bucket height. Adjust by altering the bucket angle, or the bucket may leave ruts in the surface.





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LOADER ARM SAFETY STRUT

Installing the Safety Strut

⚠ WARNING

Raised loader arms can drop suddenly and cause serious injury. Before working under raised loader arms, fit the loader arm safety strut.
2-1-1-6

⚠ WARNING

You could be killed or seriously injured if the loader control is accidently operated. Make sure that no-one goes near the machine whilst you fit the safety strut.
16-3-1-5

1 Empty the bucket and raise the loader arm enough to fit the safety strut **A**.

2 Apply the parking brake, put the transmission in neutral and stop the engine.

3 Fit the strut:

- **a** Remove the strut from its stowage position.
- **b** Place the strut around the ram.
- **c** Secure the strut into position using bolt **B**.

4 Start the engine.

5 Slowly lower the loader arm onto the safety strut. Stop the movement immediately the weight of the arm is supported by the strut.

***Note:** Extreme care must be taken when lowering the loader arm onto the safety strut. 'Feather' the lever to lower the loader arm slowly.*

Removing the Safety Strut

⚠ WARNING

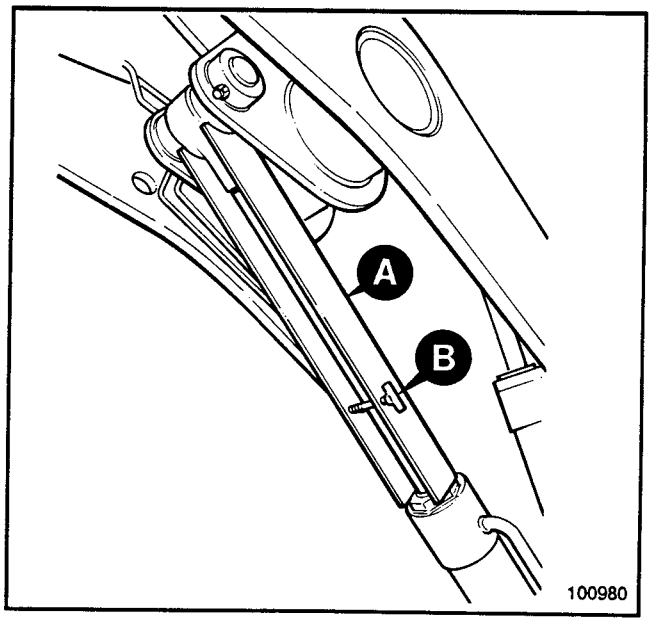
You could be killed or injured if the loader control is accidentally operated. Make sure no-one comes near the machine while you remove the safety strut.
2-3-1-3

1 Make sure the parking brake is on, and that the transmission is in neutral.

2 Raise the loader arm to take the weight off the safety strut **A**. Stop the engine.

3 Remove the strut:

- **a** Release securing bolt **B**.
- **b** Remove safety strut.
- **c** Return the safety strut to its stowage position.



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ENGINE COOLING SYSTEM
(continued)

Changing the Coolant

1 Park the machine on level ground. Engage the parking brake. Put the tranmsission in neutral. Stop the engine and let it cool down. Open the engine canopy.

2 Carefully loosen cap **A**. Let any pressure escape. Remove the cap.

⚠ WARNING

Keep your face away from the drain hole when removing the drain plug.
2-3-3-4

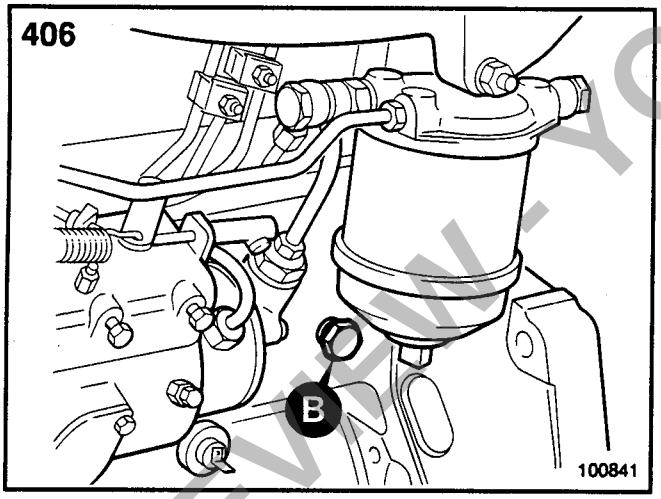
3 Remove drain plug **B** from engine block.

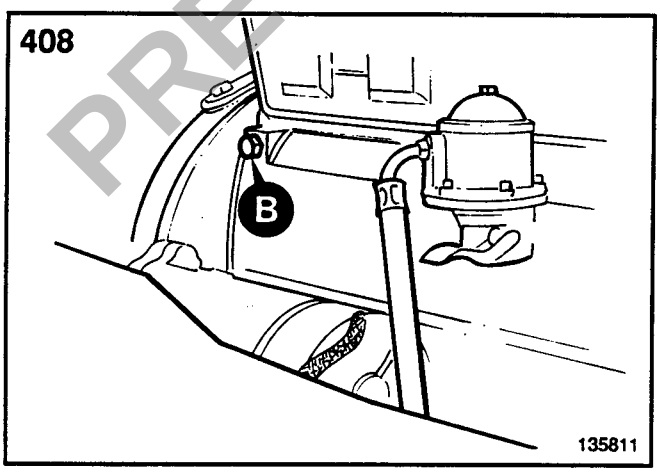
4 Remove the bottom hose **C** from the radiator and drain the coolant.

5 Flush the system using clean water.

6 Clean and refit the drain plug **B** and hose **C**.

7 Fill the system using the necessary mix of water and anti-freeze. See **Coolant Mixtures** *in MAINTENANCE section.*



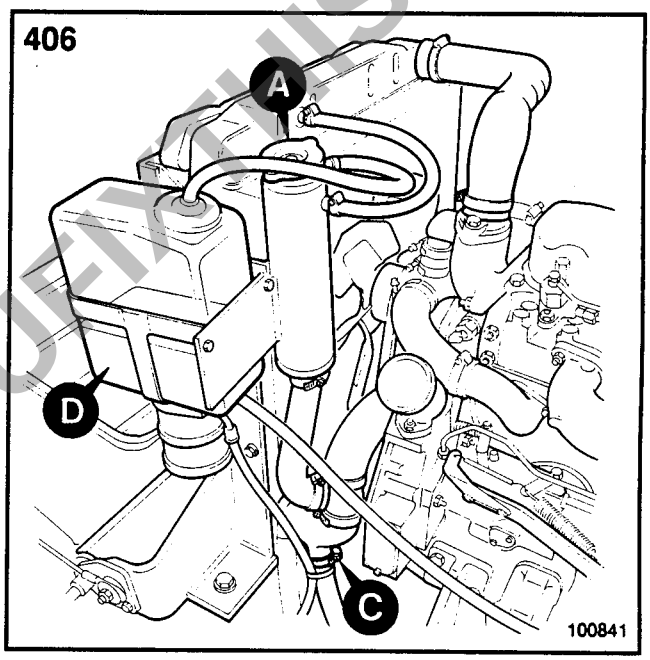


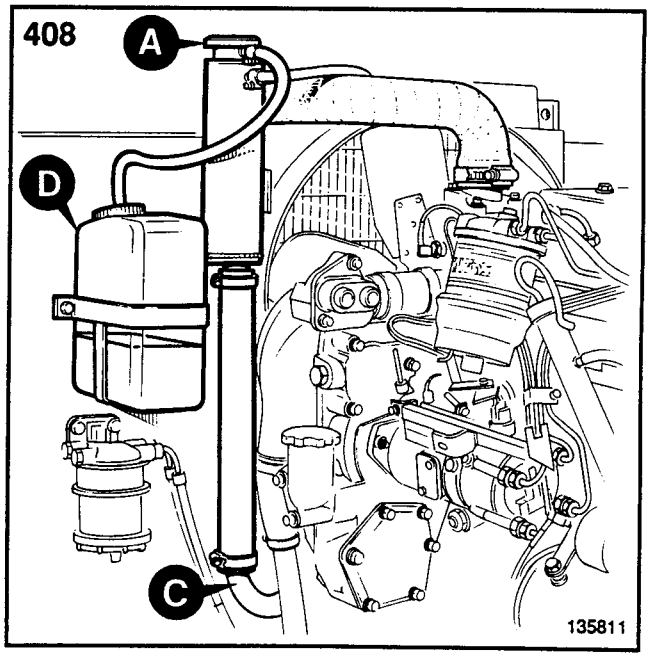
8 Refit the filler cap **A**.

9 Part fill the expansion bottle **D** using the same coolant mixture until the bottle is 1/3 full. Refit the bottle cap tightly.

10 Check for leaks.

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





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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

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