



QUALITY MASTER 2017

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EC Declaration of Conformity

According to the Machinery Directive 2006 / 42 / EC

Manufacturer:	Standen Engineering Limited Station Road, ELY Cambridgeshire CB7 4BP England
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We declare that the product, described below, meets the requirements of the above mentioned directive and has been assessed against and complies with the essential safety requirements application as specified in the Standards listed here.

Model	Quality Master Vegetable Harvester
Serial No.	QM.....

British Standards used in the implementation of this certificate

BS EN ISO 12100-1 : 2003

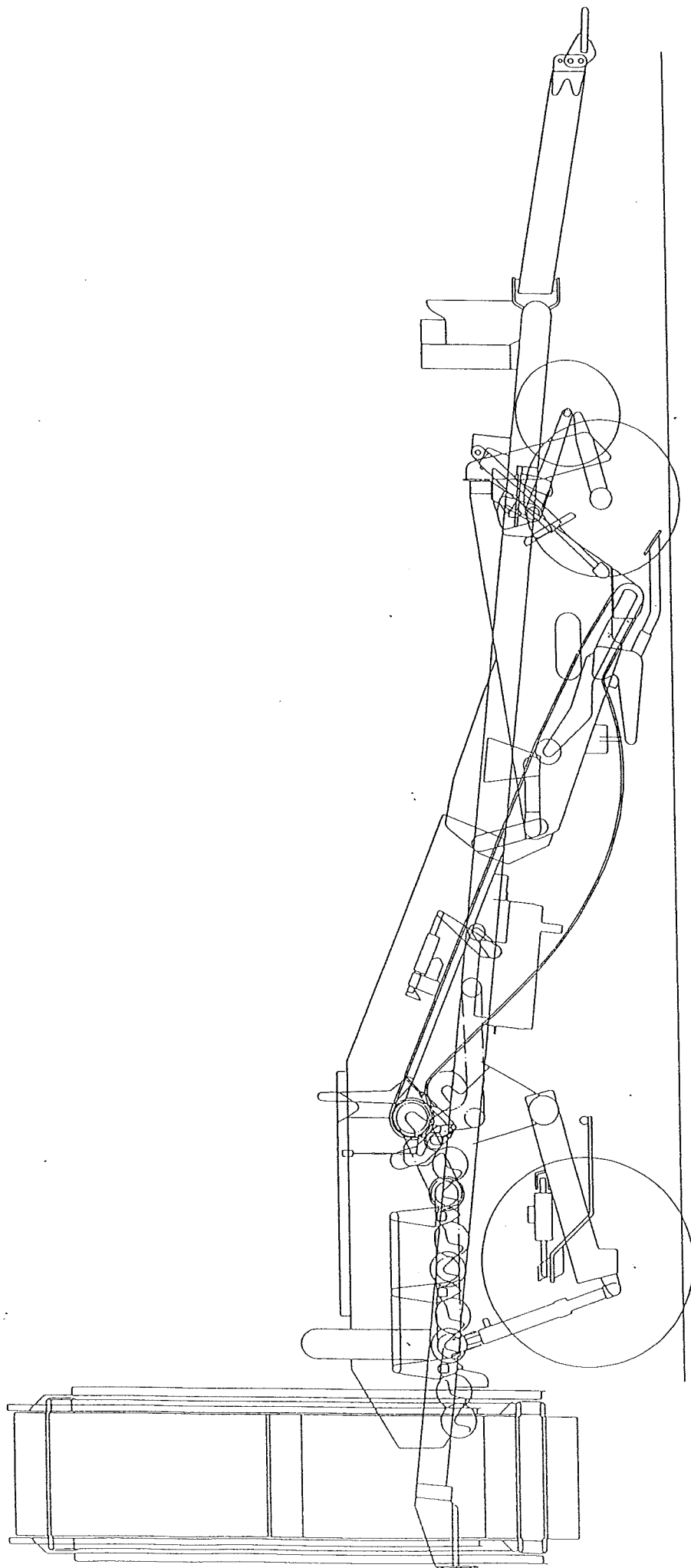
BS EN ISO 12100-2 : 2003

BS EN ISO 13857 : 2008

Place of Issue: Standen Engineering Limited, Station Road, Ely,
Cambridgeshire, UK



RA Holmes - Technical Director
For Standen Engineering Limited



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SECTION 1

INTRODUCTION

1 - INTRODUCTION

Introduction to the Manual.

1.1.1



Throughout this manual where WARNING notes appear they are preceded by this symbol

These notes are used to indicate that the procedures being described must be followed to avoid possible death or injury to the operator or others. These notes are also used to prevent damage to the machine due to unsafe working practice.

The contents of this manual are intended as a guide to the operator and maintenance of the machine. It is **NOT** a training manual.

If there are any doubts whatsoever about any aspect of the machine's capabilities, servicing or operation procedures, you **MUST** consult an officially appointed RICHARD PEARSON Ltd. Dealer prior to commencing any operation of the machine.



Only trained operators should use this machine. It is the responsibility of the machine owner/s to ensure that any operators are properly trained. For details of training courses consult your appointed RICHARD PEARSON Ltd. dealer



This manual should be kept in a clean and good condition, it should be available at all times for the use of the operator, who must read thoroughly, and understand the information and advice given before attempting to operate, or carry out any maintenance or adjustments to the machine. Additional copies of this manual are available from your officially appointed RICHARD PEARSON Ltd. dealer

Throughout this manual the term front, rear, right hand (RH) and left hand (LH), are derived from the tractor drivers operating position whilst facing forward in the normal direction of travel when the machine is in work.

The tremendous variations in operating conditions make precise setting instructions difficult. Use the advice given as a general guide, judging the correctness of the settings by the finished results. As weather and soil condition change so the setting of your machine may need to be adjusted.

1 - INTRODUCTION

Adjustments may need to be made singly, or in combination, according to the working conditions. Always allow the machine to settle to these new settings before judging the results.

The dimensions of the machine can change when certain attachments are fitted or removed.

If any modifications are carried out to the machine, make sure that it remains within the specification shown on the machine identification plate.

1 - INTRODUCTION

WARRANTY TERMS AND CONDITIONS

1.3.1

1. Every effort has been made by the manufacturers to ensure that the highest quality materials and workmanship are used in the production of your machine. In the unlikely event of a failure in any part of the machine **through defective materials or workmanship** within 6(six) months of the date of delivery, the part must be returned to our premises at Freiston, where, at our discretion, the defective part may be replaced or repaired free of charge.
2. We give no other warranty, condition, description or representation to be taken to be given or implied from anything said or written in the negotiations between the parties or their representatives prior to the date of the Contract for purchase; any statutory or other warranty, condition or description express or implied as to the state of fitness of the machine is hereby expressly excluded.
3. The Manufacturers liability only extends to repair or replacement of parts proven to be defective in their manufacture, and the Company will not be liable for any consequential or other loss, damage or injury of any kind howsoever arising.
4. Items not covered by this assurance and considered to be the customer's responsibility are: normal maintenance service, replacement of service items, replacement required due to abuse, accident, misuse or improper operation, and normal replacement of wearable items e.g. pins, bushes, bearings, stars, webs, rollers, etc.
5. Any part repaired or replaced under this assurance will be covered for the balance of the machine assurance period.
6. This assurance is give to the first owner and may be transferable with the written consent of RICHARD PEARSON Ltd.. for the balance of the machine assurance period.
7. The installation and Warranty Registration Document must be filled in correctly and returned to the manufacturer within 7 days of the sale date. Failure to do so may result in subsequent claim rejection.
8. Tyres and tubes are not covered by this assurance, but are covered by the tyre manufactures own warranty system which provides against defects in material or workmanship.
9. All defective parts replaced must be returned by the Distributor to the Manufacturer, together with a correctly completed Warranty Claim Form within 28 days after completion of work. Any delay may cause the claim to be rejected. In the event of a rejection of the claim by the manufacturer, the parts will be destroyed unless specific disposal instructions were given with the claim.
10. No claim will be considered if other than genuine RICHARD PEARSON Ltd.. Parts are used to effect a repair, or if lubricants other than those recommended by RICHARD PEARSON Ltd.. Are used.
11. The manufacturer's policy is one of continuous improvement. RICHARD PEARSON Ltd.. Reserve the right to change specifications without notice. No responsibility will be accepted for discrepancies which may occur between specifications of machines and the descriptions contained in publications.

1 - INTRODUCTION

MACHINE IDENTIFICATION

1.4.1

Please record the following information in the spaces provided below. Always quote the serial number when ordering spare parts. The serial number can be found on the identification plate, (fig 1.1) which is situated on the top of the headstock.

TYPE
SERIAL No
YEAR
UNLADEN (Kgs)
IMPOSED (Kgs)

DEALERS NAME AND ADDRESS
.....
.....
.....


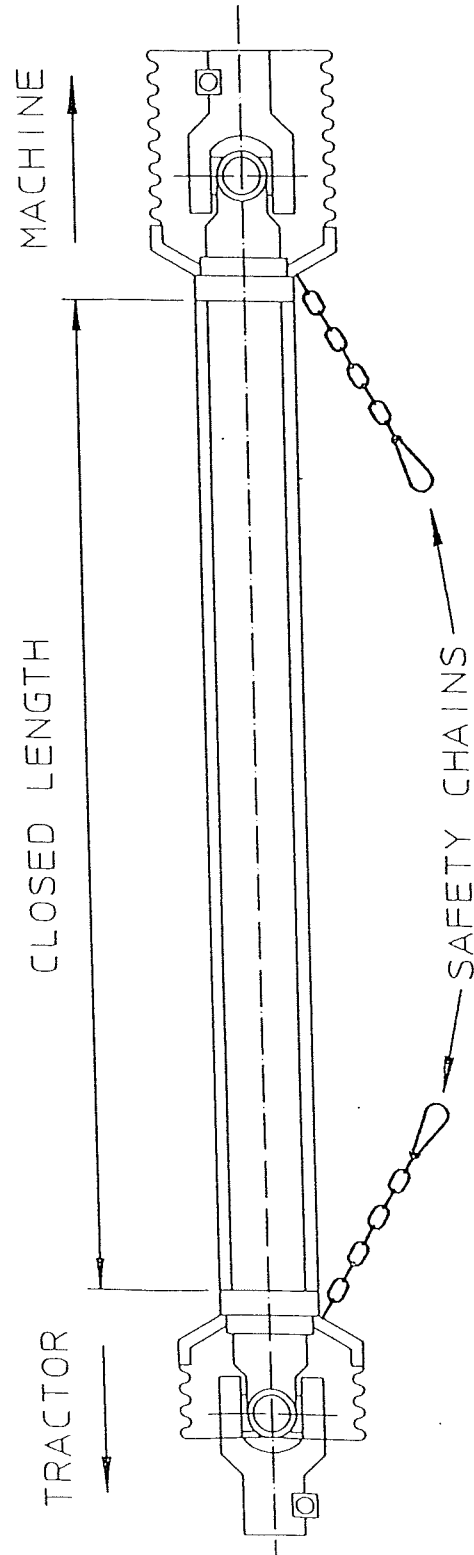
STANDEN ENGINEERING LTD.		
STATION RD. ELY. CAMBS.		
TEL No 01353 661111 www.standen.co.uk		
	TYPE	SERIAL NO
	<input type="text"/>	<input type="text"/>
YEAR	UNLADEN (Kgs)	IMPOSED (Kgs)
<input type="text"/>	<input type="text"/>	<input type="text"/>

Fig 1.1

SECTION 2

HEALTH AND SAFETY

2 - HEALTH AND SAFETY



2 - HEALTH AND SAFETY

PTO Shaft.



2.1.1

The fitting and maintenance of correct and adequate PTO shafts and guards is a legal requirement.



2.1.2

All the parts of the PTO shaft, especially the guards, must be kept in good order. Check regularly that the guard is undamaged and fully protects the whole of the shaft, and that both the guard and the shaft will telescope freely.



2.1.3

The machine is designed to be run on the tractor's 6 spline PTO output shaft, and to run at the required operating speed (see section 6.3.5). Consult your RICHARD PEARSON Ltd. dealer if further details on this subject are required.



2.1.4

Make sure that the drive shaft is fitted correctly the overload clutch at the implement end.



2.1.5

If it is possible to engage the inner and outer parts of a drive in more than two positions circumferentially then make sure that the universal joint yokes are correctly aligned.

2 - HEALTH AND SAFETY

PTO Shaft.



2.2.1

Check that when in the continuous working position, the drive shaft is not at an angle of more than 20° from the PTO centre line. The angle between the drive shaft and the input and output shafts should be equal.



2.2.2

Ensure that the chains or ropes, used to prevent the guards from turning, are fixed to the tractor and implement in such a way that they will not be stretched when the drive shaft is at maximum articulation.



2.2.3

After uncoupling from the tractor the PTO shaft must be stored in a professional manner, ensuring that the shaft halves do not become disengaged, and that no damage can occur to the shafts or guards. The safety chains fitted to the guard must not be used to support it.



2.2.4

For stationary machines make sure that the tractor and machine cannot move apart so that the two halves of the drive shaft become disengaged.

2 - HEALTH AND SAFETY

Hazard Warnings.



2.3.1

BEFORE ATTEMPTING TO CLEAR ANY BLOCKAGE, CARRY OUT ANY REPAIRS OR MAINTENANCE, THE MACHINE MUST BE STOPPED. ALWAYS DISENGAGE PTO DRIVE, SWITCH OFF TRACTOR, REMOVE IGNITION KEY AND UNPLUG DRIVERS SWITCH CONTROL BOX AT THE TRACTOR POWER SUPPLY BEFORE COMMENCING ANY WORK ON THE MACHINE.



2.3.2

Ear protection must be worn when noise levels exceed 85dBA



2.3.3

When working in dry conditions, heavy airborne particles will be present. It is the responsibility of the owner/operator to ensure that the correct, suitable, protection be worn by the operator.



2.3.4

Safety guards are design for the protection of yourself and others. Always ensure they are in position, in good repair and securely fastened by their correct means before operating the machine



2.3.5

Drive chains or web should only be fitted while the sprockets are stationary. Do not use a rotating sprocket to feed a drive chain into position.

2 - HEALTH AND SAFETY

Hazard Warnings.



2.4.1

Always securely support any raised part of the machine before attempting any work either on or under it.



2.4.2

A persons movements, especially children, are unpredictable. Always ensure the working area around the machine is clear at all times, particularly before making any turning or reversing manoeuvres.



2.4.3

Make sure everyone near the machine is fully aware of your intentions before moving off or operating any function on the machine.



2.4.4

Keep the machine adequately maintained. Loose or damaged parts are dangerous when the machine is in operation.



2.4.5

This machine is not equipped for carrying passengers do not allow ANYONE to ride on it. When an officially approved Richard Pearson picking of table is fitted, consult the options section for details regarding operational instructions.

2 - HEALTH AND SAFETY

Hazard Warnings.



2.5.1

Always obtain advice from your lubricant supplier before mixing oils, some are incompatible.



2.5.2

Inflating or servicing tyres can be dangerous. Whenever possible trained personnel should be called in to service or install tyres. In any event, to avoid the possibility of serious or fatal injury, safety precautions must be followed.



2.5.3

Liquids used in this machine are harmful if taken internally or splashed on the skin. In the event of accidentally swallowing oil, grease, chemicals etc. DO NOT encourage vomiting, but OBTAIN QUALIFIED MEDICAL ASSISTANCE IMMEDIATELY.



2.5.4

Never attempt tyre repairs on a public road or highway.



2.5.5

Do not re-inflate a tyre that has been run flat or seriously under inflated until it has been inspected for damage by a qualified person.



2.5.6

Do not inflate a tyre above the manufacturers maximum pressure shown on the tyre. If the bead does not sit on the rim by the time this pressure is reached deflate the tyre, re-lubricate the bead with soap/water solution and re-inflate. Do not use oil or grease. Inflation beyond the maximum pressure with unseated beads may break the beads or rim with sufficient explosive force to cause serious injury.

2 - HEALTH AND SAFETY

Hazard Warnings.



2.6.1

After seating the beads, adjust the inflation pressure to the recommended operating pressure.



2.6.2

Never hit a tyre or rim with a hammer.



2.6.3

Ensure the rim is clean and free of rust or damage. Do not weld, braze, or otherwise repair or use a damaged rim.



2.6.4

When fitting a new or repaired tyre, use clip on valve adaptor with a remote gauge that allows the operator to stand clear of the tyre whilst inflating.



2.6.5

Do not inflate a tyre unless the rim is mounted on the machine, or is secured so that it will not move if the tyre or rim should suddenly fail.



2.6.6

Care must be taken when carrying out any work on the hydraulic system. Even though the machine is stopped and completely disconnected from the tractor, there will still be a residual pressure within the machine's hydraulic system. Before commencing any work on the hydraulics, ensure that the system is free of any residual pressure by carrying out the residual pressure dump procedure in section 10.5.1. Never leave the machine unattended with pressure in the hydraulic system.

2 - HEALTH AND SAFETY

Hazard Warnings.



2.7.1

Always wear correctly fitting protective clothing. Loose or baggy clothing can be extremely dangerous when working on or in close proximity to a machine



2.7.2

Never allow unqualified personnel to attempt to remove or replace any part of the machine, or allow anyone to remove large or heavy components without adequate lifting equipment.



2.7.3

Owners and operators are reminded that when used on public roads in the UK a speed limit of 20 m.p.h. (32kph.) applies to any machine over 2.5m wide. Police notification may be required for some journeys, subject to local requirements



2.7.4

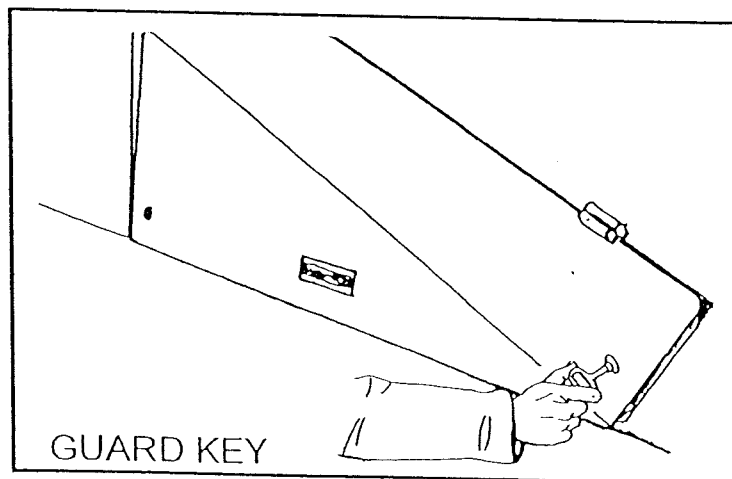
Owners of high speed tractors , when used with this machine **MUST** pay particular attention to this

2 - HEALTH AND SAFETY

GUARDS

2.8.1

All metal guards fitted to the machine are locked by means of a special key which is supplied with the machine. These guards must be closed and securely locked with the key before operating this machine.



SECTION 3

SPECIFICATION

3 - SPECIFICATION

3.1.1

Dimensions (BASIC MACHINE)			
Length	Working	7.3	(M)
	Transport	7.3	(M)
Width (M)	Working	3.38	(M)
	Transport	2.26	(M)
Height (M)	Working	3.3	(M)
	Transport	3.2	(M)
Weight		3.5	(tonnes)
Cart elevator maximum height		5.0	M
With picking off table fitted, add		0.9 M to length	
Tyre size	12.5/80 x 18	10 ply	Trac-grip
Tyre pressure		2.5 bar (36 lb/sq.in.)	
Wheel nut torque (M18 x 1.5)		310 NM	
Optional tyre size	500/60 x 15.5	8 ply	Flotation
Tyre pressure		2.2 bar (32 lb/sq.in.)	
Row widths 76 to 90 cm (30 to 36 inches)			

3 - SPECIFICATION

Hydraulic Requirements

3.2.1

Oil flow from tractor lift system
(set to constant pump)

minimum 40 ltr/min
maximum 70 ltr/min

(For flows greater than 70 ltr/min consult your officially appointed
Richard Pearson dealer)

Electrical Requirements

3.2.2

From tractor

12V NEGATIVE EARTH

Drive Requirements

3.2.3

From tractor PTO

540 RPM maximum
6 spline x 1 3/8"

SECTION 4

CONTROLS

4 - CONTROLS

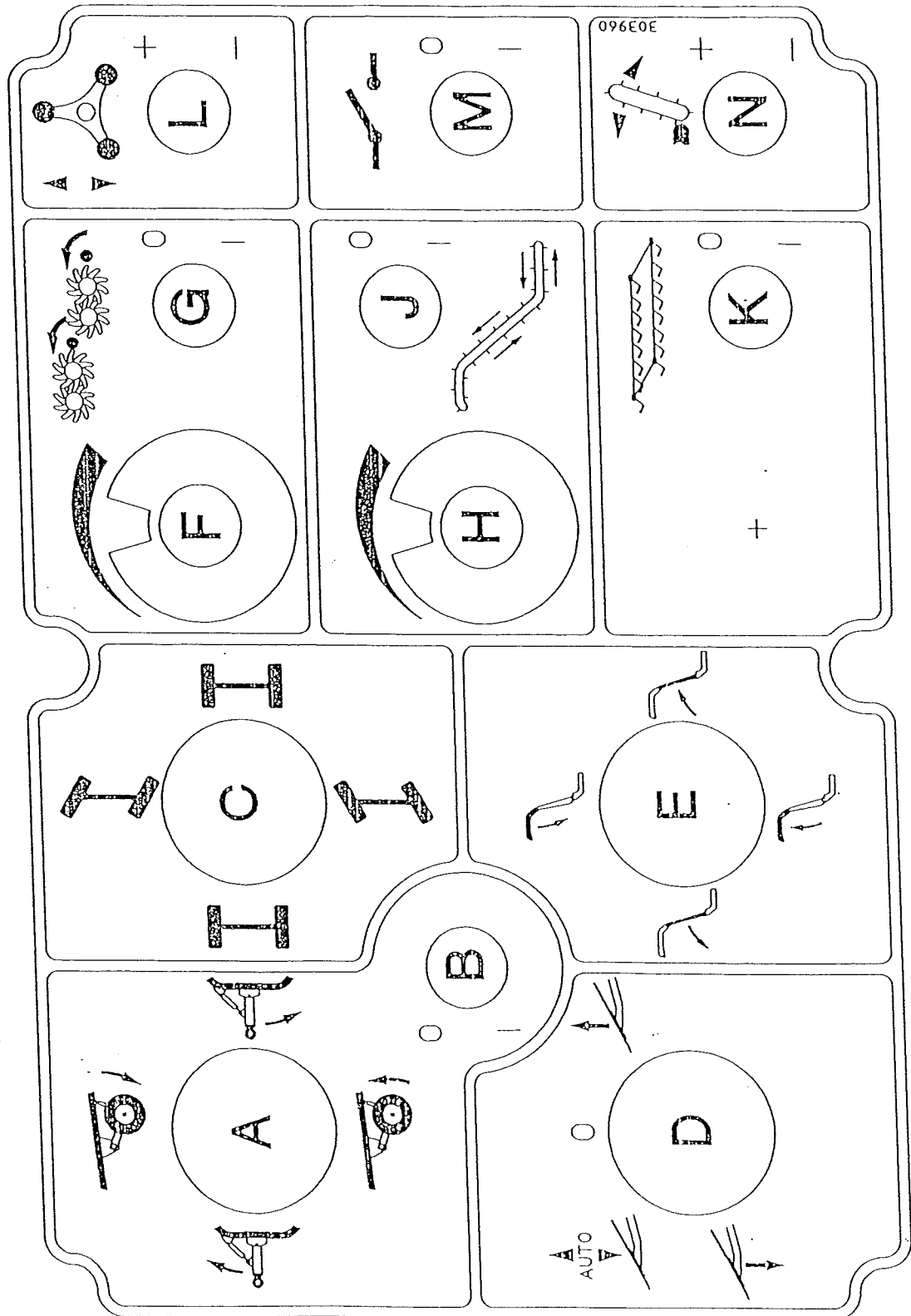


Fig 4.1

4 - CONTROLS

Drives switch control box

4.1.1



When the machine is being towed along public roads, the illuminated on/off switch (fig 4.1 item M) must be in the off position to avoid any risk of any of the control switches being accidentally activated.

4.1.2

Mounted on the base of the drives switch control box, on a plate, are two strong magnetic feet which allow it to be mounted to any convenient metal plate in the tractor cab. The thinner cable which extends from the switch box is terminated in a 3 pin plug, which provides incoming power from the tractor's electrical system. The thicker cable emanating from the control box is terminated in a multi pin plug, this fits into the multi pin socket mounted on the front of the machine and provides electrical power to the individual services on the machine.

4.1.3

Switches A - N (see fig 4.1) are the operating controls of the harvester, when moved they actuate their respective electromagnetic hydraulic valves situated midway along the right hand side of the machine (see fig 5.7).

4.1.4

Switch A is a self-centring joystick which controls the lanes adjuster on the drawbar and also the lateral levelling of the machine. Moving the joystick forward extends the lanes adjuster ram and moves the front of the machine over to the left in relation to the tractor. Moving the joystick rearwards closes the lanes adjuster ram and moves the machine over to the right.

Moving the joystick to the right closes the levelling ram on the right hand axle thus lowering the machine's right hand side, whilst moving the joystick to the left extends the ram and raises the right hand side of the machine

4.1.5

Switches B is only fitted when auto levelling option is fitted. It is an on/off switch. When in the on (1) position the lateral levelling of the machine is controlled automatically, when in the off (0) position control of the lateral levelling returns to switch B.

4 - CONTROLS

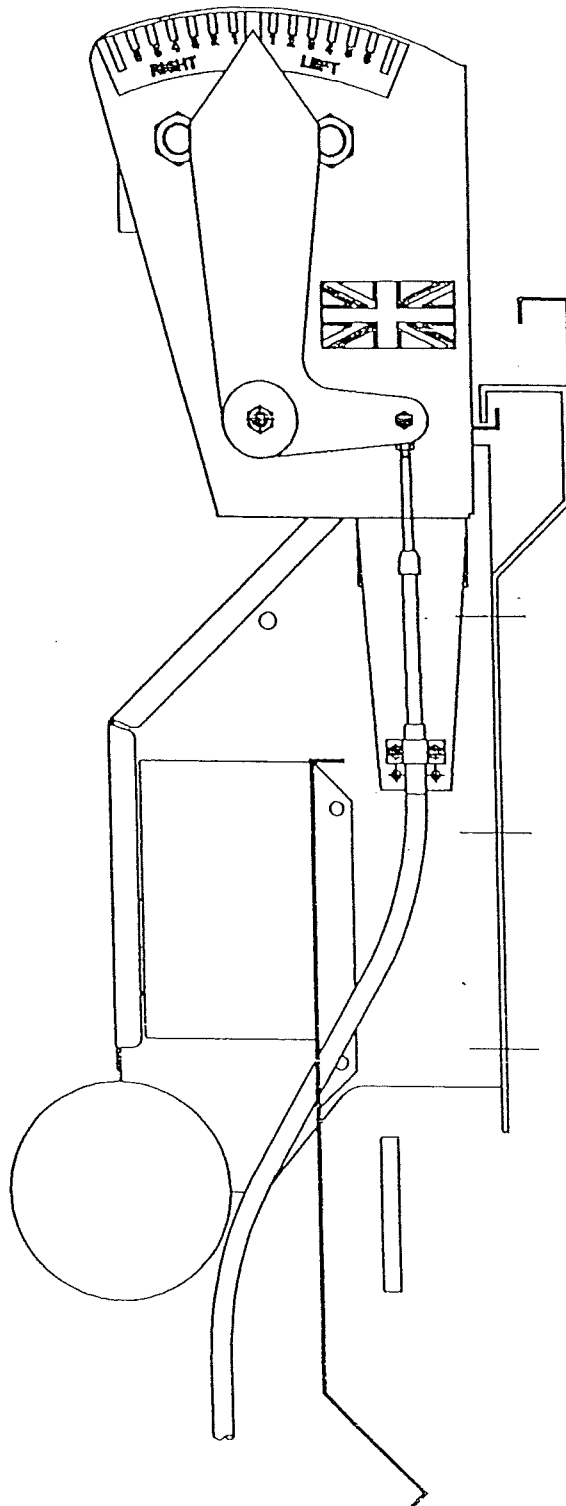


Fig 4.2

4 - CONTROLS

4.2.1

Switch C is a self-centring joystick which controls the steering. Moving the joystick to the left turns the machine to the left, moving the joystick to the right turns the machine to the right. The position of the steering can be seen by the steering indicator (see fig 4.2). The steering remains in the last set position until the joystick is moved. To centralise the steering, manually, observe the position of the steering indicator and move the joystick in the required direction to return the indicator to the centre. When the steering indicator is in the centre the wheels are in the straight ahead position. To centralise the steering, automatically, move and hold the joystick in the forward or backward position, until the steering has returned to the central position.

4.2.2

Switch D is a four position rotary switch which controls the share depth. Turning the switch clockwise from the off position (0) will raise the shares. Turning the switch anti-clockwise from the off position to the position marked auto will set the share depth to auto sense. Turning further anti-clockwise beyond the auto position will manually lower the shares.

4.2.3

Switch E is a self-centring joystick which controls the raising and lowering of both sections of the cart elevator. Moving the joystick forward lowers the main section of the elevator. Moving the joystick rearward raises the main section of the elevator. Moving the joystick to the right lowers the upper section (swan neck) of the elevator, whilst moving to the left raises the upper section (swan neck) of the elevator.

4.2.4

Switches F and G are only supplied when the Vari-web option is fitted.

Switch G is a two position switch used to turn the drive to the Vari-web on or off. The off position being marked 0 and the on position being marked I.

Switch F is a rotary switch used to control the speed of the Vari-web. Starting at the fully anti-clockwise position which is the minimum web speed, turning the knob clockwise will increase the speed of the web until a fully clockwise, maximum speed, position is reached. This switch can be set in any position between maximum and minimum.

If the drive to the Vari-web is switched off using switch G, when the drive is switched back on again it returns to its previously set speed.

4 - CONTROLS

4.3.1

Switches H and J are used to control the cart elevator web drive.

Switch J is a two position switch used to turn the drive to the cart elevator web on or off. The off position being marked 0 and the on position being marked 1.

Switch H (optional) is a rotary switch used to control the speed of the cart elevator web. Starting at the fully anti-clockwise position which is the minimum web speed, turning the knob clockwise will increase the speed of the web until a fully clockwise, maximum speed, position is reached. This switch can be set in any position between maximum and minimum.

If the drive to the elevator is switched off using switch J, when the drive is switched back on again it returns to its previously set speed.

When the rotary speed control (switch H) is not fitted, the speed of the cart elevator can be adjusted manually by turning the rotary knob on the relevant hydraulic speed control slice mounted on the hydraulic valve bank (see section 7)

4.3.2

Switch K is only supplied when the oscillator option is fitted to the machine. It is an on/off switch. The off position being marked 0 and the on position being marked 1.

4.3.3

Switch L is only supplied when the optional electric pitch agitator adjustment is fitted to the machine. It is self centring and used to control the amount of agitation applied to the main web. Moving the switch to the + position increases the amount of agitation, whilst moving the switch to the - position reduces the amount of agitation.

4.3.4

Switch M is an illuminated rotary on/off switch which can be used to isolate all the switches in the control box. The off position being marked 0 and the on position being marked 1. When the switch is in the off position there are no functions operable from the switch control box. When the switch is in the on position, all functions mounted in the control box are operational. Before attempting to operate any service on the machine ensure that this switch is in the on position.

4.3.5

Switches N is only supplied when the Haulm elevator option is fitted to the machine. It is self centring and used to control the angle of the haulm elevator. Moving the switch to the + position raises the haulm elevator, whilst moving the switch to the - position lowers the haulm elevator.

4 - CONTROLS

4.4.1

Mounted on the side of the control box is an automatic cut-out switch. This is a square, black button which acts as a safety cut out switch in case of a problem arising in the electrical system. The switch has two positions, button latched in, normal working position, button out (white section showing around button), safety cut-out operated. The safety cut-out switch can be reset by turning the main power switch to the off position (switch M), pressing the safety cut-out switch in until it latched in place, and then turning the power back on. If the safety cut-out switch operates again, there may be an electrical fault in the system.

DO NOT OPERATE THE MACHINE UNTIL THIS FAULT HAS BEEN RECTIFIED.

SECTION 5

ATTACHING TO TRACTOR

5 - ATTACHING TO TRACTOR

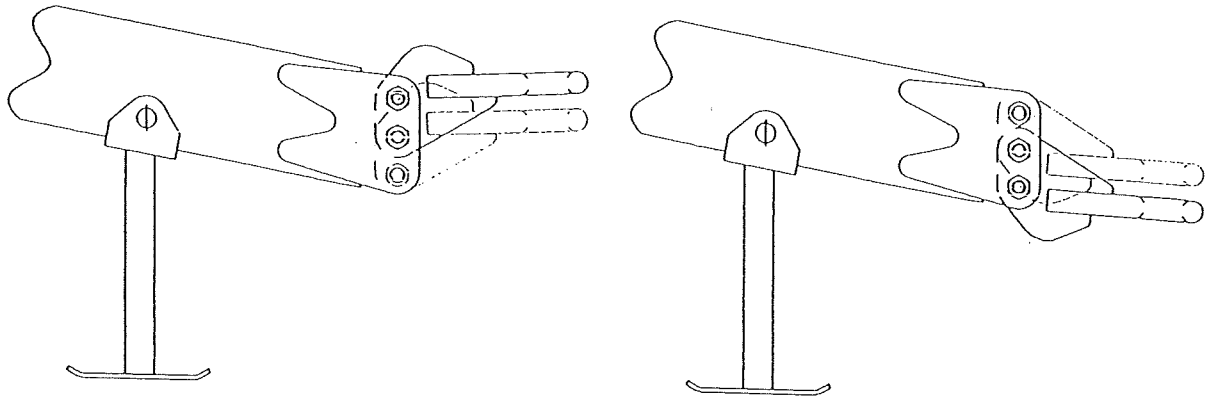


Fig 5.1

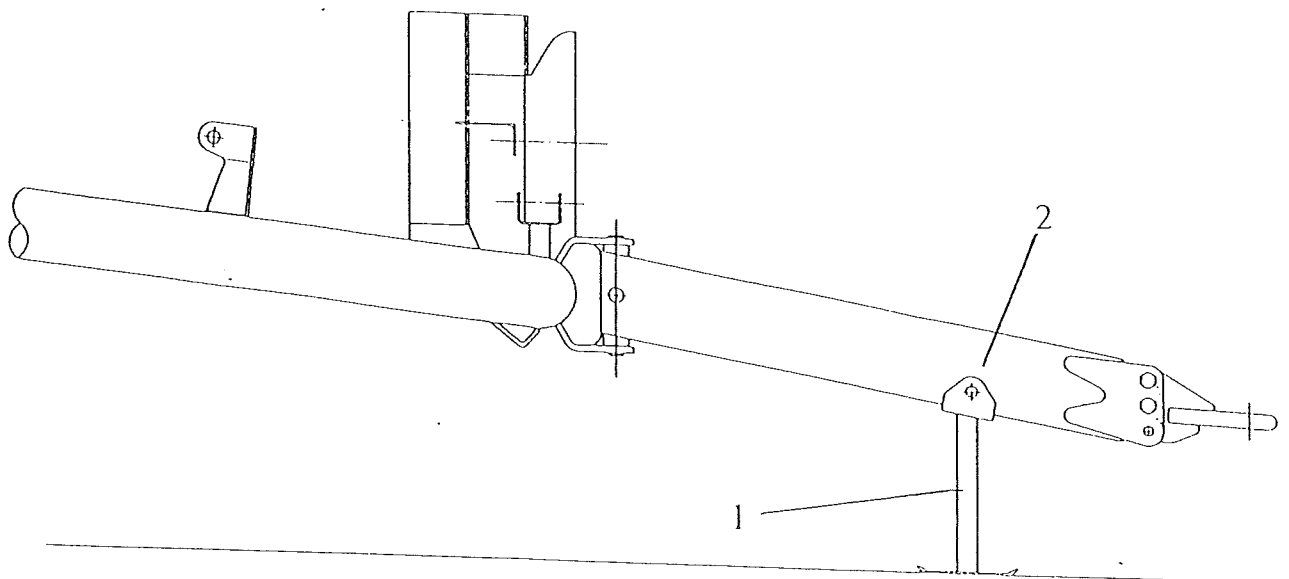


Fig 5.2

5 - ATTACHING TO TRACTOR

Drawbar

5.1.1

The harvester drawbar is designed to be attached to the pick up hitch of the tractor.

5.1.2



Consult the tractor manufacturers handbook for details of the pick up hitch

5.1.3

The drawbar eye is adjustable for height to allow the machine to be set in a level working position. When in work, the top of the guard above the Galaxy star unit is to be level with the ground. To adjust, remove the two bolts attaching the eye to the drawbar (fig 5.1), and move the eye to the required position. If the required position cannot be achieved, the eye may be turned over to give a second range of adjustments. Refit and tighten the bolts.

5.1.4



Adjustment to the drawbar should only be carried out when the jackstand is down and the machine is disconnected from the tractor.

Jackstand

5.1.5

The jackstand is provided so that the machine is held at a suitable height for safely coupling to the tractor (fig 5.2 item 1).

5.1.6



Always ensure that the jackstand is positioned on firm ground in order to avoid the danger of the machine sinking or sliding whilst stood. Both wheels should be chocked at front and rear before removing from tractor.

5 - ATTACHING TO TRACTOR

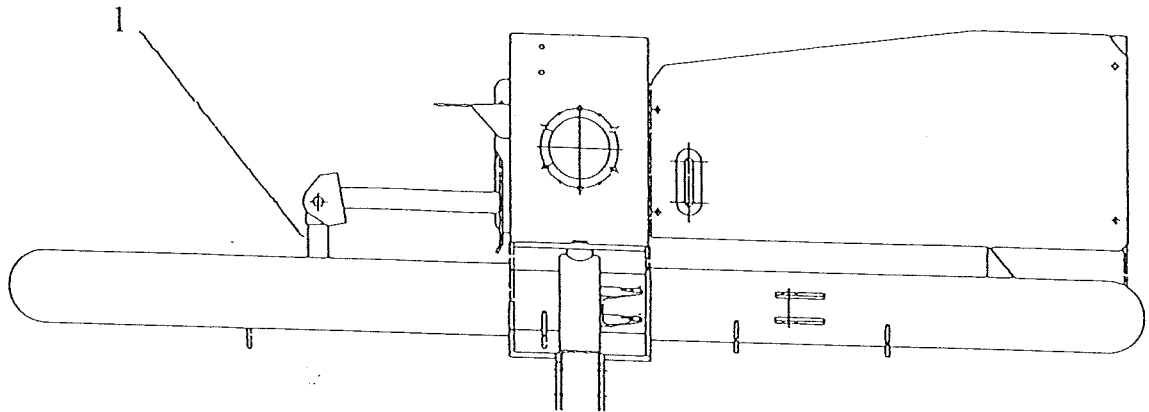


Fig 5.3

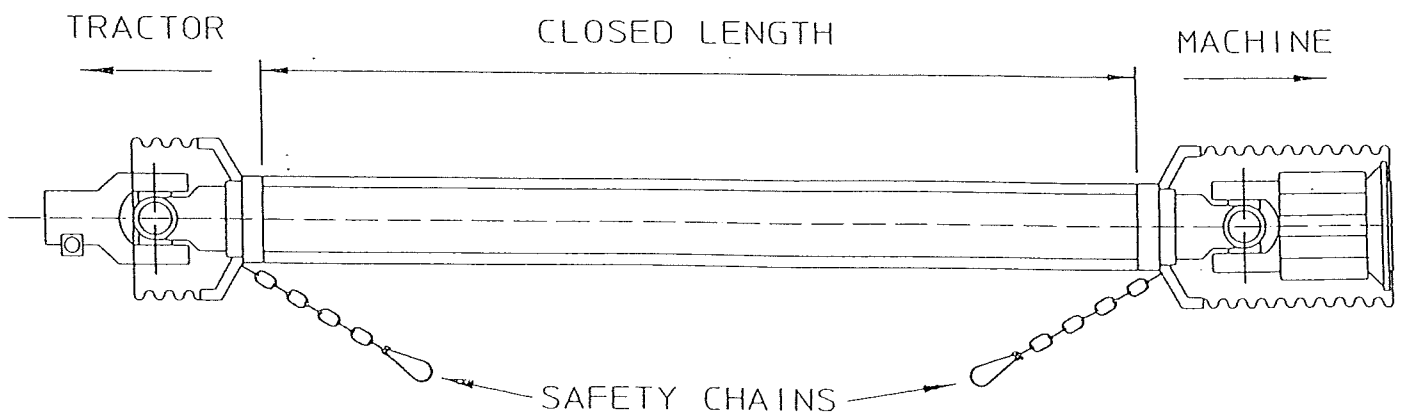


Fig 5.4

5 - ATTACHING TO TRACTOR

5.2.1

When the machine has been securely attached to the tractor, remove the jackstand by removing the anchor pin that secures it. (Fig 5.2 item 2) Fit the jackstand into the storage bracket provided on the front of the main chassis, (Fig 5.3 item 1) and secure it with the original anchor pin.

5.2.2



DO NOT store the jackstand separately from the machine, you never know when it will be needed.

PTO Shaft

5.2.3

The harvester is designed to operate with a PTO drive having a maximum speed of 540 rpm.

5.2.4

An overload clutch is fitted to one end of the PTO shaft assembly and this must be connected to the harvester.

5.2.5

Fit the two halves of the PTO shaft onto their respective drive shafts on the machine and the tractor.

Check the shaft length by turning the tractor fully in both directions, whilst the machine is in its working position attached to the tractor drawbar. Ensure the sliding tubes, when fully extended, have an overlap of at least half the closed length (Fig 5.4).

Ensure also that the ends of the sliding tubes, when at the shortest point are not in contact with other parts of the PTO shaft. If necessary, both tubes and guards must be shortened to achieve end clearance at the minimum length position.

5 - ATTACHING TO TRACTOR

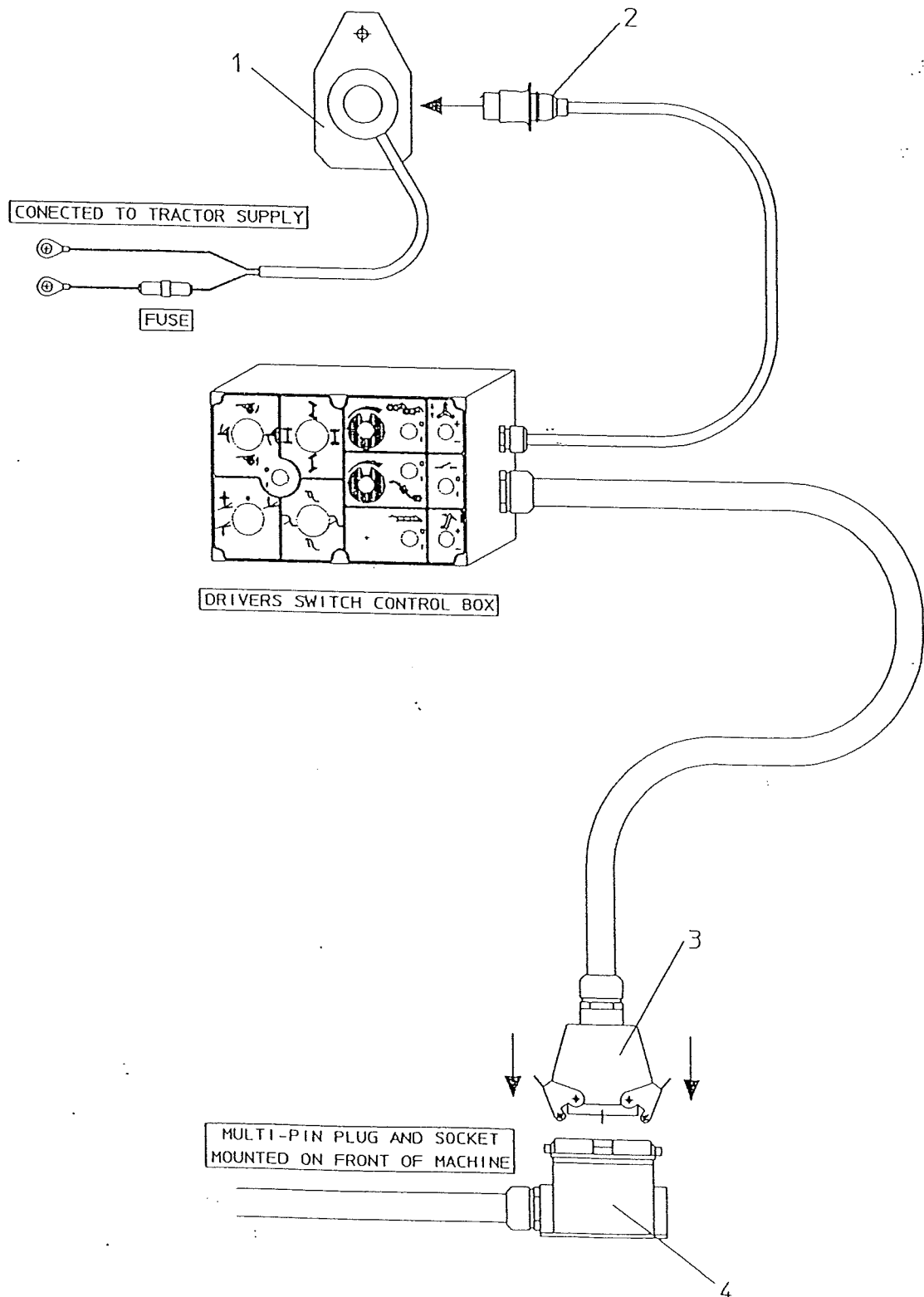


Fig 5.5

5 - ATTACHING TO TRACTOR

Electrical connections

5.3.1



DO NOT use existing electrical sockets on the tractor as these will prove inadequate. Use only the connections provided with your harvester.

5.3.2



NOTE ONLY TRACTORS WITH NEGATIVE EARTH ELECTRICAL SYSTEMS MUST BE USED. CONSULT THE TRACTOR MANUFACTURERS HANDBOOK FOR THIS INFORMATION

5.3.3

The harvester is supplied with a power supply lead (Fig 5.5 item 1), consisting of a pre-wired three pin socket, mounted on a plate. One wire of this cable is fitted with an in-line fuse, (rated at 17.5 amp continuous, 35 amp blow) this wire should be connected, via a suitable route on the tractor, to either the positive battery terminal, or the positive terminal on the starter solenoid. The other wire in the pre-wired socket is the earth wire, it should be connected to either the battery negative terminal, or to a suitable earth point on the tractor (Fig 5.5).

5.3.4

Using the two magnets mounted on the bottom of the drivers switch control box, attach the box to a suitable metal surface which the operator finds most convenient and practical.

The thinner cable emanating from the switch control box terminates in a three pin plug (Fig 5.5 item 2), and should be connected to the power supply socket (see section 5.3.3).

5.3.5

At the side of the drivers switch control box is a thick cable terminating in a multi-pin plug (Fig 5.5 item 3), this should be connected to the multi-pin socket on the front of the harvester (Fig 5.5 item 4). Make sure that the anchor clips on the socket are securely fastened.

This plug socket arrangement allows the switch control box to be removed, and kept dry and secure when the machine is left in the field

5 - ATTACHING TO TRACTOR

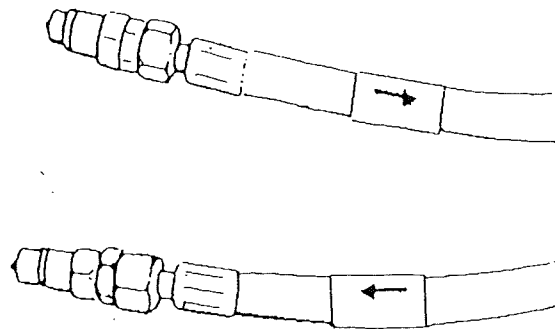


Fig 5.6

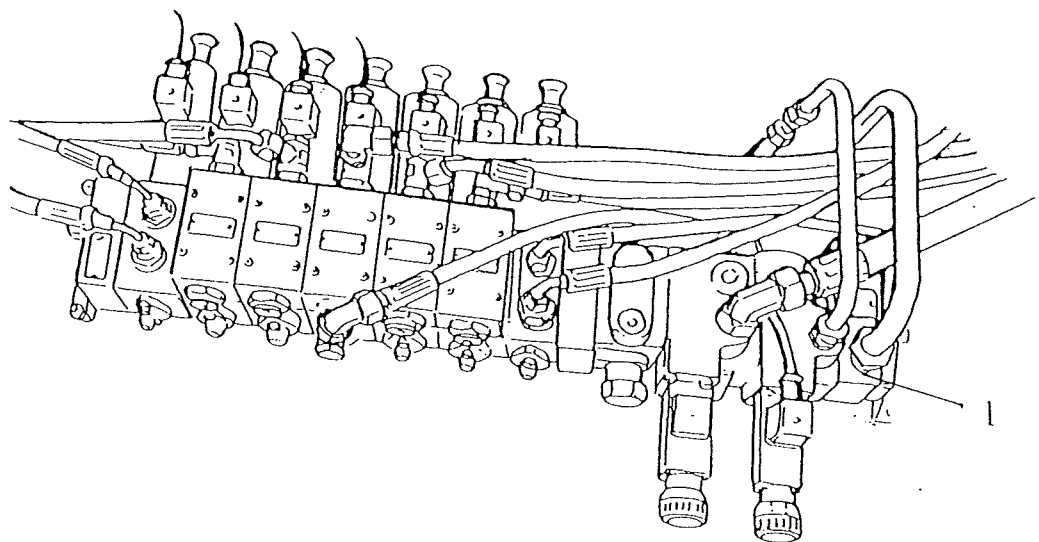


Fig 5.7

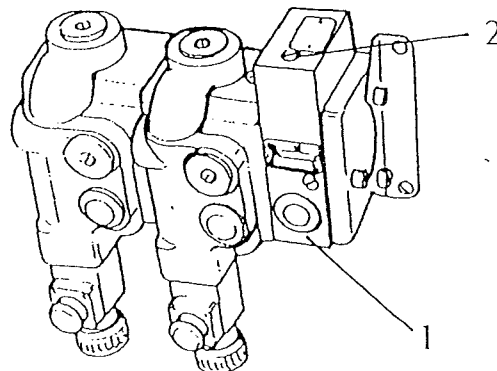


Fig 5.8

5 - ATTACHING TO TRACTOR

5.4.1



DO NOT apply excessive force to the multi-pin plug when connecting into the socket otherwise damage may be caused to the connecting pins.

5.4.2



If additional electrical equipment (working lights etc.) are fitted to the machine, they must not be connected to the existing machine wiring looms.

Hydraulic connections

5.4.3

The flow and return hoses from the machine must be connected to their respective external service connections of the tractor lift system.

The machine hoses are identified by labels marked with arrows indicating the direction of oil flow (Fig 5.6).

the tractor hydraulic system must be set to constant pumping. (For details of the tractor hydraulic connections and hydraulic pump settings, consult the tractor manufacturers handbook.

Open/closed centre hydraulics

5.4.3

Two types of hydraulic system are currently in use by tractor manufacturers, namely OPEN CENTRE or CLOSED CENTRE configurations. Consult the tractor manufacturers handbook or your dealer for further information. The hydraulic valve on the harvester (Fig 5.7) incorporates an end section (item 1) containing a screw which enables easy changing from closed to open centre and vice versa.

The screw (Fig 5.8 item 2) is located in the upper face of the front end section (Fig 5.8 item 1) of the hydraulic valve bank, which is mounted on the right hand side of the main frame half way along.

For closed centre configuration tractors, turn the screw clockwise fully closed. For open centre, turn the screw anticlockwise two turns from the closed position.

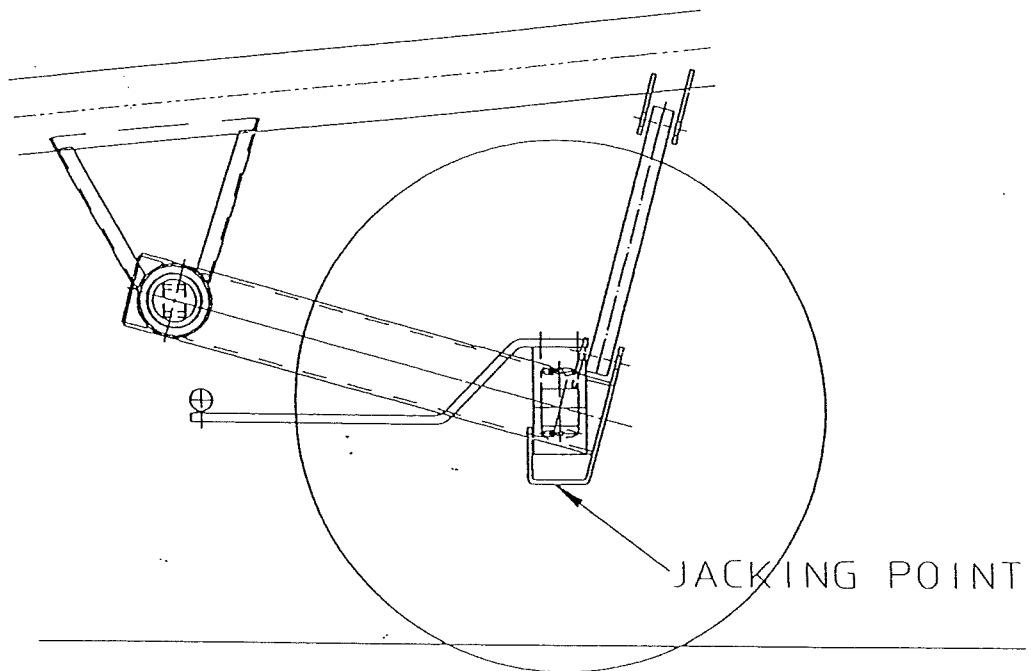


SECTION 6

PREPARING FOR WORK

6 - PREPARING FOR WORK

LEFT HAND SIDE



RIGHT HAND SIDE

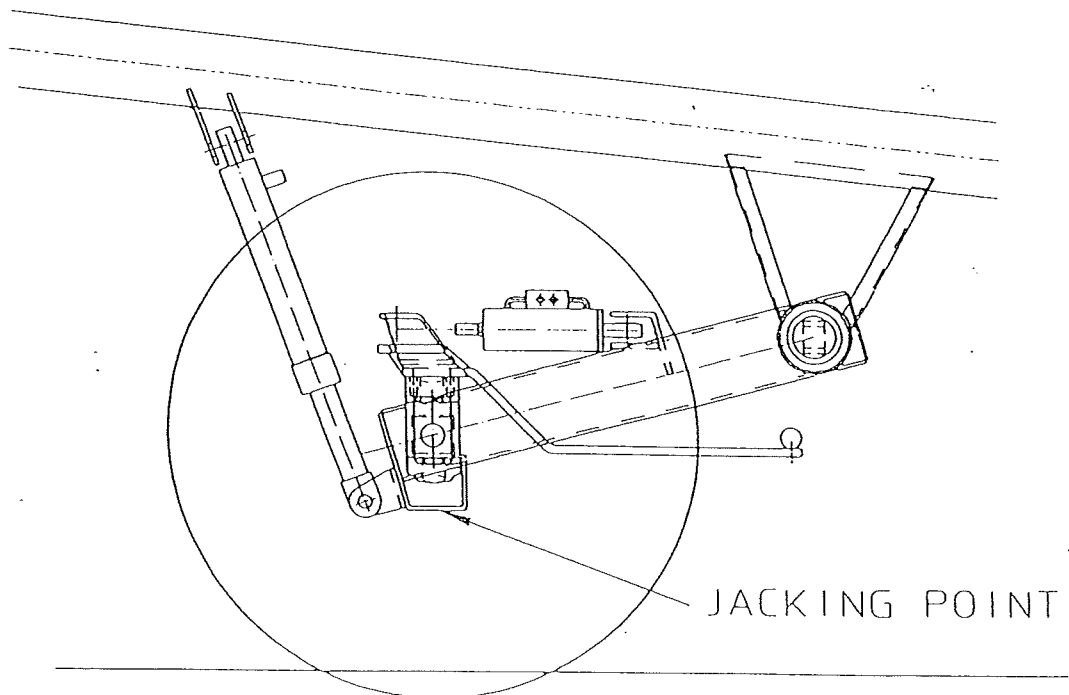


Fig 6.1

6 - PREPARING FOR WORK

Direction of work

6.1.1

The cart elevator discharges to the right of the machine, and as the trailers taking the crop away should be on cleared ground, this determines the direction of work. This also ensures the harvester wheels will be on cleared ground once the plot is opened out. It is essential to have an adequate headland to enable the harvester to be entered squarely into the row ends without damage to the crop or machine.

Row widths

6.1.2

When setting the harvester to particular row widths, the land wheels and digging area of the machine must be adjusted to suit. The following paragraphs advise the procedures required. It is important that both row assemblies are equally spaced either side of the machine centre line.

Axle adjustments

6.1.3



Before commencing axle adjustments, ensure adequate jacks and axle stands of 2500 kg. Capacity are available, along with suitable wheel chocks. It is important that the machine is correctly fitted to the tractor (see section 5) and that the tractor handbrake is applied whilst axle adjustments are carried out.

6.1.4

Refer to section 6.1.3 before commencing any axle adjustments. Place chocks at the front and rear of the opposite side wheel to the one being adjusted. Jack up the machine using the jacking point situated under the axle (fig 6.1). place an axle stand under a suitable point on the main chassis and lower the jack to allow the axle stand to take the weight of the machine.

6.1.5

Remove the two bolts in the steering track rod (fig 6.2) and remove the pin through the main axle beam which secures the supported axle. Slide the axle to the new required position (fig 6.3) and replace the pin through the main axle beam. Repeat the whole operation for the opposite side wheel. Both axles must be set correctly even though the right hand wheel runs on cleared ground.

6 - PREPARING FOR WORK

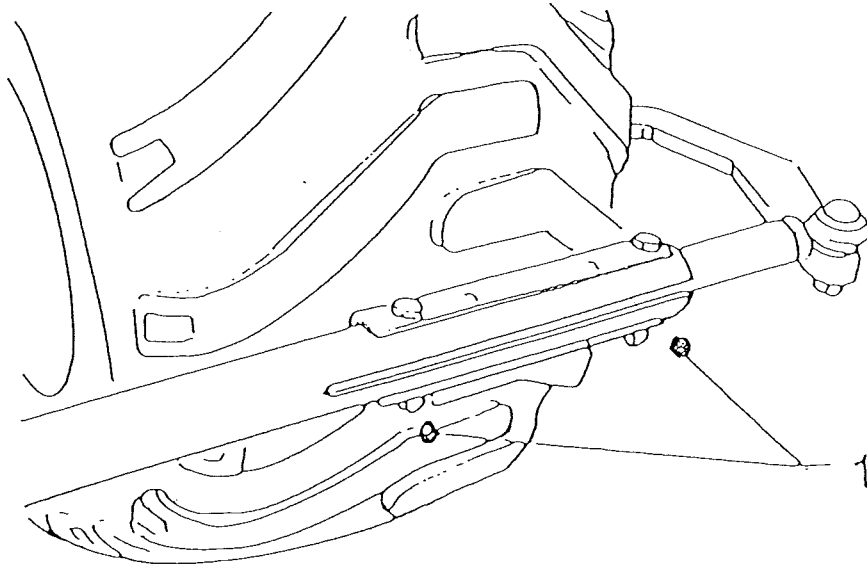


Fig 6.2

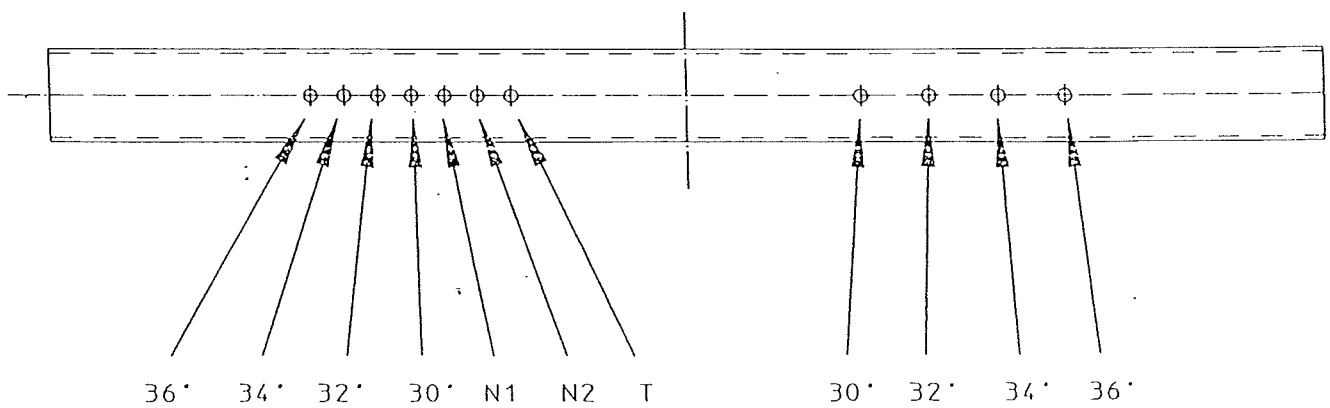


Fig 6.3

6 - PREPARING FOR WORK

6.2.1

If, after having set the wheels to the required row widths, the left hand wheel is found to damage the edge of the row, it may be advisable to move the wheel in by one extra hole. For narrow settings, or for any special conditions which may be encountered, additional hole settings are available (fig 6.3).

Track rod adjustment

6.2.2

After completion of the axle adjustments, the track rod will need to be reset. Slid the inner rod in or out, until there is approximately 25 mm toe in at the front of the wheels when they are in the straight ahead position. Replace and tighten the two bolts and nuts (fig 6.2 item 1).

Share pitch adjustment

6.2.3

Adjusters are fitted to either side of the machine (fig 6.4 item 1) to change the pitch of the shares. The points of the should be kept as high as practical whilst still maintaining adequate digging depth. This will ensure that the crop flows smoothly onto the web. If the points are lowered too much the crop will feed into the web with an increased risk of crop damage. Lowering the points will assist penetration, but if the soil has been adequately cultivated this should not be necessary. If the pitch of the shares is too steep (points lowered) it can greatly increase the loading or bulldozing effect on the share frame, especially when in hard or tough conditions.

Keep a regular check for soil build up on the share frame, especially in wet conditions as a pad of soil at this point can create a considerable braking effect on the web. Also ensure that the share frame is not rubbing on the web bars at this point.

6 - PREPARING FOR WORK

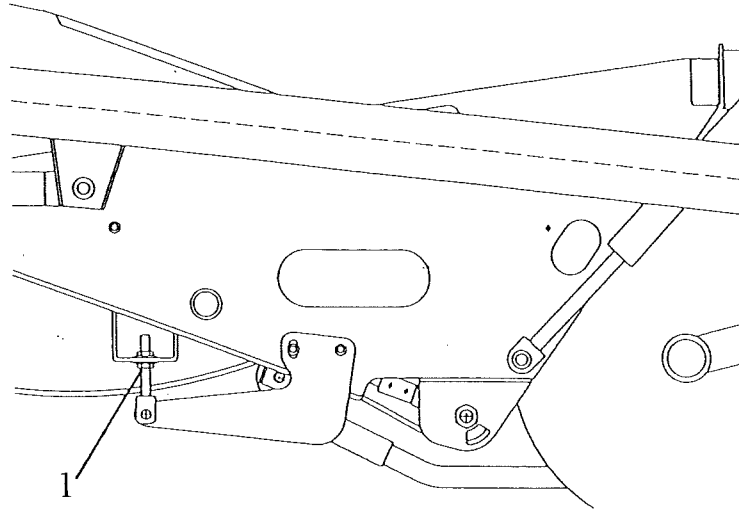


Fig 6.4

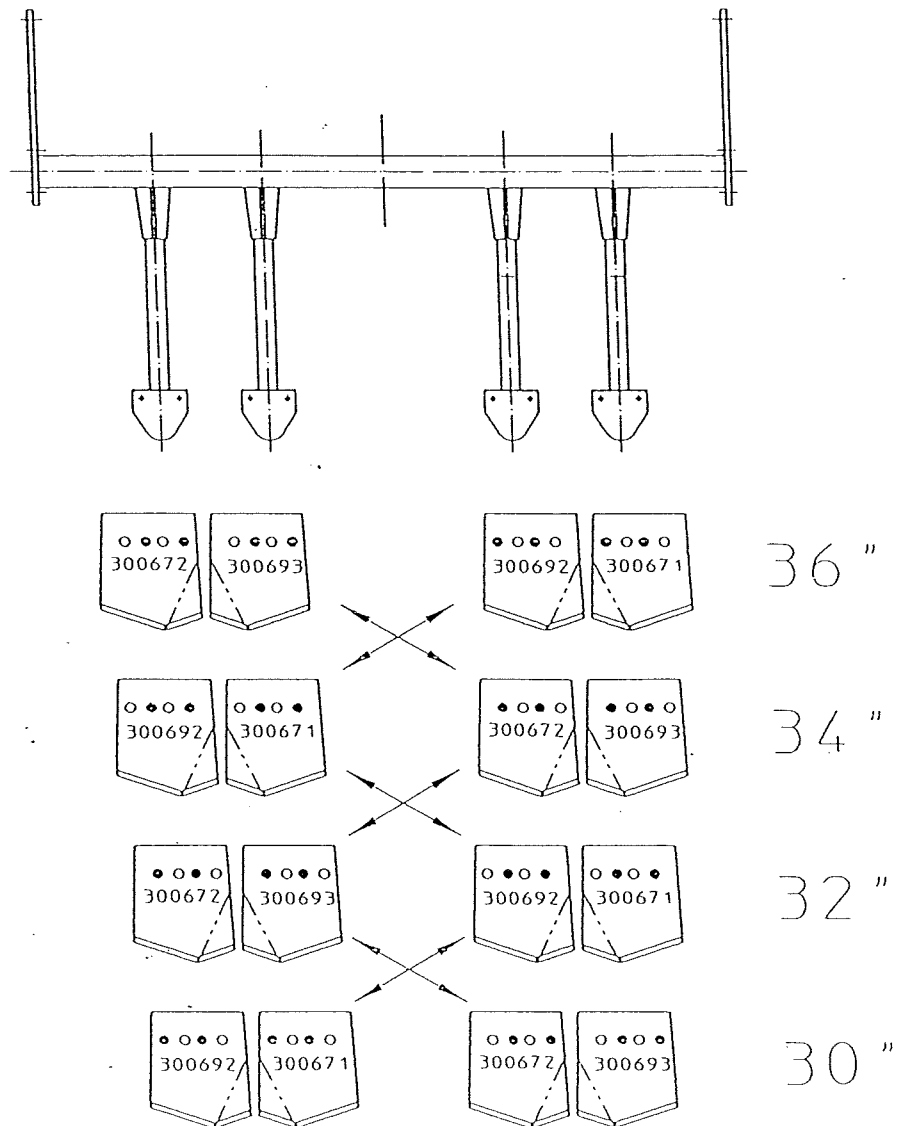


Fig 6.5

6 - PREPARING FOR WORK

Share width adjustment

6.3.1



Before commencing any share adjustments, the floating chassis must be supported on the transport lock chains (see section 9).

6.3.2

The share frame is mounted across the machine under the first web. The standard share has two blades for each row. Each blade has four mounting holes, of which only two are used at any one time to mount it to the share frame. The row width adjustment is carried out by using the alternative attachment holes to achieve the required row width (fig 6.5). both shares must be set to the same width.

Share options

6.3.2

Several share option are available to suit varying soil and harvesting conditions. The most common share options are:-

Three piece, a three bladed share with stone flaps across the rear of each blade, used in light fluffy soils which may not flow readily across the share.

Two piece, a two bladed share with stone flaps across the rear of each blade,. The most popular general purpose share blade, which can dig the minimum amount of soil without loss of potatoes..

Single piece, a single blade share for soil containing flat or wedge shaped stone which may wedge between the blades of other share arrangements.

Shares for different crops are also available

6 - PREPARING FOR WORK

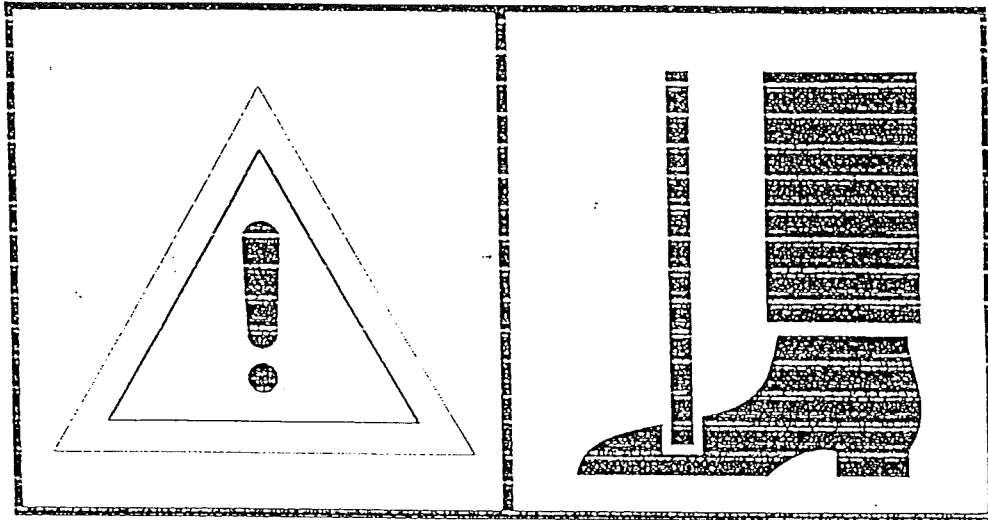


Fig 6.6

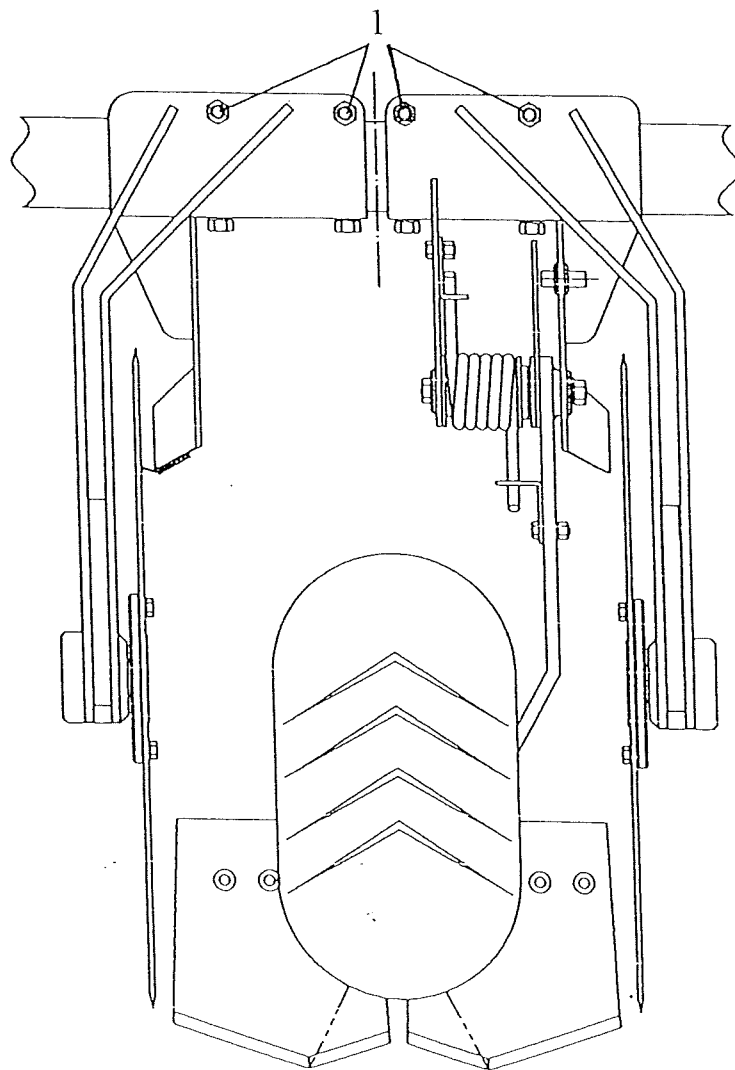


Fig 6.7

6 - PREPARING FOR WORK

Disc width adjustment

6.4.1



WARNING KEEP CLEAR OF DISC COULTER. RISK OF CRUSHING LIMBS (fig 6.6).



Before commencing any share adjustments, the floating chassis must be supported on the transport lock chains (see section 9).



Warning, disconnecting clamp bolts from assemblies could give the risk of operator injury.

6.4.1

Each disc assembly is attached to a common cross beam. The clamp bolts should be loosened to allow the disc to be moved sideways to the required position (fig 6.7 item1) . when the shares have been correctly set (section 6.3.1) the discs should be adjusted to be approximately 20 mm clear of the edge of the share blade (fig 6.7). all discs should be adjusted equally. Tighten all disc mountings when adjustments are complete.

6.4.2

- When a centre share blade option is fitted, the centre pair of discs assemblies must be removed.

Floating chassis

6.5.1

The floating chassis, including the complete intake assembly, of shares, discs and depth wheels, is controlled by two hydraulic cylinders which raise and lower the floating chassis into and out of work. As the depth wheels act independently on the two rows, these cylinders, which are controlled by proximity sensors on the depth wheel frame, and also manually by switch on the drivers control box, act independently to give flexible depth control of both rows.

6 - PREPARING FOR WORK

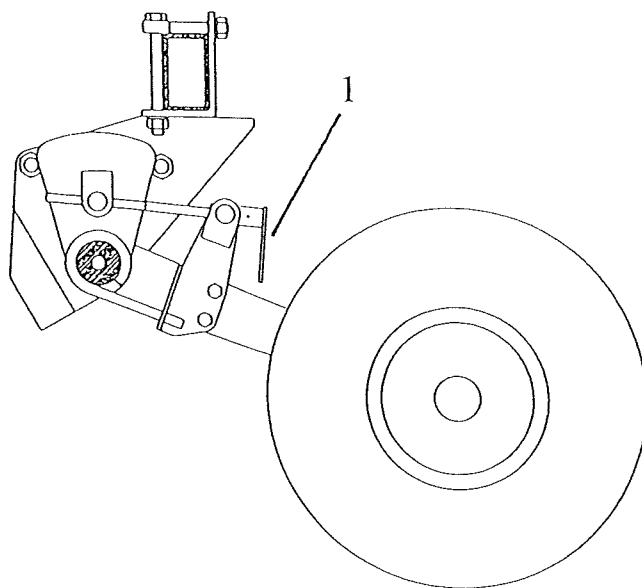


Fig 6.8

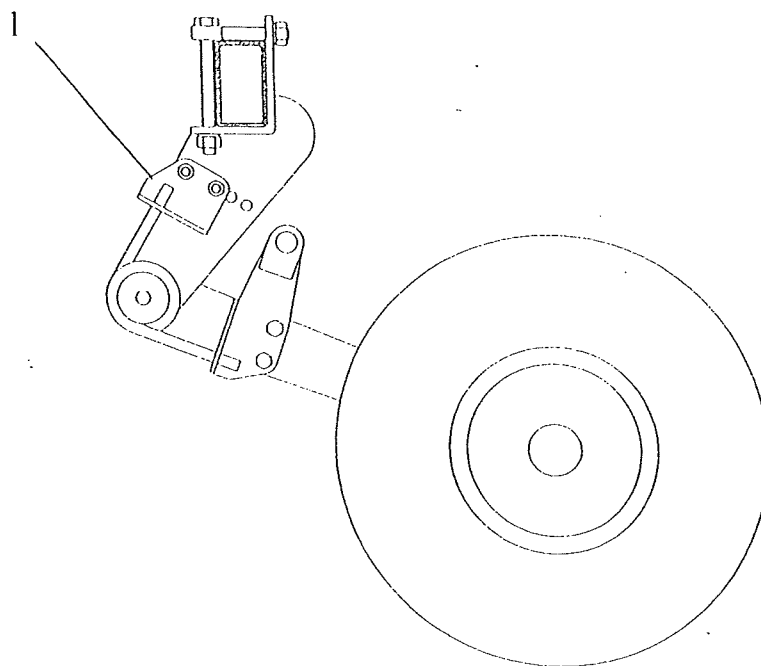


Fig 6.9

6 - PREPARING FOR WORK

Depth control

6.5.1

The share depth is automatically controlled by proximity sensors situated adjacent to each depth wheel. These are activated by trigger plates attached to the depth wheel mounting frame. Each depth wheel being adjusted and controlled independently of the other (fig 6.8).

The depth is adjusted by turning the handle mounted on the frame of the depth wheel.

Turning the handle clockwise increases the digging depth, whilst turning the handle anti-clockwise lessens the digging depth (fig 6.8 item 1).

Depth wheel loading

6.5.2

The depth wheels have a torsion spring mounted in their pivot to provide downward pressure. This spring can be adjusted to increase or decrease the amount of pressure on the depth wheel. The spring retention bracket is mounted onto the depth wheel frame and has a number of positions. By removing the mounting bolts, in the spring retention bracket, and locating the bracket in a forward, or rearward position, spring pressure can be altered (fig 6.9 item 1).

Operating speeds

6.5.3

The machine is designed to be operated at an input speed of 450 rpm from the tractor PTO. As soil and crop conditions vary, this average speed may have to be adjusted up or down. As you gain experience with your harvester you will establish the best operating speed for your machine.

SECTION 7

OPERATING ADJUSTMENTS

7 - OPERATING ADJUSTMENTS

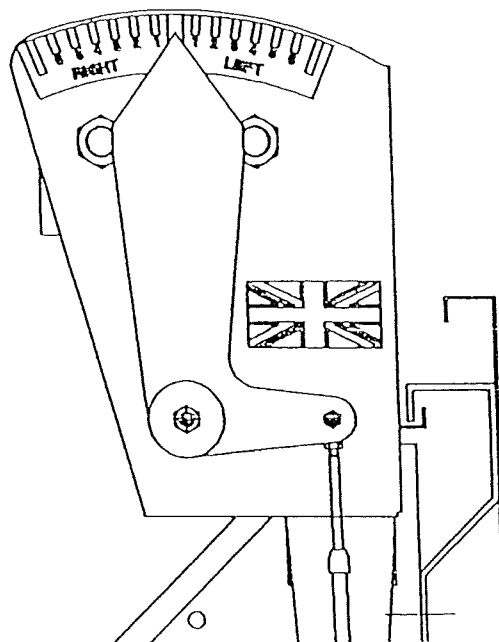


Fig 7.1

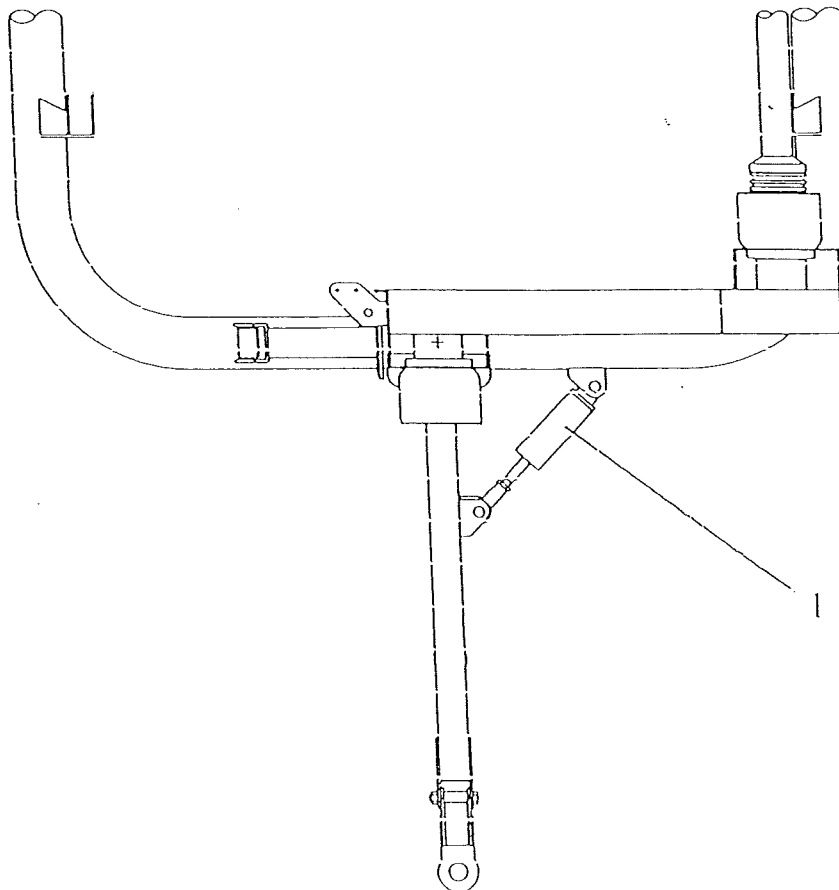


Fig 7.2

7 - OPERATING ADJUSTMENTS

Steering



Only operate the steering while the machine is moving, or some of the components may be damaged.

7.1.1

The steering is controlled by a joystick on the drivers switch control box (see section 4 Controls). Use the steering to keep the machine correctly in the rows, especially on sidling slopes. If the machines left wheel is allowed to run on or against the next ridge, the soil may be compressed, making the crop difficult to separate, also potatoes may be damaged.

7.1.2

A steering indicator is fitted to the right hand side of the machine, in full view of the driver, showing the attitude of the wheels (fig 7.1).

7.1.3

Steering should be used in conjunction with the lanes adjuster (see section 7.1.4), to ensure the machine operates parallel to the rows or beds.

Lanes adjuster



Only operate the lanes adjuster when the share is raised or the machine is moving, or some of the components may be damaged.

7.1.4

The lanes adjuster is an hydraulic double acting cylinder mounted between the drawbar and the main chassis (fig 7.2 item 1). and is controlled by a joystick on the drivers switch control box (see section 4 Controls). The lanes adjuster should be used in conjunction with the steering to centralise the machine in the rows being lifted.

7 - OPERATING ADJUSTMENTS

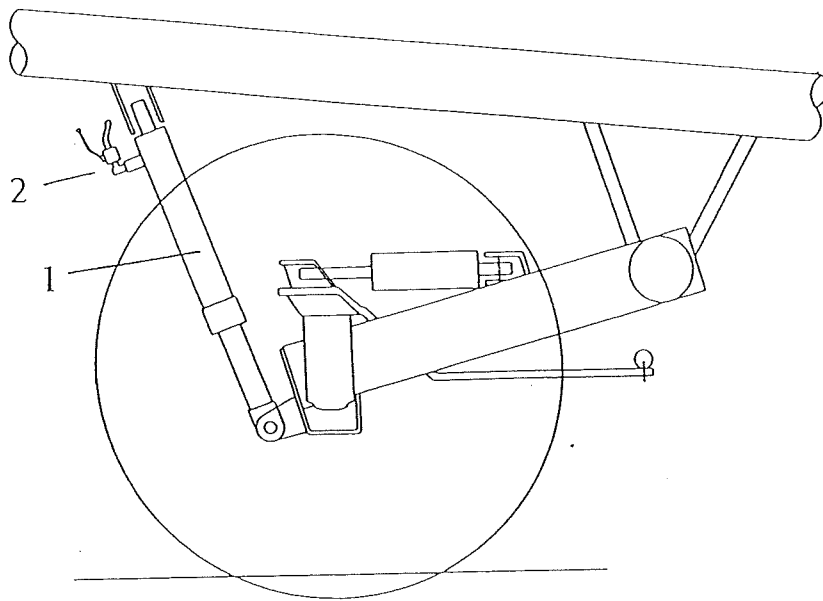


Fig 7.3

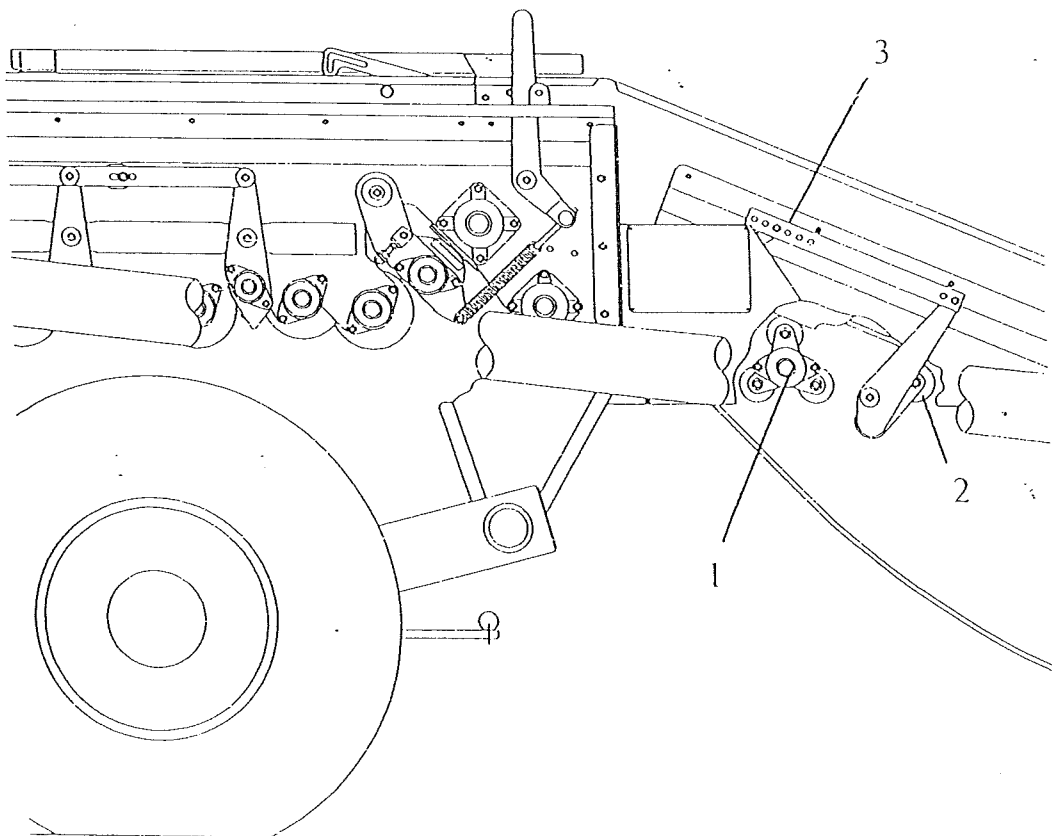


Fig 7.4

7 - OPERATING ADJUSTMENTS

Hydraulic levelling

7.2.1

The right hand wheel is mounted on a pivoting axle beam and connected to the main chassis by an hydraulic cylinder (fig 7.3 item 1). Extending the cylinder will raise the chassis while closing the cylinder will lower the chassis on that side. The cylinder is controlled by a joystick on the drivers switch control box (see section 4). Ensure transport lock is in the open position for work (fig 7.3 item 2).

7.2.2

Use the levelling to maintain a level transverse attitude, especially when working on sidling slopes. This will ensure an even spread of crop across the full width of the machine, thus making the maximum use of the separation capability of the harvester.

7.2.3

It is possible to have the levelling cylinder controlled by an optional electronic device which will give automatic control of the levelling (see section 12 Options).

Main web agitation

7.2.4

A rotating agitator is fitted inside the main web and is mechanically driven. (fig 7.4 item 1). Mounted in front of the agitator are control rollers for adjusting the amount of agitation imparted to the crop (fig 7.4 item 2). Raising the control rollers will lift the web away from the agitator, lowering the control rollers will lower the web onto the agitator. The higher the web is lifted the less effect the agitator will have on the crop flow.

7.2.5

The control rollers are adjusted by bolting an arm in one of a series of holes (fig 7.4 item 3). Set the control rollers to the desired position and ensure all nuts and bolts are re-tightened.

7.2.6

Use agitation with caution. Excessive agitation can cause severe crop damage. Remember that soil is the best cushion for the crop, so aim to keep some soil with the crop until the last possible moment as it passes through the machine.

7 - OPERATING ADJUSTMENTS

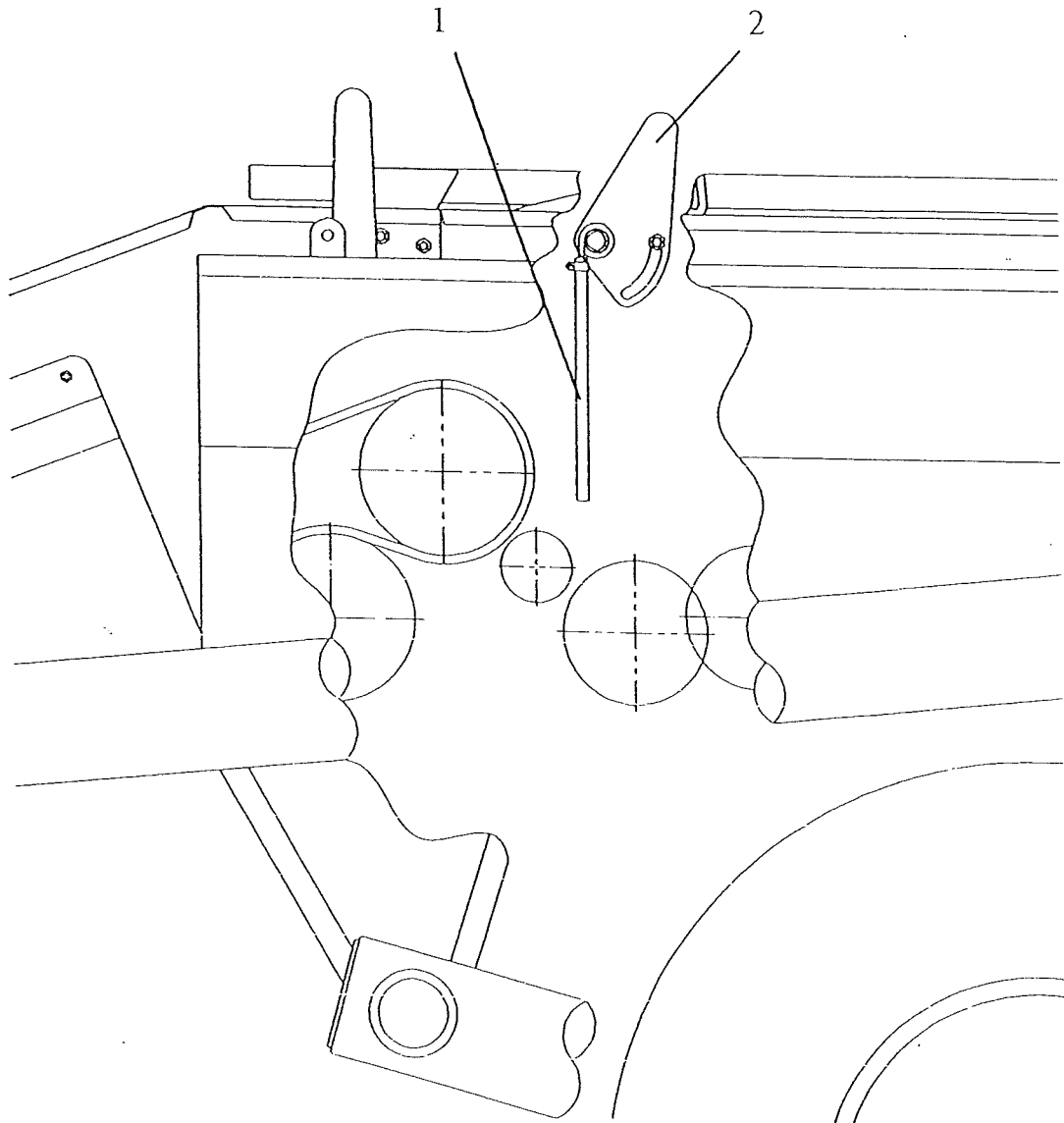


Fig 7.5

7 - OPERATING ADJUSTMENTS

7.3.1

An electric actuation option is available giving control from the drivers switch control box (see section 4 Controls) for the amount of agitation on the crop flow (see section 12 Options).

Haulm extraction rollers



WARNING DO NOT ATTEMPT TO CARRY OUT ANY MAINTENANCE , ADJUSTMENTS OR REMOVE BLOCKAGES ON THE HAULM ROLLER UNIT UNTIL MACHINE AND TRACTOR ARE STOPPED, AND TRACTOR IGNITION KEY REMOVED



Warning, at any time when haulm roller performance is being visually monitored, eye protection must be worn by all persons involved with this operation, due to the danger of flying debris

7.3.2

The haulm roller is a rubber covered roller positioned immediately behind the main web. This roller is mechanically driven from the main web and contra-rotates against the web to form a pinch point to extract the haul. The roller is held in position against the web by spring pressure and the gap between the web and roller can be adjusted. A row of haulm fingers are mounted above the haulm roller to assist in guiding the haulm into the extraction point.

Haulm fingers

7.3.3

The finger assembly (fig 7.5 item 1), is adjustable for angle by means of a lever positioned on the left hand side of the assembly (fig 7.5 item 2). When the lever is in the forward position the haulm fingers are out of work. Moving the lever rearwards lowers the fingers towards the crop and haulm passing over the web. Adjustment should be made such that the fingers are lowered sufficiently to guide the haulm, without interfering with the crop passing by them.

7 - OPERATING ADJUSTMENTS

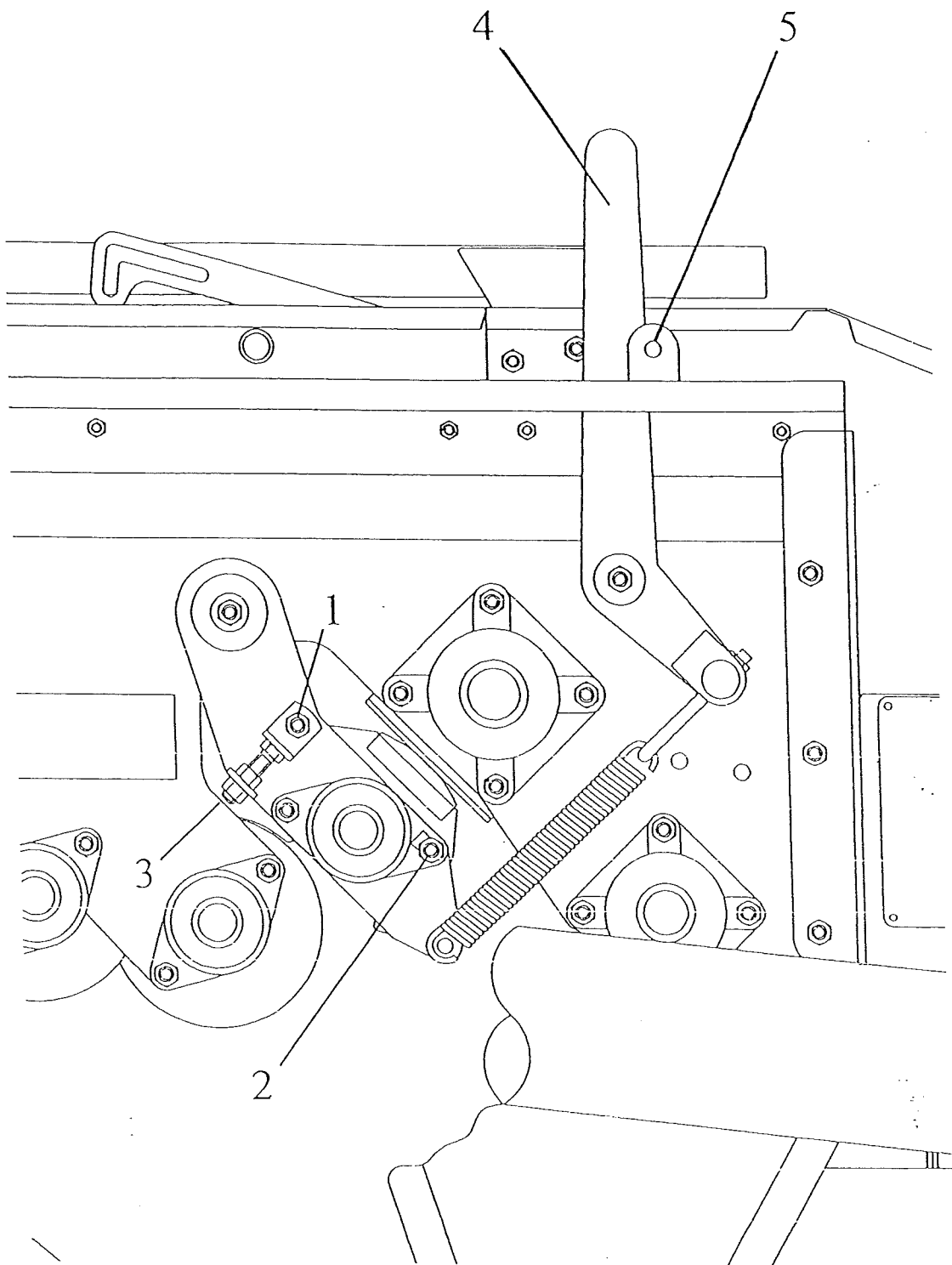


Fig 7.6

7 - OPERATING ADJUSTMENTS

Haulm roller spacing

7.4.1

The spacing between haulm roller and web can be adjusted, but may affect performance. A wider setting is likely to take out small potatoes. The optimum setting is to have the haulm roller running just clear of the main web bars so as to prevent vibration and give maximum grip to extract haulm.

7.4.2

To adjust the gap between haulm roller and web, release the spring tension which holds the roller to the web (see 7.4.3). Slacken the clamp bolts locking the bump stop mounting (fig 7.6 item 1 and 2). Adjust the set screw (fig 7.6 item 3) in or out to achieve the desired new position. Repeat these operations for the opposite side of the machine, making sure that both ends of the roller are set to the same position, and maintaining the roller parallel to the web. When the necessary adjustments have been made, tighten all bolts and nuts on both sides of the roller.

Haulm roller tension



The haulm extraction roller tensioning handle has considerable spring pressure against it. Operate with care.

7.4.3

The haulm roller is held in position by spring tension. The springs are anchored onto a pair of arms, which hold the unit in the working position. The arms are located on each side of the machine, (fig 7.6 item 4), above the haulm roller and can be used to release the spring tension. Use the handles to release the spring tension if a blockage occurs and before carrying out any adjustments to the roller setting. The handles are operated by pulling back so the retaining pin can be removed, (fig 7.6 item 5) the handle can then be carefully allowed to travel forward, thus releasing spring tension. Always reset the handles before commencing work.

7 - OPERATING ADJUSTMENTS

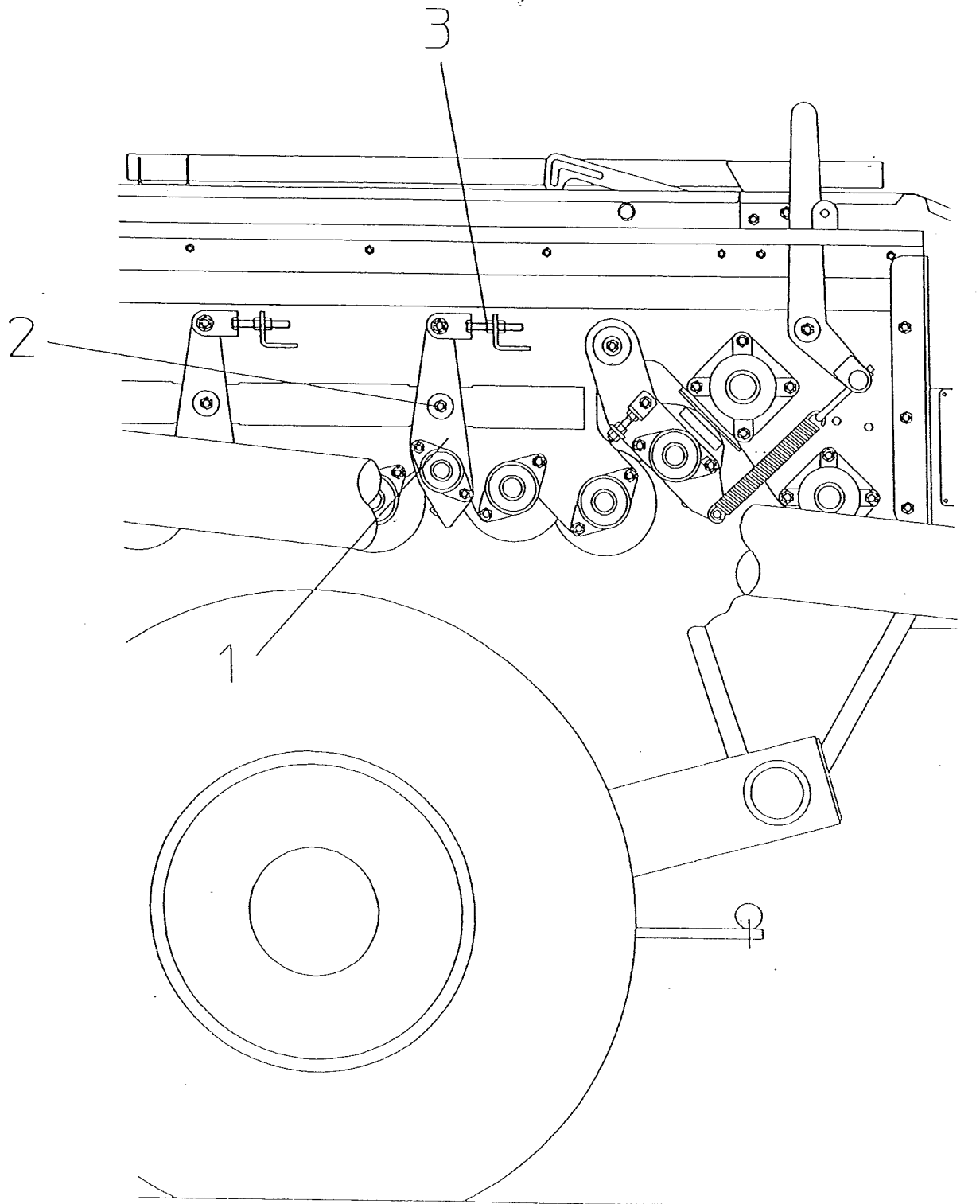


Fig 7.7

7 - OPERATING ADJUSTMENTS

Galaxy star separator

7.5.1

The Galaxy is a stone and clod separator and consists of six rows of composite stars and three contra-rotating clod rollers. The unit is mechanically driven from the main web drive. To accommodate varying soil and crop conditions, and alternative clod roller shapes, the gap between the clod rollers and the stars can be adjusted.

Clod roller adjustment



WARNING DO NOT ATTEMPT TO CARRY OUT ANY MAINTENANCE, ADJUSTMENTS OR REMOVE BLOCKAGES ON THE CLOD ROLLER UNIT UNTIL MACHINE AND TRACTOR ARE STOPPED, AND TRACTOR IGNITION KEY REMOVED

7.5.2

The three clod rollers are independently adjustable on their mounting arms (fig 7.7 item 1). Adjustment is carried out by slackening the two bolts (one each side) locking the clod roller mounting arms to the side panels (fig 7.7 item 2), for the clod roller you wish to adjust. The arms are held in position by adjusting bolts, (fig 7.7 item 3 both sides), slacken the nuts and adjust the position of the clod rollers. It is important that the clod roller adjustment is carried out so that both ends of the rollers are parallel to the star shafts. After adjustment all nuts and bolts must be re-tighten.

7.5.3

Scrapers are fitted beneath each clod roller, these should be adjusted to be as close as possible to the roller periphery without actually touching.

7 - OPERATING ADJUSTMENTS

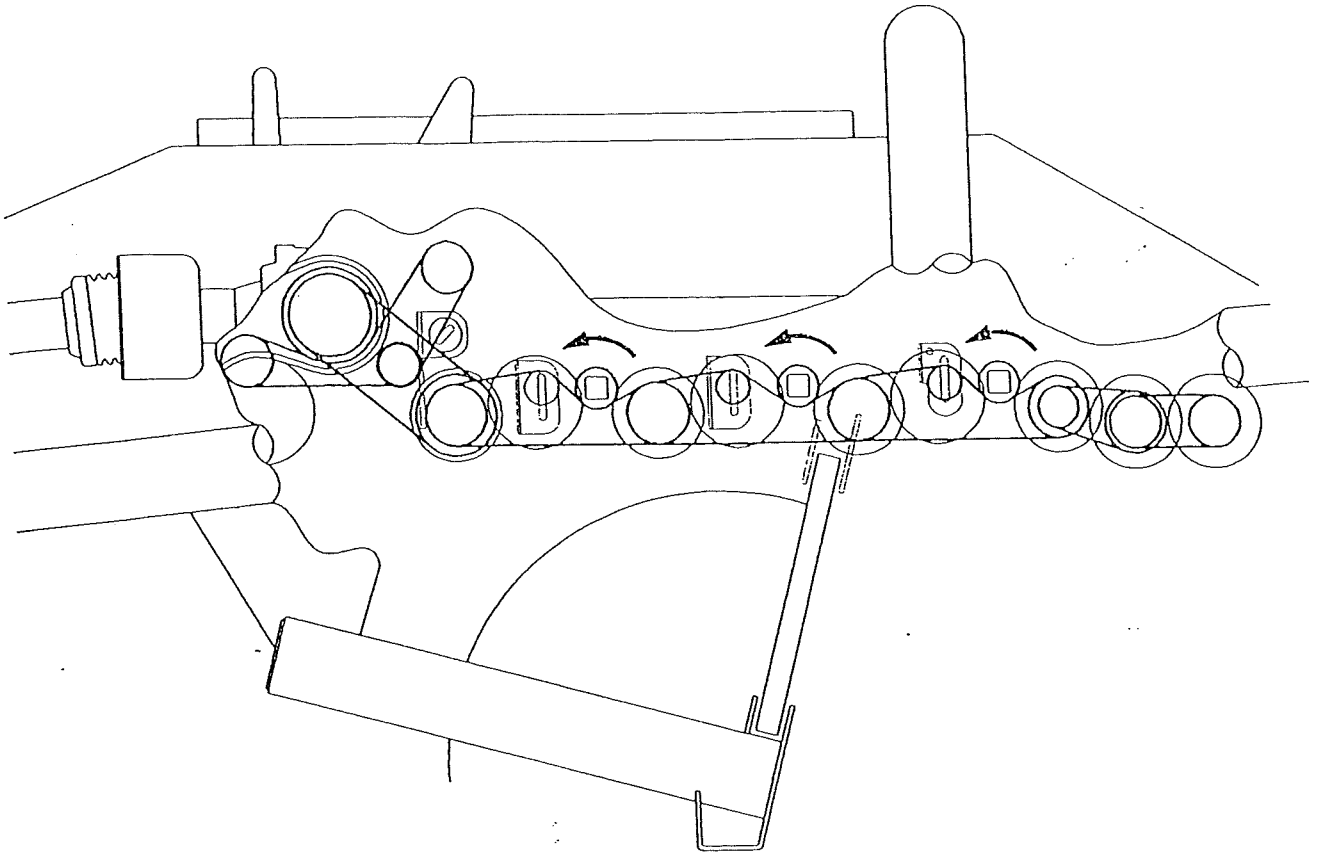


Fig 7.8

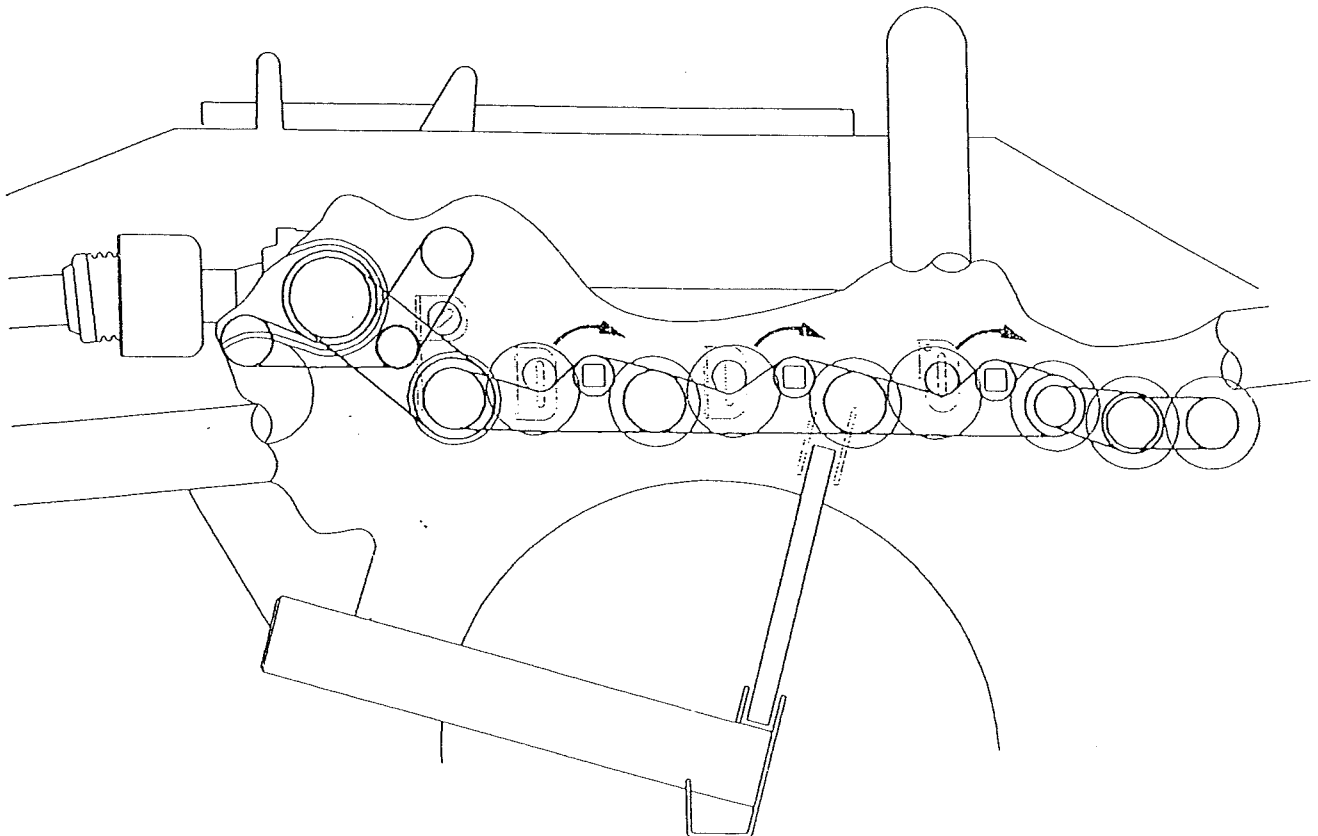


Fig 7.9

7 - OPERATING ADJUSTMENTS

Clod roller rotation

7.6.1

The clod rollers, in normal operation, contra-rotate against the stars. Under certain conditions it can be beneficial to reverse the direction of rotation. This is achieved by re-routing the chain drive to each of the clod rollers. Fig 7.8 shows the normal layout of the chain run for contra-rotating clod rollers. Fig 7.9 shows the alternative layout of the chain run for reversing the rotation of the clod rollers. When a clod roller has been reversed, its appropriate scraper should be turned over to allow clear passage of soil etc.

Cart elevator



EXTREME CARE MUST BE TAKEN BY THE DRIVER OF THE TRACTOR OPERATING THE HARVESTER TO PREVENT CONTACT OR NEAR CONTACT WITH OVERHEAD POWER LINES. IT IS THE RESPONSIBILITY OF THE DRIVER TO ENSURE ADEQUATE CLEARANCE BETWEEN THE ELEVATOR AND ANY POWER LINES, WHATEVER POSITION THE ELEVATOR MAY BE IN.



Contact your local area electricity supplier for advice regarding clearance under power lines, when operating this harvester.



When the machine is being transported, the elevator must be in the fully folded position

7.6.2

The cart elevator is pivoted in two places, in order that it can be folded for transport, as well as being adjusted for height during work. Both actions are controlled by joystick on the driver's switch control box (see section 4 Controls). Normally the inclined centre section should be fully extended while in work, but it is possible to pull this in a little to suit the position of the trailer while opening out a new plot. Always work the discharge section of the elevator as low as possible, in relation to the potatoes in the trailer, in order to minimise the drop.

7 - OPERATING ADJUSTMENTS

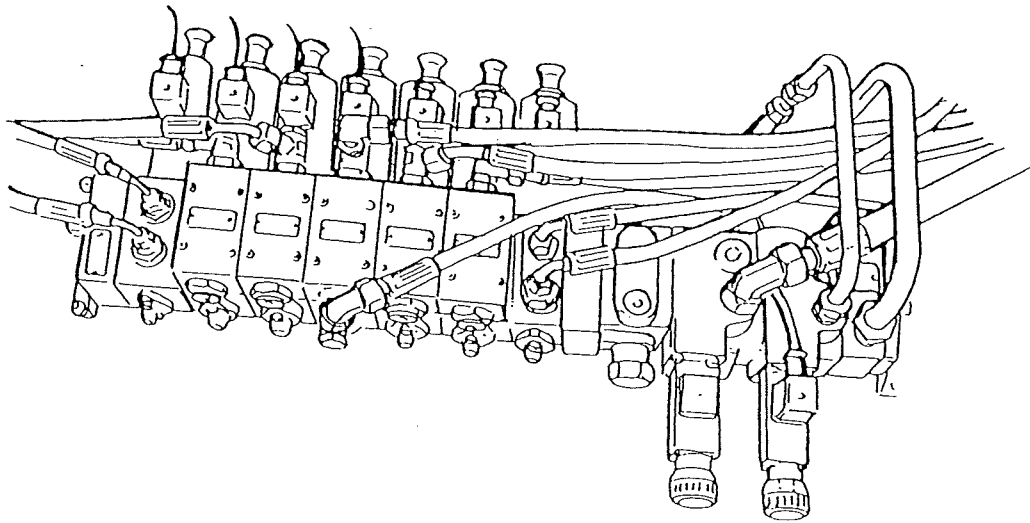


Fig 7.10

7 - OPERATING ADJUSTMENTS

7.7.1

The cart elevator is driven by an hydraulic motor mounted on the discharge end of the elevator. The elevator is controlled, for on off, by a switch in the drivers switch control box (see section 4 Controls). A black knob of the flow control valve in the harvester valve bank (fig 7.10), controls the speed of the elevator. A remote in cab control of the cart elevator speed is available, (see section 12 Options). Adjust the speed of the of the elevator according to the volume of the crop being handled. Excess speed will throw the crop too hard into the trailer.

SECTION 8

PROBLEMS AND REMEDIES

8 - PROBLEMS AND REMEDIES

Damage to crop

8.1.1

A machine that is incorrectly adjusted or operated can cause a significant amount of severe damage to the crop. The type of damage found in the sample will usually give an indication as to how the damage was caused and where it is occurring. When identification and isolation of the problem is difficult, stop the machine, drive and tractor, while it is in work and full of crop. Examine samples at various points, start in the row in front of the machine and follow the path of the crop through to the trailer. Somewhere between the last undamaged sample and the first signs of damage will be the area causing the problem. The shape and nature of the will give clues as to the cause.

Damage can take various forms. The following comments will help find and cure some of the more common problems. Remember the harvester is not always the culprit.

The speed and efficiency of mechanical harvesting can be greatly improved by good planting techniques and adequate cultivation methods.

Cutting and slicing of crop

8.1.2

The most common cause of slicing is inadequate share depth. Possible causes are:-

1. Incorrect share depth
2. Incorrect depth wheel setting
3. Incomplete lowering of hydraulics
4. Incorrect share type

Check these points with the appropriate section of this operators book.

In stony ground a stone can become wedged between the share blades preventing penetration.

Cutting can also be caused by discs which are not correctly aligned with the row, or by crop rolling forward off the web onto the discs.

8 - PROBLEMS AND REMEDIES

Loss of crop

8.2.1

If worthwhile crop is left in the ground it may be because the share is not deep enough. Check the same possible causes as for cutting crop. Check also for row alignment.

Small crop may also be lost through the web bars of the main web. Either, change to a smaller pitch main web, or dig more soil to carry the crop further into the machine.

Crop can also be lost through the haulm roller. Check for a smooth feed at the mouth of the machine and make sure that the haulm roller is set correctly.

When a machine is full of soil the damage risk to the crop is greatly reduced. Keep the soil in the machine as long as possible to cushion the crop, a combination of digging depth and forward speed will help to achieve this.

Galaxy clod rollers

8.2.2

If crop loss is being experienced, or if the flow over the first part of the Galaxy is being held up, then it is advisable to reverse the direction of the first clod roller (see section 7 Operating adjustments)

Galaxy clod roller shape

8.2.3

As a guide the square clod roller is the norm, and contends with most conditions, whether driven in the normal direction or in reverse. The need to change rollers comes when working in small crops, where there is a degree of crop loss as the clod roller operates. If crop is being lost at this point then alternative shaped clod rollers can be fitted (see section 12 Options). If a small amount of loss is being experienced then change to the hexagonal roller. If the loss continues, or is severe, then change to the round roller. The change of shape reduces the gap to the star shaft.

SECTION 9

TRANSPORT

9 - TRANSPORT

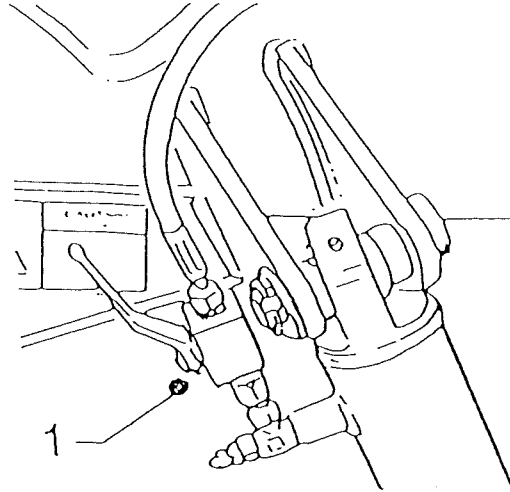


Fig 9.1

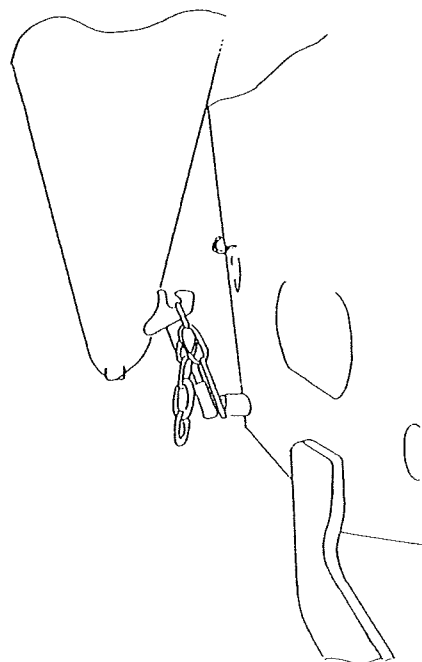


Fig 9.2

9 - TRANSPORT

9.1.1



Owners and operators are reminded that when used on public roads in the UK a speed limit of 20 mph (32 kph) applies to any machine over 2.5 M wide. Police notification may be required for some journeys, subject to local requirements.

9.1.2



Owners of high speed towing tractors, when used with the harvester **MUST** pay particular attention to the above information.

9.1.3

This machine must not be taken onto the public highway whilst carrying any form of load, or the statutory weights may be exceeded.

9.1.4

Before transporting this machine the following procedures should be carried out

- A. Ensure the machine is level laterally, then close the transport lock valve situated near the top of the levelling cylinder (Fig 9.1 item 1).
- B. Operate the share control (switch D on the drivers switch control box, see section 4) to raise the floating chassis, fit the transport chains onto the hooks provided on the main chassis. Operate the share control again to lower the floating chassis so that its weight is supported onto the transport chains. (Fig 9.2).
- C. Operate the elevator control (switch E on the drivers switch control box, see section 4) to make sure that the cart elevator is fully and correctly folded.
- D. Operate the steering control (switch C on the drivers switch control box, see section 4) to make sure that the land wheels are in the straight ahead position.
- E. Switch the illuminated on/off switch (switch M on the drivers switch control box, see section 4) to the off position.
- F. If road lights are fitted , make sure they are clean, visible and working correctly

SECTION 10

ROUTINE MAINTENANCE

10 - ROUTINE MAINTENANCE

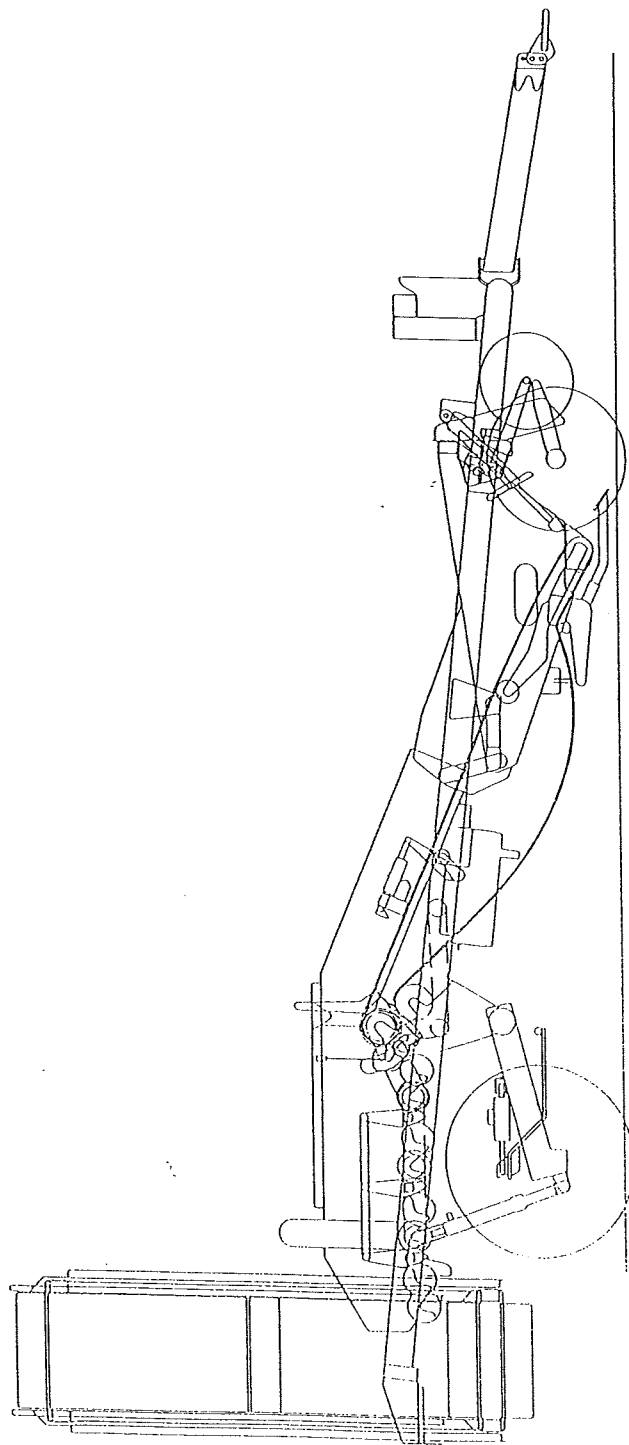


Fig 10.1

10 - ROUTINE MAINTENANCE

10.1.1

Correct and adequate maintenance is vitally important to minimise the risk of breakdowns, reduce operating costs and obtain the maximum output from your harvester.

New machines

10.1.2

It's important during the first weeks with a new machine to keep a regular check for any bolts, screws, connections etc. Which may work loose during this initial working period. A few minutes spent each day can prevent costly and time consuming breakdowns (Fig 10.1).

Daily maintenance

10.1.3

During working season the following daily maintenance should be carried out. Check all covers and guards are in position, free from damage, and all retaining latches and hinges are in place and operative. Repair or replace any found to be defective before operating the machine.

Carry out the following check list:-

1. Check tension of all drive chains, adjust if necessary and lubricate with clean oil.
2. Check tyre pressures and adjust if necessary. For tyre pressures see section 3 Specifications.
3. Check for any damaged or broken rollers, web bars or stars etc. Repair or replace as necessary.
4. Check wheel nuts for tightness. For torque settings, see section 3 Specifications.
5. Check all scraper clearances and adjust as necessary. Scraper should be adjusted as close as possible without actually touching.
6. Check all hydraulic cylinders, valves and pipe work for signs of leaks or damage, repair or replace as necessary.
7. Carry out lubrication as listed in 10.2.1

10 - ROUTINE MAINTENANCE

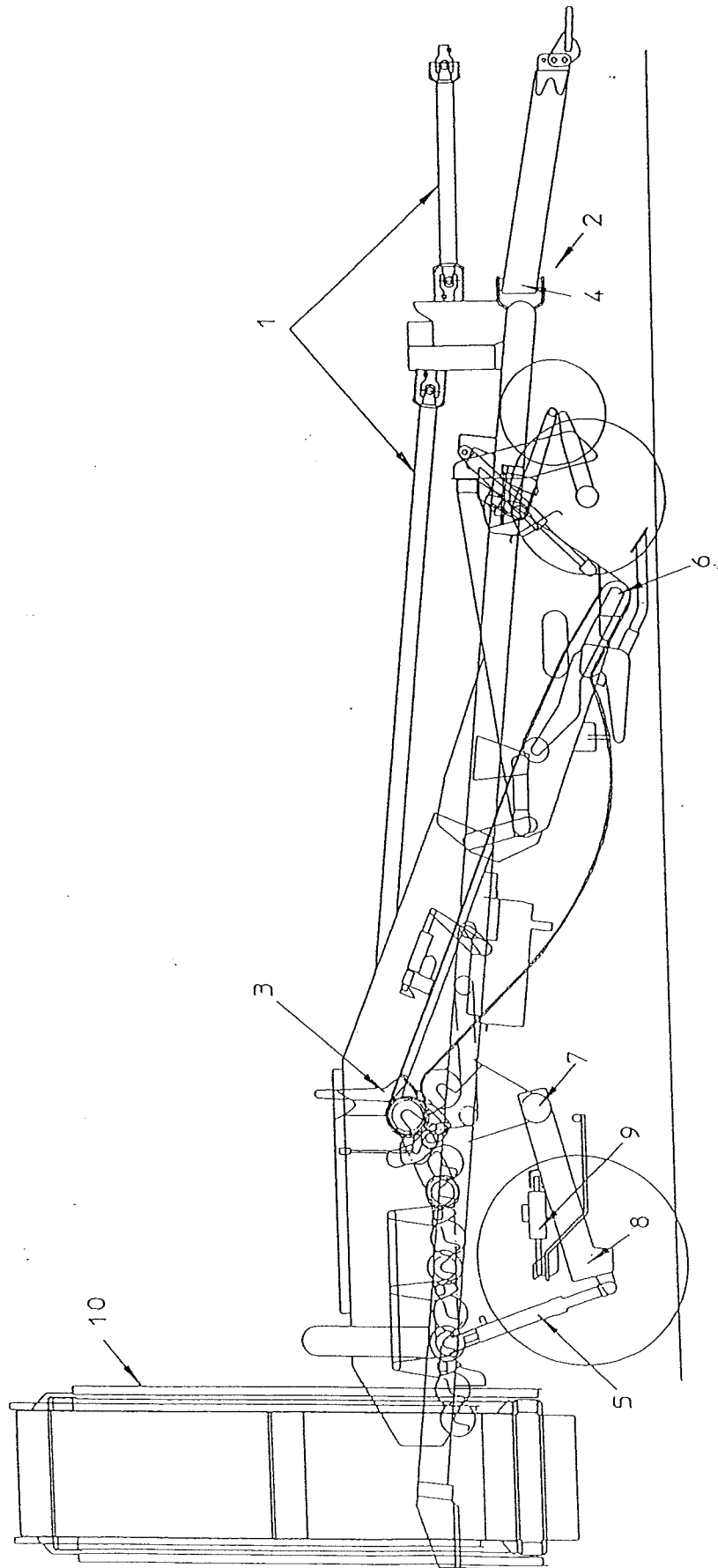


Fig 10.2

10 - ROUTINE MAINTENANCE

Daily lubrication

10.2.1

ITEM	(Fig 10.2)	LUBRICANT
1	PTO Shaft	Medium grease
2	Lanes adjuster cylinder	Medium grease
3	Haulm roller pivot	Medium grease
4	Drawbar	Medium grease
5	Level leg cylinder	Medium grease
6	Main web front rollers	Medium grease
7	Axle main beam	Medium grease
8	Steering king pins	Medium grease
9	Steering cylinder	Medium grease
10	Cart elevator pivots	Medium grease

Chain drives

10.2.2

All chain drives have adjusters that are visible when the appropriate guard is removed to expose them. Adjust the chains tight enough to give a positive drive without undue stretching. Where plastic chain tension or guide blocks are fitted, these will show fairly rapid wear initially, but will settle down when the chain rollers rather than the side plates come into contact with the plastic.

10 - ROUTINE MAINTENANCE

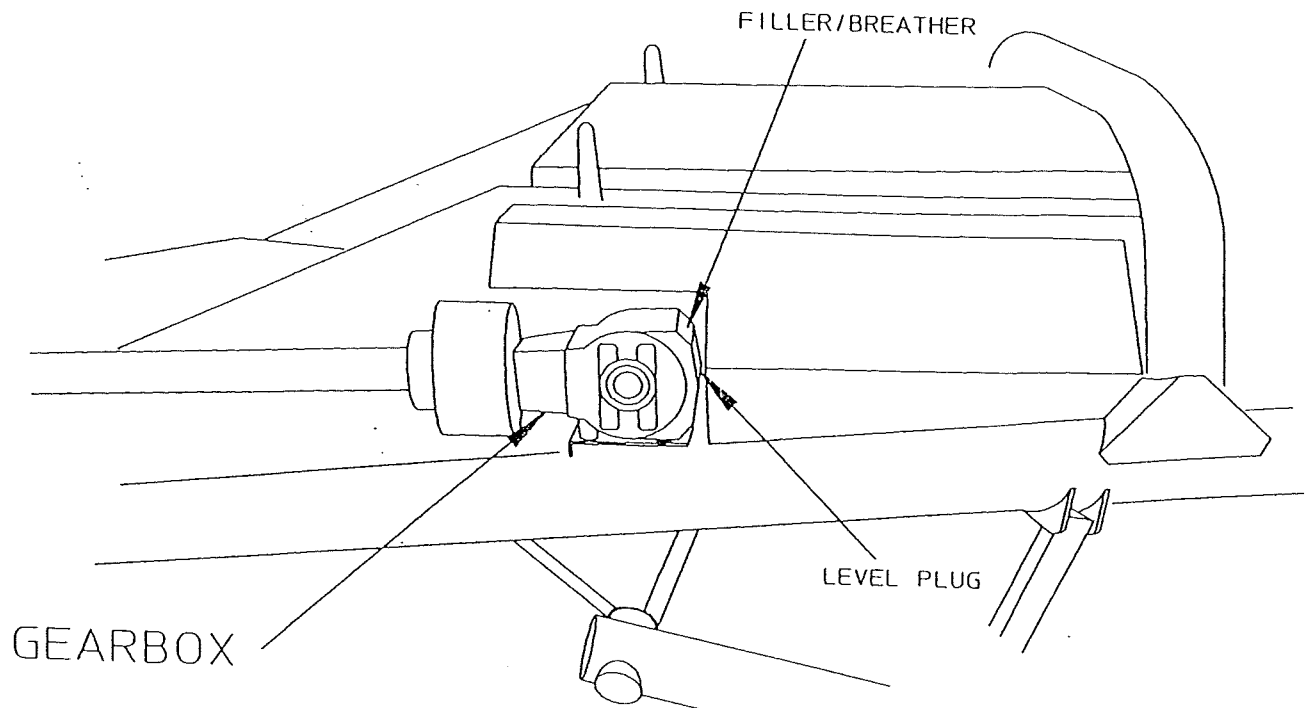


Fig 10.3

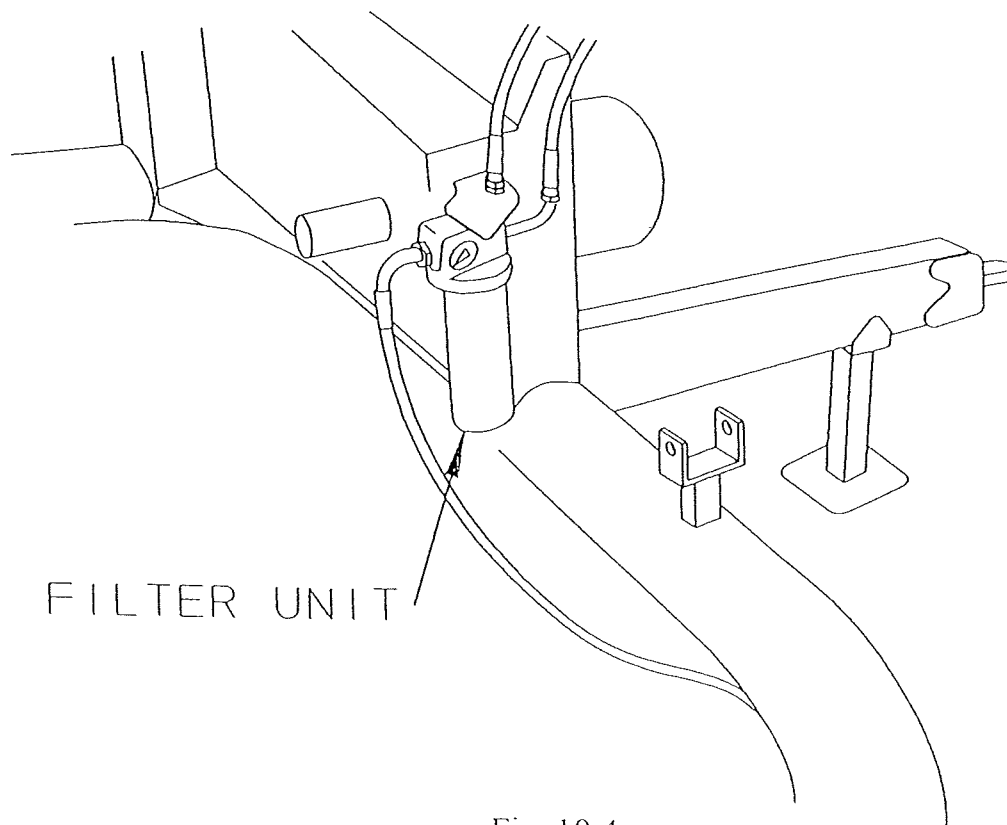


Fig 10.4

10 - ROUTINE MAINTENANCE

Weekly maintenance

10.3.1

During working season the following weekly maintenance should be carried out.

1. Carry out all the procedures listed in daily maintenance, see 10.1.2 and 10.2.1.
2. Check all shafts, bearings and rollers for undue wear, and replace as necessary.
3. Lubricate all bearings.
4. Check discs and shares blades for excessive wear, replace if necessary.
5. Check level of oil in gearbox (Fig 10.3), if necessary top up with gear oil.

Annual maintenance

10.3.2

Prior to the start of the working season the following maintenance should be carried out.

1. Carry out all the procedures listed in daily and weekly maintenance, see 10.1.2, 10.2.1 and 10.3.1.
2. Check all webs for any damage or wear and repair or replace as necessary.
3. Check stars and grip rings in Galaxy separator and replace any badly worn or damaged parts.
4. Check metalwork (e.g. side plates) for any damage or wear and repair or replace as necessary.
5. Inspect wheel bearings and check for excessive wear, replace as necessary. Re-pack with fresh grease on re-assembly.
6. Replace the hydraulic filter element in the pressure line between tractor and machine valve bank. Use only genuine Richard Pearson Ltd. Replacement elements (Fig 10.4)
NB. THIS IS NOT A WASHABLE ELEMENT.

Changing webs

10.3.3

Correct changing of webs on the harvester requires special skills and procedures to be employed, and should not be attempted before first contacting an authorised Richard Pearson dealer, or the Manufacturer for further advice and training.

10 - ROUTINE MAINTENANCE

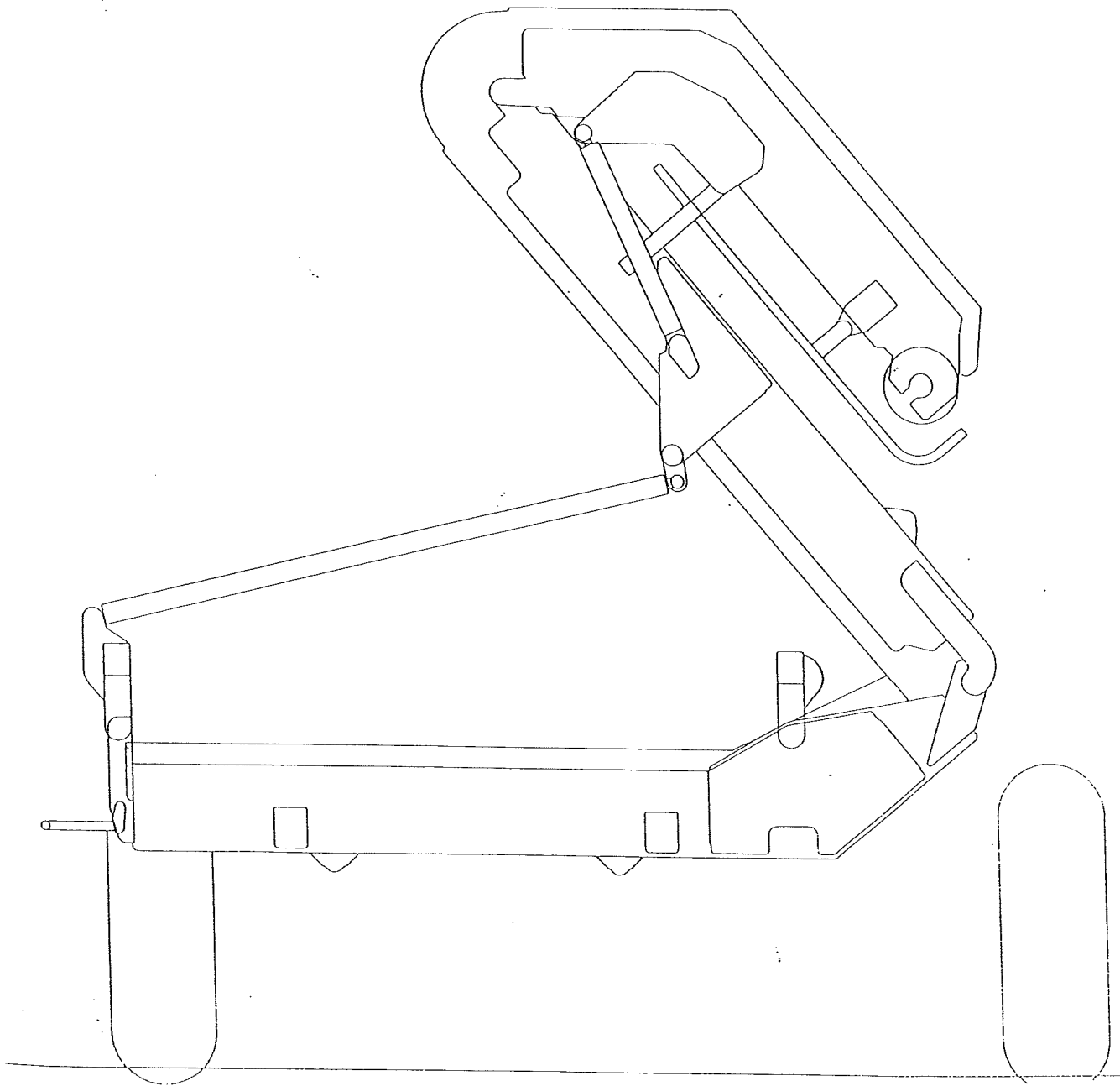


Fig 10.5

10 - ROUTINE MAINTENANCE

Hydraulic residual pressure dump procedure

10.4.1

The following procedure outlines the method of relieving the hydraulic residual pressure. It is essential that this procedure be carried out before any maintenance or repairs are attempted.

1. Make sure that the cart elevator is in the fully folded position (Fig 10.5)
2. Place chocks to the front and rear of both wheels to prevent the machine from moving
3. Either lower the floating chassis to the ground, or put it into the transport position (see section 9.1.4 B).
4. Fit the drawbar stand to the drawbar and disconnect the machine from the tractor, leaving the hydraulic and electrical connection still attached. Move the tractor forward so that the machine drawbar is just clear of the tractor drawbar jaw.
5. With the levelling cylinder transport lock valve in the open position, lower the machine to its lowest position. **LEAVE THE TRANSPORT LOCK IN THE OPEN POSITION.** (see section 9.1.4 A).
6. Switch off the tractor engine.
7. Operate switches A, C, D and E (see section 4 Controls) on the drivers switch control box, in turn, to all positions and return them to their respective neutral positions.
8. There should now be no residual pressure remaining in the machine's hydraulic system, and after disconnecting the hydraulic and electrical connection from the tractor, any work involving dismantling of the hydraulic components can be carried out.

Recommended Lubrication

10.4.2

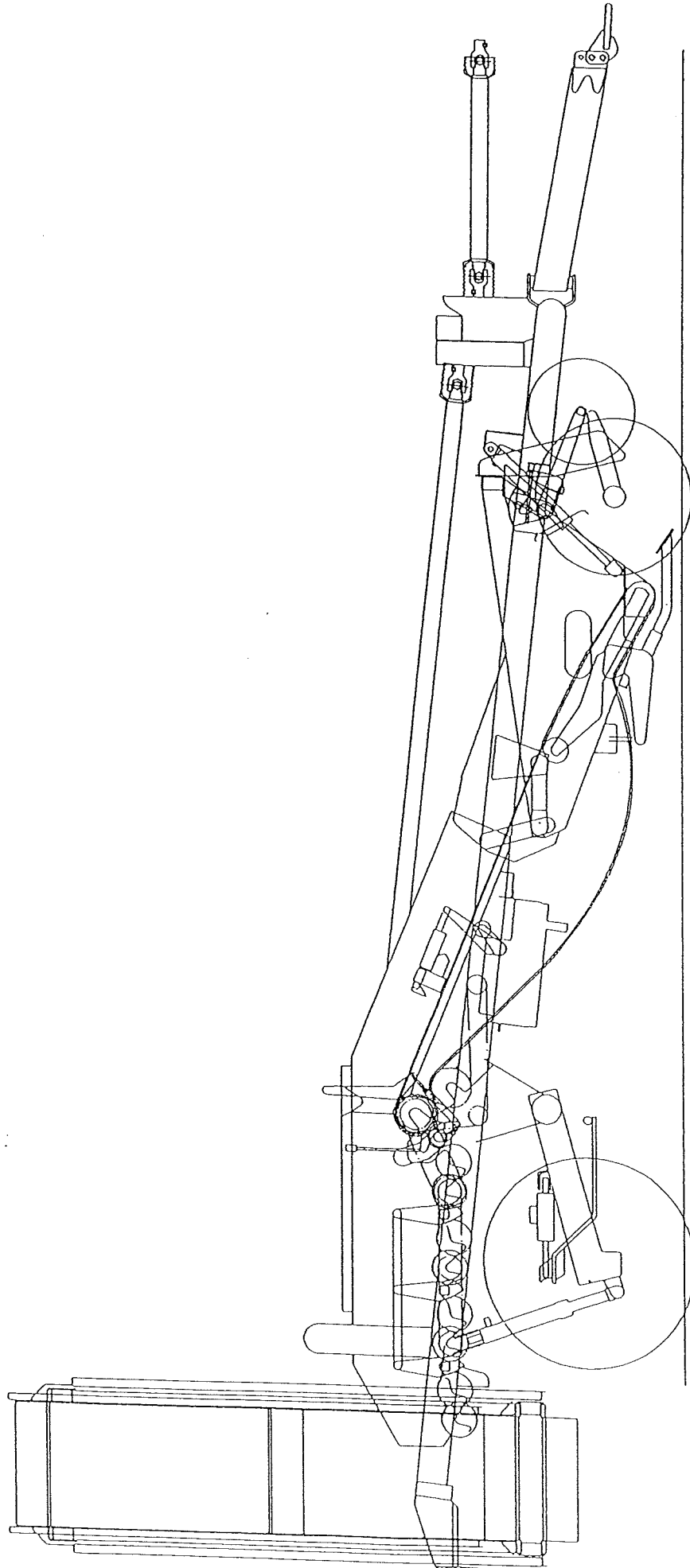
Medium grease	=	BP	Energrease L.S E P 2
Clean oil	=	BP	NT 150
Gear oil	=	BP	EP HYPO ENERGEAR
			85W/140

RICHARD PEARSON Ltd. use BP lubricants. Please consult your local lubricant distributor, in order that a compatible equivalent may be recommended to you, should you choose to use the lubricants of a different manufacture.

SECTION 11

OUT OF SEASON STORAGE

11 - OUT OF SEASON STORAGE



11 - OUT OF SEASON STORAGE

The harvester can frequently operate in soils which contain chemical fertilisers etc. When the working season is completed, wash and clean the machine thoroughly prior to carrying out the following checks and operations.

Storage procedure

11.1.1

1. Oil or grease any exposed metal surfaces which have been polished by the soil flow.
2. Clean all drive chains and lubricate with oil.
3. After carrying out the hydraulic residual pressure dump procedure (see section 10 Routine maintenance 10.4.2), any parts of hydraulic cylinders rods that are still exposed should be greased or oiled to prevent corrosion.
4. Ensure that the tyres are inflated to the correct pressure.
5. Ensure that the hydraulic hose quick release couplings and the electrical connectors on the machine are kept clean and dry.
6. Check the whole machine carefully and note any repairs which may need to be carried out. It is always better to carry out any repairs well before the commencement of the following season.
7. Carry out all the lubrication checks outlined in routine maintenance.
8. Ensure the drivers switch control box is kept in a safe, dry place and available for use at the commencement of work or for any maintenance to be carried out.
9. Ensure that this handbook is kept in a safe place and available for use at the commencement of work or for any maintenance to be carried out.

SECTION 12

OPTIONS

12 - OPTIONS

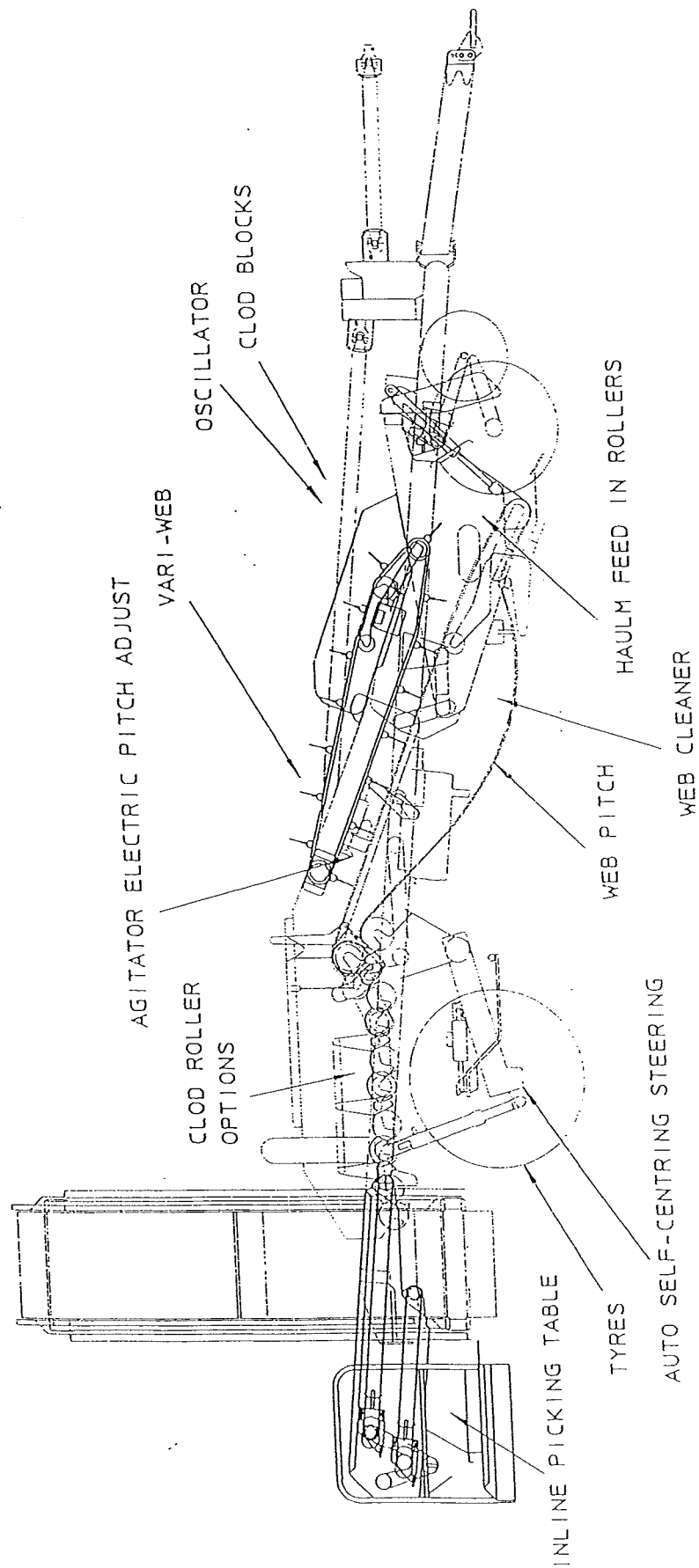


Fig 12.1

12 - OPTIONS

List of options

12.1.1

The following list is of the more popular option available for the Quality Master harvester:-

Clod roller options

Inline picking off table (up to two pickers)

canopy and frame for easi-pick

canopy lighting

Clod blocks

Oscillator

Agitator electric pitch adjustment

Automatic self-centring steering

Automatic control of machine levelling

Haulm feed in rollers

Vari-web

Pearson Vision Technique closed circuit camera system

Tyres

Main web pitch option

Web cleaner

12 - OPTIONS

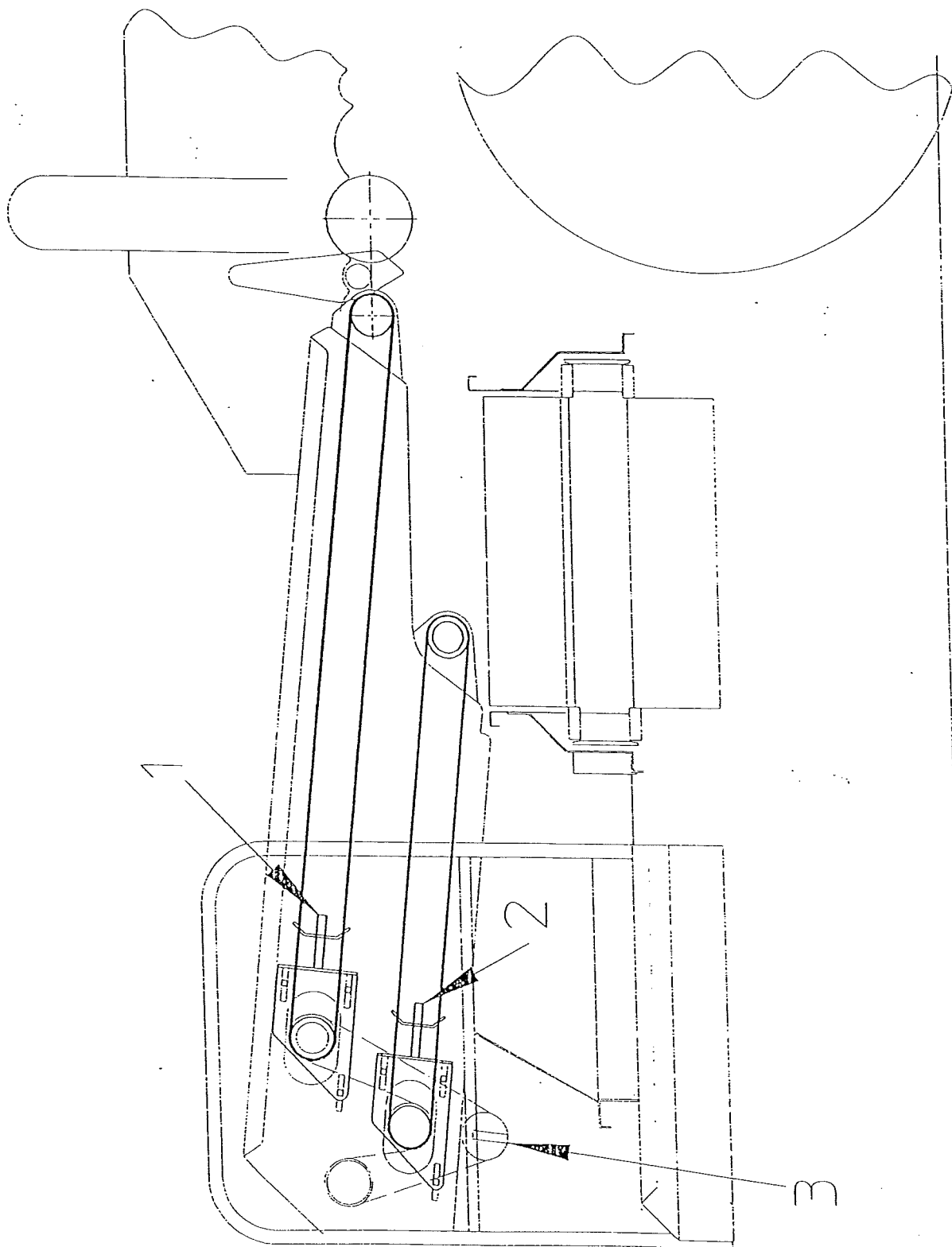


Fig 12.2

12 - OPTIONS

Clod roller option

12.2.1

There are a total of three different shaped clod rollers offered in the Galaxy separator, round, square and hexagonal. Whichever one you had supplied with your machine the others are available as options, (see section 8 Problems and remedies) Consult your Richard Pearson Dealer for more information.

Inline picking off table

12.2.2

A small picking off belt, (POB), capable of carrying 2 pickers, one on each side (fig 12.2). Comprising of a top belt from which the pickers sort through the crop, and a lower belt which returns the crop to the cart elevator. The unit is hydraulically driven and can be controlled for speed by a flow control valve mounted on the right hand side of the unit. A graduated knob mounted on top of the flow valve controls the speed, a higher number giving a higher speed. A small electrical switch box gives emergency stop facility and communication to the driver. The box has a magnetic foot and can be mounted in a convenient position to the pickers.

POB Belt tension

12.2.3

The tension of the picking off belts is maintained by adjusting the rear rollers of each belt. By removing the guards belt adjusters, on each side of the table can be reached (fig 12.2 item 1 and 2). Ensure that the belts are tensioned evenly on both sides of the table so that the belts run correctly.

POB Drive chain tension

12.2.4

The tension of the picking off table drive chain can be adjusted on the right hand side of the table. By removing the right guard the drive chain is exposed. The lower idler sprocket is mounted in a slot, by slackening the clamp bolt, the drive chain can be adjusted (fig 12.2 item 3)

12 - OPTIONS

P O B CONTROL BOX

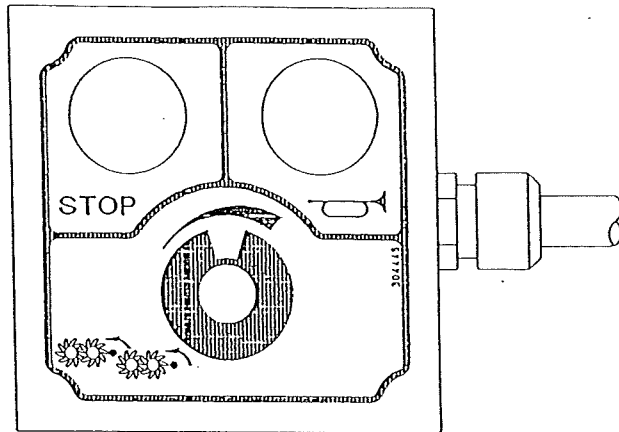


Fig 12.3

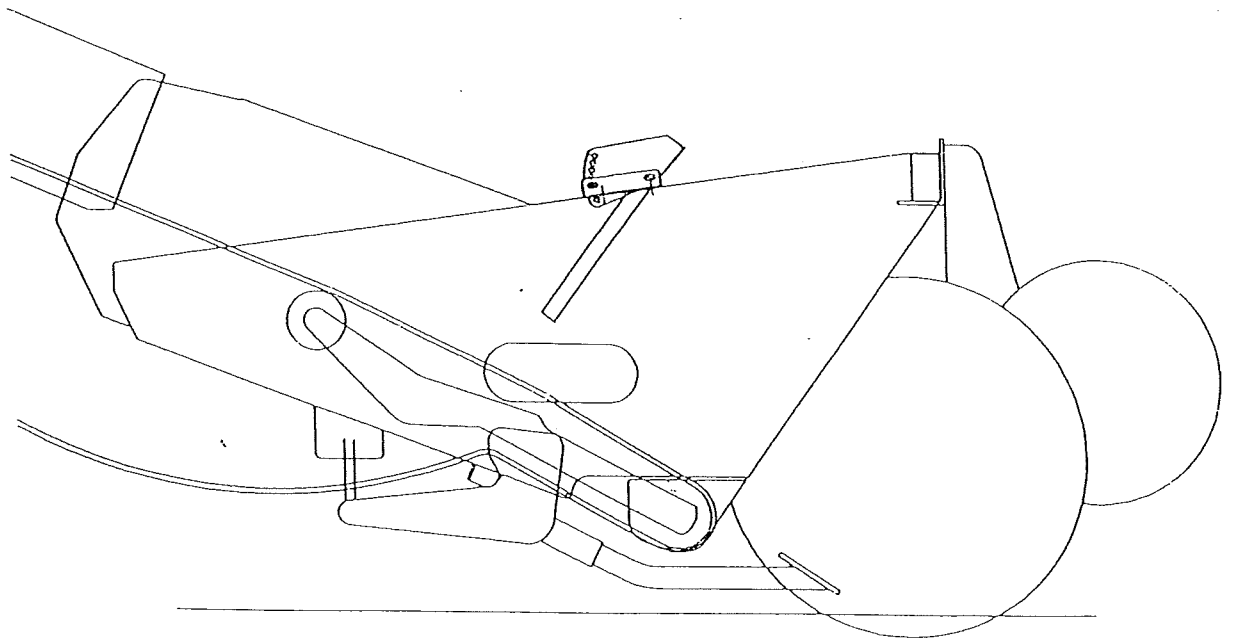


Fig 12.4

12 - OPTIONS

POB Emergency stop control

12.3.1

The emergency stop control is a red button mounted on the front face of the switch box (fig 12.3). It is a detented push and pull switch. Commencing with the switch in the off position, (pushed in), pulling the switch out (with the machine hydraulics running) will start the picking off belt, which will run at the speed pre-set by the speed control valve. Pushing in the switch will immediately stop the picking off belt and cause a buzzer to sound continuously in the tractor driver's cab. The buzzer will only cease to sound when the red button is pulled out to re-start the picking table.

POB Communication control

12.3.2

The communication buzzer control is a red button with a white circle in its centre. It is mounted on the front face of the switch box at the side of the emergency stop control (fig 12.3). The communication buzzer control is a momentary contact push switch, which when depressed will sound a buzzer in the tractor driver's cab. This will sound only for as long as the button is depressed. A system of communication between the tractor driver and the pickers should be adopted to prevent any misunderstanding of signals.

Clod blocks

12.3.3

The clod block assembly is on the floating chassis above the main web and is there to help brake down and help the sieving action on the soil through the web. The blocks are made from resilient rubber and are adjustable for angle in relation to the web (fig 12.4).

12 - OPTIONS

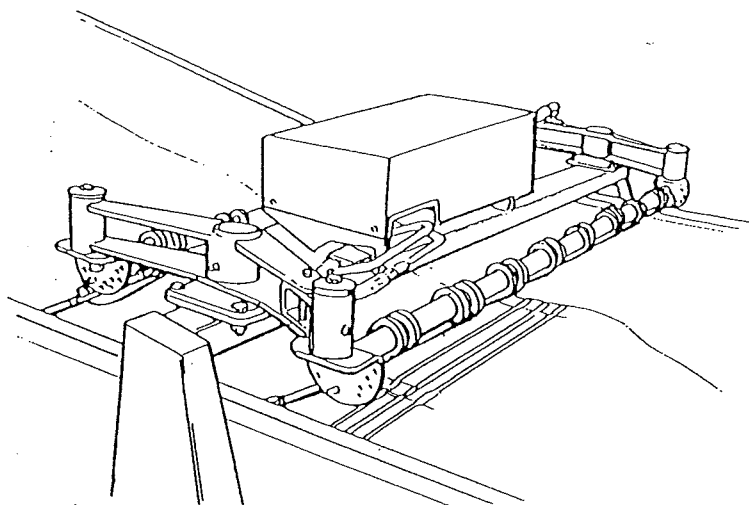


Fig 12.5

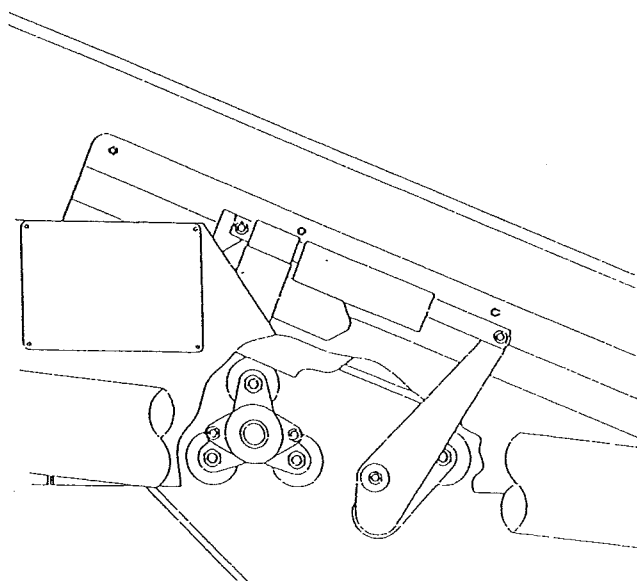


Fig 12.6

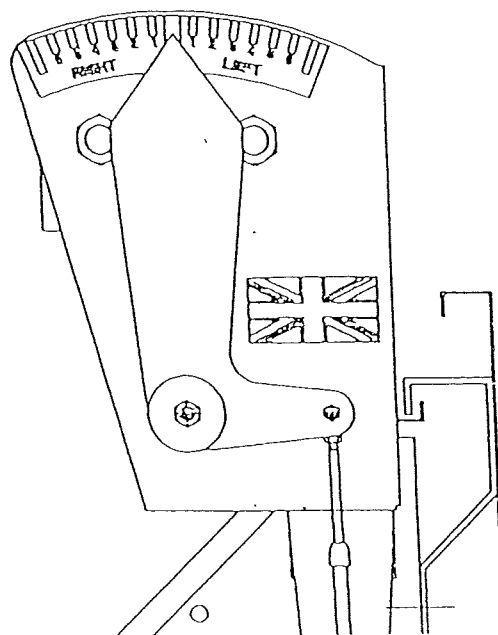


Fig 12.7

12 - OPTIONS

Oscillator

12.4.1

A hydraulic driven oscillator may be mounted above the main web in order to spread any bunches of haulm or weed. It consists of two rows of rubber covered fingers which are adjustable for height above the main web. These should be set so that the haulm is evenly distributed, but the flow along the web is not impeded. A switch is mounted in the drivers switch box which controls the on/off of the oscillator unit. The speed of the unit is by a flow control valve, included in the main valve bank, mounted on the right hand side of the machine. A graduated knob mounted on the bottom of the flow valve controls the speed, a higher number giving a higher speed. When not in use the fingers may be swung up out of the crop flow (fig 12.5).

Automatic levelling

12.4.2

It is possible to have the levelling cylinder controlled by an optional electronic device which will give automatic lateral levelling control. The unit is mounted onto a plate at the rear, right hand side of the chassis bridge. The unit can be adjusted for angle to give the required attitude of the machine. Once the unit is switched on, it will maintain that attitude, automatically irrespective of the contours of the land. When the unit is fitted a switch in the drivers switch control box will switch the unit on and off. (see section 4 switch C). When switch off there is normal manual control of the level leg, when switch on full auto control is engaged.

Agitator electric pitch adjustment

12.4.3

An electric actuator is mounted to the agitator control arm (fig 12.6). and is operated by a switch in the drivers switch control box (see section 4 switch D).

Automatic self-centring steering

12.4.4

The self-centring steering is controlled by proximity switches mounted on the steering indicator (fig 12.7). When fitted, the joystick in the drivers switch control box (see section 4 switch C), controls the steering as described, but when moved into the forward or rearward position the wheels automatically return to the straight ahead position.

12 - OPTIONS

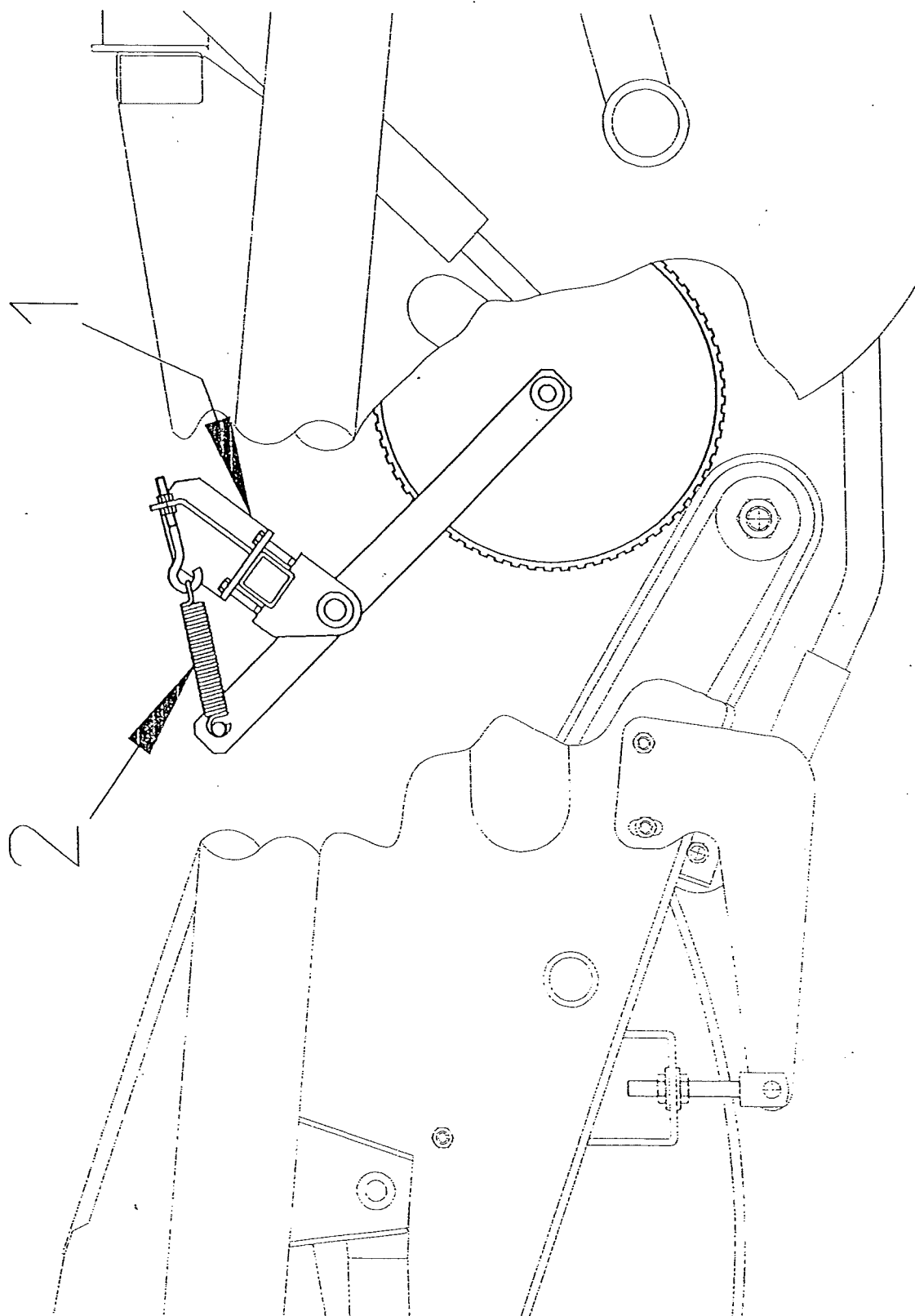


Fig 12.8

12 - OPTIONS

Haulm feed in rollers

12.5.1

In place of the standard anti-roll flaps a set of haulm feed in rollers can be fitted. These are for difficult haulm conditions and are mounted on top of the front edge of the main web, on the outside of the discs. The rollers fill the gap between the disc and the side panel and between the two centre discs, if fitted. To achieve the required row settings additional rollers and spacers may be fitted (fig 12.8). these additional roller and spacers are attached to the original rollers by suitable length bolts. Further adjustments of the rollers width position can be made by moving them laterally on their mounting beam. Slacken clamp bolts (fig 12.8 item 1), move the roller unit to the required position and tighten the clamping bolts again. Under some row settings it may be necessary to exchange the left hand and right hand roller units in order to achieve the optimum settings.

Haulm feed in roller tension

12.5.2

The loading of the haulm feed in rollers may be adjusted, to give more or less pressure between rollers and web. This is achieved by increasing or decreasing the spring tension between the roller mounting arm and the spring ashore (fig 12.8 item 2). The tension should be sufficient to allow the rollers to grip the haulm and to achieve a positive drive from the web.

Pearson vision Technique camera system

12.5.3

A closed circuit television camera and monitor is available to enable constant monitoring of the crop flow through the machine. Contact your Officially appointed Richard Pearson Ltd. Dealer for further information about this valuable aid to your machine operation.

Tyres

12.5.4

See section 3 Specification for alternative tyre sizes.

12 - OPTIONS

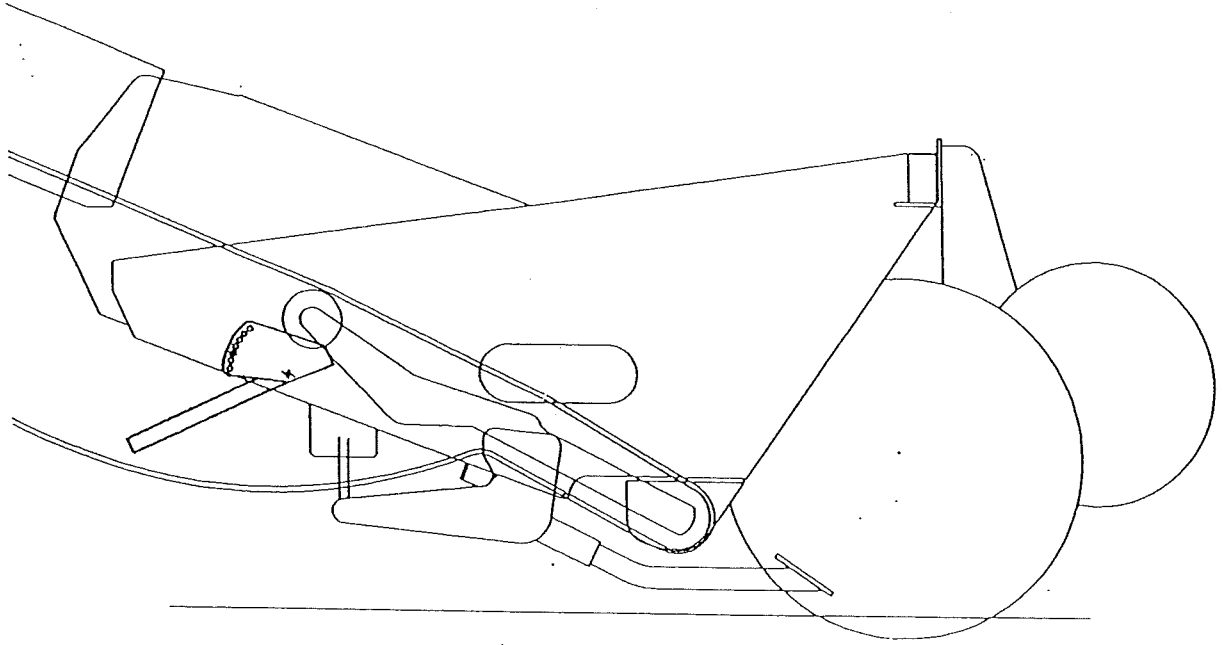


Fig 12.9

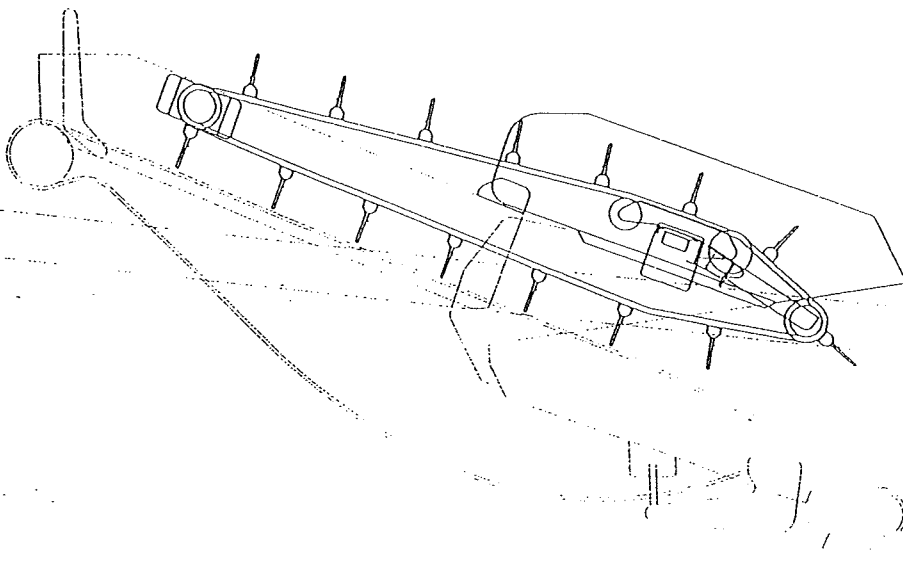


Fig 12.10

12 - OPTIONS

Main web pitch options

12.6.1

A variety of alternative main web pitches are available to suit different working condition and a variety of crops. Main web pitches are: 50 mm., 45 mm., 40 mm., 35 mm. And 28 mm.

Main web cleaner

12.6.2

A set of resilient rubber blocks mounted inside the main web, acting on the web bars to help remove soil and fibrous materials (fig 12.9). the pressure exerted on to the web bar is adjustable by rotating the cleaner assembly to give more or less contact.

Vari-web

12.6.3

The vari-web unit consists of a wide pitch web with rubber flights mounted above the main web, driven hydraulically, to assist in the transport of the crop up the main web when working in hilly conditions (fig 12.10).

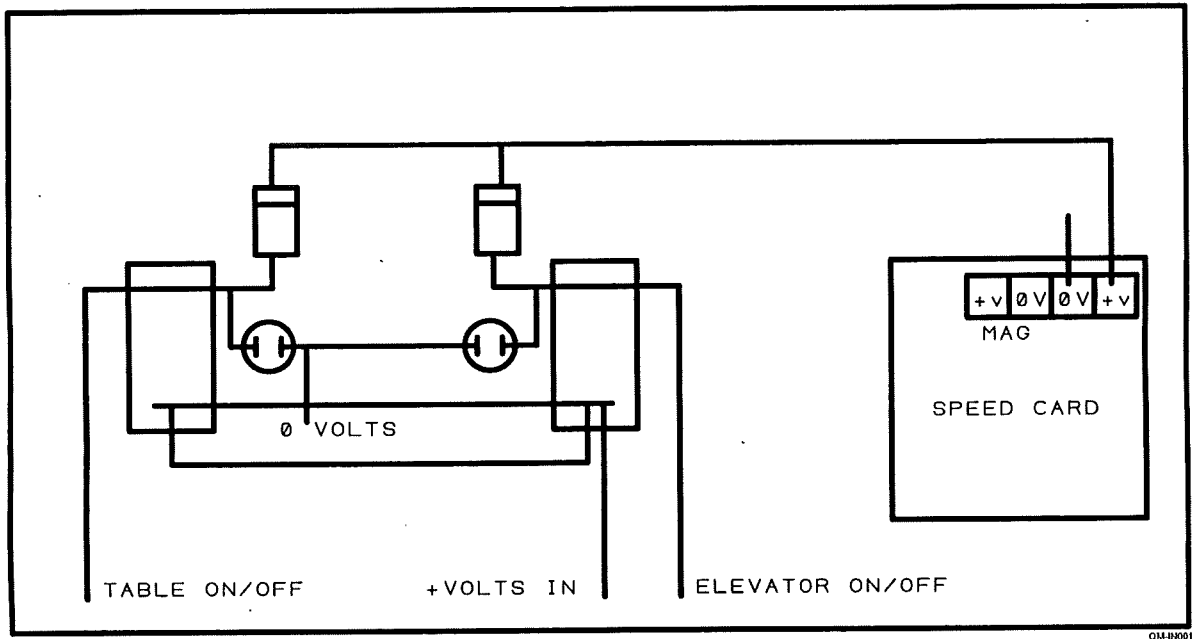
Crop types

12.6.4

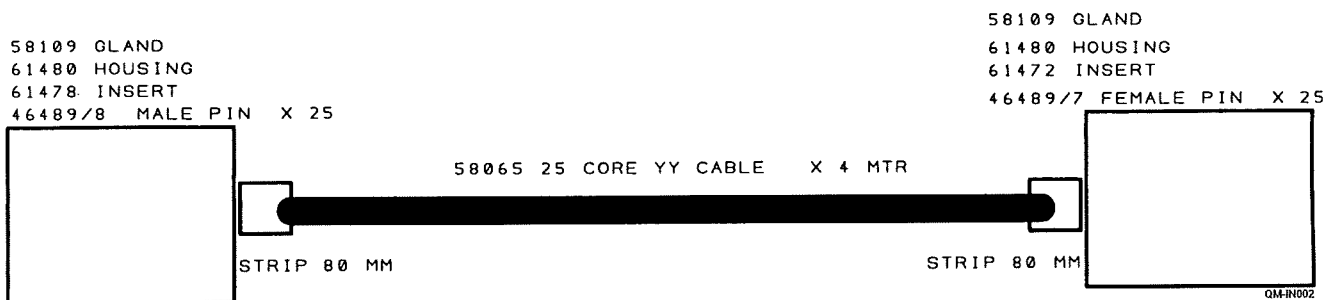
A variety of alternative crops can be lifted by your harvester. Consult your Richard Pearson Dealer for further information.

13 - ELECTRICS

13.1 Elevator and table ON/OFF switches (2017)

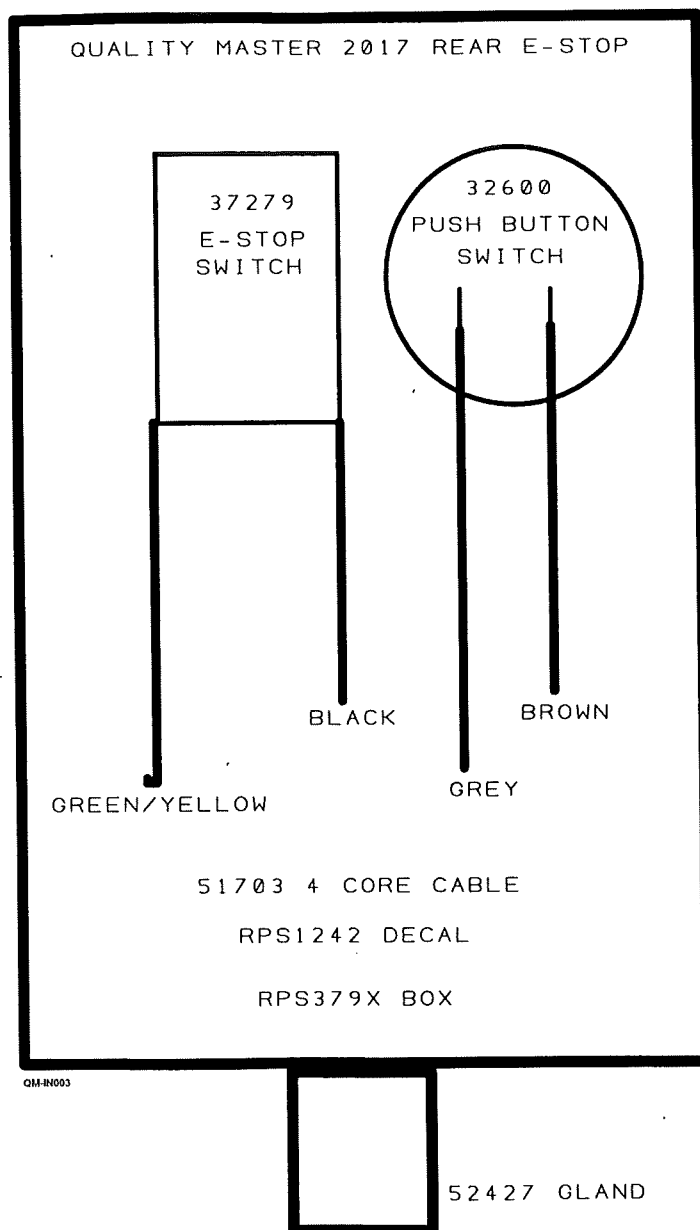


13.2 Link loom (2017)



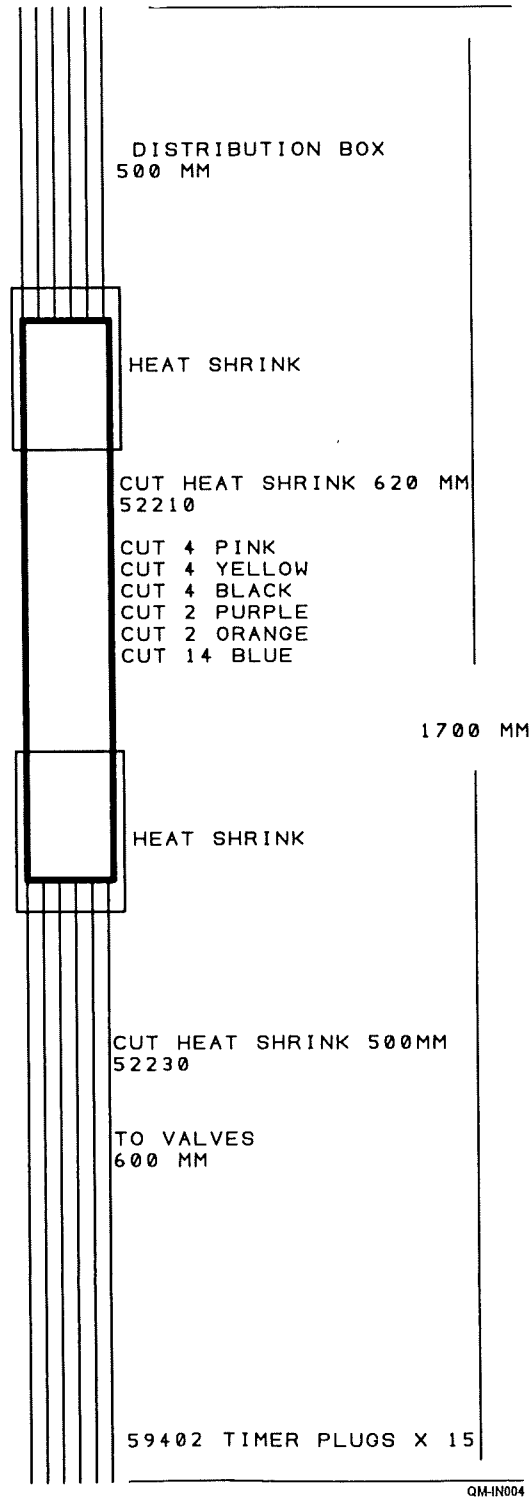
13 - ELECTRICS

13.3 Rear emergency stop (2017)



13 - ELECTRICS

13.4 Valve loom (2017)



13 - ELECTRICS

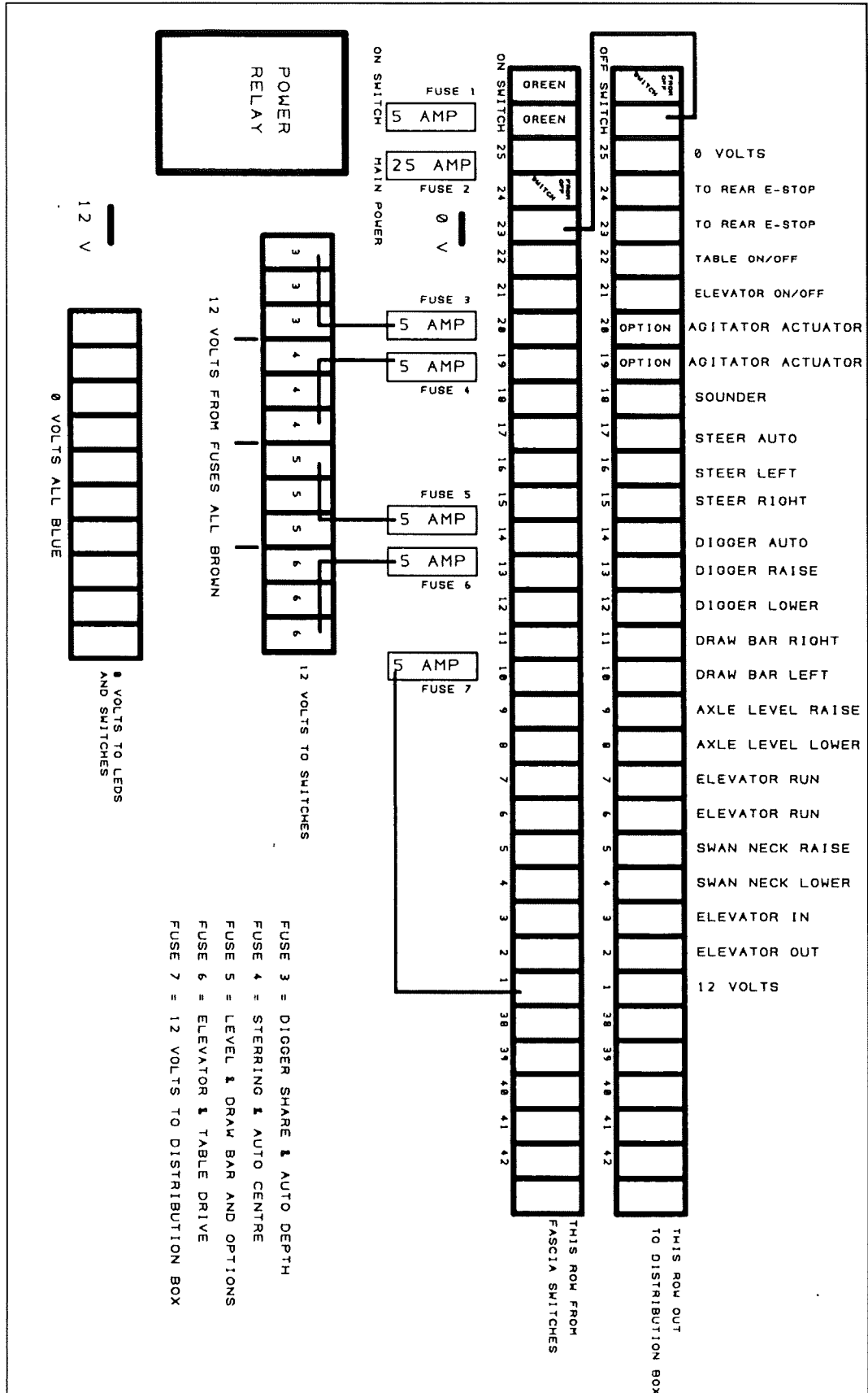
13.5 Cable numbers (2017)

CABLE NO	CONTROL BOX FUNCTION		VALVE PLUG NUMBER	VALVE PLUG CABLE COLOUR
1	12 VOLTS TO REAR JUNCTION BOX			
2	ELEVATOR OUT	VALVE	1	PINK
3	ELEVATOR IN	VALVE	2	PINK
4	SWAN NECK LOWER	VALVE	3	PINK
5	SWAN NECK RAISE	VALVE	4	PINK
6	ELEVATOR RUN	VALVE	5	PURPLE
7	ELEVATOR RUN			PURPLE
8	AXLE LEVEL LOWER	VALVE	6	YELLOW
9	AXLE LEVEL RAISE	VALVE	7	YELLOW
10	DRAW BAR LEFT	VALVE	8	YELLOW
11	DRAW BAR RIGHT	VALVE	9	YELLOW
12	DIGGER SHARE LOWER	VALVE	10=RL----12=LL	BLACK
13	DIGGER SHARE RAISE	VALVE	11=RR---13=LR	BLACK
14	DIGGER SHARE AUTO			
15	STEER RIGHT	VALVE	14	ORANGE
16	STEER LEFT	VALVE	15	ORANGE
17	STEER AUTO CENTRE			
18	SOUNDER			
19	AGITATOR	ACTUATOR		2 CORE
20	AGITATOR	ACTUATOR		2 CORE
21	ELEVATOR ON/OFF			2 CORE
22	TABLE ON/OFF			2 CORE
23	REAR E-STOP			
24	REAR E-STOP			
25	0 VOLTS			

QM-IN005

13 - ELECTRICS

13.6 Control box board (2017)



13 - ELECTRICS

13.7 Distribution board (2017)



APPENDIX A

Driver control box (machines from 2017)

The control box switches and buttons operate the various hydraulic and electrical functions of the harvester.

The buttons (item 1 & 2, fig 14.1) turn the control box ON and OFF. The adjacent LED will illuminate when the box is switched ON.



When the machine is being towed along public roads, the control box must be switched OFF to avoid any risk of switches being accidentally activated.

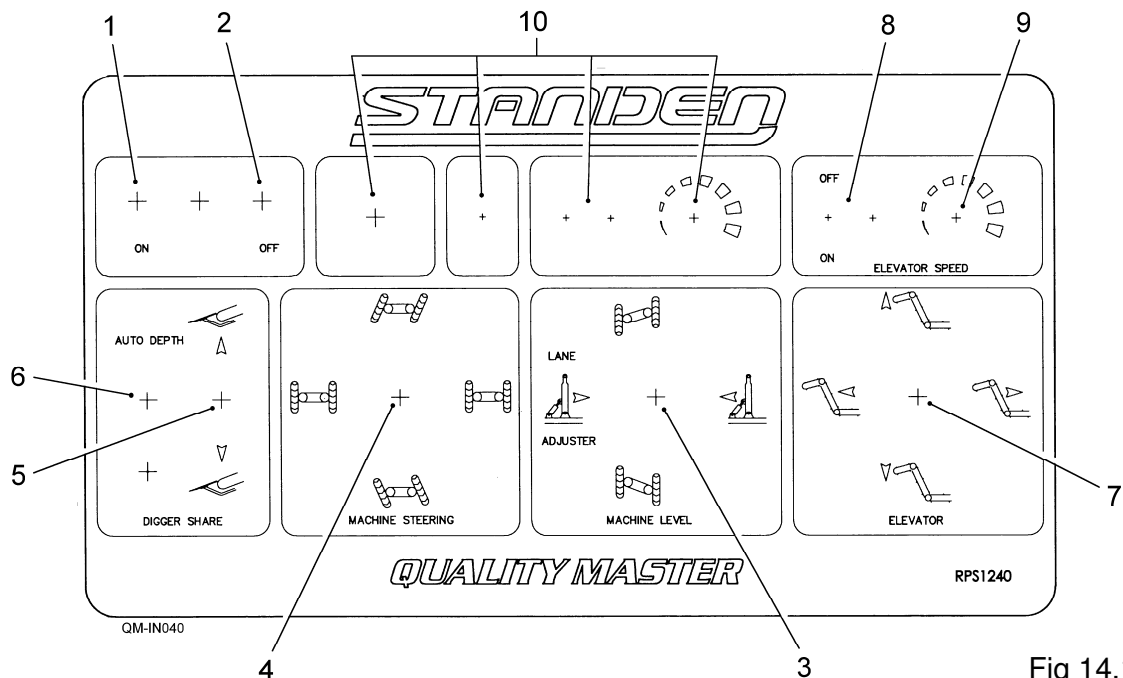


Fig 14.1

The joystick (item 3, fig 14.1) controls the drawbar lane adjuster ram and machine levelling ram. The lane adjuster ram moves the front of the harvester to the left / right in relation to the tractor. The levelling ram raises / lowers the RH side of the machine.

The joystick (item 4, fig 14.1) controls the wheel steering left / right and self-centring circuit. The angle of the wheels is displayed by the steering indicator (see fig 4.2). To centre the wheels automatically, move and hold the joystick forward or backward (indicated by the symbols) until the wheels have returned to the centre (straight ahead) position.

The switch (item 5, fig 14.1) raises / lowers the digger shares in and out of work. The switch (item 6, fig 14.1) turns the automatic depth control ON / OFF.

APPENDIX A

The joystick (item 7, fig 14.1) controls the discharge elevator bottom section fold in / fold out function, and the top section (swan neck) raise / lower function.

The button (item 8, fig 14.1) turns the discharge elevator web drive ON / OFF. The dial (item 9, fig 14.1) controls the speed of the discharge web.

The switches (item 10, fig 14.1) are used when various options such as; picking-off table, auto levelling, vari-web, oscillator, electric pitch agitator etc. are fitted. When a picking off table is fitted, the communication buzzer can be sounded by the operatives at the rear of the machine to attract the drivers attention.