OPERATORS MANUAL

GS400

SPEARHEAD MACHINERY LTD

INTRODUCTION

The **GS400** is a very robust high capacity rotary cutter that is 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.

SAFETY

Before use always check that all guards are properly fitted.

Check there are no damaged or lost parts. Particular attention should be given to the blades to ensure they are not damaged, cracked or missing. Never operate with broken or missing blades.

Never operate the machine with other people present, it is possible for debris, even large stones to be discharged from front and rear of machine. Keep all tractor windows closed.

Do not at any time allow children to play on or around the machine.

Never attempt any maintenance or adjustment without first disengaging the P.T.O., lower the machine to the ground and stop the tractor engine. Before leaving the tractor at any time always be sure the P.T.O. is disengaged and the rotors have stopped spinning.

Before folding the mower wings into transport position ensure all blades have stopped spinning. Never engage the P.T.O. with wings folded. Once folded always fit locking pins before leaving site of work.

ATTACHING TO THE TRACTOR

The GS400 is attached to the tractor's rear three point linkage. It is important that there is sufficient length in the top link to allow free movement of the A frame. This is necessary to allow the wings to float when in work.. Before lifting the machine up with 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 operating postion. To check first connect the mower to the tractor linkage. 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. 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.TO. drive shaft onto P.T.O. shaft 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.

MAINTENANCE

Check condition of blades daily and ensure all retaining bolts are fully tight. Check wheel nuts are tight. Check tyre pressure - 35 psi.

Every 8 hours dismantle and clean P.T.O. sliding surfaces and regrease. Grease universal joints, pulley retaining bolts and rear wheel pivot points.

Every 20 hours lubricate the retaining collar on all the drive shaft guard.

Gearbox seals should be inspected regularly for leaks. Check and replenish gearbox oil with EP90 Gear Oil as necessary.

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 replaceable. When replacing blades, it is important that blades are replaced in pairs, in order to retain balance of rotor. Bushes must be replaced when new blades are to be fitted.

When operating on abrasive soils, particularly in stubbles and similar conditions with thin groud cover, excessive skid wear may be expected. To provide extra protection and to prolong life of the skids special Hard Facing rods are available from Spearhead Service Department. Skid shoes must be replaced before the countersunk fixing bolt heads are worn away.

If working in wet and muddy conditions ensure that mud thrown from tractor wheels is not allowed to build up between the deck and drive shafts as this could cause damage to the drive shafts and eventually put strain onto gearbox bearings.

STORAGE

At end of the season before storing away, thoroughly wash the machine off removing all traces of grass and dirt. Grease all grease points until fresh grease shows. Grease all adjusting screws, cables and hydraulic ram piston. If possible block the machine and reduce the tyre pressure. Store P.T.O. shaft in a dry place.

Remember the GS400 is designed to withstand the most rigorous condition and with a little care and attention will give many years of trouble-free service. In order 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 rpm on the P.T.O.

OPERATION

If the machine is in transport position first remove the two locking pins and lower both wings by releasing the external hydraulic pressure and leave the valve open in float.

To alter height of cut raise or lower the outside skids and to the same degree alter the two centre trailing wheels. Care should be taken to achieve equal height across the three decks. At the front of the centre section are two anti-scalping skids which should be set 2-3" above the height of the outerskids. After any adjustments always fully re-tighten all bolts before using the machine.

Once ready to start work lower machine to the ground making sure the full length of both outer skids are in contact with the ground, carrying only front of centre section on the lower link arms. The decks should be level to the ground without any weight on the top link allowing the steel cables to be slack.

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 540 rpm P.T.O speed. If at any time serious vibration occurs, stop engine immediately and check the blades, following all safety precautions.

Select a sensible forward speed bearing in mind the density of growth, the terrain, and the available horsepower. The **GS400** is capable of operating at high speeds but extra care should be taken 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. Never reverse with the machine on the ground.

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

MACHINE PROTECTION

To prevent gear box damage all rotors are protected by slip clutches fitted to each of the three drive shafts. When cutting in extreme conditions where stumps, rocks and other such solid objects are likely to be found it is reccommended the operator reduces the engine revs to allow the blades to pivot more easily when stricking solid objects.

The clutch settings should not be altered with out reference to the Spearhead Service Depertment.

Warranty registration form

Machine Model _____

Serial No. _____

Date of Delivery _____

Dealer's Address _____

_____

_____

Telephone No. _____

Owner's Address _____

_____

_____

Telephone No. _____

Incorrect details and/or failure to return card could interfere with your warranty rights. Please complete correctly and return to Spearhead Machinery Ltd. within seven days.

I/we understand the conditions of sale with regards to warranty claims. The above information is correct to the best of my knowledge.

Sign _____

Print _____

Position _____

Date _____

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 DIRECTOR Date 1/1/95