

IM1769

**B49FM, B54FM,
B58TFM**

INSTRUCTION MANUAL

ISSUE 1

IMPORTANT

NOTE HERE THE SERIAL NUMBER OF YOUR MACHINE AND ALWAYS QUOTE IT IN ANY COMMUNICATION WITH US OR YOUR DEALER. THIS IS PARTICULARLY IMPORTANT WHEN ORDERING SPARES. REMEMBER TO INCLUDE ALL NUMBERS AND LETTERS.

MACHINE SERIAL NUMBERS _____

THE INFORMATION GIVEN THROUGHOUT THIS MANUAL IS CORRECT AT THE TIME OF PUBLICATION. HOWEVER, IN THE COURSE OF CONSTANT DEVELOPMENT OF BOMFORD TURNER MACHINES, CHANGES IN SPECIFICATION ARE INEVITABLE. SHOULD YOU FIND THE INFORMATION GIVEN IN THIS BOOK TO BE AT VARIANCE WITH THE MACHINE IN YOUR POSSESSION, YOU ARE ADVISED TO CONTACT THE BOMFORD TURNER SERVICE DEPARTMENT WHERE UP-TO-DATE INFORMATION WILL BE PROVIDED.

THE MANUAL CAN CONTAIN STANDARD AND OPTIONAL FEATURES AND IS NOT TO BE USED AS A MACHINE SPECIFICATION.

THE MACHINE HAS BEEN TESTED AND IS CONSIDERED SAFE IF CAREFULLY USED. ENSURE YOUR OPERATOR IS PROPERLY TRAINED IN ITS USE AND MAINTENANCE.

IMPORTANT

NOTEZ ICI LES NUMEROS DE SERIE DE VOTRE MACHINE ET MENTIONNEZ LES DANS TOUTE COMMUNICATION AVEC NOS SERVICES OU VOTRE REVENDEUR. CE CI EST IMPORTANT POUR LA COMMANDE DE PIECES DETACHEES. PENSEZ A NOTER TOUS LES NUMEROS ET TOUTES LES LETTERS.

NUMEROS DE SERIE DE LA MACHINE _____

LES INFORMATIONS DONNEES DANS CE MANUEL SONT CORRECTES CEPENDANT, DU FAIT DE DEVELOPPEMENT CONSTANT DES MACHINES BOMFORD TURNER.

CHANGEMENTS DANS LES CARACTERISTIQUES SONT INEVITABLES.

SI VOUS TROUVEZ QUE LES INFORMATIONS DONNEES NE CORRESPONDENT PAS A VOTRE MACHINE VEUILLEZ CONTACTER LE SERVICE DES REPARATIONS OU DES INFORMATIONS PLUS RECENTES VOUS SERONT DONNEES. CE MANUEL PEUT MONTRER DES CARACTERISTIQUES OPTIONNELLES ET NE PEUT PAS ETRE CONSIDERE COMME SPECIFICATION DE LA MACHINE.

CETTE MACHINE A ETE TESTEE, ET ELLE EST CONSIDEREE COMME FIABLE A CONDITION D'UNE BONNE UTILISATION. ASSUREZ-VOUS QUE VOTRE OPERATEUR EST QUALIFIE EN CE QUI CONCERNE L'UTILISATION DE LA MACHINE AINSI QUE SON ENTRETIEN.

WICHTIG

TRAGEN SIE HIER DIE SERIENNUMMERN IHRER MASCHINE EIN UND GEBEN SIE DIESE IMMER AN, WENN SIE SICH AN UNS ODER IHREN HÄNDLER WENDEN. DAS IST BESONDERS BEI ERSATZTEILBESTELLUNGEN WICHTIG. VERGESSEN SIE NICHT, ALLE ZAHLEN UND BUCHSTABEN ZU NOTIEREN.

SERIENNUMMERN DER MASCHINE _____

DIE ANGABEN IN DIESEM HANDBUCH SIND BEI VERÖFFENTLICHUNG KORREKT. AUFGRUND DER KONSTANTEN WEITERENTWICKLUNG VON BOMFORD TURNER MASCHINEN SIND JEDOCH ÄNDERUNGEN IN DER SPEZIFIKATION UNVERMEIDLICH. WENN DIE INFORMATION IN DIESEM HANDBUCH NICHT MIT IHRER MASCHINE ÜBEREINSTIMMEN, NEHMEN SIE BITTE KONTAKT MIT DER BOMFORD TURNER KUNDENDIENSTABTEILUNG AUF, DIE IHNEN GERNE DIE AKTUELLEN INFORMATION ZUKOMMEN LÄSST.

DAS HANDBUCH KANN SOWOHL BESCHREIBUNGEN FÜR DIE STANDARD AUSFÜHRUNG ALS AUCH FÜR ZUBEHÖR ENTHALTEN UND IST NICHT ALS MASCHINENSPEZIFIKATION ZU VERWENDET.

DIE MASCHINE IST GETESTET UND BEI SACHGEMÄSSEM BETRIEB ALS SICHER BEFUNDEN WORDEN. SORGEN SIE DAFÜR, DASS IHR BEDIENPERSONAL IN ANWENDUNG UND WARTUNG RICHTIG GESCHULT WIRD.

EC DECLARATION OF CONFORMITY
Conforming to EU Directive 2006/42/EC

We,

Of BOMFORD TURNER LIMITED, Station Road, Salford Priors, Evesham, Worcestershire, WR11 8SW, UK.

Declare that under our sole responsibility the product (type);

Reach arm base unit	Product code
B49FM	B49F
B54FM	B54F
B58TFM	B58F

A tractor mounted hedgecutter / grass mower, to be fitted with one of the following flail mower cutting attachments;

Reach arm attachment	Product code
1.2M PRO-CUT CUTTING HEAD	12PC
1.2M PRO-CUT ISMP CUTTING HEAD	12PC

Serial No(s). & Date:.....

Designed by: BOMFORD TURNER LTD, Salford Priors, Evesham, Worcestershire, WR11 8SW, UK.

Manufactured by: ALAMO MANUFACTURING SERVICES (UK) Limited, Station Road, Salford Priors, Evesham, Worcestershire, WR11 8SW, UK.

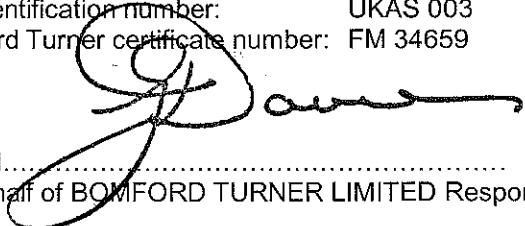
Complies with the required provisions of;

- Directive 2006/42/EC
- Directive 2004/108/EC
- BS EN ISO 12100:2010

And other national standards associated with its design and construction as listed in the technical file.

BOMFORD TURNER LIMITED operates an ISO 9001:2008 quality management system.
This system is accredited by;

BSI, Beech House, Linford Wood, Milton Keynes, UK, MK14 6ES
BSI identification number: UKAS 003
Bomford Turner certificate number: FM 34659



Signed.....
On behalf of BOMFORD TURNER LIMITED Responsible person

Status: Managing Director

Date: 02/01/2010

This manual covers the B49FM, B54FM and B58TFM Front Mount Flail Mowing Machines, suitable for loading shovels (e.g. Volvo) These are two arm, front mounted machines which are hydraulically driven from a suitable tractor and are designed for vegetation control. The machines may be used for the cutting and thinning of all types of hedges and verges within the scope of their reach and performance, provided the correct guards are fitted. It is essential that the machines are fitted in line with the procedures and practices detailed in this manual.

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IMPORTANT

THIS MACHINE IS FOR VEGETATION CONTROL AND
MUST NOT BE USED FOR ANY OTHER PURPOSE

IT IS POTENTIALLY HAZARDOUS TO FIT OR USE
ANY PARTS OTHER THAN GENUINE BOMFORD TURNER PARTS

THE COMPANY DISCLAIMS ALL LIABILITY FOR THE
CONSEQUENCES OF SUCH USE, WHICH IN ADDITION
VOIDS THE MACHINE WARRANTY

CHECK REAR OF MANUAL FOR UPDATES

	B49	B54	B58T	
Mounting System:				
DIN 3 plate, loading shovel or customer's own				
Machine weight:	1100kg	1160kg	1200kg	
Dimensions (from tractor centre line)				
Maximum reach:	horizontal	4.95m	5.3m	5.85m
	ground level	4.87m	5.28m	5.73m
	vertical	6.11m	6.51m	6.88m
	flat top	4.3m	4.70m	5.25m
	upwards 45°	4.92m	5.34m	5.79m
	downwards 45°	2.97m	3.29m	4.02m

CUTTING UNITS**Trim-king**

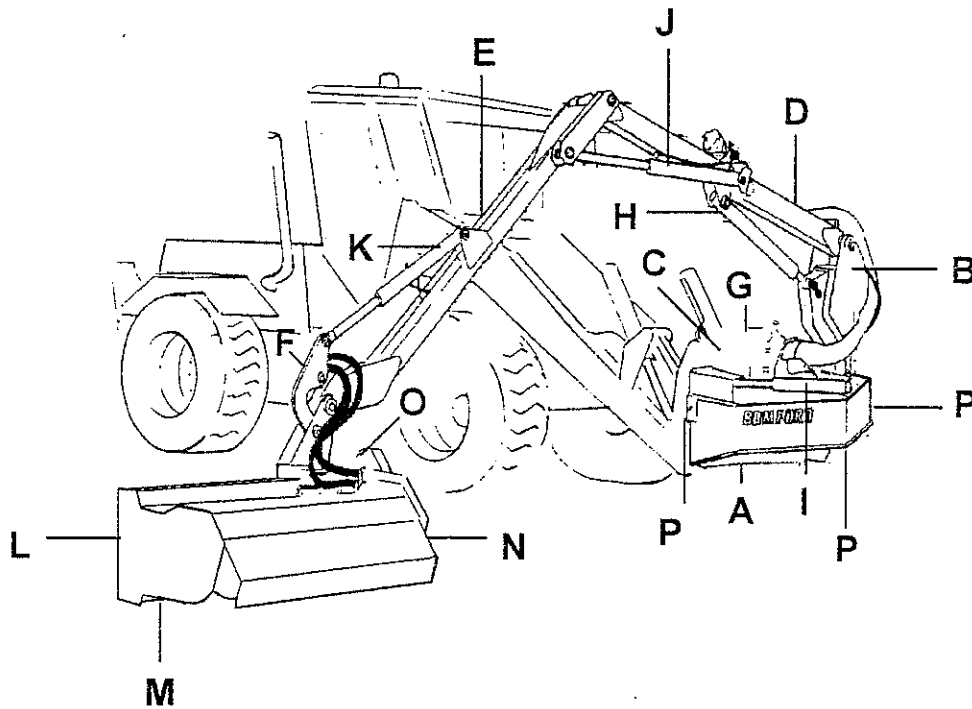
Shaft speed - nominal	2800-3000 rev/min
Flail type & quantity:	
- forward facing 'C	32
- twin	64
- heavy single	32

NOISE

The equivalent daily personal noise exposure from this machine, measured at the operator's ear, is within the range of 80-85dB when used in conditions where the load fluctuates between zero and maximum.

This applies when the machine is attached to a tractor fitted with a quiet cab and used in accordance with the operating instructions in a generally open environment.

At equivalent daily noise exposure levels of between 85 and 90dB, suitable ear protectors are recommended.



P INDICATES POSITION
OF THE STANDS

A	MAINFRAME/OIL TANK	I	BREAKOUT/SLEW RAM
B	KING POST	J	SECOND RAM
C	MOUNTING PLATE	K	CUTTING HEAD ANGLING RAM
D	FIRST ARM	L	CUTTING HEAD
E	SECOND ARM	M	ROLLER
F	CUTTING HEAD ANGLING LINKAGE	N	FRONT GUARD
G	CONTROL VALVE	O	MOTOR
H	FIRST RAM	P	STANDS

- 1 DO NOT attempt any maintenance of or adjustment to the machine while it is running. Before carrying out any work on the machine follow the three safety instructions below:
 - a LOWER THE CUTTING UNIT ON TO THE GROUND
 - b DISENGAGE THE HYDRAULIC DRIVE
 - c STOP THE TRACTOR ENGINE
- 2 Ensure that the correct guards for the particular operation are properly fitted to the machine and tractor at all times, and that they are in good condition. See section on Guards and Rotation.
- 3 The term REVERSE rotation in the following notes indicates the direction of the rotation of the rotor shaft in relation to the tractor wheels, assuming that the tractor is moving in a forward direction.
- 4 **EMERGENCY STOP.** To stop the rotor in an emergency use the on/off control or the tractor stop control. Use of the tractor stop control must only be used in an emergency as its use to stop the rotor can cause damage to the hydraulic components. After an emergency stop of the rotor, ensure that the and rotor control is set to **OFF** before restarting the tractor.
- 5 While the tractor is running all personnel should keep clear of the operational envelope, as there are numerous crushing, shearing, impact dangers caused by the machine operation.
- 6 **THINK SAFETY - WORK SAFELY.**
 - a **AVOID WIRE.** It can be extremely dangerous if wire catches in the rotor, and every care must be taken to ensure this will not happen. Inspect the working area before commencing. Remove all loose wire and obstructions and clearly mark those that are fixed so that you can avoid them.
 - b Any unusual noise from the cutting unit area indicates that the rotor shaft may have been fouled by an obstruction. A visual indication that wire is in contact with the flails may be a sudden movement of the vegetation ahead of the cutting unit. In any such event STOP the tractor engine INSTANTLY. On no account move the cutting unit until the rotor has completely stopped. NEVER IN ANY CIRCUMSTANCES run the rotor to 'clear itself'.
 - c When the rotor has stopped inspect it and remove any obstruction that may be present. If working under a raised machine ensure that it is safely supported. Before working on the rotor always stop the tractor engine.
 - d CHECK the flails for wear and the attachment bolts for tightness every day during work (see Maintenance). A few moments whenever the machine is stopped, e.g. whenever removing obstructions, will help reduce flail wear or loss.
 - e Keep your forward speed to a level appropriate to the operating conditions. High speed manoeuvres with the arms stretched out are very dangerous, particularly on uneven ground.
 - f DIRECT the cut material away from the tractor. It is important that while operating the cut material is not directed towards the operator. Avoid positioning the cutting unit so that the underside is angled towards the cab.

- g Keep a careful watch for passers by who may inadvertently get in the way of cut material being thrown from the cutting unit. Stop the rotor shaft until all people are well clear.
- h Do not operate or transport with the arms extended rearwards as instability will result.
- i Keep the roller/skid in position at all times.

7 GRASS AND HEDGE CUTTING

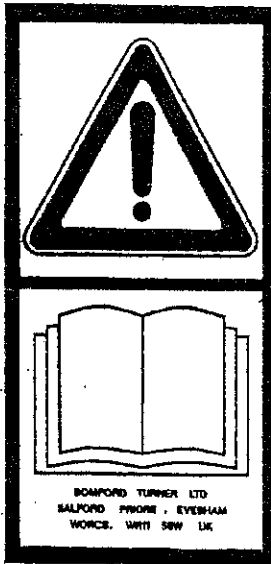
- a A wire mesh cab guard must be fitted on the outside of the cab window, between the driver and the cutting unit, in such a position as to give the driver maximum protection.
- b Where a hedge trimmer is used in conjunction with tractors not fitted with a glazed safety cab, a clear safety screen must be fitted to the tractor between the operator and the cutting unit. The safety screen must be used on cabs where windows are likely to be left open for ventilation purposes. We emphasise that cab windows on the operating side **MUST** be intact, clean and closed, or a clear safety screen must be fitted where hedge cutting and trimming operations are carried out.
- c See Section 12 for details of guarding instructions for the cutting unit.

8 SAFETY DECALS

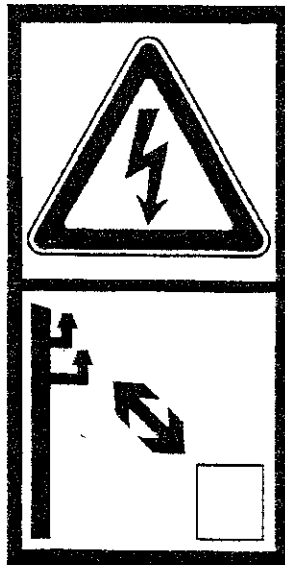
Safety decals are located on various points of the machine. They can be identified by the yellow upper panel depicting the hazard, and the lower white panel indicating means of avoidance or precautions to be taken. These decals have no text. It is essential that all operators and personnel associated with the machine fully understand their meanings which are shown below. Any safety decals which are found missing should be replaced.

9 ELECTROMAGNETIC COMPATIBILITY (EMC) - Radio Telephones

Machines fitted with electric controls are subject to EC directives. The use of radio telephone equipment should not affect their performance. Ensure that the telephone is installed correctly. Check that no unexpected movements of the machine occur when the telephone is used to transmit.



READ THE INSTRUCTION MANUAL BEFORE STARTING WORK



DANGER OF ELECTRIC SHOCK STAY CLEAR OF OVERHEAD CABLES



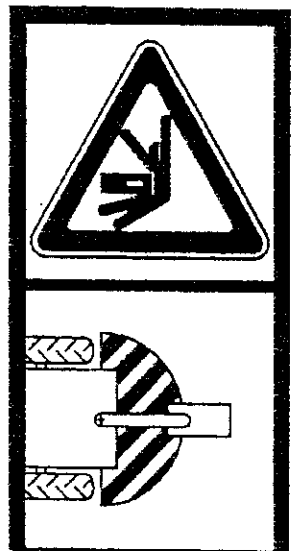
DO NOT WORK UNDER OR STAND UNDER UNSUPPORTED MACHINE



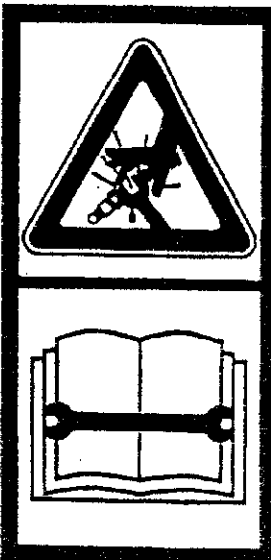
DANGER FROM THROWN DEBRIS KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE MACHINE WHEN WORKING



DANGER ROTATING MACHINERY STAY CLEAR OF OPERATING MACHINE

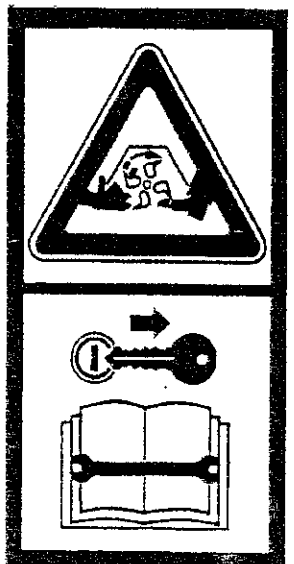


DANGER OF CRUSHING STAY CLEAR OF ZONES



RESIDUAL PRESSURE IN HYDRAULIC LINES READ INSTRUCTION MANUAL BEFORE ATTEMPTING MAINTENANCE

STOP TRACTOR AND REMOVE KEY BEFORE ATTEMPTING MAINTENANCE ON OR UNBLOCKING HEAD

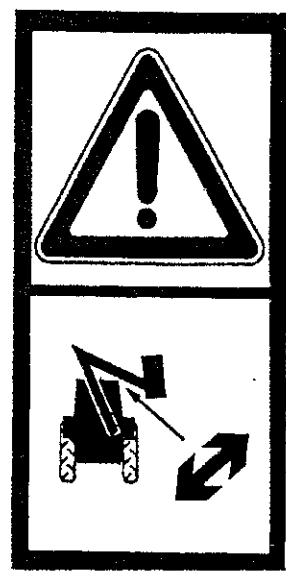




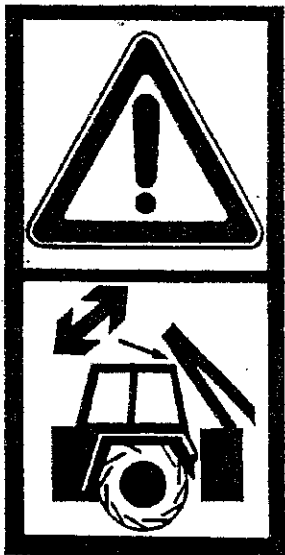
**HOT SURFACE
DO NOT TOUCH**



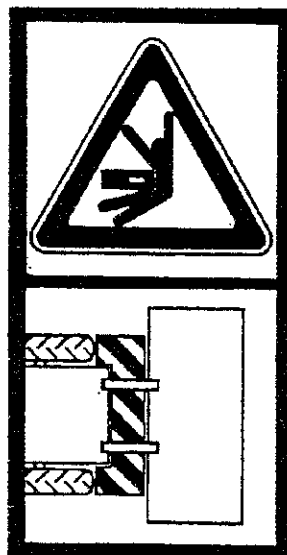
**KEEP ALL NUTS AND
BOLTS TIGHT**



**WARNING ARM MAY HIT
CAB IF CLEARANCE
IS NOT SUFFICIENT**



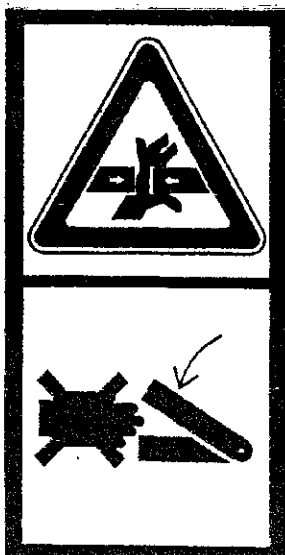
**WARNING ARM MAY HIT
CAB IF CLEARANCE
IS NOT SUFFICIENT**



**DANGER OF CRUSHING
STAY CLEAR OF ZONES**



**DANGER OF ENTANGLEMENT
IN SHAFT KEEP ALL
PERSONNEL CLEAR WHILE
TRACTOR IS RUNNING**

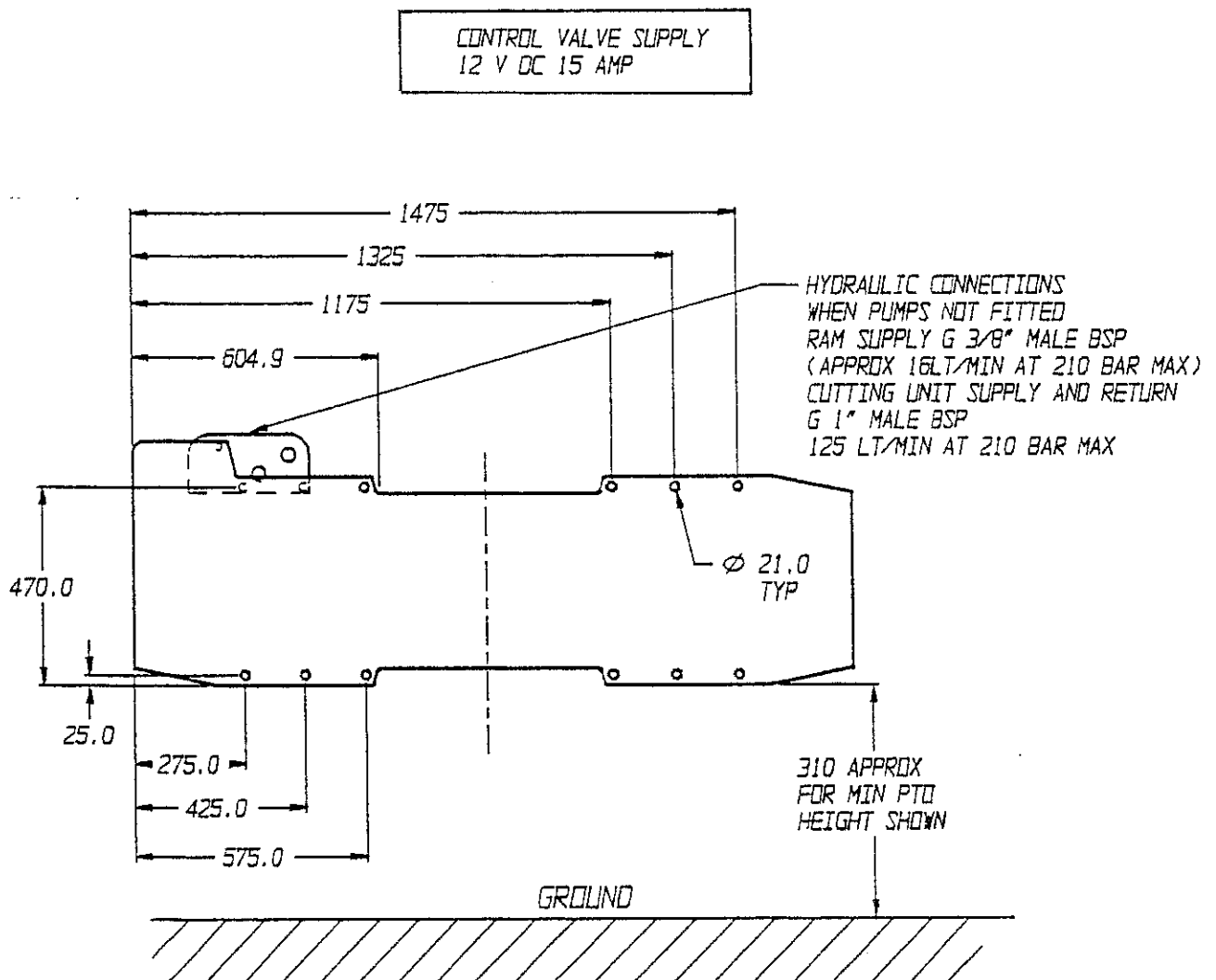


**PINCH POINT KEEP CLEAR
WHILST TRACTOR IS
RUNNING**

1 TRACTOR REQUIREMENTS

Before preparing the tractor for the machine ensure that specifications of the tractor meet the requirements listed below:

- a Volvo loader type attachment plate of at least 2 tonne capacity. Note that an alternative mounting can be made by the adaptation or replacement of the interface plate on the machine. This is held to the mainframe/tank by eight bolts. It may be replaced by an alternative mounting if necessary. Hole centre details may be obtained from Bomford Turner.
- b **Hydraulic supply.** Cutting unit: 125 lt/min at 210 bar maximum pressure. An auxiliary hydraulic system with a flow of 15 lit/min (3.3 gal/min) and a minimum pressure of 152 bar (2200 psi) maximum pressure 210 bar. Minimum filtration: 25 microns absolute. See Section 16 for hydraulic circuits.
- c The machine is supplied with 5 x 40kg ballast to be fitted to the mainframe opposite the arms. Additional ballast should be added to the rear of the vehicle to maintain 15 - 20% total weight on the rear axle.



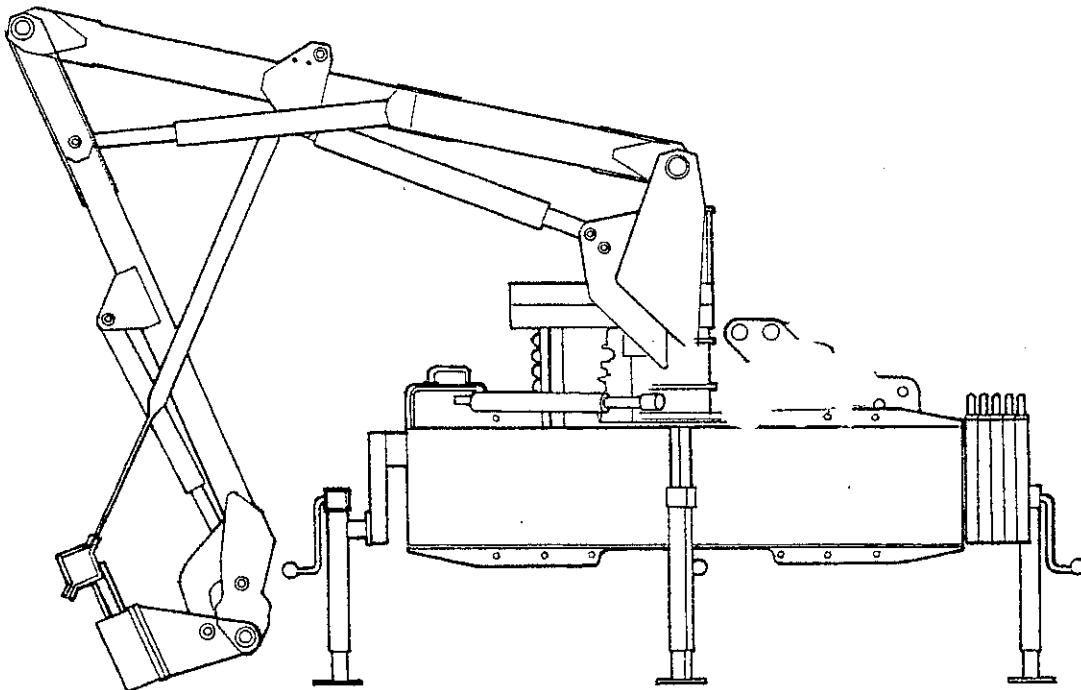
2 Machine Preparation

IMPORTANT

LIFTING. SLING THE MACHINE UNDER THE MAINFRAME OR FROM THE STANDS. DO NOT LIFT FROM THE ARMS THE MACHINE MUST NOT BE LIFTED FROM ABOVE BY MEANS OF THE KINGPOST.

ONLY PERSONNEL EXPERIENCED IN LIFT AND HOIST OPERATION SHOULD BE INVOLVED IN LIFTING MACHINES.

- a Park the machine on a flat hard surface.
- b Fit the interface plate on to the rear of the mainframe using the four M20 bolts.
- c Discard the rear stands.
- d Fit the five 40kg ballast weights to the mainframe on the appropriate non working side using the support beam, retaining bar and plate.



1 FITTING MACHINE

- a Drive the shovel carefully forward to engage the hooks.
- b Lift up the machine carefully.
- c Connect up the piepwork as shown in Section 16, pages 16-6 and 16-7.
- d Remove the front stand.

ELECTRIC CONTROLS

The machine is controlled by an EPP monolever joystick control unit, which provides proportional control to the first and second arm movement and bang-bang controls to the head angling, slew and head float. Additional switches are provided to control the cutting unit and to isolate the auto-reset breakout. There are two push-button controls located at the front of the box: black -starts the cutting unit when pressed; red - stops the cutter. It is not possible to restart the cutter until the light stops flashing. The cutter may also be stopped by means of the large red stop button which also disables all arm controls. Details of the switch functions are shown below.

1 FITTING CONTROL BOX AND ROTOR CONTROL

The control box is supplied separately, ready to connect to the wiring loom on the machine.

The position of the control box inside the tractor cab depends largely upon the preference of the operator. A bracket is available to replace the arm rest of the seat.

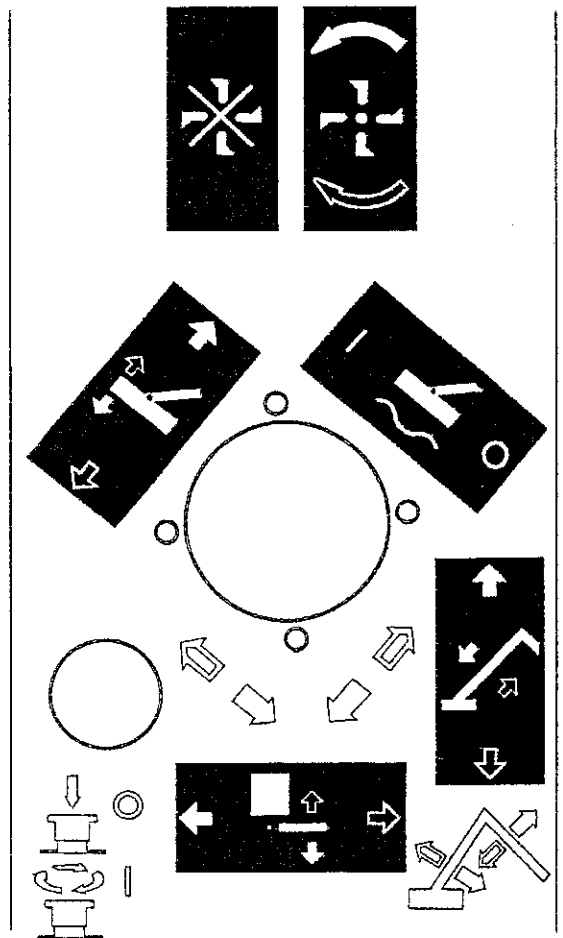
The cable can normally be routed through the cab window and should be as free of bends as possible. **DO NOT PINCH CABLE IN CLOSED WINDOW.**

2 ELECTRICAL CONNECTIONS TO CONTROL BOX

- a Fit control box power lead to tractor. It is recommended that this is fitted direct to a battery terminal to avoid overloading the tractor wiring circuit.
- b The power lead is 5 metres long. If it is found to be excessively long when routed into the tractor cab it may be shortened by dismantling the socket and refitting after cutting the lead length to suit. Note that the brown lead must be fitted to the live 'L' terminal and the blue to the neutral 'N' terminal.
- c Connect the power lead and the machine to the respective control box leads, taking care to line up the mating connections without force, using the ring lock to draw gently together after initial fitting.

CAUTION

The arms slew **behind** the kingpost to move from work to transport. Once the machine is fitted to the tractor and the power connected, it is possible to slew the arms to hit the cab. The slewing operation must be practised with care to ensure safe operation.



1 GEARBOX - RECOMMENDED OILS

MOBIL - MOBILAND Universal Multi-purpose Tractor Oil

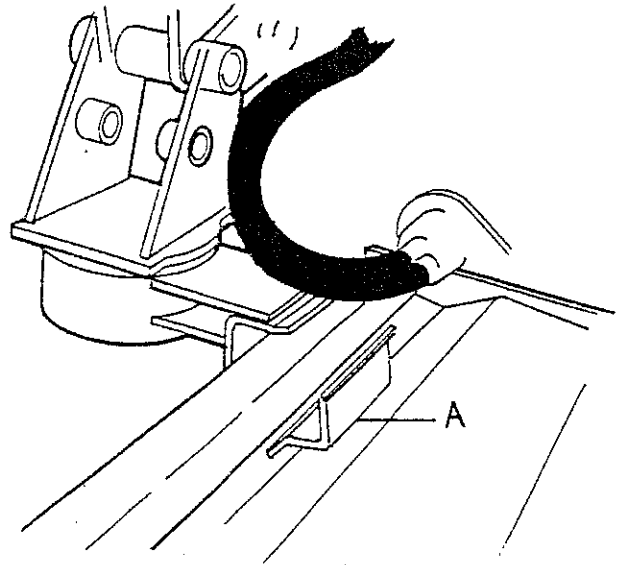
EXCELUBE - Super Universal Tractor Oil

Check oil level before use and top up if necessary.

2 PIVOT POINTS

Lithium based grease should be used for lubrication of pivot points.

- 1 The cutting unit can now be fitted to the end of the arms:
 - a Start tractor engine.
 - b Raise the arms so that the cutting unit clamp is approximately 300mm clear of the ground.
 - c Place cutting unit directly in front of the clamp.
 - d Level up cutting unit with wood packing if necessary.
 - e Remove clamp bracket (A) from the end of the arms.
 - f Adjust position of the arms until the cutting unit clamp is lined up with the clamping bar on top of the cutting unit in the desired position along the bar.
 - g Replace clamp bracket (A)



2 CONNECTING THE MOTOR

The connection of the hoses to the motor will determine the direction of rotation of the rotor shaft. The following instructions apply to reverse rotation which is standard. For forward rotation the pipe connections on the motor are interchanged:

- a Connect the two hoses to the motor.
- b Start the tractor and engage the hydraulic output.
- c Switch on the rotor control in reverse rotation as shown on the decal.
- d Check the direction of rotation.
- e Stop the rotor and tractor.
- f If the rotor has run in the wrong direction, reverse the large hoses on the motor.

WITH THE MACHINE FULLY ASSEMBLED, START THE TRACTOR, FAMILIARISE ALL THE CONTROLS AND CHECK FOR LEAKS.

3 ACCUMULATOR

The machine may be fitted with an accumulator to allow the arms to float for grass cutting application. If so the test procedure detailed below should be carried out at this stage.

Accumulator Test

- a Start tractor engine and move the arms into a normal work position, with the rotor unit resting on the ground.
- b Open the accumulator isolator valve.
- c Operate the first ram and lift the rotor unit about 1 metre (39ins) off the ground.
- d Test accumulator by pushing the rotor unit downwards. This should compress the first ram slightly.
- e No movement of the first ram means the accumulator normally is inoperative or isolator valve is defective.
- f Replace cutting head back on ground. Operate control levers to remove pressure from hydraulic system.
- g Stop tractor engine.
- h Remove isolator valve. Reconnect hose and repeat test from 3(a).
- i No movement of the first ram at this time indicates that the accumulator is not working. Movement indicates that the isolator valve is defective. Repeat instruction 3(f) and replace defective part.

4 BREAKOUT

The auto-reset breakout system is provided by pressure from the first ram being fed into the base of the ram. The slew ram permits the arms to break back by pressuring the first ram through a pressure compensated relief valve set at 70 bar. It may be checked as follows:

- a Using the slew control power the kingpost forward into the stop bracket on the mainframe to ensure that the arms are fully into the work position.
- b With the cutting head against an obstacle drive gently forward until the unit folds back about 300mm (12").
- c Reverse the tractor and the arms will automatically swing back to their normal working position.

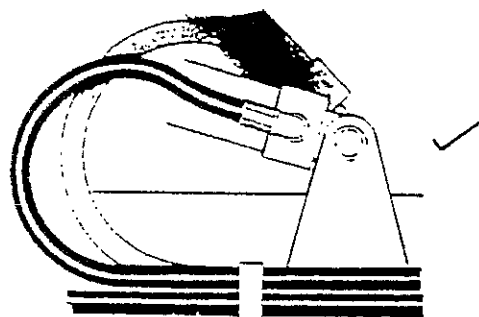
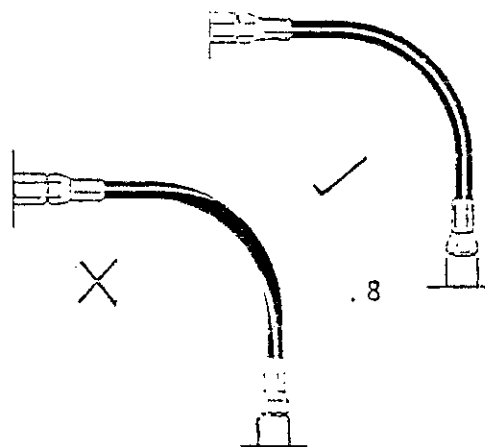
Breakout Valve Set Pressure	70 bar
Slew Relief Valve Set Pressure	200 bar

- 1 It is important that hoses are fitted correctly. To ensure that there are no kinks or sharp bends, and that the hoses do not chafe against sharp edges, the following instructions and diagrams should be used as a guide.

2 TWISTS

Hoses should never be twisted or kinked. On most hoses there is a line which runs the full length of the hose acting as a useful guide. If there is no guideline running along the hose, follow the fitting instructions below.

- a Loosen any clamps.
- b Attached one end of hose to its coupling, but do not tighten.
- c Place the hose in its required position.
- d Connect other end loosely to its union.
- e Tighten angled end of hose in required position.
- f Tighten straight end. It may be found that as the nut is tightened the hose may twist slightly. If this happens follow instruction (g), if it does not follow instruction (h).
- g Slacken off nut and turn hose in opposite direction to that of twist.
- h Re-tighten nut bring hose back central.
- i Tighten any clamps.
- j Finally, re-bleed the rams and operate the arms in all positions whilst carefully checking for twists and obstructions.

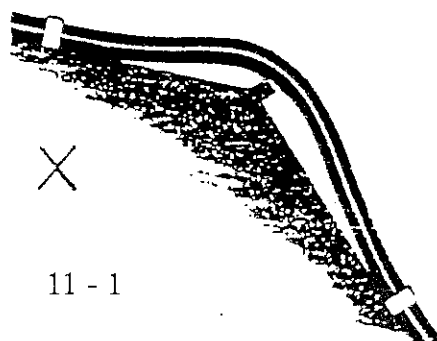
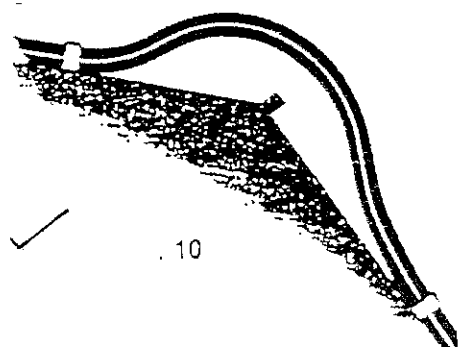


3 SHARP BENDS

- a AVOID SHARP BENDS
- b Always allow enough hose for free movement.

4 CHAFING HOSES

- a AVOID CHAFING HOSES
- b Always give plenty of clearance around sharp edges.



- 1 It is essential that in the interests of safety all guards and the roller must be kept in position on the machine whenever the machine is running. Bomford Turner Ltd disclaim all responsibility for any damage or injury arising as a result of guards or roller being removed or of guards, other than of Bomford Turner manufacture having been fitted, or of operation of the machine other than in accordance with these instructions.
- 2 When hedge cutting/trimming or any operation where the cutting head is not in contact with the ground, a weld mesh guard (part no. 90.050.06) must be fitted to the side window of the tractor cab. Cabs without laminated or toughened glass must be fitted with a laminated glass or polycarbonate shield.

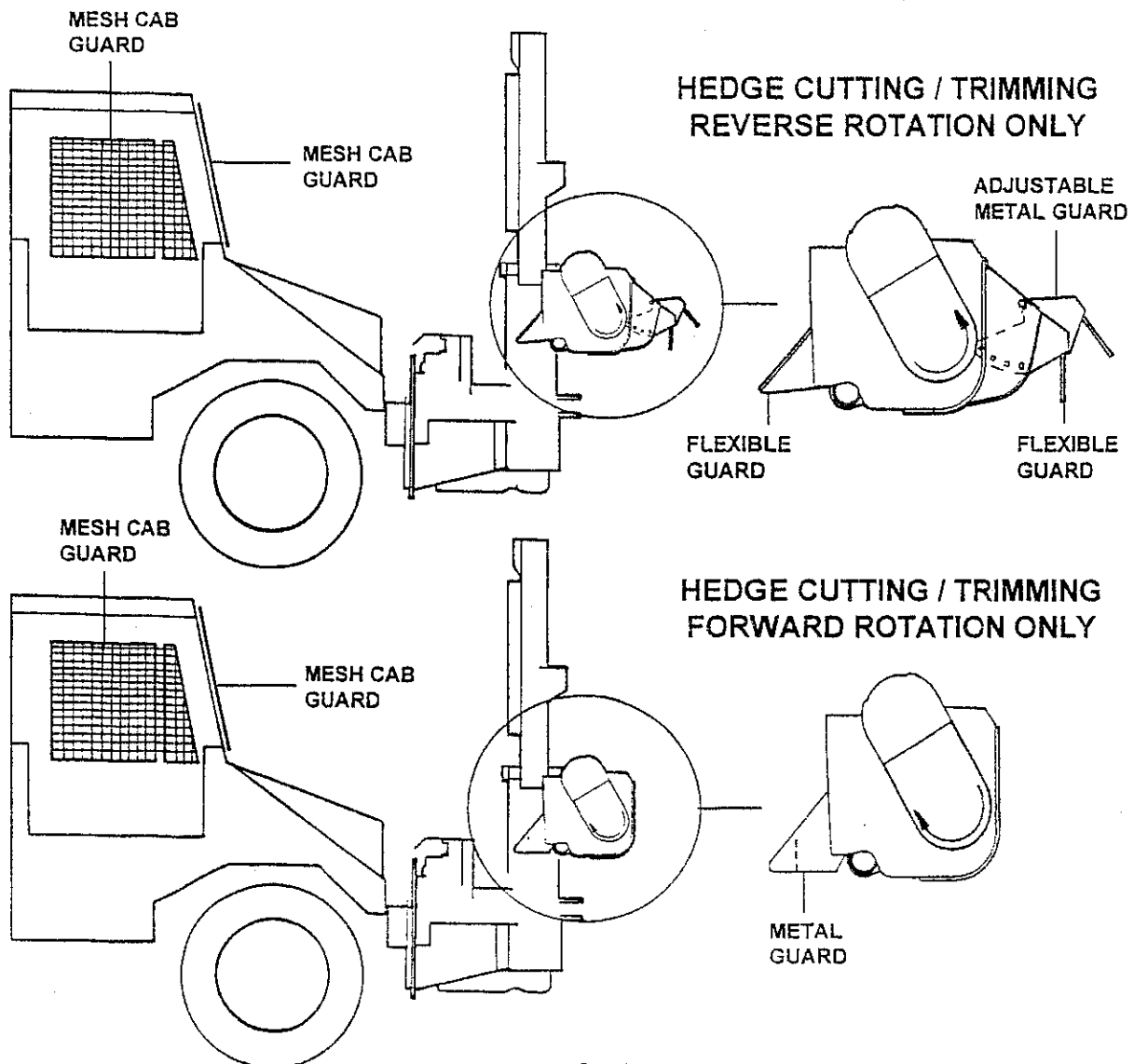
SHAFT ROTATION

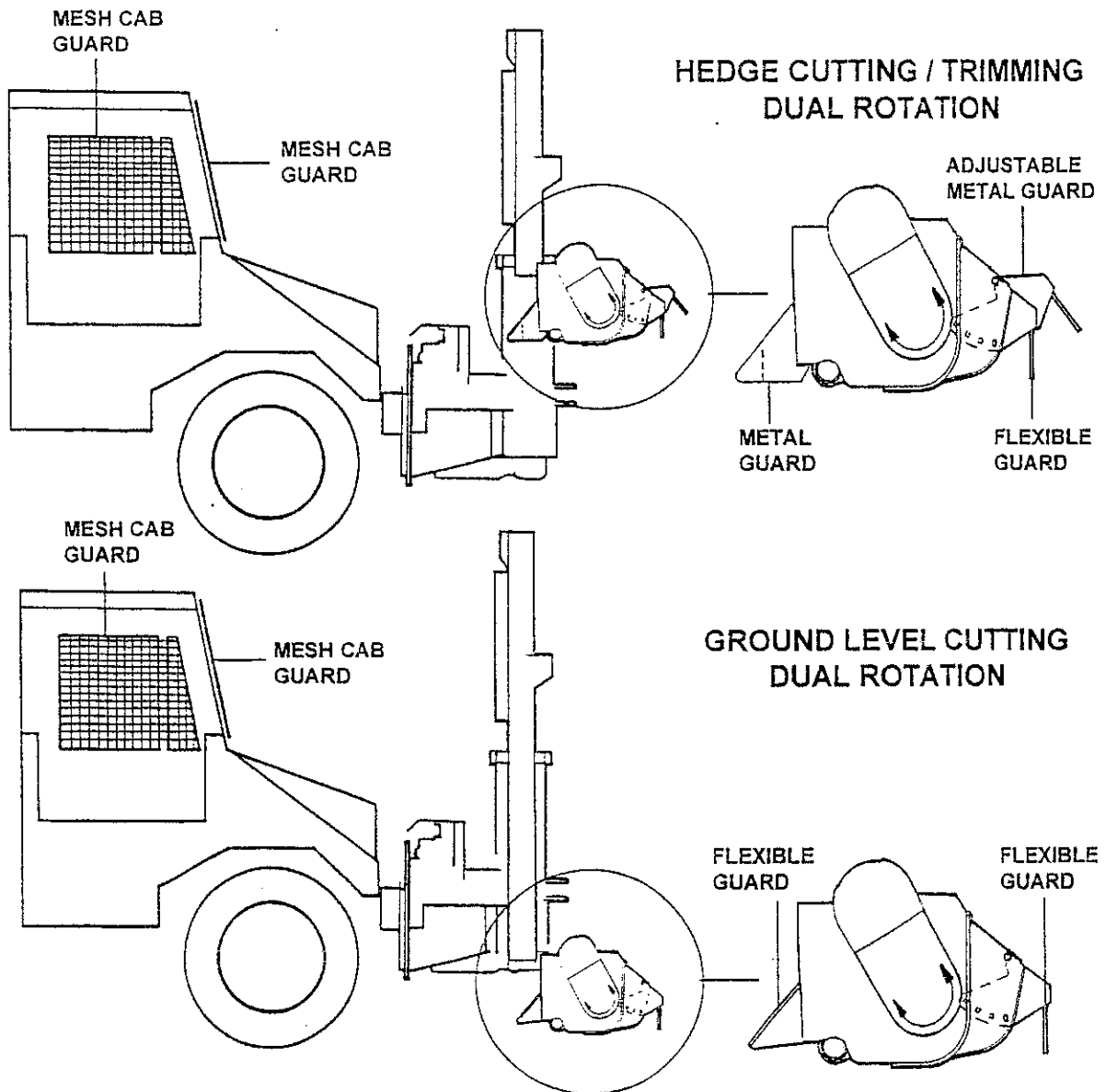
3 Single Rotation

The shaft rotation may be changed by reversing the hose connection on the motor. Ensure the correct guards are fitted for the rotation being used.

4 Dual Rotation

Machines fitted with a DSR rotor control valve can reverse head rotation by operation of a lever. Ensure the correct guards are fitted for all rotations used.





IMPORTANT

INSPECTION OF GUARDS

Inspect guards twice daily or immediately damage is suspected.

Replace guards that have damage or wear, as follows, which is likely to impair their performance.

- a **STEEL GUARD:** distorted or with sharp outer edges.
- b **WIRE TRAP GUARD:** with bent, missing or blunt cutting edge.
- c **FLEXIBLE GUARD:** with missing portions damaged or worn sufficiently to permit stones to be ejected beneath it in normal conditions.

IF IN DOUBT CONSULT BOMFORD TURNER SERVICE.

1 OPERATOR

These notes are produced for guidance and are intended to help you obtain the best results from your machine, with the minimum of trouble and downtime. Read the following pages carefully and familiarise yourself with their contents.

Make a note inside the front cover of this manual of the serial numbers stamped on the number plate of the mainframe and the cutting unit itself. Always quote these numbers in any correspondence with your dealer.

2 INITIAL CHECKS

Check that the cutting unit can be run at the correct speed.

3 MACHINE PRE-START CHECK

- a Check that the rotor is free from obstructions, especially pieces of wire.
- b Check that all flails are in good condition and securely attached to the rotor.
- c Check that all guards are in their correct place (see Section 12) and also that they are in good condition.

4 STARTING UP PROCEDURE

COLD START UP

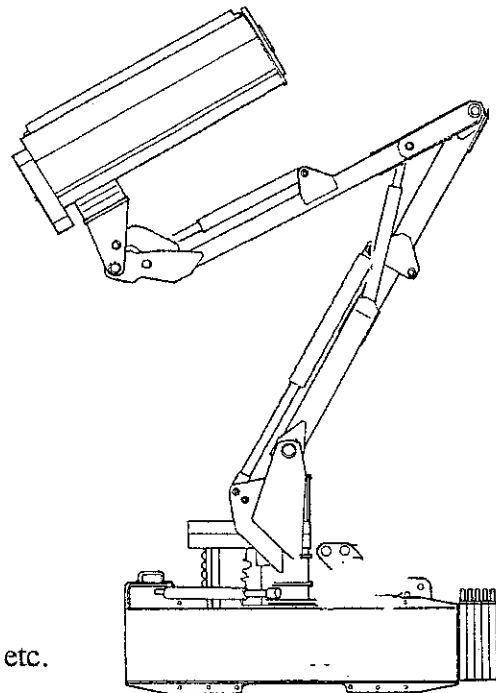
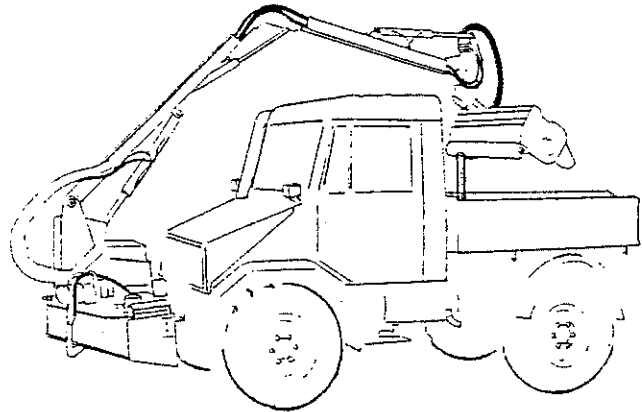
When starting the machine for the first time prior to commencing work, it is essential not to run the pump initially at too high a speed.

- a Ensure that the tractor hydraulic output is disengaged.
- b Ensure that the rotor control lever is in the rotor stopped position.
- c Start tractor engine, run at idle speed and engage the hydraulics. If the rotor starts to turn refer to Maintenance section and adjust.
- d Switch the rotor control to start the rotor.
- e Gradually increase engine speed.
- f Continue increasing engine speed until rotor is running smoothly.
- g Run rotor at this speed for minimum of 5 minutes to allow oil in system to warm up.
- h The machine is now ready for work.

5 TRANSPORT POSITION

The transport position depends on the type of prime mover fitted to the front mount. There are two transport options available:

- i with the kingpost slewed to the central position and the arms folded in front of or over the cab, and the cutting unit lowered down as far as possible;
 - ii with the kingpost slewed to one side and the arms folded up.
- a Whichever position is used the kingpost must be locked by fitting the locking pin in the appropriate hole - see para 10, page 13 - 4. Ensure that the arms and cutting unit are adequately secured when the vehicle is driven at road speed.
 - b When the machine is in the transport position it is essential that all the isolators valves are closed.
 - c When transporting on the highway, obey all relevant highway laws.
 - d Take care under low bridges, transmission lines, etc.



6 CUTTING CONTROL

Do not swing cutting unit inboard beyond vertical cut when arms are raised above tractor cab height. In this position a loss of control can occur.

Roller height

The roller on the cutting unit is set in its middle position before the machine leaves the factory. It should be reset to suit the operating conditions and cut length required.

a Grass cutting

Adjust roller to give required cut length. The higher the roller is raised the shorter the grass.

Note: The higher the roller is set the greater the flail wear.

IMPORTANT

THE ROLLER MUST BE KEPT IN POSITION AT ALL TIMES AS IT IS AN ESSENTIAL PART OF THE CUTTING UNIT GUARDING.

STOPPING THE CUTTING UNIT

The rotor must only be engaged/disengaged by means of the rotor on/off control, see Section 7. Stopping the rotor by use of the tractor engine stop or pump control risks damage to the cutting unit's hydraulic system, and should only be used in an emergency.

If the rotor is stopped by use of either the tractor engine stop or pump control, care must be taken to ensure the rotor control lever is returned to the OFF position before restarting the tractor.

7 MOTOR POSITION

All cutting units are supplied with the motor positioned on the left hand side of the unit. It is possible to change the motor to the other end of the unit if desired to suit particular operating conditions. Ensure that hoses are refitted for correct rotation (see Section 9).

8 ACCUMULATOR - ARM FLOAT

The purpose of the accumulator is to permit the cutting unit to follow uneven ground without operator intervention as far as possible, and to allow most of the weight of the cutting unit to be carried by the tractor, thus minimising the tendency to slew. This also reduces wear on the rotor and in the bearings of the roller.

The accumulator is not used when hedge trimming, as the cutting unit would be very difficult to control and uneven (castellated) results would be obtained.

To shut off the accumulator close the isolator valve. When opening the isolator valve ensure all head weight is on the ground, otherwise the first arm may move unexpectedly.

WARNING

THIS VALVE MUST BE CLOSED WHEN THE MACHINE IS TRAVELLING,
WHETHER IN TRANSPORT POSITION OR NOT.

For test procedure of the accumulator refer to Section 9.

9 SLEW SYSTEM OPERATION

Slew is from 90° work position on either side to centre transport position in front. Two stop pins and an alternative ram anchor position allow Right (pin A) or Left hand (pin B) working. An additional stop pin (C), when removed allows a work position 20° in front of the 90° position on either side (see Slew Stop Position Diagram).

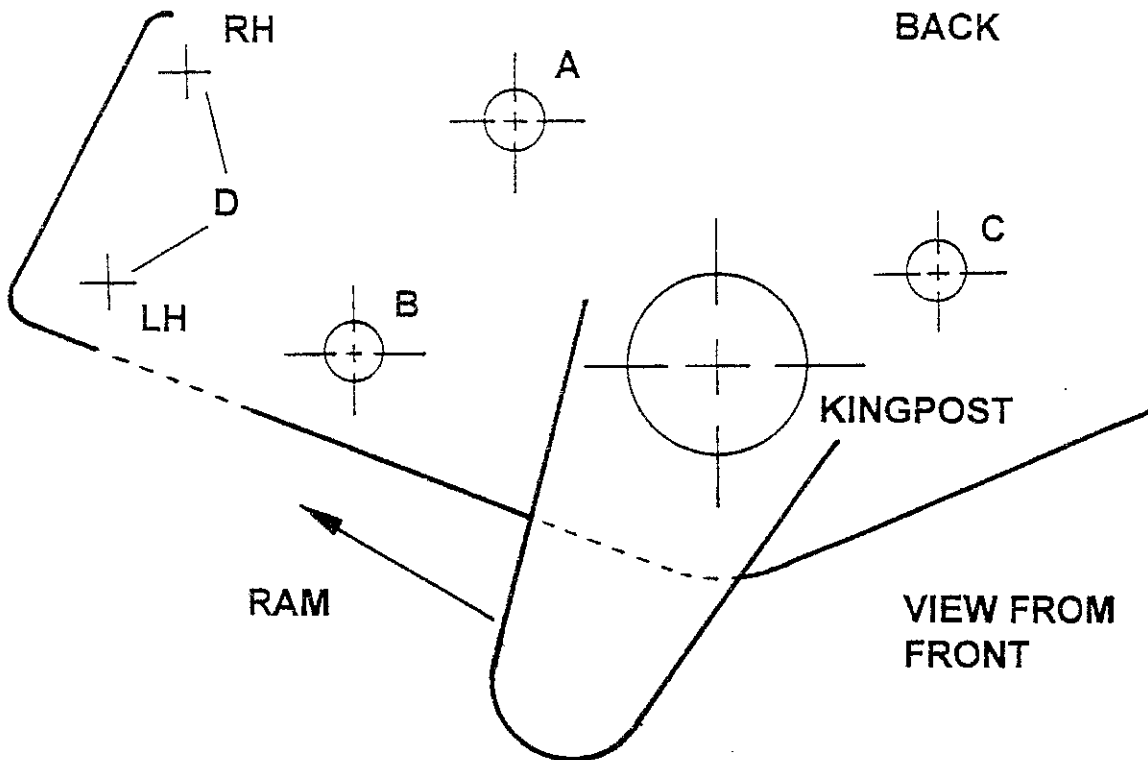
10 CONVERTING FROM RIGHT HAND TO LEFT HAND

Slew arms to transport. Remove forward reach stop pin (C) and place it in hole (B) to lock kingpost in centre position. Remove ram anchor pin (D) from rear right hand position and reposition into front left hand position. Slew arms to left hand side. Remove pin from (A) into (C). Rotate the cutting unit on its turntable (see below).

11 TURNTABLE

Within the cowl linkage is a mechanical swivel that allows the cutting unit to be set for correct direction on either side of the machine or in a mid-position for transport. To turn the cutting unit, lift the locking pin and turn the unit manually. Ensure the locking pin is re-engaged in the desired position. Do not run the cutting unit when facing wrong direction.

SLEW STOP PIN POSITIONS



PIN POSITIONS	A	B	C
RIGHT HAND WORK	●		●
TRANSPORT	●	●	
LEFT HAND WORK		●	●

FORWARD REACH - REMOVE PIN C

12 EPP CONTROLS

The EPP control system allows the operator to control both first and second arms on the machine using a single, small joystick control.

The controls are proportional in action, i.e. the further the joystick is moved the faster the corresponding service responds. By moving the joystick, such that both services operate together, it is possible with a little practice to move the cutting head very precisely in and out or up and down at will.

The remaining machine controls are operated on self centring rocker switches, which are not proportional but are restricted hydraulically for smooth operation.

An **optional head float** can be fitted to this system which is activated using a 2-position rocker switch. When the head float is engaged the red light in the switch is illuminated.

When the head float is engaged the head angling control will have no effect and the head will not be supported by the hydraulics when the arms are raised.

When verge mowing the head float will work best when the head is centre mounted and an arm float kit is fitted and in operation.

An emergency stop button is incorporated in the system and pushing this button stops the entire arm control system. It is reactivated by twisting the button clockwise and allowing it to release upwards. The emergency stop control must be used to disable the control box during road transit and whenever the operator stops the tractor or leaves the cab.

It is recommended that the power to the EPP control box is disconnected at the end of each working day.

1 OPERATING HINTS

- a Maintain the correct rotor speed for the job to be tackled. Depending on the type of cutting unit fitted this may be either 2800-3000 rev/min, or 2300-2400 rev/min. Slower speeds MAY reduce the quality of cut obtained by the rotor, but satisfactory performance can be maintained down to a rotor speed of 2100 rev/min. This can be an advantage with tractors with a high bottom gear.
- b Examine the piece of work to be cut. It is very important that the work site is inspected before cutting and all hidden obstructions removed or their position clearly marked so they may be avoided.
- c Check hedges for wire and fencing stakes, and ditches for tree stumps, drain pipes, large stones, etc.
- d Stalling in heavy growth is likely to cause damage to the rotor.
- e Do not operate with the head slewed more than 40° backwards.

IMPORTANT

DO NOT ALLOW PERSONNEL NEAR THE MACHINE WHILE IT IS OPERATING.

- f DO NOT angle the cutting unit in such a way as to throw material towards the tractor.
- g Avoid rushing into the work. Remember that the unit has to chop up material as well as cut it to the required height.
- h When hedge cutting close the isolator valve on the accumulator, if fitted.
- i Always give the rotor shaft enough material to 'bite' into, particularly when a hedge has a lot of leaf and very flexible thin stems.

2 GRASS CUTTING

- a Run the rotor at normal speed.
- b Avoid taking in too much grass by regulating tractor forward speed.
- c If rotor shaft slows down or begins to choke up in grass, slow down, raise the cutting unit a little and allow grass to fall clear.
- d Before proceeding with the cutting let rotor speed recover again.
- e Advantage may be gained in exceptional conditions by taking a narrow cut with part of the cutting unit clear of the work.
- f When working alongside or clearing ditches, take a first cut along the edge of the ditch so that the ditch limits can be seen.
- g When working over a hedge or into a ditch, keep the highest point of the mower arms directly over the obstacle.

- h Do not run machine for prolonged periods when the head is not at 90° to the direction of travel.
- i Use the arm float to avoid the head digging into obstructions

3 HEDGE TRIMMING

Consider how the job should be done before commencing work, as every hedge has a different height, width, thickness or density of growth.

Hedges which have previously been cut by machine tend to have denser growth, and although they can be cut to any desired shape, it is advisable to trim to the same shape and height as before.

The flails cause the growth to 'tiller' and thicken up the hedge. Therefore it is advisable to cut the hedge side at a slight angle rather than straight, otherwise the hedge may eventually die at the bottom due to lack of light.

The following information gives a few hints on how to tackle a hedge:

- a First trim the top down to previous year's trim in one cut, but do not cut into it as the old growth will be very thick and strong and can cause premature wear to the flail cutting edges.
- b Next trim the sides to the previous trim but not into it.

IMPORTANT

DO NOT ANGLE THE CUTTING UNIT SO THAT ANY DEBRIS IS THROWN THROUGH THE HEDGE WHEN TRIMMING THE FAR SIDE OF THE HEDGE. ALWAYS ENSURE CUT MATERIAL IS DIRECTED AWAY FROM YOU OR ON TO THE GROUND.

- c Finally, lower the roller and trim along the bottom of the hedge to clear debris and undergrowth.

4 STALLING THE ROTOR

If the rotor does become choked the tractor will stall, the belts will slip or the relief valve will operate. If this occurs follow the instructions below:

- a Stop forward motion and disengage drive to cutting unit immediately by placing the lever controlling the rotor in the stop position. **DO NOT REVERSE THE ROTOR**
- b Ensure that the rotor has stopped and lift the cutting unit.
- c Stop tractor engine.
- d Remove any obstruction that may be present on the rotor. If working under the raised machine ensure that it is safely supported and beware of sharp edges.

NEVER IN ANY CIRCUMSTANCES run or reverse the rotor to "clear itself".

1 STORAGE

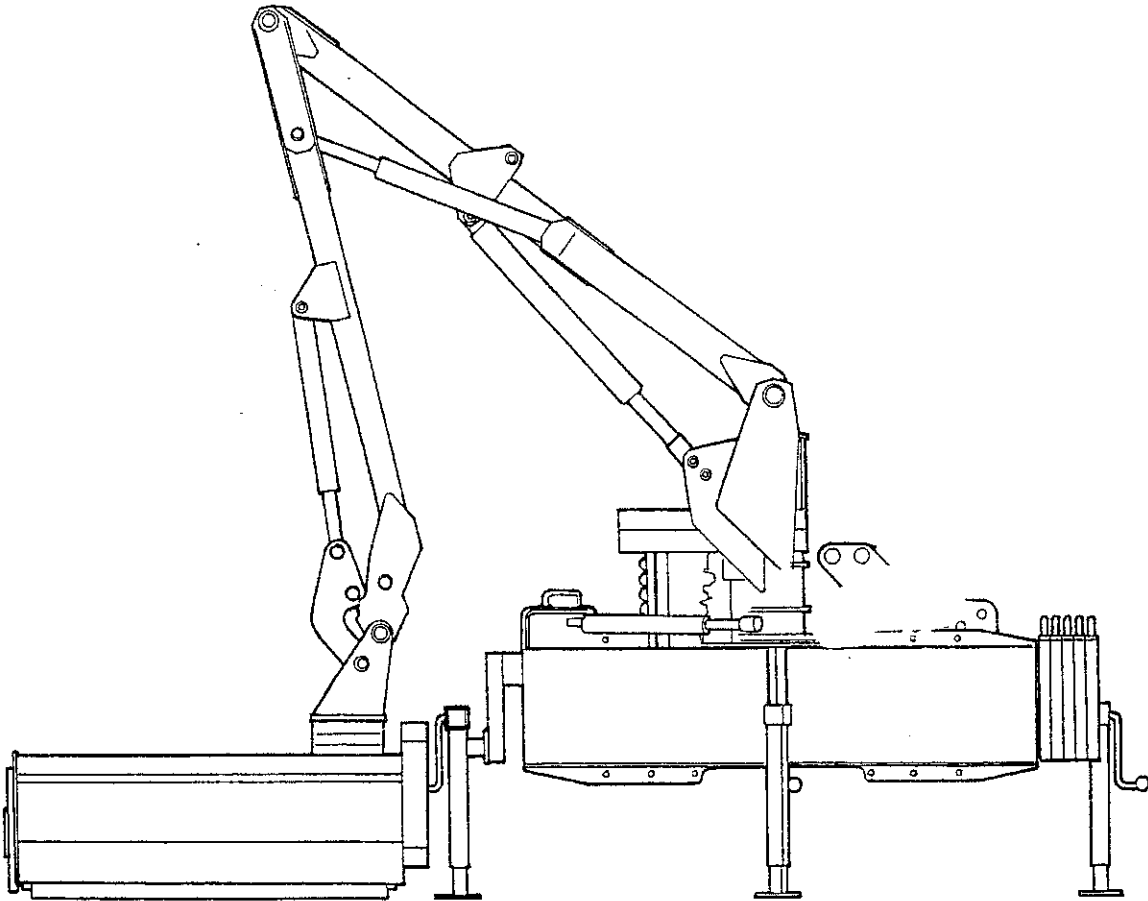
Before removing the machine from the tractor a thorough check of the machine should be made as follows:

- a Thoroughly clean all moving parts, particularly the cutting unit.
- b Check that all flails are in place and that they are in good condition.
- c Check all hoses for damage such as cracks, evidence of chafing and leaks.
- d Smear all unpainted metal parts with grease and lubricate all grease nipples.
- e Make a note of any item that needs replacing so that parts can be ordered.

2 PARKING AND REMOVAL

IMPORTANT

DO NOT ALLOW PERSONNEL BETWEEN TRACTOR AND MACHINE WHEN MANOEUVRING.



In the parked position the machine is supported by three stands on the mainframe and also the cutting unit. To put the machine into this position the following procedure is necessary:

- a Find a flat, hard area on which to park.
- b Place the cutting unit on the ground in the work position about 1 metre out.
- c Fit the parking stands into position.

- d Turn off all taps to the rams.
- e Stop the tractor engine.
- f Adjust the stands until no weight is taken on the mountings.
- g Undo the four bolts retaining the machine to the tractor plate.
- h Adjust the stands to lift the machine hooks clear of the DIN plate.
- i Disconnect electric cable from control box, feed through the rear window and secure to mainframe, protected by weather.
- j Release the PTO shaft.
- k Start tractor engine and reverse a short distance backwards.
- l Replace lower link pins and place cap over tractor PTO.
- m Disconnect power supply cable from control box. Remove control box from cab and store in a clean dry place.
- n Remove PTO shaft and store in a safe place.

3 REFITTING

Provided that the machine has been parked on a hard flat surface in a stable condition, refitting to the same tractor is a straightforward reversal of the removal procedure.

1 HOSES AND ROTOR DRIVE CIRCUIT

It is false economy to try and make a damaged hose last a bit longer, because a failure can spill a lot of oil on the road endangering traffic and costing money. To reduce the risk of this happening and ensure a long life from the hoses, follow instructions given below:

IMPORTANT: SOME HOSES MAY CONTAIN RESIDUAL HIGH PRESSURE

- a Check weekly that all hoses and their connections (with particular attention to the rotor drive circuit) are in good condition and that there are no leaks or damage.
- b Replace any hose that is leaking or damaged.

IMPORTANT

ENSURE THAT THE HEAD IS RESTING ON THE GROUND BEFORE DISCONNECTING HOSES.

- c Ensure that hoses have not chafed against sharp edges. If they have, inspect damage and replace if necessary.
- d Re-route any hose that has been chafing (see Hose Section).
- e Ensure that hoses are fitted without kinks or sharp bends (see Hose Section).
- f Pay particular attention to the suction hose from tank to pump.
- g If in doubt about the condition of any hose **REPLACE IT**.

2 CUTTING UNIT

Vibration of the rotor shaft can cause premature failure of the rotor shaft bearings, as well as hydraulic and structural failures. It is important not to operate the machine with the cutting unit vibrating. As soon as any vibration is felt stop operating the machine and make the checks listed below:

- a Place head vertically on ground or support it safely.
- b Stop tractor engine and disengage hydraulic power.
- c Check for missing flails and always replace missing flails in pairs.
- d Check flail attachments are tight. If any flails were missing or loose and have been replaced or tightened, run the rotor and test for vibration. If vibration is still present check as follows.
- e Stop tractor engine and disengage hydraulic drive
- f Check rotor shaft bearings for roughness or signs of slackness
- g Replace bearings if either of the above symptoms are found. If vibration persists it is an indication that the rotor shaft is probably bent and must therefore be replaced.

4 PINS

Periodically check all pins for damage and correct retention.

5 RAMS

It is advisable to check all ram caps for tightness occasionally and if found to be loose tighten them immediately.

6 GREASING

IMPORTANT: Exercise caution when working on or around the machine. Clean off oil and grease which could lead to slippery surfaces.

There are a number of greasing points on the machine. The frequency at which these greasing points should be greased is shown by a decal adjacent to the greasing point.

GREASING CHART

LOCATION	DAILY	WEEKLY	MONTHLY
ROTOR SHAFT BEARINGS		●	
P.T.O. SHAFT BEARINGS		●	
P.T.O. SHAFT TUBES		●	
PIVOT PINS	●		
ROLLER BEARINGS		●	
OIL TANK			<input type="checkbox"/>
● GREASE			CHECK OIL <input type="checkbox"/>

To grease the rotor shaft bearings follow the instructions below:

- a Place head vertically on ground or support it safely.
- b Stop tractor engine and disengage drive to PTO shaft.
- c Rotor shaft bearings. Grease nipples are located in the side of the bearing housing tubes inside the cutting head.
- d Apply grease to the nipples but do not grease violently, as damage to the seals may result.
- e Do not overgrease or it could cause overheating.
- f Do not overgrease the roller and its bearings or the carriers may be forced apart and distorted by the pressure.

1 TENSIONING DRIVE BELTS

The rotor shaft is driven from the gear motor via 'V' belts which are adjustable for tension.

The instructions below describe the procedure for tightening the belts.

- a Stop tractor engine and disengage hydraulic drive.
- b Remove drive guards.
- c Check the tension by applying a force of 2.8-3.5kg at right angles to the belt in the centre of the two pulleys.
- d If the deflection is greater than 6mm (1/4") then release the motor mounting plate screws and adjuster locknut and screw the adjuster to tighten the belts until the deflection is 6mm (1/4").
- e Tighten all bolts and replace drive guards.

IMPORTANT

DO NOT OVERTIGHTEN BELT as this may cause premature failure of the rotor shaft and motor bearings.

- f Tighten locknut 14(A) and recheck belt tension.
- g Replace belt cover.

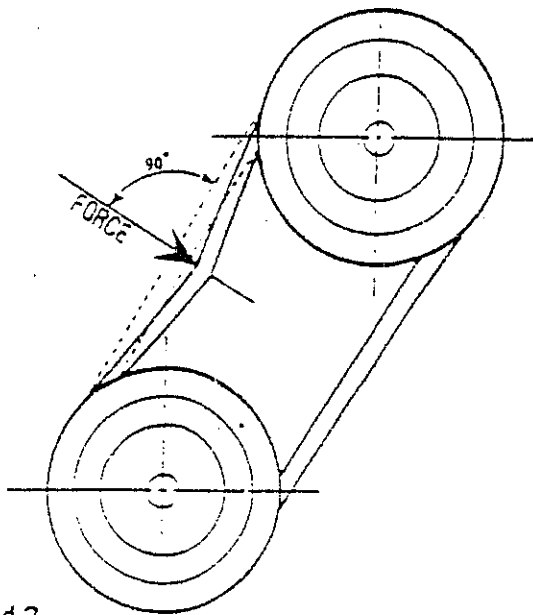


fig. 13

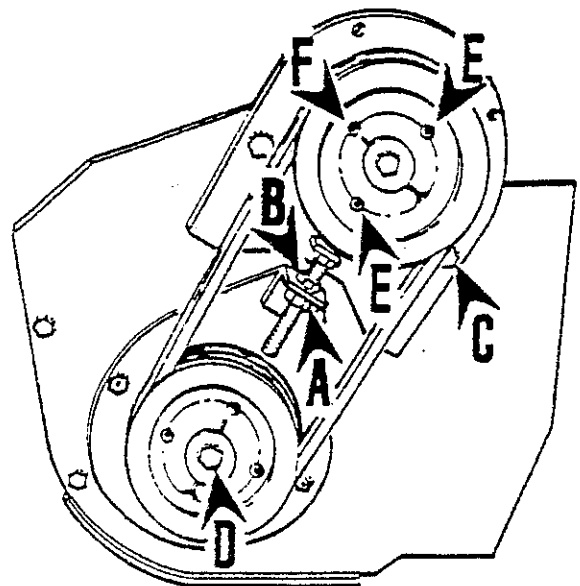


fig. 14

2 REVERSING THE DRIVE PULLEYS

For either hedge trimming or grass cutting see General Operation.

- a Stop tractor engine and disengage hydraulic drive.
- b Remove drive guards.
- c Slacken motor mounting plate nuts 14(C).
- d Slacken locknuts 14(A) enough to push motor mounting plate fully down in the slots.
- e Remove lower pulley centre bolt and washer 14(D).
- f Remove the top pulley by taking out the 2 grub screws 14(E) from the taperlock bush and using one of them to loosen the pulley by inserting into the third tapped hole 14(F).
- g Remove the 'V' belts and remove the bottom pulley in the same manner as (F) above.
- h Exchange the pulleys on the taper lock bushes and loosely fit the 2 grub screws 13(E).
- i Replace the lower taper lock bush and pulley on to the rotor shaft, being careful not to displace the drive key. Replace and fully tighten centre bolt, washer and grub screws.
- j Replace 'V' belts at the same time as replacing the top taperlock bush and pulley. With a straight edge line up top and bottom pulleys and fully tighten grub screws. Check pulley alignment and repeat above if not aligned correctly.

TELESCOPIC ARM

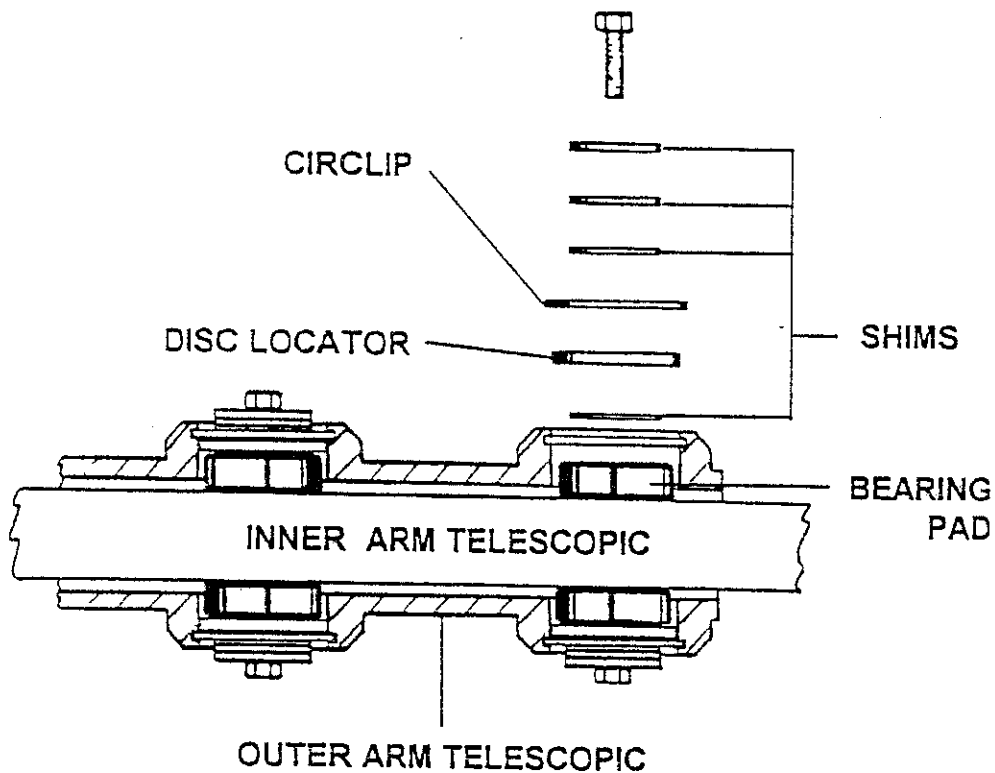
When necessary the wear pads can be adjusted to alleviate any excessive slack or play between the inner and outer arm. The desired clearance between the inner arm and the wear pads is 0.5mm. Also ensure that the inner arm is parallel inside the outer arm.

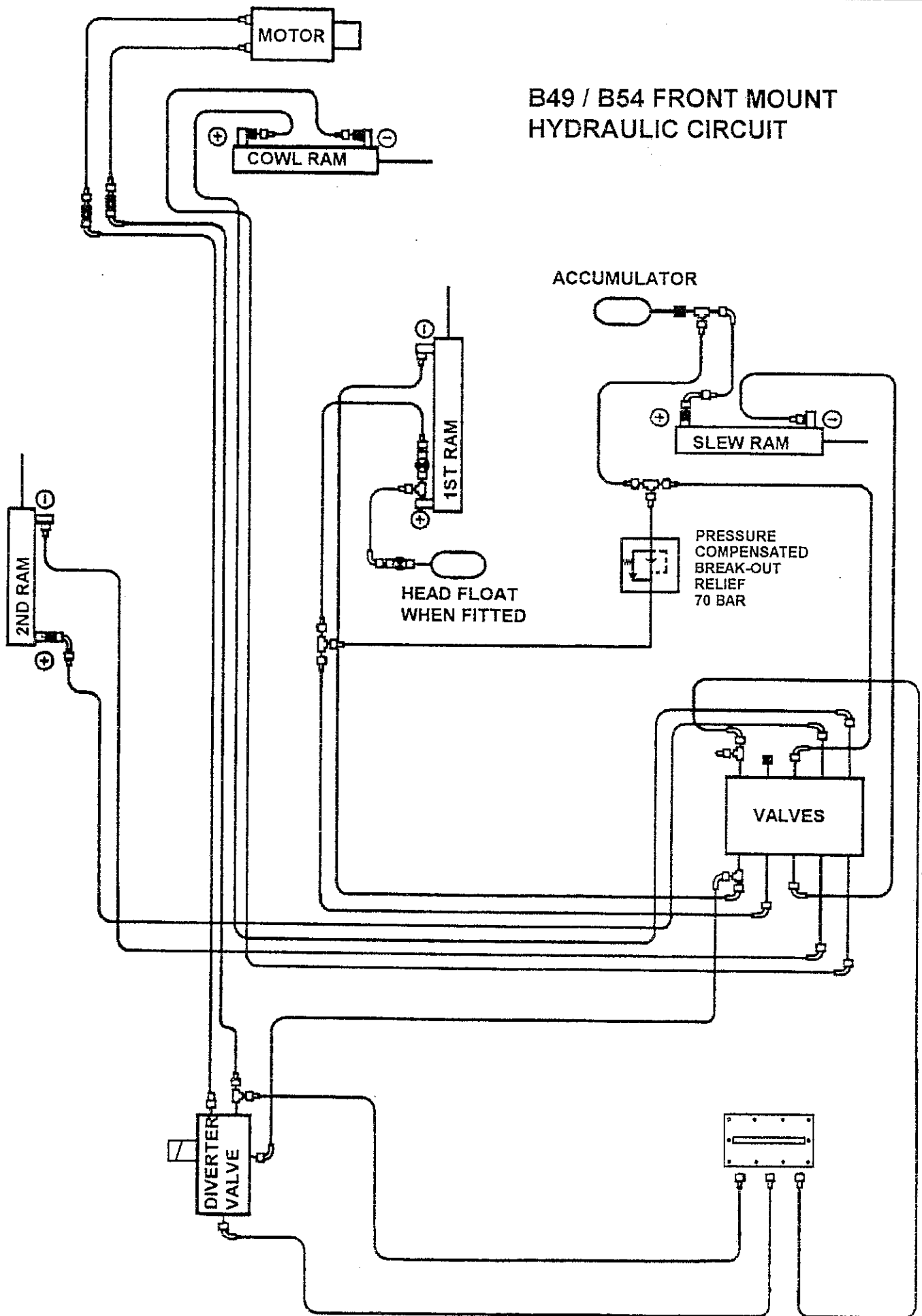
Adjustment can be achieved by varying the shim configuration between wear pad the locating disc thicker or thinner. Shims are provided of different thickness and combinations of these can be used to obtain the desired packing.

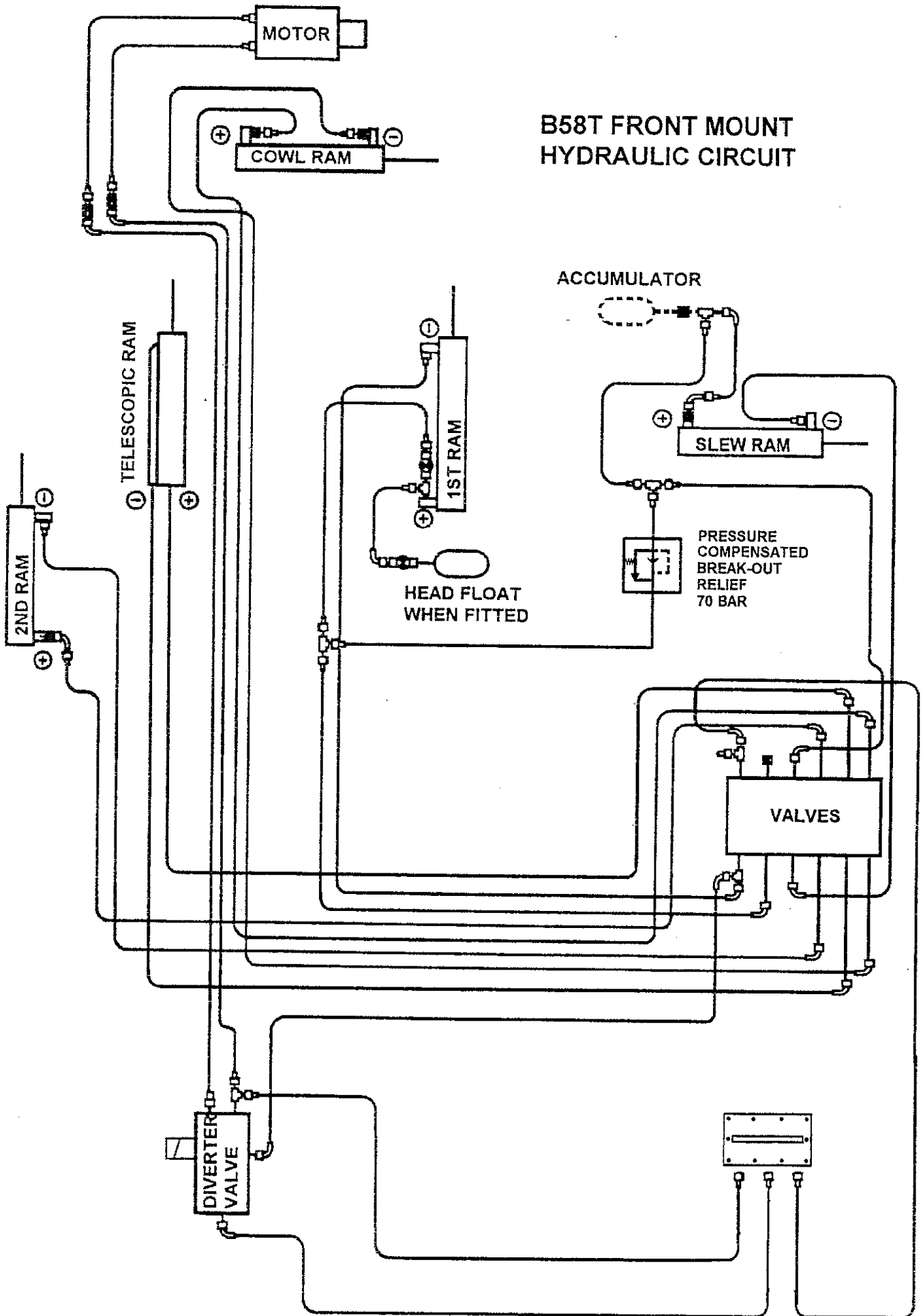
Extra caution should be used when operating the machine after an adjustment has been made to the wear pads in case they were over adjusted.

Annually coat the inner arm with black Waxoil Original or a similar product.

Do not lubricate the inner arm or the wear pads.







B58T FRONT MOUNT
HYDRAULIC CIRCUIT