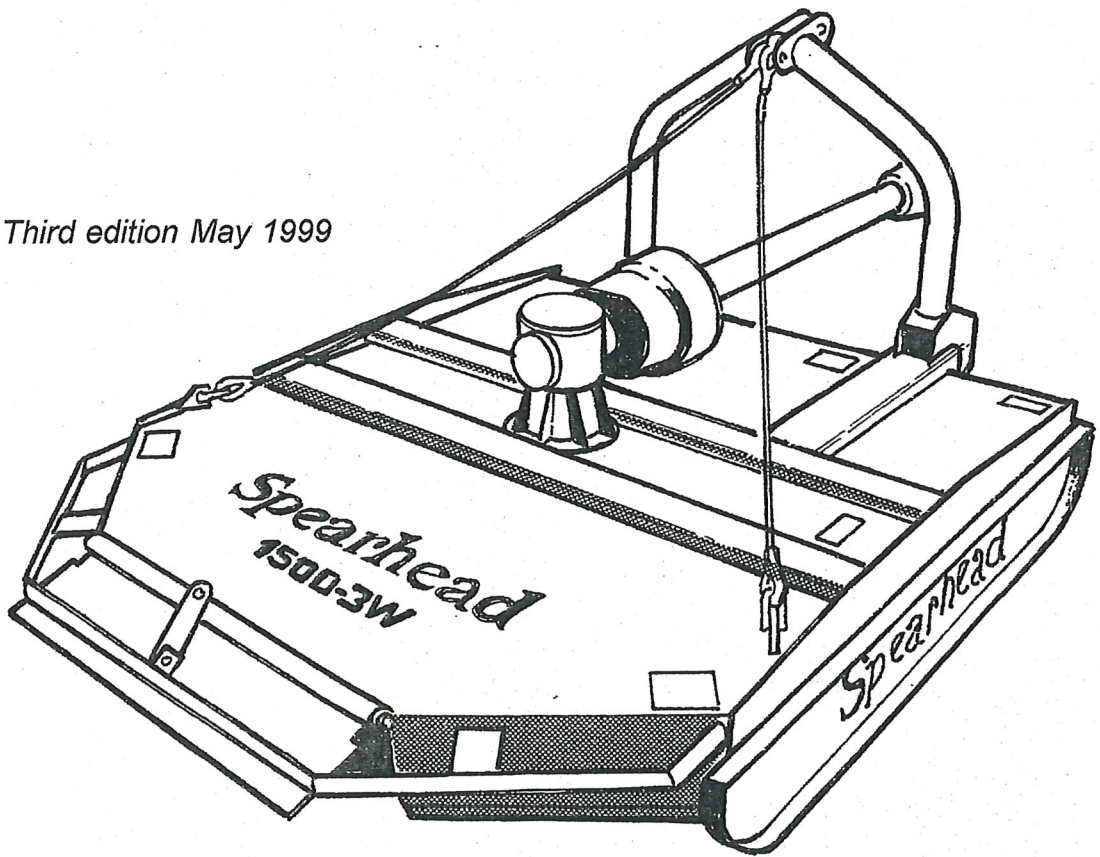


1500-3W & 2000-3W rotary swipe

Third edition May 1999



Spearhead

Spearhead

1500-3W &

2000-3W

Operator's manual

Third edition

May 1999

IMPORTANT - *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.*

Important

The purchaser should ensure that this manual is handed to the operator before using the machine for the first time and should be satisfied that the operator fully understands the contents of this manual before being allowed to proceed. If the machine is resold the Operators Manual must be given to the new owner.

Fill in the details below, you will find it useful to refer to when ordering spare parts.

Serial No.

Date of Delivery

Dealer's address

Telephone No.

Spearhead Machinery Limited
Pershore Trading Estate,
Pershore,
Worcestershire WR10 2DD
Tel: 01386 556748 Fax: 01386 561398
e-mail: enquiries@spearhead.uk.com
visit our web site: www.spearhead.uk.com



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 main deck.
- Always ensure all 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 p.t.o., 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 p.t.o. engaged.
- Always check that all guards are properly fitted, check there are no damaged or loose parts. Particular attention should be given to the blades to ensure they are not damaged, cracked or missing.
- Never operate with damaged blades.
- Always operate p.t.o. at recommended speed.
- Always inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Never operate with wire around the 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 p.t.o. engaged.
- When parking up always lower to the ground.
- Where applicable, check condition of tyres and that wheel nuts are tight.
- During transport, ensure linkage stabilisers are fully tightened and observe public highway regulations.

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Introduction

The Spearhead 1500-3W and 2000-3W are very robust high capacity Rotary Cutter that are easy to operate and maintain. 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. Always ensure the operators are proficient with the operation of this type of machine.

Tractor requirements

- Spearhead strongly recommend 40hp-plus tractor with category 2 rear linkage.
- Ensure there is sufficient weight on front wheels of tractor for safe transport and stability.
- P.t.o. must be independent live drive to enable continuous p.t.o. 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 stabilisers must be in good working order to hold the machine firmly. Do not operate with out checking chains and stabilisers tight.
- Spearhead particularly recommend "turn buckle" type check chains.
- Set linkage lift rods to an equal length.

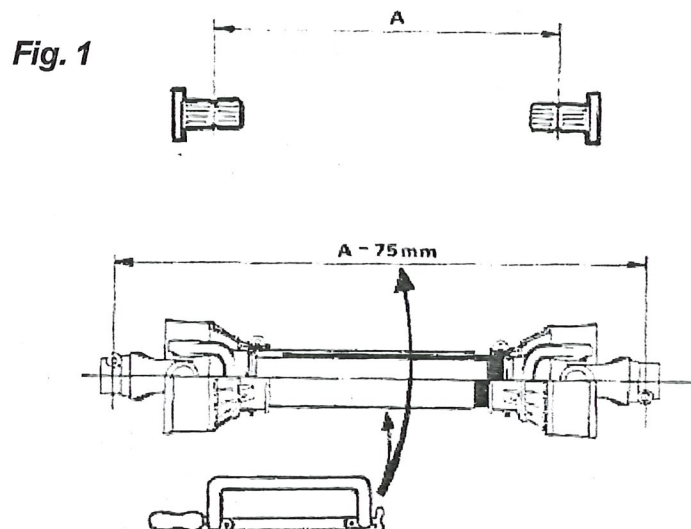
Attaching to the tractor

Fit the machine to the tractor in the standard way ensuring the correct match of linkage (category 2). Check that the top link is in good order and threads are well lubricated. Use stabilisers to take any free movement out of the 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 p.t.o. 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 p.t.o. shaft apart and connect to the tractor p.t.o. output shaft and the gearbox input shaft. Hold the half shafts next to each other in the shortest working position. If necessary shorten the inner and outer guard tubes equally (Fig. 1). 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.

To fit the p.t.o. first clean and grease press pins on the yoke and simultaneously push the p.t.o. drive shaft onto p.t.o. shaft of the tractor until pins engage.

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



Setting up and adjustment

Height Cutting height adjustment is achieved by raising and lowering the two outer skid plates. Lowering the skid plates produces a longer cut, raising the skid plates leaves a shorter cut. Always set to equal hole settings from front to rear and side to side.

Optional wheel The wheel acts as a 'middle skid' therefore it should be set to take equal weight to the skids. When set properly this should prevent scalping.

Machine protection

To prevent gearbox damage the p.t.o. is fitted with a slip clutch. When cutting in extreme conditions where solid objects are likely to be found it is recommended the operator reduces the engine revs to allow the blades to pivot more easily when striking solid objects, and proceed with caution.

The clutch settings should not be altered without reference to the Spearhead Service Department. Never over-tighten the pressure springs on the slip clutches, this could result in severe damage to the gearbox and drive lines, as well as infringing to the warranty (The correct length of spring is 29mm).

Important

If the machine has been laid up for any length of time, there is a risk of the clutch plates rusting and seizing together. Never operate the machine in this condition as there will be no protection to the drive line and gearboxes against shock loading. Refer to after storage (page 8).

Operation

Engage the p.t.o. only when the tractor engine is at low revs to prevent shock damage to the machine slowly increase the engine revs to achieve the standard 540r.p.m p.t.o. speed. *If at any time serious vibration occurs, stop the engine immediately and check that no blades 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 skids, allowing the machine to follow the contours of the ground and ensuring there is sufficient slack in the wire ropes. 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 in a tight corner or to reverse over dense undergrowth or when operating on the front linkage. The machine is fitted with as standard 3 high lift blades complete with fin, and with the adjustable rear flaps for control of spreading/mulching.

Transportation

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

Servicing & Maintenance

Safety first

- Never leave the tractor seat without first disengaging the p.t.o. and stopping the engine.
- Ensure all rotating objects have stopped turning.
- Never attempt any repairs, maintenance, service or any other checks with the machine carried on the tractor hydraulics.
- Always fully lower to the ground, or securely prop the machine on substantial servicing stands.
- Always replace all guards and retaining chains after servicing/ maintenance is completed.

Important - *On delivery of your machine check that the Dealer has completed the P.D.I. form, ensure the warranty registration form in this manual is completed and returned.*

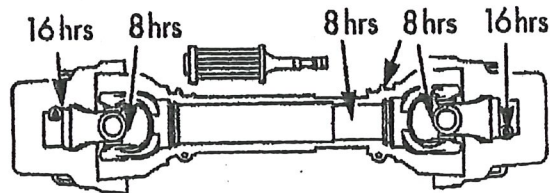
Servicing and maintenance

It is imperative that the following checks are carried out in order not to invalidate your warranty, these are carried out before the first operation, after the first hour, then after 4 hours. These checks are:

- wheel nuts and tyre pressure,
- gearbox bolts,
- blade bolts are fully tightened and in particular the castle headed nut on the blade rotor,
- retaining bolts on the drive shaft,
- grease all points.
- After the first 50 hours drain and replace the gearbox oil. Replace with EP90 Gear oil.
- It is your responsibility to maintain to ensure a long reliable working life.

Daily / Every 8 hours

- Grease all grease points, including p.t.o.
- Check condition of blades and blade bushes ensure all retaining bolts are fully tight.
- Check gearbox oil, replenish with EP90 gear oil as necessary to the correct level line on the dip stick, provided with each gearbox.

Fig. 2

- Dismantle and clean p.t.o. sliding surfaces and re-grease. Grease universal joints. (Fig 2)

Every 20 hours

- Grease p.t.o inner tube and push pins (Fig 2)

Regularly

- Check there is no wrapping of string, plastic, grass or other debris between rotor boss and blades.
- Inspect gearbox seals for leaks.
- Regularly check the rotor boss retaining castle nut for tightness (part no. 5771409). First remove the split pin, select the correct size socket in 3/4" drive and fully tighten the nut. When replacing the split pin, do not slacken the nut to align the hole, always tighten. Failure to regularly check this nut will result in serious wear to hub, which is expensive to repair.
- It is most important that all gearbox and blade bolts are regularly checked to be very tight. **When the machine is new there will be a 'bedding in' period where very frequent checking is important.**

Blades

Caution! When carrying out maintenance work on or near the blades be careful of free-swinging blades over-centring and falling. It is recommended that protective headgear, gloves and goggles are worn.

The blades can be re-sharpened by grinding the cutting edges, care must be taken that the blades are of the same weight and length after grinding. Do not over heat when grinding as this will affect the hardness of the blades.

All the blades are free swinging and swivel on hardened steel bushes which are easily replaced. When replacing blades, it is important that blades are replaced in sets, in order to retain balance of the rotor. Bushes must be replaced when new blades are to be fitted.

If the blades are showing any signs of severe wear, damage or cracking, they must be replaced immediately. Never attempt to weld the blades, this will make them very brittle thus extremely dangerous. Do not take risks with the cutting blades - if in doubt, replace.

Note - The slip clutch is there to protect gearbox if the blades strike large obstickle they may get damaged or break avoid these conditions.

Optional Chain Kit

Is available for use in stoney conditions for scrub clearance but not suitable for thick material.

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 are available.

If working in wet and muddy conditions, ensure that mud thrown from tractor wheels is not allowed to build up between the deck.

Storage

Before storing away, thoroughly wash the machine removing all faces 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, be sure to remove all detergents to avoid any discolouring or damage to paint. Grease all grease points until fresh grease shows. Store P.t.o. shaft in a dry place.

After storage

Disassemble the slip clutch and with an emery cloth remove all traces of rust on the metal clutch plates. Check condition on the friction plates, if there is any sign of over heating, wear or cracking, replace with new. Do not attempt to use the machine with damaged slip clutch plates.

Assemble the clutch and tighten the bolts to achieve a spring length of 29mm. Do not over tighten or the clutch will not work.

Check condition of the tyre (where applicable) and then follow the maintenance procedure covered in the servicing part of this manual. Pay particular attention to the condition of guards and blades.

Remember the 1500-3W is designed to withstand the most rigorous conditions and, with a little care and attention, will give many years of trouble free service. So as not to invalidate the warranty and to avoid problems, use only genuine parts and make sure the machine is not driven at a speed in excess of 540 r.p.m. on the p.t.o.

Parts lists

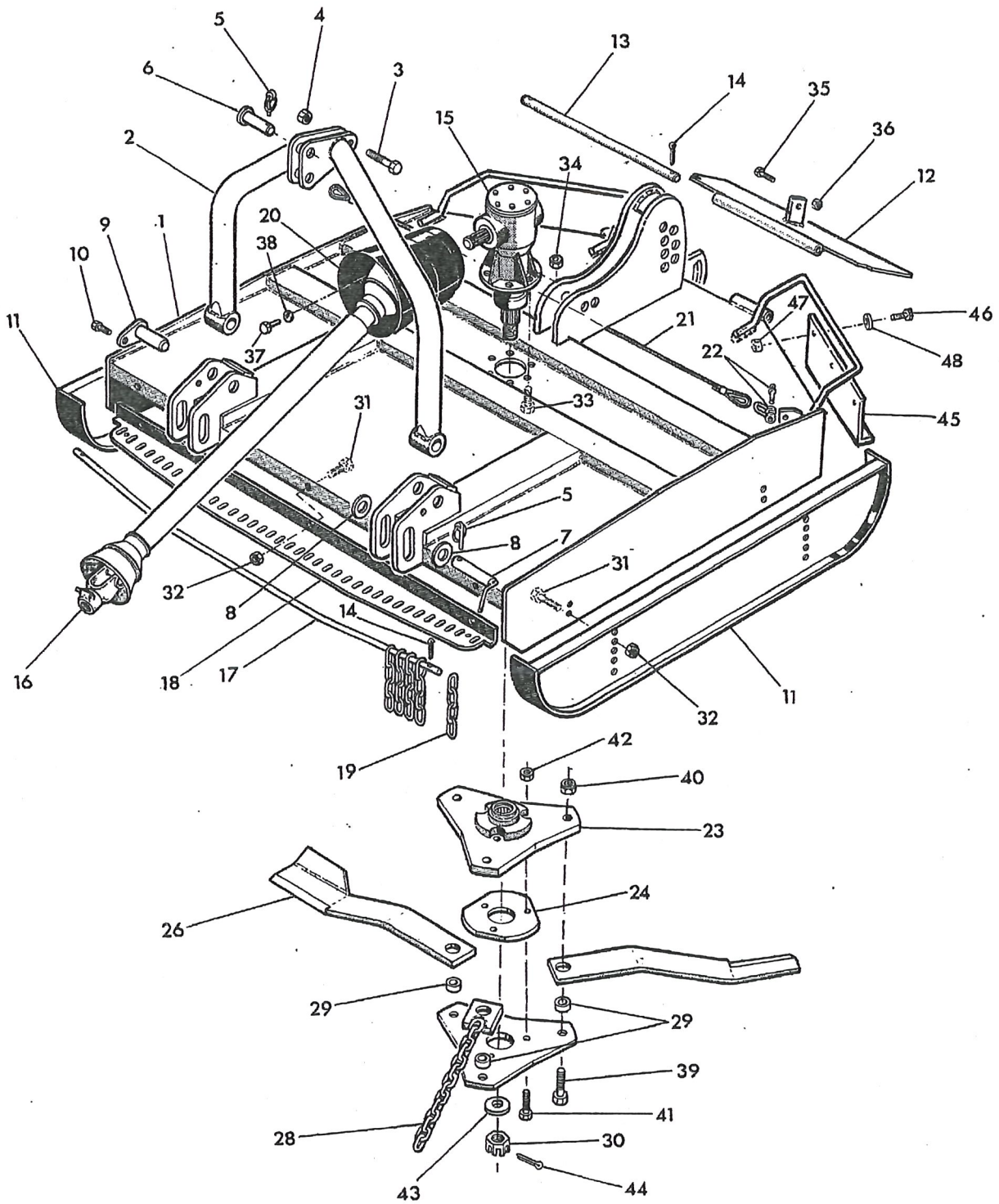
Ordering parts

When ordering parts please refer to your parts list to help your dealer with your order. Please provide the following:

- Model no.
- Part no. and quantity
- Description
- Serial number of machine
- Delivery instruction (e.g. next day)

Delivery is normally via carrier direct to your dealer. Services that are currently available are Next Day with the additional option of before 9am, 10.30am or Noon. Carriers also offer a 2-3 day service for heavier items. For light and small parts, these can be posted first or second class mail.

167002 58710



ANTI SCALP DISH 8000 SWIPE 1777042 WITH BLADE CARRIER
777028 DISH ONLY

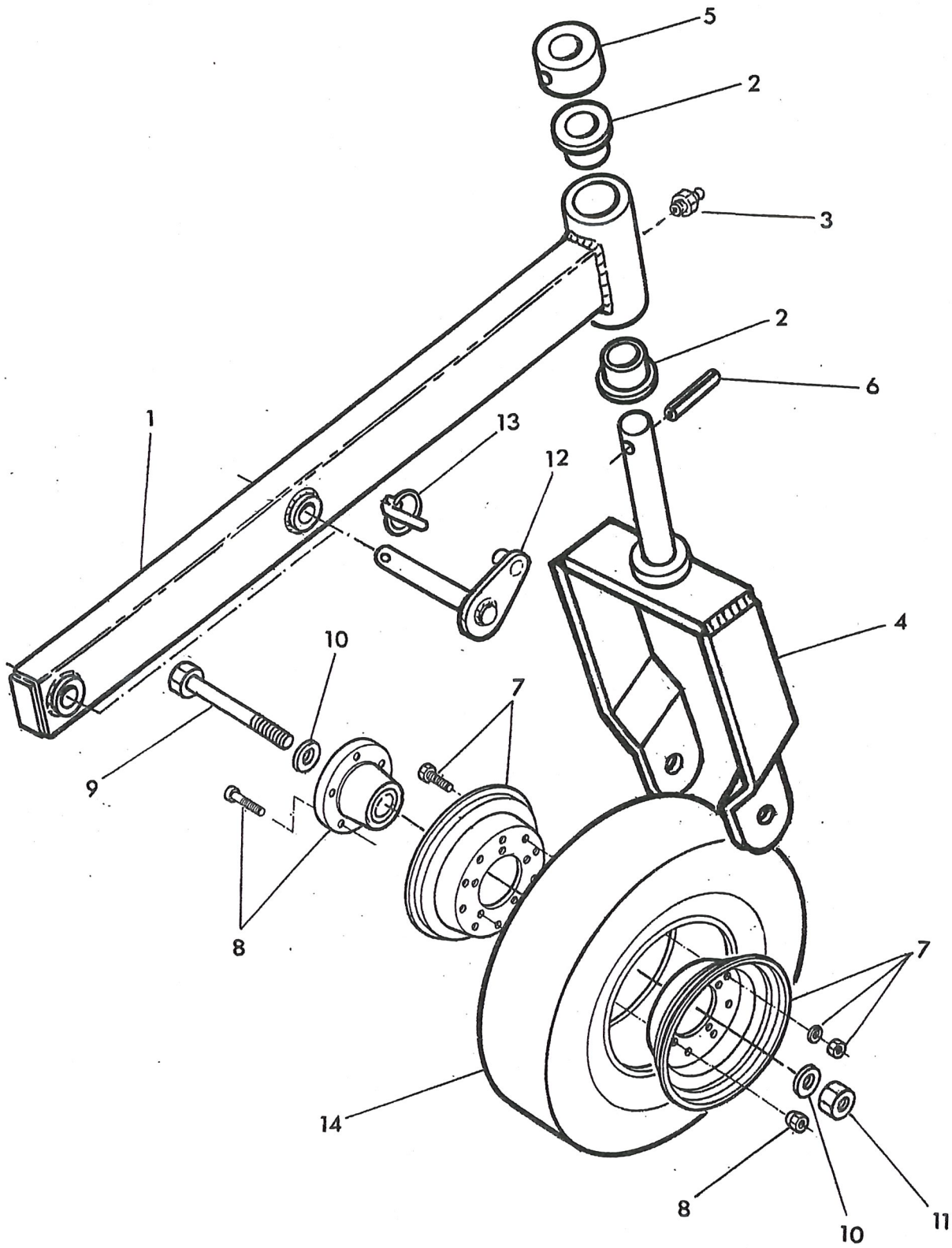
Main Body Assembly

Parts list - 1500-3W Main body (Illustrated)

Fig. Ref	Part number		Item description
	1500-3W	2000-3W	
1	1560100	1770202	Main body c/w wheel profile
2	1777613	1777613	Headstock
3	2770463	2770463	Bolt
4	2770447	2770447	Nut
5	6310206	6310206	Lynch Pin
6	6310203	6310203	Pin
7	6310208	6310208	Pin
8	2770470	2770470	Washer
9	1777611	1777611	Pin
10	2770407	2770407	Setscrew
11	1560102R	1560102R	Right hand skid
	1560102L	1560102L	Left hand skid
12	1560103	1770224	Rear flap
13	1560104	1770223	Hinge bar
14	2770513	2770513	Split pin
15	5770004	5770004	Gearbox
16	5770079	5770076	P.t.o. shaft
17	1560105	1560105	Chain bar
18	1560111	1560106	Chain Guard
19	8770621	8770621	Chain
20	5770106	5770106	Cone
21	6770915	6770917	Wire rope
22	6770575	6770575	Shackle
23	1770603/3	1770220	Upper blade carrier
24	1770604/3	1770222	Blade spacer
25	1770606/3	1770221A	Lower blade carrier
26	7770700 ^{28"}	7770718 ^{29 1/2"}	Blade c/w fin
28	OPT0004	OPT0011	Swipe chain
29	7770707	7770707	Bush
30	5771409	5771409	Castle nut
31	2770535	2770535	Bolt
32	2770417	2770417	Nut
33	2770423	2770423	Bolt
34	2770447	2770447	Nut
35	2770421	2770421	Setscrew
36	2770412	2770412	Nut
37	2770431	2770431	Setscrew
38	2770432	2770432	Washer
39	2770413	2770413	Bolt
40	2770414	2770414	Nut
41	2770404	2770404	Bolt
42	2770447	2770447	Nut
43	5771410	5771410	Domed washer
44	2770477	2770477	Split Pin
45	1770410	1770410	Side Flap
		1770614	Chain bar (Front corners)

H6
H7

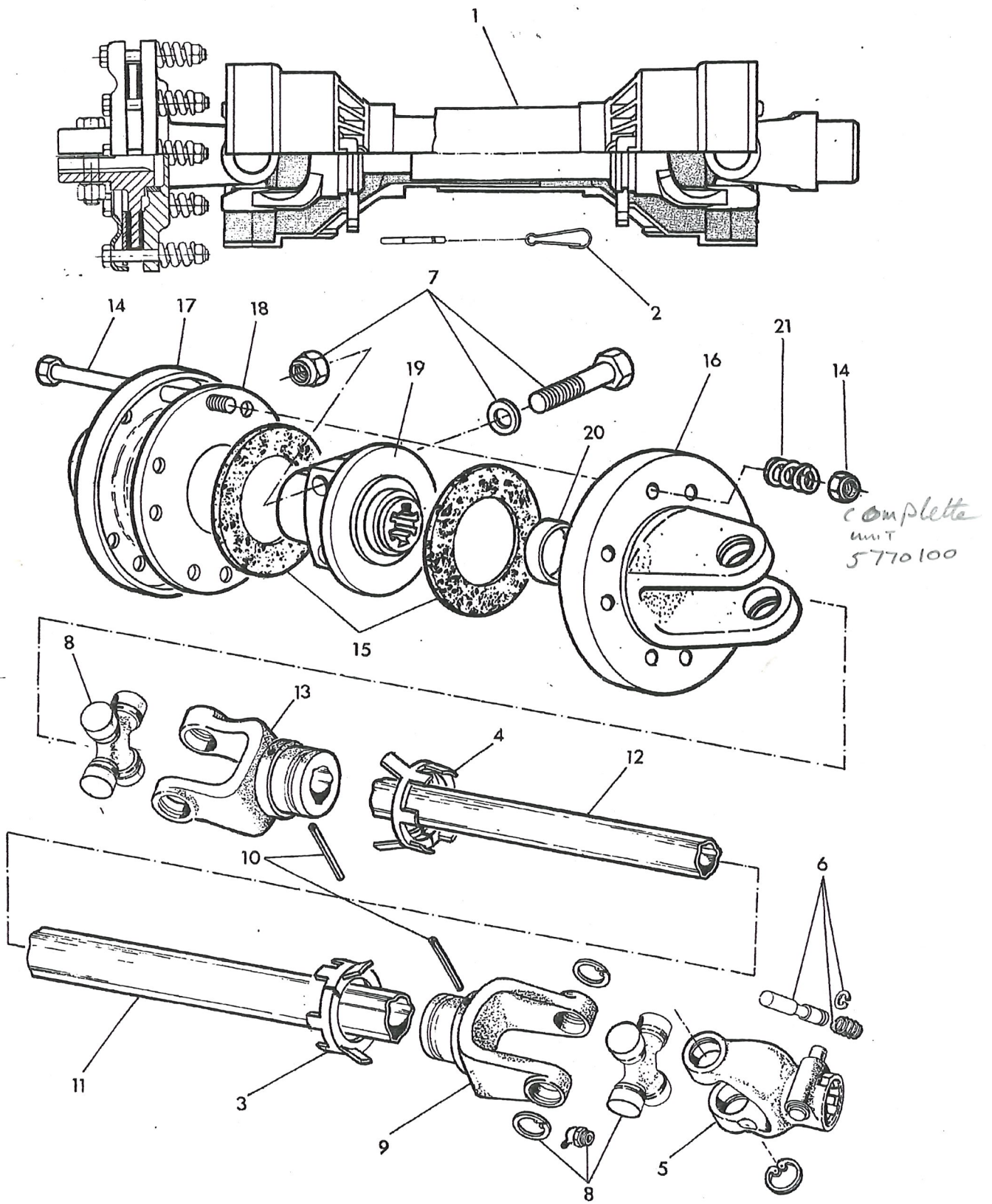
2770420 BOLT
2770417 NUT



Wheel Kit Assembly

Parts list - 1500-3W Wheel Kit

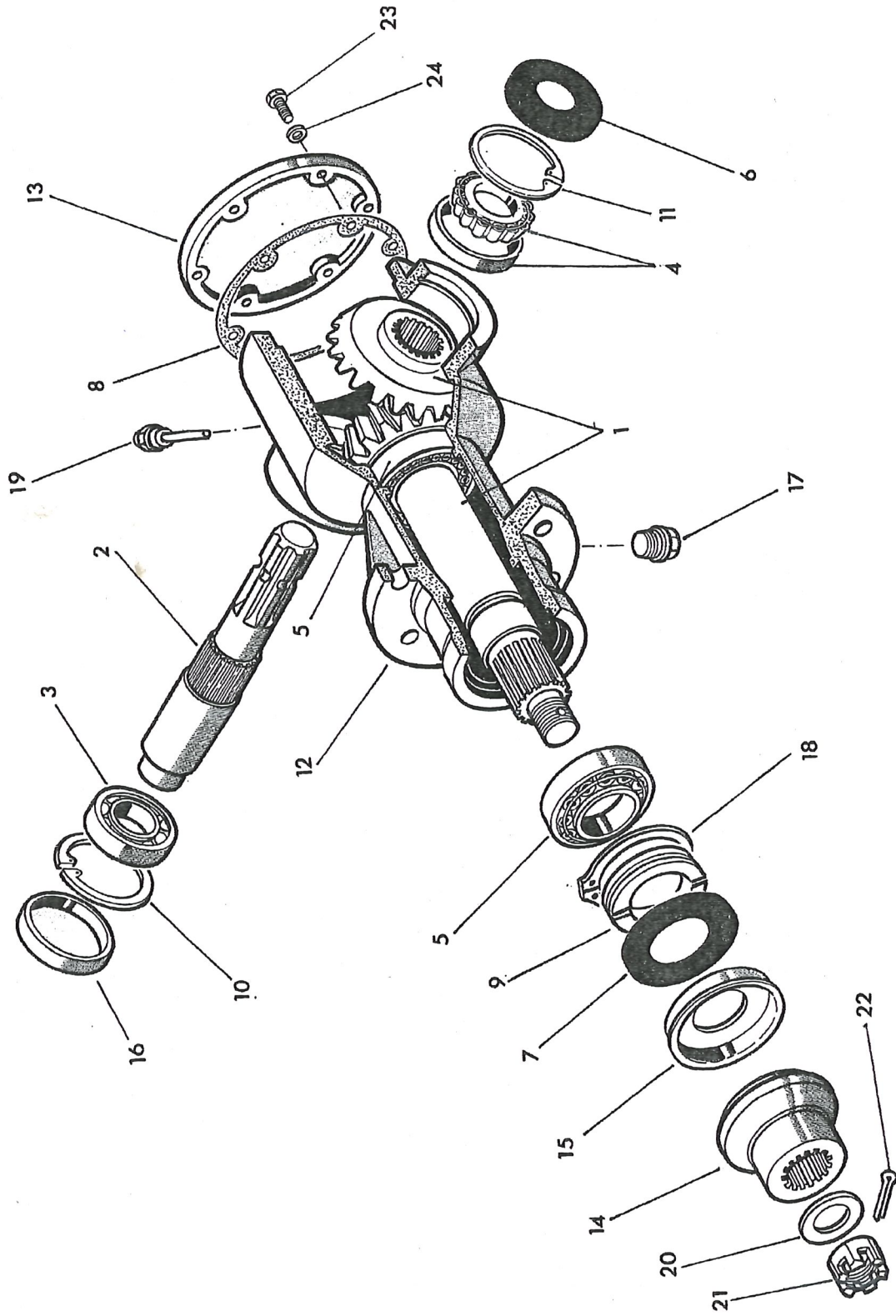
Fig. Ref	Part number		Item description
	1500-3W	2000-3W	
1	1770401	1770401	Wheel arm
2	4600127	4600127	Bush
3	2770467	2770467	Grease nipple
4	1770399	1770399	Wheel Yoke
5	1777700	1777700	Bush
	1777524	1777524	Spacer - height adjuster
6	2770479	2770479	Roll pin
7	6770647	6770647	Wheel rim
	2770421	2770421	Set screw
	2770469	2770469	Spring washer
	2770438	2770438	Nut
8	6770676	6770676	Hub
	6770677	6770677	Wheel stud
	6770678	6770678	Wheel nut
9	2770538	2770538	Bolt
10	2770517	2770517	Washer
11	2770409	2770409	Nut
12	1770634	1770634	Pear pin
13	6310206	6310206	Linch pin
14	6770675	6770646	Complete wheel



P.t.o. Assembly

Parts list - P.t.o. shaft assembly

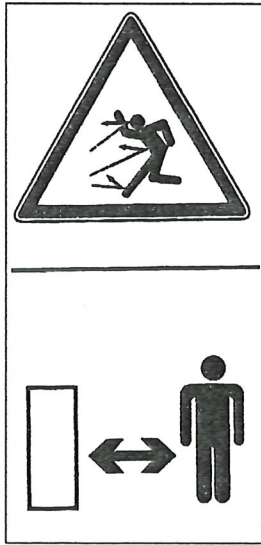
Fig. Ref	Part number	Item description
	5770079	P.t.o. shaft 1500-3W
	5770076	P.t.o. shaft 2000-3W
1	5770120	P.t.o. guard 1500-3W
	5772262B	P.t.o. guard 2000-3W
2	5771020	Retaining chain
3	5771308	Outer bearing
4	5771313	Inner bearing
5	5771299	Yoke Q.R.
6	5771023	Complete push button
7	5770091	Bolt set (2)
8	5771301	Cross journal assembly
9	5770095	Outer tube yoke
10	2770542	Roll pin
11	5772277	Outer tube
12	5772278	Inner tube
13	5770096	Inner tube yoke
14	5771325	Clutch plate bolt c/w nut
15	5771320	Clutch plate
16	5771318	Flange yoke
17	5771324	Pressure plate
18	5771323	Inner plate
19	5770093	Flange hub 6 spline
20	5771319	Bush
21	5771317	Spring
22	5771320	Clutch plates
	5770100	Complete TORQUE LIMITER N6 6 spline
	5770100A	AS ABOVE BUT 21 spline.



Gearbox Assembly

Parts list - Gearbox assembly

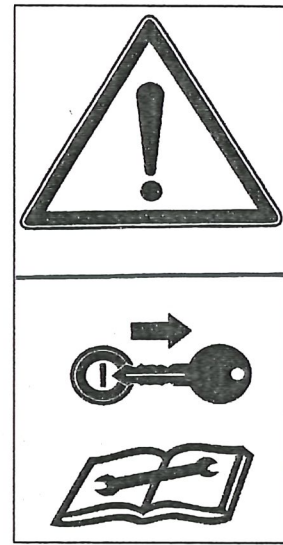
Fig. Ref	Part number	Item description
1	5771418	Gear & pinion set
2	5771403R	Input shaft
3	4771600	Bearing
4	4771601	Bearing
5	4771602	Bearing
6	4771124	Seal
7	4771500	Bottom seal
8	5771405	Gasket
9	5771422	Collet
10	2771600	Circlip
11	2771129	Circlip
12	5771402	Casing
13	5771401	Cover
14		Splined bush (see blade carrier)
15	5771406	Cover
16	4771503	End seal
17	571415	Plug
18	2771108	Circlip
19	5771416	Dipstick
20	5771410	domed washer
21	5771409	castle nut
22	2770477	Split pin
23	5771407	Screw
24	2771408	Small washer
	6771423	Shim set



1



2



3



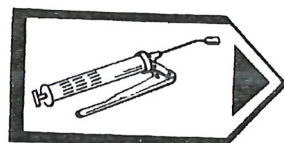
4

D Vor Inbetriebnahme die Betriebsanleitung und Sicherheitshinweise lesen und beachten.
F Lire le livret d'entretien et les conseils de sécurité avant la mise en marche et en tenir compte pendant le fonctionnement.
GB Carefully read Operator's Manual before handling this machine. Observe instructions and safety rules when operating.
NL Voor ingebruikname de bediening handleiding en veiligheidsvoorschriften lezen en in acht nemen.

5

KEEP BOLTS TIGHT
 Check bolt tightness after
 1 hour, 4 hours, 10 hours and
 thereafter daily.

6

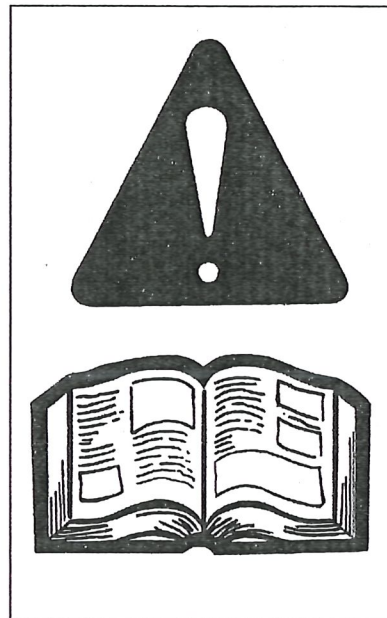
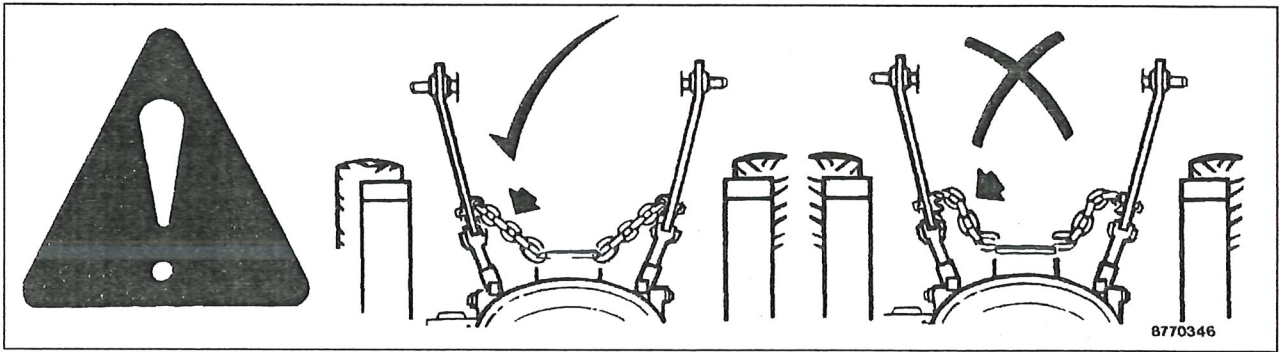


7

Stickers assembly

Parts list - Sticker assembly

Fig.Ref	Part number	Item description
1	8770357	'Keep Safe Distance When Machine is Running' Sticker
2	8770356	'Do Not Remove/Open Guard' Sticker
3	8770358	'Shut Off Engine Remove Key' Sticker
4	8770360	'Stay Clear of Mower Flails' Sticker
5	8770363	'Read Manual' Sticker
6	8770306	'Keep Bolt Tight' Sticker
7	8770322	'Grease Point' Sticker



Recommended P.T.O.
speed 540 r.p.m.

4

Stickers assembly

Parts list - Stickers assembly

Fig.Ref	Part number	Item description
1	8770346	'Check - Chains' Sticker
2	8770307	'Manufactured in Great Britain' Sticker
3	8770340	'Read Manual' Sticker
4	8770305	Recommended P.t.o. speed 540r.p.m.

Spearhead

EC declaration of conformity, conforming to EEC directive 89/392/EEC

We, Spearhead Machinery Ltd, Pershore Trading Estate, Pershore,
Worcestershire WR10 2DD declare under our sole responsibility that the

product

product code

serial no. & date

type

Manufactured by the above company complies with the required provisions of the directive 89/392/EEC, and AMD 91/368/EEC, AMD 93/44/EEC, AMD 93/68/EEC and conforms with European norm. BSEN 292; Part 1: 1991 safety of machinery - Terminology, methodology; Part 2; 1991 Safety of machinery - Technical specifications and other national standards associated with its design and constructions as listed in the Technical File.

Signed

on behalf of Spearhead Machinery Ltd

Status

Date

The Spearhead Warranty

Spearhead warrants that the Spearhead machine referred to in the Warranty Registration Form will be free from defects in materials and workmanship for a period of 12 months from the date of sale. This warranty does not affect your statutory rights, but merely adds to them. Should you have a problem within 12 months from the date of sale please contact your original Spearhead dealer, or Spearhead's Service Department. Any part found to be defective during this period will be replaced or repaired, at Spearhead's discretion, by the dealer or a Spearhead Service Engineer.

Spearhead Warranty Conditions

- 1 The Warranty Registration Form must be completed and returned to Spearhead within 30 days of the date of sale.
- 2 This warranty does not cover defects arising from fair wear and tear, wilful damage, negligence, misuse, abnormal working conditions, use in competition, failure to follow Spearhead's instructions (oral or written, including all instructions and recommendation made in the Operator's Manual) or alteration or repair of the machinery without Spearhead's approval.
- 3 The machinery must have been serviced in accordance with the Operator's Manual and the Service Log must have been kept up to date and made available to the dealer should service, repair or warranty work be undertaken.
- 4 This warranty does not cover claims in respect of wearing parts such as blades, flails, paintwork, tyres, belts, hydraulic hoses, bearings, bushes, linkage pins, top links, ball ends unless there is a manufacturing or material defect or the cost of normal servicing items such as oils and lubricants.
- 5 This warranty does not cover any expenses or losses incurred whilst the machinery is out of use for warranty repairs or parts replacement.
- 6 This warranty does not extend to parts, materials or equipment not manufactured by Spearhead, for which the Buyer shall only be entitled to the benefit of any such warranty or guarantee given by the manufacturer to Spearhead. Only genuine Spearhead replacement parts will be allowable for warranty claims.
- 7 All parts replaced by Spearhead under warranty become the property of Spearhead and must be returned to Spearhead if Spearhead so request. Such parts may only be disposed of after a warranty claim has been accepted and processed by Spearhead.
- 8 Spearhead is not liable under this warranty for any repairs carried out without Spearhead's written consent or without Spearhead being afforded a reasonable opportunity to inspect the machinery the subject of the warranty claim. Spearhead's written consent must, therefore, be obtained before any repairs are carried out or parts replaced. Use of non-Spearhead parts automatically invalidates the Spearhead Warranty. Failed components must not be dismantled except as specifically authorised by Spearhead and dismantling of any components without authorisation from Spearhead will invalidate this warranty.
- 9 All warranty claims must be submitted to Spearhead on Spearhead Warranty Claim Forms within 30 days of completion of warranty work.

Extended Warranty

As an extension to the 12 month warranty set out above, Spearhead will provide an additional 12 month warranty cover subject to the Spearhead Warranty Conditions above and the Extended Warranty Conditions below.

Extended Warranty Conditions

- 1 The extended warranty applies to hydraulic pumps, motors, valves and gearboxes only. It does not apply to other parts, to consumables such as lubricants, seals or filters or to labour charges.
- 2 The machinery must have had an annual service carried out by an Authorised Spearhead Dealer or a Spearhead Service Engineer within 1 month of the first anniversary of the date of sale and the Service Report form must have been completed and stamped by the servicing dealer or Spearhead Service Engineer and sent to Spearhead within 14 days after the first annual service.
- 3 The extended warranty does not cover costs of transportation of the machinery to or from the dealer or Spearhead or the call out costs or travelling expenses of on-site visits.

Transfer of Warranty

The Spearhead warranty may be transferred to a subsequent owner of the machinery (for use within the UK) for the balance of the warranty period subject to all of the warranty conditions and provided that the Change of Owner form is completed and sent to Spearhead within 14 days of change of ownership.

Spearhead reserves the right to make alterations and improvements to any machinery without notification and without obligation to do so.