

# Spearhead

## QUADSAW 1601, 2001 & 2401 & HXF3300 TELEHANDLER FRAME



Edition 1.0 – 2016  
Part No. 8999097

## HANDBOOK & PARTS MANUAL

## IMPORTANT

### VERIFICATION OF WARRANTY REGISTRATION

#### DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with Spearhead Machinery Limited before delivery to the end user – failure to do so may affect the validity of the machine warranty.

To register machines go to the Spearhead Machinery Limited web site at [www.spearheadmachinery.com](http://www.spearheadmachinery.com), log onto 'Dealer Inside' and select the 'Machine Registration button' which can be found in the Service Section of the site. Confirm to the customer that the machine has been registered in the section below.

Should you experience any problems registering a machine in this manner please contact the Spearhead Service Department on 01789 491867.

#### Registration Verification

<b>Dealer Name:</b>	.....
<b>Dealer Address:</b>	.....
<b>Customer Name:</b>	.....
<b>Date of Warranty Registration:</b>	...../...../..... <b>Dealer Signature:</b> .....

#### NOTE TO CUSTOMER / OWNER

*Please ensure that the above section has been completed and signed by the selling dealer to verify that your machine has been registered with Spearhead Machinery Limited.*

**IMPORTANT:** During the initial 'bedding in' period of a new machine it is the customer's responsibility to regularly inspect all nuts, bolts and hose connections for tightness and re-tighten if required. New hydraulic connections occasionally weep small amounts of oil as the seals and joints settle in – where this occurs it can be cured by re-tightening the connection – *refer to torque settings chart below*. The tasks stated above should be performed on an hourly basis during the first day of work and at least daily thereafter as part of the machines general maintenance procedure.

**CAUTION: DO NOT OVER TORQUE HYDRAULIC FITTINGS AND HOSES.**

#### TORQUE SETTINGS FOR HYDRAULIC FITTINGS

HYDRAULIC HOSE ENDS		
BSP	Setting	Metric
1/4"	18 Nm	19 mm
3/8"	31 Nm	22 mm
1/2"	49 Nm	27 mm
5/8"	60 Nm	30 mm
3/4"	80 Nm	32 mm
1"	125 Nm	41 mm
1.1/4"	190 Nm	50 mm
1.1/2"	250 Nm	55 mm
2"	420 Nm	70 mm

PORT ADAPTORS WITH BONDED SEALS		
BSP	Setting	Metric
1/4"	34 Nm	19 mm
3/8"	47 Nm	22 mm
1/2"	102 Nm	27 mm
5/8"	122 Nm	30 mm
3/4"	149 Nm	32 mm
1"	203 Nm	41 mm
1.1/4"	305 Nm	50 mm
1.1/2"	305 Nm	55 mm
2"	400 Nm	70 mm

## WARRANTY POLICY

### WARRANTY REGISTRATION

All machines must be registered, by the selling dealer with Spearhead Machinery Ltd, before delivery to the end user. On receipt of the goods it is the buyer's responsibility to check that the Verification of Warranty Registration in the Operator's Manual has been completed by the selling dealer.

#### 1. LIMITED WARRANTIES

- 1.01. All machines supplied by Spearhead Machinery Limited are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months, unless a different period is specified.
- 1.02. All spare parts supplied by Spearhead Machinery Limited are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 6 months.
- 1.03. The manufacturer will replace or repair for the purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship. Returned parts must be complete and unexamined.
- 1.04. This warranty does not apply to any part of the goods, which has been subjected to improper or abnormal use, negligence, alteration, modification, fitment of non-genuine parts, accident damage, or damage resulting from contact with overhead power lines, damage caused by foreign objects (e.g. stones, iron, material other than vegetation), failure due to lack of maintenance, use of incorrect oil or lubricants, contamination of the oil, or which has served its normal life. This warranty does not apply to any expendable items such as blades, flails, bushes, belts, flap kits, skids, shields, guards, wear pads or pneumatic tyres.
- 1.05. Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.
- 1.06. Warranty on hoses is limited to 12 months and does not include hoses which have suffered external damage. Only complete hoses may be returned under warranty, any which have been cut or repaired will be rejected.
- 1.07. Machines must be repaired immediately a problem arises. Continued use of the machine after a problem has occurred can result in further component failures, for which Spearhead Machinery Ltd cannot be held liable, and may have safety implications.
- 1.08. Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of Spearhead Machinery Ltd.
- 1.09. For machine warranty periods in excess of 12 months the following additional exclusions shall apply:
  - 1.09.1. Hoses, external seals, exposed pipes and hydraulic tank breathers.
  - 1.09.2. Filters
  - 1.09.3. Rubber mountings
  - 1.09.4. External electric wiring.
  - 1.09.5. Labour and mileage costs.
- 1.10. All service work, particularly filter changes, must be carried out in accordance with the manufacturer's service schedule. Failure to comply will invalidate the warranty. In the event of a claim, proof of the service work being carried out may be required.

***NB Warranty cover will be invalid if any non-genuine parts have been fitted or used. Use of non-genuine parts may seriously affect the machine's performance and safety. Spearhead Machinery Ltd cannot be held responsible for any failures or safety implications that arise due to the use of non-genuine parts.***

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## 2. REMEDIES AND PROCEDURES

- 2.01. The warranty is not effective unless the Selling Dealer registers the machine, via the Spearhead Machinery web site and confirms the registration to the purchaser by completing the confirmation form in the operator's manual.
- 2.02. Any fault must be reported to an authorised Spearhead Machinery dealer as soon as it occurs. Continued use of a machine, after a fault has occurred, can result in further component failure for which Spearhead Machinery Ltd cannot be held liable.
- 2.03. Repairs should be undertaken within two days of the failure. Claims submitted for repairs undertaken more than 2 weeks after a failure has occurred, or 2 days after the parts were supplied will be rejected, unless the delay has been authorised by Spearhead Machinery Ltd.
- 2.04. All claims must be submitted, by an authorised Spearhead Machinery Service Dealer, within 30 days of the date of repair.
- 2.05. Following examination of the claim and parts the manufacturer will pay, at their discretion, for any valid claim the cost of any parts and an appropriate labour allowance if applicable.
- 2.06. The submission of a claim is not a guarantee of payment.
- 2.07. Any decision reached by Spearhead Machinery Ltd is final.

## 3. LIMITATION OF LIABILITY

- 3.01. The manufacturer disclaims any express (except as set forth herein) and implied warranties with respect to the goods including, but not limited to, merchantability and fitness for a particular purpose.
- 3.02. The manufacturer makes no warranty as to the design, capability, capacity or suitability for use of the goods.
- 3.03. Except as provided herein, the manufacturer shall have no liability or responsibility to the purchaser or any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by the goods including, but not limited to, any indirect, special, consequential, or incidental damages resulting from the use or operation of the goods or any breach of this warranty. Notwithstanding the above limitations and warranties, the manufacturer's liability hereunder for damages incurred by the purchaser or others shall not exceed the price of the goods.
- 3.04. No action arising out of any claimed breach of this warranty or transactions under this warranty may be brought more than one (1) year after the cause of the action has occurred.

## 4. MISCELLANEOUS

- 4.01. The manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.02. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.03. Applicable law may provide rights and benefits to the purchaser in addition to those provided herein.

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## CE Declaration of Conformity, Conforming to EU Machinery Directive 2006/42/EC

We, Spearhead Machinery Ltd, Green View, Salford Priors, Evesham,  
Worcestershire, WR11 8SW hereby declare that:

**Product** .....

**Product Code**.....

**Serial No.**.....

**Type**.....

Manufactured by: Alamo Manufacturing Services (UK) Limited, Station Road, Salford  
Priors, Evesham, Worcestershire, WR11 8SW

Complies with the required provisions of the Machinery Directive 2006/42/EC. The  
Machinery Directive is supported by the following harmonized standards:

- BS EN ISO 14121-1 (2007) Safety of Machinery – Risk Assessment, Part 1: Principles Part 2: Practical Guide and Examples of Methods.
- BS EN ISO 12100-1 (2010) Safety of Machinery – Part 1: Basic Terminology and Methodology Part 2: Technical Principles.
- BS EN 349 (1993) + A1 (2008) Safety of Machinery – Minimum Distances to avoid the Entrapment of Human Body Parts.
- BS EN 953 (1998) Safety of Machinery – Guards General Requirements for the Design and Construction of Fixed and Movable Guards.
- BS EN 982 (1996) + A1 (2008) Safety Requirements for Fluid Power Systems and their Components. Hydraulics.

The EC Declaration only applies if the machine stated above is used in accordance  
with the operating instructions.

**Signed**



(On behalf of Spearhead Machinery Ltd)

**Status**

General Manager

**Date**

.....

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## CONTENTS

Safety Information.....	7
Safety Decals.....	12
Tractor Preparation.....	13
Overview and Specifications.....	14
Machine Attachment.....	15
Quadsaw Operation.....	17
HXF 3300 Mounting Carriage.....	20
Transport and Work Positions.....	21
HXF 3300 Controls.....	22
HXF 3300 Maintenance.....	25
Trouble Shooting Guide.....	27
Ordering Your Parts.....	28
Quadsaw 1601 – Main Assembly.....	29
Quadsaw 1601 – Drive Assembly.....	31
Quadsaw 1601 – Blade Unit Assembly.....	33
Quadsaw 2001/2401 – Main Assembly.....	35
Quadsaw 2001/2401 – Blade Shaft Assembly.....	37
Quadsaw 2001/2401 – Adjusting System.....	38
Quadsaw 2001/2401 – Piston Motor.....	39
Quadsaw 1601/2001/2401 – Decals.....	40
HXF 3300 – Main Frame Assembly.....	41
HXF 3300 – Valve Assembly.....	42

# LRS QUADSAW & HXF FRAME

DEFINITIONS: *The following definitions apply throughout this manual;*

## **⚠ DANGER**

**DANGER:** Alerts to a hazardous situation which will result in death or serious injury if not observed carefully.

## **⚠ WARNING**

**WARNING:** Alerts to a hazardous situation which could result in death or serious injury if not observed carefully.

## **⚠ CAUTION**

**CAUTION:** Alerts to a hazardous situation which could result in damage to the machine and/or equipment if not observed carefully.

## **NOTICE**

**NOTICE:** Specific or general information considered important or useful to emphasise.

**LEFT HAND (LH) & RIGHT HAND (RH):** *These terms are applicable to the machine when fitted to the tractor and viewed from the rear; these terms also apply to tractor references.*

### SERIAL PLATE

*All machines are equipped with a serial number plate containing important information relating to the machine including a unique serial number used for identification purposes.*

*Note: Images in this manual are provided for instruction and informational purposes only and may not show components in their entirety. In certain instances images may appear different to the actual machine; where this occurs the general procedure will be basically the same. E&OA.*

## MACHINE & DEALER INFORMATION

Record the serial number of your machine on this page and always quote it when ordering parts. Whenever information concerning the machine is requested remember to also state the make and model of tractor to which the machine is fitted.	
Machine Serial Number:	Installation Date:
Machine Model Details:	
Dealer Name & Branch:	
Dealer Address:	
Dealer Telephone No:	
Dealer Email Address:	



This machine has the potential to be extremely dangerous - in the wrong hands it can kill or maim; it is therefore imperative that both owner and operator of the machine reads and understands the following section to ensure they are fully aware of the dangers that do, or may exist, and their responsibilities surrounding the use and operation of the machine. The operator of this machine is responsible not only for their own safety but equally for the safety of others who may come into the close proximity of the machine, as the owner you are responsible for both.

All operators must be fully competent in the use of this machine and also the machine to which it is attached and must read and understand the operation manuals for both machines before attempting to attach or operate this equipment.

When the machine is not in use it should be lowered to rest on the ground. In the event of any fault being detected with the machine's operation it must be stopped immediately and not used again until the fault has been corrected by a qualified technician.

## POTENTIAL DANGERS ASSOCIATED WITH THE USE OF THIS MACHINE:

- ▲ *Being hit by debris thrown by rotating components.*
- ▲ *Being hit by machine parts ejected through damage during use.*
- ▲ *Being caught on a rotating power take-off (PTO) shaft.*
- ▲ *Being caught in other moving parts i.e.: belts, pulleys and cutting heads.*
- ▲ *Electrocution from Overhead Power Lines (by contact with or 'flashover' from).*
- ▲ *Being hit by cutting heads or machine arms as they move.*
- ▲ *Becoming trapped between tractor and machine when hitching or unhitching.*
- ▲ *Tractor overbalancing when machine arm is extended.*
- ▲ *Injection of high-pressure oil from hydraulic hoses or couplings.*
- ▲ *Machine overbalancing when freestanding (out of use).*
- ▲ *Road traffic accidents due to collision or debris on the road.*



# LRS QUADSAW & HXF FRAME

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## BEFORE USING THIS MACHINE YOU MUST:

- ▲ *Ensure you read all sections of the operator handbook.*
- ▲ *Ensure the operator is, or has been, properly trained to use the machine.*
- ▲ *Ensure the operator has been issued with and reads the operator handbook.*
- ▲ *Ensure the operator understands and follows the instructions in operator handbook.*
- ▲ *Ensure the tractor front, rear and sides are fitted with metal mesh or polycarbonate guards of suitable size and strength to protect the operator against thrown debris or parts.*
- ▲ *Ensure tractor guards are fitted correctly, are undamaged and kept properly maintained.*
- ▲ *Ensure that all machine guards are in position, are undamaged, and are kept maintained in accordance with the manufacturer's recommendations.*
- ▲ *Ensure blades and their fixings are of a type recommended by the manufacturer, are securely attached and that none are missing or damaged.*
- ▲ *Ensure hydraulic pipes are carefully and correctly routed to avoid damage by chaffing, stretching or pinching and that they are held in place with the correct fittings.*
- ▲ *Always follow the manufacturer's instructions for attachment and removal of the machine from the tractor.*
- ▲ *Check that the machine fittings and couplings are in good condition.*
- ▲ *Ensure the tractor meets the minimum weight recommendations of the machine's manufacturer and that ballast is used as necessary.*
- ▲ *Always inspect the work area thoroughly before starting to note obstacles and remove wire, bottles, cans and other debris.*
- ▲ *Use clear suitably sized warning signs to alert others to the nature of the machine working within that area. Signs should be placed at both ends of the work site. (It is recommended that signs used are of a size and type specified by the Department of Transport and positioned in accordance with their, and the Local Highways Authority, guidelines).*
- ▲ *Ensure the operator is protected from noise. Ear defenders should be worn and tractor cab doors and windows must be kept closed. Machine controls should be routed through proprietary openings in the cab to enable all windows to be shut fully.*
- ▲ *Always work at a safe speed taking account of the conditions i.e.: terrain, highway proximity and obstacles around and above the machine. Extra special attention should be applied to Overhead Power Lines. Some of our machines are capable of reach in excess of 8 metres (26 feet) this means they have the potential to well exceed, by possibly 3 metres (9' 9"), the lowest legal minimum height of 5.2 metres from the ground for 11,000 and 33,000 volt power lines. It cannot be stressed enough the dangers that surround this capability, it is therefore vital that the operator is fully aware of the maximum height and reach of the machine, and that they are fully conversant with all aspects regarding the safe minimum distances that apply when working with machines in close proximity to Power Lines. (Further information on this subject can be obtained from the Health & Safety Executive or your Local Power Company).*

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- ▲ *Always disengage the machine, kill the tractor engine, remove and pocket the key before dismounting for any reason.*
- ▲ *Always clear up all debris left at the work area, it may cause hazard to others.*
- ▲ *Always ensure when you remove your machine from the tractor that it is left in a safe and stable position using the stands and props provided and secured if necessary.*

## WHEN NOT TO USE THIS MACHINE:

- ▲ *Never attempt to use this machine if you have not been trained to do so.*
- ▲ *Never use a machine until you have read and understood the operator handbook, are familiar with it, and practiced the controls.*
- ▲ *Never use a machine that is poorly maintained.*
- ▲ *Never use a machine if guards are missing or damaged.*
- ▲ *Never use a machine on which the hydraulic system shows signs of wear or damage.*
- ▲ *Never fit, or use, a machine on a tractor that does not meet the manufacturer's minimum specification level.*
- ▲ *Never use a machine fitted to a tractor that does not have suitable front, rear and side(s) cab guarding made of metal mesh or polycarbonate.*
- ▲ *Never use the machine if the tractor cab guarding is damaged, deteriorating or badly fitted.*
- ▲ *Never turn a machine cutting head to an angle that causes debris to be ejected towards the cab.*
- ▲ *Never start or continue to work a machine if people are nearby or approaching - Stop and wait until they are at a safe distance before continuing. WARNING: Some cutting heads may continue to 'freewheel' for up to 40 seconds or more after being stopped.*
- ▲ *Never attempt to use a machine on materials in excess of its capability.*
- ▲ *Never use a machine to perform a task it has not been designed to do.*
- ▲ *Never operate the tractor or machine controls from any position other than from the driving seat, especially whilst hitching or unhitching the machine.*
- ▲ *Never carry out maintenance of a machine or a tractor whilst the engine is running – the engine should be switched off, the key removed and pocketed.*
- ▲ *Never leave a machine unattended in a raised position – it should be lowered to the ground in a safe position on a level firm site.*
- ▲ *Never leave a tractor with the key in or the engine running.*
- ▲ *Never carry out maintenance on any part or component of a machine that is raised unless that part or component has been properly substantially braced or supported.*
- ▲ *Never attempt to detect a hydraulic leak with your hand – use a piece of cardboard.*
- ▲ *Never allow children near to, or play on, a tractor or machine under any circumstances.*

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## ADDITIONAL SAFETY ADVICE

### Training

Operators need to be competent and fully capable of operating this machine in a safe and efficient way prior to attempting to use it in any public place. We advise therefore that the prospective operator make use of relevant training courses available such as those run by the Agricultural Training Board, Agricultural Colleges, Dealers and McConnel.

### Working in Public Places

When working in public places such as roadsides, consideration should be paid to others in the vicinity. Stop the machine immediately when pedestrians, cyclists and horse riders etc. pass. Restart only when they are at a distance that causes no risk to their safety.

### Warning Signs

It is advisable that any working area be covered by suitable warning signs and statutory in public places. Signs should be highly visible and well placed in order to give clear advanced warning of the hazard. Contact the Department of Transport or your Local Highways Authority to obtain detailed information on this subject. The latter should be contacted prior to working on the public highway advising them of the time and location of the intended work asking what is required by way of signs and procedure. – *'Non-authorized placement of road signs may create offences under the Highways Act'*.

### Suggested Warning Signs Required

*'Road works ahead' warning sign with a supplementary 'Hedge cutting' plate. 'For 1 mile' or appropriate shorter distance may be added to the plate.*

*'Road narrows' warning signs with supplementary 'Single file traffic' plate.*

*White on blue 'Keep right' (\*) arrow sign on rear of machine.*

*\* Note – this applies to UK Market machines where traffic passes to the right of a machine working in the same direction as the traffic flow. The direction, use and colour of the arrow sign will depend on the country of use and the Local Highway Authorities regulations in the locality.*

### Use of Warning Signs

- ▲ *On two-way roads one set of signs is needed facing traffic in each direction.*
- ▲ *Work should be within 1 mile of the signs.*
- ▲ *Work only when visibility is good and at times of low risk e.g.: NOT during 'rush-hour'.*
- ▲ *Vehicles should have an amber-flashing beacon.*
- ▲ *Ideally, vehicles should be conspicuously coloured.*
- ▲ *Debris should be removed from the road and path as soon as practicable, and at regular intervals, wearing high visibility clothing and before removing the hazard warning signs.*
- ▲ *Collect all road signs promptly when the job is completed.*

**Safety Gear:** It is recommended that the following personal protective equipment is worn when operating and/or maintaining this machine; Coveralls, safety boots, safety glasses, hearing protection, safety helmet, protective gloves, protective dust mask.



# LRS QUADSAW & HXF FRAME

## SAFETY DECALS



**WARNING**  
Pressurised oil, beware of leaks.  
Consult technical manual for  
service procedures.



**WARNING**  
Stop engine and remove key  
before performing maintenance  
or repair work.



**WARNING**  
Danger – flying objects. Keep a  
safe distance from the machine  
when the engine is running.



**WARNING**  
Check tightness of bolts every 8  
hours – retighten if required.



**WARNING**  
Danger - keep clear of rotating  
blades.



**WARNING**  
Read the operator's manual  
before handling or using the  
machine. Observe the safety  
rules when operating.



**WARNING**  
Keep clear of the machines  
swing area.



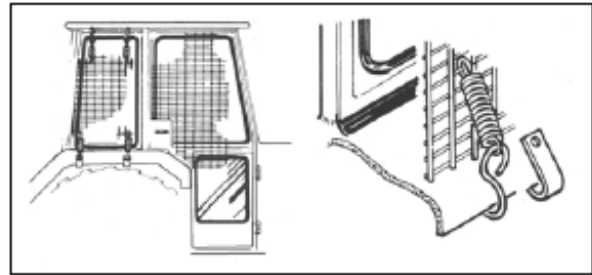
**WARNING**  
Danger - keep clear of overhead  
power lines.  
Where doubt exists, contact your  
local power company for advice.

# LRS QUADSAW & HXF FRAME

## VEHICLE / TRACTOR PREPARATION

We recommend vehicles are fitted with cabs using 'safety glass' windows and protective guarding when used with our machines.

Fit Operator Guard (Part No. 7313324) using the hooks provided. Shape the mesh to cover all vulnerable areas. The driver must be looking through mesh and/or polycarbonate glazing when viewing the flail head in any working position - unless the vehicle/ cab manufacturer can demonstrate that the penetration resistance is equivalent to, or higher than, that provided by mesh/polycarbonate glazing.



If the tractor has a roll bar only, a frame must be made to carry both mesh and polycarbonate glazing. The operator should also use personal protective equipment to reduce the risk of serious injury such as; eye protection (mesh visor to EN1731 or safety glasses to EN166), hearing protection to EN352, safety helmet to EN297, gloves, filter mask and high visibility clothing.

**Vehicle Ballast:** It is imperative when attaching 'third-party' equipment to a vehicle that the maximum possible stability of the machine and vehicle combination is achieved – this can be accomplished by the utilisation of 'ballast' in order to counter-balance the additional equipment added.

**Front weights** may be required for rear mounted machines to place 15% of total outfit weight on the front axle for stable transport on the road and to reduce 'crabbing' due to the drag of the cutting unit when working on the ground.

**Rear weights** may be required to maintain a reasonable amount of rear axle load on the opposite wheel from the arms when in work; for normal off-ground work i.e. hedge cutting this should be 20% of rear axle weight or more for adequate control, and for ground work i.e. verge mowing with experienced operators, this can be reduced to 10%.

All factors must be addressed in order to match the type and nature of the equipment added to the circumstances under which it will be used – in the instance of Power Arm hedgecutters it must be remembered that the machines centre of gravity during work will be constantly moving and will differ from that during transport mode, therefore balance becomes critical.

### **Factors that affect stability:**

- Centre of gravity of the tractor/machine combination.
- Geometric conditions, e.g. position of the cutting head and ballast.
- Weight, track width and wheelbase of the tractor.
- Acceleration, braking, turning and the relative position of the cutting head during these operations.
- Ground conditions, e.g. slope, grip, load capability of the soil/surface.
- Rigidity of implement mounting.

### **Suggestions to increase stability:**

- Increasing rear wheel track; a vehicle with a wider wheel track is more stable.
- Ballasting the wheel; it is preferable to use external weights but liquid can be added to around 75% of the tyre volume – water with anti-freeze or the heavier Calcium Chloride alternative can be used.
- Addition of weights – care should be taken in selecting the location of the weights to ensure they are added to a position that offers the greatest advantage.
- Front axle locking (check with tractor manufacturer).

**NOTE:** The advice above is offered as a guide for stability only and is not a guide to vehicle strength. It is recommended that you consult your vehicle manufacturer or local dealer to obtain specific advice on this subject, additionally advice should be sought from a tyre specialist with regard to tyre pressures and ratings suitable for the type and nature of the machine you intend to fit.

# LRS QUADSAW & HXF FRAME

## OVERVIEW

Spearhead Quadsaws 1400, 1600, 2000 & 2400 are a range of hydraulic arm mounted 4 blade saw units used for the cutting of trees and branches. Available in widths of 1.6, 2.1 & 2.4m the machines are equipped with 340mm, 400mm, 500mm & 600mm 'belt-driven' blades respectively. The machines have the following cutting capabilities;

*Quadsaw 1601 up to 70mm diameter material (up to 100mm when cutting single branches).*

*Quadsaw 2001 up to 80mm diameter material (up to 120mm when cutting single branches).*

*Quadsaw 2401 up to 120mm diameter material (up to 160mm when cutting single branches).*

Best performance is achieved if the unit is angled at no more than 45° from the upright when vertical cutting.

When working horizontally on hedges, best performance will be achieved on hedge widths of less than 100mm for the 1400 and 1600 models and less than 1200mm for the 2000 and 2400 models with branch diameters of up to 40mm; thicker diameter materials may cause the blades to stall or get stuck.

## SPECIFICATIONS

Specification/Model	Quadsaw 1601	Quadsaw 2001	Quadsaw 2401
Working Width	1.6m	2.1m	2.4m
Blade Diameter	400mm	500mm	600mm
Teeth Per Blade	60	72	78
Blade Material	Hardened Steel	Hardened Steel	Hardened Steel
Blade Speed	2600-2700rpm	3000-3200rpm	2700-2800rpm
Oil Flow Rate	40 l/min	50 l/min	45 l/min
Cutting Performance	Up to 100mm	Up to 120mm	Up to 160mm
Main Application	Vertical Cutting	Vertical Cutting	Vertical Cutting
Weight	98kg	220kg	280kg

### Noise Level

Noise measurements tests (\*) by the manufacturer using an 'Elma 1350B Noise Measurer', (ICE 651 Type II), performed under normal working conditions, produced the following result;

***The energy A-weighted Sound pressure is below 90 dB (A).***

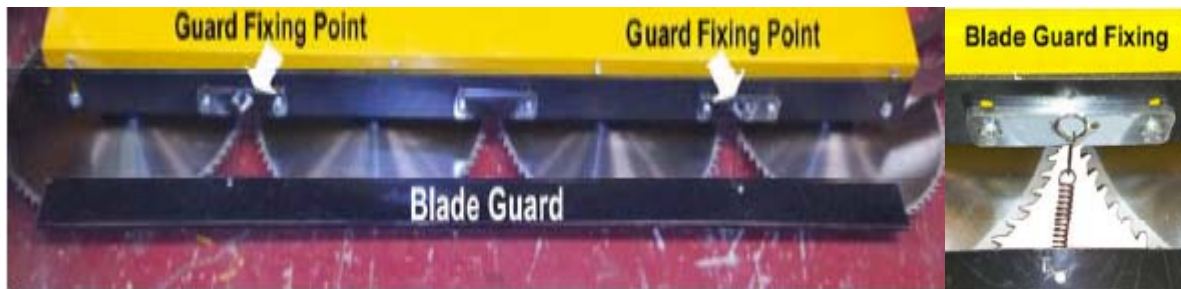
*(\*) Noise measurement was performed at a distance of 1 meter from the machine's critical noise maker positioned at a height of 1.5 meters above the ground.*

# LRS QUADSAW & HXF FRAME

## MACHINE ATTACHMENT

### **▲WARNING**

Attachment of the machine must be performed in a safe location on a firm level site. Care should be adopted at all times when handling or manoeuvring the machine during the attachment procedure; ensure all persons remain clear of the cutting blades which possess the potential to cause injury even when stationary. For reasons of safety the blade guard should be fitted to machine at all times and only removed for machine operation.



### **Attachment to Power Arm**

Machines are attached to Power Arms with a clamp bracket; fixing nuts should be torqued to 203Nm (150 ft lb).

- Ensure blades are correctly mounted. Blades **MUST** be mounted in a downward cut rotation in relation to the tractors driving direction – *refer to illustrations on following page.*
- Install and connect the hydraulic hoses ensuring the correct cutting direction is achieved. The separate drainage hose (max. 1.5 bar) must be led directly back to the oil reservoir.
- Check system for leaks.
- Check belt tension before using the machine; *refer to belt tensioning section for details.*
- On initial installation the blade speed should be measured and the flow control valve adjusted to achieve the optimum working speeds of;

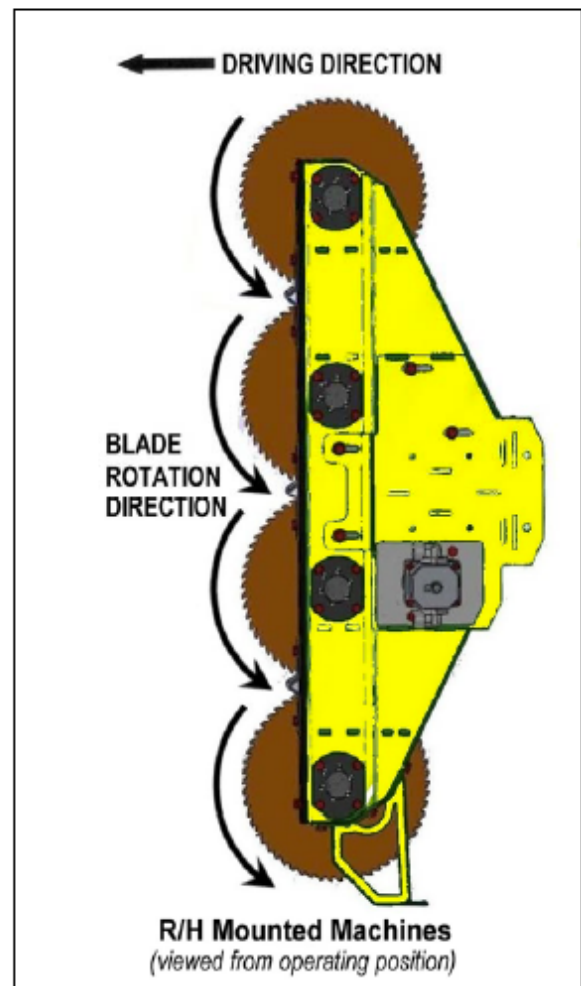
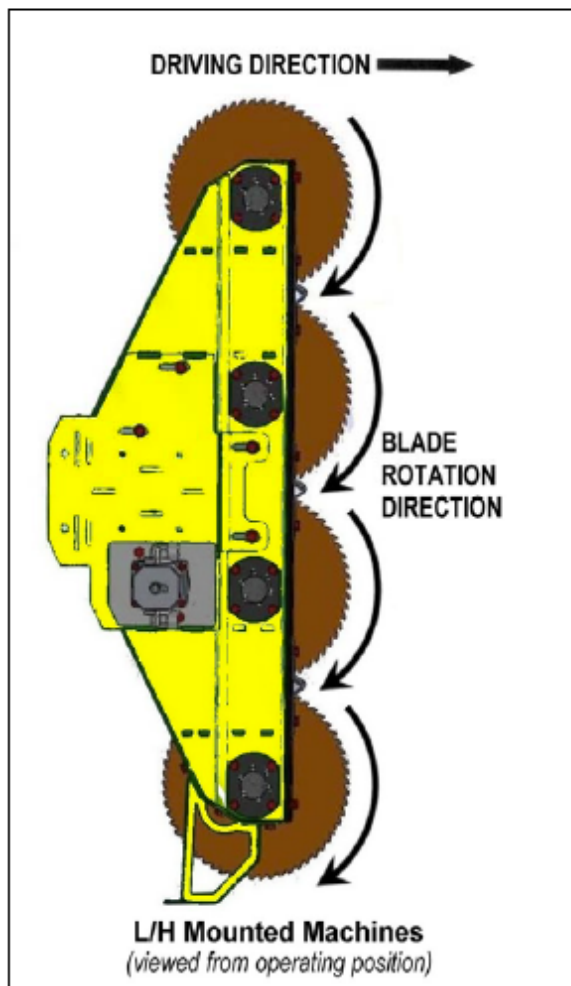
**2600-2700RPM for 1.6m models** (*Quadsaw 1601*)

**3000-3200RPM for 2.1m models** (*Quadsaw 2001*)

**2700-2800RPM for 2.4m models** (*Quadsaw 2401*)

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## Blade Cutting Direction



**⚠ WARNING** Blades must be mounted to cut in a downward direction only.



# LRS QUADSAW & HXF FRAME

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## QUADSAW OPERATION

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It is recommended that forward speed is kept to a minimum when starting work in order to retain the correct working speed of the blades. Set the angle of the Quadsaw so it is positioned at right angles to the work and adjust the machine position so the branches meet the saw blades 'straight on'.

Wherever possible try to keep the blades running vertical in relation to the direction of travel, this will help prevent them from 'distorting' during operations.

A skid is available as an option which can be mounted on the base of the machine to prevent the blades from hitting the ground.

Should small branches, debris or unwanted material get stuck in the blades the **machine and tractor must be switched off** and the starting key removed before attempting to clear the blockage. If necessary, remove the belt cover to gain better access to the blockage; replace cover immediately before starting or using the machine.

**▲WARNING** Never attempt to run the machine with the belt cover removed.

**▲WARNING** Great care must be taken when attempting to clear debris from the blade and/or belt area of the machine; sharp components and numerous pinch risk points exist in these locations. Safety gloves and safety eyewear should be worn and wherever possible the use of a suitable tool should be used to remove any debris to ensure hands and fingers are kept clear of any risk areas.

When in charge of the machine always obey the following rules;

- Always inspect the work area prior to operation and remove any dangerous materials.
- Never operate the machine with persons or animals in close proximity.
- Ensure all cab guarding is in place and the tractor windows are kept shut.
- Only operate the machine at the correct blade speed.
- Never use the machine in excess of the maximum oil pressure in the hoses (250 bar, 210 bar for 1400 models).
- Never stop the engine with the PTO engaged.
- Never transport the machine with the PTO engaged.
- Never transport the machine without the blade protection guards fitted.
- Never approach the machine when it is running, always switch it off and stop the tractor.
- Always remove the tractor ignition key before leaving the cab.
- Never use the machine to perform tasks it was not designed for.
- Always lower the machine to rest on the ground with blade protection guards fitted when the unit is parked up or not in use.

# LRS QUADSAW & HXF FRAME

## QUADSAW OPERATION

**⚠ WARNING** Beware of blades and belt areas when maintaining and servicing.

### Initial Maintenance

- After an initial 2 hours work, re-tighten taper-lock bushes to 31 Nm.
- After the first day's work, all bolts, screws and taper-lock bushes must be re-tightened - if the bushes loosen at a future time they should be secured with 'Loctite' or similar.

### Regular Maintenance

- Check all bolts and screws on a regular basis and re-tighten as and when required.
- The plastic strips should be adjusted down to a 1mm clearance from the blades – these strips must be replaced when no further adjustment is available and the clearance distance exceeds 5mm.
- Branch deflectors must be adjusted as close as possible to the blades without touching.
- Remove belt guard and clean the housing.
- Inspect belts and check their tension, adjust if required.
- Check condition of protection guards – always replace guards before using the machine.

### Belts

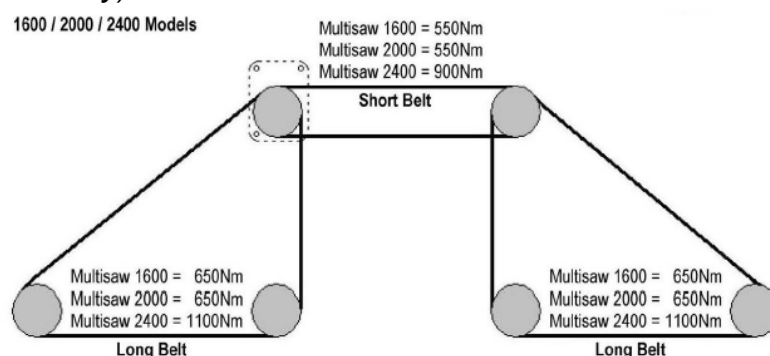
It is important that belts are kept in good condition and are correctly tensioned at all times.

The correct tensions are as follows;

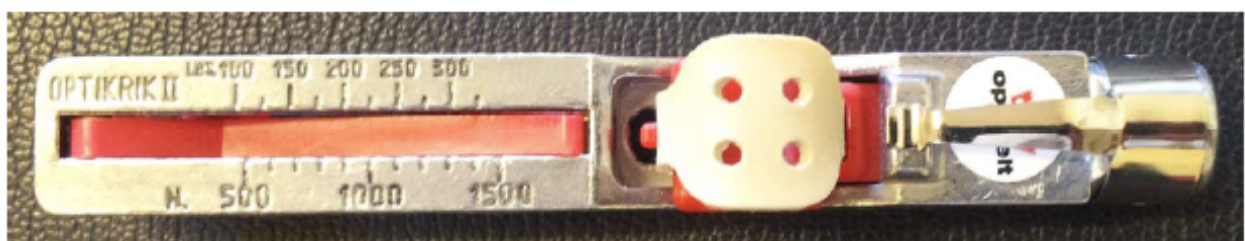
Quadsaw 1601: Short belt 550Nm / Long belts 650Nm (*New belts 700Nm / 900Nm respectively*)

Quadsaw 2001: Short belt 550Nm / Long belts 650Nm (*New belts 700Nm / 900Nm respectively*)

Quadsaw 2401: Short belt 900Nm / Long belts 1100Nm (*New belts 1100Nm / 1300Nm respectively*)



### Belt Tension Measuring Tool



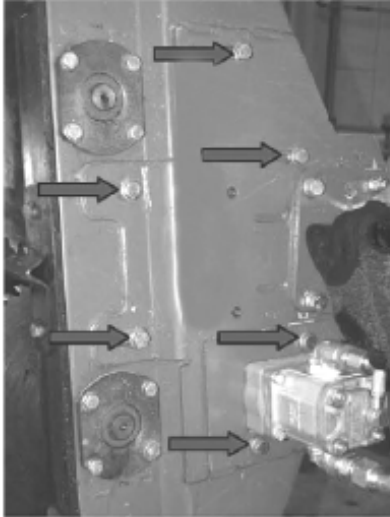
# LRS QUADSAW & HXF FRAME

## Tensioning Belts

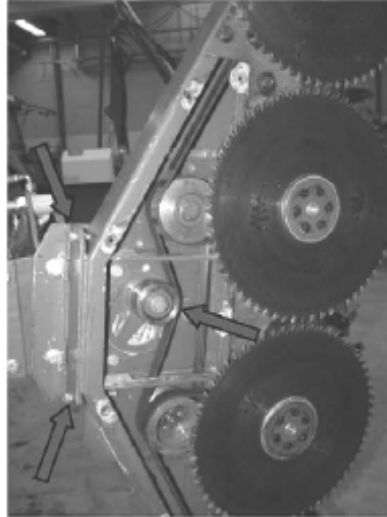
### **⚠ WARNING**

Great care must be adopted when servicing this part of the machine as there is risk of trapping hands or fingers in the belts, pulleys or blades.

Loosen bolts indicated



Remove cover



Loosen bolt and turn idler roller



Set tension of the centre belt



Set tension of lower belt



Set tension of upper belt



Set the tensions at centre point of the belts between the pulleys, turn blades a few times and re-check.

### **⚠ WARNING**

Replace cover and tighten bolts before attempting to use the machine.

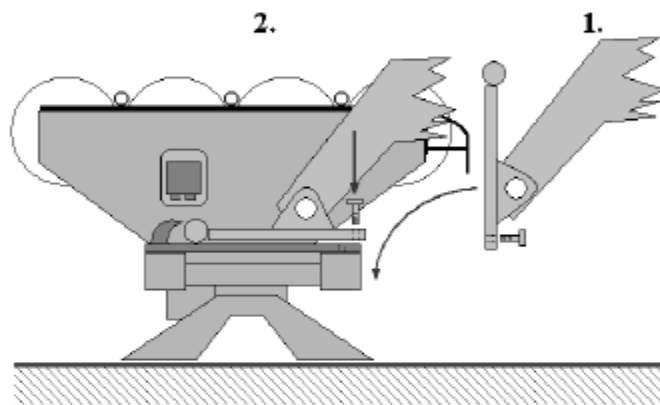
# LRS QUADSAW & HXF FRAME

## HXF3300 MOUNTING CARRIAGE

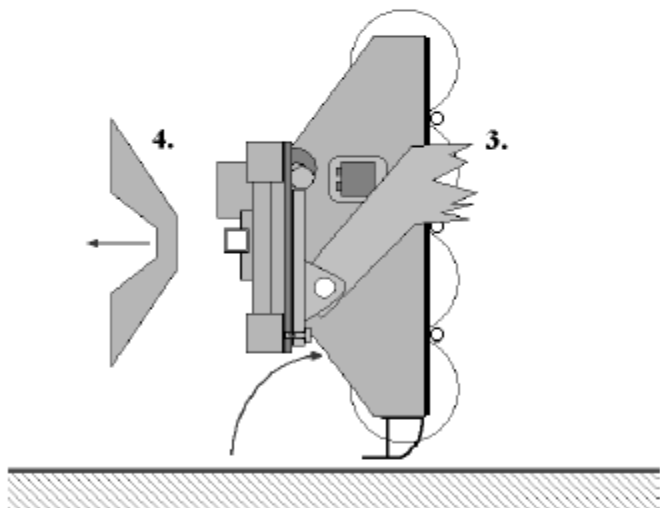
The HXF3300 is a mounting carriage specifically designed for attaching Multisaw 2000 and 2400 models to Telehandlers. The HXF3300 features a reach of approximately 2.5 metres, 180° manual folding system, and hydraulic collision safety. The overall weight of the unit, without tools, is 225kg. If necessary, suitable ballasting should be fitted to the vehicle to ensure the unit remains stable and balanced in all working positions under all conditions.

**⚠ DANGER** Never use the machine on a vehicle that is unstable or unsuitable.

## ATTACHING THE CARRIAGE



- 1) Drive up to the machine, tilt attachment bracket into the horizontal position.
- 2) Locate attachment bar into hooks and secure latches.



- 3) Tilt bracket backwards 90°.
- 4) Detach supporting legs.



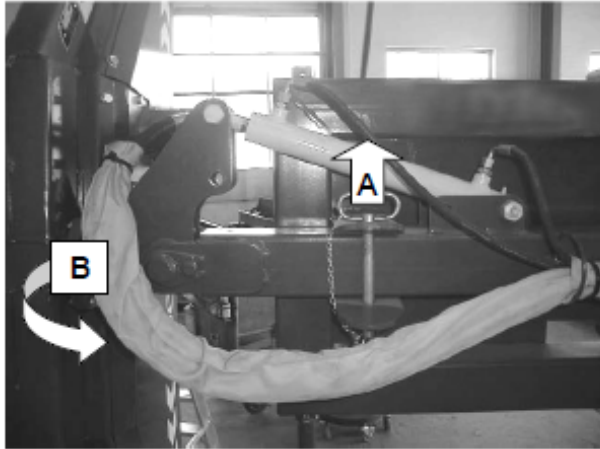
**⚠ DANGER**

Keep well clear of all overhead power lines when manoeuvring or operating this machine.

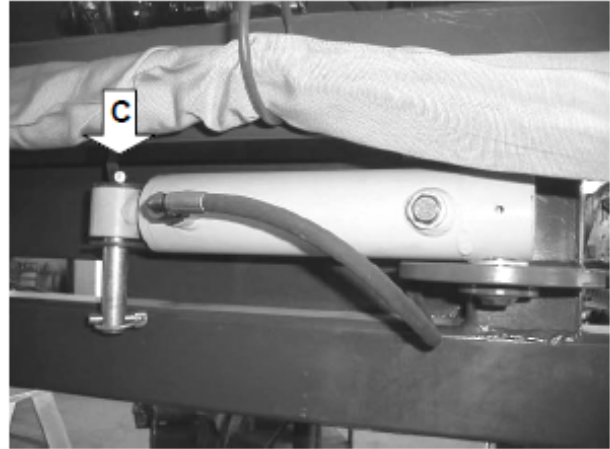
# LRS QUADSAW & HXF FRAME

## TRANSPORT & WORK POSITIONS

Transport Position



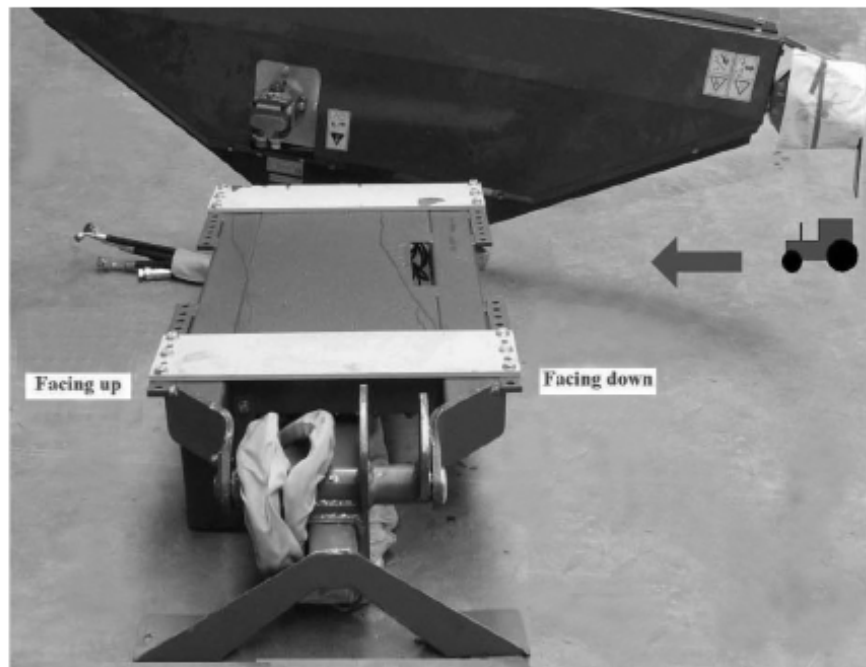
Work Position



The procedure for moving the machine from transport position to work position is as follows;

- A) Remove transport pin.
- B) Manually fold the arm out by 180° into the work position.
- C) Fit and secure the ram pin.

## Storage Position



## **⚠️ WARNING**

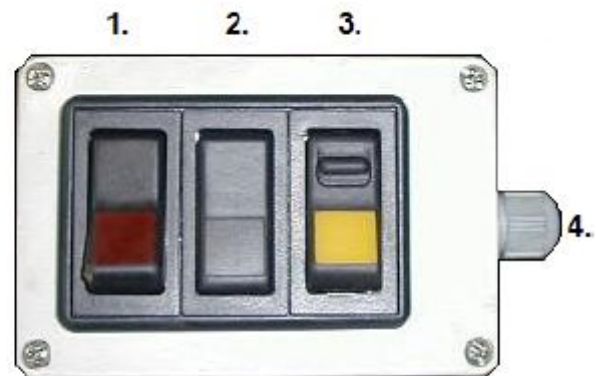
Blade guard must be fitted when the machine is in storage or parked.

# LRS QUADSAW & HXF FRAME

## HXF3300 CONTROLS

### Operator Controls

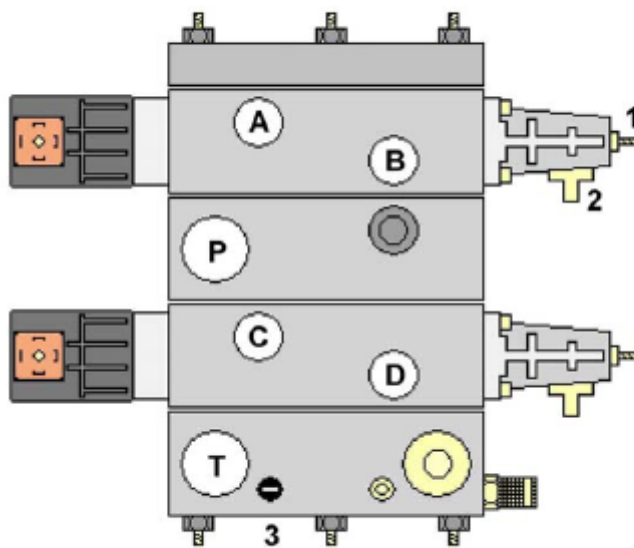
- 1) On/Off Switch.
- 2) Cutting Angle Switch.
- 3) Tool On/Off Switch.
- 4) Control Unit Fuse (8 Amp).



### Cutting Angle Adjustment

The cutting angle is adjusted hydraulically by operation of the rocker switch (2); operate the switch in the required direction to set the desired cutting angle before starting work. The angle switch may be operated during work to make minor angling adjustments, but it is recommended to halt work before making major adjustments to the cutting angle.

### Valve Unit



- 1) Flow Adjustment.
  - 2) Manual Override.
  - 3) Pressure Relief Valve (200 bar).
- A) Flow for Tool (regulated).  
B) N/A  
C) Cutting Angle  
D) Cutting Angle  
P) Pressure (flow from pump).  
T) Tank Connection  
(pressureless + T from motor).

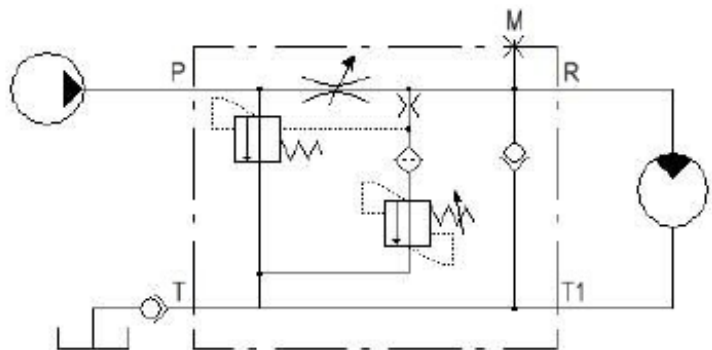
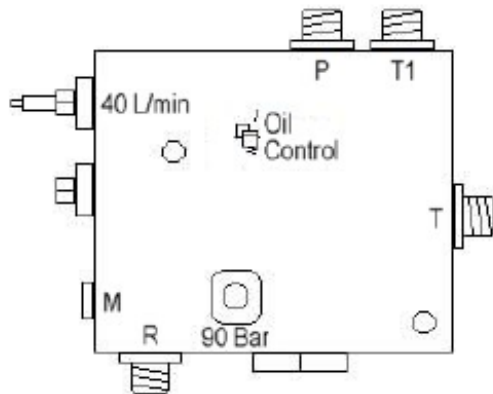
# LRS QUADSAW & HXF FRAME

## Splitter Valve

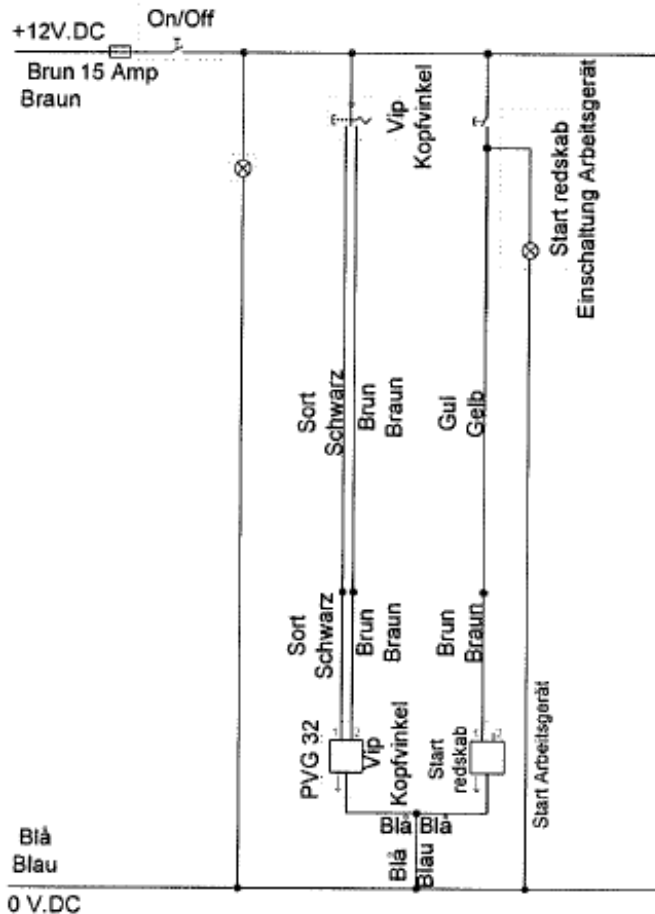
- P) Pressure from pump (Max. 150L/min).
- R) Regulated oil flow (Max. 90L/min).
- T1) Return from motor.
- T) Tank connection.
- M) Manometer test plug.

P / R / T1 / T = 3/4" Thread  
M = 1/4" Thread

HXF 3300  
50 L/min  
150 bar



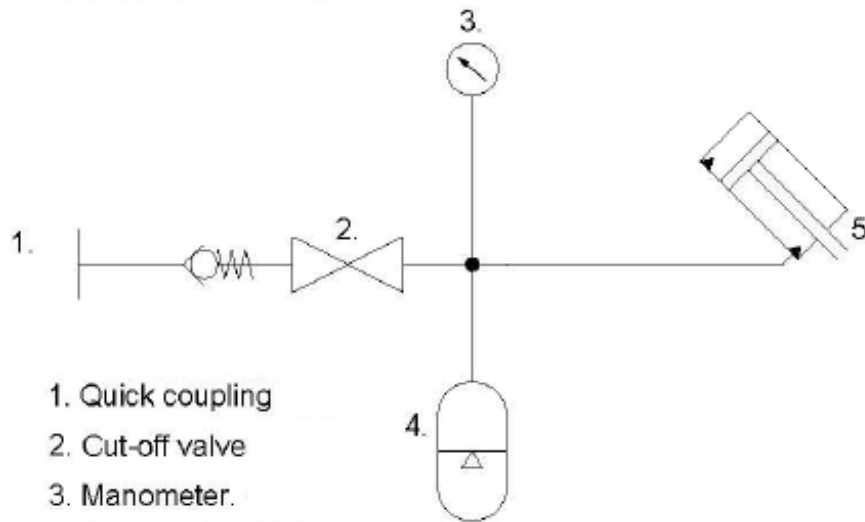
## Electrical Diagram



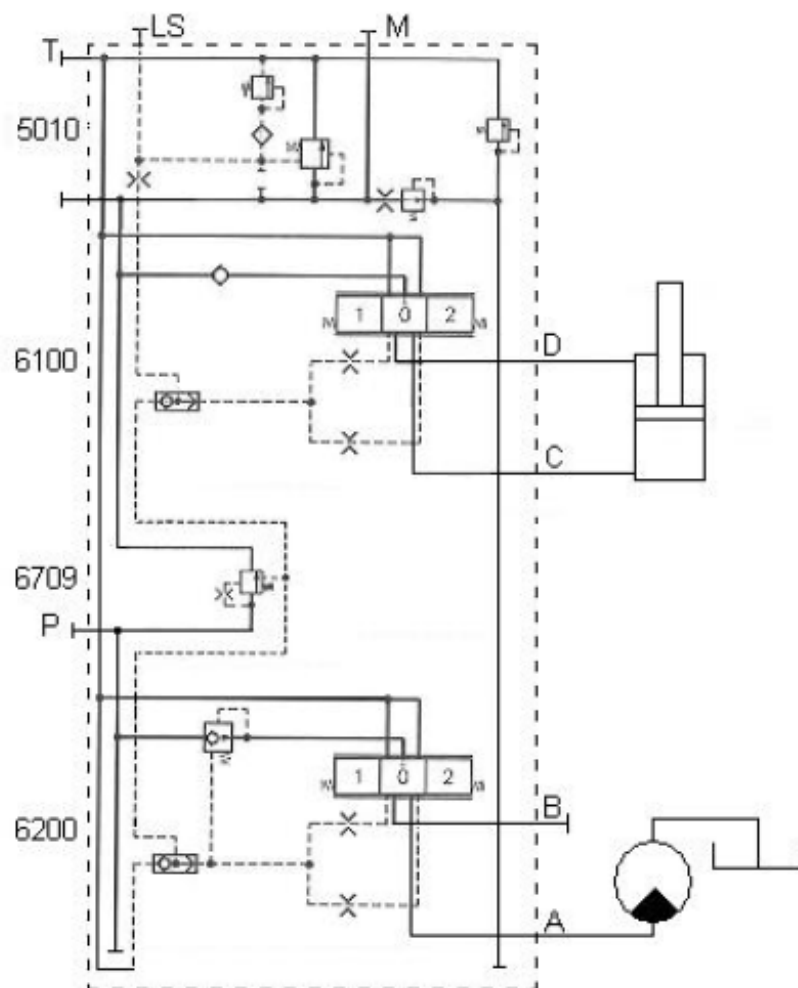
# LRS QUADSAW & HXF FRAME

## Hydraulic Diagrams

Break-back 40-50 bar



- 1. Quick coupling
- 2. Cut-off valve
- 3. Manometer.
- 4. Accumulator 32 bar
- 5. Break back ram





# LRS QUADSAW & HXF FRAME

## HXF3300 MAINTENANCE

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### Lubrication

Grease the lubrication points on machine on the following basis;

- Daily prior to use.
- Always prior to storage.
- Always after it has been washed.

**NOTE:** Never use grease that contains Molybdenum Disulfide on nylon bushes.

### Hydraulic Hoses

Inspect hydraulic hoses and fittings on a daily basis prior to using the machine; ensure they are free from damage or leaks and that the hoses are not rubbing on machine components. Any damaged hoses or fittings should be repaired or replaced immediately.

Run new hoses alongside the old ones prior to removal to ensure the correct routing is retained. When replacing a hose avoid twisting it, use 2 spanners to tighten it.

Ensure hoses bend with machine movements and that they do not twist or strain.

All hose connections are of a 'soft seal' type and should only be turned a further 1/2 turn more than hand tight in order to be leak-proof (*see table below*).

BSP (size)	Nm	
1/4"	24 Nm	18 lbs/ft
3/8"	33 Nm	24 lbs/ft
1/2"	44 Nm	35 lbs/ft
3/4"	84 Nm	62 lbs/ft
1"	115 Nm	85 lbs/ft

### Oil Supply

Check oil level in the tank each day prior to starting work - it is good practice to constantly keep an eye on the sight glass level as a ruptured pipeline can empty a system within minutes; a pump or motor that runs out of oil will be damaged beyond repair very quickly.

The oil must be changed if there are signs that it is contaminated (discolored).

Ensure cleanliness when replacing or topping up the oil by;

- Carefully cleaning around the filler neck prior to opening.
- Always using clean containers for refilling the system.
- Regular inspection of the filtration system.
- Never letting the oil level fall below the level in the sight glass.

Check daily for all hydraulic connections and fittings are in good condition. Any defect or leak must be immediately repaired, it is part of the daily maintenance that will reduce costs and prolong machine life.

If fittings require retightening always use 2 spanners and avoid over tightening. If the fitting continues to leak, replace it.

# LRS QUADSAW & HXF FRAME

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## Regular Maintenance Tasks

After every 4 hours of use the following maintenance task should be observed;

- Check bolts for tightness and – *retighten if required.*
- Check valve block, hoses and fittings for signs of leaks – *retighten or replace seals if required.*
- Bolts and bushes should be greased and retightened.

## Bolts and Bushes

All major pivot points are equipped with replaceable bushings, if they show signs of wear, replace them. **NOTE: Never use grease that contains Molybdenum Disulfide on nylon bushes.**

## Machine Storage

Before the machine is placed into storage, it should be thoroughly washed. Remove all traces of grass, leaves and dirt.

Take care if using high pressure jet hoses or steam cleaners as these can quickly damage paintwork and decals. Remove all cleaning products thoroughly to avoid them from staining or damaging the paint.

Grease lubrication points until fresh grease comes out.

Where applicable, rotor drive belts should be loosened to remove tension and 'relax' the belts.

Ideally, the machine should be stored in a clean dry environment where it is protected from the elements; if the machine has to be stored outside it is advisable to keep it covered over to protect it from rain and sunlight. Control units should be stored clear of the ground and protected from the damp. It is recommended that canvas tarpaulin or similar coverings are used to cover the machine rather than plastic sheeting which would harbor condensation and promote rapid corrosion.

**⚠ WARNING** Blade guard must be fitted when the machine is in storage or parked.

# LRS QUADSAW & HXF FRAME

## TROUBLESHOOTING GUIDE

Problem	Possible Cause	Solution
Valve or motor leak.	Oil pressure too high. Hose incorrectly fitted or loose.	Check pressure. Replace gasket. Refit and tighten correctly.
Overheating.	Tool speed incorrect. Incorrect oil level. Wrong oil type. Blades clogged. Air temperature too high.	Check PTO speed. Check oil level. Empty tank and fill with correct oil. Stop machine and clear blades. Reduce operating speed/install fan.
Electrical failure.	Wrong supply from tractor. Contacts exposed to water.	Check fuse and supply from tractor. Always store protected from water.
Hydraulic failure.	Oil level too low. Pressure hose kinked. Oil leak in pressure hose. Oil pump suction filter blocked.	Top up oil to correct level. Check pump rotates / check hoses. Check machine for leaks. Replace filter element.
Irregular arm movements.	Broken spring in the PVG valve. Defective ram seals.	Check spring – <i>replace if required.</i> Check seals – <i>replace if required.</i>
Electric valve not responding.	Faulty wiring. Dirt in valve. Valve stuck. Insufficient voltage.	Check wiring and switches. Check and clean valve. Replace valve. Check for bad connection.

## MACHINE DISPOSAL

At the end of its working life disposal of this machine and any component parts must be performed in an environmentally friendly manner respecting the current laws relating to the subject. Materials forming the machine that must undergo differentiated division and disposal are;

- Steel
- Rubber
- Plastic

# LRS QUADSAW & HXF FRAME

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## Ordering Your Part's

When ordering parts please refer to your parts list to help your dealer with your order.

Part number and quantity  
Description  
Machine model number  
Serial number of the machine  
Delivery instructions (e.g. next day).

Delivery is normally via carrier direct to your dealer. Please check with your dealer for stock availability and arrangement of dispatch. Ensure you or your dealer has sufficient cover for parts requirement outside factory hours.

When ordering your seal kits please quote both codes stamped on the base of the cylinder.

### Important Note

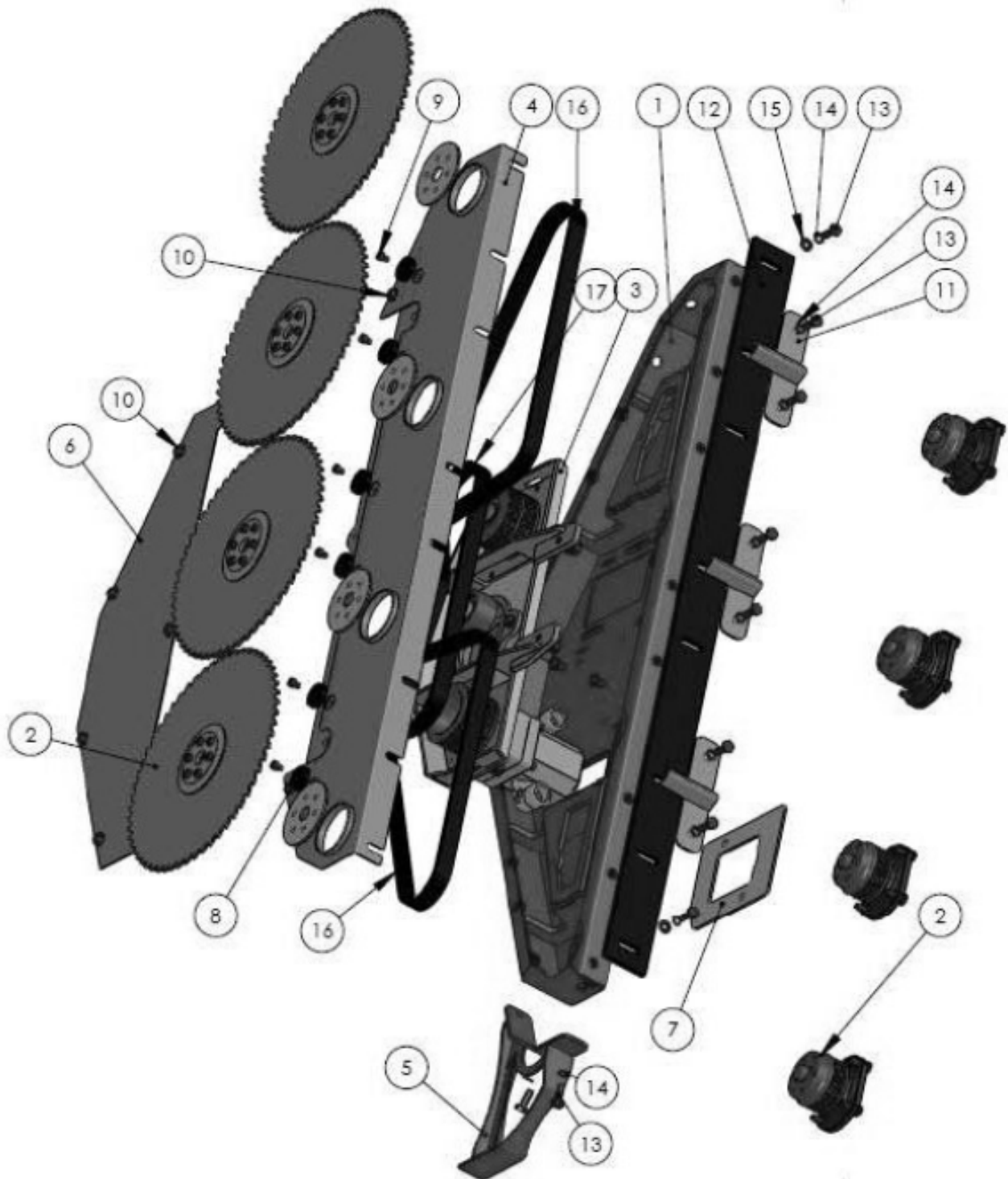
The information contained in this manual is correct at the time of publication. However, in the course of constant development, changes in specification are inevitable. Should you find the information given in this book different to the machine it relates to, please contact the "After Sales Department" for advice.

### Key:

(LH) = Left hand  
(RH) = Right hand

# LRS QUADSAW & HXF FRAME

## Quadsaw 1601 - Main Assembly



# LRS QUADSAW & HXF FRAME

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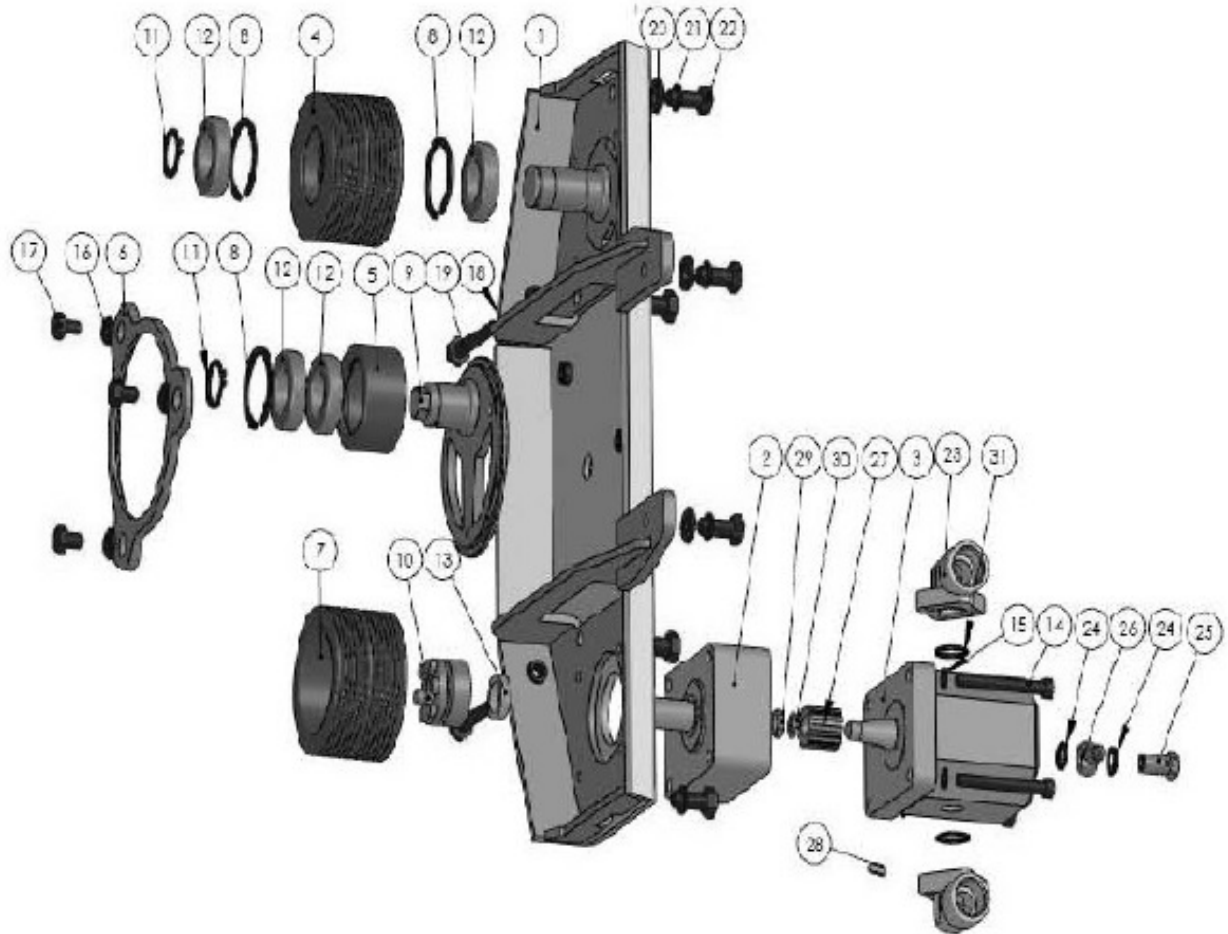
## Quadsaw 1601 - Main Assembly

REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 1600 - MAIN ASSEMBLY</b>
1	1	1070072	FRAME
2	<i>See blade unit page</i>		DRIVE PULLEY ASSEMBLY
3	1	1070088	DRIVE BOX
4	1	1070073	DECK
5	1	1070074	SKID
6	1	1070075	BELT COVER
7	1	1070076	PLATE
8	6	1070077	RUBBER BLOCK
9	6	1070078	BOLT
10	9	1070079	BOLT
11	3	1070080	BRANCH DEFLECTOR
12	1	1070081	PLASTIC STRIP
13	11	1070082	BOLT
14	11	1070083	WASHER
15	2	1070084	WASHER
16	2	1070085	BELT (LONG)
17	1	1070086	BELT (SHORT)
18	1	1070087	* PROTECTION

\* *not illustrated*

# LRS QUADSAW & HXF FRAME

## Quadsaw 1601 - Drive Assembly



# LRS QUADSAW & HXF FRAME

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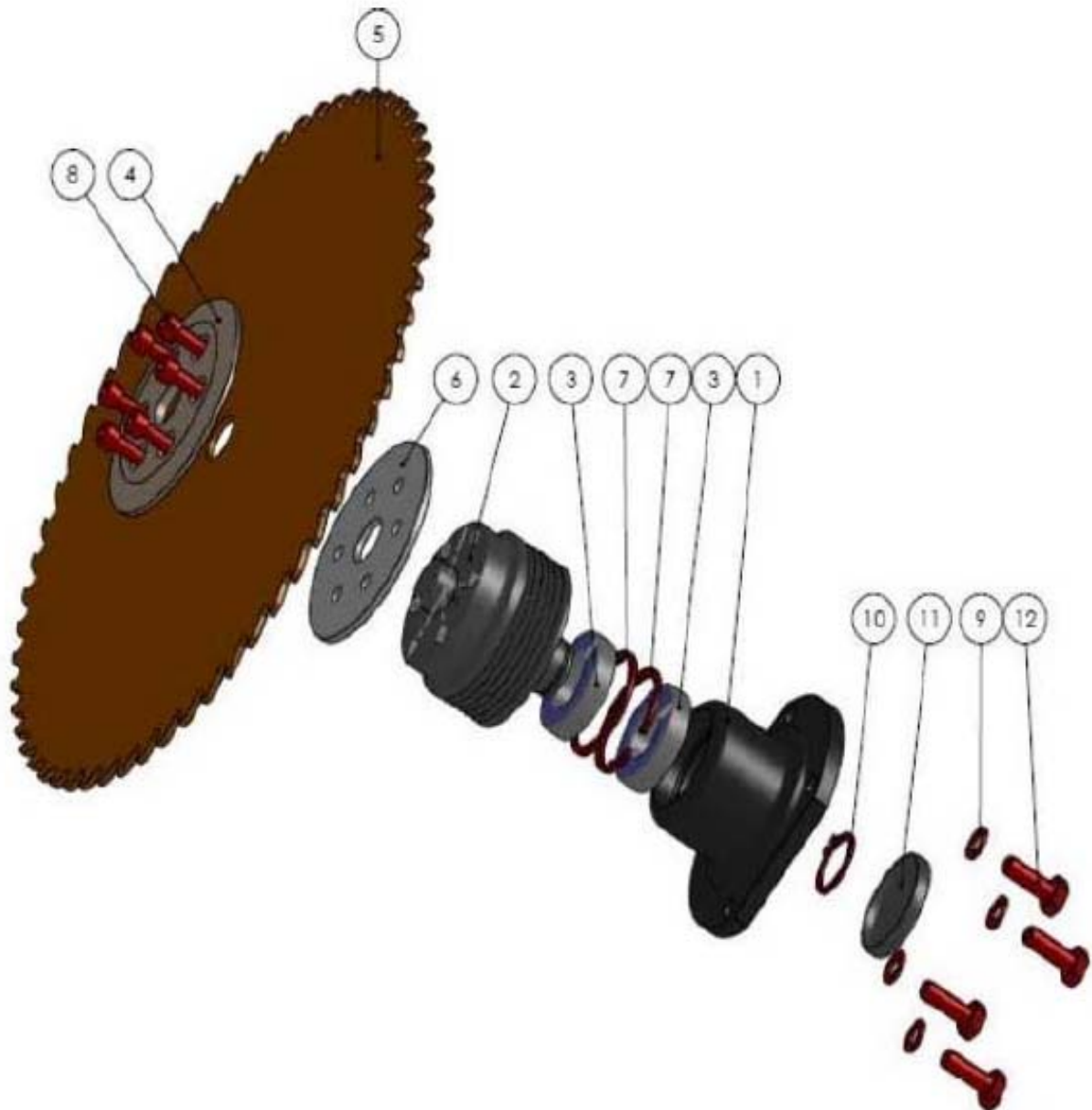
## Quadsaw 1601 - Drive Assembly

REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 1600 - DRIVE ASSEMBLY</b>
1	1	1070088	DRIVE BOX
2	1	1070089	DRIVE SUPPORT
3	1	1070090	MOTOR (17cc)
4	1	1070091	BELT PULLEY
5	1	1070092	IDLER PULLEY
6	1	1070093	ADJUSTER RING
7	1	1070094	DRIVE PULLEY
8	3	1070095	CIRCLIP
9	1	1070096	ADJUSTMENT WHEEL
10	1	1070097	EASY LOCK BUSH
11	2	1070098	CIRCLIP
12	4	1070099	BEARING
13	1	1070100	ADJUSTER
14	4	1070101	BOLT
15	4	1070064	WASHER
16	3	1070084	WASHER
17	3	1070102	BOLT
18	2	1070103	NUT
19	2	1070104	BOLT
20	4	1070105	WASHER
21	6	1070106	WASHER
22	6	1070107	BOLT
23	2	1070108	FLANGE CONNECTOR
24	2	1070109	WASHER
25	1	1070110	BANJO BOLT
26	1	1070111	BANJO
27	1	1070112	SPLINED COUPLING
28	1	1070113	SOCKET
29	1	1070114	NUT
30	1	1070115	WASHER
31	2	1070116	O RING



# LRS QUADSAW & HXF FRAME

## Quadsaw 1601 - Blade Unit Assembly



# LRS QUADSAW & HXF FRAME

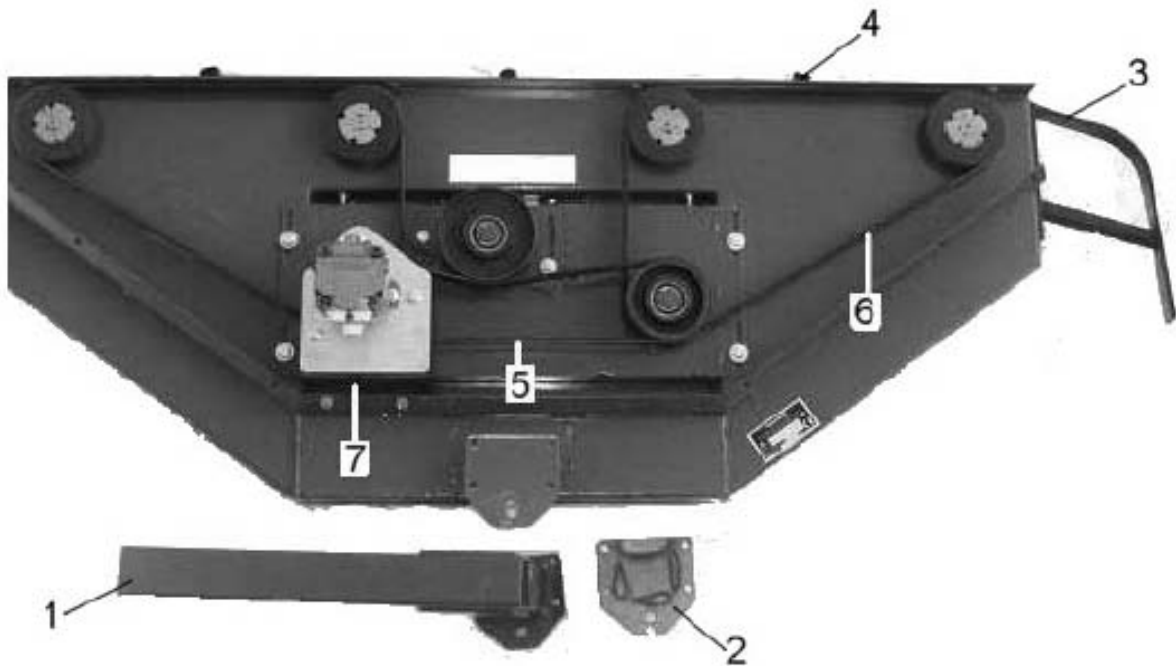
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## Quadsaw 1601 - Blade Unit Assembly

REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 1600 - BLADE ASSEMBLY</b>
1	1	1070117	BEARING HOUSING
2	1	1070118	DRIVE PULLEY
3	2	1070099	BEARING
4	1	1070119	OUTER BLADE PLATE
5	1	1070001	BLADE
6	1	1070120	INNER BLADE PLATE
7	2	1070095	CIRCLIP
8	6	1070121	SETSCREW
9	4	1070083	WASHER
10	1	1070098	CIRCLIP
11	1	1070122	COVER PLATE
12	4	1070082	BOLT

# LRS QUADSAW & HXF FRAME

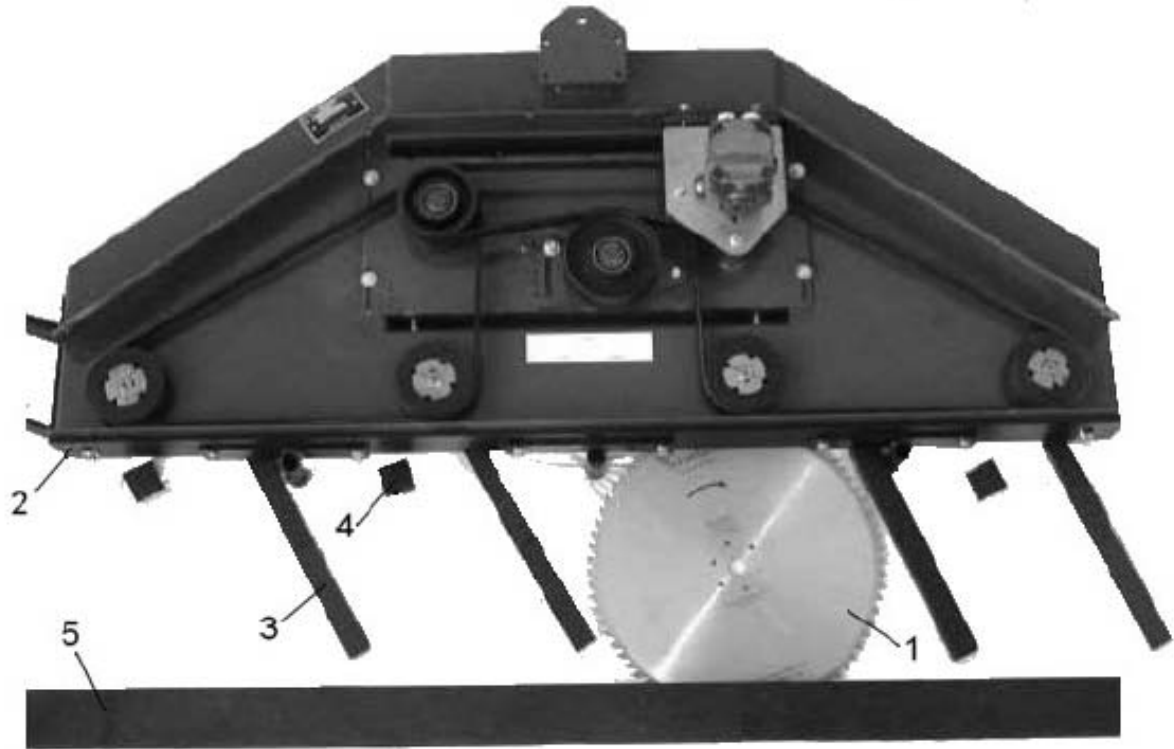
## Quadsaw 2001/2401 - Main Assembly



REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 2000/2400 - MAINFRAME (1)</b>
1	1	1070005	MOUNTING ARM - <i>Multisaw 2000</i>
	1	1070006	MOUNTING ARM - <i>Multisaw 2400</i>
2	1	1070007	MOUNTING PLATE
3	1	1070010	SKID (LH USE) - <i>Multisaw 2000</i>
	1	1070011	SKID (LH USE) - <i>Multisaw 2400</i>
	1	1070008	SKID (RH USE) - <i>Multisaw 2000</i>
	1	1070009	SKID (RH USE) - <i>Multisaw 2400</i>
4	3	1070012	BRANCH CARRIER - <i>Multisaw 2000</i>
	3	1070013	BRANCH CARRIER - <i>Multisaw 2400</i>
5	1	1070014	BELT (SHORT) - <i>Multisaw 2000</i>
	1	1070015	BELT (SHORT) - <i>Multisaw 2400</i>
6	2	1070016	BELT (LONG) - <i>Multisaw 2000</i>
	2	1070017	BELT (LONG) - <i>Multisaw 2400</i>
7	1	1070018	RUBBER PROTECTION
8	1	1070199	BELT COVER - 2400 LH ( <i>Not shown</i> )
	1	1070200	BELT COVER - 2400 RH ( <i>Not shown</i> )

# LRS QUADSAW & HXF FRAME

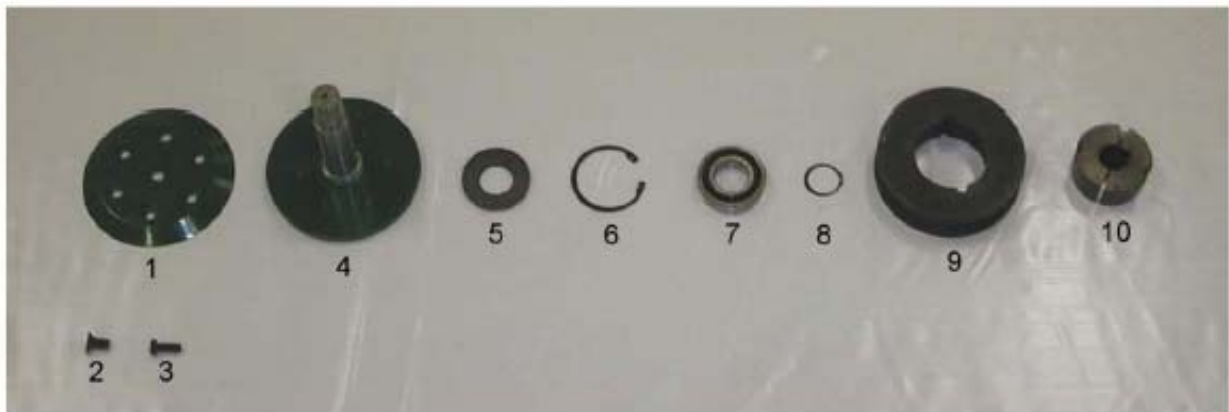
## Quadsaw 2001/2401 – Main Assembly



REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 2000/2400 - MAINFRAME (2)</b>
1	4	1070002	BLADE - <i>Multisaw 2000</i>
	4	1070003	BLADE - <i>Multisaw 2400</i>
2	1	1070019	PLASTIC STRIP - <i>Multisaw 2000</i>
	1	1070020	PLASTIC STRIP - <i>Multisaw 2400</i>
3	4	1070021	WEAR PLATE (LONG) - <i>Multisaw 2400</i>
4	4	1070022	WEAR PLATE (SHORT)
5	1	1070023	TRANSPORT PROTECTOR

# LRS QUADSAW & HXF FRAME

## Quadsaw 2001/2401 – Blade Shaft Assembly

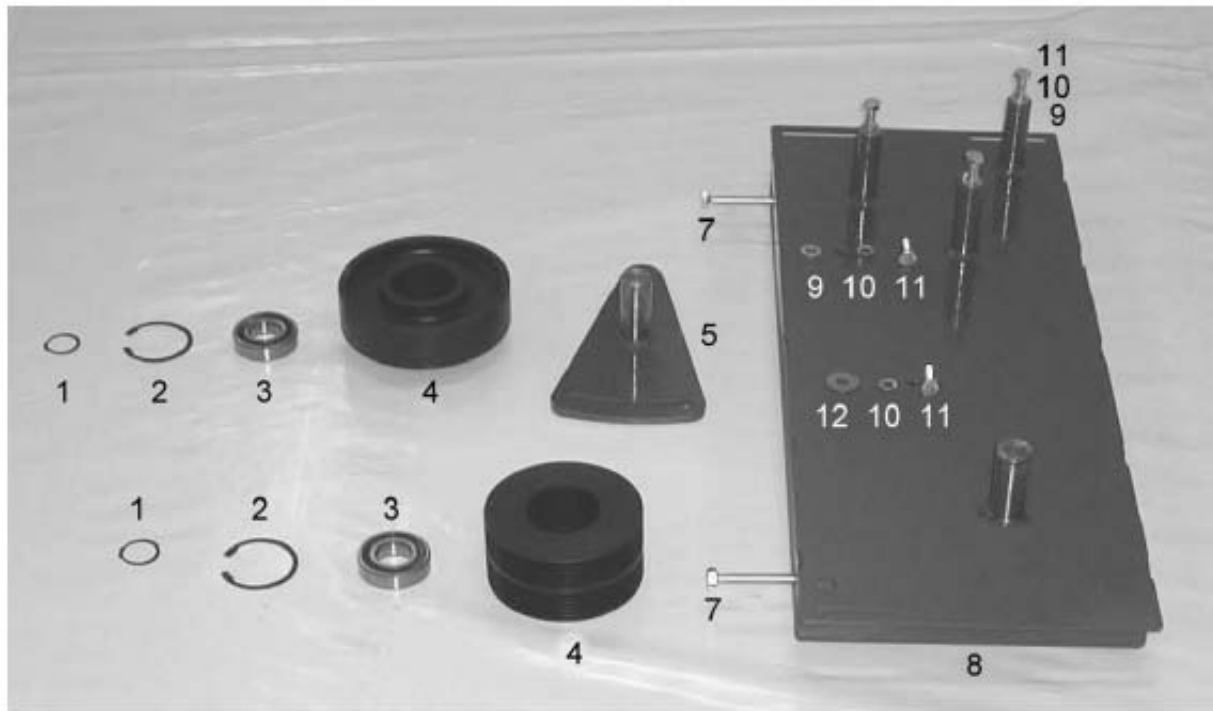


REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 2000/2400 - BLADE SHAFT</b>
1	4	1070024	MOUNTING PLATE
2	4	1070025	CENTRE BOLT (CONICAL) - <i>Multisaw 2000</i>
	4	1070026	CENTRE BOLT (ALLEN) - <i>Multisaw 2000/2400</i>
3	24	1070027	BOLT
4	4	1070028	BLADE SHAFT - <i>Multisaw 2000</i>
	4	1070029	BLADE SHAFT - <i>Multisaw 2400</i>
5	4	1070030	SEAL - <i>Multisaw 2000</i>
	4	1070031	SEAL - <i>Multisaw 2400</i>
6	8	1070032	CIRCLIP - <i>Multisaw 2000</i>
	8	1070033	CIRCLIP - <i>Multisaw 2400</i>
7	8	1070034	BEARING - <i>Multisaw 2000</i>
	8	1070035	BEARING - <i>Multisaw 2400</i>
8	4	1070036	CIRCLIP - <i>Multisaw 2000</i>
	4	1070037	CIRCLIP - <i>Multisaw 2400</i>
9	4	1070038	PULLEY - <i>Multisaw 2000</i>
	4	1070039	PULLEY - <i>Multisaw 2400</i>
10	4	1070040	TAPERLOCK - <i>Multisaw 2000</i>
	4	1070041	TAPERLOCK - <i>Multisaw 2400</i>

NOTE: Quantities stated are per machine

# LRS QUADSAW & HXF FRAME

## Quadsaw 2001/2401 – Adjusting System

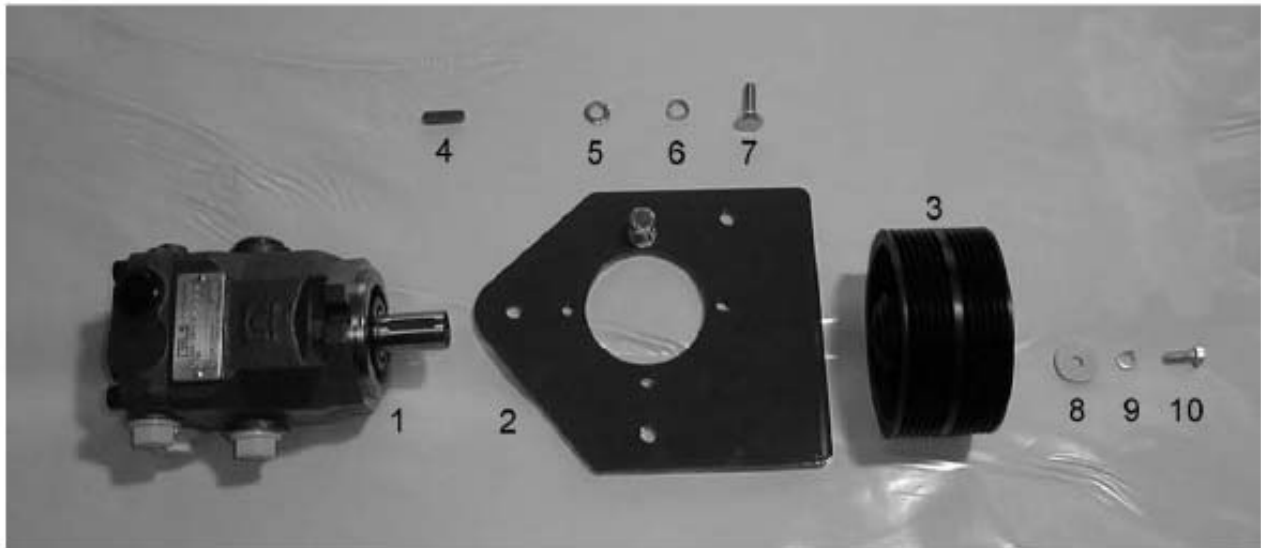


REF.	QTY.	PART No.	DESCRIPTION
<b>MULTISAW 2000/2400 - ADJUSTER SYSTEM</b>			
1	2	1070036	CIRCLIP
2	4	1070032	CIRCLIP
3	4	1070034	BEARING
4	1	1070042	TENSION PULLEY - <i>Multisaw 2000</i>
	1	1070043	TENSION PULLEY - <i>Multisaw 2400</i>
5	1	1070044	ADJUSTER PLATE - <i>Multisaw 2000</i>
	1	1070045	ADJUSTER PLATE - <i>Multisaw 2400</i>
6	1	1070046	DOUBLE PULLEY - <i>Multisaw 2000</i>
	1	1070047	DOUBLE PULLEY - <i>Multisaw 2400</i>
7	2	1070048	ADJUSTMENT BOLT
8	1	1070051	ADJUSTMENT BOX - <i>Multisaw 2000 LH</i>
	1	1070049	ADJUSTMENT BOX - <i>Multisaw 2000 RH</i>
	1	1070052	ADJUSTMENT BOX - <i>Multisaw 2400 LH</i>
	1	1070050	ADJUSTMENT BOX - <i>Multisaw 2400 RH</i>
9	4	1070053	WASHER
10	5	1070054	SPRING WASHER
11	5	1070055	BOLT
12	1	1070056	WASHER

NOTE: Quantities stated are per machine

# LRS QUADSAW & HXF FRAME

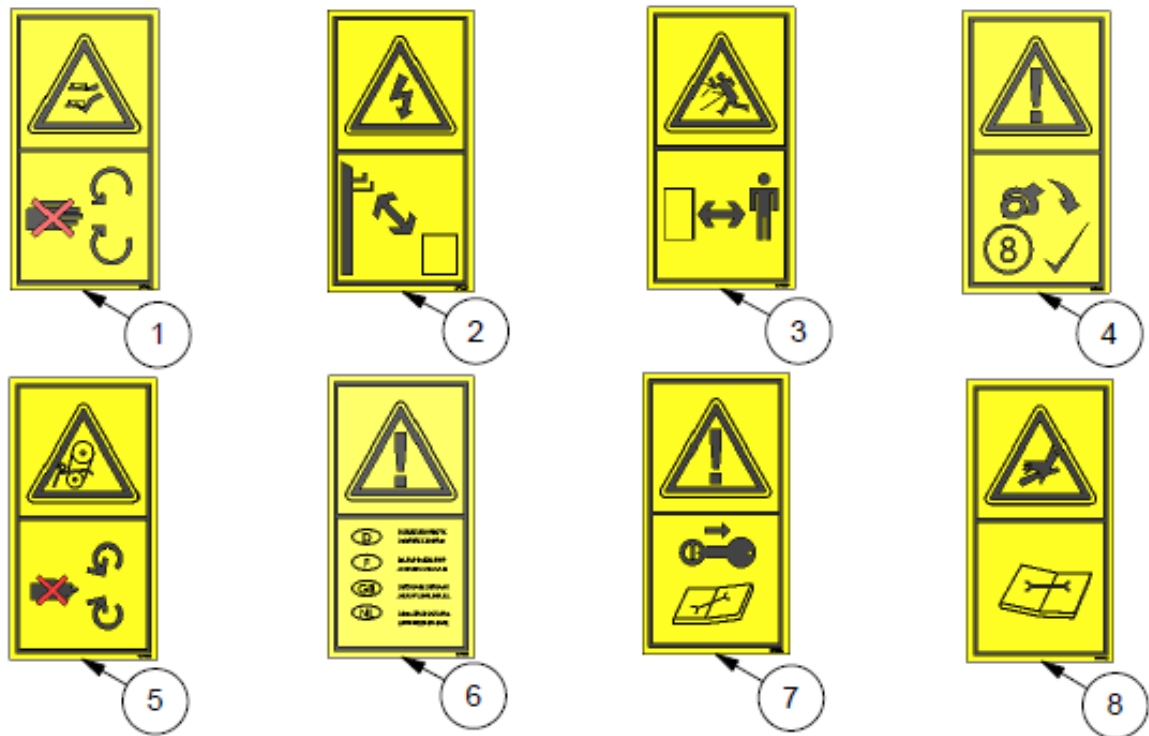
## Quadsaw 2001/2401 – Piston Motor



REF.	QTY.	PART No.	DESCRIPTION
			<b>MULTISAW 2000/2400 - PISTON MOTOR</b>
1	1	1070058	PISTON MOTOR (28cc)
	1	1070057	PISTON MOTOR (15cc) - <i>Telehandler builds only</i>
2	1	1070061	MOUNTING PLATE - <i>Multisaw 2000</i>
	1	1070062	MOUNTING PLATE - <i>Multisaw 2400</i>
3	1	1070063	PULLEY - <i>Multisaw 2000</i>
	1	1070064	PULLEY - <i>Multisaw 2400</i>
4	1	1070065	KEY
5	2	1070053	WASHER
6	2	1070054	SPRING WASHER
7	2	1070055	BOLT
8	1	1070066	WASHER
9	1	1070067	SPRING WASHER
10	1	1070068	BOLT
11	2	1070069	3/4" HYDRAULIC HOSE
12	1	1070070	3/8" HYDRAULIC HOSE
13	1	1070071	HOSE PROTECTION (1600mm)
		1070059	SEAL & O RING (Output Shaft)
		1070060	SEAL KIT COMPLETE

# LRS QUADSAW & HXF FRAME

## Quadsaw 1601/2001/2401 – Decals



Spearhead  9

**QUADSAW** 2001 10

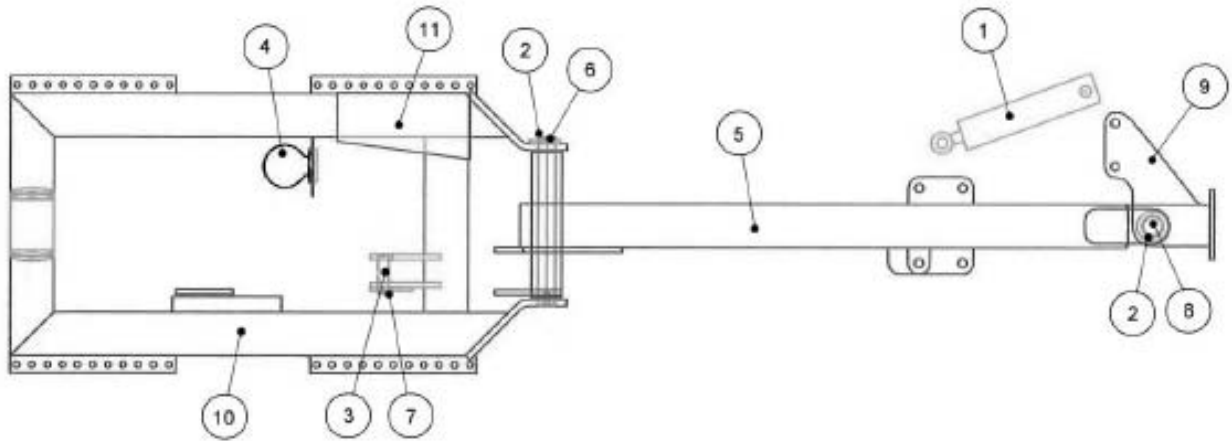
**QUADSAW** 2401 11

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8770361	STAY CLEAR OF BLADES	1
2	8770359	POWER LINES	1
3	8770357	KEEP SAFE DISTANCE	1
4	8770306	KEEP BOLTS TIGHT	1
5	8770356	DO NOT OPEN	1
6	8770363	READ OPS BOOK	1
7	8770358	REMOVE KEY	1
8	8770362	AVOID FLUID ESCAPING	1
9	8770388	SPEARHEAD - 320MM	1
10	8770693	QUADSAW 2001	-
11	8770694	QUADSAW 2401	-



# LRS QUADSAW & HXF FRAME

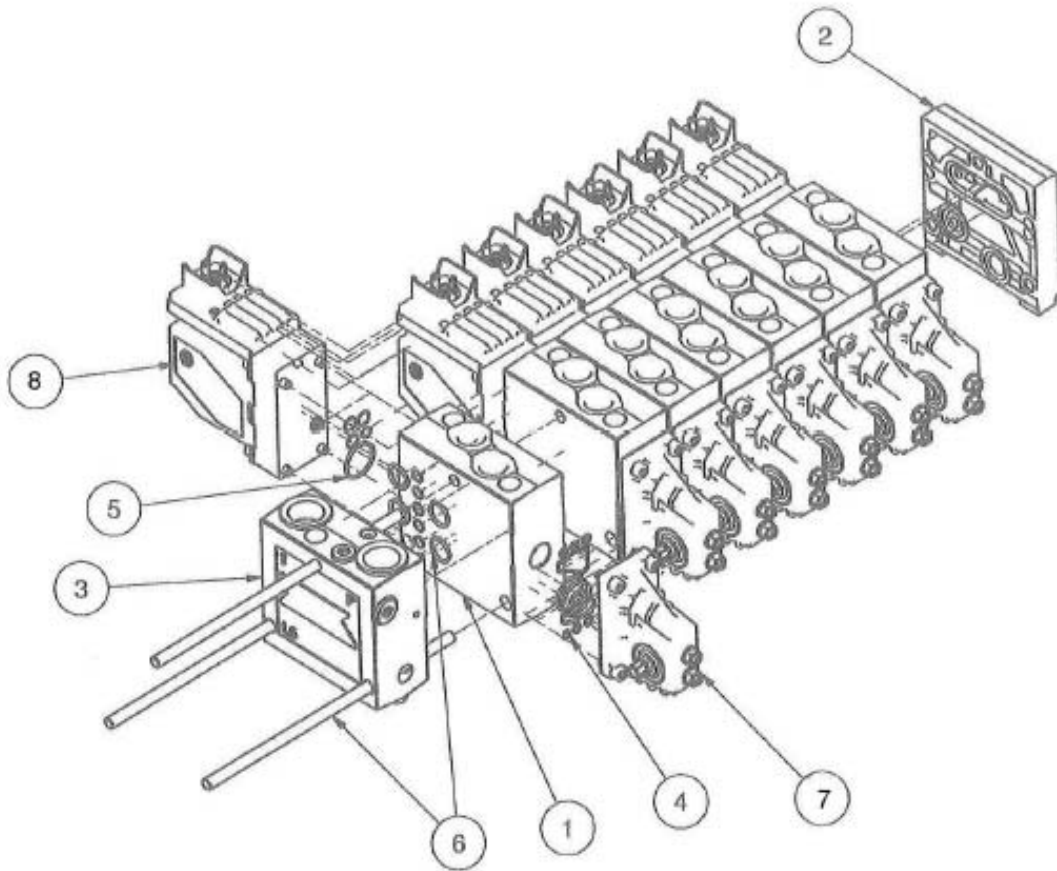
## HXF 3300 – Main Frame Assembly



REF.	QTY.	PART No.	DESCRIPTION
			<b>TELEHANDLER CARRIAGE</b>
1	1	1070128	RAM
2	4	1070130	BUSH
3	1	1070131	RAM
4	1	1070132	ACCUMULATOR
5	1	1070133	ARM
6	1	1070134	PIN
7	1	1070135	PIN
8	1	1070136	PIN
9	1	1070137	BRACKET - L/H
	1	1070138	BRACKET - R/H
10	1	1070139	MAINFRAME
11	1	1070140	GUARD
12	1	1070129	TOP LINK - <i>Not shown</i>

# LRS QUADSAW & HXF FRAME

## HXF 3300 – Valve Assembly



REF.	QTY.	PART No.	DESCRIPTION
			<b>TELEHANDLER CARRIAGE VALVE</b>
1	1	1070141	PRIORITY VALVE
2	1	1070142	MOTOR VALVE
3	1	1070143	TOOL VALVE
4	1	1070144	END COVER
5	1	1070145	END COVER
6	1	1070146	LEVER SEAL KIT
7	1	1070147	O RING KIT
8	1	1070148	SEAL KIT
9	1	1070149	LEVER HOUSING c/w SEAL KIT 1070146
10	1	1070150	ELECTRIC VALVE c/w O RING KIT 1070147
11	1	1070151	SPOOL
12	1	1070152	SPOOL



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