POWER ARM 34

Operator & Spares Manual



LIST OF CONTENTS

Page 2
Page 3
Page 5
Page 6
Page 8 Page 10 Page 12 Page 13 Page 14 Page 15
Page 16 Page 16 Page 16 Page 16 Page 17 Page 17 Page 17 Page 18 Page 18 Page 20 Page 21 Page 22 Page 22 Page 23 Page 23
Page 25 Page 26 Page 26 Page 27 Page 27 Page 28 Page 29 Page 30 Page 30 Page 31 Page 32
Page 34 Page 36 Page 38 Page 46 Page 48 Page 50 Page 52 Page 54 Page 56 Page 60 Page 64 Page 66 Page 66

GENERAL INFORMATION

Read this manual before fitting or operating the machine. Whenever any doubt exists contact your dealer or the McConnel Service Department for assistance.

Use only McConnel spare parts on McConnel equipment and machines. This manual includes an illustrated spare parts breakdown and the interpretation which precedes it should be read before ordering replacement components.

DEFINITIONS

The following definitions apply throughout this manual:

WARNING

An operating procedure, technique etc., which can result in personal injury or loss of life if not observed carefully.

CAUTION

An operating procedure, technique etc., which can result in the damage of either machine or equipment if not observed carefully.

NOTE

An operating procedure, technique etc., which is considered essential to emphasise.

Left and Right-Hand

This term is applicable to the machine when fitted to the tractor and viewed from the rear. This also applies to tractor references.

Record the serial number of your machine on this page and always quote this number when ordering spares. Whenever information concerning the machine is requested remember to also state the type of tractor to which it is fitted. **INSTALLATION** MACHINE SERIAL DATE NUMBER MODEL **DETAILS** DEALERS! NAME **DEALERS** TELEPHONE NUMBER

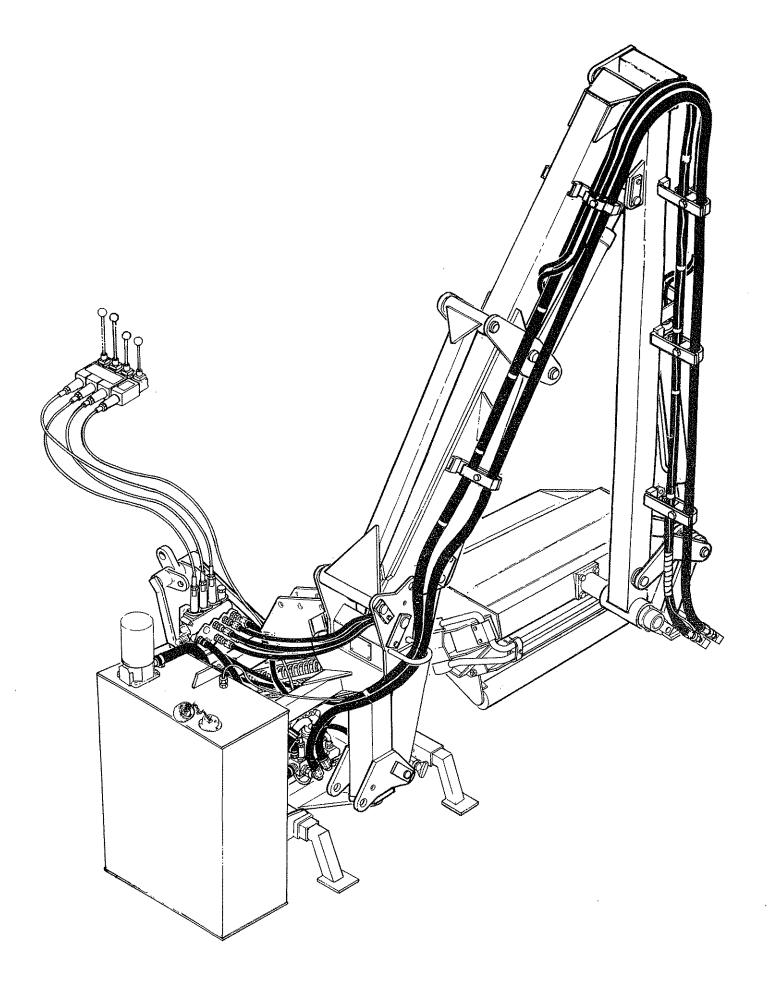


WARNING

NEVER		permit inexperienced personnel to operate the machine without supervision.
	• • •	stand under the raised flail head.
	• • •	cut over the far side of a hedge with the flail cutting towards the operator.
	• • •	continue to operate the flail when wire has wrapped around the rotor.
	* * P	leave the tractor seat with the flail still rotating.
	0 > 0	operate the flail without the correct hood properly fitted in position.
	· • •	exceed 540 rpm on the pto shaft.
		stop the engine with the pto engaged.
		operate the machine without a cab safety guard.
	• • •	operate the machine without the pto shaft guard in position.
ALWAYS	•••	inspect the work area or hedgerow for wire, steel posts, large stones, bottles and other dangerous materials and remove them before starting work.
	• • •	ensure bystanders are kept away from the machine during all flailing operations.
		check frequently, nuts and bolts for tightness and also check roll pins, shackles and flails for security.
	• • •	replace missing or damaged flails as soon as possible to avoid vibration and damage to the machine.
	• • •	disengage the pto and stop the tractor engine before making any adjustments.

CAUTION:

One of the features of the Power Arm 34 is the ability to cut close to the tractor in confined spaces. This means that in some instances the flail head casing can be made to foul the tractor if reasonable care is not observed.



INTRODUCTION

The Power Arm 34 is a hydraulically driven hedge and grass trimmer designed to fit on the three point linkages of the great majority of tractors without having to use extra brackets or fittings.

All Power for the operation of the rotor is provided by a high performance pump unit that is operated from the tractors P.T.O. shaft. The machine carries its own 30 gallon (136 litre) oil reservoir which incorporates an oil strainer and a 10 micron return flow filter.

The Power Arm 34 can be supplied either fully independent or with the arms operated by tractor supply. The fully independent model which is fitted with a tandem pump should be specified where any doubt exists on the hydraulic oil supply from the tractor. The economy version which utilises the tractors hydraulic oil supply to provide movement of the arms is fitted with a single pump for the operation of the rotor.

The models also differ in that engagement of the rotor drive on the tractor supply model is effected by operation of the tractors P.T.O lever, while on the fully independent version a rotor control valve is operated by an extra lever on the control console within the cab.

The machine has also been designed in such a way that it can be constructed to cut on either the right or left side of the tractor and in addition flail rotation can be altered for an upward or downward cutting action.

The flail head is despatched with the flails to cut in an upward motion and is equipped with an adjustable hood to minimise flying debris. An additional hood for the rear of the flail head is available should the rotation of the flails be reversed and the operator is further protected by the mesh guard which attaches to the tractor.

The controls are cable operated from within the tractor cab and the levers can be mounted in a number of different positions to suit the operator.

The machine is equipped with a spring assisted automatic self resetting gravity breakaway system which allows the flail head to pivot up and back. On resetting a rubber damper absorbs any shock loads. The breakaway geometry also allows the complete flail to be folded compactly for travel on the highway.

An in built stand is supplied to aid stability when the machine is unhitched from the tractor.

Tractor Selection

The Power 34 will fit almost any tractor equipped with a category II linkage.

Oil Supply

On both models the relief valve setting in the control valve is 2000 P.S.I (140Bar) therefore if operating from tractor supply the tractors relief valve setting must be at least a little above this figure for satisfactory operation. Oil flow rates are not crucial. Flow rates of up to 45 l/min (10g.p.m.) should not have any adverse affect to the 'inching' response that is sometimes required from the control valve.

On all tractors where a double-acting service spool is provided this should should be used and connected to the Power Arm 34 through the tractors own hydraulic coupling.

The return through the tractors' auxiliary spool valve creates higher back pressure than is normally acceptable and the security of the return line from the machine to the tractor should be checked. Double hose clips are fitted as standard to minimise the risk of the hose blowing off.

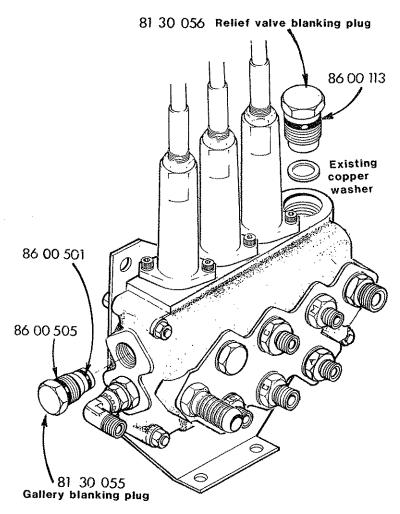
Where a double-acting service is not available then an auxiliary service must be taken from the trailer pipe connection and a return line provided to the tractor according to the tractor manufacturers instructions.

Return adaptors are available from F.W. McConnel Ltd., for specific tractors on request.

John Deere

The John Deere utilises a 'closed centre' hydraulic principle and because of this it is recommended to use the fully independent model of the PA34 with tractors of this manufacture. However it is practicable for the tractor supply machine to be used with these tractors subject to certain modifications. There are the following two alternatives.

- i) A flow limiting valve manufactured by John Deere is available to provide an 'open centre' external supply sufficient for the PA34 requirement. For further advice consult your John Deere dealer.
- ii) Components are available from F.W.McConnel Ltd, to convert the standard 'open centre' valve art no. 81.30.059 consists of a relief valve blanking plug which should be installed in place of the existing relief valve. Take care when extracting the relief valve not to damage the copper sealing washer as it is re used with the blanking plug. In addition a pressure gallery blanking plug is installed in place of the standard blanking plug at the valve outlet end next to the lift ram gland connection.



CLOSED CENTRE CONVERSION KIT FOR JOHN DEERE
PART No. 81 30 059

Draft control

Loads imposed through the draft sensing mechanism will not normally be sufficient to put a strain on the tractor, however, any provision for draft control should be set to minimum response. Where a draft control rocker is fitted with a dead pin position this should be utilised.

Linkage isolation

Although it may be possible to operate the tractor supply model without linkage isolation, a severe strain would be put upon the attachment yoke and pins. Most modern tractors are equipped with a ready means of providing linkage isolation through a conveniently operated valve. Linkage isolation is not required on the independent machine and the tractor's hydraulic controls should be neutralised.

Check chains/stabilizers

To hold the machine firmly in position, check chains or stabilizer bars must be fitted. It is dangerous to operate the machine without.

Ballast weight

Irrespective of the size of the tractor, it must be stable whilst operating the Power Arm 34 under all conditions. Due regard must be paid to operating on slopes, and front end ballast as well as rear wheel weights to counterbalance the overhang of the flail head should be added as appropriate. On steeply banked ground it may not be sufficient to depend alone on the counterweight afforded by the oil reservoir.

In addition rear wheel track should be as wide as practicable to increase stability. It will also increase the protection to the reservoir.

SECTION 2

FITTING & REMOVAL INSTRUCTIONS

Note: Although it is possible for one person to attach the machine to the tractor the task is made considerably easier if assistance is given.

Procedure is much easier if carried out on a hard flat surface,

- * Fit hydraulic tank over the leg housing and secure with leg pin and stabilizer tank strap. Connect hoses and secure tightly.
- * Fill the reservoir to capacity to increase the stability of the machine (see "hydraulic installation" page 13)
- * Remove and discard the 'T' shaped transport strap connecting the flail head and frame.
- * Unscrew the white tap on the lift ram, select 'reach out' and 'lift down' services and pry the flail head sideways until there is sufficient clearance to allow the tractor to be reversed up and the draft links connected. The bung from the oil return hose on tractor supply models should be removed and vented oil collected in a suitable container.

Adjust tractor drop arms to enable the draft links to lower within 300mm(12") of the ground.

Remove the top link and machine yoke completely.

Reverse the tractor squarely to the front of the machine, engage draft link pins and secure

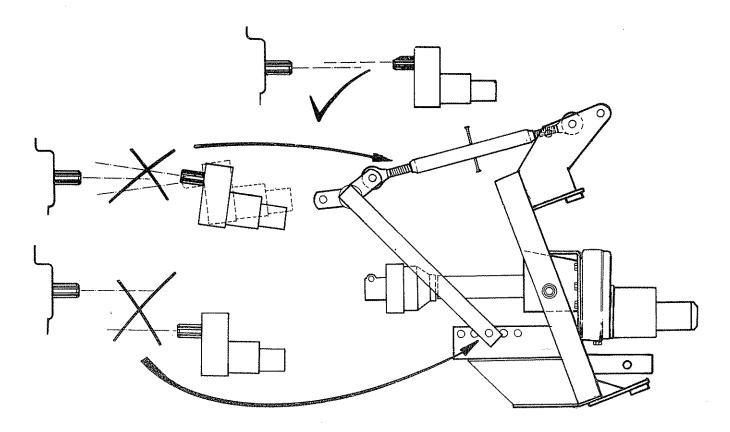
Attach yoke to the top hitch position on tractor ensuring lug for the top link is uppermost.

Install top link between yoke and upper hitch position on machine. If necessary fitting Cat I sleeves into ball ends of top link.

Raise the machine on the tractor linkage to enable the lower yoke pins to be assembled in the main frame. Select a hole position, so that when weight is taken by the yoke the pillar is approximately upright and level.

Lower the quadrant lever so that the machines weight is taken by the tractor

Install the P.T.O. drive shaft to the tractor. It is essential that the shaft is not allowed to 'bottom out' There should be a minimum of 25mm (1") of further travel before the shaft is fully closed. The measurement should be taken carefully before cutting of both the driving and driven members of the tube by an equal amount. Likewise the plastic shield will similarly have to be cut. Take heed that if too much is cut off it cannot be stuck back on. Measure twice and cut once.



Ideally the tractor stub shaft and the gearbox should be in a straight line. The greater the misalignment, the shorter will be the expected working life of the powershaft joints. Parallel adjustment is effected by the top link and vertical alignment is adjusted by the hole selection between the yoke and the main frame.

Ensure the collar locking device on the P.T.O. shaft is fully engaged and wrap the torque chain around the tractor drawbar or any convenient point to prevent the shaft guard from rotating.

Unbolt the control unit from its stowage position and fit into the tractor cab (see Page 10). The mounting nut and bolt is reused to fix the controls to the mounting pillar.

On tractor supply models the supply and return hoses must be connected to the tractor Fit return connections to the tractor and connect the return hose before connecting the self seal coupling on the supply hose to the tractors external services point.

Final adjustment of the top link to bring the pillar upright, and of the tractor lift arm levelling box to bring the main frame horizontal should be further checked when the arm-head weight is taken by the frame when in an average working position i.e., at half to two thirds reach.

Tighten the check chains or adjustable stabilizers to hold the machine rigid without sidesway.

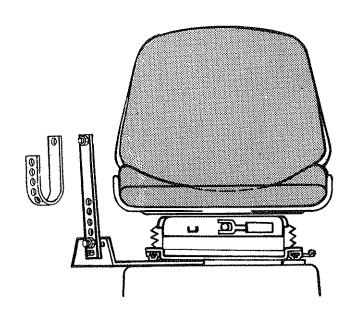
Remove parking feet, turn through 180° and re locate in their housings.

This procedure is for initial attachment only, for subsequent attachment para's marked * do not apply.

Fitting of control unit in cab.

The control box is mounted on an adjustable stalk that is attached to a seat bracket which is of universal design for mounting in many models of tractor. The bracket is normally trapped between the seat runners and their mounting base. It may sometimes be necessary to drill extra holes in the seat bracket to find the ideal operator position.

On tractors other than quiet cab models it is permissible to attach the control unit to the mud-wing or the cladding of the cab observing the precaution that no structural member of the safety frame should be drilled. For this purpose the mounting stalk can be bent round in a 'U' shape.



The control unit itself is bolted to an angled mounting bracket in either a transverse or longitudinal position thus giving a variety of mounting positions, which in conjunction with the flexibility of the mounting pillar will enable a satisfactory working position to be achieved.

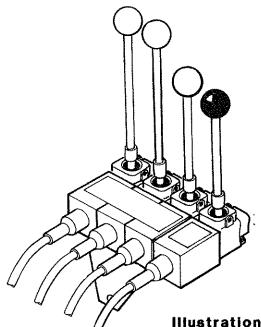


Illustration shows control unit arrangement for fully independent model with extra control handle for rotor ON - OFF. This handle can be mounted either end of the main control block to suit individual operator requirements

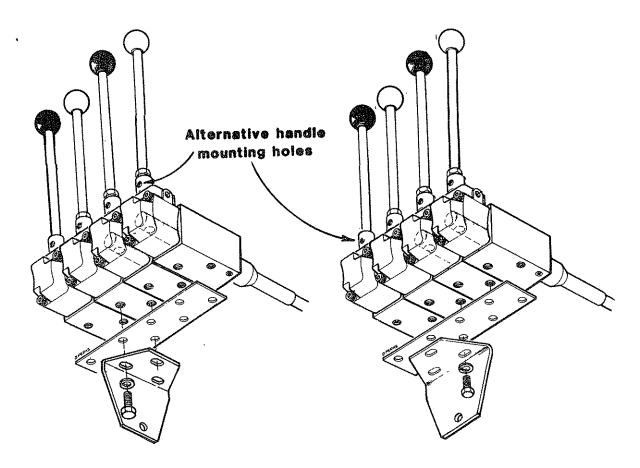


Illustration shows fully independent control unit arrangement

Shown above is detail of alternative fitting of the mounting spigot. In deciding the final position of the control box, remember that tight bends in the cables will reduce their operational life. Do not exceed the minimum acceptable bend radii of 8".

The handles may be screwed into alternative holes in the levers to give and "in line" installation should it be desirable.

Fitting operator guard

The Power Arm 34 is supplied with an operator guard kit part number 73 13 324 which must be fitted to the tractor before commencing work.

It consists of two areas of wire mesh which can be shaped to suit and secured against the cab window with spring loaded hooks, the upper edge being anchored around the cab gutter and the lower edge around the mudwing.

Owing to the great range of cabs it may be necessary to adapt or make brackets to secure the mesh.

A tractor fitted with a cab that has safety glass windows should be used whenever possible. This is a basic safety precaution applicable to the use of all flail-type hedge trimmers.

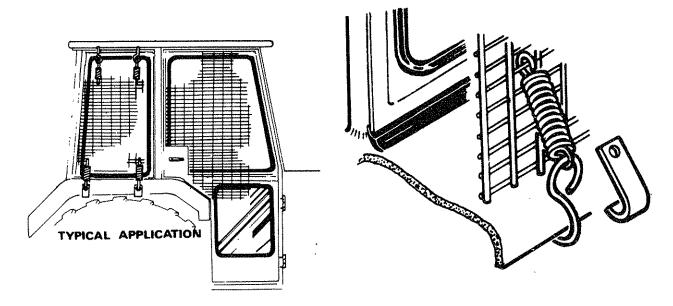
Where the flail is operated on a tractor that is equipped with a safety frame or roll bar only, then an additional frame must be made and fixed to the tractor on to which the guard mesh can be secured. In addition to the guard mesh, a sheet of Polycarbonate transparent glazing must be fitted to the frame to provide further operator protection. This material must also be used when the cab does not have safety glass installed.

Polycarbonate transparent sheeting is an impact resistant material which can be readily sawn and shaped to requirements. Unfortunately it is susceptible to surface damage and scratching, therefore it is advisable to place the material on the inside of the window for protection. No attempt should be made to wipe the sheeting with dirt engrained cloth.

Toughened grades of polycarbonate sheeting are available under the brand names of "Makrolon", "Tuffak", and "Lexan".

In case of difficulty in obtaining this material locally, contact F.W. McConnel Ltd through your normal dealer.

CAB GUARD



Hydraulic Installation

i) The Power Arm 34 is delivered from the factory without oil. Fill the reservoir with a light hydraulic oil as recommended in the chart until the oil level is approximately:6" below the top of the tank. The total capacity is approximately 135 litres (30galls) Do not overfill.

Supplier	Cold or temperate climate	Hot climate
Castrol	Agricastrol hydraulic oil Hy–spin AWS32	Hy-spin AWS68
Shell	Tellus 27	Tellus 33
Mobil	D.T.E.25	D.T.E.26
Esso	Nuto 'H' or 'A' 32	Nuto 'H' or 'A' 68
Texaco	Rando HD 32	Rando HD 68
Gulf	Hydrasil 32	Hydrasil 68
B.P.	Energal HLP 32	Energal HLP 68
Dalton	Silkolene Dove 32 or Derwent 32	Silkolene Dove 68 or Derwent 68
Elf	Hydrelf 32	Hydrelf 68

ii) Check the gearbox oil level. On level ground gearbox should be filled until oil dribbles out of the level plug. Top up if required with SAE 30/50 Universal tractor oil.

Running Up Procedure

i. Fully Independent model

Ensure that the rotor control valve is in "STOP" position, start tractor, engage P.T.O and allow the oil to circulate for about 5 minutes without operation of the armhead control lever. This will allow all the oil to circulate thoroughly through the return line filter

Operate the armhead levers through their complete range ensuring that all movements are functioning correctly.

Place the flail head at a safe attitude and move the rotor control to "START" position. After initial fluctuation due to priming the rotor should settle to a steady speed. Increase P.T.O. speed to approximately 360 rpm. and run for a further five minutes before disengaging and stopping tractor.

Check the hose runs and observe that they are free from any pinching, chafing straining or kinks. Re-check the oil level in the tank and top up as necessary.

ii) Tractor supply model

Ensure P.T.O. lever is in neutral position, and isolate tractor hydraulic linkage. Start tractor and select external service supply on the hydraulic controls. Allow the tractor to run for several minutes before attempting to operate any of the machine control levers.

On operating move the levers through their complete range ensuring that all movements are functioning correctly.

Check the tractor rear axle oil level and top up if necessary.

Place the flail head at a safe attitude and bring tractor engine revolutions to 1000 rpm. to avoid stalling when the starting load is placed on the motor. Engage P.T.O. and allow the rotor to run for several minutes. Do not leave the tractor cab or allow anyone to approach the flail head at this time.

Caution:

Do not allow the pump to continue working if the rotor does not turn - Overheating and serious damage to the pump can be caused in a very short time.

After running up the machine increase P.T.O. speed to approximately 360 rpm. and run for a further five minutes before disengaging the P.T.O. and stopping tractor. The reason for this running period under a no load condition is to thoroughly circulate the oil in the reservoir through the return line filter.

Check the hose runs and observe that they are free from any pinching, chafing, straining or kinks. Re-check the oil level in the tank and top up as necessary.

Removal from Tractor

Select a firm level site for parking the machine.

Remove parking feet, turn through 180° and re-locate in their housings.

Unscrew the lift ram tap and with the machine at approximately half reach in normal working position, i.e. not broken back, operate the hydraulic services until the flail head roller is horizontal and level with the feet on the main frame.

Disengage tractor P.T.O and remove

Disconnect stabilizer bars or loosen check chains as applicable.

Unbolt the control unit from the mounting pillar and rebolt in the stowage position on the valve mounting bracket.

Disconnect the supply and return hoses on tractor supply model.

Raise the machine on the tractors linkage to take the weight off the yoke and remove the lower yoke pins.

Lower the tractor draft links and place machine firmly on the ground.

Remove draft links and the top link from the machine, drive tractor forward and remove yoke. Blank off the end of the return hose with plug or small plastic bag.

STORAGE

If machine is to be left standing for an extended period of time, lightly coat the exposed portions of the ram rods with grease. Subsequently this grease which becomes contaminated with dust and grit should be wiped off before the rams are next moved.

If the machine has to be stored outside tie a piece of tarpaulin or canvas over the control assembly — do not use a plastic fertilizer bag which could lead to rapid corrosion.

SECTION 3

OPERATION

Limitation

The Power Arm 34 has been designed as a light to medium weight hedgetrimmer; is ideal for work on hedges that have been regularly maintained and is capable of making a reasonable job in up to two years growth. The machine can be operated on either side of the tractor and the rotor has been designed to cut in either direction. Heavily overgrown or badly neglected hedges should be tackled with a shapesaw.

Highway Working

It it is intended to cut roadside hedges or to work in the vicinity where the public have access, it is a statutory requirement that suitable warning signs are placed at both ends of the work area. These signs should not be more than half a mile apart (.8Km) To further promote highway safety, the use of headlamps and a flashing beacon on the cab roof would be beneficial.

Hazard warning lamps should not be used since an oncoming vehicle could easily misjudge braking distance in presuming the tractor approaching them is stationary.

Operator Guard

Owners are reminded that it is illegal to use a flail without an efficient operator guard. The guard supplied as standard equipment with each machine attaches to the tractor cab with spring loaded hooks.

Preparation

Before commencing work, the operator should read the instruction manual thoroughly, paying particular attention to the SAFETY PRECAUTIONS printed in the front of the manual. It is the operator's responsibility to ensure that a safe code of practice is followed.

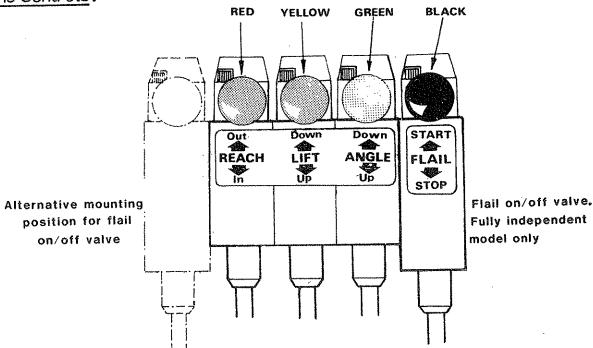
If the operator is unfamiliar with the control levers and thus the reach, height and angling of the flail head, a worthwhile exercise is to make a dummy run alongside a hedgerow with the rotor stationary.

The work area or hedgerow should be carefully inspected for wire, steel posts, large stones, bottles and other dangerous materials and removed. The position of any immovable objects should be particularly noted or identified i.e., with a fragment of plastic sack to avoid running into them with the flail. Should the rotor accidentally strike anything of a hazardous nature, the machine should be immediately stopped and the rotor examined for damaged or missing flails which should be replaced to retain rotor balance. Continuing to work the flail head with the rotor out of balance will cause vibration which can rapidly damage the rotor bearings and break up the flail casing.

CAUTION

The ability for the flail head to work closely alongside the tractor wheel in narrow lanes and for transport to fold within the overall tractor width can present a possible hazard for the flail head to contact the mudwing, rear lamp cluster etc, and cause damage. Caution should be exercised when operating under these conditions and particularly when folding within the tractors width for transport.

Machine Controls.



Transport Postion

When transporting on the highway the flail head and arms should be latched securely in the broken back position and the white tap on the lift ram screwed fully in.

Moving from Transport to Working Position

Unscrew the lift ram tap fully. Lower the flail head flat to the ground and release the transport latch, if it does not release take the weight off the latch by easing the tractor forward slightly. The working position can be achieved by either reversing the tractor or by operating the lift ram to raise the head which allows the breakaway mechanism to position the flail head for work.

To revert back to the transport position angle the flail head and place one corner of it on the ground. Raise the latch, drive forward and simultaneously select 'lower' until the arms are fully broken back. Release the latch and raise the machine. Screw the lift ram tap in fully to prevent droop and any consequent damage to the tractor tyre or mudwing.

Engaging drive

a) Fully Independent model

Ensure that the rotor control lever is moved to the "STOP" position before engaging the P.T.O. shaft. Allow the oil to circulate for a minute or so before operating the armhead levers. Position the flail head in a safe position, increase engine speed to a high idle and move rotor control lever to 'START'. After initial surging the rotor will run at an even speed. Starting the rotor this way reduces starting loads imposed on the hydraulic motor and drive splines.

b) Tractor Supply model

Place the flail head at a safe attitude and bring the tractor engine revolutions to 1000rpm. to avoid stalling when the starting load is placed on the motor. Engage the P.T.O. and slowly increase revs. until operating speeds are attained.

Operating speed

The machine should be run at a speed no higher than is need to make a clean cut with no fall off in rotor speed. This also allows better control of the tractor and reduces the tendency of the operator to 'ride the clutch pedal'

The recommended rotor speed is 2450 Rpm.

To achieve these speeds on machines pre April 1986 it will be necessary to run the tractor engine to give a P.T.O. speed of — 420 rpm. On machines after April 1986 a PTO speed of 450 rpm is recommended

WARNING

Do not exceed 540 rpm on the P.T.O. shaft

Always allow the rotor to run for a couple of minutes before moving into the work.

Forward Speed

Tractor ground speed is determined by common sense and experience. It should be slow enough to allow sufficient time for the flails to cut the work without overloading. It is obviously better to make a second pass or more in heavier growth to avoid undue strain.

Hedge Cutting

a) Tractor Position.

The position of the tractor in relation to the hedgerow will again be determined by experience. For a normal straight forward hedgerow the position should be such as to allow the reach ram to be in mid-stroke. This effectively allows the reach to be adjusted in either direction without altering the tractors position.

Hedge Shape

Local practice and customs as well as the requirement; be it a stockproof barrier, a windbreak to resist soil erosion or as a sanctuary to protect wild life will each have their part to play in influencing the desired finished shape of the hedgerow.

A hedge cut in the shape of an 'A' although rather wider and so taking up more ground will be encouraged to send out new growth from the bottom. The stubbly ends from the ground to the top can further discourage stock and wide dense bottoms will promote conservation of wild life.

A hedge with vertical sides and an apex top is an alternative which has found favour in many parts of the country. The sloping top encourages light to penetrate and promote growth in the lower regions of the hedge. The sloping top also assists to shed heavy falls of snow which can accumulate and break a hedge down.

Although a box shaped hedge, flat across the top and with square corners may look very tidy in its early stages it is prone to dying of in the bottom while being encouraged to grow in the top. After a few years this type of hedge can become 'buck-headed' is always susceptible to damage by snow and becomes increasingly inefficient as a stock proof barrier.

Cutting Sequence

Operator preference will ultimately decide on the order of cutting. Where it is difficult to determine the original hedge line because of overgrowth, a recommended method is to start by siding up the hedge first, if necessary making more than one pass.

A second cut should then be taken at an incline along the hedge top and again if there is prolific growth it may be necessary to make more than one pass until the hedge is reduced to the height and contour required.

Finally, finish with a ground cut and for this, the roller should be lowered. This ground cut defines the base line of the hedge, severs brambles and rubbish that encroach out from the bottom, and further mulches the toppings that have fallen.

Note:

Flails are more prone to accidental damage and blunting by stones on a ground cut. Therefore when convenient this should be left to the last.

Where the hedge has been well maintained in the past it may be found better to cut the top before siding up.

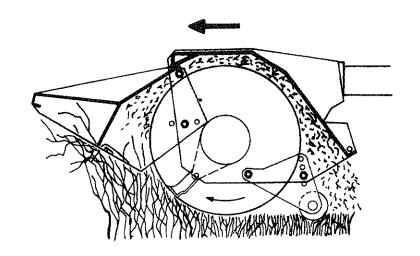
WARNING

Do not be tempted to make a vertical cut on the far side of the hedge. This would entail cutting 'blind' and the rotating flail would be capable of throwing debris through the hedgerow in line with the operator.

Where both sides of a roadside hedge are to be cut, always cut, the field side first. The uncut roadside helps to reduce the amount of debris being flung through the hedge into the road. Also by sloping the vertical cut to give an 'A' shape, debris is thrown down into the hedge bottom and the spread of material is reduced.

Upward Cutting

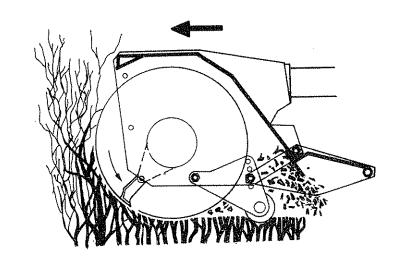
The flail head is assembled at the factory for the flails to cut with an upward motion. Upward cutting produces a cleaner finish, minimises split stems and is ideal for a light hedge that has been regularly maintained.



Optional Downward Cutting

It is possible to reverse the rotation of the flail for downward cutting in heavy growth. This chopping action subjects the rotor to violent usage and should therefore be avoided whenever possible.

For downward cutting a rear hood is necessary and should be obtained under Part No. 71 14 336. It is permissable to remove the front hood to allow larger material to pass under the flail head.



Reversing rotation.

Fully extend the armhead and lower flail to the ground to minimise oil loss. Release the hoses from the flail motor rigid pipes and interchange the two flail hoses. It will provide a tidier hose run with less chance of snagging if the hoses are crossed over higher up the dipper i.e., above the last hose bracket. Hedging flails mounted on the rotor must also be individually turned round by releasing the locknut and withdrawing the flail pivot bolt. The flail may then be reversed. On re-assembly, tightening torque of the locknut is 135Nm or 100 ft. lbs.

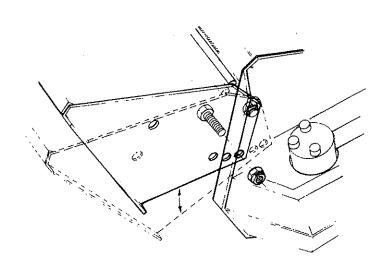
WARNING

If any wire is picked up by the rotor, the machine should be stopped immediately and the rotor cleared before proceeding.

Flail hoods

Both the flail hoods are hinge mounted by bolts to the front and rear of the head and provision is made for the front hood be adjusted in three working positions. To minimise the throwing of debris particularly when roadside working the hood should be adjusted to its lowest position. When the front hood isfully raised, larger growth can pass underneath but with the greater tendency for material to be thrown. The front hood must always be in place for upward cutting and the rear hood must always be in place for downward cutting.

Note: The two hoods are not interchangeable on the flail head.



Wire trap

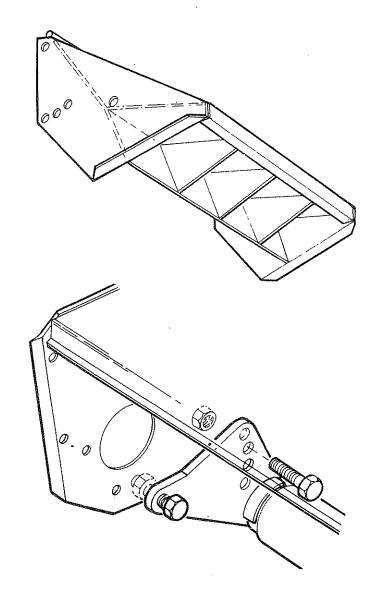
Both flail hoods are equipped with a wire trap. The trap consists of a steel plate welded across the underside. Any loose ends of wire which are picked up and carried round by the rotor are cut by the edge of the metal plate and fall harmlessly to the ground. This plate should not be interfered with or modified in any way.

Furthermore this wire trap does not relieve the operator of the responsibility of checking and cleaning the flail when it is suspected that wire has caught in the rotor.

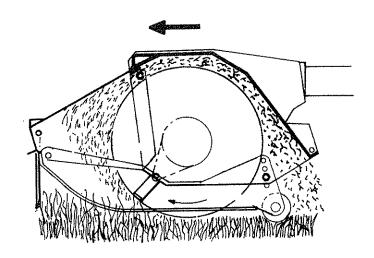
Roller

The roller is adjustable vertically to four positions, when hedge cutting the roller should be set higher than the flails. The roller helps to prevent the flail head from bouncing and sinking into the hedge and so assists in maintaining a level cut.

For making a ground cut the roller should be lowered below the cutting level of the flails. This helps prevent 'scalping' the ground and picking up stones which are injurious to the flails.



Never attempt to operate the flail without the roller in position. It shields the flails, acts as a chopping bar and eliminates the chances of long lengths of cut material being thrown.



Grass Cutting

The flail must rotate in an upward motion for grass cutting. The vacuuming effect created by the rotating flails causes the grass to stand erect. The grass cutting cowl which consists of a number of hinged flaps is always mounted on the front of the flail head. It completely shields the rotor at the front and directs all cut material up under the hood discharging it down on to the ground at the rear.

Grass Roller adjustment

When grass cutting, the weight of the flail head will be carried by the roller for much of the time. It is therefore necessary for the rollers to be reinforced for increased stability. For this reason, a tie bar passes right through the roller and is secured to the grass skids at either side. The skids are hinged at the front of the flail hood and a three position bolt mounting at the rear allows the roller to be adjusted vertically to control height of cut. Whenever possible the roller should be set in its lowest position to avoid the flails 'scalping' the ground as well as suffering damage from stones etc.

Breakaway

An automatically resetting, spring assisted, gravity breakaway system protects the machine when an obstruction is encountered. The spring unit assists the breakaway reset when working close in and at height. The spring pre-load is factory set and non adjustable.

Breakaway reset forces are absorbed by a pre-tensioned hollow rubber spring unit.

The breakaway geometry is such that there is a possibility of an unstable condition occurring when in the broken back position at full height. To prevent this the transport latch also acts as an abutment stop, which physically stops the flail head going over centre in the breakaway position. When operating in conditions where there is any likelihood of this happening e.g. when cutting high hedges on sloping ground the latch must always be in the lowered position.

Lift Float Kit. Optional Extra, for Grass Flails Only

Grass flailing can be a slow tedious task requiring a high degree of operator concentration especially when working on rough or undulating ground.

A hydraulic float kit is available which is mounted as shown in the vertical position using the outermost hole of the alternative gearbox mounting position. The above illustration shows the float kit fitted to a machine which has been built to cut on the right hand side of the tractor.

Inwork, with the stop tap open the flail runs along the ground and automatically lifts and rides over any bumps. Any shock loads are absorbed by the accumulator which is pre-charged with nitrogen to 500 psi.

To obtain optimum working performance the lift control should be operated to take approx. fifty per cent of the flail head weight off the flail roller. This is important as with too little weight on the roller the flailhead will tend to remain in the air after riding over a bump and leave uncut areas of grass while with too much weight on the roller the float will be inoperative; the ground will be scalped in places and increased flail wear, loss, or damage to flails could occur.

To revert to hedge cutting or to use the flail without it running along the ground the stop tap should be closed to isolate the accumulator.

Right or Left Hand

The machine is supplied in either specification to order and has been designed such that conversion can be carried out with only the minimum of special handed components, i.e., left handed upper and lower flail head rigid pipes. However it must be stressed conversion is a major rebuild and not an in field adjustment. A workshop with overhead lifting tackle is necessary.

Before commencing drain the hydraulic system and empty the reservoir. Study the drawings carefully paying particular attention to the Gearbox-Pump-Rotor control valve, its position and the positions of the filler, breather and level plug. Note also that the rotor on the flail head is not touched and is therefore inboard when right hand cutting and outboard when left. New rigid pipes for the flail head will be required see parts list.

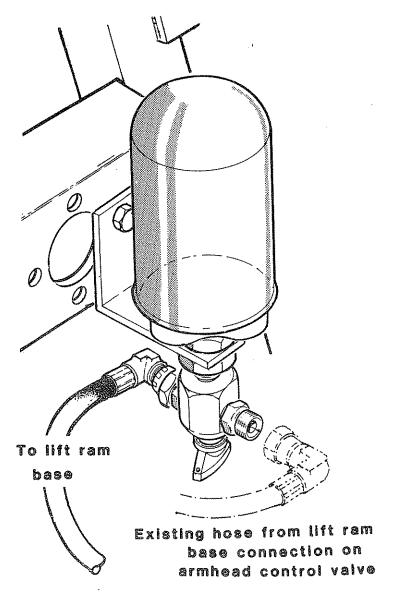
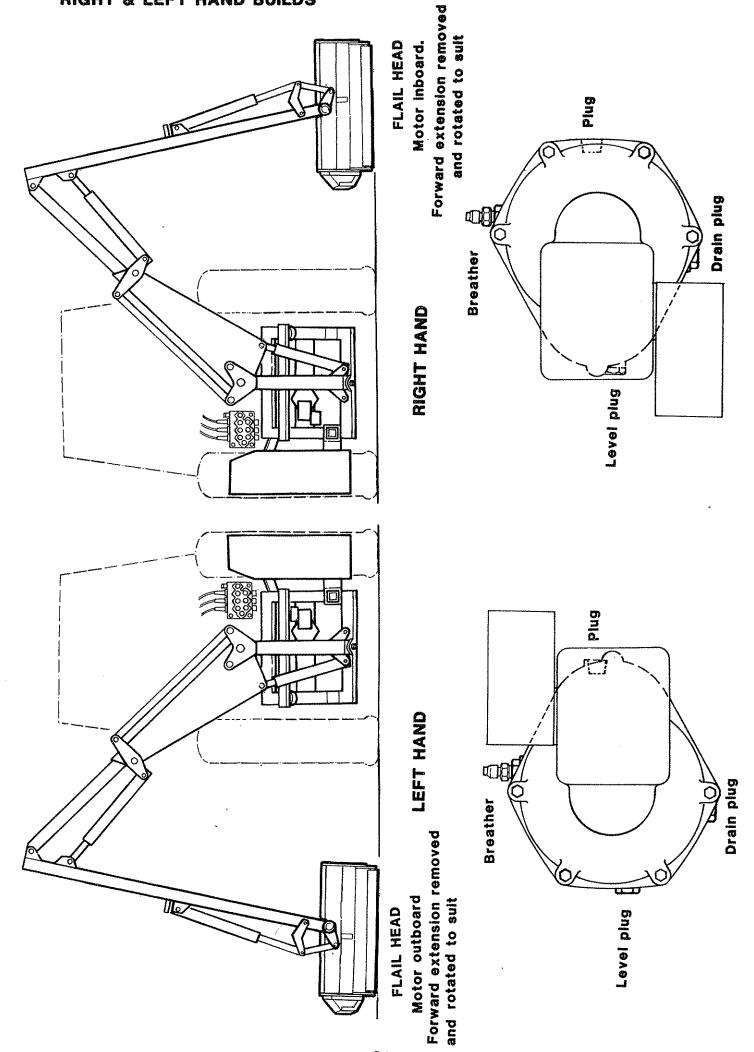


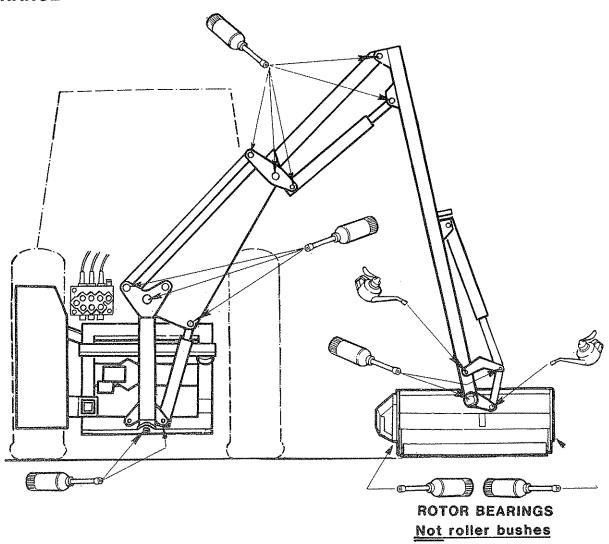
ILLUSTRATION SHOWS
R. HAND INSTALLATION

RIGHT & LEFT HAND BUILDS



SECTION 4

MAINTENANCE



The Power Arm 34 has been designed to reduce servicing and maintenance to a minimum although any work specified in the section should be carefully carried out.

Lubrication

a) General

Refer to the lubrication diagram and grease daily all points shown. Use an oil can once weekly where indicated at other pivot points.

b) Power take-off shaft.

The PTO shaft should be regularly examined to ensure that it is in good condition together with the guards. The universal joints should be greased very sparingly i.e., one shot weekly.

Note: Overgreasing a universal joint will blow-out the cork or neoprene sealing rings that exclude the dirt from the needle bearings inside.

The two halves of the pastic guard should be checked daily to ensure that they can spin freely on the shaft. The nylon slip rings which support the guard on the drive shaft should be lightly greased at weekly intervals.

The telescopic drive shaft should be similarly separated and grease applied to the internal shaft at approximately 100 hour intervals.

Hydraulic system

a) Oil supply.

Check daily the oil level in the reservoir.

No fixed time period can be quoted for oil changes as operating conditions and maintenance standards vary so widely. Although the oil does not wear out, it does eventually break down through contamination, oxidation and condensation. Continual operation of the machine beyond its rated capacity to almost the stall point of the rotor can cause overheating which produces insoluble gums, sludge, varnish and acids. Overheated oil thins to give a sluggish performance and causes earlier failure of seals and '0' rings. Burnt and scorched oil odours and the oil darkening and thickening are all signs of oxidation and indicate the oil should be changed.

Moisture which results from condensation can become entrapped in the oil and cannot be removed by filtration so that contamination is a progressive factor.

Contamination can be reduced by:-

- i) Carrying out all hydraulic servicing in clean, dust-free surroundings
- ii) Cleaning off around the reservoir cap before removal, and keeping that area clean.
- iii) Using clean containers when replenishing the system.
- iv) Regular servicing of the filtration system.
- b) Filtration Maintenance.

The machine is protected by a 125 micron suction strainer and a low pressure 10 micron full flow return line filter.

- i) Suction strainer.
 - The strainer is fixed in position within the reservoir. Should symptons of pump cavitation or spongy intermittent operation occur the tank must be drained and flushed out with a suitable cleaning agent e.g. clean diesel oil.
- ii) Return Line Filter

The element should be changed after the first 50 hours and thereafter at 500 hour intervals. It is important to note hours worked as, if the filter becomes blocked an internal by-pass within the canister will operate and no symptons of filter malfunction will occur to jog your memory.

Rotor Control Valve & Rotor relief Valve

No servicing is required of the rotor control valve other than a periodic check for oil leaks. The relief valve assembly within the block is calibrated by shims to give a setting of 170-175 Bar 2450-2550 PSI. On no account should this pressure be exceeded.

The operating spool and block are selectively assembled and cannot be supplied as separate components.

Hydraulic Pumps

All pumps are clockwise rotation. No routine maintenance is necessary other than a periodical check for tightness of the mounting bolts and a visual check for oil leakage especially around the pump supply and pressure unions. Where two hose clips are used on the pump supply hose, their worm drive barrels should be placed opposite each other at 180°. When fitted with tandem pump assembly do not attempt to operate the armhead rams without the 1" BSP flail hoses being interconnected. The tandem pumps share a common seal drain and both circuits must be intact before the pumps are run.

Pump servicing is limited to replacing seals, gaskets and '0' rings. Servicing should take place under clean dust free conditions. Pumps should be thoroughly washed and their end plates and body lightly identified with scribe marks to ensure correct re-assembly.

When re-assembling, lubricate all components with clean oil and tighten down the securing bolts in a diagonal sequence to pull the pumps squarely together, finally tightening to a torque load of 4-5Kgm(30-37lbs/ft) M10 Setscrew.

21/2-3Kgm (18-22lbs/ft) M8 Setscrew.

Check for freedom of rotation. The pumps should turn freely under a hand load applied on a 6" radius arm. If tight, the lobe seals and/or backing washers have been trapped and the unit must be dismantled to rectify this.

After installation the serviced pumps should be run for several minutes under a 'no load' condition before load is gradually applied. During this time frequent checks should be made of the pump casing temperature. An excessive temperature rise will indicate that the pump has been assembled incorrectly.

Generally it is unwise to replace major components since they have to be matched in sets. Unless this is done the pump will be inefficient, resulting in overheating and power loss. No detailed parts breakdown is shown, but factory reconditioned units are available within our service exchange scheme.

HYDRAULIC MOTOR

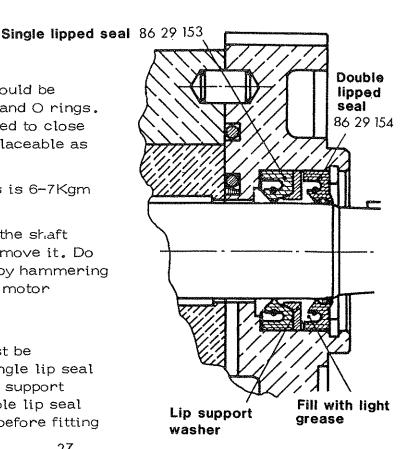
Servicing of the hydraulic motor should be limited to replacing seals, gaskets and O rings. Components of the motor are matched to close tolerances and are therefore not replaceable as individual parts.

The torque setting of the capscrews is 6-7Kgm (40 - 47 lbs ft)

To remove the drive coupling from the shaft use a tool of the sprocket type to remove it. Do not attempt to remove the coupling by hammering or leverage as this will damage the motor internally.

Replacing shaft seals

The double shaft seal assembly must be assembled with the 7 m.m. wide single lip seal fitted first with the 1m.m. thick lip support washer on top. The back of the double lip seal should be filled with a light grease before fitting with the wiper lip outermost.



Replacing damaged or worn spool '0' rings.

Release the locknut located on the cable at the back of the sleeve.

Remove the two allen headed capscrews that secure the sleeve to the valve block and screw the sleeve back down the threaded portion of the cable to reveal the clevis pin which is then withdrawn from the end of the spool. Take care not to lose the roller in the eye of the spool end.

Remove the spring cover at the opposite end of the spool and remove the setscrew to release the return spring assembly.

Pull the spool through the block from the cable end until '0' ring marked 'A' is accessible. Remove the '0' ring from its groove using a smooth edged hook.

Completely remove the spool from the block out of the return spring end.

Remove '0' ring marked 'B' and refit a new '0' ring.

Lightly oil the spool and replace it in the block from the return spring end pushing it through just far enough to clear '0' ring groove at 'A'

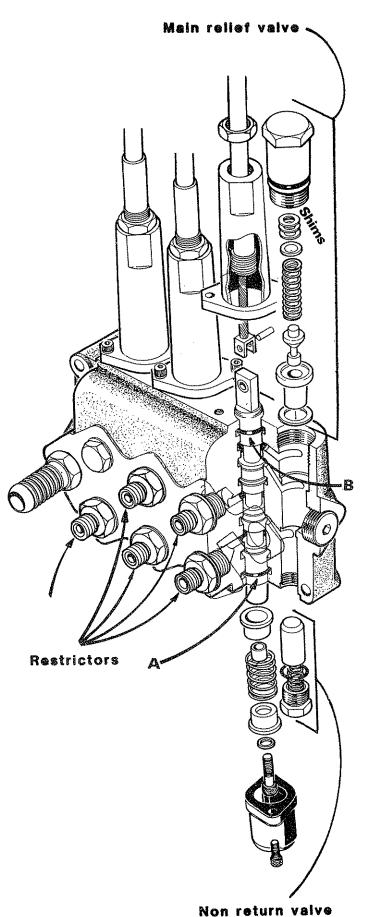
Fit new '0' ring in groove 'A'.

Push the spool back through from the cable end far enough to re-assemble the return spring assembly and cover.

Replace the clevis pin in the spindle eye and re-assemble the sleeve. Adjustment of the threaded section being correct when the handle on the control box is in a vertical position. Re-tighten the locknut.

Note: Owing to the sharp edges in the design of the spool, failure to follow the above procedure could result in damage to the new '0' rings resulting in external leakage.

The spools are selectively assembled, matched with their mating bores in the block and should not be interchanged.



Relief Valve

The relief valve setting 140 Bar (2000 PSI). A sticking relief valve will probably cause overheating and/or loss of power. If this is suspected it should be dismantled and examined for dirt and damage.

If any part of the valve is damaged a new relief valve assembly should be fitted. A pressure gauge in the supply circuit must be used to check the relief valve pressure which can be adjusted by adding or removing shims in the relief valve cap. Under no circumstances should shims be added without the use of a reliable pressure gauge otherwise serious damage to the tractor pump could result.

Use a new'0' ring when refitting the relief valve.

Non Return valve

The non-return valve prevents the feed back of oil from the service ports to the pump. It is unlikely to need attention but if removed for cleaning a new '0' ring should be fitted.

Restrictors

Restrictor unions which are identified by code letters are calibrated for correct speed of operation. The restricted hole should not be enlarged or the unions interchanged in the block.

Cable Control System

The cables operate on a push/pull system with the spool centering springs always returning the spool to the neutral position when the handle is released.

Care should be taken during installation and operation to ensure that the cables are not trapped or kinked. Any abrasion or damage to the outer casing should be sealed with plastic insulation tape to avoid moisture penetrating.

No routine adjustment of the cables are necessary as they do not stretch. The threaded collar is correctly adjusted when the lever is in a vertical position in its housing allowing and equal amount of travel in either direction.

CAUTION

On no account should any attempt be made to lubricate the cables which are assembled with a special lubricant during manufacture.

NOTE:

Take care to ascertain the correct cable. connections on both the control unit and the valve in the event of cable replacement.

P.T.O. Gearbox

The gearbox is rigidly bolted on to the main frame and has a filler plug. Oil level is correct when level with the filler plug aperture. The gearbox oil should be changed every two years or at 1000 hour intervals; whichever occurs first. The capacity of the gearbox is .25 litre (½ pint) use S.A.E. 30/50 Tractor universal oil

Flail Head

Frequently inspect the rotor assembly for damaged or missing flails. Bolts and nuts securing the flails to the rotor should be regularly checked and kept tight. The correct torque setting for these locknuts is 135Nm(100 lb/ft)

Use only the correct flail bolt and locking nut and ensure that the spring washer is in good condition. Check the flail pivot bushes for possible damage or wear. They do not require oil.

Do not attempt to run the rotor with flails missing. Imbalance will cause severe vibration and can rapidly damage the rotor shaft bearings. As an emergency measure if a flail is broken off or lost, remove another on the opposite side of the rotor to retain balance. Always replace flails in opposite pairs and never match up a new flail with a re-sharpened one which will of course be lighter.

Blunt flails absorb a lot of power and leave an untidy finish to the work. They should be sharpened on a grindstone or with a portable grinder periodically. Wear protective gear when sharpening flails.

Ensure that the bearing housings and hydraulic motor mounting nuts and bolts are kept tight. They should be checked during servicing.

Do not attempt to oil or grease the roller bushes. They should be left dry. The case-hardened bearing surfaces of the roller brackets run within spring steel bushes. Any lubricant will attract dust and grit into the bearing surfaces and accelerate wear by a grinding paste action.

FLOAT KIT ACCUMULATOR TEST

If a leak of Nitrogen is suspected a test with soapy water around the valve thread and core area should be carried out.

A replacement charge valve assembly can be fitted after the accumulator has been fully discharged. It is essential that this work is carried out by the dealer or distributor who must have the facilities for recharging.

The accumulator can be removed for this purpose.

If oil is leaking from the area of the charge valve then the internal butyl bag is damaged and the accumulator is scrap.

Hydraulic hoses

The condition of all hoses should be carefully checked during routine service of the machine. Hoses that have been chafed or damaged on their outer casing should be securely wrapped with waterproof adhesive tape to stop the metal braid from rusting. Hoses that have suffered damage to the metal braid should be changed at the earliest opportunity.

Hose replacement

- a) Replace one nose at a time to avoid the risk of wrong connections.
- b) When the hose is screwed to an additional fitting or union, use a second spanner on the union to avoid breaking both seals.

- c) Do not use jointing compound on the threads.
- d) Avoid twisting the hose. Adjust the hose line to ensure freedom from rubbing or trapping before tightening hose end connections.

Hose warranty

Warranty is limited to replacement of hoses which have failed due to faulty materials or manufacture. Warranty will not be considered on hoses that have suffered damage by abrasion, cuts or being pinched or trapped while in work. Neither will a claim be considered where a hose end has been damaged by a blow or where the threads or unions have been damaged by overtightening.

Hydraulic rams

- Ram seal replacement general information.
 - i) Whenever possible the ram should be removed from the machine and cleaned-off before dismantling on a clean work-bench.
 - ii) When using a bench vice do not apply excessive pressure to the ram cylinder - use soft metal jaws when grasping the ram-rod.
 - iii) Remove scores and nicks on the ram-rod by using a fine oil stone.

Do <u>not</u> use a file or emery cloth.

Lift, Reach ram and angling ram. b)

Unscrew the gland and withdraw the complete rod assembly. Slacken piston grub screw, unscrew the piston and slide off the gland housing.

Gland Seals.

Replace as necessary. Ensure seals are replaced in the position from which they were removed.

Piston Seal.

Remove split members of the piston seal and then, using a soft lever which will not scratch the piston lift the remaining seal components from the piston. Replace with new seals in reverse order.

Renew the '0' ring on the piston rod.

Lubricate all new seals prior to assembly.

Refit gland housing on the rod taking care when easing the wiper seal over the piston rod shoulder.

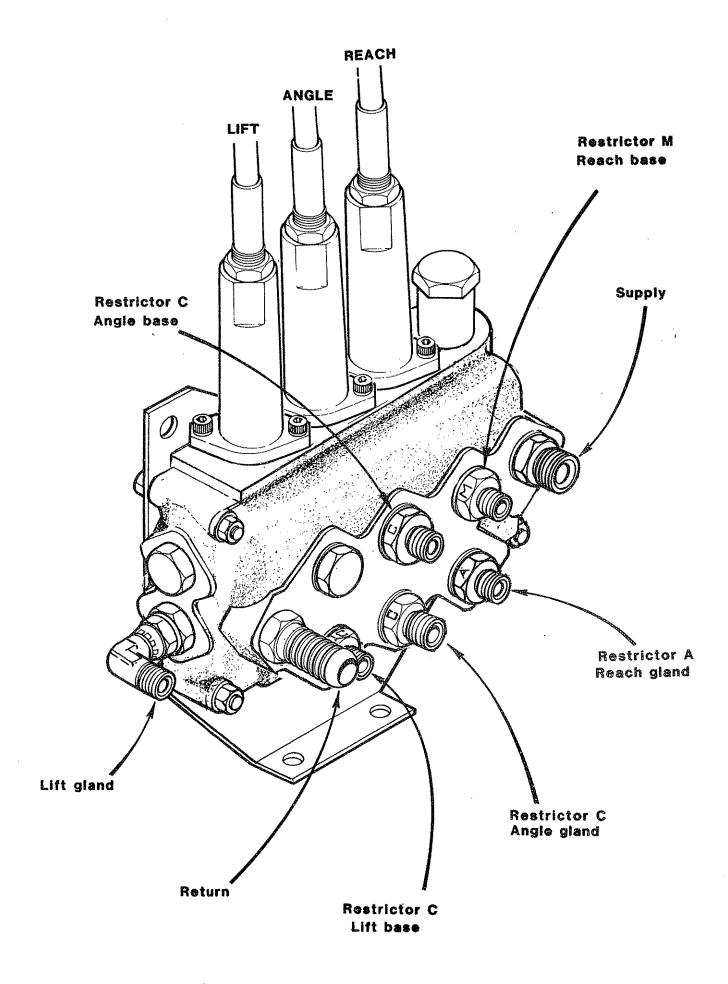
Screw the piston firmly back onto the rod, re-tighten the grub screw and centre pop the access hole to secure.

Fitting new piston on angling rams after machine serial No. 04 GH 29.

The locking grub screw on the angling ram is longitudinal; it fits into the pre drilled hole in the piston and keys into mating threads on the rod. fitting a new piston it is unlikely the holes will be in line and a new mating thread will have to be formed on the ram rod. Tighten the piston and using the pre drilled hole as a jig, run down with an M6 plug tap until the tap bottoms. Remove any swarf from the hole and lock the piston in place with M6 grub screw.

Lift Ram Tap C)

Should an external leak appear dismantle the tap and renew the '0' ring and anti-extrusion ring again taking care to replace them in the position from which they came.



SPARE PARTS MANUAL



USE ONLY MCCONNEL SPARE PARTS

To be assured of the latest design improvements purchase your genuine replacements from the original equipment manufacturer F.W.McConnel Ltd. through your local dealer or stockist.

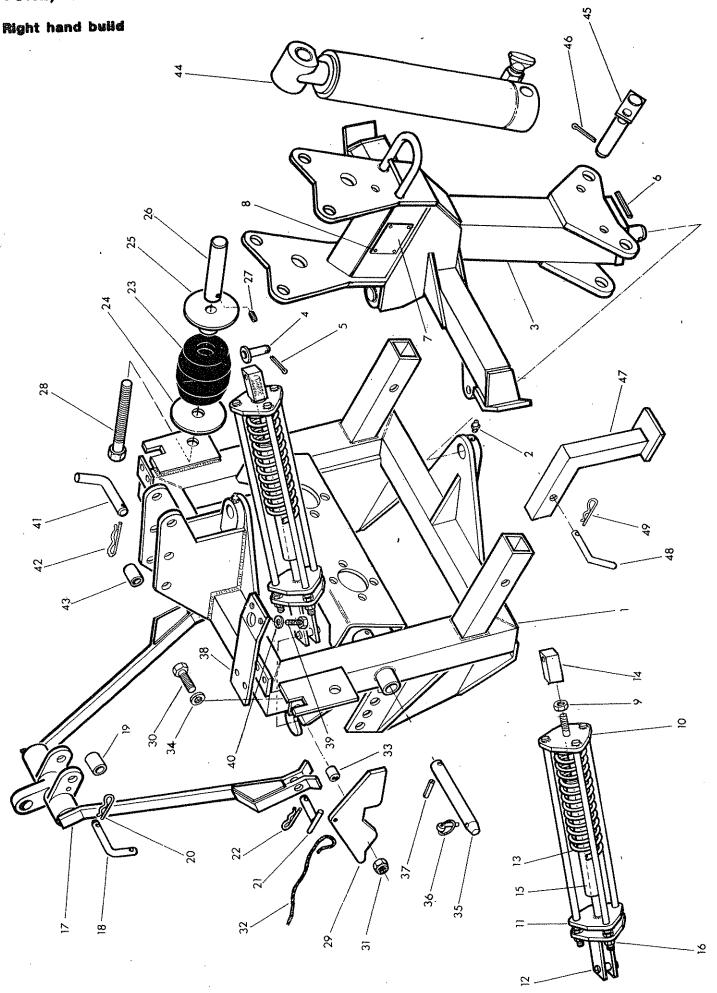
Always quote machine type and serial number as well as the part number.

Design improvements may have altered some of the parts listed in this manual - the latest part will always be supplied when it is interchangeable with an earlier one.

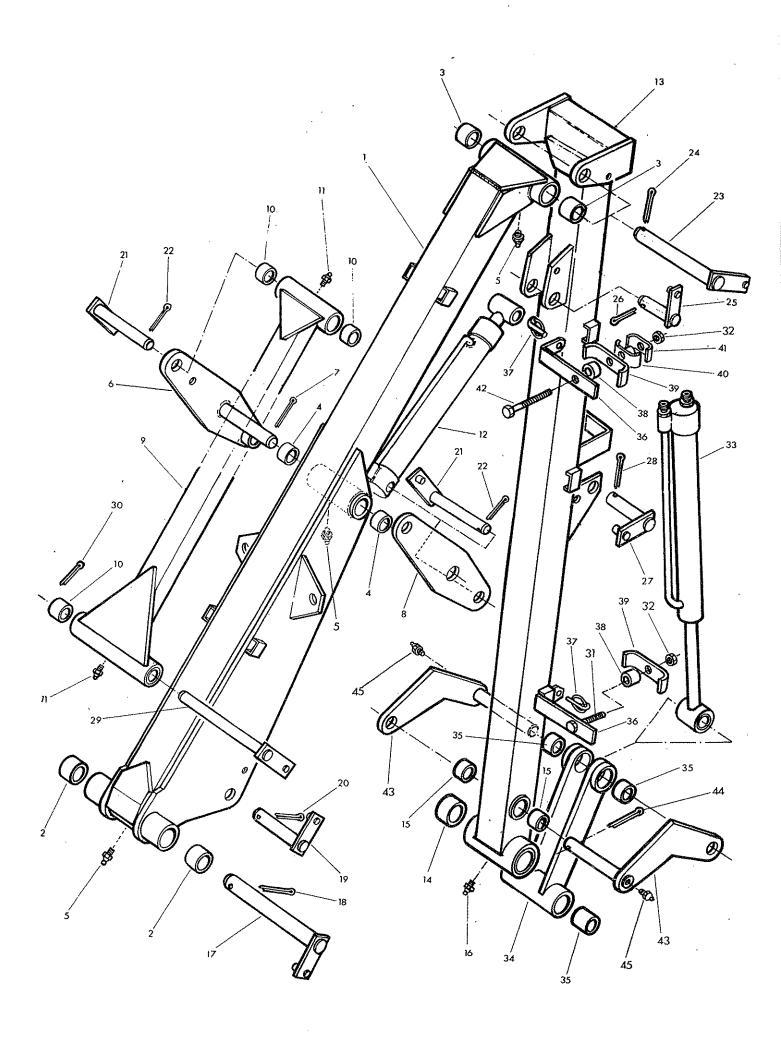
THE DOT SYSTEM

Many spares are supplied as Assemblies or as Sub-assemblies and, to help the customer determine the composition of an Assembly, the Dot System is used. The Main Assembly will not show a dot preceding its description and is printed in BLOCK CAPITALS. Subsequent listed parts are preceded by one or more dots until the next major assembly is reached. An increase in the number of preceding dots indicates that the item is an associated part of the preceding item. Whenever the number of dots are decreased by one this indicates the termination of an assembly.

YOKE, MAIN FRAME & PILLAR



Ref	Part No.	Qty	Description POWER ARM 34 FLAIL
1	71 35 265	1	.Main Frame c/w greaser
2	09 01 121	2	Greaser 1/8 BSP- straight
3	71 34 314	1	.Pillar c/w pins etc.
4	71 35 067	1	Anchor pin c/w split pin
5	95 01 406	1	Split pin Ø5 × 40
6	04 21 832	1	Spring dowel ¼" dia. x 2" long.
7	71 34 026	1	Serial plate.
8	71 03 230	4	Pop rivet 1/8" diameter
į.	71 35 314	1	.Breakaway assistor spring assy. Compr:-
9	01 11 006	1	Nut 5/8 UNF
10	71 35 315	1	Spring cage.
11	71 35 316	1	Tie rod
12	71 35 317	1	Jaw End.
13	71 35 298	1	Spring.
14	71 35 081	1	Pinned End.
15	71 35 082	1	Spacer
16	01 11 003	6	Nut 3/8 UNF
17	71 35 335	1	.Stabilizer c/w pins etc.
18	14 67 049	1	Top link pin c/w sleeve
19	14 67 063	1	Sleeve
20	04 31 105	1	Spring cotter
21	71 11 007	2	Stabilizer pin c/w spring cotter
22	04 31 105	1	Spring cotter
23	71 35 033	1	. Breakaway buffer.
24	71 35 035	1	.Buffer disc.
25	71 35 034	1	.Buffer locating disc.
26	71 35 289	1	.Buffer abutment c/w grub screw
27	93 63 034	1	Grub screw - cup point M8 x 16
28	71 35 293	1	.Buffer bolt.
29	71 35 299	1	.Latch c/w nut, bolt, cord, spacer & nut
30	92 13 126	1	Bolt M12 × 60
31	91 43 006	1	Self locking nut M12
32	71 35 036	1	Operating cord.
33	71 35 097	1	Spacer
34	01 00 105	1	Plain washer
35	71 35 039	2	.Linkage pin c/w dowel & pin
36	04 31 217	1	Linch pin
37	04 22 628	1	Spring dowel 3/8" dia. x 1 ¾" long.
38	71 35 079	1	.Valve mounting bracket c/w screw etc.
39	93 13 054	2	Setscrew M8 x 25
40	91 00 204	2	Spring washer Ø8
41	14 67 049	1	.Top link pin c/w spring cotter, sleeve.
42	04 31 105	1	Spring cotter.
	14 67 063	1	Sleeve.
43	71 35 278	1	.Lift Ram assembly (see page 64)
44 45	71 35 278	1	.Base end pin - lift ram c/w split pin
45 46	05 03 166	1	Split pin ¼" dia x 2" long.
46 47		2	Leg c/w pin
47	71 35 288	1	Leg pin c/w spring cotter
48 40	71 09 060 04 31 105	1	Spring cotter
49	71 14 289	1	.P.T.O. shaft assembly - not illustrated.
	1117200	1	e. a c e w e within a more et a margin and a

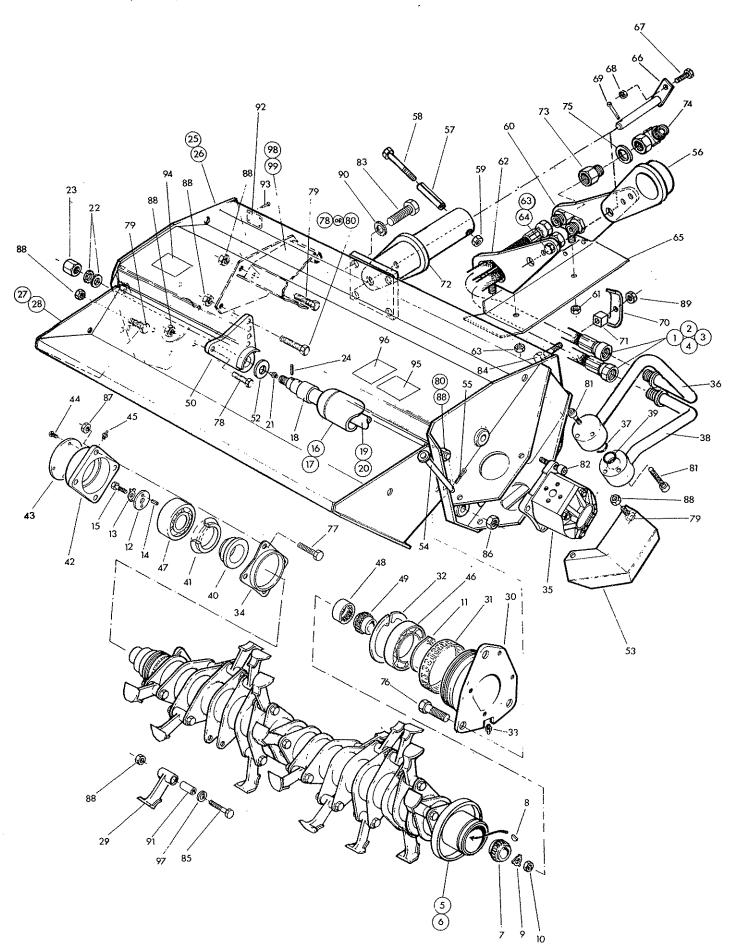


Ref	Part No.	Qty.	Description
			POWER ARM 34 FLAIL CONTINUED.
1	71 34 310	1	.Main arm c/w bushes & greaser
2	72 13 023	2	Bush
3	71 01 134	2	Bush
4	68 03 010	2	Bush
5	09 01 121	3	Greaser 1/8" BSP straight
6	71 34 021	1	.Rocker c/w split pin
7	95 01 406	1	Split pin $\emptyset5 \times 40$
8	71 34 022	1	.Rocker plate
9 (71 34 316	1	.Tension link c/w bush & greaser
10	68 03 010	4	Bush
11	09 01 121	2	Greaser 1/8 BSP straight.
12	71 11 283	1	.Reach ram assembly (see page 65)
13	71 34 315	1	.Dipper arm c/w bushes, greaser etc.
14	71 11 175	2	Bush
15	71 01 083	2	Bush
16	09 01 181	1	Greaser 1/8 BSP straight
17	71 35 025	1	.Pivot pin – main arm c/w split pin
18	95 01 509	1	Split pin Ø10×50
19	71 34 028	1	.Pivot pin c/w split pin – Lift ram rod
20	05 03 166	1	Split pin $\frac{1}{4}$ " dia. \times 2" long
21	71 34 023	2	.Pivot pin c/w split pin - Reach ram base and rocker.
22	95 01 406	1	Split pin Ø5 x 40
23	71 23 034	1	.Pivot pin c/w split pin – dipper
24	95 01 509	1	Split pin ∅ 10 × 50
25	71 09 062	1	.Pivot pin c/w split pin – Reach ram rod.
26	05 03 126	1	Split pin ¼" dia x 1½" long.
27	71 35 029	1	.Pivot pin c/w split pin – Angle ram base
28	05 03 126	1	Split pin ¼" dia. x 1½" long.
29	71 34 027	1	.Pivot pin c/w split pin - tension link
30	95 01 406	1	Split pin Ø5 × 40
31	92 13 125	3	.Bolt M10 \times 60
32	91 43 005	5	.Nut M10
33	71 35 290	1	.Angling ram assembly (see page 66)
34	71 14 340	1	.Slave link c/w bushes
35	71 01 083	4	Bush
- 36	71 09 073	5	.Hose bracket c/w linch pin
37	04 31 217	1 -	Linch pin
38	71 35 093	5	.Hose spacer
39	71 35 092	5	.Hose clamp - upper - large
40	71 14 076	2	.Hose clamp - lower - small
41	71 14 075	2	.Hose clamp - upper - small
42	92 13 165	2	Bolt M10 x 80
43	71 11 053	2	.Radius arm c/w split pin
44	95 01 406	1	Split pin Ø5 × 40
45	09 01 121	1	Greaser 1/8 BSP Straight.

1 METRE & 1-2 METRE HEDGE FLAILS (Sheet 1 of 2) Shown in R. hand build

FOR MACHINES AFTER APRIL 1986

For machines pre April 1986 see pages 68-71 inclusive.



1 METRE AND 1.2 METRE HEDGE FLAILS

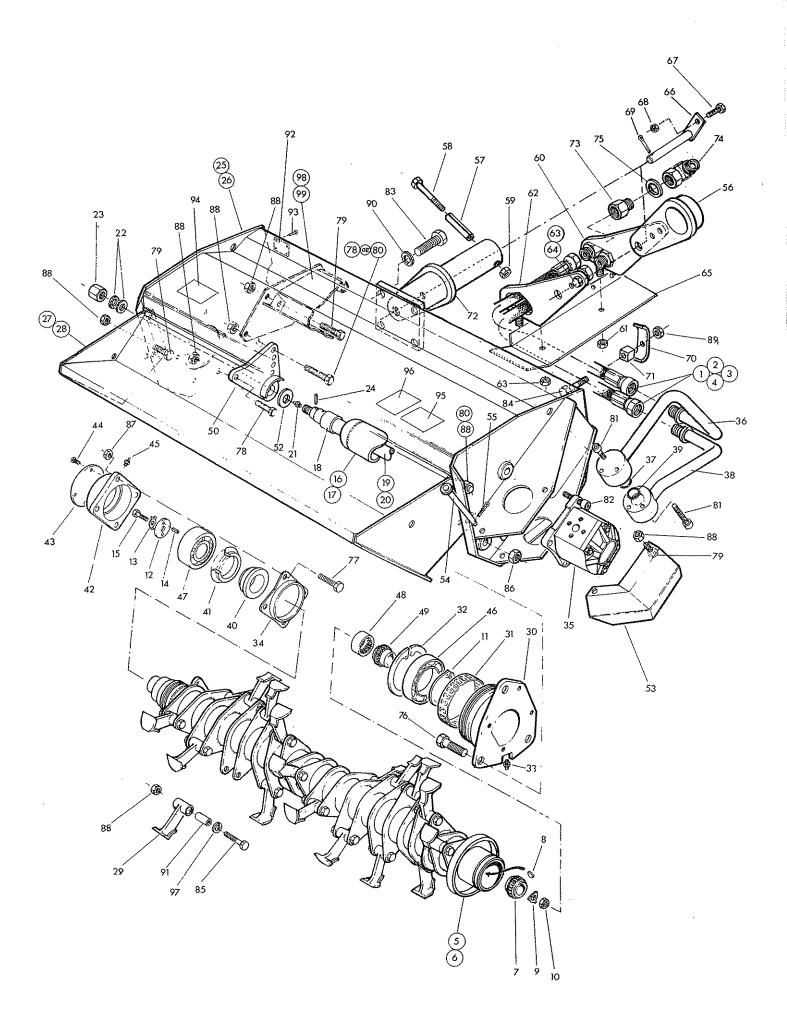
Important Check width and Hand of head before ordering parts

	Ref	Part No.	Qty 1M	<u>Qty</u> 1.2M	Description
	. 1	71 34 285 85 18 025	2		1 METRE HEDGE FLAIL R. HAND .Hose 3/4 BSP SF - SF x 38" long
	2	71 34 287 85 18 035	2		1 METRE HEDGE FLAIL L HAND .Hose 3/4 BSP SF - SF x 21" long
	3	71 35 320 85 18 055		2	1.2 METRE HEDGE FLAIL R HAND .Hose 3/4 BSP x 42" long
	4	71 35 322 85 18 045		2	1.2 METRE HEDGE FLAIL L HAND .Hose 3/4 BSP x 25" long
	5 6	71 14 486 71 14 485	1	1	.Rotor 1M c/w coupling half nuts etc. .Rotor 1.2M c/w coupling half nuts etc.
	Items 7 to	15 inclusive	are co	mmon t	to both rotor assemblies
	v9.	71 14 104	1	1	Coupling half
•	7 8	83 01 010	1	1	Woodruff key
	9	82 01 139	1	1	Tab washer Ø 14
	10	91 00 015	1	1	Hexagon nut M14
	11	04 01 290	1	1	External circlip Ø90
	12	71 40 005	1	1	Bearing clamp washer
	13	71 14 179	1	1	Tab washer Ø 12
	14	04 25 522	1	1	Spring dowel Ø 5 x 22
	15	93 13 066	1	1	Setscrew M12 x 30
	16	71 14 019	1		.Roller 1M c/w bush
	17	71 14 096		f	.Roller 1.2M c/w bush
	18	72 13 023	2	2	Bush - (common to both rollers)
	19	71 34 283	1		.Roller tie rod 1M c/w spring dowel and
	20	71 14 377	*** ***	1	greaser etc .Roller tie rod 1.2M c/w spring dowel and greaser etc
	21	09 01 121	1	1	Greaser 1/8 BSP - straight) Common
	22	71 14 177	2	2	Cam washer) to both
	23	71 14 176	1	1	Special roller nut) Roller
	24	04 21 808	1	1	Spring dowel 1/4" dia x 1/2"long) tie rods
	25	71 14 315	1		,Flail Casing 1M
	26	71 14 325		1	.Flail casing 1.2M
	27	71 14 300	1		.Front hood 1M
	28	71 14 335		1	.Front hood 1.2M
	The fo	ollowing item	s are o	commor	n to all 1M & 1,2M hedging flail assemblies
	29	71 14 312	20	24	Flail F12H
	30	71 14 298	1	1	.Bearing housing motor end c/w tolerance ring circlip
	31	71 14 042	1	1	Tolerance ring
	32	71 14 043	1	1	Internał circlip Ø140 Greaser 1/8" BSP - 45 ⁰
	33	09 01 125	1	1	
	34	71 14 464	1	1	,Shroud ring .Hydraulic motor
	35	83 01 263	1	1	Rigid pipe upper c/w 'O' ring
	36 37	71 14 487 86 00 121	· 1	1	'O' ring
	38	71 14 488	1	1	.Rigid pipe lower c/w 'O' ring
	39	86 00 121	1	1	'O' ring
	40	71 40 006	1	1	.Seal carrier
	41	86 29 163	1	1	.'V' seal
	42	71 40 273	1	1	.Bearing housing - free end c/w cover etc
	43	71 40 007	1	1	End cover
	44	93 00 125	4	4	Capscrew - domed - socket headed M6 x 16
	45	09 01 121	1	1	Greaser 1/3 BSP - straight
	46	06 00 043	1	1	.Ball bearing - motor end (60182)
*	47	06 00 072	1	1	.Ball bearing - self aligning - free end
*	48	71 14 103	1	1	.Coupling sleeve .Coupling half
	49	71 14 104	1	1	, Cooping nan

86 99 166 SEAL KIT FOR HYDRAULIC MOTOR

^{*}Spares note:- Items 7, 48 and 49 are available as a complete drive coupling assembly part No. 71 14 105

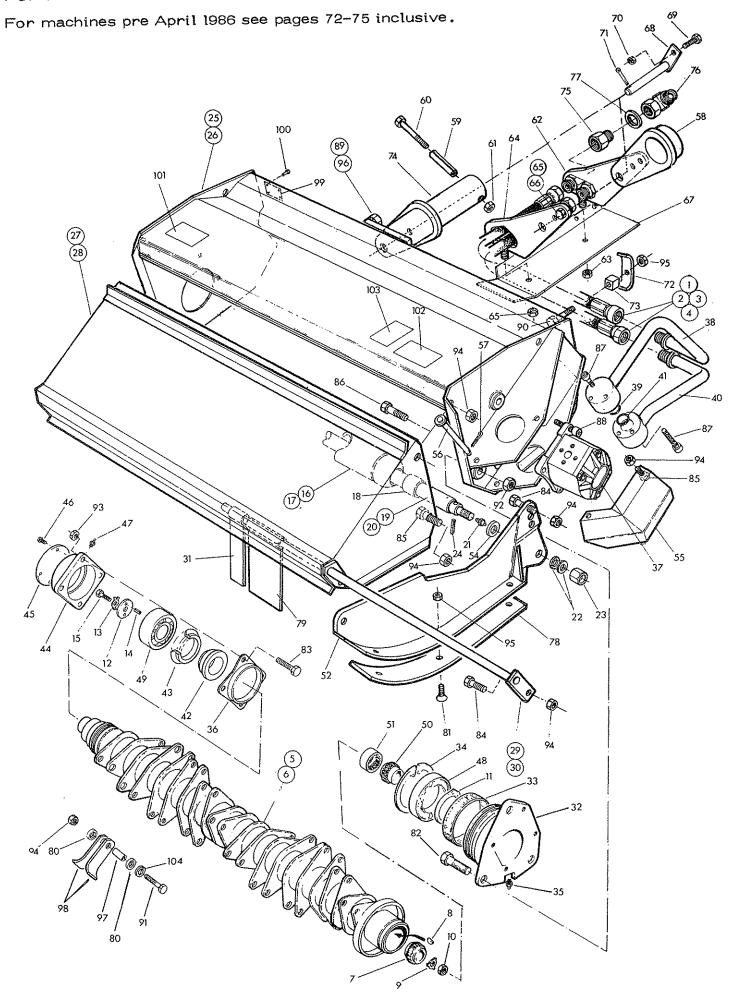
1 METRE & 1.2 METRE HEDGE FLAILS - Continued



Ref.	Part No.	Qty	<u>Qty</u>	Description
		1M	1.2M	1 METRE HEDGE FLAILS (Continued) 1.2 METRE HEDGE FLAILS (Continued)
50	71 14 483	1	1	.Roller bracket – R Hand
51	71 14 484	1	1	.Roller bracket L Hand – not illus
52	60 01 136	2	2	.Thrust washer
53	71 14 337	1	1	.Motor cover
54	71 14 049	1	1	. Motor cover mounting pin c/w split pin
55	05 03 095	1	1	.Split pin 3/16" dia x 1 1/8" long
56	71 14 109	1	1	.Jaw plate c/w nut bolt etc Spring dowel 5/8" dia x 3" long
57	04 23 548	1	1	Bolt M10 × 90
58	92 13 185	1	1	Self locking nut M10
59	91 43 005 71 14 489	1	1	.Hose bracket c/w nut
60 61	01 41 005	1	1	Self locking nut ½" UNF
62	71 14 491	1	1	.Hose guard support bracket c/w nuts and bolts
63	01 41 005	2	2	Self locking nut ½" UNF
64	03 11 105	1	1	Setscrew ½" UNF x 1¾" long
65	71 14 492	1	1	.Hose guard tray
66	71 36 076	1	1	.Slave link pin c/w nut bolt etc
67	93 13 106	1	1	Bolt M12 × 50
68	91 43 006	1	1	Self locking nut M12
69	95 01 406	1	1	Split pin Ø 5 × 40
70	71 35 092	1	1	.Pipe clamp
71	71 35 093	1	1	.Clamp spacer
72	71 14 341	1	1	Forward extension
73	85 81 224	1	1	.Extension adaptor 3/4 BSP M - F .90° elbow 3/4 BSP - M - F
74	85 81 160	2	2	Bonded seal 3/4" BSP
75	86 50 106	1	1	.Special Bolt M16 × 50
76 77	73 14 146	3	3 4	.Setscrew 5/8 UNF x 1½" long
77	02 11 146 03 11 105	4 4	4	.Setscrew ½" UNF x 1½" long - (roller)
78 79	03 11 085	4	4	Setscrew ½ UNF x 1" long
79 80	03 11 125	2	2	.Setscrew ½ UNF x 1½" long
81	93 00 014	6	6	.Capscrew - socket hd 'wedglok' M10 x 60
82	93 00 104	4	4	.Capscrew - socket hd 'wedglok' M10 x 40
83	03 11 106	4	4	.Setscrew 5/8 UNF x 1¼" long
84	92 13 125	1	1	.Bolt M10 × 60
85	71 14 082	20	24	.Special Bolt ½" UNF
86	91 43 007	3	3	.Self locking nut M16
87	01 41 006	4	4	.Self locking nut 5/8 UNF
88	01 41 005	28	32	.Self locking nut ½" UNF
89	91 43 005	1	1	.Self locking nut M10
90	01 00 406	4	4	.External serrated washer 5/8" dia
91	71 14 159	20	24	.Flail pivot bush
92	73 14 087	1	1	Serial No. plate
93	71 03 230	4	4	.Pop rivet 1/8" dia .Safety sticker – Bolt tightness
94	71 14 481	1	1	.Safety sticker - Rotating cutters
95	73 14 399	1	1	Safety Sticker - Rotor Speed
96 97	12 90 006 01 00 205	1 20	1 24	.Spring washer 1/2" dia
0,			. EXTRA	
9 8	71 14 297	1		Rear hood 1M for downward cutting
99	71 14 336		1	Rear hood 1.2M for downward cutting
	03 11 125	2	2	Bolt ½ UNF x 1½ long - bottom)not illus.
	03 11 085	2	2	Bolts ½ UNF × 1 long - top)
	01 41 005	4	4	Self locking nut ½" UNF

1 METRE & 1-2 METRE GRASS FLAILS (Sheet 1 of 2) Shown in R hand build

FOR MACHINES AFTER APRIL 1986



1 METRE AND 1.2 METRE GRASS FLAILS

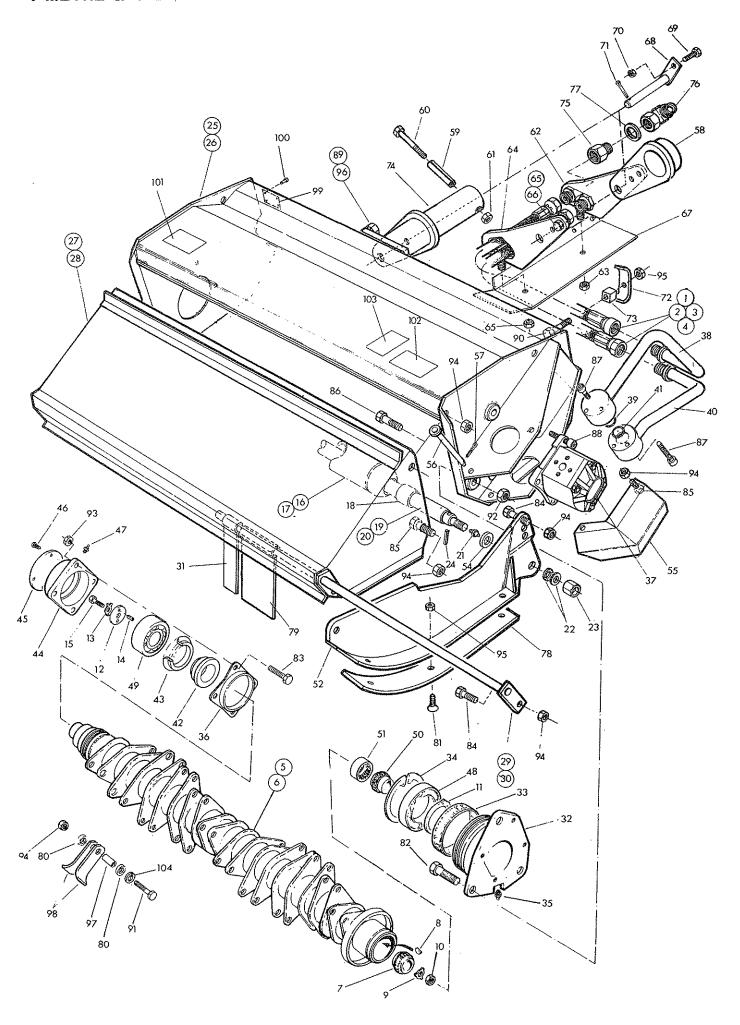
Important Check width and Hand of head before ordering parts from ref

Ref	Part No.	Qty 1M	Qty 1.2M	Description
1 '	71 34 286 85 18 025	2	1.5171	1 METRE GRASS FLAIL R. HAND .Hose 3/4 BSP SF - SF x 38" long
2	71 34 288 85 18 035	2		1 METRE GRASS FLAIL L HAND .Hose 3/4 BSP SF - SF x 21" long
3	71 35 321 85 18 055		2	1.2 METRE GRASS FLAIL R HAND .Hose 3/4 BSP x 42" long
4	71 35 323 85 18 045		2	1.2 METRE GRASS FLAIL L HAND .Hose 3/4 BSP x 25" long
5 6	71 14 485	1	1	.Rotor 1M c/w coupling half nuts etcRotor 1.2M c/w coupling half nuts etc.
		sive are co		to both rotor assemblies
* 7	71 14 104	1	1	Coupling half
8	83 01 010	1	1	Woodruff key Tab washer Ø 14
9	82 01 139	1	1	Hexagon nut M 14
10	91 00 015	1	1	External circlip Ø90
11	04 01 290	1	1	Bearing clamp washer
12	71 40 005	1	1	Tab washer Ø 12
13	71 14 179	1	1	Spring dowel Ø 5 x 22
14	04 25 522	1	1	Setscrew M12 x 30
15	93 13 066	1	1	.Roller 1M c/w bush
16	71 14 019	1	1	Roller 1.2M c/w bush
17	71 14 096 72 13 023	2	2	Bush - (common to both rollers)
18 19	71 34 283	1	_	Roller tie rod 1M c/w spring dowel and greaser etc
20	71 14 377		1	.Roller tie rod 1.2M c/w spring dowel and greaser etc
21	09 01 121	1	1	Greaser 1/8 BSP - straight
22	71 14 177	2	2	Cam washer
23	71 14 176	1	1	Special roller nut
24	04 21 808	1	1	Spring dowel 1/4" dia x 1/2" long
25	71 14 315	1		.Flail Casing 1M
26	71 14 325		1	.Flail casing 1.2M
27	71 34 256	1		.Grass hood 1M
28	71 14 374		1	.Grass hood 1.2M
29	71 14 118	1		.Flap bar 1M
30	71 14 119		1	.Flap bar 1.2M
31	71 34 255	2		.Flap narrow
32	71 40 270	1	1	.Bearing housing motor end c/w tolerance ring circle
33	71 14 042	1	1	Tolerance ring
34	71 14 043	1	1	Internal circlip Ø 140
35	09 01 125	1	1	Greaser 1/8" BSP - 45°
36	71 14 464	1	1	.Shroud ring
37	83 01 263	1	1	.Hydraulic motor
38	71 14 487	1	1	.Rigid pipe upper c/w 'O' ring
39	85 00 121	1	1	., 'O' ring
40	71 14 488	1	†	.Rigid pipe lower c/w 'O' ring
41	86 00 121	1	1	'0' ring
42	71 40 006	1	1	Seal carrier
43	85 29 163	1	1	.'V' seal
44	71 40 273	1	1	.Bearing housing - free end c/w cover etc
45	71 40 007	1	1	End cover
46	93 00 125	4	4	Capscrew - domed - socket headed M6 x 16
47	09 01 121	1	†	Greaser 1/3 BSP - straight
48	06 00 043	1	1	Ball bearing - motor end (6018Z)
49	06 00 072	1	1	.Ball bearing - self aligning - free end
* 50	71 14 103	1	1	.Coupling sleeve
*51	71 14 104	1	1	Coupling half

86 99 166 SEAL KIT FOR HYDRAULIC MOTOR

^{*} Spares note:- Items 7, 50 and 51 are available as a complete drive coupling assembly part number 71 14 105

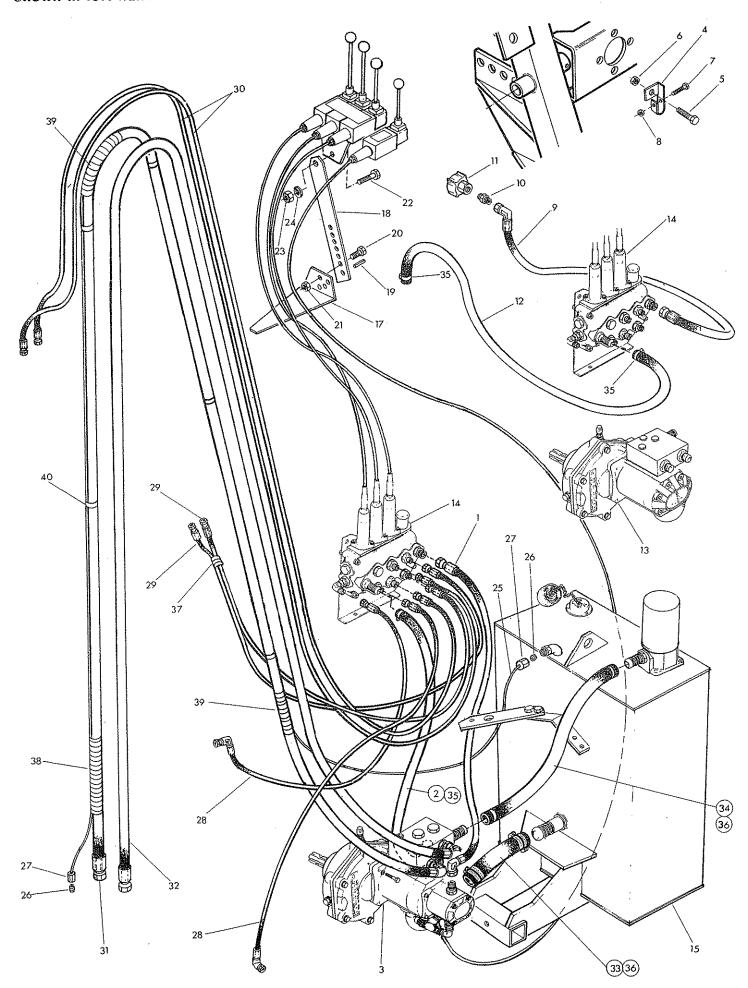
1 METRE & 1.2 METRE GRASS FLAILS - Continued



1M 1.2M 1 METRE GRASS FLAILS (Continued) 1.2 METRE GRASS FLAILS (Continued) 52 71 14 376 1 1 .Skid - L Hand 53 71 14 375 1 1 .Skid - L Hand 54 60 01 136 2 2 .Thrust washer 55 71 14 337 1 1 .Motor cover 56 71 14 037 1 1 .Motor cover mounting pin c/w split pin 57 05 03 095 1 1 .Split pin 9/16" dia x 1 1/8" long 58 71 14 109 1 1 .Jaw plate c/w nut bolt etc 59 04 23 548 1 1 .Spring dowel 5/8" dia x 3" long 60 92 13 185 1 1 .Solt M10 x 90 61 91 43 005 1 1 .Self locking nut M10 62 71 14 489 1 1 .Hose bracket c/w nut 63 01 41 005 1 1 .Self locking nut ½" UNF 64 71 14 491 1 1 .Hose guard support bracket c/w nuts and bolts 65 01 41 005 2 2 .Self locking nut ½" UNF 66 03 11 105 1 1 .Setscrew ½" UNF x 1½" long 67 71 14 492 1 1 .Hose guard tray 68 71 36 076 1 1 .Slave link pin c/w nut bolt etc 69 93 13 106 1 1 .Self locking nut ½" UNF 70 91 43 006 1 1 .Self locking nut M12 71 95 01 406 1 1 .Self locking nut M12 72 71 35 092 1 .Self locking nut M12 73 71 35 093 1 1 .Ceand pacer 74 71 14 341 1 1 .Self locking nut M12 75 85 81 224 1 1 .Self locking nut M12 76 85 81 60 2 2 .Self locking nut M12 77 95 96 97 97 97 97 97 97 97 97 97 97 97 97 97	Ref	Part No	Qty	<u>Qty</u>	Description
53 71 14375 1 1 3. Skid - R Hand - not illustrated 54 60 01 136 2 2 . Thrust washer 55 71 14 337 1 1 . Motor cover 56 71 14 049 1 1 . Motor cover mounting pin c/w split pin 57 05 03 095 1 1 .Split pin 3/16" dia x 1 1/8" long 58 71 14 109 1 1 .Jaw plate c/w nut bolt etc 59 04 23 548 1 1Spring dowel 5/8" dia x 3" long 60 92 13 185 1 1Spring dowel 5/8" dia x 3" long 61 91 43 005 1 1Self locking nut M10 62 71 14 489 1 1 .Hose bracket c/w nut 63 01 41 005 1 1Self locking nut ½" UNF 64 71 14 491 1 1 .Hose guard support bracket c/w nuts and bolts 65 01 41 005 2 2Self locking nut ½" UNF 66 03 11 105 1 1Setscrew ½" UNF x 1½" long 67 71 14 492 1 1 .Hose guard tray 68 71 36 076 1 1Solt M12 x 50 70 91 43 006 1 1Solt M12 x 50 70 91 43 006 1 1Solt M12 x 50 71 35 092 1 1Split pin Ø 5 x 40 72 71 35 092 1 1Split pin Ø 5 x 40 74 77 11 4 341 1Split pin Ø 5 x 40 75 85 81 224 1 1Sprit pin Ø 5 x 40 76 85 81 60 2 2Self locking nut M12 77 95 01 406 1 1Split pin Ø 5 x 40 78 85 81 160 2 2Self locking nut M12 79 71 14 378 5 8Self locking nut M12 79 71 14 378 5 8Self locking nut M12 79 71 14 378 5 8Self locking nut M12 79 71 14 378 5 8Self locking nut M12 79 71 14 404 1 1Split pin Ø 5 x 40 81 93 33 065 6 6Counter-sunk set screw M10 x 30 82 73 14 146 3 3Special Bolt M16 x 50 83 02 11 146 4 4Setscrew ½" UNF x 1½" long 84 03 11 105 4 4Setscrew ½" UNF x 1½" long 85 03 11 105 4 4Setscrew ½" UNF x 1½" long 86 03 11 125 2 2Setscrew ½" UNF x 1½" long 97 92 13 125 1Bolt M10 x 60 98 99 21 3125 1Bolt M10 x 60	•		1M	1.2M	· · · · · · · · · · · · · · · · · · ·
53 71 14375 1 1	52	71 14 376	1	1	.Skid - L Hand
55 71 14 337 1 1 Motor cover 56 71 14 049 1 1 Motor cover mounting pin c/w split pin 57 05 03 095 1 1 Split pin 3/16" dia x 1 1/8" long 58 71 14 109 1 1 Jaw plate c/w nut bolt etc 59 04 23 548 1 1 Spring dowel 5/8" dia x 3" long 60 92 13 185 1 1 Bolt M10 x 90 61 91 43 005 1 1 Self locking nut M10 62 71 14 489 1 1 Hose bracket c/w nut 63 01 41 005 1 1 Self locking nut ½" UNF 64 71 14 491 1 1 Self locking nut ½" UNF 65 01 41 005 2 2 Self locking nut ½" UNF 66 03 11 105 1 1 Sels rocking nut ½" UNF 68 71 36 076 1 1 Sels rocking nut ½" UNF 69 93 13 106 1 1 Sels rocking nut ½" UNF 70 91 43 006 1 1 Sels locking nut M12 71 95 01 406 1 1 Self locking nut M12 72 71 33 092 1 1 Self locking nut M12 73 71 40 300 1 1 Self locking nut M12 74 71 14 341 1 1 Self locking nut M12 75 85 81 124 1 1 Self locking nut M12 76 85 81 160 2 2 Self locking nut M12 77 85 50 106 1 1 Self locking nut M12 78 79 71 14 378 5 8 Self locking nut M12 79 71 14 378 5 8 Self locking nut M12 80 71 14 121 40 48 Setscrew ½" UNF x 1½" long 81 03 11 105 4 4 Setscrew ½" UNF x 1½" long 82 73 14 146 3 Setscrew ½" UNF x 1½" long 8	53		1	1	.Skid - R Hand - not illustrated
56	54	60 01 136	2	2	.Thrust washer
57 05 03 095	55	71 14 337	1	1	.Motor cover
58	56	71 14 049	1	1	.Motor cover mounting pin c/w split pin
59	57	05 03 095	1	1	.Split pin 3/16" dia x 1 1/8" long
1	58	71 14 109	1	1	.Jaw plate c/w nut bolt etc
61 91 43 005 1 1Self locking nut M10 62 71 14 489 1 1Self locking nut ½" UNF 63 01 41 005 1 1Self locking nut ½" UNF 64 71 14 491 1 1Self locking nut ½" UNF 65 01 41 005 2 2Self locking nut ½" UNF 66 03 11 105 1 1Setscrew ½" UNF x 1½" long 67 71 14 492 1 1Setscrew ½" UNF x 1½" long 68 71 36 076 1 1Self locking nut with bolt etc 69 93 13 106 1 1Self locking nut M12 70 91 43 006 1 1Self locking nut M12 71 95 01 406 1 1Self locking nut M12 71 95 01 406 1 1Self locking nut M12 71 95 01 406 1 1Self locking nut M12 71 95 01 406 1 1Self locking nut M12 71 95 01 406 1 1Self locking nut M12 72 71 35 092 1 1Fipe clamp 73 71 35 093 1 1Clamp spacer 74 71 14 341 1 1Forward extension 75 85 81 224 1 1Extension adaptor 3/4 BSP M - F 76 85 81 160 2 290° elbow 3/4 BSP - M - F 77 85 50 106 1 1Bonded seal 3/4" BSP 78 73 14 323 2 2Skid runner 79 71 14 378 5 8Flap 80 71 14 121 40 48Flail spacer 81 93 33 065 6 6Counter-sunk set screw M10 x 30 82 73 14 146 3 3Special Bolt M16 x 50 83 02 11 146 4 4Setscrew ½" UNF x 1½" long 84 03 11 105 4 4Setscrew ½" UNF x 1½" long 85 03 11 085 4 4Setscrew ½" UNF x 1½" long 86 03 11 125 2 2Setscrew ½" UNF x 1½" long 87 93 00 014 6 6Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1Bolt M10 x 60	59	04 23 548	1	1	Spring dowel $5/8$ " dia \times 3" long
62 71 14 489 1 1 1 .Hose bracket c/w nut 63 01 41 005 1 1 1 .Self locking nut ½" UNF 64 71 14 491 1 1 .Hose guard support bracket c/w nuts and bolts 65 01 41 005 2 2 .Self locking nut ½" UNF 66 03 11 105 1 1 .Setscrew ½" UNF x 1½" long 67 71 14 492 1 1 .Setscrew ½" UNF x 1½" long 68 71 36 076 1 1 .Selt link pin c/w nut bolt etc 69 93 13 106 1 1 .Bolt M12 x 50 70 91 43 006 1 1 .Self locking nut M12 71 95 01 406 1 1 .Self locking nut M12 71 95 01 406 1 1 .Split pin Ø 5 x 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew ½" UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 4 .Setscrew 5/8 UNF x 1½" long 88 93 00 104 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60	60	92 13 185	1	1	Bolt M10 × 90
63	61	91 43 005	1	1	Self locking nut M10
64	62	71 14 489	1	1	.Hose bracket c/w nut
65	63	01 41 005	1	1	Self locking nut ½" UNF
66 03 11 105 1 1Setscrew ½" UNF x 1¾" long 67 71 14 492 1 1 .Hose guard tray 68 71 36 076 1 1 .Slave link pin c/w nut bolt etc 69 93 13 106 1 1Bolt M12 x 50 70 91 43 006 1 1Self locking nut M12 71 95 01 406 1 1Split pin Ø 5 x 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 93 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew ½" UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60	64	71 14 491	1	1	.Hose guard support bracket c/w nuts and bolts
67 71 14 492 1 1 1 .Hose guard tray 68 71 36 076 1 1 .Slave link pin c/w nut bolt etc 69 93 13 106 1 1 .Bolt M12 × 50 70 91 43 006 1 1 .Self locking nut M12 71 95 01 406 1 1 .Split pin Ø 5 × 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 .Clamp spacer 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 × 30 82 73 14 146 3 3 .Special Bolt M16 × 50 83 02 11 146 4 4 .Setscrew ½" UNF × 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF × 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF × 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF × 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 × 40 89 03 11 106 4 4 .Setscrew 5/8 UNF × 1½" long 90 92 13 125 1 1 .Bolt M10 × 60	65	01 41 005	2	2	
68 71 36 076 1 1 .Slave link pin c/w nut bolt etc 69 93 13 106 1 1Bolt M12 x 50 70 91 43 006 1 1Self locking nut M12 71 95 01 406 1 1Split pin Ø 5 x 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew ½" UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 .Capscrew - socket hd 'wedglok' M10 x 40 88 93 00 104 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 .Bolt M10 x 60	66	03 11 105	1	1	
69 93 13 106 1 1Bolt M12 x 50 70 91 43 006 1 1Self locking nut M12 71 95 01 406 1 1Split pin Ø 5 x 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew ½" UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 40 88 93 00 104 4 4 .Setscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60	67		1	1	-
70 91 43 006 1 1Self locking nut M12 71 95 01 406 1 1Split pin Ø 5 x 40 72 71 35 092 1 1Pipe clamp 73 71 35 093 1 1Clamp spacer 74 71 14 341 1 1Forward extension 75 85 81 224 1 1Extension adaptor 3/4 BSP M - F 76 85 81 160 2 290° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8Flap 80 71 14 121 40 48Flail spacer 81 93 33 065 6 6Counter-sunk set screw M10 x 30 82 73 14 146 3 3Special Bolt M16 x 50 83 02 11 146 4 4Setscrew 5/8 UNF x 1½" long 84 03 11 105 4 4Setscrew ½" UNF x 1½" long 85 03 11 125 2 2Setscrew ½" UNF x 1½" long 86 03 11 125 2 2Setscrew ½" UNF x 1½" long 87 93 00 014 6 6Capscrew - socket hd 'wedglok' M10 x 40 88 93 00 104 4 4Setscrew 5/8 UNF x 1½" long 90 92 13 125 1Bolt M10 x 60	68		1	1	
71 95 01 406 1 1Split pin Ø 5 x 40 72 71 35 092 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90 elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60			1	1	
72 71 35 092 1 1 1 .Pipe clamp 73 71 35 093 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew ½" UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60			1	1	
73 71 35 093 1 1 1 .Clamp spacer 74 71 14 341 1 1 .Forward extension 75 85 81 224 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1½" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60			1	1	·
74 71 14 341 1 1			1	1	•
75 85 81 224 1 1 1 .Extension adaptor 3/4 BSP M - F 76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¾" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 01 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60			1		
76 85 81 160 2 2 .90° elbow 3/4 BSP - M - F 77 85 50 106 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¾" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60			•	•	
77 85 50 106 1 1 1 .Bonded seal 3/4" BSP 78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 93 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1½" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
78 73 14 323 2 2 .Skid runner 79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
79 71 14 378 5 8 .Flap 80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					•
80 71 14 121 40 48 .Flail spacer 81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
81 93 33 065 6 6 .Counter-sunk set screw M10 x 30 82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					·
82 73 14 146 3 3 .Special Bolt M16 x 50 83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Setscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
83 02 11 146 4 4 .Setscrew 5/8 UNF x 1¾" long 84 03 11 105 4 4 .Setscrew ½" UNF x 1¼" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
84 03 11 105 4 4 .Setscrew ½" UNF x 1½" long - (roller) 85 03 11 085 4 4 .Setscrew ½" UNF x 1" long 86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					,
85 03 11 085 4 4					
86 03 11 125 2 2 .Setscrew ½" UNF x 1½" long 87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
87 93 00 014 6 6 .Capscrew - socket hd 'wedglok' M10 x 60 88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					•
88 93 00 104 4 4 .Capscrew - socket hd 'wedglok' M10 x 40 89 03 11 106 4 4 .Setscrew 5/8 UNF x 1½" long 90 92 13 125 1 1 .Bolt M10 x 60					
89 03 11 106 4 4 .Setscrew 5/8 UNF × 1½" long 90 92 13 125 1 1 .Bolt M10 × 60					•
90 92 13 125 1 1 .Bolt M10 × 60					•
		· ·	·-		
92 91 43 007 3 3 .Self locking nut M16					·
93 01 43 005 4 4 .Self locking nut 5/8 UNF					**
94 01 41 005 32 36 .Self locking nut ½" UNF					
95 91 43 005 7 7 .Self locking nut M10					
96 01 00 406 4 4 .External serrated washer 5/8" dia					"
97 71 14 159 20 24 .Flail pivot bush					
98 71 14 120 40 48 .Grass flail F 12G					•
99 73 14 087 1 1 .Serial No. plate					
100 71 03 230 4 4 .Pop rivet 1/8" dia					·
101 71 14 481 1 1 .Safety sticker - Bolt tightness					•
102 73 14 399 1 1 .Safety sticker - Rotating cutters					"
103 12 90 006 1 1 Safety sticker - Rotor speed					
104 01 00 206 20 24 .Spring washer - 5/8 dia					· ·

HYDRAULIC INSTALLATION. Independent & tractor supply

Shown in left hand build

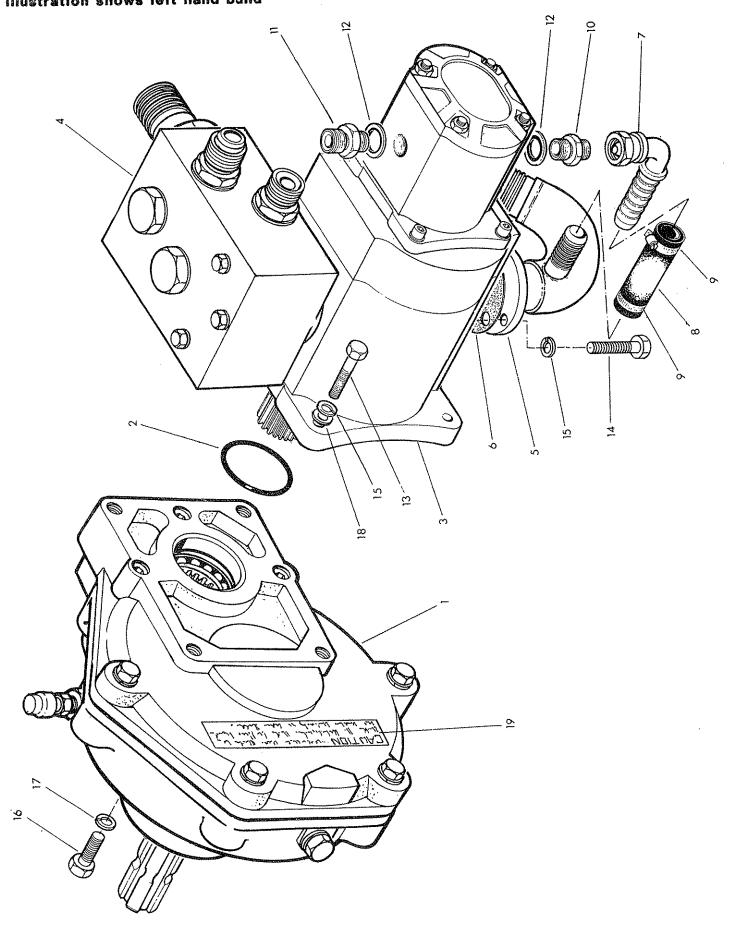


Ref	Part No.	Qty	Description
1	80 17 369 85 31 303	1	HYDRAULIC INSTALLATION PA34 INDEPENDENT. .Hose 3/8 BSP St.F-90°F x 42" long supply from pump.
2	85 01 129	1	.Hose 5/8 bore x 35" long return to R.C. Valve.
3	80 13 362	1	.Gearbox,pump, rotor control valve (see page 48)
4	71 35 094	1	.Rotor cable clamp c/w nuts & bolts.
5	93 13 046	1	Setscrew M12 x 20
6	91 43 006	1	Self locking nut M12
7	93 13 054	1	Setscrew M8 x 25
8	91 43 004	1	Self locking nut M8
_	80 17 368		HYDRAULIC INSTALLATION PA34 TRACTOR SUPPLY
9	85 31 223	1	.Hose $3/8$ BSP S-F 90° F x 59 "long supply from tractor.
10	60 00 113	1	.Union 3/8 BSP-MM
11	85 90 023	1	.Self seal coupling - Female half
12	85 01 053	1	.Hose 5/8" bore x 60" long.
13	80 13 363	1	.Gearbox, pump, rotor relief valve (see page 52)
The fo	ollowing items	are com	nmon to both hydraulic installations.
14	81 30 338	1	.Control assembly (see page 56-59)
15	71 35 305	1	.Hydraulic tank assembly (see page 60)
16	71 09 319	1	.Valve mounting plate and pillar compr:
17	71 09 320	1	.Sandwich plate.
18	71 09 146	1	Pillar c/w spring dowel.
19	04 22 816	1	Spring dowel.
20	93 13 066	1	Setscrew M12 x 30
21	91 13 006	1	Nut M12
22	03 11 086	1	Setscrew 5/8 UNF x 1" long
23	01 11 006	1	Plain nut 5/8 UNF
24	01 00 206	1	Spring washer 5/8" dia
* 25	85 01 127	1	.Nylon motor drain tube 5.6M long.
* 26	85 81 199	2	.Brass olive Ø8
*27	85 81 200	2	.Female nut
28	85 35 022	2	.Hose ¼" BSP St-F 90 ⁰ F x 48" long — lift.
29	85 15 0 62	2	.Hose ¼"BSP St-F St-Fx 72"long - Reach
30	85 15 012	2	.Hose¼" BSP St-F St-Fx 156" long - Angle.
31	85 01 132	1	.Hose 3/4BSP St-F 90°F x 212 long-motor supply
32	85 01 131	1	.Hose 3/4BSP St-F x 1 1/16 JIC 900F x 212" long motor
33	85 01 122	1	.Hose 1½"bore x 11 3/4"long -suction from tank.
34	85 01 130	1	.Hose $1\frac{1}{4}$ " dia x 46" long return to tank.
35	09 04 204	2	.Hose clip for 5/8 bore hose.
36	09 04 107	6	.Hose clip (4 for 1½"bore 2 for 1½" bore)
* 37	71 35 090	1	.Hose armour 50mm long.
* 38	71 35 091	1	,Hose armour 700mm long.
* 39	71 15 173	2	.Hose armour 300mm long.
* 40	71 35 084	6	.Nylon tube tie.

* SPARES AND ASSEMBLY NOTE

On machines after April 1986 Items 25, 26, 27, 37, 38, 39, and 40 are deleted.

GEARBOX-PUMP-ROTOR CONTROL VALVE ASSEMBLY(Independent model only) Illustration shows left hand build

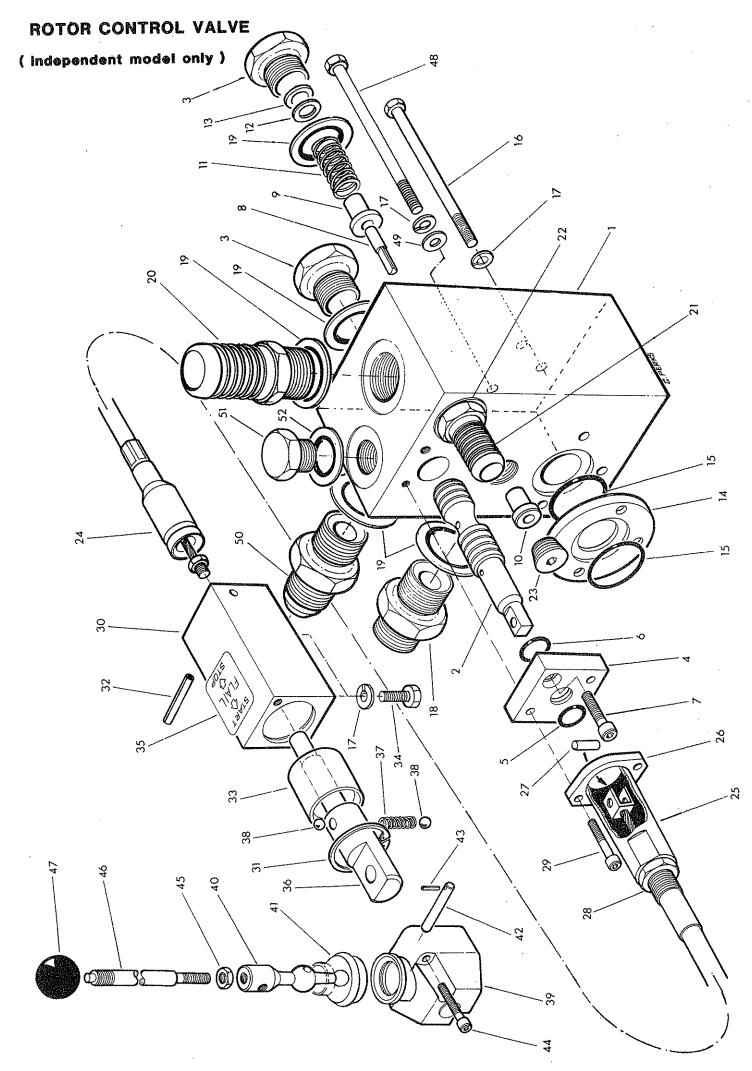


	Ref	Part No.	Qty.	Description
			, ,,,,, ,,,,, ,,,,, ,,,,,, ,,,,,,,,,,,	
		80 13 362		GEARBOX - PUMP - ROTOR CONTROL VALVE
	1	80 13 360	1	.Gearbox 4.94:1 (see page 54)
	2	86 00 523	1	.'0' ring.
茶	3	82 01 462	1	.Tandem pump CPL 33/6.2
·	4	81 25 331	1	.Rotor control valve (see page 50)
	5	71 35 296	1	.Suction Union
	6	80 13 023	1	.Gasket
	7	85 81 173	1	.Swept elbow connection.
	8	85 01 103	1	.Connecting hose
	9	09 04 204	2	.Hose clip
茶	10	85 81 180	1	.Union ½"BSP - 5/8" BSP M-M
·	11	60 00 112	1	.Union ½" BSP 3/8" BSP M-M
	12	86 50 104	2	.Bonded seal
	13	92 13 094	4	.Bolt M8 × 45
	14	93 13 044	4	.Setscrew M8 × 20
	15	91 00 204	8	.Spring washer $ ot \emptyset$ 8
	16	93 13 056	4	.Setscrew M12 × 25
	17	91 00 206	4	.Spring washer Ø12
	18	91 00 104	4	.Plain washer Ø8
	19	80 13 081	1	.Gearbox label.

^{*} Spares Note.

For machines after serial No. 03 G \odot 10 items 3 % 10 will be as follows.

3	82 01 466	1	.Tandem pump CPL33/5.7
10	85 81 206	1	.Union 1/2" BSP- 5/8 BSP M-M



```
Ref
        Part No.
                     Qty
                            Description
                            ROTOR CONTROL VALVE
        81 25 331
                            .Valve body c/w spool (not supplied separately)
 1
        81 25 074
                      1
 2
                            Spool (reference only)
 3
        81 25 031
                      2
                            .Spool or Relief valve cap
        81 25 039
                            .Control plate c/w '0' rings
                      1
 4
        86 00 502
                            ..'0' ring.
 6
        86 00 503
                      1
                            ..'0' ring.
        93 43 023
                      2
                            .Capscrew M6 x 12
 7
                            Relief valve neede Supplied assembled 81 25 083
        81 25 081
 8
9
        81 25 082
                      1
                            .Spring register
                            .Drill bush 1/32" dia
        81 25 084
10
        81 10 003
                      1
                            .Relief valve spring
11
        60 01 232 As reqd. .0.4 Shim washer
12
                            .5/16" dia bright washer
        01 00 102 "
                       11
13
14
        81 25 045
                      1
                            .Spacer
        86 00 119
                      2
                            .'0' ring.
15
                            .Bolt M8 \times 90
16
        92 13 184
                            .Spring washer Ø8
17
        91 00 204
                      5
        85 81 136
                            .Union %" BSP M-M
18
                      1
19
        86 50 106
                      5
                            .Bonded seal 3" BSP
                            .Return connection ¾ BSP
20
        81 25 061
                      1
        81 25 008
                            .Low pressure connection 3/8 BSP
21
                      1
22
        86 50 103
                            .Bonded seal 3/8 BSP
23
        85 82 044
                      1
                            .Taper plug ½" BSPT
24
        81 25 046
                      1
                            .Cable assembly c/w sleeve, flange, etc.
25
        71 15 162
                      1
                            ..Sleeve
        81 25 050
                            ..Flange
26
                      1
                            ..Pin
27
        71 15 160
                      1
28
        01 31 006
                      1
                             .. Thin locknut 5/8 UNF
        93 43 022
                      2
29
                             .Capscrew M5 x 12
30
        71 14 069
                      1
                            .Control block c/w spring dowel and circlip
31
        04 11 118
                      1
                            .. Internal circlip
        04 25 540
                            ...Spring dowel Ø5 x 40
32
                      1
33
        71 14 067
                            .Detent cage
34
        93 13 034
                      2
                            .Setscrew M8 x 16
35
        71 14 073
                            .Instruction label
                      1
36
         71 14 070
                      1
                            .Spindle
37
        71 14 068
                      1
                            .Spring
38
        09 05 108
                      2
                            .Steel ball ¼" diameter
        81 30 065
                      1
                            .Lever pivot box assembly comprising:-
                            ..Lever pivot box.
39
        81 30 107
                      1
40
        81 30 019
                      1
                            ..Lever
                            ..Lever weather gaiter
41
        81 30 106
                      1
                            ..Lever pivot
        81 30 009
42
                      1
43
        81 30 021
                            ...Spring dowel
44
        93 43 072
                      2
                            .Capscrew M5 x 35
                            .Thin hexagon nut M8
45
        91 13 004
                      1
                            .Lever handle
46
        71 14 072
                      1
                             .Knob - black
        09 03 121
47
                      1
        92 13 204
                      2
                            .Bolt M8 x 100
48
        81 25 068
                      2
49
                            .Special washer
        85 81 167
                             .Union %BSP - 1 1/16 J.I.C. M-M
50
                      1
51
        81 03 001
                      1
                             .Blank plug 1/2" BSP
        86 50 104
                             .Bonded seal,
52
                      1
```

* An alternative cable assembly may be fitted depending on supply availability.

The complete assembly is interchangeable and thus retains the same assembly Part Number i.e., 81 25 046.

Individual cable components are not interchangeable thus before ordering spares the cable must be correctly identified.

The cable listed above is manufactured by "BOWDEN" and is BLACK

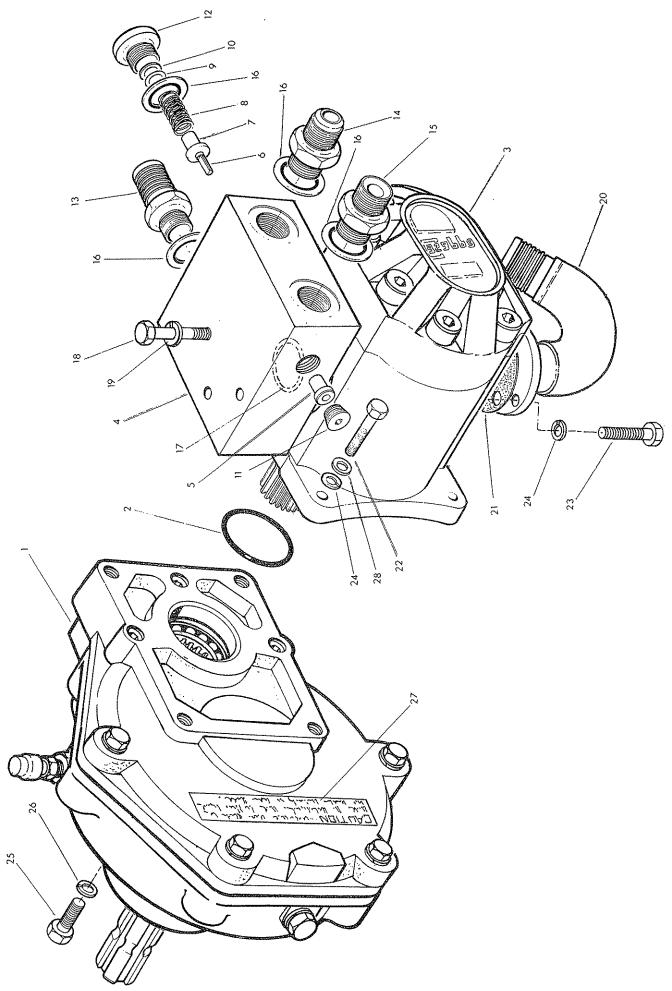
The alternative cable manufactured by "TELEFLEX MORSE" is RED. and consists of

```
24
        81 25 046
                             .Cable assembly c/w sleeve, flange etc
25
                             .Cable sleeve
        81 25 049
                      1
                             .Flange.
26
        81 25 050
                      1
                             Pin
27
        81 25 051
        91 00 016
                             .Thin locknut Ø16 x 1.5 pitch.
28
```

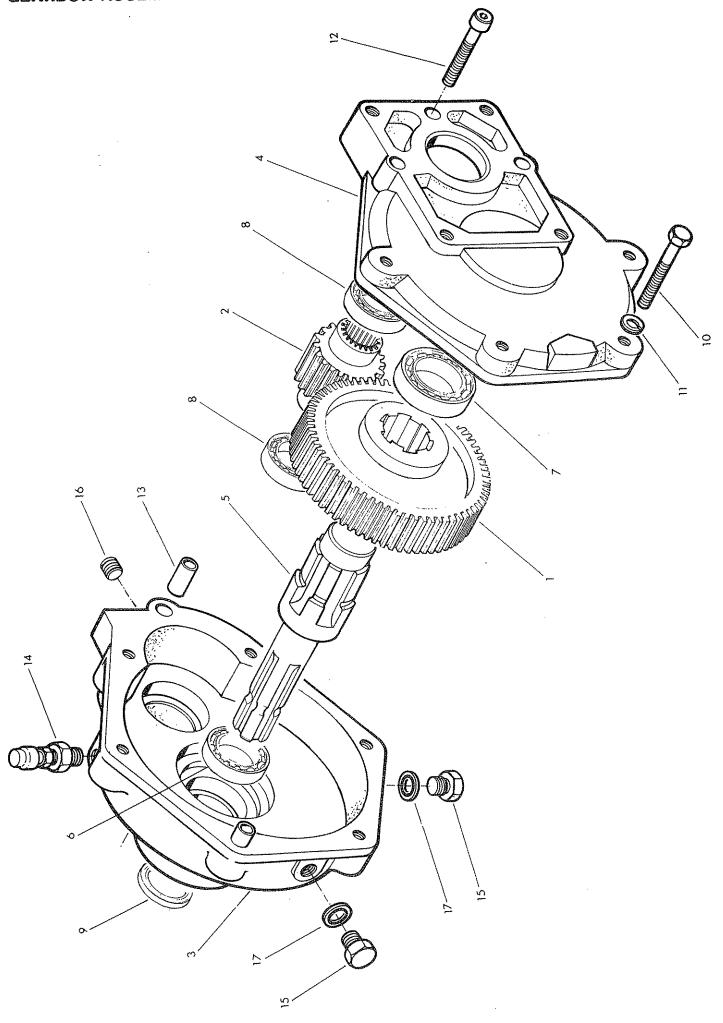
81 25 051 1 ..Pin ¼ dia.) Alternative pin for T. Morse.

GEARBOX - PUMP - ROTOR RELIEF VALVE (Tractor supply model only)

Illustration shows left hand build



Ref	Part No.	Qty	Description
	80 13 363		GEARBOX-PUMP-ROTOR RELIEF VALVE.
1	80 13 360	1	.Gearbox 4.94:1 (see page 54)
2	86 00 523	1	.'0' ring.
3	82 01 463	1	.Pump CPL 33
J	81 25 336	1	.Rotor relief valve assembly compr:
4	81 25 322	1	Valve block
5	81 25 048	1	Drill bush Ø5
6	81 25 042	1	Relief valve needle) supplied assembled.
7	81 25 047	1	Spring register)
8	81 10 003	1	Spring.
9	60 01 232	As reqd	Shim 0.4mm
10	01 00 102	As reqd	5/16 dia. bright washer
11	85 82 043	1	Taper plug 3/8 BSPT
12	81 25 058	1	Relief valve cap.
13	81 25 061	1	Return connection.
14	85 81 167	1	Union 3/4 BSP \times 1 1/16 J.I.C. M-M
15	85 81 136	1	Union 3/4 BSP M-M
16	86 50 106	4	Bonded seal 3/4" BSP
17	86 00 119	1	'0' ring.
18	92 13 124	3	Bolt M8 × 60
19	91 00 204	3	Spring washer Ø8
20	71 35 297	1	.Suction connection
21	80 13 023	1	.Gasket
22	92 13 094	4	.Bolt M8 × 45
23	93 13 044	4	.Setscrew M8 x 20
24	91 00 204	8	.Spring washer Ø8
25	93 13 056	4	.Setscrew M12 x 25
26	91 00 206	4	.Spring washer Ø12
27	80 13 081	1	.Gearbox label.
28	91 00 104	4	.Plain washer Ø8



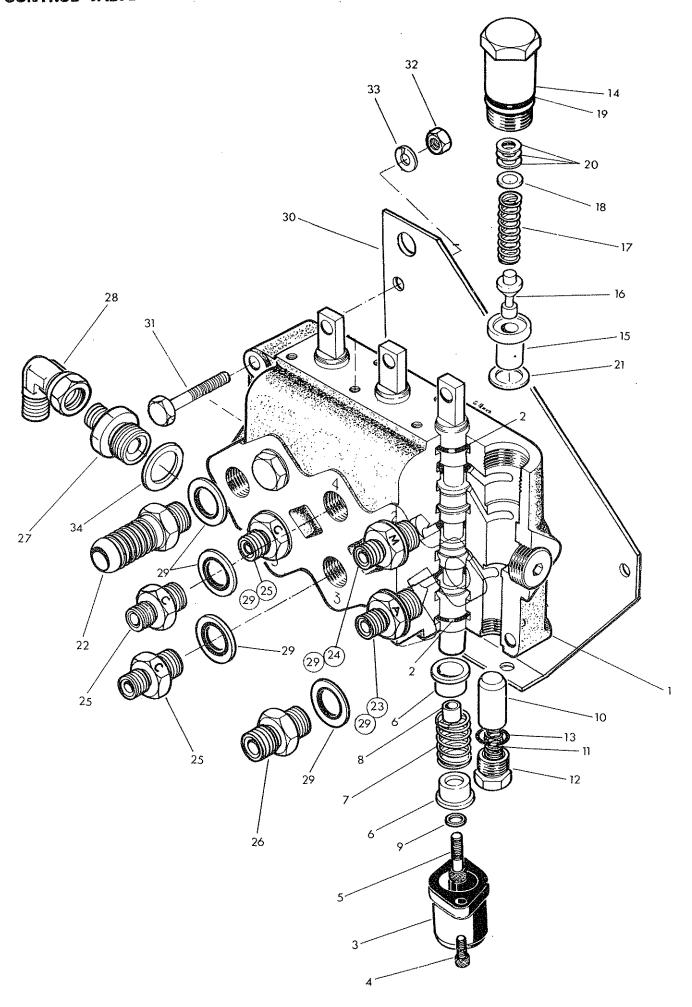
	Ref	Part No.	<u>Qty</u>	Description
		80 13 360		GEARBOX ASSEMBLY (4.59:1)
*	1	80 13 384	1	.Gear 78 teeth
*	2	80 13 385	1	.Pinion 17 teeth
		80 13 360		GEARBOX ASSEMBLY (4.94:1)
*	1	80 13 372	1	.Gear 79 teeth
*	2	80 13 373	1	.Pinion 16 teeth

The following items are common to both gearbox assemblies.

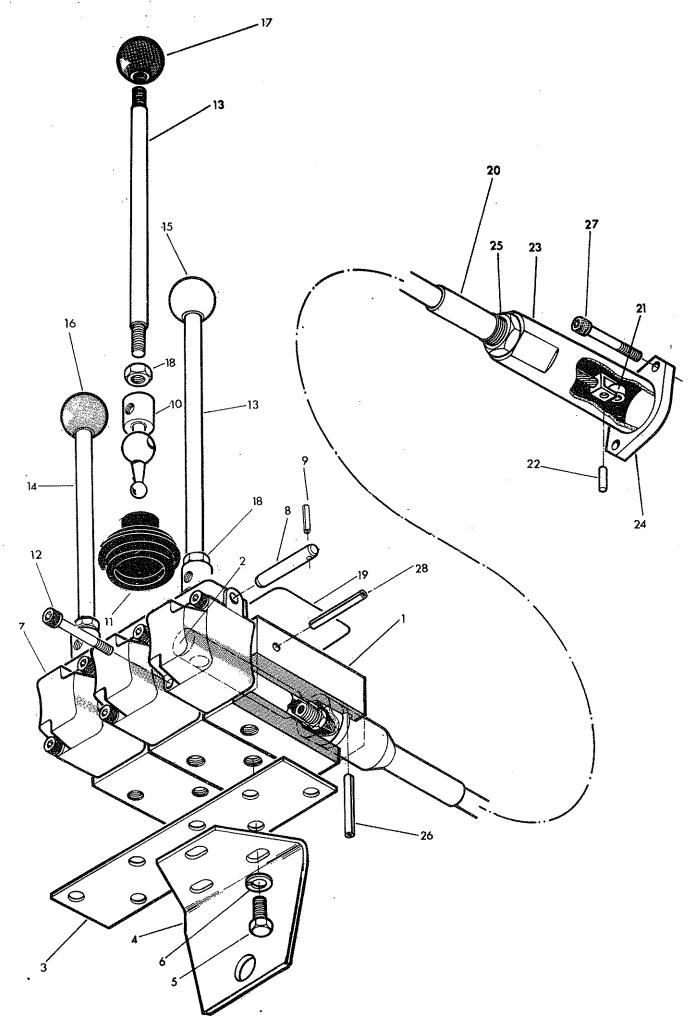
3	80 13 370	1	.Gearbox casing — input
4	80 13 371	1	.Gearbox lid — output
5	80 13 374	1	.Input Shaft 1 3/8 dia. x 6 spline
6	06 00 063	1	.Bearing
7	06 00 064	1	.Bearing
8	06 00 065	2	.Bearing
9	86 29 151	1	.Shaft seal 2 1/8" × 1 3/8" × 1/2"
10	92 13 064	4	.Bolt M8 × 30
11	91 00 204	4	.Spring Washer Ø 8
12	93 43 074	3	.Capscrew socket headed M8 $ imes$ 35
13	80 13 375	2	.Sleeve dowel
14	80 13 376	1	.Breather
15	85 81 133	2	.Plug - level and drain ¼BSP
16	85 82 042	1	.Taper plug ¼BSPT
17	86 50 102	2	.Bonded seal ¼" BSP

* Service and spares note

Before ordering or replacing these components check carefully that you have correctly identified the item required. To assist in correct gearbox identification the 4.59:1 ratio gearbox assembly will have an identification tab trapped under the head of one of the cap screws and be stamped 4.6



Ref	Part No.	Qty	Description	
	81 30 338		HYDRAULIC CONTROL ASSEMBLY	
	81 30 335	1	.Valve c/w connections.	
1	81 30 252	1	Valve block c/w spools '0' rings.	
2	86 00 112	6	'0' ring.	
3	81 30 002	3	Centering spring cover	
4	93 43 022	6	Socket headed capscrew M5 x 12	
5	93 83 043	3	Setscrew M6 x 20	
6	81 30 003	6	Centering spring cup	
7	81 30 004	3	Centering spring.	
8	81 30 005	3	Distance piece	
9	81 30 020	3	Washer	
	81 30 022	1	Non-return valve assembly compr:	
10	81 30 006	1	Supply check valve	
11	81 30 007	1	Spring.	
12	81 30 008	1	Plug	
13	86 00 501	1	'0' ring.	
	81 30 023	1	Relief valve assembly	
14	81 30 045	1	Relief valve body	
15	81 30 016	1	Relief valve seat housing.	
16	81 30 015	1	Relief valve needle	
17	81 30 011	1	Relief valve spring	
18	81 30 044	1	Washer	
19	86 00 113	1	'0' ring.	
20	81 30 043	As Reqd	Shim	
21	81 30 017	1	Sealing washer	
22	81 25 008	1	Return connection 5/8" bore	
23	81 30 046	1	Restrictor union A 1/8SP - 3/8BSP M-M	
24	81 30 066	1	Restrictor union M 3/8"BSP-1/BSP M-M	
25	81 30 048	3	Restrictor union 'C' 1/4BSP -3/8BSP M-M	
26	60 00 113	7	Union 3/8 BSP M-M	
27	85 81 145	1	Union 3/8 BSP-1/BSP M-M	
28	85 81 190	1	Elbow ¼ BSP	
29	86 50 103	. 8	Bonded seal 3/8 BSP	
30	71 34 320	1 '	.Valve mounting plate	
31	92 13 124	3	.Bolt M8 × 60	
32	91 13 004	3	.Nut M8 ❖	
33	91 00 204	3	.Spring washer	
34	81 30 064	1	.Copper sealing washer.	
	86 99 163		SEAL KIT	



	Ref	Part No.	Qty	Description
ŧ		81 30 338		HVDBALLIC CONTROL ASSEMBLY Continued
,	1	81 30 052	2	HYDRAULIC CONTROL ASSEMBLY (continued) .Control block
	2	81 30 053	3 3	·
	3	71 14 071		Control block spindle.
		80 17 006	1	.Control block mounting base.
	4 5	93 13 034	1	.Mounting bracket.
			6	Setscrew M8 x 16
	6	01 00 102	6	.Thin washer 5/16" dia.
		81 30 065	3	Lever pivot box assembly compr:
	7	81 30 107	1	Lever pivot box.
	8	81 30 009	1	Lever pivot spindle
	9	81 30 021	1	Spring dowel.
	10	81 30 019	1	Lever
	11	81 30 118	1	Lever weather gaiter.
	12	92 43 072	6	.Socket headed capscrew M5 x 35
	13	71 09 131	2	Lever handle long - Reach and Lift
	14	71 09 132	1	.Lever handle short - Angle
	15	09 03 112	1	.Lever knob - Reach (Red)
	16	09 03 113	1	.Lever knob - Angle (Green)
•	17	09 03 114	1	.Lever knowb - Lift (Yellow)
	18	91 13 004	3	.Hexagon nut M8
	19	81 30 093	1	.Operating instruction lable.
*	20	80 17 003	3	.Cable c/w spacer and pin, sleeve, flange etc.
	21	7 15 158	1	Spacer
	22	71 15 160	1	Pin
	23	71 15 162	1	Sleeve
	24	81 25 050	1	Flange.
	25	01 31 006	†	Thin locknut %"UNF
	26	04 25 522	3	.Spring dowel Ø5 x 22
	27	93 43 032	6	.Socket headed capscrew M5 x 16
	28	04 25 540	3	.Spring dowel Ø5 x 40

An alternative cable assembly may be fitted depending on supply availability.

The complete assembly is interchangeable and thus retains the same assembly Part Number i.e., 80 17 003

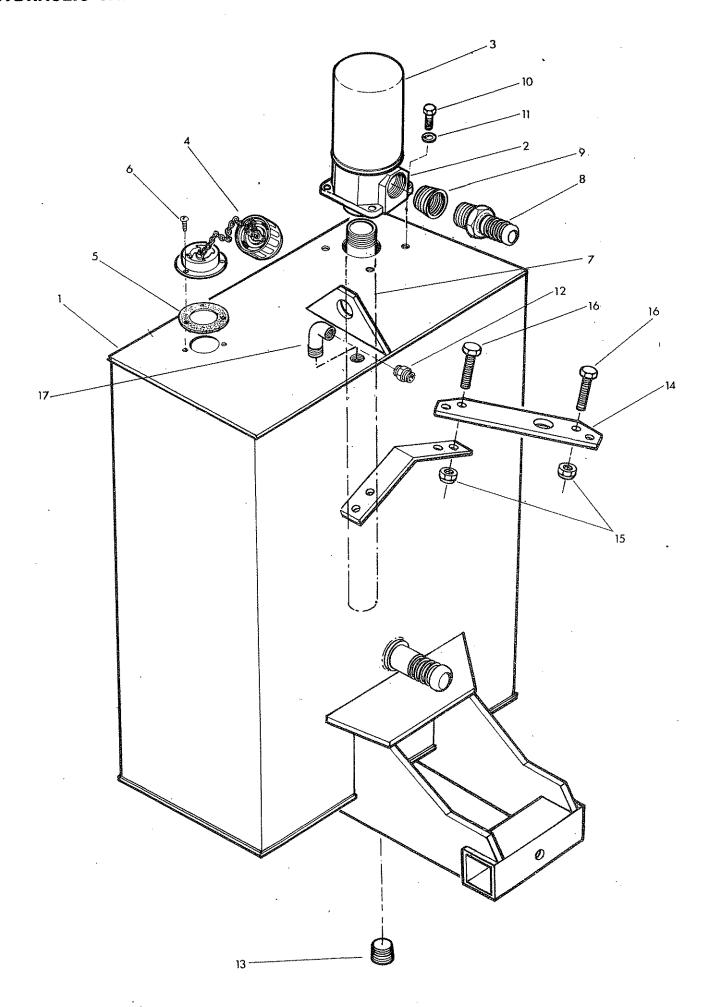
Individual cable components are not interchangeable thus before ordering spares the cable must be correctly identified.

The cable listed above is manufactured by "BOWDEN" and is BLACK.

The alternative cable manufactured by "TELEFLEX MORSE" is RED and consists of

To minimise backlash in cable operation it is important to fit mating pins and spacers on each cable.

HYDRAULIC TANK ASSEMBLY



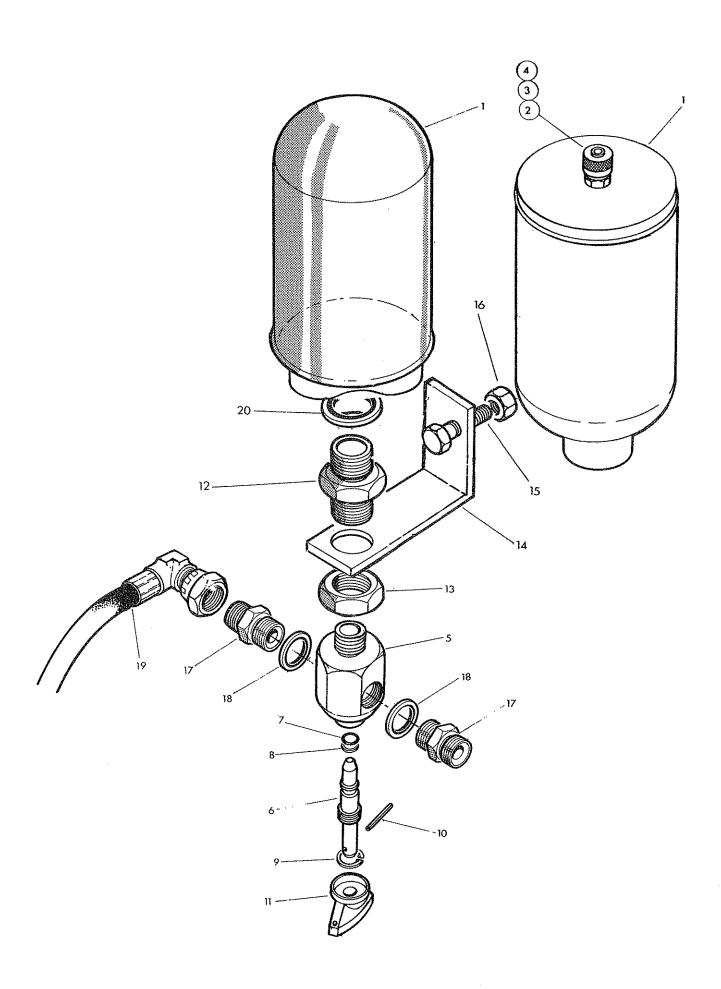
	Ref	Part No.	Qty	Description,
		71 35 305		HYDRAULIC TANK ASSEMBLY
	1	71 35 306	1	.Oil tank
	2	84 01 040	1	.Filter c/w element
	3	84 01 041	1	Canister filter element.
		84 01 014	1	.Filler/breather assembly compr:-
	4	84 01 015	1	Filler cap and neck
	5	84 01 017	1	Gasket
	6	03 00 082	3	Screw self tapping 3/16 dia. x 1½ long.
	7	71 23 026	1	.Return pipe
-	8	81 21 051	1	.Return connection
9	9	85 81 202	1	.Adaptor 1½ BSPT M - 1" BSP F
•	10	93 13 054	4	.Setscrew M8 x 25
	11	91 00 204	4	.Spring washer
* 2	12	85 81 201	1	.Special union ¼ BSP
	13	85 81 203	1	.Drain plug 1" BSP
	14	71 35 077	1	.Tank strap
	15	93 13 065	4	.Setscrew M10 × 30
	16	91 43 005	4	.Self locking nut M10
	17	85 81 204	1	.Elbow

Assembly note.

- * Special union assembled onto tank using 'Permabond A121' or similar sealing compound.
- Adaptor assembled into filter and return connection into adaptor using Permabond 'A' 121 or similar sealing compound.

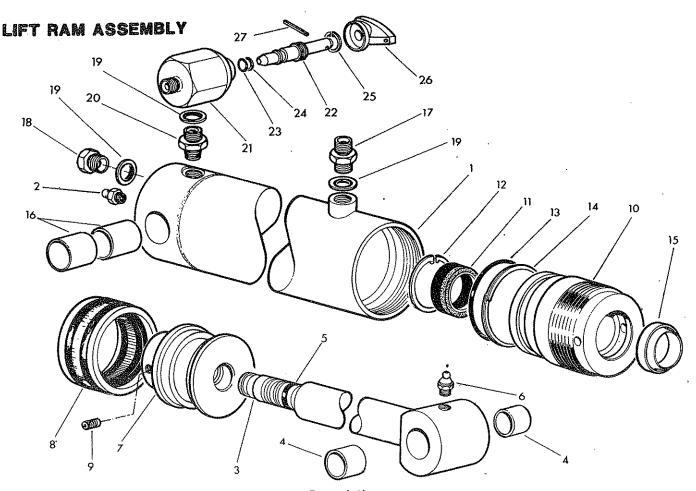
2 SPARES NOTE

On machines after April 1986 Items 12 and 17 are deleted.



Ref	Part No.	Qty	Description
	81 26 264		LIFT FLOAT KIT
1	81 26 254	1	.Accumulator (500 Psi)
2	81 26 015	1	Charge valve assembly c/w '0' ring.
3	81 26 016	1	Charge valve core.
4	86 00 103	1	'0' ring.
	71 35 007	1	.Tap assembly compr:-
5	71 35 294	1	Tap body
6	71 35 006	1	Tap spindle
7	86 00 107	1	'0' ring
8	86 09 107	1	Anti extrusion ring.
9	04 16 110	1	.Internal circlip
10	04 20 820	1	Spring dowel.
11	81 08 006	1	Knob
12	85 81 205	1	.Adaptor
13	85 81 151	1	.Back nut
14	71 35 096	1	.Mounting bracket.
15	93 13 056	1	.Setscrew M12 x 25
16	91 43 006	1	.Self locking nut M12
17	85 81 145	2	.Union 3/8 BSP - ¼BSP M-M
18	86 50 103	2	.Bonded seal 3/8 BSP
19	85 35 062	1	.Hose ¼"BSP SF - 90^{0} F x 15" long.
20	86 50 106	1	.Bonded seal 3/4" BSP

Two alternative accumulators may be supplied depending on supply availability. The two accumulators are directly interchangeable and have a common charge valve assembly.



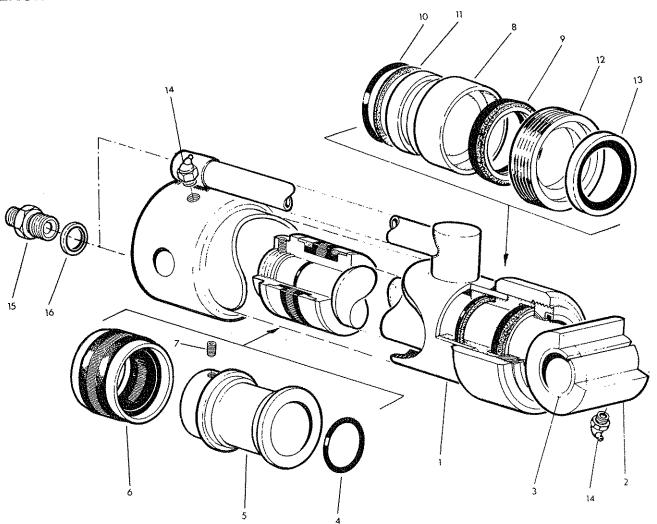
	Ref	Part No.	Qty	Description
		71 35 278		LIFT RAM ASSEMBLY
		71 35 280		.Ram basic compr:-
	1	71 35 283	1	Ram cylinder c/w greaser.
	2	09 01 121	1	Greaser 1/8 BSP - straight
Z	3	71 35 304	1	Piston rod c/w bush, '0' ring and greaser.
	4	60 12 032	2	Bush
	5	86 00 119	1	'0' ring.
	6	09 01 121	1	Greaser 1/8" BSP - straight.
2	7	71 35 004	1	Piston c/w seal and grub screw.
	8	86 38 740	1	Piston seal.
	9	93 00 110	1	Grub screw M6 x 8 socket headed.
	10	71 35 282	1	Gland housing c/w seals etc.
	11	86 22 127	1	Gland seal.
	12	04 11 132	1	Internal circlip
	13	87 00 740	1	'0' ring.
	14	87 09 740	1	Anti extrusion ring
	15	86 29 147	1	Wiper
	16	71 01 134	2	Bush - ram base.
	17	85 81 115	1	.Union ¼ BSP - 3/8 BSP M-M
	18	80 03 001	1	.Plug 3/8 BSP
	19	86 50 103	3	.Bonded seal 3/8 BSP
*	20	80 05 007	1	.Taper adaptor 3/8 BSPT
		71 35 005	1	.Lock tap assembly compr:-
	21	71 35 284	1	Tap body.
	22	71 35 006	1	Tap spindle.
	23	86 00 107	1	'0' ring.
	24	86 09 107	1	Anti extrusion ring.
	25	04 16 110	1	Internal circlip.
	26	81 08 006	1	Tap knob
	27	04 20 820	1	Spring dowel 1/8" dia x 1½" long.
		86 99 187		SEAL KIT

^{*}Taper adaptor to be assembled into ram cylinder using 'Permabond' A121 or other suitable sealant.

Assembly note. Piston is assembled onto piston rod using 'Permabond A 113 or other similar thread locking compound.

when replacing a piston or a piston rod on machines prior to serial No 04 GH 29 a complete piston/ piston rod assembly is necessary, Part No 71 35 105.

REACH RAM

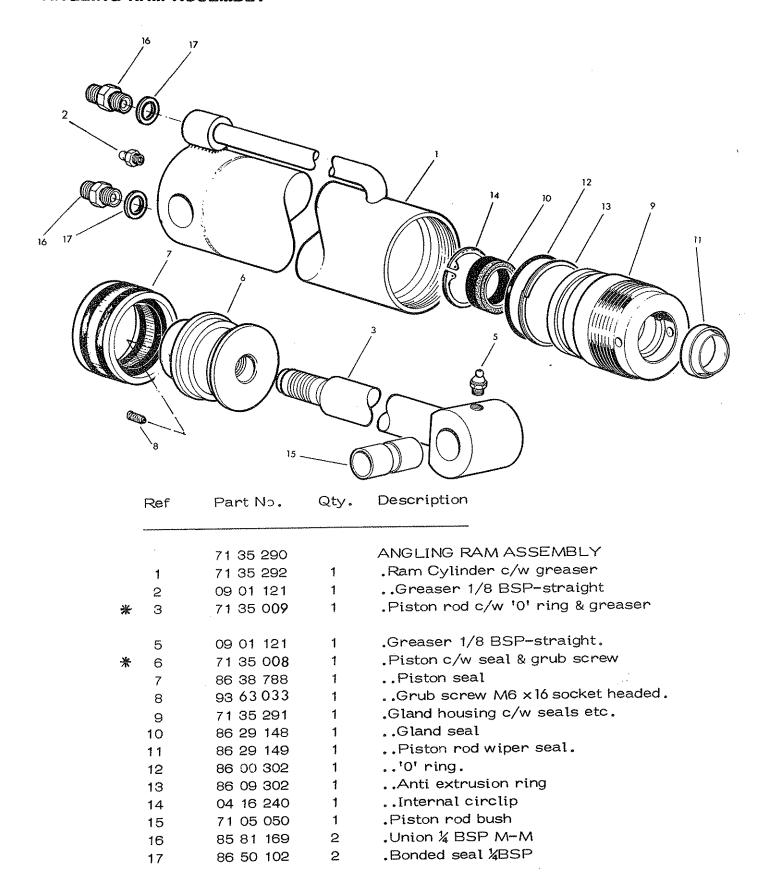


Ref	Part No.	Qty.	Description
	71 11 283		REACH RAM ASSEMBLY
	71 11 316	1	.Basic ram assembly
1	71 03 304	1	Ram cylinder
2	71 01 095	1	Piston rod c/w bush and '0' ring.
3	71 05 050	1	Bush
4	86 00 119	1	'0' ring.
5	71 01 165	1	Piston c/w seal and grub screw
6	86 36 131	1	Piston seal.
7	93 00 110	1	Grub screw M6 × 8
8	71 01 099	1	Gland housing c/w seal and '0' ring.
9	86 22 127	1	Gland seal.
10	86 00 304	1	'0' ring.
11	86 09 304	1	Anti-extrusion ring.
12	71 01 100	1	Gland nut c/w wiper
13	86 40 328	1	Piston rod wiper
14	09 01 124	2	Greaser 1/8 BSP angular 67%
15	85 81 145	2	.Union 3/8 BSP - ¼ BSP MM
16	86 50 103	2	.Bonded seal 3/8 BSP

86 99 102

SEAL KIT

ANGLING RAM ASSEMBLY



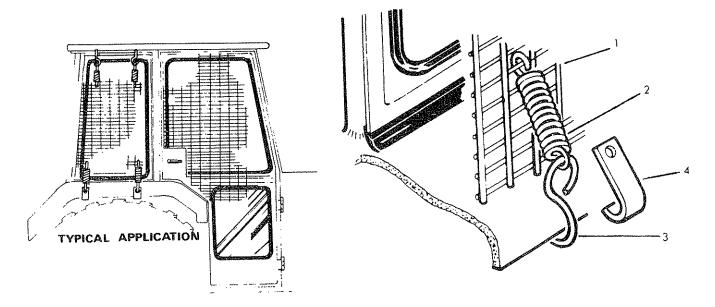
^{*} When replacing a piston rod or a piston on machines prior to serial No 04 GH 29 a complete piston/piston rod assembly is necessary Part No. 71 35 106.

Assembly note. Piston is assembled onto the rod using 'Permabond A121 or other thread sealer of similar specification.

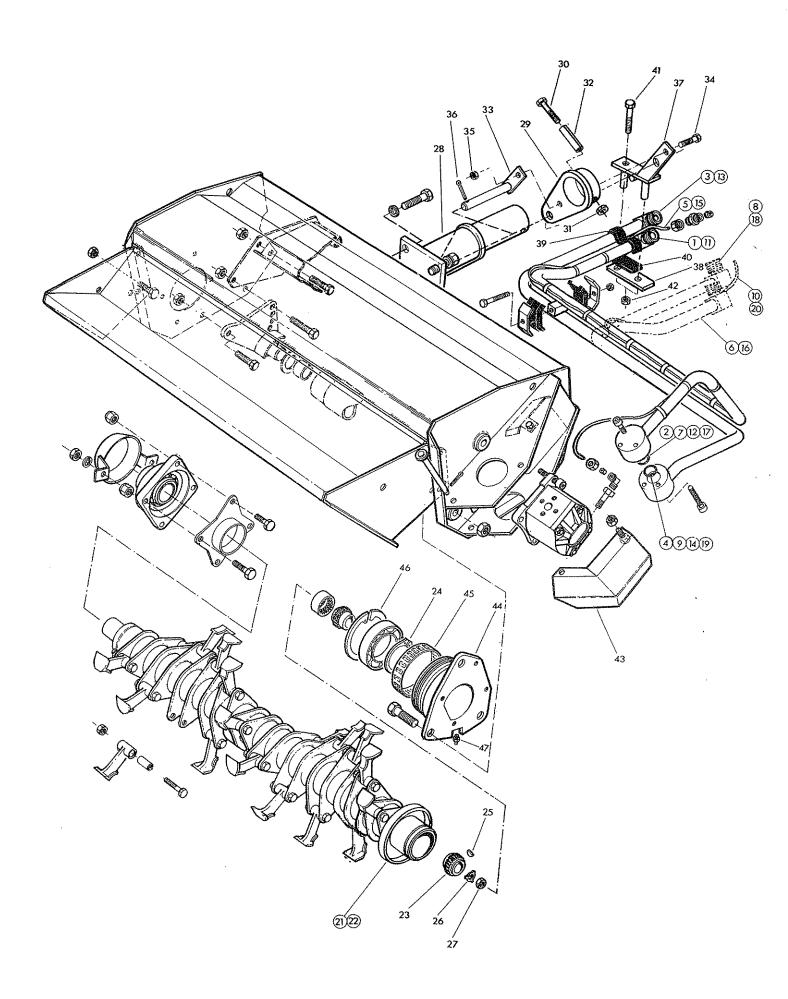
86 99 188

SEAL KIT

CAB GUARD



Ref	Part No	Qty	Description
	73 13 324	1	CAB GUARD KIT comprising:-
1	73 13 049	1	.Guard panel large
1	73 13 050	1	.Guard panel small
2	60 01 064	12	.Spring
3	60 01 065	6	.Hook
4	73 13 051	6	.Hook



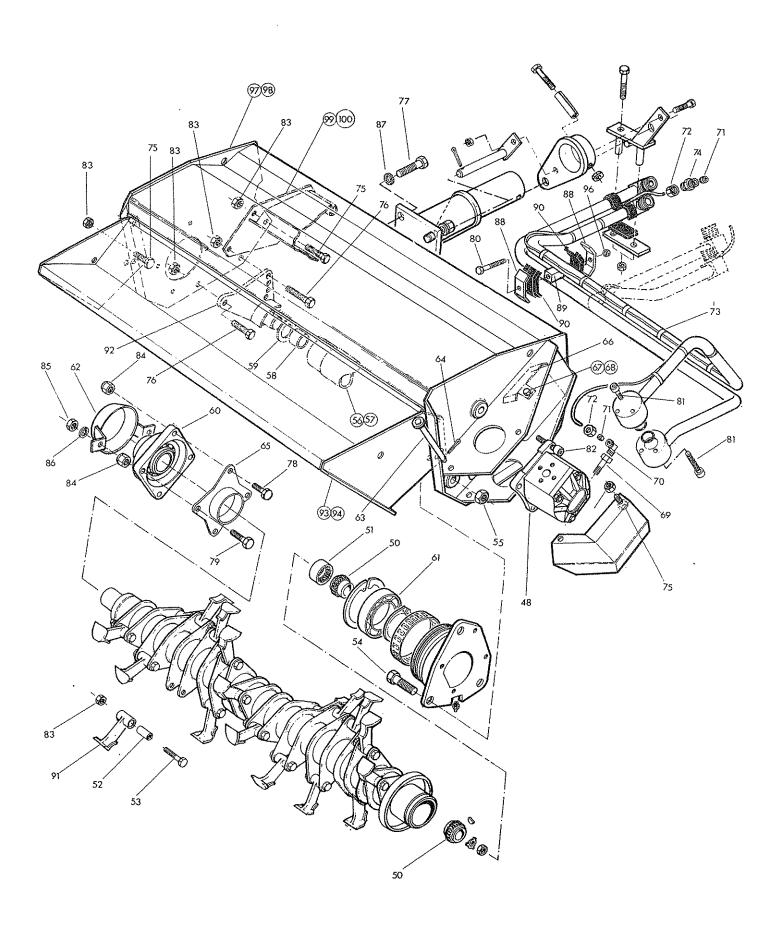
1 METRE AND 1.2 METRE HEDGE FLAILS

Important Check "Width" and "Hand" of flail head before ordering parts ref. 1 - 22

Ref	Part No.	Qty 1M	Qty 1.2M	Description
	71 34 285	1741	I & Duni V I	1 METRE HEDGE FLAIL HEAD R. HAND
1	71 34 277	1		.Rigid pipe upper c/w '0' ring.
2	86 00 121	1		'0' ring.
3	71 34 278	1		.Rigid pipe lower c/w '0' ring.
4	86 00 121	1		'0' ring.
5	85 01 124	1		.Nylon tube 1800mm long.
				2,1
	71 34 287			1 METRE HEDGE FLAIL HEAD L. HAND
6	71 34 275	1		.Rigid pipe upper c/w '0' ring.
7	86 00 121	1		'0' ring.
8	71 34 276	1		.Rigid pipe lower c/w '0' ring.
9	86 00 121	1		'0' ring
10	85 01 126	1		.Nylon tube 382mm long.
	71 35 320			1.2 METRE HEDGE FLAIL HEAD R.HAND
11	71 35 300		1	.Rigid pipe upper c/w '0' ring.
12	86 00 121		1	'0' ring
13	71 35 301		1	.Rigid pipe lower c/w '0' ring.
14	86 00 121		1	'0' ring.
15	85 01 123		1	.Nylon tube 1900 mm long.
	71 35 322			1.2 METRE HEDGE FLAIL HEAD L. HAND
16	71 35 302		1	.Rigid pipe upper c/w '0' ring.
17	86 00 121		1	'0' ring.
18	71 35 303		1	.Rigid pipe lower c/w '0' ring.
19	86 00 121		1	'0' ring.
20	85 01 125		1	.Nylon tube 482mm long.
21	71 14 434		1	.Flail rotor c/w coupling half, nuts etc.
22	71 14 433	1		.Flail rotor c/w coupling half, nuts, etc.
				e common to both flail rotors.
23	71 14 325	1	1	Coupling half.
24	04 01 290	1	1	External circlip Ø90
25	83 01 010	1	1	Woodruff key
26	82 01 139	1	1	Tab washer Ø14
27	91 00 015	1	1	.Nut M14
The	nunciaina itaun	~ ~ ~ ~ ~	manan t	o all flail head assemblies.
28	71 14 341	s are co	1	.Forward extension
20 29	71 14 109	1	1	.Jaw plate c/w nut bolt and spring dowel.
30	92 13 185	1	1	Bolt M10 × 90
31	91 43 005	1	1	Self locking nut
32	04 23 548	1	1	Spring dowel 5/8" dia x 3" long
33	71 14 099	1	1	.Slave link pin c/w split pin, nut & bolt.
34	92 13 075	1	1	Bolt M10 x 35
35	91 43 005	1	1	Self locking nut
36	95 01 406	1	1	Split pin Ø5 x 40
37	71 35 089	1	1	Pipe mounting bracket.
38	71 35 085	1	1	.Clamp plate
39	71 35 087	1	1	.Clamp strip - long
40	71 35 088	1	i	.Clamp strip short
41	92 13 124	2	2	.Bolt M8 × 60
42	91 43 004	2	2	.Self locking M8
43	71 14 337	1	1	.Hydraulic motor cover
44	71 14 298	1	1	.Bearing housing c/w ring, circlip & greaser
45	71 14 042	1	1	Tolerance ring.
46	71 14 043	1	1	. Internal circlip Ø140
47	09 01 125	1	1	Greaser 1/8 BSP 45 ⁰

HEDGE FLAILS - Continued

Shown in right hand build



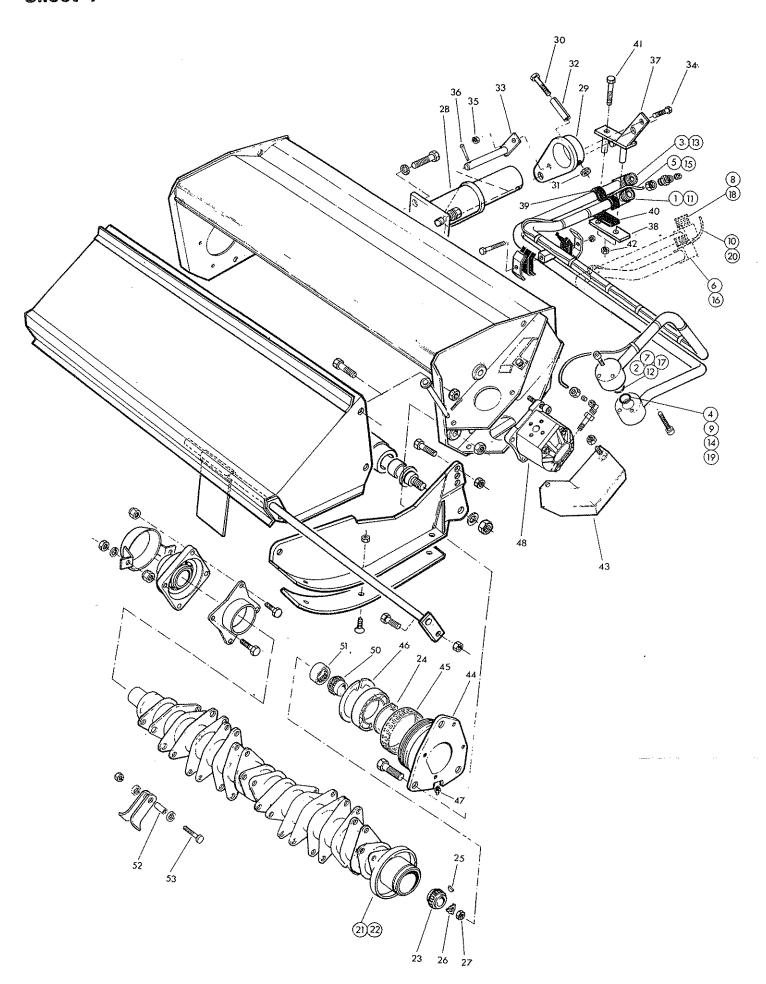
Ref	Part No.	Qty	Qty 1.2M	Description
		1M	1.2111	1 METRE HEDGE FLAIL (Continued)
				1.2 METRE HEDGE FLAIL (Continued)
48	83 01 261	1	1	.Hydraulic motor
49	71 14 105	1	1	.Coupling assembly compr:
49 50	71 14 104	2	2	Drive coupling half.
51	71 14 103	1	1	Coupling sleeves
52	71 14 159	20	24	.Flail pivot bush.
53 53	71 14 082	20	24	Special bolt.
54	73 14 146	3	3	.Special bolt.
55	91 43 007	3	3	.Self locking nut M16
56	71 14 019	1		.Roller c/w bushes.
57	71 14 096	·	1	.Roller c/w bushes.
58	72 13 023	2	2	.Bush
59	60 01 136	2	2	.Thrust washer
60	06 00 062	1	1	.Flange bearing.
61	06 00 043	1	1	.Bearing 6018-Z
62	71 14 339	1	1	.Bearing cover.
63	71 14 049	1	1	.Motor cover pin c/w split pin
64	05 03 095	1	1	Split pin $3/16$ " dia. \times 1 $1/8$ " long.
65	71 14 464	1	1	.Shroud
66	71 35 083	1	1	.Drain line cover c/w nut & screw
67	93 00 114	1	1	.Setscrew M8 x 20
68	91 43 004	1	1	.Self locking nut M8
69	71 35 086	1	1	.Adaptor - drain line.
70	85 81 198	1	1	.Elbow - drain line.
	85 81 199	1	1	.Olive Ø8
71	85 81 200	, 1	1	.Female nut
72 70	71 35 084	10	10	.Hose tie.
73 74	85 81 201	1	1	.Special union
74		6	6	.Setscrew ½" UNF x 1" long.
75 70	03 11 085	4	4	.Setscrew ½" UNF x 1¼" long.
76 77	03 11 105	4	4	.Setscrew 5/8 UNF x 1½" long
77	03 11 106	2	2	.Setscrew 5/8 UNF x 1 3/4" long.
78	03 11 146	2	2	.Bolt 5/8 UNF x 2¼" long.
79	02 11 186	1	1	.Bolt M10 × 65
80	92 13 135		6	.Capscrew 'wedglok' M10 x 60
81	93 00 014	6	4	.Capscrew 'wedglok' M10 x 40
82	93 00 104	4	34	.Self locking nut ½" UNF
83	01 41 005	30 4	4	.Self locking nut 5/8UNF
84	01 41 006	4	2	.Thin plain nut 5/8 UNF
85	01 31 006	2 2	2	.Plain washer 5/8 dia.
86	01 00 206	2	2	External serrated washer 5/8" dia.
87	01 00 406	. 2	2	Rigid pipe clamp
88	71 35 092	1	1	.Clamp spacer
89	71 35 093	1	1	. Clamp strip
90	71 14 048		24	.Hedge flail - F12H
91	71 14 312	20	1	.Roller bracket R. Hand.
92	71 11 090	1	1	.Hedge hood front.
93	71 14 300	1	.1	.Hedge hood front.
94	71 14 335	.a.	1	.Roller bracket L.Hand not illustrated.
95	71 11 091	1	1	.Self locking nut M10
96	91 43 005	1	1	
97	71 34 279	1	4	.Flail casing
98	71 14 325		1	.Flail casing.
	86 99 166			SEAL KIT HYDRAULIC MOTOR.

OPTIONAL EXTRA

The flails may be reversed to cut with a downward chopping action, if this is done the following is necessary.

99	71 14 336		1	Rear Hedge hood.
100	71 14 297	1		Rear Hedge hood.

Sheet 1



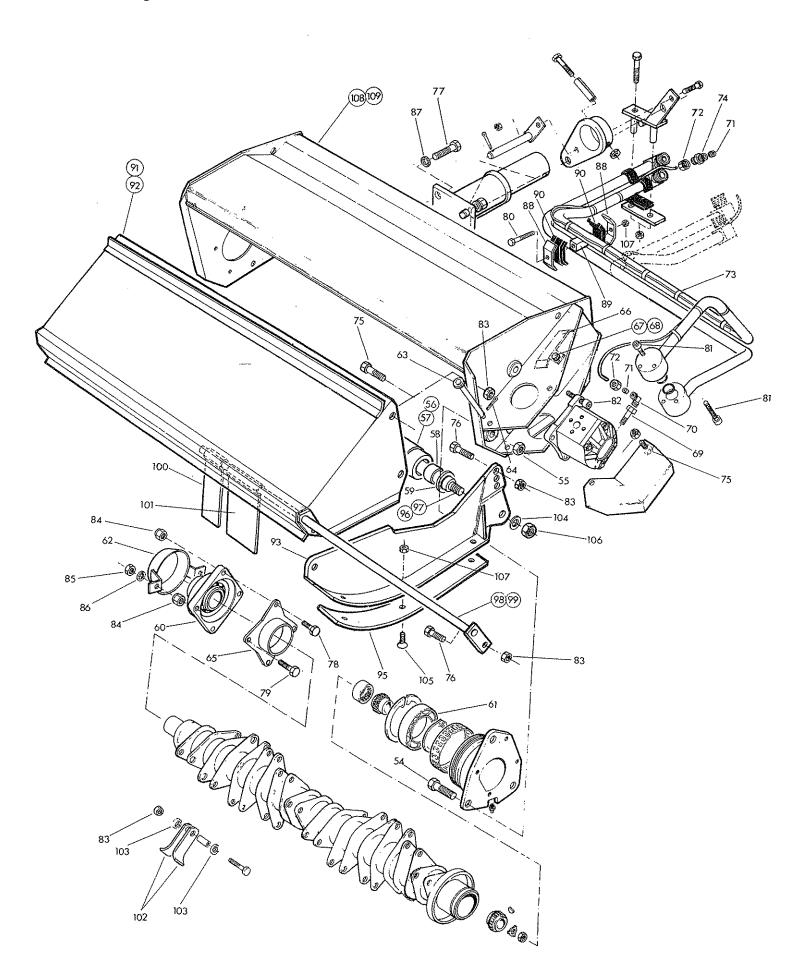
1 METRE AND 1.2 METRE GRASS FLAILS

Important Check 'Width' and 'Hand' before ordering parts ref. 1 - 22

Ref	Part No.	Qty 1M	Qty. 1.2M	Description
	71 34 286	,,,,	. 4(2) 4 .	1 METRE GRASS FLAIL HEAD R. HAND.
1	71 34 277	1		.Rigid pipe upper c/w '0' ring.
2	86 00 121	1		'0' ring.
3	71 34 278	1		.Rigid pipe lower c/w '0' ring.
4	86 00 121	1		'0' ring.
5	85 01 124	1		.Nylon tube 1800mm long.
	71 34 288			1 METRE GRASS FLAIL HEAD L. HAND
6	71 34 275	1		.Rigid pipe upper c/w '0' ring.
7	86 00 121	1		'0' ring.
8	71 34 276	1		.Rigid pipe lower c/w '0' ring.
9	86 00 121	1		'0' ring.
10	85 01 126	1		.Nylon tube 382mm long.
	71 35 321			1.2 METRE GRASS FLAIL HEAD R. HAND
11	71 35 300		1	Rigid pipe upper c/w '0' ring,
12	86 00 121		1	'0' ringRigid pipe lower c/w '0' ring.
13	71 35 301		1	'0' ring.
14	86 00 121		1	. Nylon tube 1200mm long.
15	85 01 123 71 35 323		1	1.2 METRE GRASS FLAIL HEAD <u>L.HAND</u>
16	71 35 323		1	.Rigid pipe upper c/w '0' ring.
16 17	86 00 121		1	.,'0' ring.
18	71 35 303		1	.Rigid pipe lower c/w '0' ring.
19	86 00 121		1	'0' ring.
20	85 01 125		1	.Nylon tube 482mm long.
21	71 14 433	1		.Flail rotor c/w coupling half, nuts etc.
22	71 14 43 4		1	.Flail rotor c/w coupling half, nuts etc.
Items	s 23 – 27 inclus	sive are	commo	n to both flail rotors.
23	71 14 104	1	1	Coupling half.
24	04 01 290	7	1	External circlip Ø90
25	83 01 010	1	1	Woodruff key.
26	42 01 139	1	,1	Tabwasher Ø14
27	91 00 015	1	1	Nut M14
				er all finil hand accompling
			1	to all flail head assemblies. Forward extension
28	71 14 341	1 1	1	.Jaw plate c/w nut, bolt and spring dowel.
29 30	71 14 109 92 13 185	1	1	Bolt M10 × 90
	91 43 005	1	1	Self locking nut M10
31 32	04 23 548	1	1	Spring dowel 5/8" dia. x 3" long.
33	71 14 099	1	1	.Slave link pin c/w split pin, nut & bolt
34	92 13 075	1	1	Bolt M10 x 35
35	91 43 005	1	1	Self locking nut M10
36	95 01 406	1	1	Split pin \emptyset 5 × 40
37	71 35 089	1	1	.Pipe mounting bracket.
38	71 35 085	1	1	.Clamp plate
39	71 35 087	1	1	.Clamp strip - long.
40	71 35 088	1	1	.Clamp strip - short.
41	92 13 124	5	2	.Bolt M8 x 60
42	91 43 004	2	2	.Self locking nut M8
43	71 14 337	1	1	.Hydraulic motor cover
44	71 14 298	1	1	.Bearing housing c/w tolerance ring, circlip
				and greaser.
45	71 14 042	1	1	Tolerance ring.
46	71 14 043	1	1	Internal circlip Ø140
47	09 01 125	1	1	Greaser 1/8 BSP - 45 ⁰
48	83 01 261	1	1	.Hydraulic motor
49	71 14 105	1	1	.Coupling assembly compr:
50	71 14 104	2	2	Drive coupling half.
51	71 14 103	1	1	. Coupling sleeve.
52	71 14 159	20	24	.Flail pivot bush
53	71 14 082	20	24	.Special bolt.

GRASS FLAILS -Continued

Shown in right hand build



Ref	Part No.	Qty	Qty	Description
		1M	1.2M	1 METRE GRASS FLAIL (Continued)
				1.2 METRE GRASS FLAIL (Continued)
54	73 14 146	3	3	.Special bolt.
55	91 43 007	3	3	.Self locking nut M16
56	71 14 019	1		.Roller c/w bushes.
57	71 14 096	_	1	.Roller c/w bushes.
58	72 13 023	2	2	.Bush
59	60 01 136	2	2	.Thrust washer
60	06 00 062	1	1	.Flange bearing.
61	06 00 043	1	1	.Bearing 6018-Z
62	71 14 339	1	1	Bearing cover
63	71 14 049	1	1	.Motor cover pin c/w split pin
64	05 03 095	1	1	Split pin 3/16"dia.x 1 1/8" long.
65	71 14 464	1	1	.Shroud .Drain line cover c/w nut & screw
66	71 35 083	1	1	
67	93 00 114	1	1	.Setscrew M8 x 20
68	91 43 004	1	1	.Self locking nut M8 .Adaptor – drain line.
69	71 35 086	1	1	Elbow - drain line.
70	85 81 198	1	1	
71	85 81 199	1	1	.Olive Ø8 .Female nut
72	85 81 200	1	1	.Hose tie.
73	71 35 084	10	10	. Special union
74	85 81 201	1	1	.Setscrew ½"UNF x 1" long.
75	03 11 085	6	6	.Setscrew %"UNF x 1½"long.
76	03 11 105	4	4	.Setscrew 5/8UNF x 1½"long.
77	03 11 106	4	4 2	.Setscrew 5/8UNF x 1 3/4"long.
78	03 11 146	2	2	.Bolt 5/8 UNF x 2½" long.
79	02 11 186	2 1	1	.Bolt M10 x 65
80	92 13 135	6	6	.Capscrew 'Wedglok' M10 x 60
81	93 00 014	4	4	.Capscrew 'Wedglok' M10 x 40
82	93 00 104	30	34	.Self locking nut ½UNF
83	01 41 005 01 41 006	4	4	.Self locking nut 5/8 UNF
84 85	01 31 006	2	2	.Thin plain nut 5/8 UNF
86	01 00 206	2	2	.Plain washer 5/8" dia.
87	01 00 406	2	2	.External serrated washer 5/8" dia.
88	71 35 092	2	2	.Rigid pipe clamp
89	71 35 093	1	1	.Clamp spacer
90	71 14 047	1	1	.Clamp strip
91	71 34 256	1		.Grass Hood
92	71 14 374		1	.Grass Hood
93	71 14 376	1	1	.Skid - L.Hand.
94	71 14 375	1	1	.Skid - R.Hand not illustrated.
95	73 14 323	2	2	.Skid runner.
96	71 14 283	1		.Roller tie rod.
97	71 14 377		1	.Roller tie rod
98	71 14 118	1		.Flap bar
99	71 14 119		1	.Flap bar
100	71 34 255	2		.Flap – narrow
101	71 14 378	5	8	.Flap
102	71 14 120	40	48	.Grass Flail F126
103	71 14 121	40	48	.Flail spacer
104	91 00 108	2	2	.Plain washer Ø20
105	93 33 065	6	6	.Counter sunk setscrew M10 x 30
106	91 43 008	2	2	.Self locking nut M20
107	91 43 005	7	7	.Self locking nut M10
108	71 34 279	1	-	.Flail Casing.
109	71 14 325		1	.Flail Casing.

SEAL KIT HYDRAULIC MOTOR

