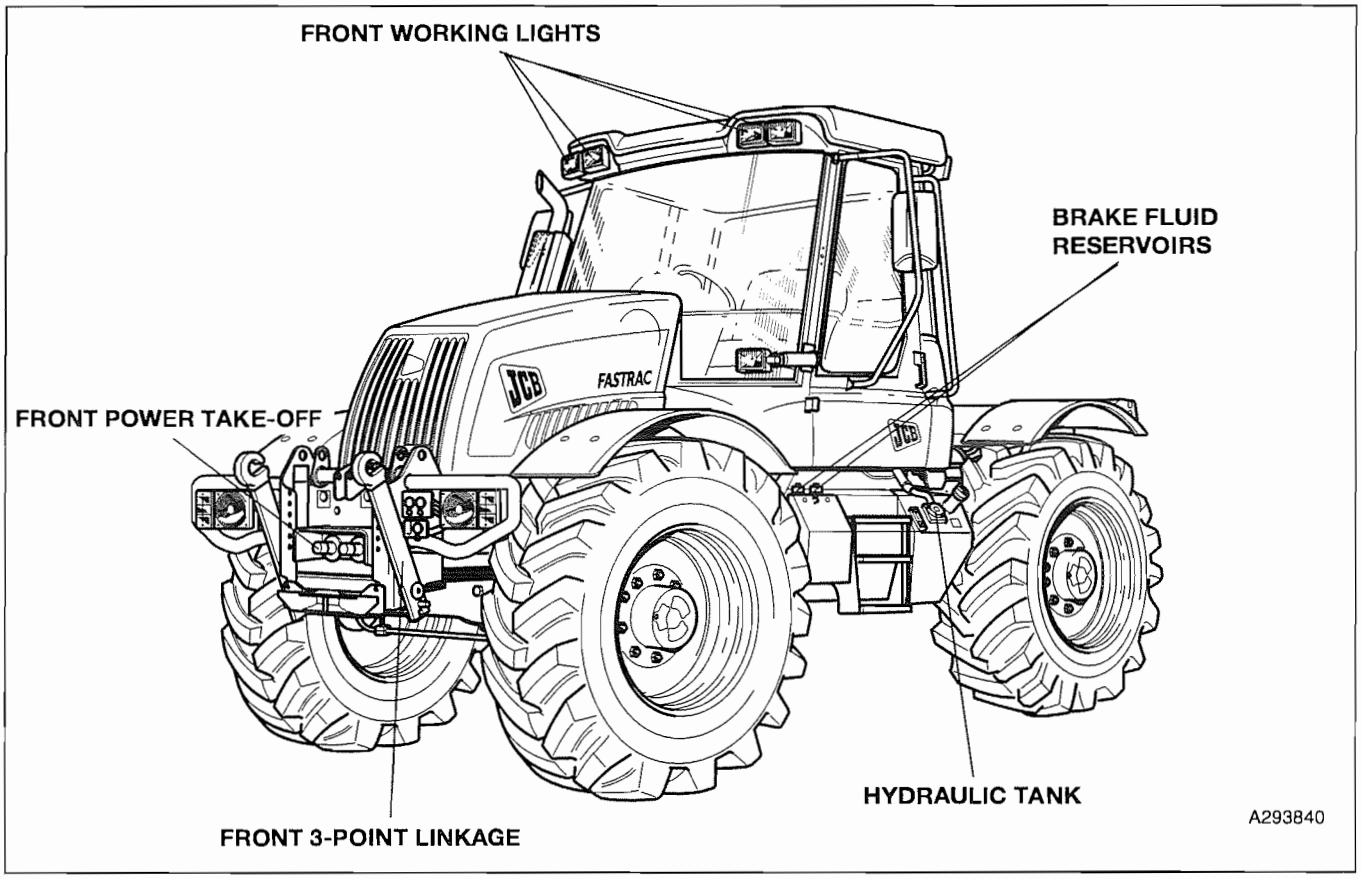
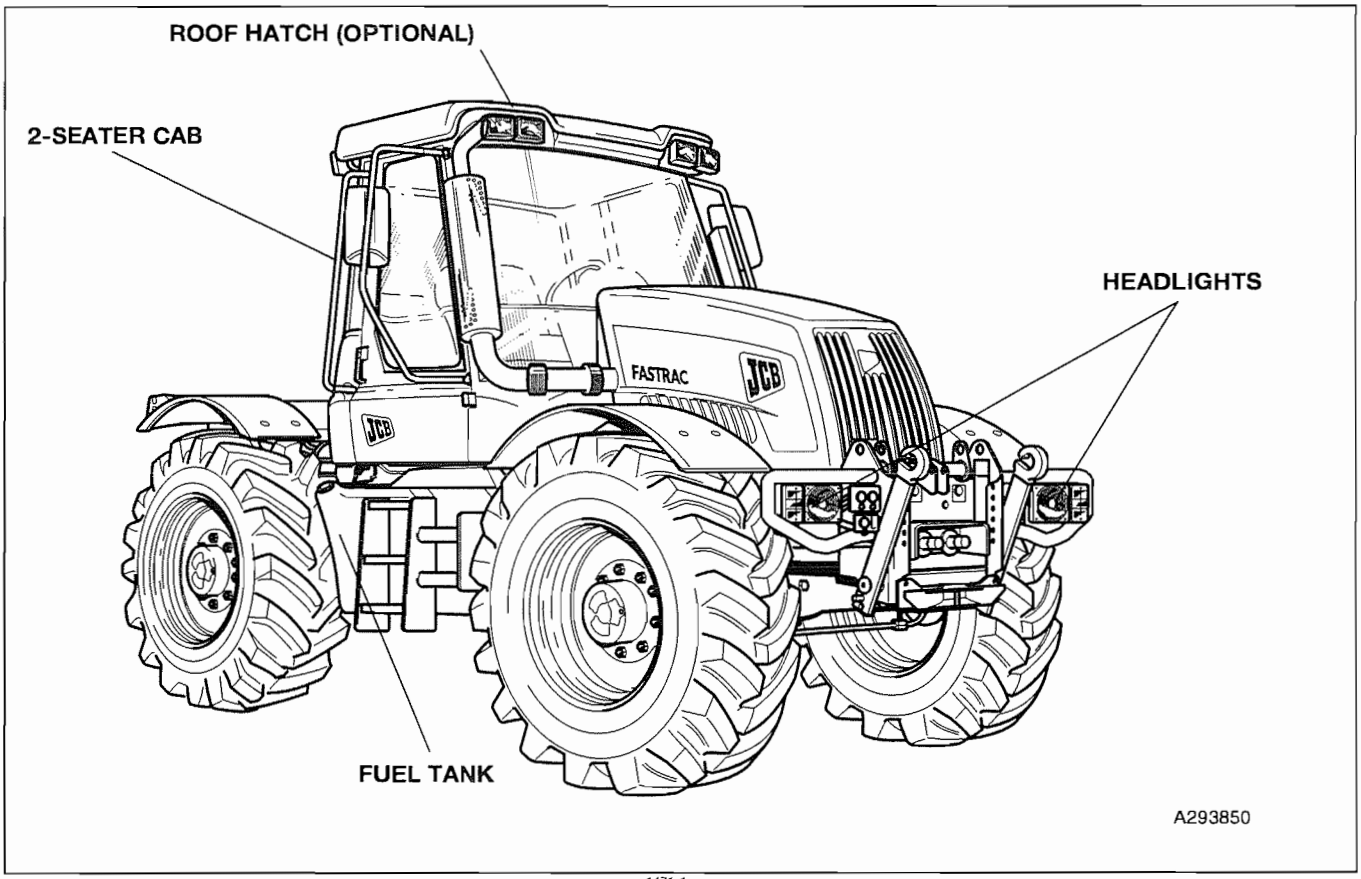
THE JCB FASTRAC





INSTRUMENT CLUSTER (continued)

Wheel Slip

Slip Control Re-calibration

The following procedure should be carried out when one set of wheels has been exchanged for a set of a different size, or if a slip reading not near 0% is observed when the machine is being driven on a tarmac surface. Proceed as follows:

1 Fit an implement to the rear hitch e.g. a plough.

2 Operate the draft control up and down after starting the engine to ensure that the draft control is unlocked.

3 Set the draft control main lever to the UP position i.e. in the transport position.

4 Drive the tractor on tarmac at a speed in excess of 15 kph for a minimum of 12 minutes.

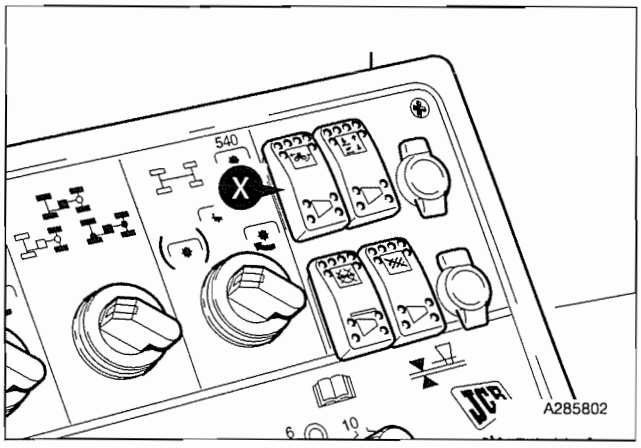
5 The draft control and instrument cluster will by now have been automatically re-calibrated.

Slip Control - Normal Operations

Having selected the 'Wheel Slip' display (see ***Level 0 Programming***), press SET-UP/SELECT button **D** until the wheel slip icon flashes. Centre display **30** will show either 'OFF' or a percentage figure i.e. wheel slip active or disabled. Press switch **X** (later machines) or press buttons **A** and **B** at the same time (early machines) to toggle between active and disabled. Warning lamp **16** illuminates when 'wheel slip' is active.

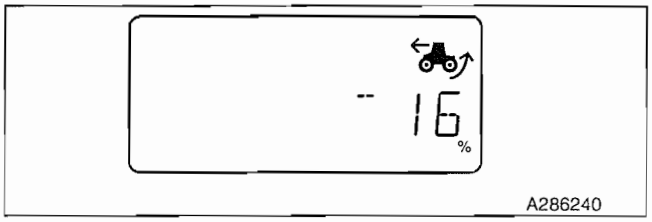
With warning lamp **16** illuminated, use button **A** or **B** to achieve the required 'wheel slip' setting between 5% and 40%. Toggle between active and disabled by pressing switch **X** or pressing buttons **A** and **B** at the same time. When activated, wheel slip resumes at the previously set level.

Note: *Wheel slip can be enabled or disabled by switch* ***X*** *without having to enter the wheel slip display.*

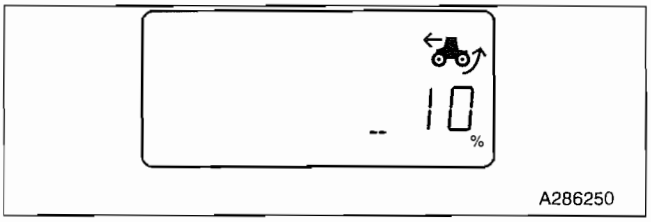


After a delay of 20 seconds or after pressing RPM/EXIT button **C** the normal display will resume. The following examples show how to interpret the display, assuming an 'active wheel slip' setting of 14%.

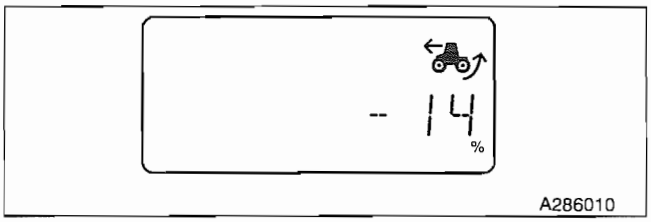
1 The measured wheel slip is more than 1% higher than the 'wheel slip' setting. Note that the top bar is illuminated.



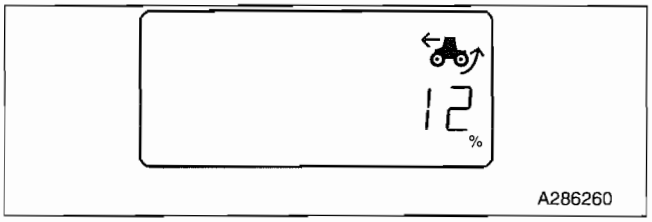
2 The measured wheel slip is more than 1% lower than the 'wheel slip' setting. Note that the bottom bar is illuminated.



3 The measured wheel slip is within ± 1% of the 'wheel slip' setting. Note that the centre bar is illuminated.



4 'Wheel slip' is switched OFF, as indicated by the absence of a bar in front of the current reading, which continues to be displayed. Warning lamp **16** on the Instrument Cluster is not illuminated.



SWITCHES (continued)

Cab Interior Light

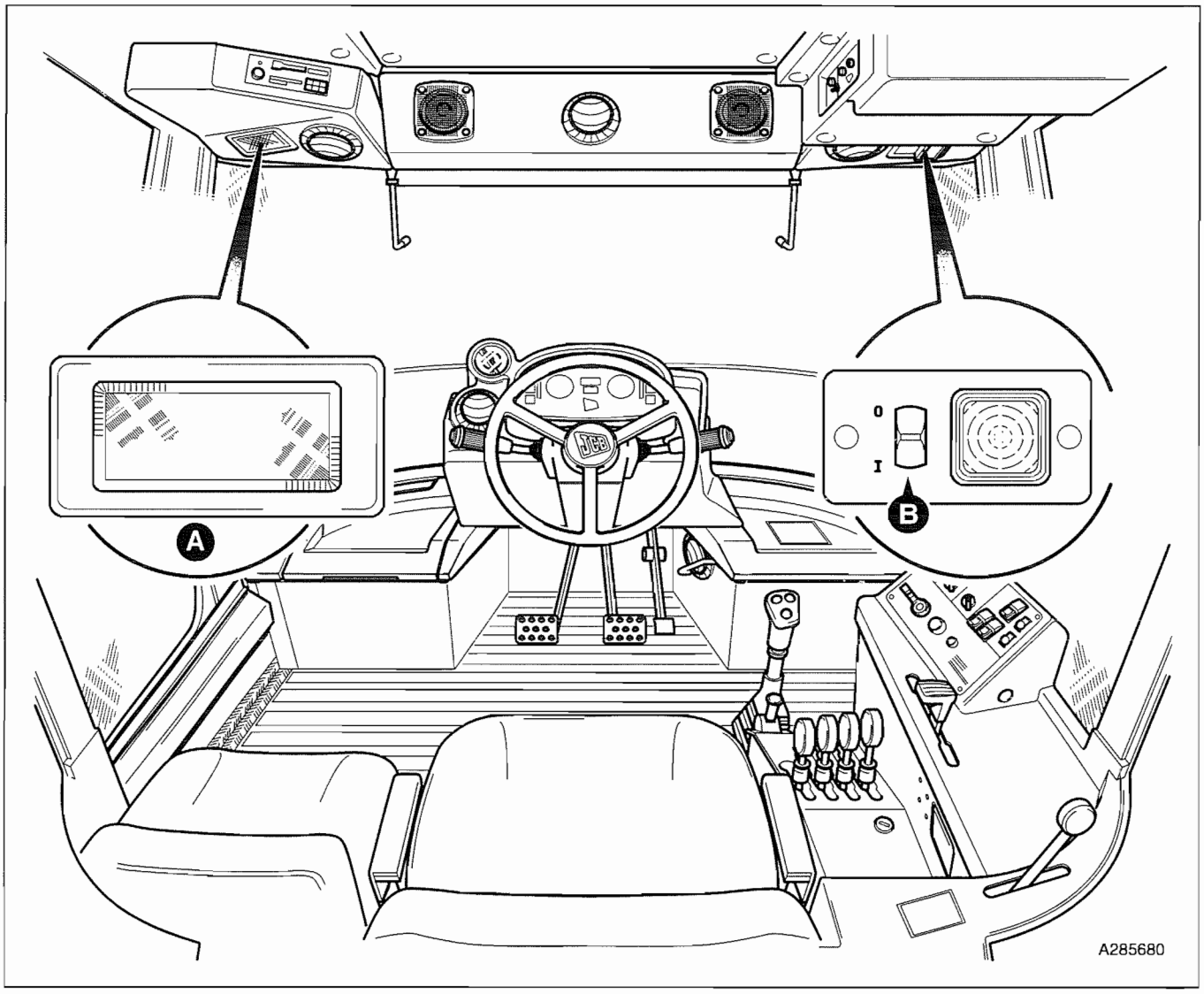
When the left hand cab door is opened, light **A** will come on automatically.

When the doors are closed, press either end of the lens to switch the light on.

Pressing the other end to make the lens flush with the housing will switch the light off.

Spot Light

Press switch **B** to illuminate the controls to your right.



DRAWBARS AND HITCHES (continued)

Roller Drawbar (if fitted)

If your Fastrac is equipped with a roller drawbar it can be adjusted for length. It can also be fixed straight back, to the left or right for offset implements or with free side-to-side movement.

⚠ 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

Adjusting the Length

1 Stop the engine and remove the starter key.

2 Remove pivot pin **S**.

3 Slacken the four screws **T** to permit the moving of roller assembly **U** along the drawbar.

4 Position drawbar hole **A**, **B**, **C**, **D** or **E**, as necessary, in line with the hole in the frame **V** (see **Table** for effective lengths). Insert pivot pin **S** from below, and secure with its R-clip.

Hole	Hitch Point-to-PTO (Shaft Distance)
A	12 in
B	14 in (for 1 3/8 in/540 rpm shaft)
C	16 in (for 1 3/8 in/1000 rpm shaft)
D	18 in
E	20 in (for 1 3/4 in PTO shaft)

Note: *See **Fitting the Rear PTO Output Shaft** for information on selecting PTO drive.*

5 Position roller assembly **U** with the rollers resting on the top surface of frame **V**, leaving a 5 mm gap (**W**) between the assembly and the frame. Tighten the four screws **T** to a torque of 476 Nm (350 lbf ft), ensuring that the roller assembly and its clamping plate are in full contact with the drawbar.

Setting the Drawbar

1 Stop the engine and remove the starter key.

2 To set the drawbar in a fixed offset position:

- **a** Withdraw the relevant R-clip and remove pin **X** or **Y**.
- **b** Swing the drawbar fully left or right.
- **c** Insert pin **X** or **Y** and secure with its R-clip.

3 To set the drawbar for free side-to-side movement remove pins **X** and **Y**.

Safety Chain

We recommend that you connect a safety chain between the tractor and implement. Connect the chain to cross-shaft **Z**.

⚠ WARNING

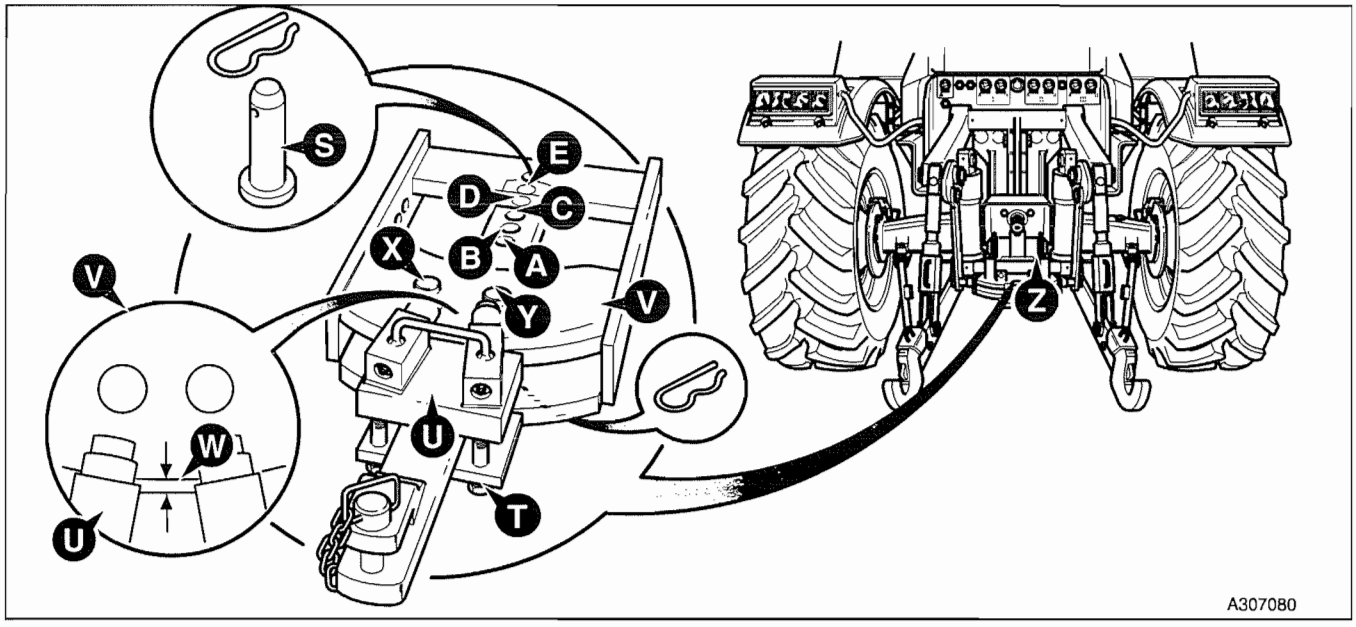
When the vehicle is approaching a trailer or equipment to be hitched, make sure that no persons are present between vehicle and trailer or equipment. When mounting equipment at the rear of the vehicle, you must ensure that proper steering control is maintained. The machine must never be loaded such that less than 20% of the vehicle weight is carried on the front axle.

13-1-1-13/1

⚠ WARNING

Dragged or towed loads should be hitched only to the drawbar. Hitching loads to any other part of the machine can cause machine instability. We recommend that a safety chain is used between the tractor and the implement, as detailed in this manual.

13-2-3-10



1471-1

ENGINE COOLING SYSTEM

Checking the Coolant Level

⚠ 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 Prepare the Machine

Park the machine on firm, level ground. Apply the parking brake. Lower any mounted implements to the ground. Turn the front wheels to full left hand lock.

2 Stop the Engine

Remove the starter key

3 Open the Bonnet

4 Check the Level

Visually check that the level of the coolant is up to the line marked '**COLD MIN**' but below the line marked '**HOT MAX**'. If the level is low, then continue with steps **5** to **7.**

5 Top-up the Expansion Tank

⚠ WARNING

Antifreeze can be harmful. Obey the manufacturer's instructions when handling full strength or diluted antifreeze.

7-3-4-4/1

Remove filler cap **A** and add pre-mixed water/antifreeze solution (see ***Coolant Mixtures***) until the level is up to the line marked '**COLD MIN**'. Do not overfill.

Note: *Check the quality of the antifreeze mixture every year before the cold weather starts. Change it every two years.*

6 Refit the Filler Cap

Make sure it is tight.

7 Check for Leaks

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

Coolant Mixtures

The protection provided by JCB Four Seasons Anti-freeze & Summer Coolant is shown below. If any other anti-freeze is used, refer to the manufacturer's instructions and ensure that a corrosion inhibitor is included.

DO NOT use solutions of more than 60% or less than 50% or damage to the cooling system will occur.

Solution	Maintains circulation down to		Protects against damage down to	
	deg C	deg F	deg C	deg F
55%	-36	-33	-41	-42

The strength of the anti-freeze solution must be checked at least once a year, preferably at the beginning of the cold period.

It is an advantage to leave the anti-freeze in all the year round as it gives continued protection against corrosion. Always renew the anti-freeze every two years.

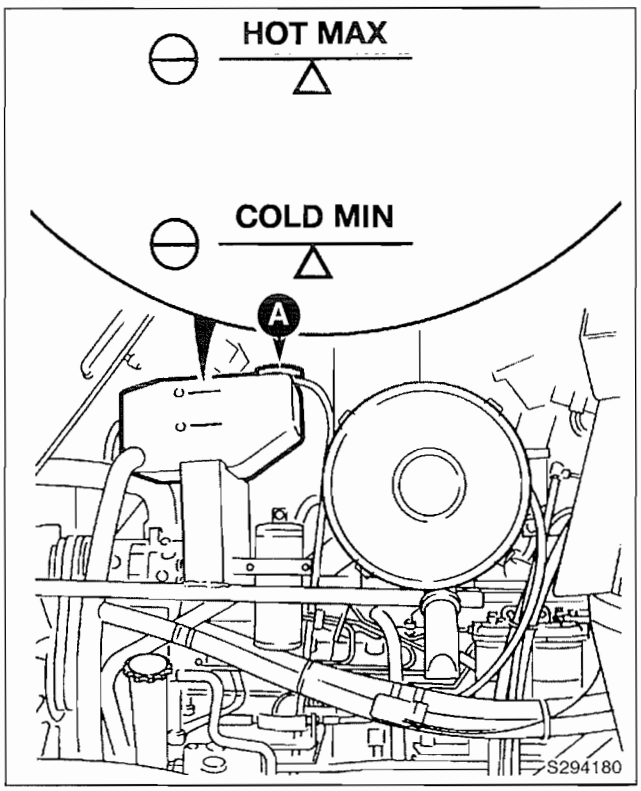
A 50% anti-freeze mixture must be used even if frost protection is not needed. This gives protection against corrosion and raises the coolant's boiling point.

Note: *In climates where antifreeze is not necessary, a reputable corrosion inhibitor must be used. Renew the mixture every 6 months.*

⚠ WARNING

Antifreeze can be harmful. Obey the manufacturer's instructions when handling full strength or diluted antifreeze.

7-3-4-4/1



1471-1

PREPARING FOR TRAVEL

Testing the Parking Brake

⚠ WARNING

Before testing the parking brake, make sure the area around the machine is clear of people.
2-2-4-5

Note: *This routine test applies to all types of brake system but if a trailer fitted with twin-line trailer air brakes is attached and you are parking on an incline, you must also test the parking brake as detailed under step 8 of* ***Stopping and Parking the Machine.***

Test the brake on a level, dry surface.

⚠ WARNING

If the machine starts to move during the following test, immediately apply the foot brakes and reduce the engine speed.
2-2-5-1

1 Ensure that any mounted implements are in the raised position.

2 Make sure the parking brake is engaged

3 **a** Select a mid range gear.
b Move the hand throttle to run the engine at low speed.
c Slowly release the clutch pedal. If the engine speed drops to a stall, the parking brake is working.

Note: *If the machine moved during the test, have your JCB Distributor inspect the brake.*

⚠ WARNING

Do not use a machine with a faulty parking brake.
3-2-3-10

⚠ CAUTION

Non approved modifications to axle ratios, machine weight or wheel and tyre sizes may adversely affect the performance of the parking brake.
3-2-3-11

Before Travelling on Public Roads

⚠ WARNING

Do not use working lights when travelling on public roads, you will dazzle oncoming drivers and could cause an accident.
2-2-2-5

⚠ WARNING

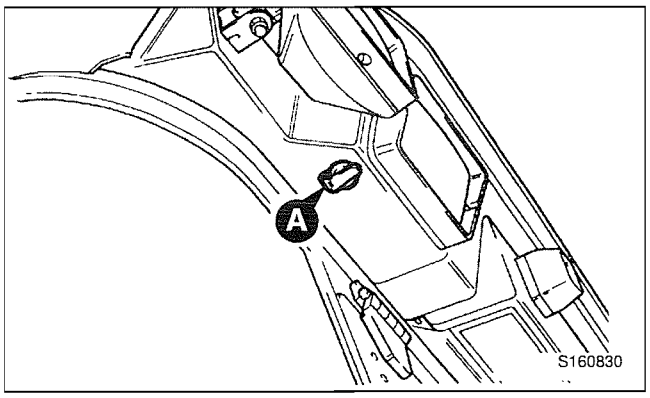
It is recommended that roof-mounted flashing beacons are not used on public roads at speeds in excess of 30 k.p.h. (20 m.p.h.).
13-2-2-12

When required by law or for safety reasons, mount the magnetic-based flashing beacon on the metal roof panel; plug in at **A** and switch on (see ***Switches***).

Note: *In some territories, a special licence is required before a flashing beacon may be used.*

When no implement is fitted on the front linkage, make sure that the arms are raised to the travelling position (see ***Front 3-point Linkage, Mechanical Connections and adjustment***).

Check that the indicators, brake, flashing beacon and road lights work correctly.



GETTING THE MACHINE MOVING

1 **Check the Seat Position**

2 **Raise the equipment**

3 **Select two or four wheel drive to suit the conditions.** See ***Travelling.***

4 **Engage the correct gear ratios and move off**

a Select a gear to suit the conditions and the job you will be doing. See ***Travelling.***
b Make sure it is safe to move off, then release the parking brake as you slowly release the clutch pedal and push down on the accelerator pedal. The machine will move smoothly away.

Note: *When releasing the parking brake, lift the lever and push the lever forward as far as it will go. Check that the indicator light goes out. The brake will not be released before the air system reaches operating pressure. If the indicator light stays on when the lever has been released, run the engine until the light goes out.*

c While the machine is travelling slowly, check the steering and brakes. Do not drive the machine unless the steering and brakes are working correctly. If you are not sure, assume they are faulty.

ELECTRONIC LINKAGE CONTROL

Introduction

The machine is equipped with an electronic control system giving precise fingertip control of the rear three point linkage from the control panel positioned by the driver's seat.

Alternatively, simple raise/lower action of the linkage is controlled by pairs of buttons provided near the control panel and externally on the rear fenders.

A Main control lever
- **1** Raise
- **2** Neutral
- **3** Lower
- **4** Setpoint Override

B Transport lock - slides in to lock main control lever in raised position.

C Rate of drop control - increases rate of drop from minimum (position '0' on scale) to maximum as knob is turned clockwise.

D Setpoint (implement height/depth) control knob - Bottom limit of linkage travel is lowest when knob is at position '1' on scale. Bottom limit position rises (or implement depth decreases) as knob is turned clockwise.

E Maximum lift height control - Maximum lift height decreases as pointer is turned anti-clockwise.

G Diagnostic LED - Illuminates (as steady glow) to indicate that the system is in stand-by mode (see ***System Activation***)

In the event of the system developing a fault, the LED would flash to indicate the cause. The fault indication would consist of a series of flashes which represent a code number that can be interpreted by a JCB Dealer. Although some faults may not prevent the machine from continuing to operate, you should contact your dealer if the LED indicates a fault in order to avoid the possibility of damage,

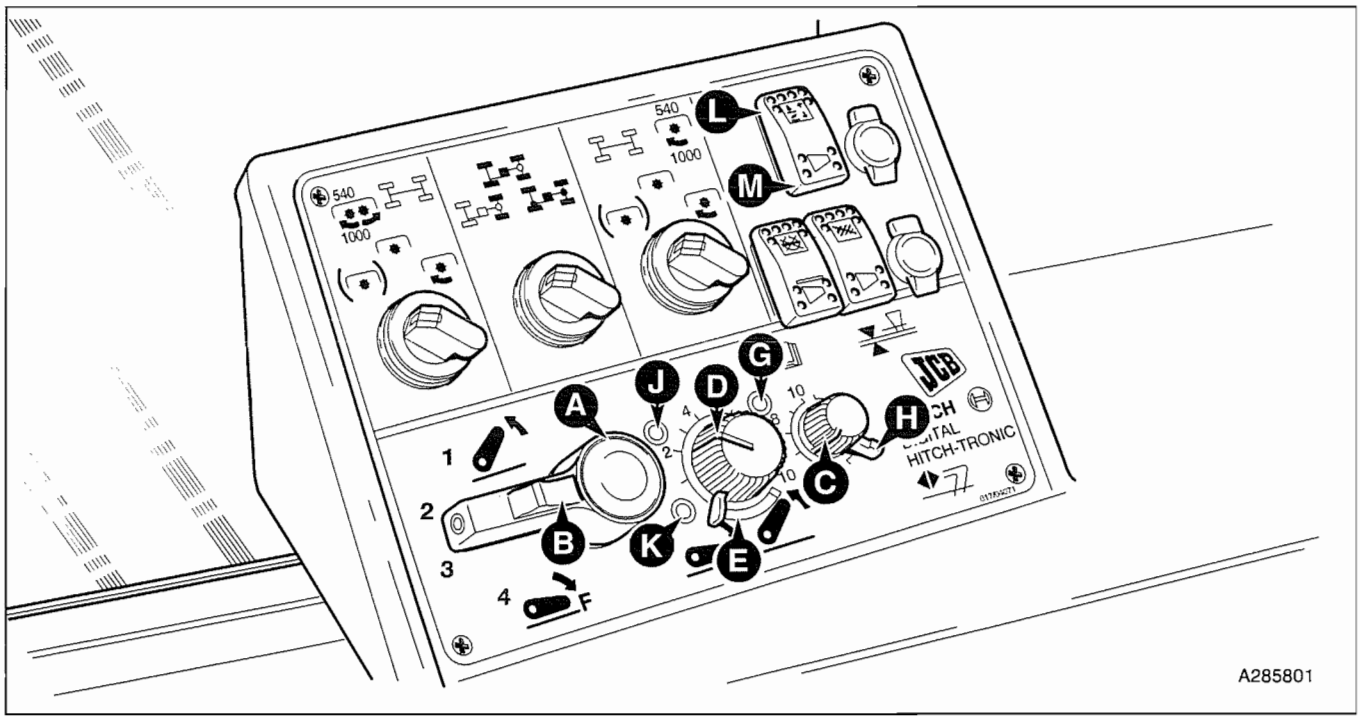
H Position control/draft control selector - Raise pointer to top position for full position control. Lower pointer to bottom position for full draft control. Sensitivity to draft signals is controlled automatically.

J Linkage lifting indicator - Red light illuminates when linkage is being raised.

K Linkage lowering indicator - Green light illuminates when linkage is being lowered.

L
M — Lift (**L**)/lower (**M**) switch

Note: *The lift/lower switch will work whenever the engine is running but before it can be used, the main control lever* ***A*** *must be put into either the neutral or lower position. Each time the switch is used, the control panel is switched off and must be re-activated (see* ***System Activation****)*



ENGINE COOLING SYSTEM (continued)

Fan Belt (Fastrac 3185)

1 Stop the engine.

2 Open the bonnet.

⚠ WARNING

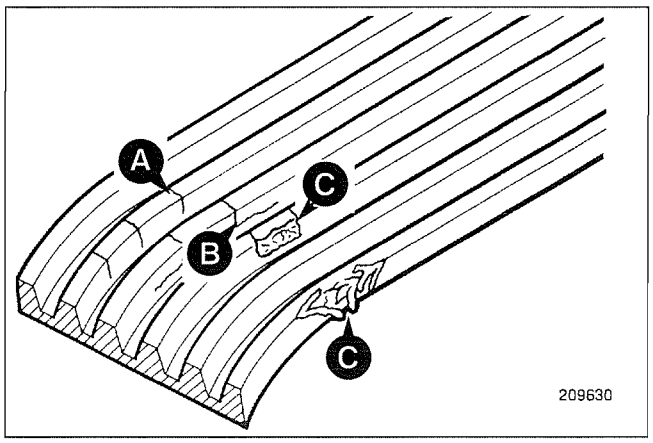
Make sure the engine cannot be started. Disconnect the battery before doing this job.
2-3-3-5

3 Inspect the belt for damage

Cracks across the belt width **A** are acceptable.

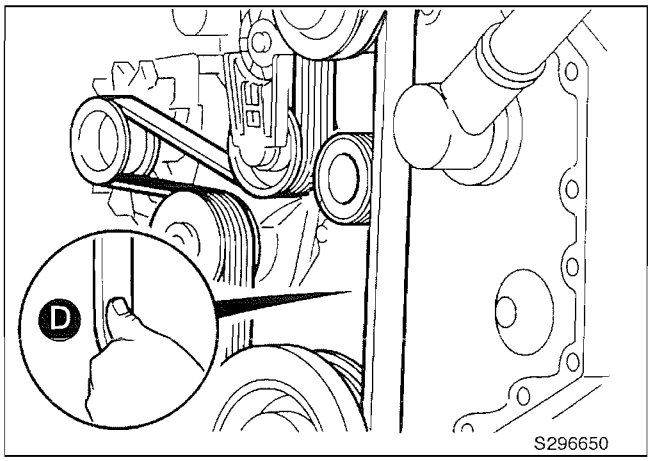
Cracks across the belt which intersect those in the direction of the belt length **B** are not acceptable.

Renew the belt if it has unacceptable cracks or if it is frayed or has pieces of material missing as at **C**.



4 Check the Belt Tension

The maximum deflection on the longest run of the belt as at **D** should be 9.5 to 12.7 mm (0.375 to 0.5 in). If the deflection is excessive, renew the fan belt.



5 Renew the Belt and Check the Belt Tensioner

a Slacken the tension of the air conditioning compressor belt **E** and lift the belt clear of the fan pulley (see ***Adjusting the Compressor Belt***).

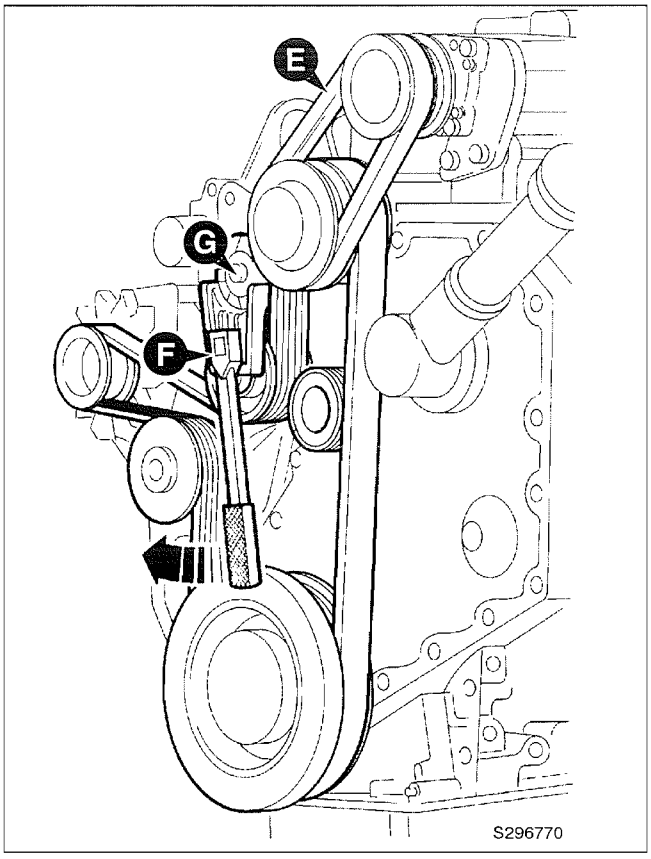
b Using a 3/8 in square drive inserted into the square hole in the belt tensioner as shown at **F**, lever the tensioner roller in the direction of the arrow to allow the belt to be lifted clear. Do not use excessive force or the tensioner will be damaged.

b Before fitting the new belt, check that the tensioner roller and the fan pulley rotate smoothly and that there is no side play in the bearings.

c Fit the new belt and allow the tensioner to return to its normal position.

d Check that bolt **G** is tightened to 43 Nm (32 lbf ft).

e Refit the compressor belt and adjust the tension.



ENGINE COOLING SYSTEM (continued)

Draining and Refilling the Coolant (Fastrac 3155)

⚠ 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. Remove the Filler Cap

Carefully loosen cap **A** (see previous page). Let any pressure escape. Remove the cap.

⚠ CAUTION

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

2-3-3-4

2 Drain the Coolant

Remove the drain plugs **D** and **E** and let the coolant drain out. Make sure the drain hole is not blocked.

3 Flush the System with Clean Water

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

4 Fill the System with the Correct Coolant Mixture. See ***Coolant Mixtures.***

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.*

a Remove filler cap **A** and fill the system with pre-mixed water/antifreeze solution until the level is up to the line marked '**COLD MIN**'. Do not overfill.

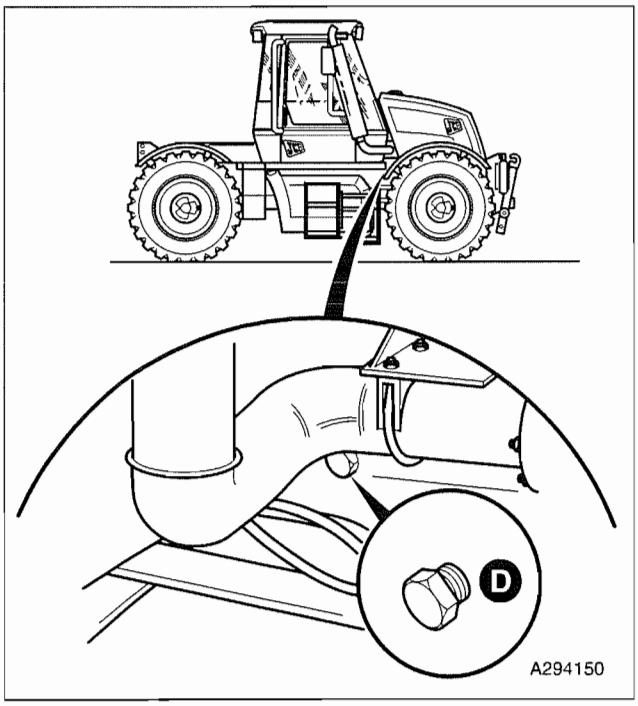
b Refit the filler cap.

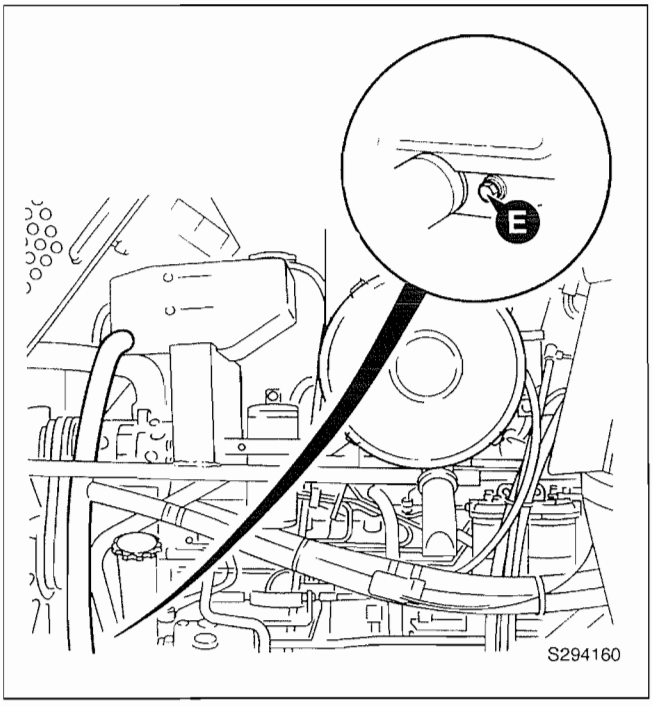
5 Check for Leaks

a Run the engine and raise the coolant to working temperature and pressure.

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.*

b Stop the engine.
c Check for leaks.





Moving a Disabled Machine
General 99
Limp Home Mode 99
Preparation for Towing 100

Transporting the Machine 102

MAINTENANCE **Page**

Service Requirements 111

Service Schedules 112

Lubricants - Health and Safety 115

Fluids, Lubricants Capacities and Specifications
Fastrac 3155 116
Fastrac 3185 117

Cleaning the Machine 118

Checking for Damage 118

Opening and Closing the Bonnet 118

Checking Seat Belt Condition and Security 118

Greasing 119

Brakes
Checking the Footbrake Fluid Level 125
Draining the Air System Tanks 125
Checking and Renewing the Footbrake Pads 126
Checking the Parking Brake Pads 127

Hydraulic System
Checking the Fluid Level 127

Engine Air Filter
Changing the Elements 128

Engine Oil and Filter(s)
Checking the Oil Level 129
Changing the Oil and Filter(s)
Fastrac 3155 130
Fastrac 3185 131

Engine Cooling System
Checking the Coolant Level 132
Coolant Mixtures 132
Draining & Refilling the Coolant
Fastrac 3155 133
Fastrac 3185 134
Cleaning the Radiator 135
Adjusting the Fan Belt (Fastrac 3155) 136
Fan Belt (Fastrac 3185) 137

Fuel System
Types of Fuel 138
Filling the Tank 138
Fuel Standards 138
Low Temperature Fuels 138
Draining the Sediment Bowl 139
Draining the Fuel Filters 140
Bleeding the Fuel System
Fastrac 3155 140
Fastrac 3185 141

Transmission
Checking the Oil Level 142
Changing the Transmission Oil Filter 142

Front PTO Transfer Gearbox (Optional)
Checking the Oil Level 143

Front Axle
Checking the Differential Oil Level 144
Checking the Hub Oil Levels 144

Rear Axle
Checking the Oil Level 145

Automatic Trailer Coupling (if fitted) 146

Tyres and Wheels
General 147
Pressures, Speeds and Loads 148
Tyre Inflation 149
Checking Wheel Nut Torques 149
Adjustable Track Width 149
Lock Stops 149
Checking and Adjusting the Front Wheel Alignment 150
Fender Adjustment 151

Electrical system
Fuses 152

Battery
Warning Symbols 154
First Aid - Electrolyte 154
Checking the Electrolyte Level 155

Headlights
Checking Beam Alignment 156

Windscreen Washer 157

Air Conditioning
Cleaning the Filter 157
Adjusting the Compressor Belt 158
Checking the Sight Glass 159

Obtaining Replacement Parts 160

SPECIFICATION

Static Dimensions 171

Weights and Loads 172

Maximum Travel Speeds in All Gear Ratios 173

Tyre Sizes and Pressures - See *MAINTENANCE* section

STOPPING AND PARKING THE MACHINE

⚠ DANGER

Leaving the machine in gear will not prevent it running away. Do not leave the driving seat under any circumstances unless the parking brake is on.
13-2-1-10

Where possible, stop the machine on dry and level ground. If parking the machine overnight, leave the front wheels on full left lock to allow easy access for the daily checks before starting the engine on the following day.

1 **Stop the Machine**
Ease up on the accelerator pedal and down on the brake and clutch pedals to bring the machine to a smooth stop. Keep the foot brake on and the clutch pedal down until the parking brake has been engaged and the drive disengaged, (Steps **2** and **3**).

2 **Engage the Parking Brake**
Pull up the lever **X**. Make sure that the parking brake indicator lights up.

If a trailer fitted with twin-line trailer air brakes is attached and you are parking on an incline, you must also test the parking brake as detailed under step 8.

3 **Disengage the Drive**
Set the speed gearbox lever to neutral.

⚠ DANGER

Before lowering the equipment, make sure that the machine and the area around it are clear of other people. Anyone on or near the machine could fall and be crushed by the equipment, or get caught in the linkages.
13-2-1-4

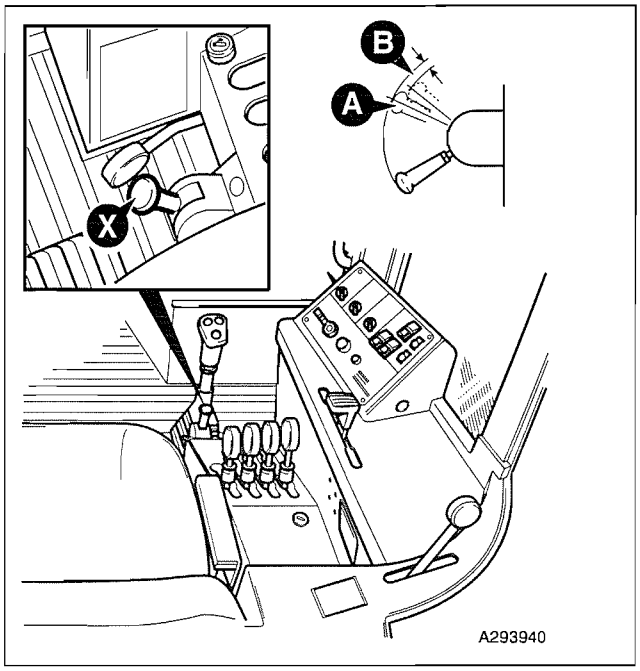
4 **Lower the Equipment**
Operate the control lever to fully lower the equipment.

***Note**: When parking the machine for extended periods, close all rams as much as possible to protect the shafts. Lower the rear hitch but raise and block up the front hitch.*

5 **Stopping the Engine**
Before stopping the engine, run at idling speed and reduced load for 2-3 minutes to allow the turbocharger to cool down.

6 **Stop the Engine and Remove the Starter Key**
Turn the starter key to the off position. If you are going to leave the machine, remove the key.

7 **Switch Off All Unnecessary Switches**
If you are leaving the machine, make sure that all switches are set to off. If necessary, leave the hazard warning and/or side lights switched on.



8 **Parking on an Incline**

⚠ WARNING

If the machine starts to move during the following test, immediately apply the foot brakes and reduce the engine speed.
2-2-5-1

If a trailer fitted with twin-line trailer air brakes is attached and you are parking on an incline, you **must** test the parking brake as follows:

a Pull up the parking brake lever to the parking position **A**. Make sure that the parking brake indicator lights up. Press the lever rearwards and pull it up to test position **B**.

b At this position, only the machine parking brake is holding (not the trailer brakes). Make sure the machine has not moved.

c Release the parking brake lever and it will return to parking position **A**. Now both the machine and trailer brakes are holding.

***Note:** If the machine moved during the test, have your JCB Distributor inspect the brakes. Do not use the machine with faulty brakes.*

9 **Leave and Secure the Machine**
Use the handholds and steps when you climb down from the machine. If you are leaving the machine, close and latch all windows and lock the doors.

⚠ WARNING

Always face the machine when entering and leaving the cab. Use the step(s) and handrails. Make sure the step(s), handrails and your boot soles are clean and dry. Do not jump from the machine. Do not use the machine controls as handholds, use the handrails.
INT-2-1-7

GREASING

Read and understand ***Lubricants - Health and Safety,*** before greasing. You must grease the machine regularly to keep it working efficiently. Regular greasing will also lengthen the machine's working life. Refer to the Service Schedules for the recommended frequencies.

Note: *If working in muddy conditions the propshafts and PTO driveshafts must be greased daily.*

Note: *The machine must always be greased after pressure-washing or steam cleaning. Extra care must be taken to ensure that propshaft universal joints and splines are greased regularly.*

Greasing should be done with a grease gun. Normally, two strokes of the gun should be enough. Stop greasing when fresh grease appears at the joint. Use only **JCB HP Grease**.

In the following illustrations the grease points are numbered. Count them off as you grease them.

Refit the grease point dust caps after greasing.

Propshafts and PTO Drive Shafts

⚠ 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

Front axle propshaft
Grease points **1** to **3.**

Rear axle propshaft
Grease points **4** to **6.**

Rear PTO drive shaft
Grease points **7** to **9.**

Front PTO drive shaft (optional)
Grease points 10 to 12.

Note: *When greasing the universal joints, you must ensure that grease appears at all four bearing caps. If grease does not appear at any cap, move the shaft from side to side and then re-grease. Wipe away all excess grease.*

Rear PTO Drive shaft bearing
Grease point **13.** Do not exceed 2 to 3 strokes of the grease gun.

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