ARTICULATED DUMP TRUCK HANDBOOK



712

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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 dealer or employer. **Do not guess**, you or others could be killed or seriously injured.

INT-1-1-1

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SAFETY FIRST - YOURS AND OTHER PEOPLE'S

All earthmoving equipment can be hazardous. When a 712 ADT is correctly operated and properly maintained, it is a safe machine to work with. But when it is carelessly operated and poorly maintained it can become a danger to you (the operator) and others.

In this handbook and on the machine you will find warning messages. Read and understand them. They tell you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB dealer to explain them.

But safety is not just a matter of responding to the warnings. All the time you are working on or with the machine you must be thinking what hazards there might be and how to avoid them.

Do not work with the machine until you are sure that you can control it.

Do not start any job until you are sure that you and those around you will be safe.

If you are unsure of anything, about the machine or the job, ask someone who knows. Do not assume anything.

Remember

BE CAREFUL
BE ALERT
BE SAFE

SAFETY FIRST - CHECK LIST

General Safety

WARNING

Handbook

You and others can be injured if you operate or maintain the machine without first studying this handbook. Read the safety instructions before operating the machine. If you do not understand anything, ask your employer or JCB dealer to explain it. Keep this handbook clean and in good condition. Do not operate the machine without a handbook in the cab, or if there is anything on the machine you do not understand.

INT-1-3-2

CAUTION

Regulations

Obey all laws, work site and local regulations which affect you and your machine.

INT-1-3-3

WARNING

Decals

You can be injured if you do not obey the decal safety instructions. Keep decals clean. Replace unreadable or missing decals with new ones before operating the machine. Make sure replacement parts include warning decals where necessary.

INT-1-3-4

WARNING

Care and Alertness

All the time you are working with or on the machine, take care and stay alert. Always be careful. Always be alert for hazards.

INT-1-3-5

WARNING

Clothing

You can be injured if you do not wear the proper clothing. Loose clothing can get caught in the machinery. Wear protective clothing to suit the job. Examples of protective clothing are: a hard hat, safety shoes, safety glasses, a well fitting overall, ear-protectors and industrial gloves. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained.

INT-1-3-6

WARNING

Machines with a Tip-up Body

A raised body can fall and injure you. Do not walk or work under a raised body unless it is safely supported with the body safety strut.

7-1-1-1

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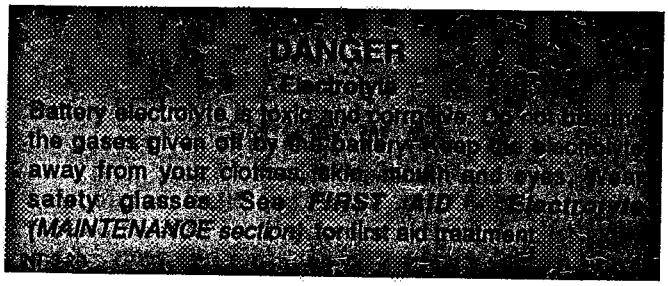
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SAFETY CHECK LIST
(continued)

WARNING
Accumulators

The accumulators contain hydraulic oil and gas at high pressure. Prior to any work being carried out on the braking system they must be discharged by a JCB dealer as the sudden release of the hydraulic oil or gas may cause injury.

7-1-1-2



WARNING
Diesel Fuel

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

WARNING
Oil

Oil is toxic. If you swallow any oil, do not induce vomiting, seek medical advice. Used engine oil contains harmful contaminants which can cause skin cancer. Do not handle used engine oil more than necessary. Always use barrier cream or wear gloves to prevent skin contact. Wash skin contaminated with oil thoroughly in warm soapy water. Do not use petrol, diesel fuel or paraffin to clean your skin.

INT-3-2-3

WARNING
Soft Ground

A machine can sink into soft ground. Never work under a machine on soft ground.

INT-3-2-4

WARNING
Counterweights

Your machine may be fitted with counterweights. They are extremely heavy. Do not attempt to remove them.

INT-3-2-5

WARNING
Tyres and Rims

Over-inflated or over-heated tyres can explode. Follow the instructions in this handbook for inflating the tyres. Do not weld or cut rims. Get a tyre/wheel specialist to do any repair work.

INT-3-2-6

WARNING
Fires

Do not use water to put out a machine fire, you could spread an oil fire or get a shock from an electrical fire. Use carbon dioxide, dry chemical or foam extinguishers. Contact your nearest fire department as quickly as possibly. Firefighters should use self-contained breathing apparatus.

INT-3-2-7

WARNING
Jacking

A machine can roll off jacks and crush you unless the wheels have been chocked. Always chock the wheels at the opposite end of the machine that is to be jacked. Do not work underneath a machine supported only by jacks. Always support a jacked-up machine on axle stands before working underneath it.

INT-3-2-8

WARNING
Hot Coolant

The cooling system is pressurised when the engine is hot. Hot coolant can spray out when you remove the radiator cap. Let the system cool before removing the radiator 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

CAUTION
Rams

The efficiency of the rams will be affected if they are not kept free of solidified dirt. Clean dirt from around the rams regularly. When leaving or parking the machine, close all rams if possible to reduce the risk of weather corrosion.

INT-3-2-10

CAUTION
Cleaning

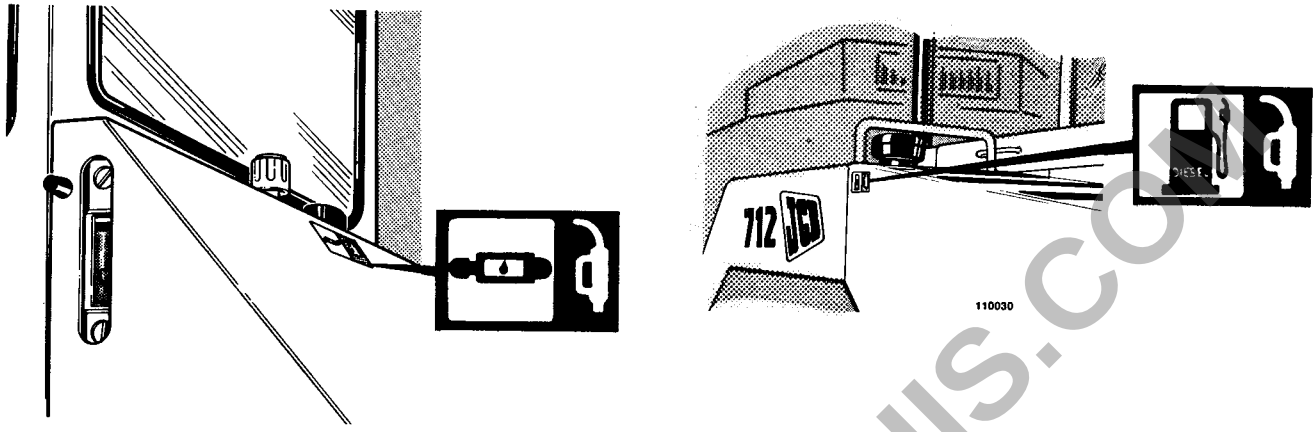
Cleaning metal parts with incorrect solvents can cause corrosion. Use only recommended cleaning agents and solvents.

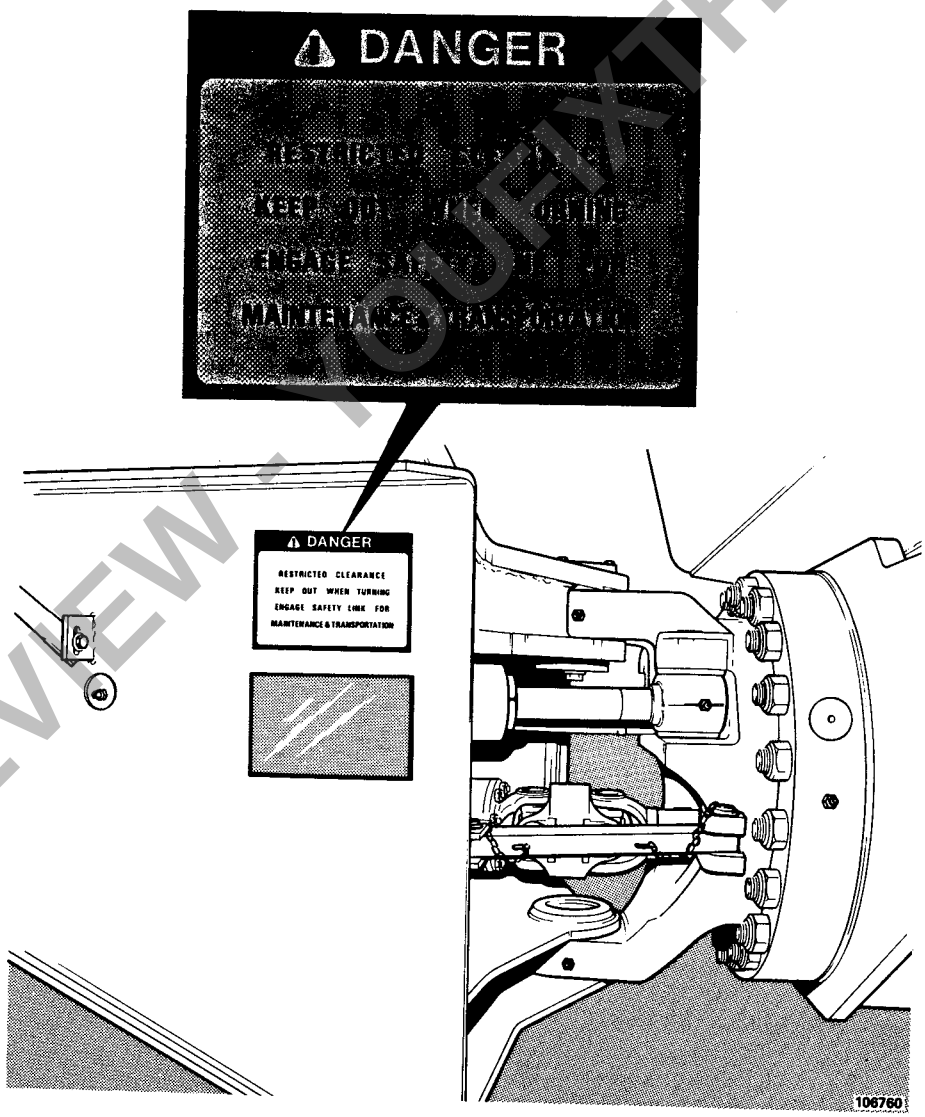
INT-3-2-11

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SAFETY DECALS
(continued)





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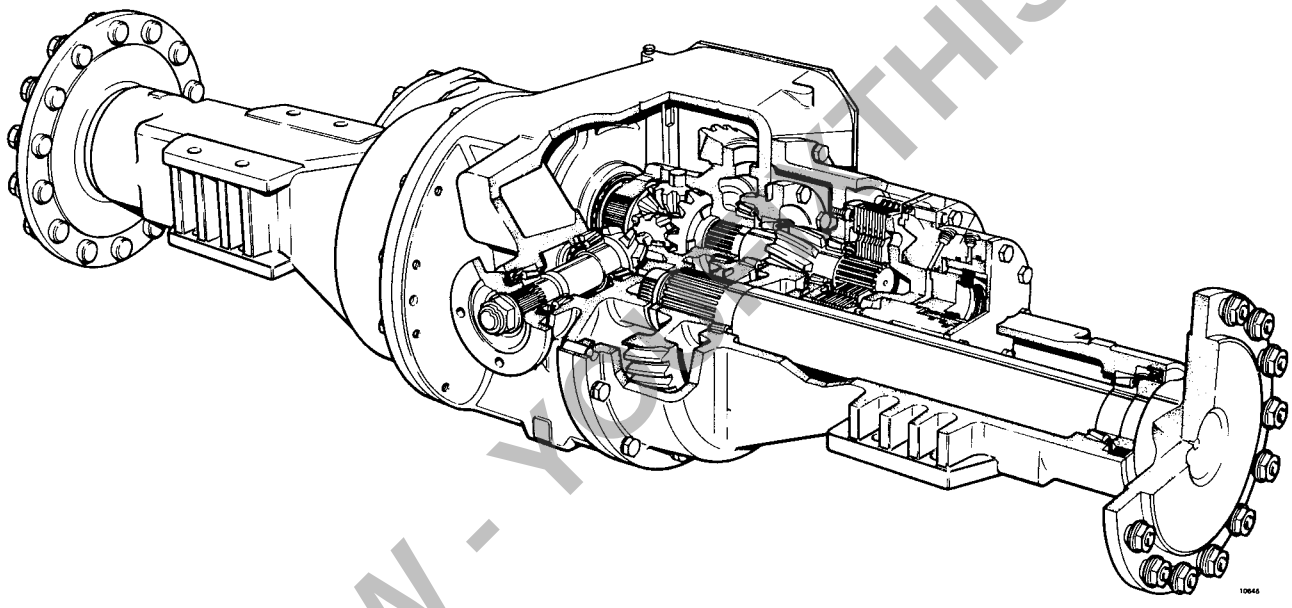
THE 712 ARTICULATED DUMP TRUCK
(continued)

Axles

The front and rear axles are similar (rear axle shown), the difference being on the parking/emergency brake arrangement. The steering is not on the axles but by the two steer rams and the articulated pivot, i. e. pivot steering system.

The axle casing comprises three major castings, containing the axle gearing, bearings, and brakes. Specially shaped differential gears provide 'torque proportioning' which means drive power will be kept on one wheel if the other is slipping.

Both axles are rigidly mounted to the chassis. The suspension required is achieved through the tyres. The wheels are secured onto the axle by 14 stud wheel mountings.

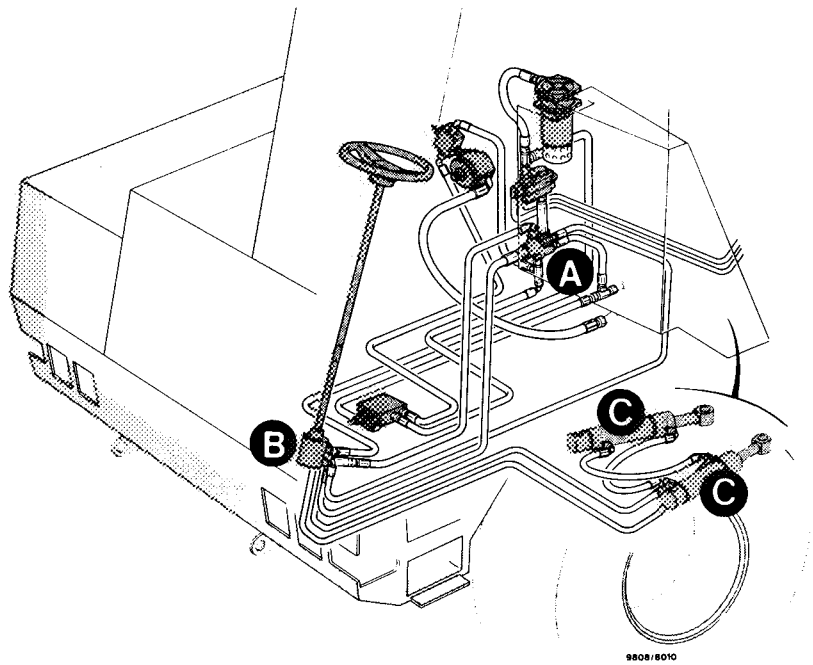


Steering

The steering is a full power hydraulic, pivot steer system comprising a priority valve **A**, steer control unit **B**, and two rams **C**.

When the steering wheel is turned, the control valve sends a pressure signal to the priority valve. The priority valve on sensing the signal directs pressurised hydraulic oil to the control valve. The control valve supplies metered pressurised oil to the steer rams and the required degree of turn is executed.

Oil flow to the rams is proportional to speed of rotation of the steering wheel which in conjunction with a narrow arc of movement at the rams, gives uniform power lock to lock, and a natural feel at the steering wheel.



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ENGINE AND DRIVE CONTROLS, SWITCHES AND INSTRUMENTS

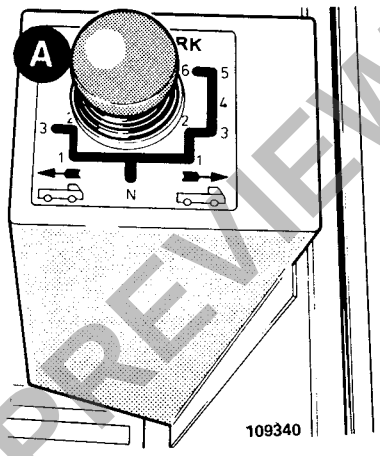
Control

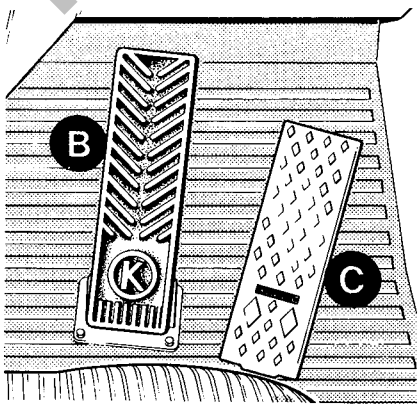
Steering Wheel
Turn the wheel in the direction you want to go. The steering is 'full power steering' with no mechanical linkage. From lock to lock is four turns.

Gear Shift Lever (A)
Gear selection is by a gear shift lever which is moved through a gate to select the six forward and three reverse gears. In addition to the gear positions in the gate there is an additional 'neutral/ start' position.

The engine will not start if the neutral/start position is not selected, this is a safety measure to make sure you cannot start the machine in gear and possibly cause an accident.

To change gear on the move, simply select the next gear. The type of transmission used allows 'full power shift' i.e. you can change gear without taking your foot off the accelerator, although we recommend that you use the accelerator to produce a smooth gear change.





Service Brake Pedal (B)
Push down on the brake pedal to slow or stop the machine. Use the brakes to prevent over speeding on a down-gradient.

The stop lights come on when the brakes are applied. Do not drive the machine unless both stop lights work correctly.

Accelerator Pedal (C)
Push the accelerator pedal down to increase the engine speed. Let the pedal up to reduce engine speed. With your foot off the pedal the engine will idle.

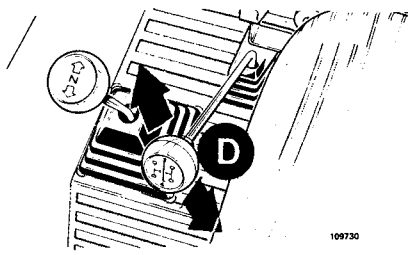
2/4-Wheel Drive Lever (D)

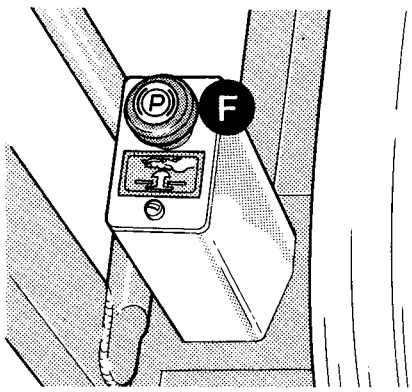
CAUTION

Make sure the machine is stationary when engaging 4-wheel drive.
7-2-2-1

Select either 2 or 4-wheel drive by moving the lever as shown, i.e. down to select 4-wheel drive and up to select 2-wheel drive.

The lever is connected to a cable which is connected to the 4-wheel drive disconnect unit and engages/disengages the drive to the front propshaft.





Parking/Emergency Brake

Parking/Emergency Brake Lever – Early Machines (E)
To engage the parking/emergency brake, pull the lever up as shown. With the starter switch set to IG^N an indicator on the instrument panel lights up while the parking/emergency brake is engaged.

To release the parking/emergency brake, pull up the collar on the lever and lower the lever as far as it will go. Check that the warning light goes out.

Parking/Emergency Brake Button – Later Machines (F)
To engage the parking/emergency brake, push the switch knob down. With the starter switch set to IG^N an indicator on the instrument panel lights up while the parking/emergency brake is engaged.

Turn the switch knob clockwise to release the parking/emergency brake. Check that the warning light goes out.

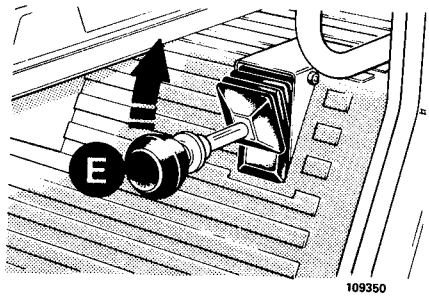
***Note:** The parking/emergency brake will release only when the starter switch is set to the IG^N position.*

⚠ WARNING

If the starter switch is turned to the IG^n position whilst the parking brake is dis-engaged, the machine could run away.

Always engage the parking brake before leaving the machine. Make sure the parking brake is engaged before turning the starter switch.
7-2-2-12

The braking system conforms to regulations covering emergency braking, therefore the parking brake is used in the event of an emergency where the service brakes fail.



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TRANSMISSION

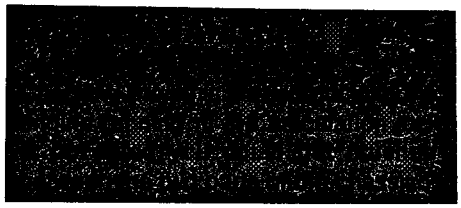
Checking the Oil Level

1 Park the Machine on Level Ground

Engage the parking brake. Stop the engine. See Page **51**.

2 Fit the Articulation Lock

See Page **79**.



3 Open the Rear Engine Panel

See Page **80**.

4 Start the Engine

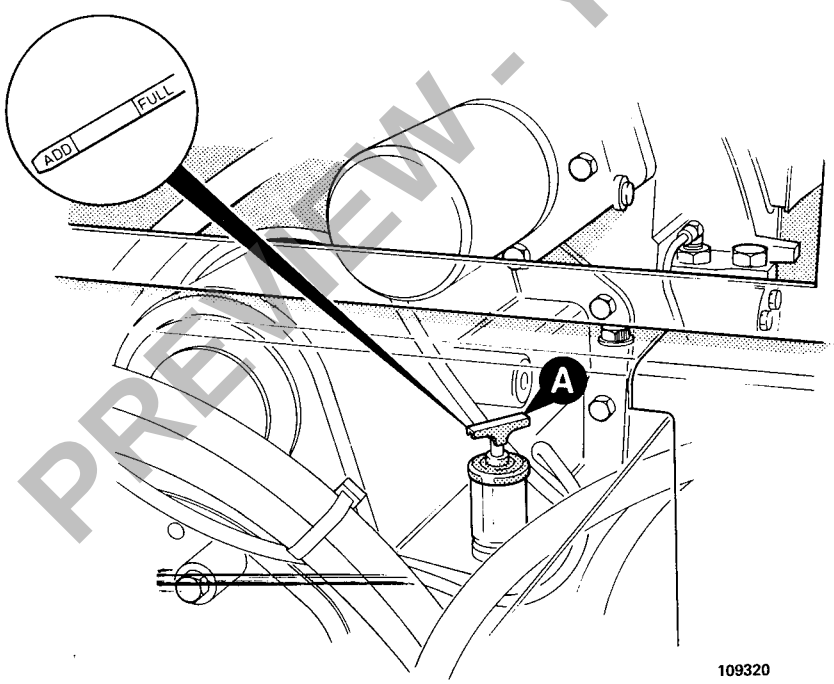
Run the engine for two minutes to prime the torque converter and hydraulic lines.

5 Check the Oil

Note: *The oil level is checked with the engine at idle speed. If a top-up is required, use only recommended oils, see Page **110**.*

a Check that the oil is up to the **LOW** mark on the dipstick **A**. Add oil if necessary.
b Allow the oil time to reach operating temperature. Check that the oil is up to the **HIGH** mark on the dipstick. Add oil if necessary.

Note: *Do not fill past the 'Full ' mark on the dipstick.*



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BRAKES

WARNING

Before adjusting the brakes make sure the machine is safe and correctly parked on level ground.

To prevent anyone starting the engine, remove the starter key. Disconnect the batteries when you are not using electrical power.

Fit the safety struts, see ***Body safety strut*** *(MAINTENANCE section).*
7-3-4-1

WARNING

Accumulators
The accumulators contain hydraulic oil and gas at high pressure. Prior to any work being carried out on the braking system they must be discharged by a JCB dealer as the sudden release of the hydraulic oil or gas may cause injury.
7-1-1-4

Adjusting the Service Brake Linkage

1 Loosen locknut **A**.

2 Remove Safety clip **B**.

3 Adjust clevis **C**.

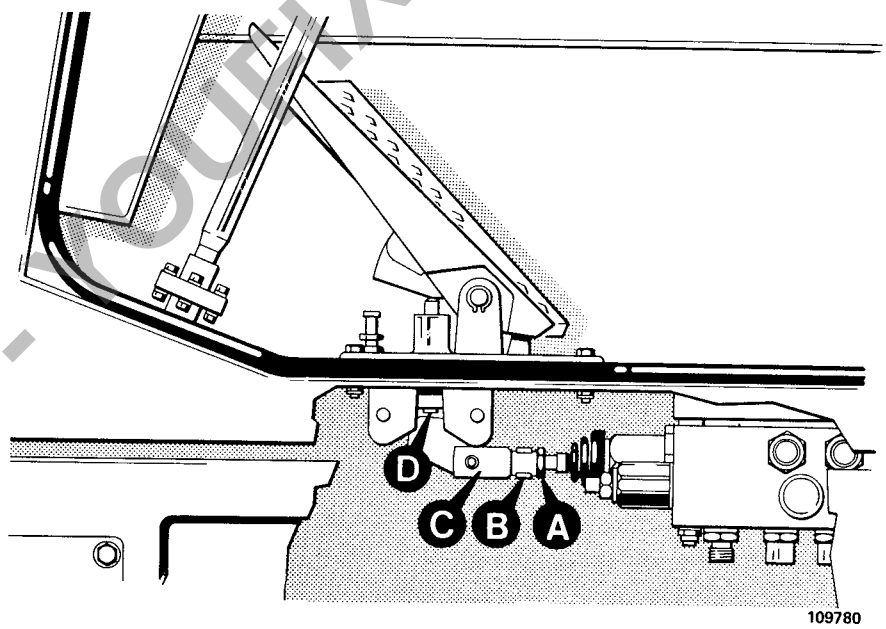
4 Fit safety clip **B**.

5 Check clearance at **D**. The clearance should be 0.5mm (0.020in).

6 If necessary repeat steps **2** to **5** to achieve correct clearance.

7 Tighten locknut **A**.

Note: *If further adjustment of the service brake is required contact your JCB dealer.*



109780

Adjusting the Parking/ Emergency Brake Cable (Early machines only)

1 Discharge the accumulator by continually applying the parking brake and releasing it.

Note: *Once the accumulator is discharged the parking brake will not release until the engine is running; so there is no danger of the brakes being released while the adjustment is being made.*

2 Push the parking/emergency brake lever **A** fully down into the off position.

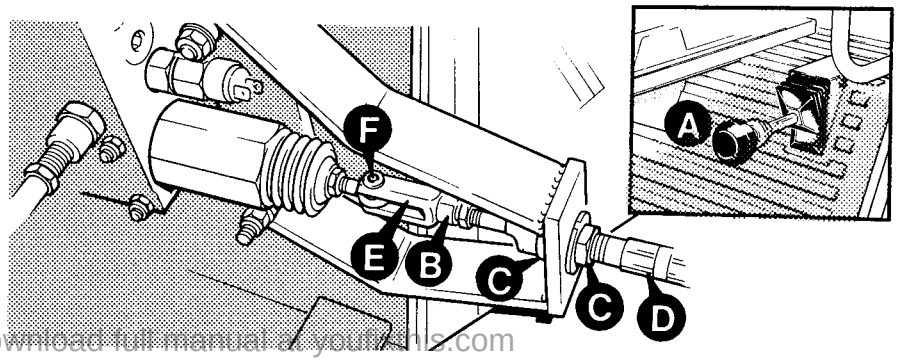
3 Remove safety clip **B**.

4 Adjust locknuts **C** to move the cable **D**, and align clevis **E** with rod **F**.

5 Tighten locknuts **C**.

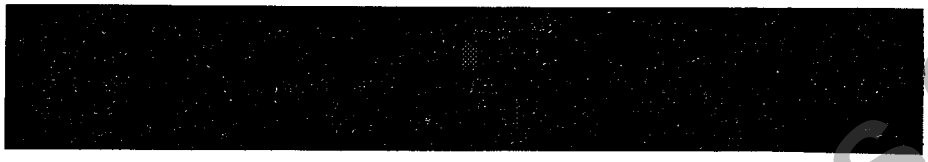
6 Fit safety clip **B**.

7 Test the parking brake. See ***Testing the parking brake*** *(OPERATION section).*



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



⚠ 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-1-2-2

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BODY CONTROLS

The body is operated from a single control lever, the lever is to the right of the seat, and is next to the 2/4-wheel drive lever. The lever when operated raises and lowers the body.

⚠ WARNING

Before raising or lowering the body, make sure the area around the machine is clear of people.

The lever has four positions - **Raise**, **Hold**, **Lower**, and **Float**.

Raise
Pulling the lever back raises the body.

Hold
This position, when selected stops and holds the body in any raised position. Note the lever is spring loaded and will return to this position from the **Raise** and **Lower** positions, but not from the **Float** position.

Lower
Pushing the lever forward lowers the body.

Float
Pushing the lever fully down engages the float position. This is used to take the load out of the rams for normal driving, by ensuring the body is carried on the rear chassis and not on the rams.

⚠ WARNING

Do not operate the body control lever while the machine is moving. You will not have total control and you can cause an accident.

CAUTION

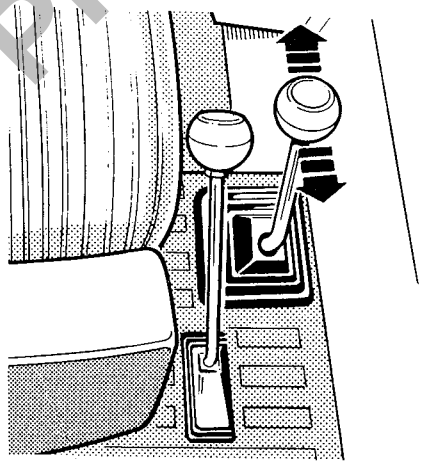
Do not drive the machine unless the body is in the fully down position and the body control lever is in the **Float** position.

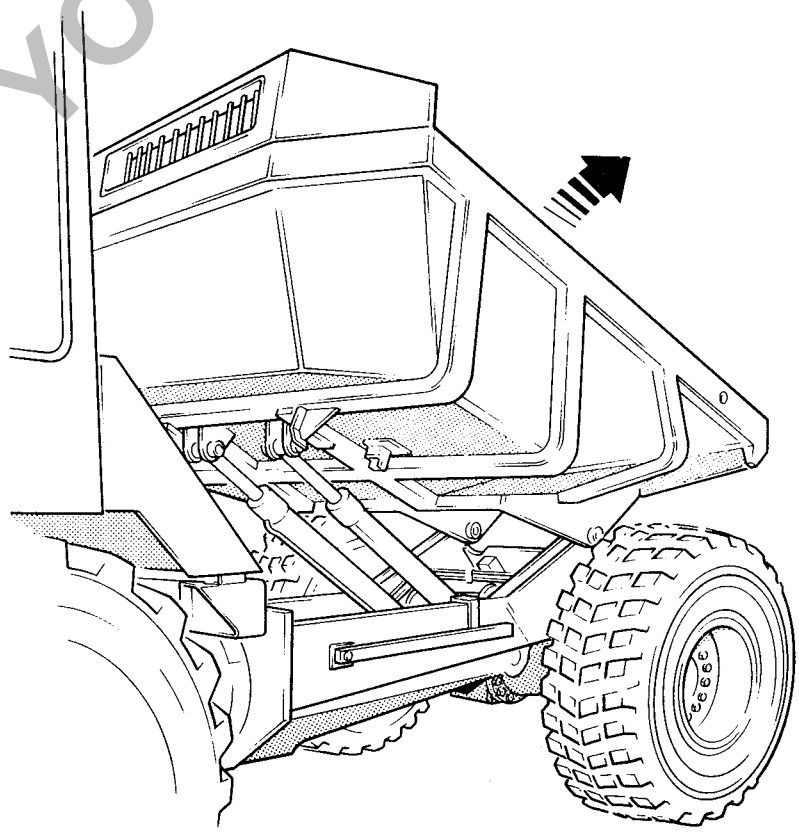
Raise/Lower the Body

To raise the body pull the lever back. Control the speed with the lever . When it reaches the position you wish to stop it or its maximum lift, return the lever to the central **Hold** position.

To partially lower the body push the lever forward. Control the speed with the lever. When it reaches the position you wish to stop it, return the lever to the central **Hold** position.

To fully lower the body for driving, push the lever forward. Control the speed with the lever. When the body reaches the fully down position, push the lever fully forward to engage the **Float** position.





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GREASING (250 HOURS)

Read **Greasing (Daily)** for general information about greasing.

WARNING

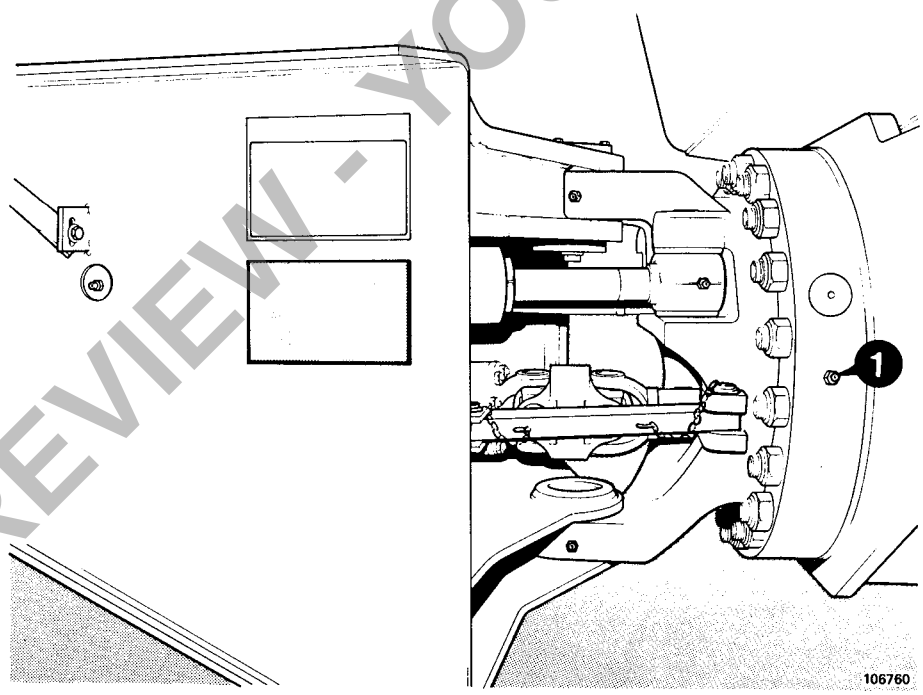
Before doing any greasing make sure the machine is safe and correctly parked on level ground.

To prevent anyone starting the engine, remove the starter key. Disconnect the batteries when you are not using electrical power.

Fit the safety struts, see Pages **77** and **79**.

Oscillating Ring

1 grease point each side.
— Total : 2 Grease Points.



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