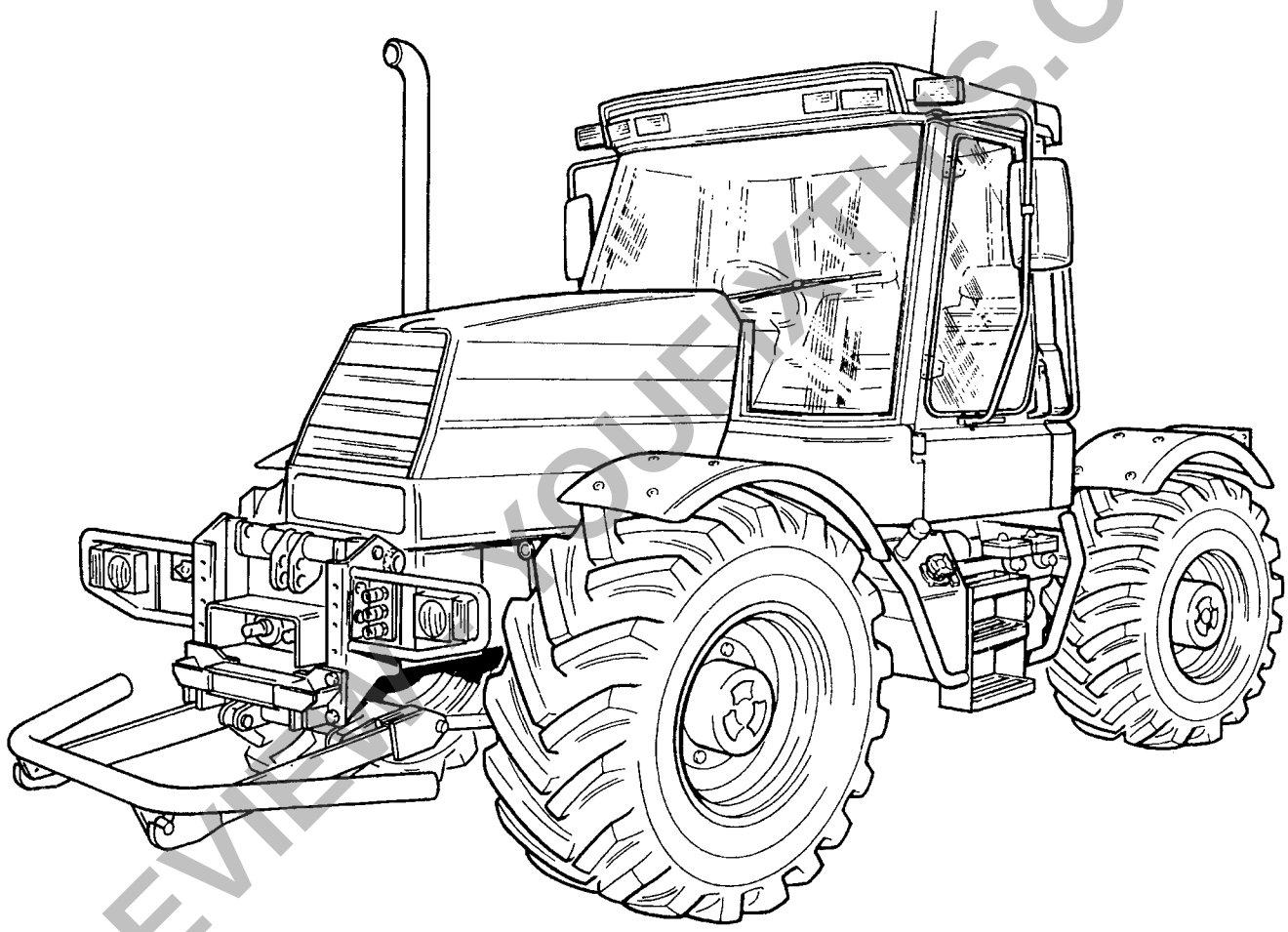
Operator Handbook

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FASTRAC

135 · 155 · 185

From Machine No. 637734

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

Publication Number 9801/1361

Nov. 97 Issue 3

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CONTENTS

INTRODUCTION

About this Handbook 3

The JCB Fastrac
Identification of Machine Components 4

Safety First - Yours and Other People's 6

Safety Check List
General Safety 6
Operating Safety 7
Maintenance Safety 8

Safety Decals 10

Identifying Your Machine
Serial Number Plate 12
Typical Vehicle Identification Number 12
Typical Engine Identification Number 12
Location of Major Unit Serial numbers 12

OPERATION

Introduction 29

Before Entering the Cab 29

Entering/Leaving the Cab 31

Emergency Exit 31

Doors and Windows 31

Cab Layout and Controls 32

Instrument Panel 34

Digital Speedometer 36

Switches 38

Air Conditioning and Heater Controls 41

Seat Adjustment 42

Seat Belts 43

Before Starting the Engine 44

Steering Column Adjustment 44

Starting the Engine 45

Jump-Starting the Engine 46

Preparing for Travel
Testing the Parking Brake 48
On Public Roads 48

Getting the Machine Moving 48

Travelling 49
Utilisation of Gears 49
General Precautions 51
Four Wheel Drive and Differential Lock 52
Automatic Differential Lock 52

Stopping and Parking the Machine 53

Using the Machine and Site Safety 54

Electronic Linkage Control 55

Area Cut-out 58

Rear 3 - Point Linkage
Mechanical Connections and Adjustment 59

Front 3 - Point Linkage
Mechanical Connections and Adjustment 62

Front Hitch
Fitting and Adjusting the DIN 3 Hitch 63
Removing the 3-Point Linkage Arms 63

External Hydraulics
Control Layout 64
Lever Locking 64
Variable Flow Spool Operation 65
Fixed Flow Spool Operation 66
Front 3-point Linkage Operation 67
Connecting Equipment 68
Priority Flow Service 68

Quick Release Couplings 69

Drawbars and Hitches
Pick-up Hitch 70
Clevis Drawbar 71

Connecting Trailer Brakes
Air Brakes 72
Hydraulic Brakes 73

Independent Power Take-Off (PTO)
Introduction 74
Fitting Rear PTO Output Shaft 75
Attaching Equipment to Rear PTO 75
Rear PTO Operation 76
Attaching Equipment to Front PTO (Dual Output) 77
Attaching Equipment to Front PTO (Single Output 78
Front PTO Operation 79
PTO Static Guards 80

Automatic Trailer Couplings
Rockinger Type 850 RB 81
Scharmüller Type 1139/2 83

Operating in Low Temperatures 85

Operating in High Temperatures 85

Moving a Disabled Machine 86

Transporting the Machine 88

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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

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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AIR CONDITIONING & HEATER CONTROLS

Air Conditioning

To obtain air conditioning at face level, move switch **B** to the right and open vents **A.** Air will also be directed down onto the windscreen via slots below the vents. This air flow will increase if vents **A** are closed.

To control the temperature from ambient downwards, turn knob **C** clockwise to decrease the temperature, or anti-clockwise to increase. Select a suitable fan speed by turning knob **D.**

Note: *To keep the air conditioning system in good condition during the winter months, it is advisable periodically to switch on the system for a short time.*

Heating

To admit heated air through vent **E** and demisting slots **F,** move switch **B** to the left and select the required temperature using heat control **G.** Select a suitable fan speed by turning knob **H.**

Note: *With the heater on, cool air will still flow through vents **A** and down onto the screen but the fan will run at its slowest speed regardless of the setting of knob **D**.*

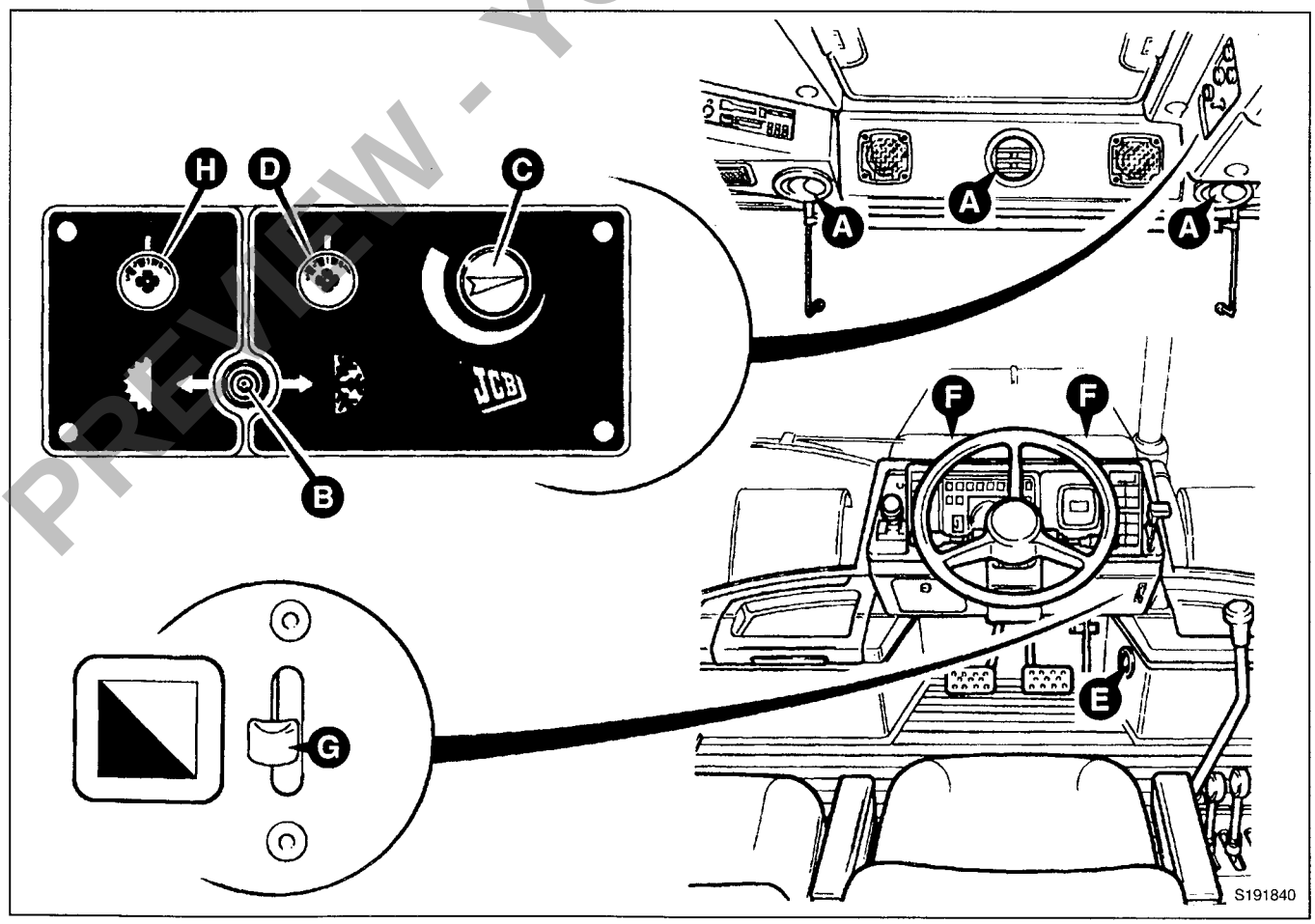
Defrosting

To provide maximum defrosting of the windows, move switch **B** to the left, select fan speed 3 on knob **H**, select maximum temperature on control **G** (fully up) and close vent **E**.

⚠ WARNING

The air conditioning system is a closed loop system and contains pressurised refrigerant. No part of the system should be disconnected until the system has been discharged by a refrigeration engineer or a suitably trained person. You can be severely frostbitten or injured by escaping refrigerant.

4-3-4-1/2



1361-2

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BEFORE STARTING THE ENGINE

Note: *Read* ***Operating in Low Temperatures*** *or* ***Operating in High Temperatures*** *if you will be using the machine in very cold or very hot climates.*

1 Engage the Parking brake

The parking brake should have been engaged when the machine was last parked. But if it is not already engaged, engage it now.

2 Do a Pre-start Inspection

Note: *If the engine has not been run for a long period (e.g. 3 months, it may be necessary to bleed the fuel system.*

For your own safety (and others) and for a maximum service life of your machine, do a pre-start inspection before starting the engine.

a If you have not already done it, do a walkround inspection of the outside of the machine. See **Before entering the Cab**. Also do the daily checks as detailed in the Service Schedules.

b Remove dirt and rubbish from the cab interior, especially around the pedals and control levers.

⚠ WARNING

Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you may lose control of the machine.
7-2-2-8

c Remove oil, grease and mud from the pedals, control levers and the steering wheel.

d Make sure that your hands and shoes are clean and dry.

⚠ WARNING

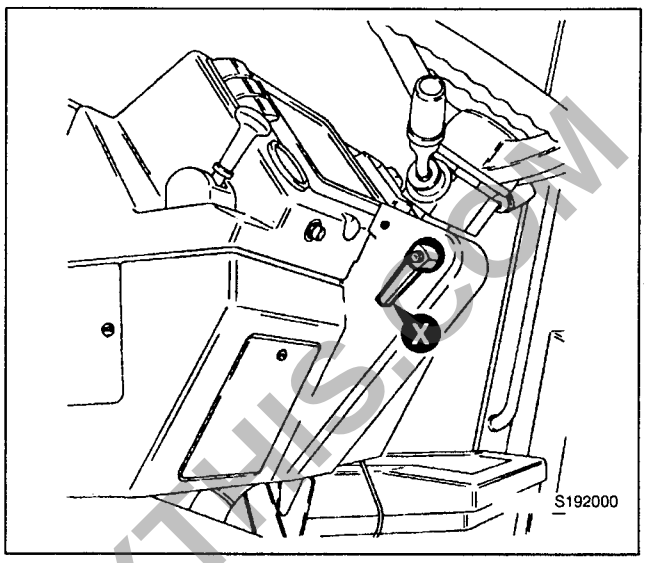
Loose articles can fall and strike you or roll on the floor. You could be knocked unconscious, or the controls could get jammed. If that happens you will lose control of the machine.
2-2-3-7/1

e Remove or secure all loose articles in the cab - such as lunch boxes, tools etc.

f Make sure that power take-off guards are in position and that the bonnet is closed firmly.

g Check round the cab for loose or missing bolts, screws etc. Renew or tighten where necessary.

h Check that the following are in working order :- Lights, Warning Lights, Rotating Beacon, Horn, Indicator Lights, All Switches, Direction Indicators, Hazard Warning Lights, Windscreen Washers and Wipers.



3 Sit in the Driving Seat and adjust the Seat and the Steering Column

⚠ WARNING

The ROPS cab is designed to give you protection in an accident. If you do not wear your seat belt you could be thrown about inside the cab, or thrown out of the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.
2-2-1-9

Slacken knob **X** and adjust the rake of the column forwards or backwards. Tighten the knob securely when the wheel is in the most comfortable position.

⚠ CAUTION

Make sure the steering column is fully clamped before driving the machine.
5-2-1-3

4 Set the Rear View Mirror(s)

Set the rear view mirror(s) to give you a good view close behind the machine when you are correctly seated.

5 Make sure that other people are clear of machine and equipment

6 Ensure that both PTO switches (when fitted) are in the brake position and that the PTO shields are in place.

The engine will not start unless the clutch pedal is depressed and the PTO switches are in the brake position.

7 Put the Speed Gearbox Lever in Neutral

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DRAWBARS AND HITCHES (continued)

Clevis Drawbar

This is used for trailed implements that are not equipped with a drawbar connection suitable for the pick-up hitch. The clevis drawbar **A** is mounted on the pick-up hitch frame and is located by pin **B**.

Before fitting or removing the drawbar, release and partly lower the pick-up hitch.

Fitting

⚠ WARNING

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

13-3-1-1

1 Locate the drawbar eye **C** on the pick-up hitch hook **D**. Raise the front end of the drawbar so that clevis **E** engages on one end of the pick-up hitch cross-member **F**.

2 Slide the front end of the drawbar across until the holes in clevis **E** and cross-member **F** are in line. Fit pin **B** and secure with a linch pin **G**.

3 Raise the pick-up hitch so that the latch is heard to engage and lower slightly until the latch is carrying the weight of the hitch and drawbar.

Adjustment

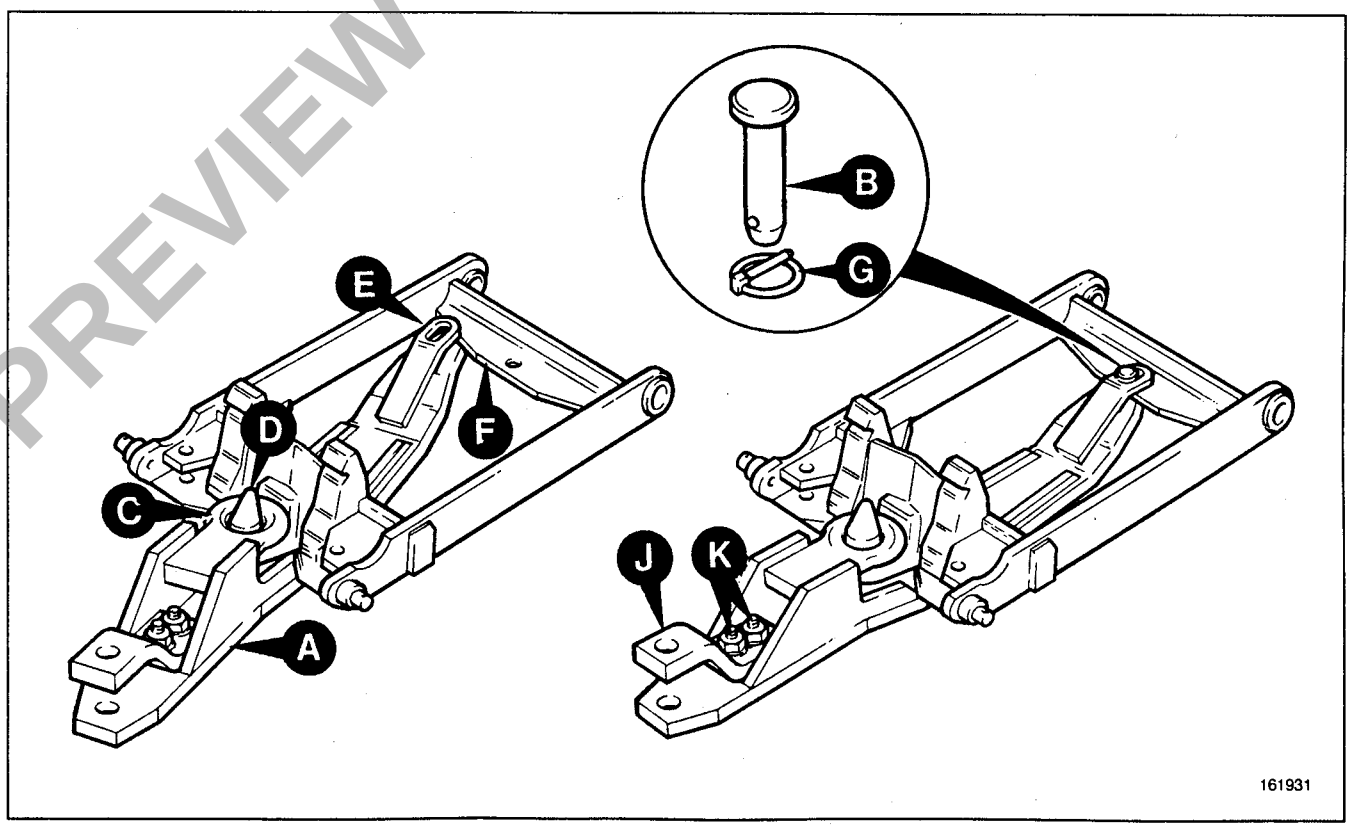
If the implement drawbar is a single plate, fit the cranked plate **J**. Ensure that bolts **K** are fitted with their heads at the bottom so as to allow maximum ground clearance.

If the implement drawbar has a clevis jaw (i.e. two plates, one above the other) remove the cranked plate **J**. Never connect two clevis jaws together.

⚠ WARNING

When the vehicle is approaching a trailer or equipment to be hitched, make sure that no persons are present between vehicle and trailer or equipment. When mounting equipment at the rear of the vehicle, you must ensure that proper steering control is maintained. The reduction of front axle loading must not exceed 80%.

13-1-1-13



1361-1

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REAR 3-POINT LINKAGE
MECHANICAL CONNECTIONS & ADJUSTMENT
(continued)

Lift Rods

Both lift rods **H** and **J** are adjustable for length.

To adjust the rods, lift the centre collar **K** and rotate. Ensure that the collar drops down after adjustment so that it can no longer rotate. The collar should be left so that the handles are positioned in a fore and aft direction.

The lower end of each rod is connected to the lower link by a pin and locating plate **L**.

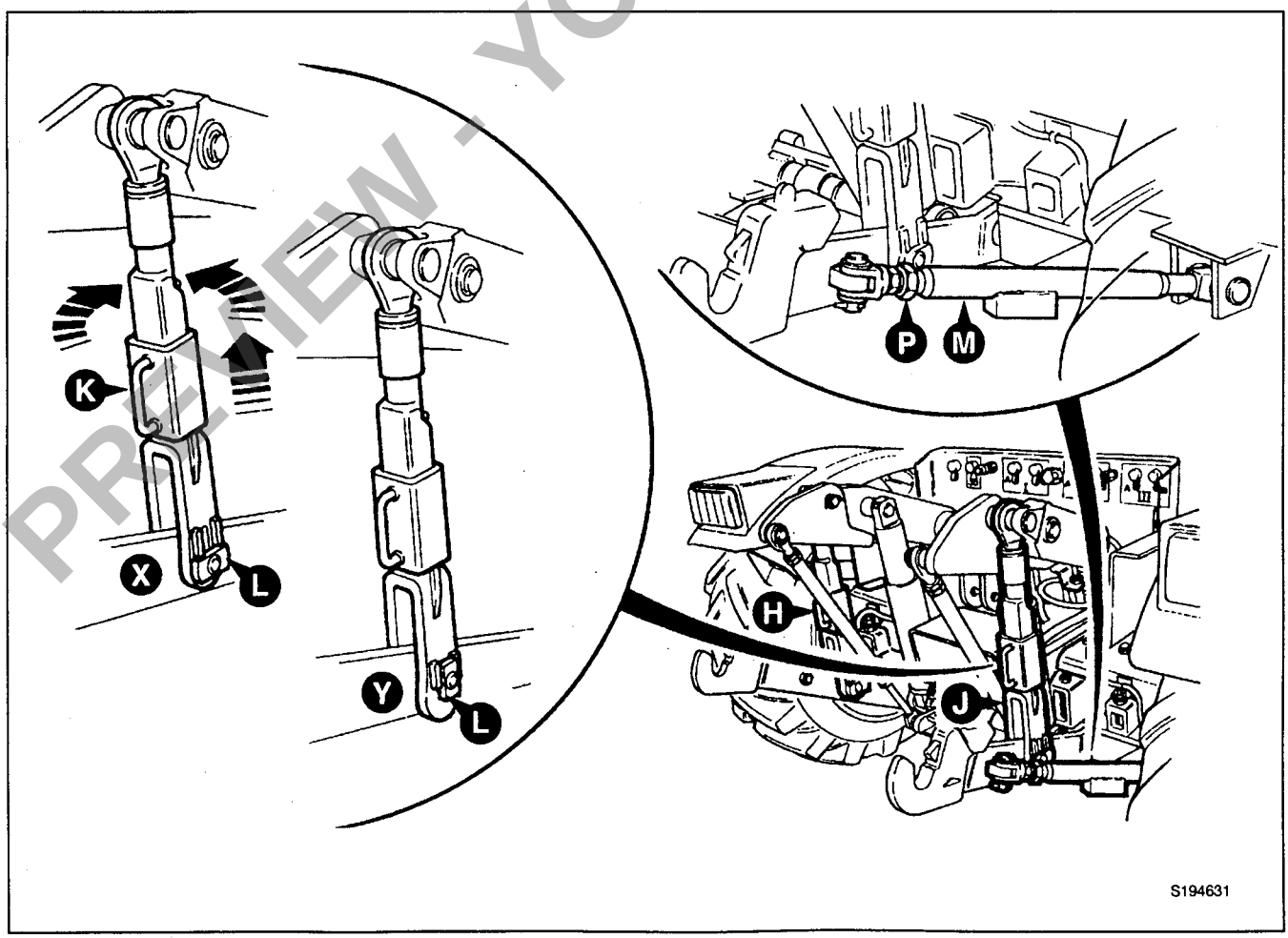
To connect the rods rigidly to the lower links, position the plate **L** horizontally as at **X**.

To connect the rods to the lower links with a degree of float, position the plate **L** vertically as at **Y**. Use this setting for wide soil-engaging implements (not ploughs).

Stabilizers (Standard type)

Both stabilizers **M** are adjustable for length.

To adjust the rods, slacken the locknut **P** and rotate the tubular section of the rod. Tighten the locknut.



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BRAKES
(continued)

Checking and Renewing Foot Brake Pads

1 Prepare the Machine

Park the machine on firm, level ground. Apply the parking brake. Lower any mounted implements to the ground. Jack up the machine and support it on axle stands. Remove the road wheels.

Note: *Disc brakes are fitted to all four wheels. The illustration shows only the left hand rear brake but the other brakes are similar.*

⚠ WARNING

Oil on the brake disc will reduce brake effectiveness. Keep oil away from the brake disc. Remove any oil from the disc with a suitable solvent. Read and understand the solvent manufacturer's safety instructions. If the pads are oily, fit new ones.

2-3-2-3/2

2 Check the thickness of all the friction pads **A** and the condition of each disc **X**. If the friction material is 3 mm (0.12 in) or less on any of the pads, fit a new set. If the surface of the disc is badly warped or pitted, you must consult your JCB distributor.

⚠ WARNING

Always renew brake pads and locating pins in complete axle sets, using genuine JCB parts, otherwise braking will be unsafe.

13-3-1-10

⚠ WARNING

Brake pads generate dust which if inhaled, may endanger health. Wash off the caliper before commencing work. Clean hands thoroughly after work.

13-3-1-3

3 Tap out pad locating pins **B** in direction of arrow. Discard pins and anti-rattle springs **C**.

4 With a suitable lever, force the worn pads back against the pistons. Remove the pads. Force both pistons fully back, taking care not to damage the seals.

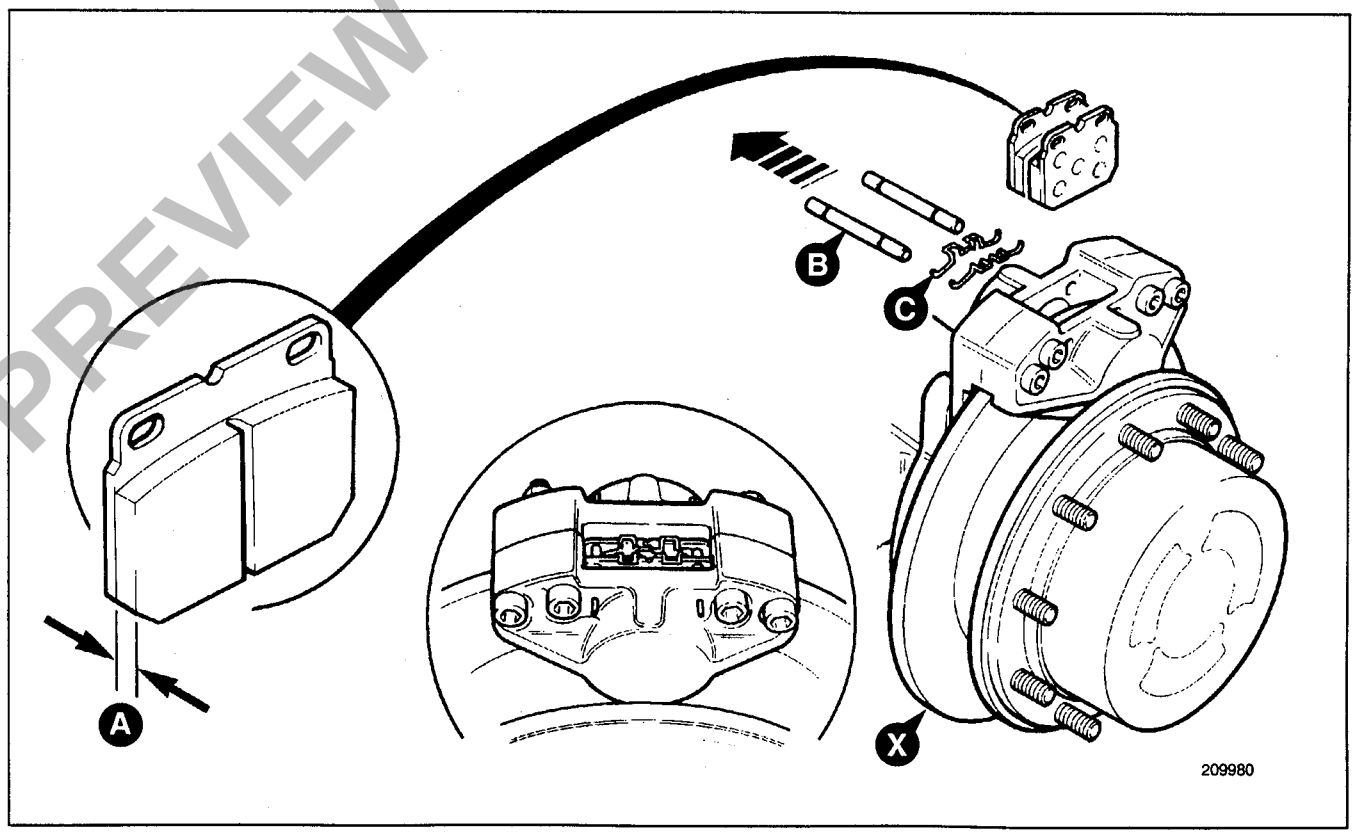
5 Ensure that the seals are not leaking and that both pistons move freely in the caliper. If not in perfect condition, the caliper must be repaired by your JCB distributor.

6 Slide in the new pads and fit new locating pins and anti-rattle springs

7 Refit the wheels and tighten the wheel nuts. (See ***Checking the Wheel Nut Torque***.)

8 Before driving the machine, start the engine, wait for air pressure to rise and pump the brake pedal until the brakes are felt to engage at the middle of the pedal travel range.

9 Try to avoid heavy braking for the first 50 hours of operation after fitting new pads.



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ENGINE OIL AND FILTER(S)

Changing the Oil and Filter(s) (Perkins Engine)

1 Drain the oil when the engine is warm as contaminants held in suspension will then be drained with the oil. Park the machine on firm ground and turn the front wheels to full left hand lock.

⚠ WARNING

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

13-3-1-1

2 Drain the Oil

⚠ CAUTION

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

- **a** Place a container that can hold at least 18 litres (4UK gal) beneath the engine to catch the oil.
- **b** Remove drain plug **C** and its 'O' ring. Make sure the 'O' ring is not damaged. Let the oil drain out, then clean and refit the drain plug and its 'O' ring. Tighten to 34 Nm (25 lb ft).

3 Open the bonnet. Change the Filter(s)

- **a** Unscrew the single filter **D** (normally aspirated engine) or the two filters **E** (turbocharged engine).

Note: *An internal pipe is fitted to each filter to retain the oil as it is removed. The oil can spill if the filter is tipped over after removal.*

- **b** Clean the filter head **F** and check tightness of adapter(s) **G**.
- **c** Add clean engine lubricating oil to each new filter. Allow enough time for the oil to pass through the filter element.
- **d** Smear the seal **H** on each new filter with oil. Screw in the new filter(s), hand-tight only.

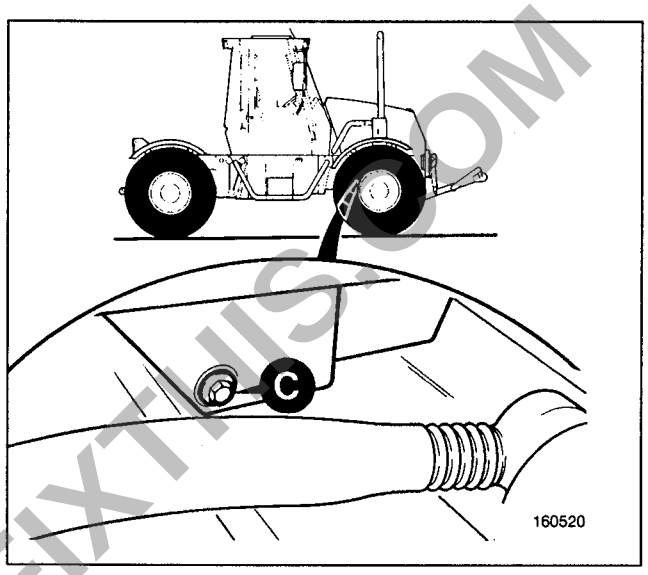
4 Fill the System

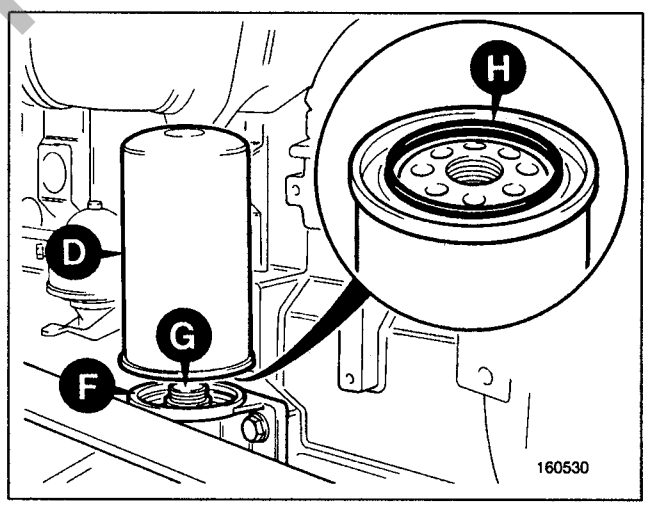
Fill the engine to the upper mark on the dipstick with new oil through the filler **B** (shown on previous page). See ***Fluids, Lubricants and Capacities*** for recommended oil grades. Wipe off any spilt oil. Check for leaks. Make sure the filler cap is correctly refitted.

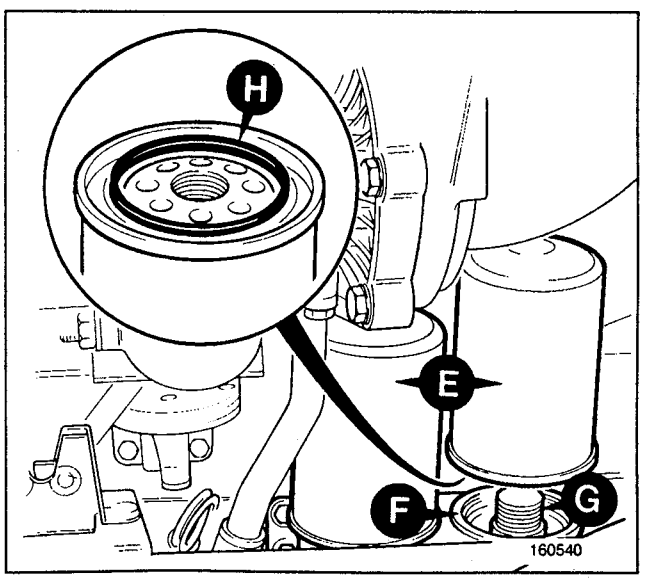
5 Check for Leaks

Note: *Before starting the engine, remove the ESOS fuse and rotate the engine on the starter until the oil pressure low light has gone out. Refit the fuse and start the engine.*

Run the engine and check for leaks. Stop the engine. When the engine has cooled, recheck the oil level.







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BRAKES
(continued)

Checking the Parking Brake Pads

⚠ WARNING

Brake pads generate dust which if inhaled, may endanger health. Wash off the caliper before commencing work. Clean hands thoroughly after work.
13-3-1-3

⚠ WARNING

Before checking the parking brake, park on level ground. Put chocks each side of all four wheels. Ensure that all three air tank warning lights are out. Release the parking brake, then stop the engine and disconnect the battery so that the engine cannot be started. If you do not take these precautions the machine could run over you.
13-3-1-4/1

1 Check the Pad Condition

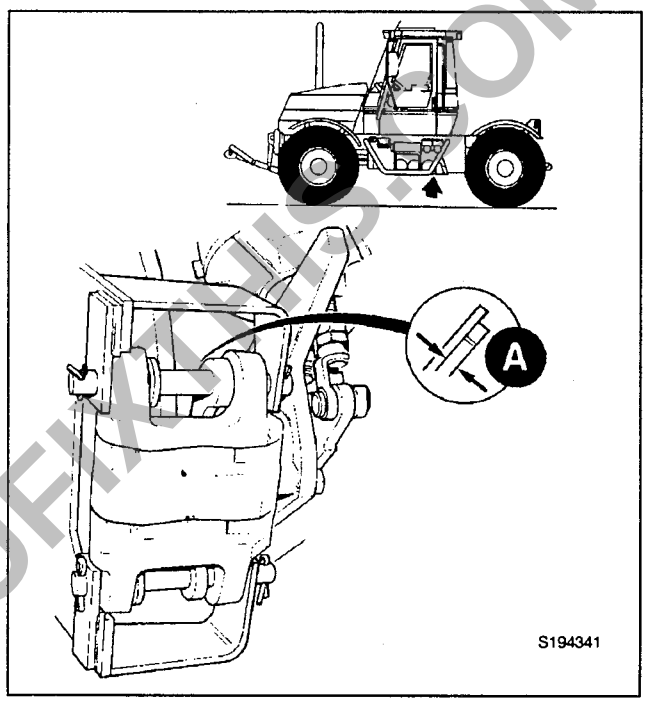
Measure pad thickness **A**. If the thickness of the friction material is 3 mm (0.12 in) or less, the pads must be renewed by your JCB Distributor.

⚠ WARNING

Oil on the brake disc will reduce brake effectiveness. Keep oil away from the brake disc. Remove any oil from the disc with a suitable solvent. Read and understand the solvent manufacturer's safety instructions. If the pads are oily, new ones must be fitted.
2-3-2-3/3

2 Check the disc condition

If the surface of the disc is badly warped, pitted or showing signs of overheating, you must have it renewed by your JCB Distributor.



HYDRAULIC SYSTEM

Checking the Fluid Level

1 Prepare the Machine

Park the machine on level ground. Apply the parking brake. Lower the rear linkage to the ground. Stop the engine. Remove the starter key.

2 Check the Level

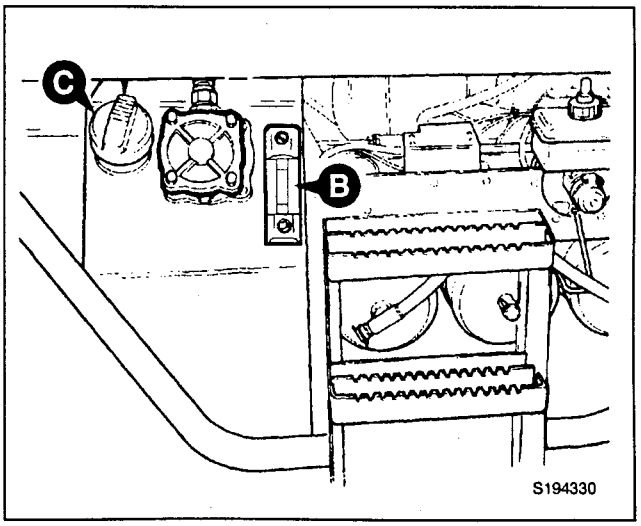
Look at the fluid level in the sight gauge **B** The level should be between the two marks on the gauge. If the fluid is cloudy, water or air has entered the system. Water or air in the system could damage the hydraulic pump. Contact your JCB distributor if the fluid is cloudy.

3 Add Oil

If necessary, add recommended fluid at tank cap **C**.

⚠ CAUTION

Using incorrect 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 or grazes.
2-3-5-1/1



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ENGINE COOLING SYSTEM (continued)

Draining and Refilling the Coolant (Cummins Engine)

⚠ WARNING

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

13-3-1-1

⚠ WARNING

The cooling system is pressurised when the coolant is hot. Hot coolant will burn you. Make sure the engine is cool before checking the coolant level or draining the system.

2-3-3-3

1 Open the bonnet. Carefully loosen the filler cap. Let any pressure escape. Remove the cap.

⚠ CAUTION

Keep your face away from the drain hole when removing the drain plug.

2 Remove drain plugs **D** and **E**. Let the coolant drain out.

⚠ CAUTION

Keep your face away from the hose while disconnecting it.

5-3-3-1

3 Check for damaged hoses and loose or damaged hose clips. Check the radiator for damage and build up of dirt. Clean and repair as required.

4 Clean and refit drain plugs **D** and **E**.

5 Prepare a mixture of 19 litres of water and 0.4 kg sodium carbonate (or a commercially available alternative).

6 Open the aftercooler bleed screw **F** and fill the system slowly with the mixture to prevent air locks. Wait 2 to 3 minutes to allow air to be vented, then close the bleed screw and top up to the level marked '**COLD MIN**'. Do not fit the filler cap at this stage.

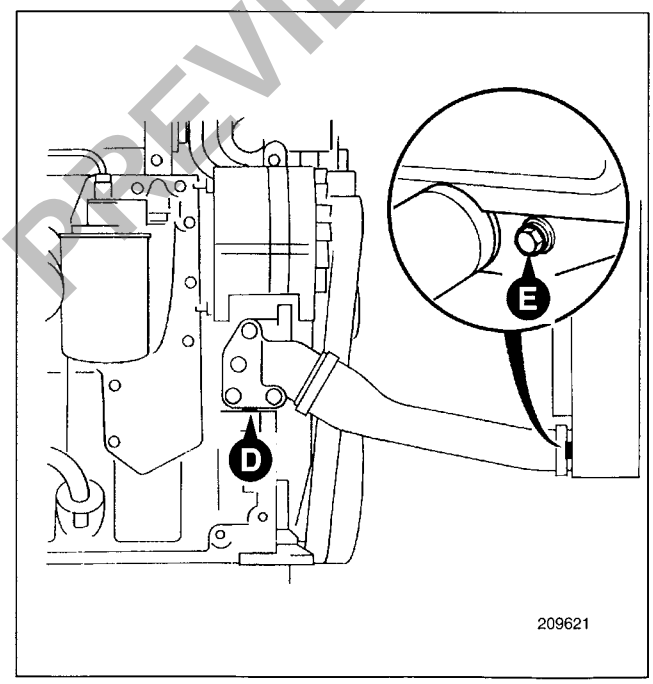
7 Run the engine for 5 minutes at the normal running temperature. Stop the engine and allow to cool.

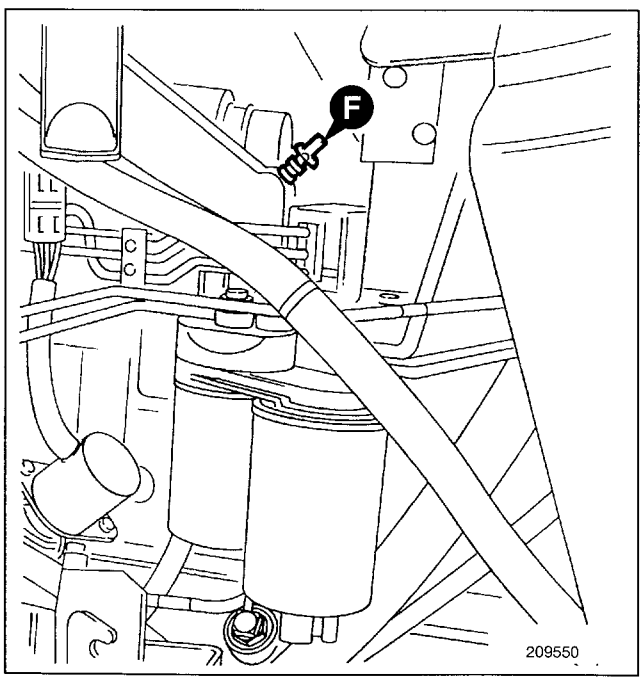
8 Drain the cooling system, checking that the coolant is not dirty. If it is, repeat the flushing process (steps **5** to **8**).

9 Refill the system as described at step **6** but using pre-mixed water/antifreeze solution (as specified in **Coolant Mixtures**). Do not overfill. Fit the filler cap.
Note: *A 50% anti-freeze mixture must be used even if frost protection is not needed. This gives protection against corrosion and raises the coolant's boiling point.*

10 Run the engine and raise the coolant to working temperature. Stop the engine. Check for leaks

Note: *Make sure the heater control is in the hot position before running the engine. This will ensure that the coolant mixture circulates through the entire cooling system.*





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ELECTRONIC LINKAGE CONTROL (continued)

Attaching an Implement - Using Controls in Cab

1 Start the engine.

2 Move selector **H** to the top setting (Position Control).

3 Activate the control panel (see ***System Activation***)

4 Adjust the linkage height using the setpoint control knob **D**. Indicators **J** and **K** will show whether the linkage is lifting or lowering.

5 To lift the linkage, turn the setpoint control knob **D** clockwise. The red indicator **J** will illuminate.

6 Engage the lower link hooks on the linkage balls and secure using latches **Z**. Finally, attach the top link and adjust as necessary.

Transport

1 Move selector **H** to the top setting (Position Control).

2 Move main control lever **A** to lift position (**1**).

3 Adjust the maximum lift height to suit the implement being transported, using maximum lift height control **E**. Start from the minimum setting (slide fully anti-clockwise) and move clockwise to increase the lift height.

4 When the implement is at the desired height, push in the red transport lock **B**, which will then prevent the main control lever from being moved to the lower position.

Attaching an Implement - using External Controls (on fender)

1 Start the engine.

2 Move main control lever **A** to either neutral position (**2**) or lower position (**3**).

⚠ WARNING

Keep clear of the linkage when using external controls.

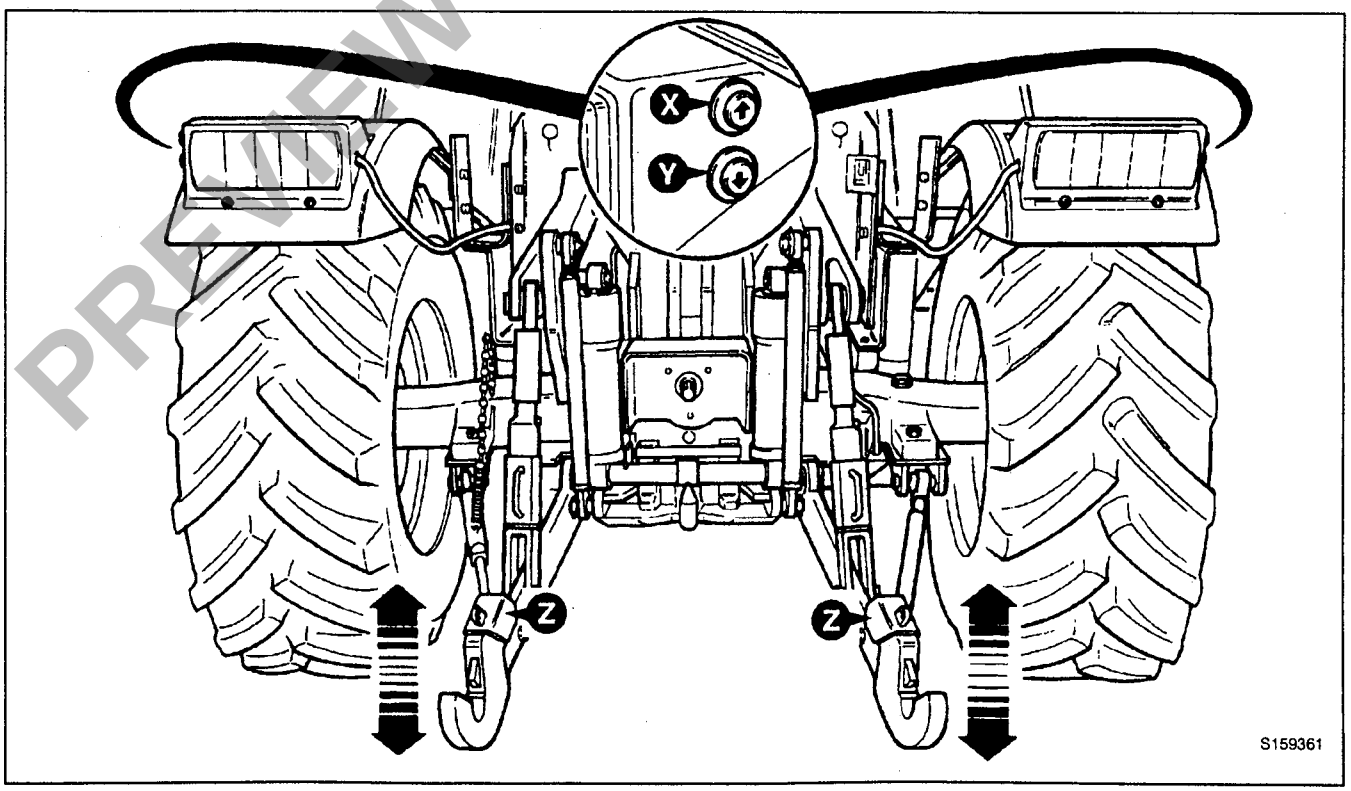
13-2-1-3

3 Press button **X** to raise the linkage or button **Y** to lower it. The movement of the linkage will stop as soon as the button is released.

Note: *The rate of drop of the linkage when external control buttons are used is 70% of the maximum speed.*

4 Engage the lower link hooks on the linkage balls and secure using latches **Z**. Finally, attach the top link and adjust as necessary.

5 Once the external controls have been used, remember to re-activate the control panel.



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