

# Spearhead

## Q2000HD, Q2500HD & Q2800HD Flail Mowers



13<sup>th</sup> Edition – March 2015

## HANDBOOK & PARTS MANUAL

# Spearhead QHD Flail Mowers

## 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

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

### 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

# Spearhead QHD Flail Mowers

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## 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.***

# Spearhead QHD Flail Mowers

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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.

# Spearhead QHD Flail Mowers

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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*

.....

# Spearhead QHD Flail Mowers

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## Safety

- Never operate the machine with other people present, as it is possible for debris, including stones, to be discharged from the front and rear of the flail hood.
- Always ensure all cab safety guards are in place and all tractor windows closed.
- Never allow an inexperienced person to operate the machine without supervision.
- Never allow children to play on or around the machine at any time.
- Never attempt any maintenance or adjustment without first disengaging the PTO, lowering to the ground, stopping the tractor engine and applying the tractor parking brake.
- Before leaving the tractor cab always ensure that the machine is firmly on the ground, and the rotor has stopped spinning.
- Never stop the engine with the PTO engaged.
- Always check that all guards are properly fitted, check there are no damaged or loose parts. Particular attention should be given to the flails to ensure they are not damaged, cracked or missing.
- Never operate with flails missing.
- Always operate PTO at recommended speed 540/1000 R.P.M. as indicated on the decal.
- Always inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Never operate with wire/debris around rotor. Stop immediately.
- Never attempt to use the machine for any purpose other than that it was designed for.
- Ensure that all warning labels are always visible and that they are not damaged, defaced or missing.
- Never transport with the PTO engaged.
- When parking up, always lower to the ground

# Spearhead QHD Flail Mowers

## Safety Warning Stickers



Carefully read Operator's Manual before handling this machine. Observe instructions and safety rules when operating.



Shut off engine  
Remove key



Keep nuts and bolts tight, check every 8 hours.



Stay clear of mower flails/blades



Keep a safe distance  
When the machine is running



Beware of escaping fluid



Do not remove/open guard.



# Spearhead QHD Flail Mowers

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## Introduction

The Spearhead Q2000HD, Q2500HD and Q2800HD are robust high capacity flail mowers that are easy to operate and maintain, but to ensure trouble-free operation this manual should be carefully studied.

## Safety First

Do not start the machine until you fully understand operation and safety precaution requirements.

## Tractor Requirements

- Spearhead strongly recommends using a 50 - 90HP tractor with **CATEGORY 2** rear linkage.
- Minimum tractor weight including ballast must be 2500kg.
- PTO must be independent live drive to enable continuous PTO drive even when tractor clutch is pressed down.
- Before hitching, ensure position control is selected. Do not attempt to hitch in draft control.
- Check chains and stabilizers must be in good working order to hold the machine firmly. Do not operate without checking that chains and stabilizers are tight.
- Spearhead particularly recommend 'turn buckle' type check chains.
- Set linkage lift rods to an equal length.
- Double acting spool for hydraulic offset models.
- Clockwise rotating tractor PTO as standard, anti-clockwise available as an option.

# Spearhead QHD Flail Mowers

## Attaching To the Tractor

Fit the machine to the tractor linkage in the standard way, ensuring the correct match of linkage (**CAT 2 pins**). Check that the top link is in good order and threads are well lubricated, (as fine adjustment to height of cut is regulated by the top link). Use stabilizers to take any free movement out of lower link arms. Before fitting the machine to the tractor linkage you should ensure there is sufficient front weight to ensure the front wheels are always in contact with the ground. This is most important for safe transport and stability when turning on slopes.

Before fitting the PTO for the first time, it may be necessary to adjust the length. There should be maximum engagement of the sliding tubes without bottoming at the shortest operation position. To check, first connect the mower to the tractor. Pull the PTO shaft apart and connect to the tractor PTO output shaft and the gearbox input shaft. Hold the half shafts next to each other in the shortest working position.

**NOTE – CHECK ROTATION OF OVERUN CLUTCH BEFORE CUTTING PTO SHAFT**

If necessary, shorten the inner and outer guard tubes equally (Fig. 2). Shorten the inner and outer sliding profiles by the same length as the guard tubes. File all sharp edges and remove burrs. Grease sliding profiles.

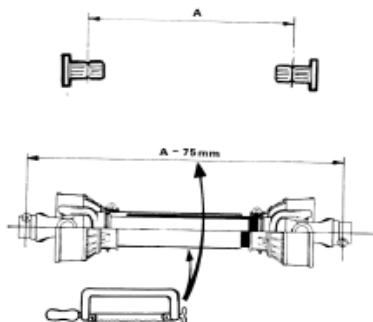
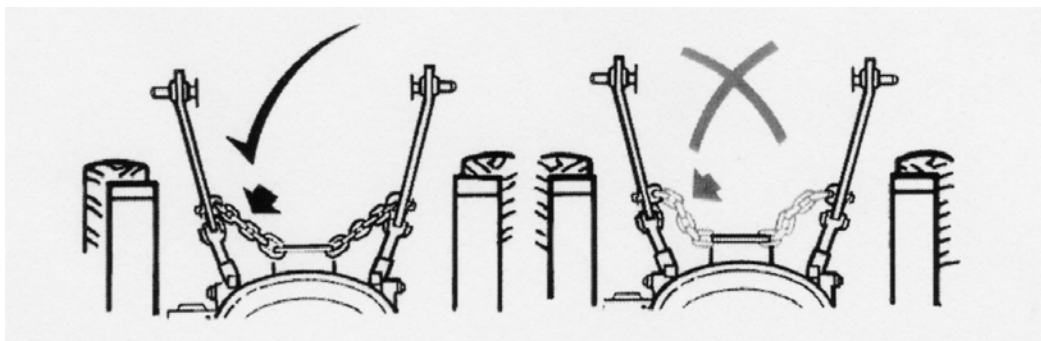


Fig 2

To fit the PTO, first clean and grease. Press pins on the yoke and simultaneously push the PTO drive shaft on to PTO shaft of the tractor until pins engage.

The PTO shaft is fitted with a non-rotating safety guard. It should be secured to the machine and tractor with the two retaining chains provided.



### Warning

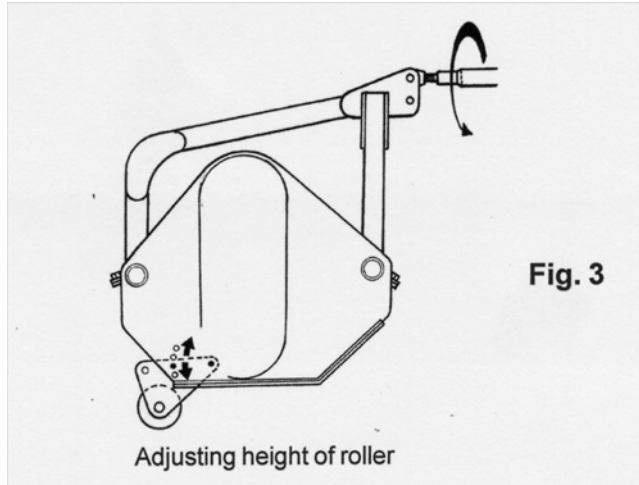
Fully tighten check chains and linkage stabilisers to hold the machine rigid. There must be no side ways movement, it is dangerous.

# Spearhead QHD Flail Mowers

## Setting Up & Adjustment

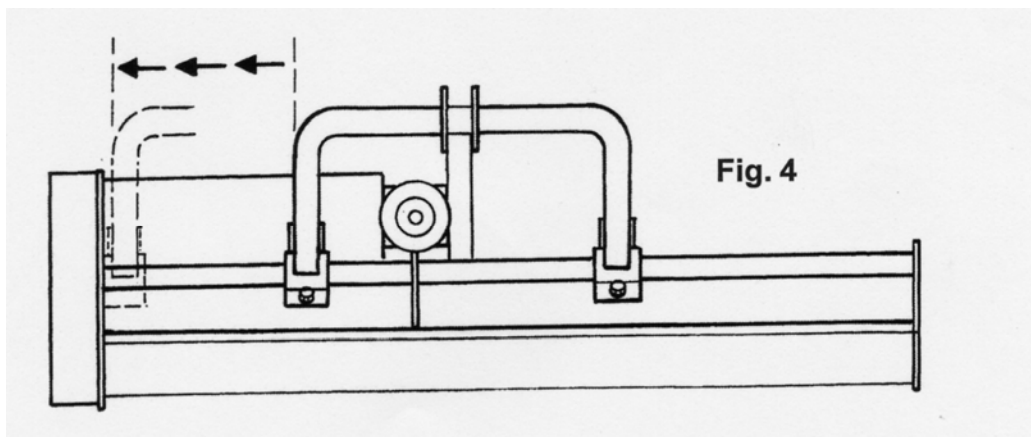
### Height Adjustment

To achieve major adjustment to height of cut; reposition the two side plates attached to the rear roller. A finer adjustment to cut can be achieved by lengthening or shortening the top link of the tractor (Fig. 3).



### Mechanical Offset

The linkage 'A' frame (Fig. 4) can be slid along the tube to obtain numerous settings from central to fully offset by simply slackening the clamping bolts, position the 'A' frame and re-tighten the bolts. Remember to regularly check that these bolts are tight.



### Hydraulic Offset – Optional

Can be moved from central to fully offset by operating the tractor external spool valve to the desired position. Lubricate the sliding tubes with grease/oil to prolong the life of the bushes.

To reduce the strain on the drive line ensure to operate the PTO in a straight line.

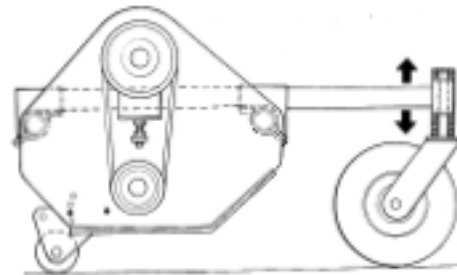
# Spearhead QHD Flail Mowers

## Front Linkage Mounting

Simply remove the clamping bolts and revolve the standard 'A' frame through 180 degrees so the linkage mounting pins are facing the rear of the mower. The hydraulic 'A' frame is double sided.

Tractor front PTO's has no standard rotation so it may be necessary to turn the gearbox through 180 degrees (top to bottom), to compensate for this irregularity. It is important the rotor rotates (Fig. 5a) to ensure the flails cut.

OPTIONAL – Wheel kits are available for height control, recommended for all front mounted machines both standard and hydraulic models.



## 540 or 1000 RPM

If the tractor has only 540 RPM. PTO output speed, it is possible to compensate by swapping the top drive pulley onto the rotor and rotor pulley to the top drive shaft i.e. smaller pulley driving the larger pulley will act as a reducer (Fig. 5b). **Never operate the PTO at 1000 RPM with the larger pulley driving the smaller rotor pulley.** This will drive the rotor at higher speed and will result in severe damage to the machine.

Fig. 5a – position of pulleys for 540RPM.  
1000RPM

Fig. 5b – position of pulleys for

- A. Rotation Anti-Clockwise
- B. Shaft Pulley 190mm
- C. Shaft Pulley 250mm

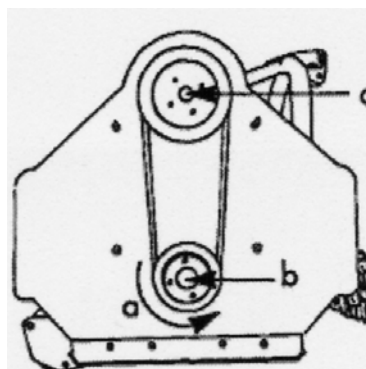


Fig 5a

540r.p.m.

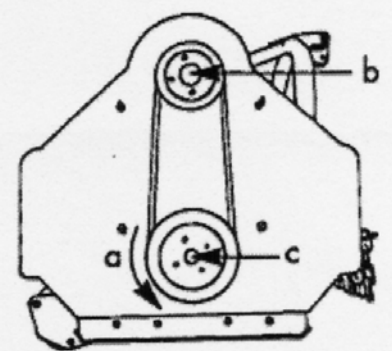


Fig 5b

1000r.p.m.

# Spearhead QHD Flail Mowers

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## Operation

Engage the PTO only when the tractor engine is at low revs to prevent shock damage to machine. Slowly increase the engine revs to achieve the standard 1000/540 RPM PTO speed, as indicated by the decal. ***If at any time serious vibration occurs, stop the engine immediately and check that no flails are missing, (following all safety precautions). The cause must be found and rectified immediately or other components may be affected.***

When in work, lower the machine to the ground carrying all its weight on the rear roller or wheels, allowing the machine to follow the contours of the ground. Select a sensible forward speed bearing in mind the density of growth, the terrain, and the available horsepower, taking extra care when turning, particularly on slopes. When turning it is not necessary to lift the machine off the ground but instead allow sufficient room to turn in a large radius. The machine only needs to be raised when turning a tight corner or reversing over dense undergrowth.

Quality of finish is determined by the forward speed i.e. a slow speed will produce a high quality of cut, whereas faster forward speeds are used when high output is first priority.

When cutting in extreme conditions or when small stumps, stones and other such solid objects are likely to be found it is recommended the operator reduces the engine revs to allow the flails to pivot more easily when striking solid objects, and **proceed with caution.**

# Spearhead QHD Flail Mowers

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## Rotor Care

- Always** operate at the correct PTO speed, 540/1000 r.p.m.
- Always** inspect the condition of flails and bolts on a very regular basis.
- Always** replace bushes, bolts and nuts when replacing flails.
- Always** use genuine flails, bolts and nuts. The flails and bolts are made to a very high standard from a high tensile steel, being fully heat treated and subjected to rigorous testing in very stringent conditions to comply with our rigid quality control requirements
- Never** operate with bolts loose or flails missing.
- Never** change to a different spec or type of flail, this will immediately put the rotor out of balance.
- Never** engage rotor at high PTO speeds.

**Remember, the rotor is highly complex and expensive to manufacture, please treat with care and enjoy the benefits of the Spearhead Rotor.**



### Warning

Rotor is balanced to be run at PTO speed, do not operate above or below this speed. Optimum rotor speed 2200r.p.m.



### Warning

Never carry out any servicing or maintenance work without first disengaging the PTO and stopping the tractor.

# Spearhead QHD Flail Mowers

## Servicing & Maintenance

### Gearbox



- Before first use check gearbox oil level, thereafter check every 8 hours.
- After the first 50 hours drain and replace the gearbox oil, thereafter annually. Replace with EP90.
- Regularly inspect gearbox seals. If oil is leaking replace immediately. This is your responsibility to maintain a long and reliable working life.
- Check that gearbox bolts are fully tightened, and secured with loctite.



#### Warning

Check that all gearbox bolts remain tight. When the machine is new there will be a 'bedding in' period when very frequent checking is important.



#### Warning

It is imperative the screws are checked on the pulley taper locks (once bedded in, loctite compound may prove useful).



#### Warning

Never carry out any servicing or maintenance work without first disengaging the PTO and stopping the tractor.

### Flail Rotor (Daily)

- Grease all bearings daily.
- Check there is no wrapping of string, plastic, grass or other debris on rotor shaft and rear roller bearing.
- Check the condition of flails and ensure all retaining bolts are tight. When flails are replaced, care must be taken to maintain balance of the rotor shaft, do not change to a different type.
- Check flail retaining bolt and nut for tightness, 160lb.ft – 200Nm.
- Never operate with any flails missing. This will cause severe vibration and lead to rapid bearing wear and quickly cause the hood to crack.

# Spearhead QHD Flail Mowers

- Blunt flails leave an untidy finish and absorb excessive power, when re-sharpening always wear protective clothing and goggles.
- When flails are showing severe wear, damage or cracking, they must be replaced immediately. Never attempt to weld the flails, as this will make them very brittle, thus extremely dangerous. Do not take risks with the cutting flails, if in doubt replace.
- When replacing flails always replace bolts and nuts for new.
- Regularly check that all bearing bolts are tight.
- It is imperative the screws are checked on the taper locks (once bedded in loctite glue may prove useful).

## Greasing

Daily grease all points shown below.

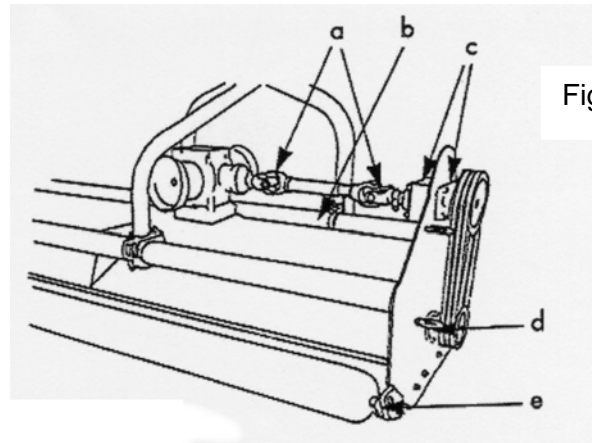
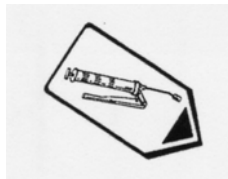


Fig 6

Fig. 6  
Grease point for rotor, cross shaft and rear roller bearings.



## Warning

Grease rotor bearing and rear roller at least every 8 hours and especially after washing.

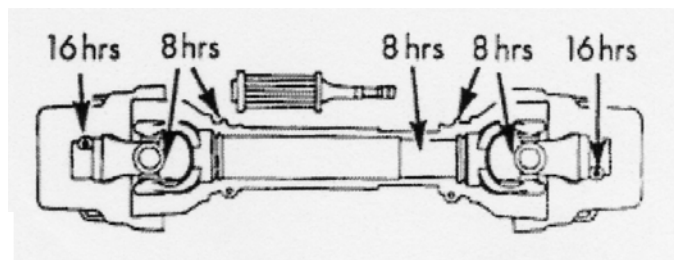
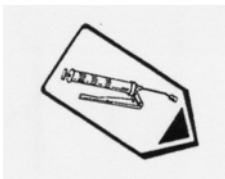


Fig 7

Fig. 7  
Dismantle and clean PTO sliding surfaces and re-grease universal joints.



# Spearhead QHD Flail Mowers

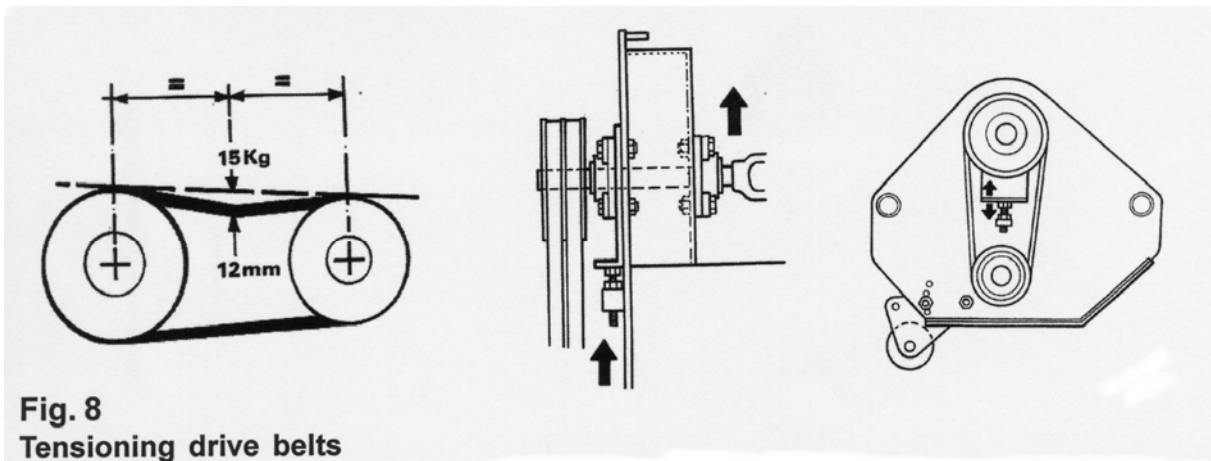
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## Regularly

- Check the condition of drive belts, ensuring they are aligned and properly tensioned to avoid any unnecessary belt wear.
- Remove both guards for access when tensioning belts; ensure belts are running in line after adjustment.
- Check there is no wrapping of string, plastic, grass or other debris on rear roller.

### N.B.

The pulleys are fitted with taper locks which have 7 screws to tighten, and 3 holes to aid removal in the pulley centers.



**Fig. 8**  
Tensioning drive belts

## Skids

When operating on abrasive soils, particularly in stubbles and similar conditions with thin ground cover, excessive skid wear may be expected. To provide extra protection and to prolong life of the skids, special hard facing rods can be used.

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## Storage

At the end of the season before storing, thoroughly wash the machine off, removing all traces of grass and dirt. Great care must be taken when washing with high-pressure hoses, do not hold the water jet close to the paintwork. Use steam cleaners with caution and be sure to remove all detergents to avoid any discoloring or damage to paint. Grease all grease points until fresh grease shows. Store PTO shaft and drive belts in a dry place.

## Transportation

Please observe Public Highway Regulations, concerning transport of machines and securely attach a registration/lighting board. Take care when travelling over rough ground to avoid bouncing the machine on the tractor linkage, causing unnecessary strain.

**Warning – be aware of the extra width hazard of ‘off-set’ machines.**

### **Servicing Checklist** *(see relevant sections for full details)*

#### **Regularly**

Gearbox: Inspect seals, check bolts for tightness.

Flail rotor: check bolts for tightness, check condition of flails, check retaining bolts for tightness, check rotor bearing bolts for tightness.

#### **Daily**

Maintain correct belt tension.

Check gearbox oil level.

Grease PTO shaft.

Grease all points as shown in diagram.

#### **Every Year**

Drain and replace gearbox oil with EP90.

# Spearhead QHD Flail Mowers

## Torque Settings

The torque figures given are recommended maximum settings only

Size:	Tensile strength:	Description:	Torque setting: Nm.
M8	12.9	Pulley clamps	45
M10	8.8	General fasteners	65
M12	8.8	General fasteners	114
M16	8.8	Roller plate bolts	280
M14	10.9	Flail bolts	200
M24	8.8	Head stock bolts	950

## Troubleshooting

Problem	Cause	Solution
Gearbox Overheating	Oil level incorrect Oil grade incorrect Implement overloaded Wrong P.T.O. speed	Check oil level Check oil grade Reduce forward speed Ensure tractor P.T.O. speed matches implement.
Excessive Belt Wear	Belt and Pulley condition Pulley Alignment Incorrect belt tension Overloading of implement	Replace if necessary Check Alignment Tension belts to spec. Reduce forward speed or increase height of cut.
P.T.O. wear UJ failure	Working angle too great Shaft incorrect length i.e. Bottoming out Lack of maintenance	Reduce offset of implement Resize P.T.O. shaft as recommended Grease P.T.O. shaft as recommended.
Cut quality	Flails worn Rotor speed/Direction Crop condition.	Replace worn flails Check tractor P.T.O. speed Look for suitable conditions.
Rotor bearing failure	Rotor out of balance Wire/string in bearing Lack of maintenance Water in bearing.	See rotor vibration Replace bearings Re-balance/replace rotor Remove debris.

### Note:

When operating in arduous conditions with a tractor of more than 80HP, you reduce the strain on the drive line by;

- Running with 1000 speed set-up
- Keeping the PTO shaft straight

# Spearhead QHD Flail Mowers

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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 advise.

### Key:

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



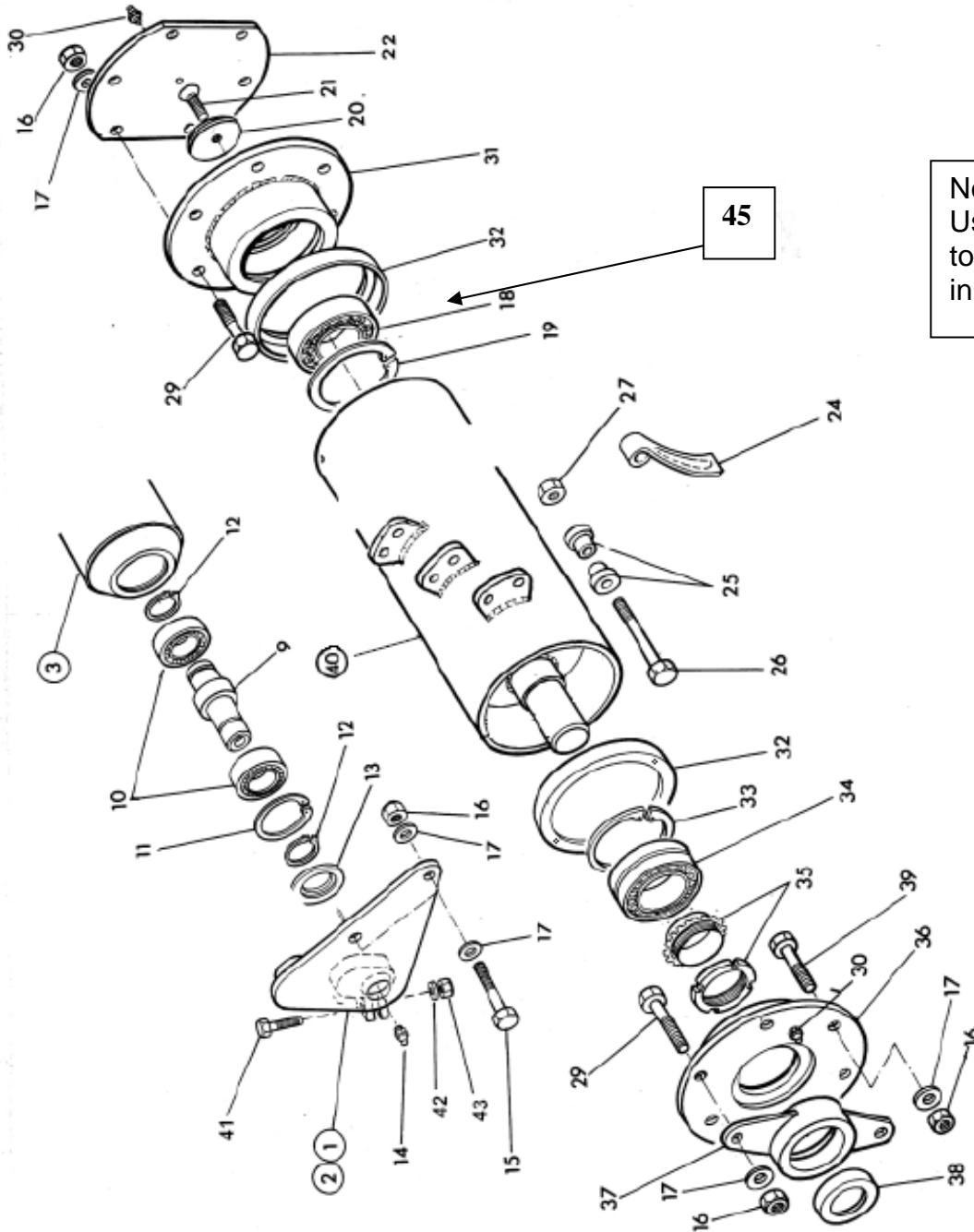
# Spearhead QHD Flail Mowers

## Main Body Assembly

REF. NO	PART NO.	DESCRIPTION
1	N/A	BODY
2	5770009	GEARBOX
4	5770105A	GUARD
5	2770418	BOLT
6	2770434	WASHER
7	5770530	SHAFT Q2000HD
	5770531	SHAFT Q2500HD + Q2800
8	1772211	SHAFT - 35MM - 1 X KEYWAY
	1772211A	SHAFT - 40MM - 1 X KEYWAY
	1772211B	SHAFT - 35MM - 2 X KEYWAY
10	4772229	KEY
11	4770860EC	BEARING - 35MM
	4770933EC	BEARING - 40MM
12	2770423	BOLT
13	2440447	NUT
14	2770454	WASHER
15	1771513A	BRACKET
16	4770920	PULLEY (250MM)
17	4770922	TAPER LOCK
18	4770918	PULLEY (190MM)
19	4770921	TAPER LOCK
20	8777516	CAP
21	1772231B	GUARD
22	4770843	BELT
23	1772309	SKID
24	2770422	BOLT
25	8400201	RUBBER 2M
	8400200	RUBBER 2.5M
	8400199	RUBBER 2.8M
26	1772290	BAR 2M
	1772291	BAR 2.5M
	1772310	BAR 2.8M
27	2770396	BOLT
28	2770412	NUT
29	1771520A	PLATE
30	2770493	BOLT
31	2770457	WASHER
32	1772256A	COVER - 2M
	1772268A	COVER - 2.5 & 2.8M
34	2770469	WASHER

# Spearhead QHD Flail Mowers

## Rotor & Roller Assembly



Note  
Use shims as required  
to centralise rotor shaft  
in body

# Spearhead QHD Flail Mowers

## Rotor & Roller Assembly

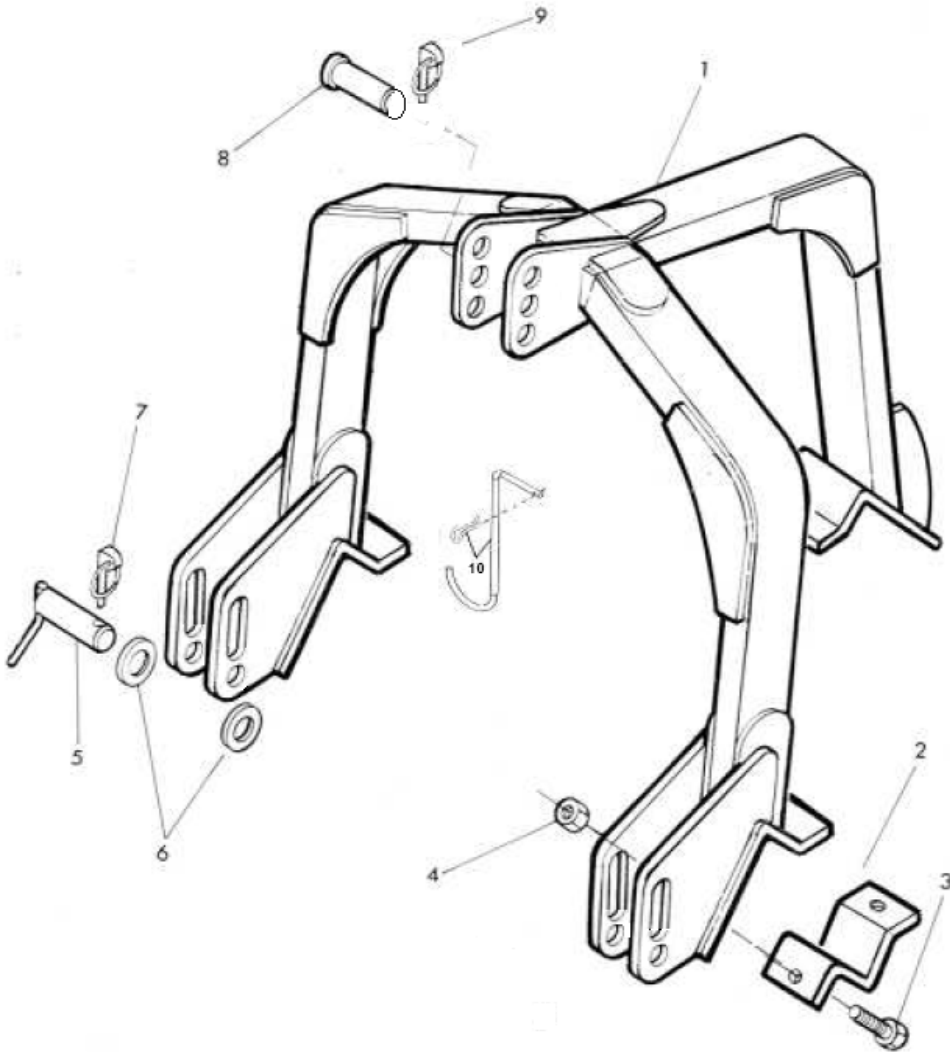
REF. NO	PART NO.	DESCRIPTION
1	1772307	LH PLATE
2	1772307R	RH PLATE
3	SA02006	STD ROLLER ASSEMBLY 2.0M
	SA02011	LARGE ROLLER ASSEMBLY 2.0M
	SA02005	STD ROLLER ASSEMBLY 2.5M
	SA02012	LARGE ROLLER ASSEMBLY 2.5M
	SA02007	STD ROLLER ASSEMBLY 2.8M
	SA02013	LARGE ROLLER ASSEMBLY 2.8M
9	1772305	SHAFT
10	4770872	BEARING
11	2771109	CIRCLIP
12	2777512	CIRCLIP
13	1772306	COVER
14	2770468	GREASE NIPPLE
15	2770425	BOLT
16	2770447	NUT
17	2770454	WASHER
18	4770891	BEARING
19	2771610	CIRCLIP
20	1777850	WASHER
21	2770461	BOLT
22	1777312A	COVER
24	7770699	FLAIL
25	180489	BUSH
26	2770600	BOLT
27	05.968.06	NUT
29	2770397	BOLT
30	2770467	GREASE NIPPLE
31	1772303A	HOUSING
32	4771122	SEAL
33	2771611	CIRCLIP
34	4770892	BEARING
35	4770893	SLEEVE
36	1772302A	HOUSING
	2770398	C/SINK BOLT
37	1772311A	SEAL HOUSING
38	4771511	WASHER
39	2770443	BOLT
40	1772298A	2.0M LH ROTOR ASSEMBLY
	1772298D	2.0M RH ROTOR ASSEMBLY
	1772299A	2.5M LH ROTOR ASSEMBLY
	1772299D	2.5M RH ROTOR ASSEMBLY
	1772301A	2.8M LH ROTOR ASSEMBLY
	1772301D	2.8M RH ROTOR ASSEMBLY
41	2770450	BOLT
42	2770436	WASHER
43	2770417	NUT
44	180470	3MM SPACER



# Spearhead QHD Flail Mowers

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## Headstock Assembly



# Spearhead QHD Flail Mowers

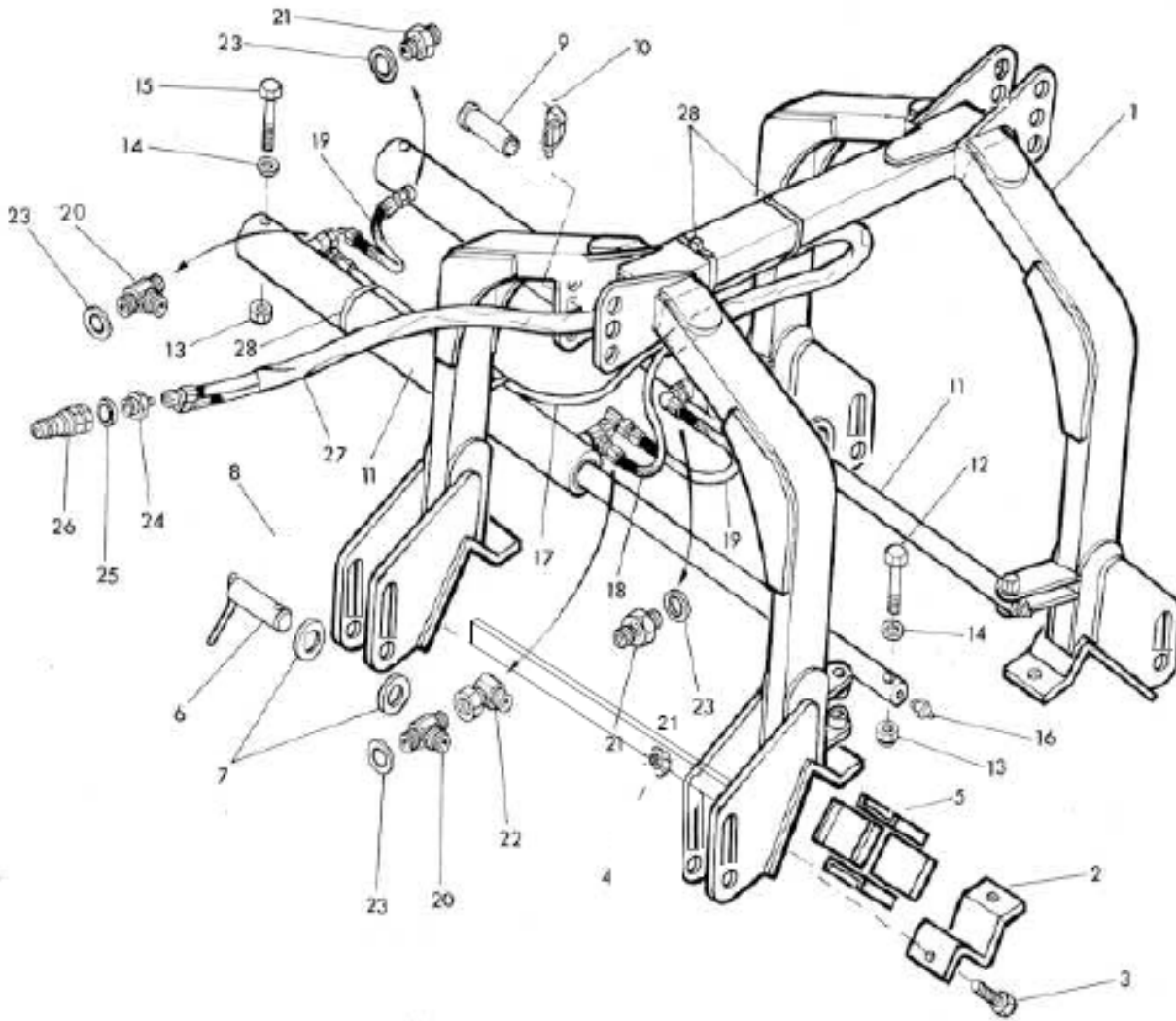
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## Headstock Assembly

REF. NO	PART NO.	DESCRIPTION
1	1772265	STANDARD HEADSTOCK
2	1772266A	FRONT CLAMP
	1772267A	REAR CLAMP
3	2770403	BOLT
4	2770414	NUT
5	6310208	PIN
6	05.281.18	WASHER
7	00.372.01	PIN
8	6310203	PIN
9	00.372.01	PIN
10	1777434	PTO SUPPORT
	6310194	CLIP

# Spearhead QHD Flail Mowers

## Hydraulic Headstock Assembly



# Spearhead QHD Flail Mowers

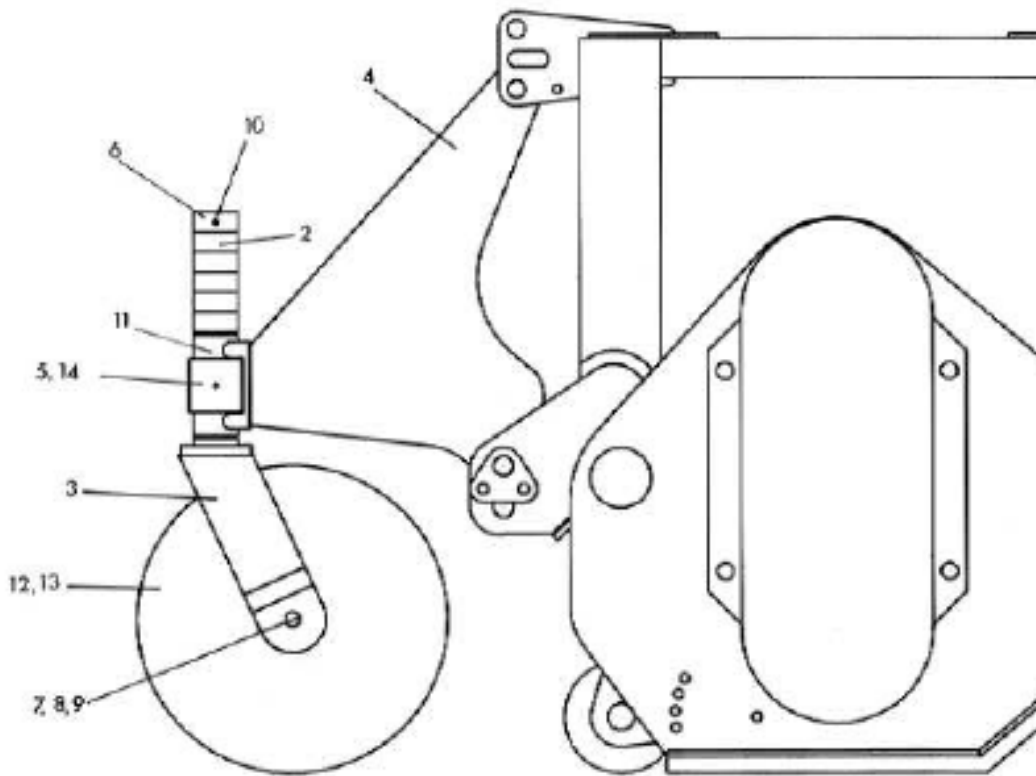
## Hydraulic Headstock Assembly

REF. NO	PART NO.	DESCRIPTION
1	1772270	HYDRAULIC HEADSTOCK
2	1772271A	CLAMP
3	2770519	BOLT
4	2770414	NUT
5	4600120	WEAR PAD
6	6310208	PIN
7	05.281.18	WASHER
8	00.372.01	PIN
9	6310203	PIN
	1777434	PTO SUPPORT
	6310194	CLIP
11	3580650	RAM – 2M
	3580663	RAM – 2.5M & 2.8M
	3570650T,W,HP	SEAL KIT
12	2770424	BOLT
13	2770417	NUT
14	2770436	WASHER
15	2770471	BOLT
16	2770511	GREASE NIPPLE
17	3760261	HOSE
18	3760262	HOSE
19	3760260	HOSE
20	3460100	ADAPTOR
21	3360080	ADAPTOR
22	3460107	ADAPTOR
23	3260070	WASHER
24	3360074	WASHER
25	3260072	SEAL
26	3750153	QR COUPLING
27	3870500	SLEEVE
28	8770639	TIE
29	3750150	HOSE KIT (COMPLETE)

# Spearhead QHD Flail Mowers

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## Wheel Kit Assembly - Hydraulic Headstock



# Spearhead QHD Flail Mowers

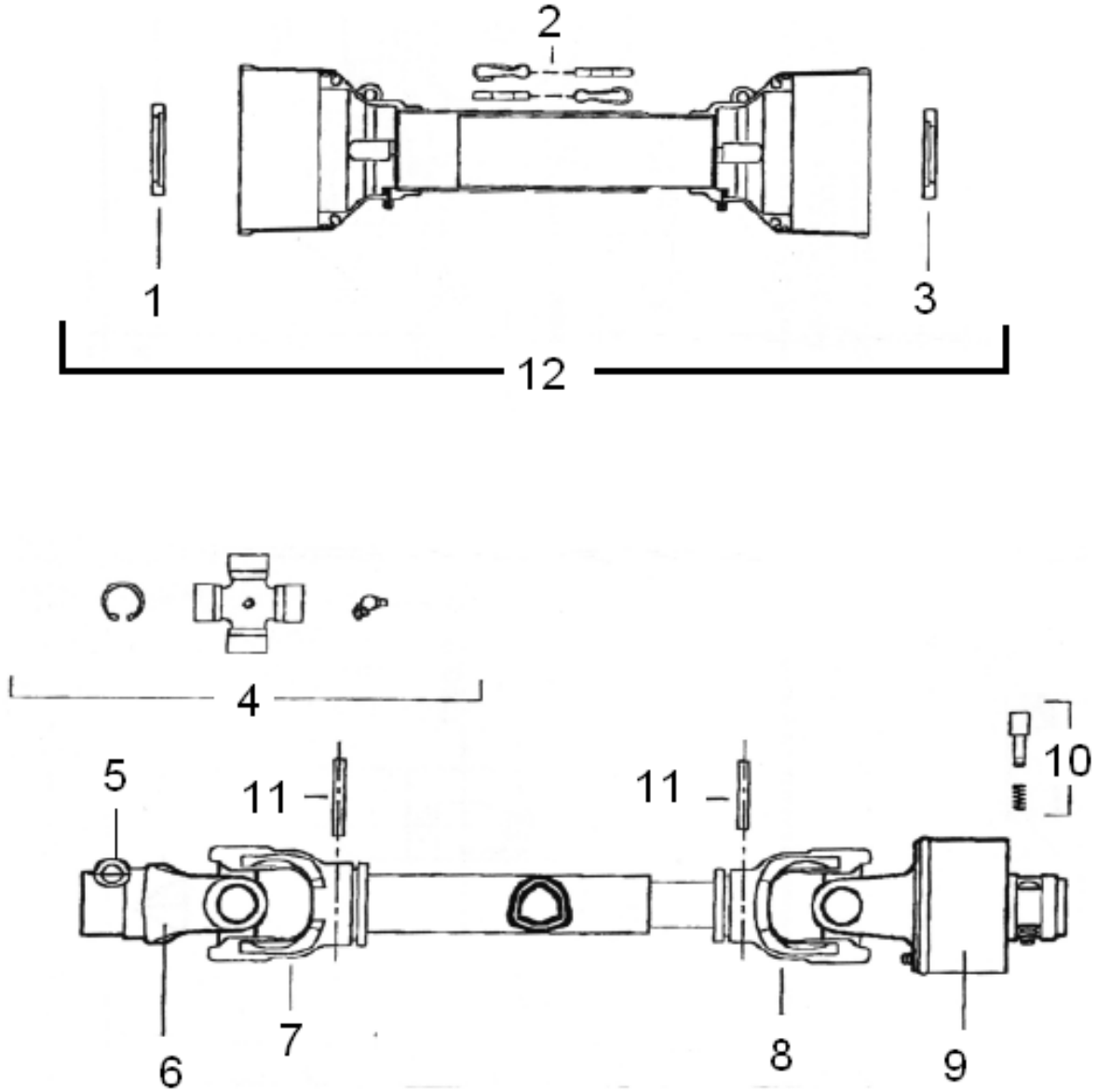
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## Wheel Kit Assembly - Hydraulic Headstock

REF. NO	PART NO.	DESCRIPTION
	OPT0009	WHEEL KIT
2	1770393	SPACER
3	1770399A	WHEEL YOKE
4	1777449	FRAME
5	1777450	BEAM
6	1777700	BUSH
7	156130	PIN
8	2770417	NUT
	2770436	WASHER
	2770397	BOLT
9	1777208	WASHER
	2770506	BOLT
10	2770411	BOLT
	2770412	NUT
11	4600127-A	BUSH
12	6770680B	WHEEL
	4771600	BEARING
13	1560131	SPACER
14	1777325A	CLAMP PLATE

# Spearhead QHD Flail Mowers

## P.T.O. Shaft Assembly



# Spearhead QHD Flail Mowers

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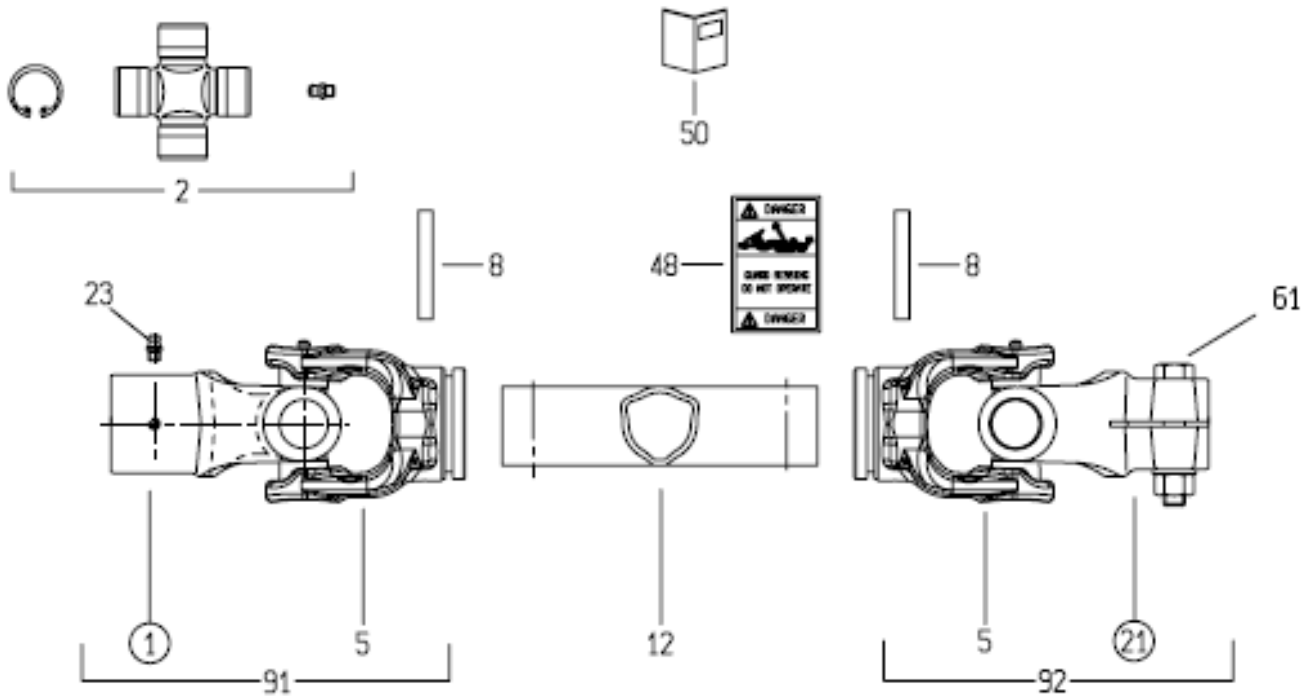
## P.T.O. Shaft Assembly

REF. NO	PART NO.	DESCRIPTION
	5780076	P.T.O SHAFT ASSEMBLY – REAR MOUNT
	5780078	P.T.O SHAFT ASSEMBLY - FRONT MOUNT
1	4770815	OUTER BEARING
2	5771020	CHAIN
3	4770814	INNER BEARING
4	5771301	CROSS JOURNAL
5	5772323	RELEASE PIN
6	5771299	QR YOKE
7	5770095	TUBE YOKE
8	5770096	TUBE YOKE
9	5772321	OVERRUN CLUTCH
9	5772321L	OVERRUN CLUTCH
10	5771322	TAPER PIN
11	2770542	ROLL PIN
12	5772262	COMPLETE GUARD



# Spearhead QHD Flail Mowers

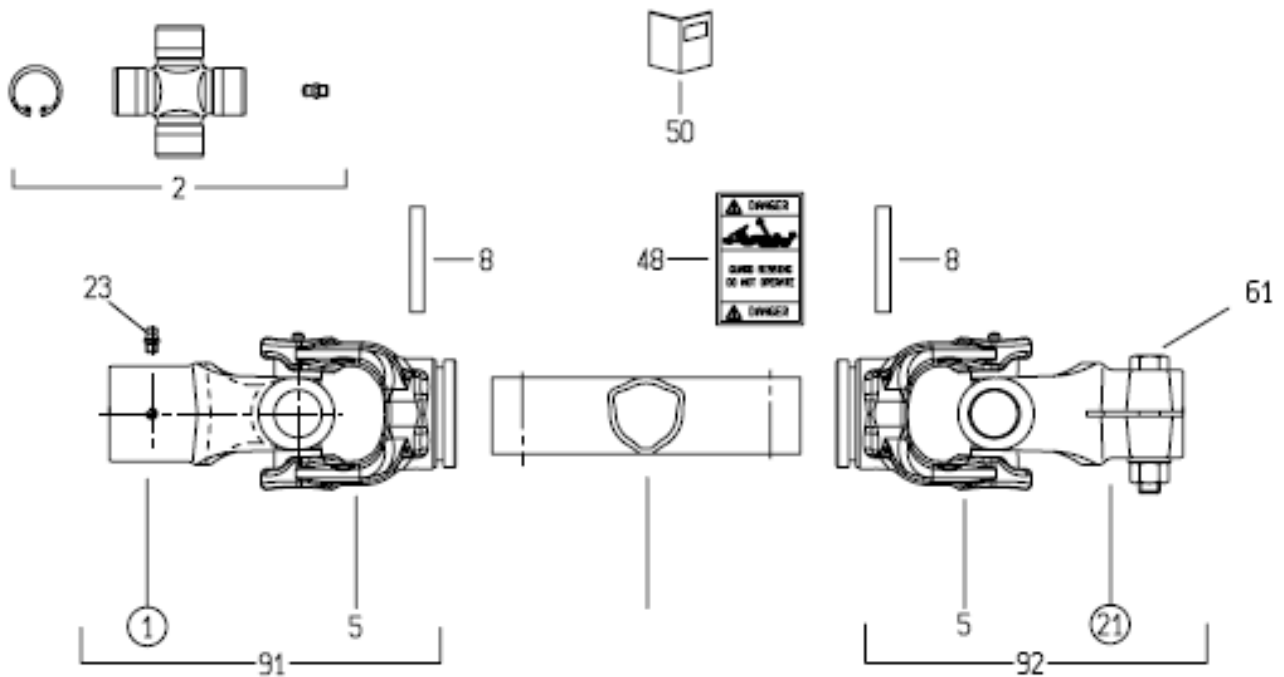
## Cross Shaft Assembly 5770530 - Q2000HD



REF NO.	PART NO.	DESCRIPTION.
	<b>5770530</b>	<b>CROSS SHAFT - Q2000HD</b>
1	5770529.01	YOKE - GEARBOX END
2	5770529.02	CROSS JOURNAL
5	5770529.03	YOKE - IN-BOARD OUTER
8	5770529.04	PIN
12	5770530.01	TUBE
21	5770529.06	YOKE - PULLEY END
23	5770529.07	GREASE NIPPLE
61	5770529.08	NUT AND BOLT

# Spearhead QHD Flail Mowers

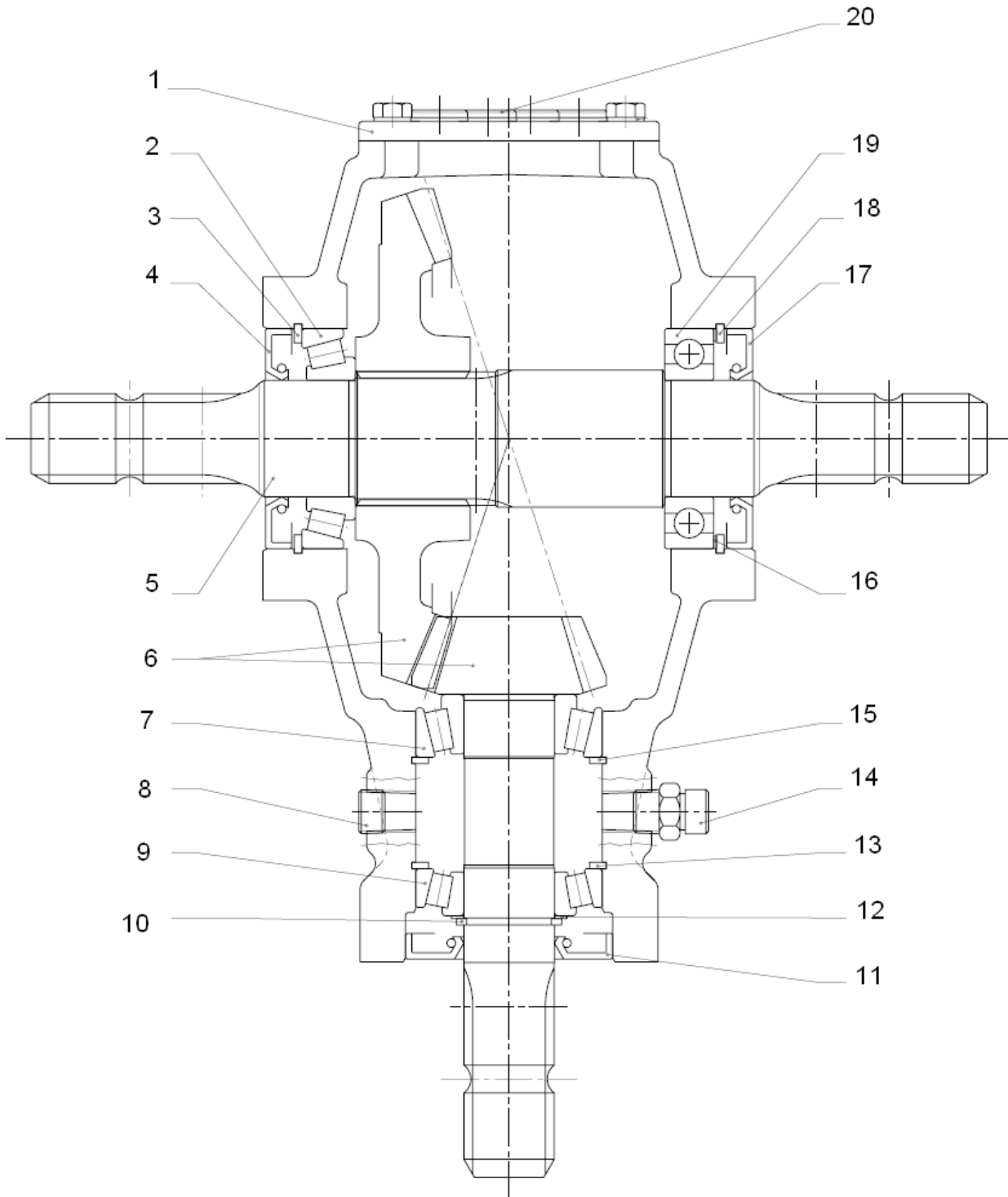
## Cross Shaft Assembly 5770531 - Q2500HD/Q2800HD



REF NO.	PART NO.	DESCRIPTION.
	<b>5770531</b>	<b>CROSS SHAFT - Q2500HD/Q2800HD</b>
1	5770529.01	YOKE - GEARBOX END
2	5770529.02	CROSS JOURNAL
5	5770529.03	YOKE - IN-BOARD OUTER
8	5770529.04	PIN
12	5770531.01	TUBE
21	5770529.06	YOKE - PULLEY END
23	5770529.07	GREASE NIPPLE
61	5770529.08	NUT AND BOLT

# Spearhead QHD Flail Mowers

## Gearbox Assembly



# Spearhead QHD Flail Mowers

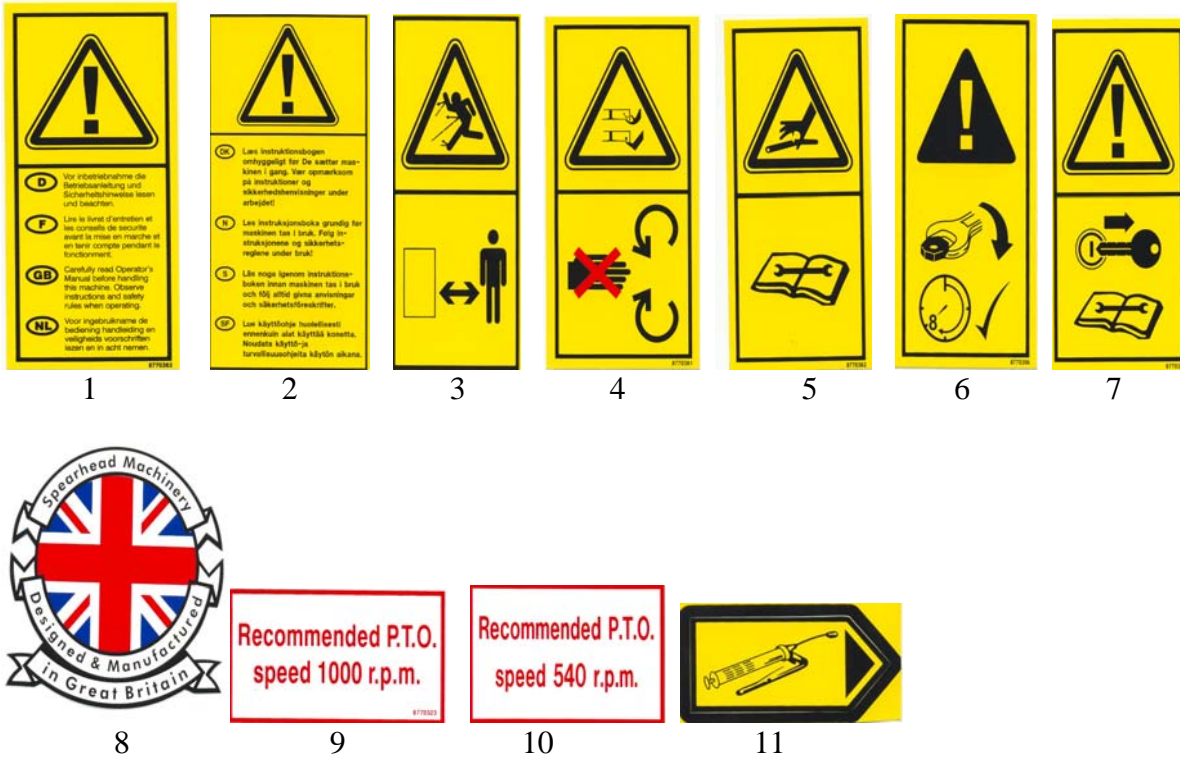
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## Gearbox Assembly

REF. NO	PART NO.	DESCRIPTION
	5770009	GEARBOX ASSEMBLY
1	5772296	COVER
2	5772341	BEARING
3	5772447	CIRCLIP
4	5772343	SEAL
5	5772297	SHAFT
6	5772344	GEARSET
7	4771606	BEARING
8		PLUG
9	5771435	BEARING
10	5772299	CIRCLIP
11	4771124	OIL SEAL
12	N/A	SHIMS
13	5772348	CIRCLIP
14	5771607	BREATHER
15	5772348	CIRCLIP
16	N/A	SHIMS
17	5772343	OIL SEAL
18	5772347	CIRCLIP
19	5772340	BEARING
20	5777205	PLUG
	1777602	REAR SHAFT GUARD

# Spearhead QHD Flail Mowers

## Sticker Assembly



REF. NO	PART NO.	DESCRIPTION
1	8770363	'READ MANUAL' STICKER
2	8770367	'READ MANUAL' STICKER
3	8770357	'KEEP SAFE DISTANCE WHEN MACHINE IS RUNNING' STICKER
4	8770360	'STAY CLEAR OF MOWER FLAILS' STICKER
5	8770362	ESCAPING FLUID
6	8770306	'KEEP BOLT TIGHT' STICKER
7	8770358	'SHUT OFF ENGINE, REMOVE KEY' STICKER
8	8770307	'MANUFACTURED IN GREAT BRITAIN' STICKER
9	8770323	1000 PTO
10	8770305	'RECOMMENDED PTO SPEED 540 RPM' STICKER
	8770356	'DO NOT REMOVE/OPEN GUARD' STICKER
	8770305	CHECK – BELT TENSION
11	8770322	'GREASE POINT' STICKER



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