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:


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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## Servicing & Maintenance

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Safety

**Warning**
Avoid fluid escaping under pressure. Consult technical manual for services procedures.

**Warning**
Danger – flying objects keep safe distance from the machine as long as the engine is running.

**Warning**
Stay clear of mower blade as long as engine is running.

**Warning**
Stay clear of swinging area of implements.

**Warning**
Check all nuts are tight every 8 hours.

**Warning**
Carefully read operator’s manual before handling this machine. Observe instructions and safety rules when operating.

**Warning**
Shut off engine and remove key before performing maintenance or repair work.
Recommendations

Beware of the following Potential Dangers associated with the use of this machine:

- Becoming trapped when hitching or unhitching
- Machine overbalancing when wing is raised.
- Getting caught on rotating power take off (PTO)
- Being hit or caught by any moving part, e.g. Blades, drive shaft and wings.
- Being hit by flying debris or machine parts due to machine damage
- Machine overbalancing when not in use
- Injection of high pressure oil from damaged couplings or hydraulic hoses
- Accidents due to collision with other machines, or debris left on road
- Beware of free-swinging blades over centering and falling when wings are folding.

ALWAYS:

- Ensure the operator has read this handbook and has been trained to use the machine.
- Ensure all safety guards are in place and all tractor windows closed.
- Impact resistant shielding to the tractor is recommended
- Before leaving the tractor cab always ensure that the wings are firmly on the ground, no weight is on the machine’s hydraulics and the rotor has stopped spinning.
- Check that all guards are properly fitted and there are no damaged or loose parts. Particular attention should be given to the blades to ensure they are not damaged, cracked or missing
- Inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Ensure that all warning labels are always visible and that they are not damaged, defaced or missing.
- Fit locking pins to height and to wings before transport and before unhitching when applicable.
- Wear ear defenders if operating without a quiet cab or with the cab windows open
- Ensure tractor guards are fitted correctly and are undamaged
- Work at a safe speed, taking into account terrain, passing vehicles and obstacles
- Ensure that the tractor meets the minimum weight recommendations of the machine manufacturer and that ballast is used if necessary
- Check that machine fittings and couplings are in good condition
- Follow the manufacturer’s instructions for attachment and removal of machine from the tractor
- Ensure blades are of the type recommended by the manufacturer, are securely fitted and are undamaged
- Ensure hydraulic pipes are correctly routed to avoid damage from chafing, stretching, pinching or kinking.
- Check condition of tyres and tightness of wheel nuts.
• Ensure all blades have stopped spinning before folding wings into transport position.
• Disengage the machine, stop the engine and remove the key before leaving the tractor cab for any reason.
• Clean up any debris left at the work site.
• Ensure that when you remove the machine from the tractor it is secured in a safe position using the stands provided.

NEVER:

• Never operate the machine with other people present, as it is possible for debris, including stones, to be discharged from the front and rear.
• Never operate the machine until you have read and understood this Handbook and are familiar with the controls.
• Never use a machine that is poorly maintained or has guards that are damaged or missing.
• Never allow an inexperienced person to operate the machine without supervision.
• Never use or fit a machine onto a tractor if it doesn't meet the manufacturer's specification.
• Never use a machine if the hydraulic system shows signs of damage.
• Never attempt to detect a hydraulic leak with your hand, use a piece of card.
• 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 the wings to the ground, stopping the tractor engine and applying the tractor parking brake.
• Never leave the cab without removing the ignition key.
• Never operate the tractor or any controls from any position other than from the driving seat.
• Never stop the engine with the PTO engaged.
• Never operate with blades missing.
• Never operate PTO above recommended speed, 1000 r.p.m.
• Never operate with wire around the rotor. Stop immediately.
• Never use the wing raised which may throw debris towards the cab.
• Never attempt to use the machine for any purpose other than that it was designed for.
• Never transport with the PTO engaged.
• Never enter the working area of the machine (risk of injury!).
• Never engage the P.T.O with wings folded.
Introduction

The Spearhead 620 is a heavy-duty rotary mower for a set-aside, stubble and pasture topping. By carefully following the instructions in this handbook, the 620 will give many years of trouble free operation.

Safety First

Never start using the machine until the handbook has been read and understood. The 620 rotary mower is a potentially lethal machine if used incorrectly and it is essential that the operator fully understand the working before starting up.

Tractor Requirements

- Spearhead recommend tractors of between 85 and 150hp.
- A clevis drawbar must be used,
- The tractor should have a minimum weight of 3000 kg.
- The tractor should have a 1,000rpm P.T.O.
- Two external hydraulic services are required, single acting for height control and single acting for wings with float facility.

Attaching To The Tractor

It is essential to ensure that the tractor lift arms cannot foul the P.T.O. shaft, even when the tractor is on full lock. It is advisable to remove them altogether if there is any doubt.

The tractor drawbar should be extended to its maximum not less then 400mm from the P.T.O. This will enable turning in work without damaging the drive shaft. Never attach the mower using the pick-up hitch as this will cause damage to the drive shaft.

Fit the nylon washer between the mower drawbar and the tractor clevis, as shown, to reduce wear between the two parts. The nylon washer is a replaceable wearing part.

Warning

Do not attach machine to pick up hook. This will damage the P.T.O. shaft
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. 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 PTO, first clean and grease. Press pins on the yoke and simultaneously push the PTO drive shaft onto 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.

Connect the two hydraulic hoses, one to each separate single acting service, with a dump facility. This is particularly important for the spool valve that operates the wings as, when in work the wings must be able to follow the ground contours.
Levelling – Front To Rear

Once coupled to the tractor, check the mower is cutting level from the front to the rear of the machine. This is important to ensure each rotor will cut at the same height (Fig. 3). The machine has adjustable tie bars that can be lengthened to lower the front or shortened to raise the front of the machine by turning barrel nut (part no. 1770675) (Fig. 2). Once satisfied the mower is cutting level, with equal weight on each tie bar, tighten locking nuts.

Levelling – Wings LH & RH

With the machine in the working position and the wings folded down it may be necessary to alter the height of the wing to ensure each rotor is cutting level. Between each axle there is an adjustable link (part no. 1770673B) shortening this will raise the cutting height of the wing rotor and blades.

1. Fine adjustment is made using the tum-buckle located between the axles, shorten to raise the wing, lengthen to lower the wing.

(Note do not expose more than 25mm of thread as the ball ends will foul in the clevis when fully lowered)

Coarse adjustment is made via the serrated disc located on each wing axle, move ball end rearwards to raise wing. Ensure the teeth fully mesh. We recommend lock-tight on the Allen bolt and torque of 500Nm.

Warning
The machine is set at the factory with the centre deck 1” (25mm) higher at the front and the wings ½” (12mm) higher to the centre section, when mounted on the tractor drawbar at 16” (400mm).

When operating over uneven ground it is recommended to raise the front of the machine by adjusting the tie bars to prevent scalping or damage to the blades.
Setting Up Your Machine

Height

To alter the minimum height of cut; fully raise the machine, remove pin a (Fig. 4) slide sleeve b forward or backwards to raise and lower cutting height respectively, replace pin a through sleeve b and gently lower the machine. The sleeve b only controls the minimum cutting height, however the operator may raise and lower the machine by the hydraulic ram when the machine is in operation.

Use the height gauge as a guide when setting height of cut

Wings

Before unfolding the wings if the machine is in the transport position, first pressurise hydraulic rams before releasing locking pins and transport strap, lower wings by releasing hydraulic pressure, leaving tractor spool in float position (Fig. 5)
Operation

Once ready for work, raise the mower cutting height and slowly engage the PTO with the tractor engine at low revs to prevent shock damage to the machine. Slowly increase the engine revs to achieve the recommended PTO speed of 1000 r.p.m. As indicated by the decal on top of the centre guard and not the number of splines on the P.T.O shaft. If at any time serious vibration occurs, **stop the 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 quality of finish is determined by the forward speed, i.e. a slow speed will produce a high quality of cut, where as faster forward speeds are used when high output is first priority.

When in work, always ensure the hydraulic spool valve that operates the folding of the wings is in float position to enable the wings to freely follow all contours of ground (Fig. 6).

**Fig. 6 contours of the ground**

Recommended

Do not operate the machine over rough terrain on the height stop, as any shock loads may cause stress leading to fatigue and failures. Carry the weight on the gas suspension system by removing the height stop pin.

Whilst operating it is possible to continue working when turning as the 620 Rotary Cutter is fitted with a constant velocity joint on PTO shaft. However take care not to run the rear tractor wheel against the mower draw bar as this will result in serious damage to the tractor, the mower and, in particular, the PTO shaft.

The constant velocity joint on the input PTO shaft, allows the PTO to be left in gear whilst turning out of work, e.g. on the headlands. **It is important not to turn sharply when the machine is in work as this will over-strain and shorten the life of the constant velocity joint.**

When operating in confined areas it is possible to cut going backwards, but it is advisable to slightly raise the machine, particularly if in scrub, where there is the risk of hitting hidden solid obstacles obscured by dense undergrowth.

Always exercise particular care when operating over uneven ground surfaces. Do not allow the blades and blade holder to frequently hit the ground.

Do not allow debris to build upon the cutting decks in dry conditions, as this can be a fire hazard, in wet conditions it will place unnecessary strain on the machine and may foul the drive shaft causing damage.
**Options**
Swivel drawbar hitch for use on uneven ground.

**Transportation**
First disengage the PTO drive, fold the wings fully up and secure with locking pin and transport strap (Fig. 7). Raise the machine up above the height stop carrying the machine weight on the height ram, this transfers pressure to the hydra gas suspension system.

**Warning**
Do not transport the machine over rough ground on the height pin alone as any shock loads may cause stress leading to fatigue and failure. Never transport along public highways with the wings only supported by the hydraulics, always secure with locking pins.

**Note**
Before parking and unhitching your machine please lower the height ram onto its stop to relieve the hydraulic pressure, before releasing to hoses. Observe Public Highway Regulations, concerning the towing of implements, and securely attach a registration and lighting board.

**Warning**
Avoid transporting machine at high speed over rough ground. Maximum speed on highway – 20mph (30kph).
Machine Protection

When the machine is delivered new, the slip clutch tensioning bolts will be purposely left loose after initial PDI at Spearhead. This is to force the clutches to be slipped and reset before the customer uses their machine for the first time. Refer to clutch settings on page 19/20.

To prevent gearbox damage all rotors are protected by slip clutches fitted to each of the five drive shafts. When cutting in extreme conditions where stumps, rocks and other such solid objects are likely to be found it is recommended that the operator reduces the engine revs to allow the blades to pivot more easily when striking solid objects, fit stump jumper plates to lower blade carriers, and proceed with caution.

The clutch settings should not be altered without reference to Service and Maintenance. Never over-tighten the pressure springs on the slip clutches (Fig. 8) as this could result in severe damage to the gearbox and drive lines, as well as invalidating the warranty.

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 driveline and gearboxes against shock loading. To free the clutch plates first slacken all pressure spring bolts and run up the machine for a short period, deliberately try to cause the clutch to slip. Finally re-tighten the tension spring bolts to their original length, taking great care not to over-tighten. Alternatively refer to page 19/20.

If in any doubt, consult Spearhead’s Service Department or your local Spearhead Dealer for further advice.

Fig. 8  Slip Clutch (WALTERSCHEID)
Service & Maintenance

Safety First

- Never leave the tractor seat without first disengaging the PTO and stopping the engine.
- Ensure all rotating parts 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 completed.

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:

1. Wheel nuts and tyre pressure (40psi).
2. Gearbox bolts, including the splitter box.
3. Oils in all the 6 gearboxes.
4. Blade bolts are fully tightened and in particular the 5 castle headed nuts on the 5 blade rotors.
5. Retaining bolts on the drive shafts.
6. Grease all points including drive shaft tubes.
7. After the first 50 hours drain and replace the gearbox oil. Replace with EP90 gear oil.

Warning

Never carry out any servicing or maintenance work without first disengaging the PTO and then stopping the tractor engine before leaving the seat.

On delivery of your machine check that the dealer has completed the P.D.I form, ensure the warranty registration form is completed and returned.
Servicing & Maintenance

Daily

- Grease all grease points, including rear axle pivot points (Fig. 9a), axle hinge (Fig. 9c), wheel arms (Fig. 9b), and front draw bar pivot (Fig. 9f)
- Check bolts are tight on all gearboxes.
- Check condition of blades and blade bushes; ensure all retaining bolts are fully tight.
- Check wheel nuts are tight.
- Check tyre pressures – 40 P.S.I.
- Check gearbox oil, replenish with EP90 gear oil as necessary to the correct level line on the dipsticks, provided with each gearbox.

Fig. 9 Greasing points

A  Rear axle pivot points; grease points 7 off
B  Wheel arm grease points 4 off
C  Rear axle hinge joint grease points 2 off
D  Height adjustment grease points 1 off
E  Drive shafts c/w slip clutch 2 off
F  Front drawbar grease points 2 off
G  Wing rams 2 off
H  Wheel bearings 8 off
I  Telescopic shafts 2 off

Blade rotation CLOCkWISE
Blade rotation ANTI CLOCkWISE
Service & Maintenance

Every 8 hours

- Dismantle and clean the main input P.T.O shafts sliding surfaces and re-grease; failure to do this will result in serious damage to the splitter gearbox.
- Grease all universal joints, (Fig. 10) paying particular attention to the constant velocity joint. If under-greased this constant velocity joint will soon fail.
- Grease the wing drive shaft tubes, (note the hole in the plastic tubing for access).
- Lubricate the retaining collar on all the drive shaft guards (Fig. 10).
- Grease PTO inner tube and push pins (Fig. 10).
- Check all bolts are tightened to the correct Torque (Fig.11).

For maximum life and performance, the CV body must be greased regularly. Lubricate with the driveline in a straight position - up to 30 pumps of grease may be required.
- The metal drive tubes must be greased to operate properly.
- Shielding is subject to damage from abuse and weathering. Replace all damaged components and all shielding removed during maintenance.
- Do not use PTO adapters with CV drivelines. Replace special taper pin bolts only with genuine OEM parts, periodically check tightness of nuts.

Torque Settings

The Torque figures given below are recommended maximum settings only.

<table>
<thead>
<tr>
<th>Size:</th>
<th>Tensile strength:</th>
<th>Description:</th>
<th>Torque setting: Nm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16</td>
<td>8.8</td>
<td>Gearbox bolts</td>
<td>280</td>
</tr>
<tr>
<td>M16</td>
<td>8.8</td>
<td>Axle clamps</td>
<td>280</td>
</tr>
<tr>
<td>M24</td>
<td>8.8</td>
<td>Blade bolts</td>
<td>540-800</td>
</tr>
<tr>
<td>M24</td>
<td>12.9</td>
<td>Axle bolts</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wheel nuts</td>
<td>270</td>
</tr>
</tbody>
</table>
Servicing & Maintenance

Regularly

- Check there is no wrapping of string, plastic, grass or other debris between rotor boss and gearbox oil seal.
- Inspect gearbox seals for leaks.
- Clear grass and other debris from the deck.
- Regularly check the rotor boss retaining castle nut for tightness. 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 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.

![Warning](image)

Warning
When operating in dry conditions keep upper decks, clear of debris is reduce the risk of fire.

Blades

Caution! When carrying out maintenance work on or near the blades be careful of free-swinging blades over-centering and falling. It is recommended that protective clothing including hardhat 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 overheat 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 replaceable. 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, as this will make them very brittle thus extremely dangerous. Do not take risks with the cutting blades - if in doubt, replace.

LH Blade (25”)
Part No. 7770701
Cutting Rotation
Clockwise
Clutch Maintenance & Settings

**BONDIOLI Manufacture (Belleville Spring)**

Check the condition of the friction discs before use and following periods of storage. Release the tension from the spring, turn the clutch while holding the P.T.O stationary. Adjust the spring compression to the original setting. Following seasonal use, unload the spring tension and store clutch assembly in a dry place. Check condition of friction linings and reset spring compression to original height before use.

Should the assembly overheat due to frequent or prolonged clutch slipping, dismantle for inspection. The original thickness of the lining is 3.2mm, replace them when worn to 2.5mm. Clean up all contact surfaces and replace any damaged components before assembly.

**Warning**
The slip clutch is there to protect the gearbox. If the blades strike a large obstacle they may get damaged or break - avoid these conditions.

![Fig 1](image1.jpg) ![Fig 2](image2.jpg)

<table>
<thead>
<tr>
<th>Fig. No.</th>
<th>Position</th>
<th>Part No.</th>
<th>Setting ‘h’</th>
<th>Machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Centre (2 plate)</td>
<td>5770223</td>
<td>18.9mm</td>
<td>620 (1000rpm)</td>
</tr>
<tr>
<td>2</td>
<td>Inner Wing (4 plate)</td>
<td>5770215</td>
<td>17.6mm</td>
<td>620 (1000rpm)</td>
</tr>
<tr>
<td>2</td>
<td>Outer Wing (2 plate)</td>
<td>5770207</td>
<td>17.8mm</td>
<td>620 (1000rpm)</td>
</tr>
</tbody>
</table>

**Note**
The dimensional setting ‘h’ applies to later type clutches where the 2 discs being measured are of equal diameter.
Clutch Maintenance & Settings

WALTERSCHEID Manufacture (Coil Spring)

Check the condition of the friction discs before use and following periods of storage. Release the tension from the spring, turn the clutch while holding the P.T.O to ensure hub is not seized to linings.

Measure spring length before slackening nuts to vent, reset at same length. Clutch settings listed for reference as clutch torque not spring length pre-set at factory.

Note: All spring lengths based on standard spring with a free length of 41.0mm. Alternative spring 47.0mm long not covered by this chart.

<table>
<thead>
<tr>
<th>Position</th>
<th>Part No.</th>
<th>Setting (L)</th>
<th>Machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre</td>
<td>5770416</td>
<td>36.0 mm</td>
<td>620 (1000rpm)</td>
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<tr>
<td>Inner wing (4 plate)</td>
<td>5770424</td>
<td>37.5 mm</td>
<td>620 (1000rpm)</td>
</tr>
<tr>
<td>Outer wing (2 plate)</td>
<td>5770425</td>
<td>37.5 mm</td>
<td>620 (1000rpm)</td>
</tr>
</tbody>
</table>

WARNING! Slip clutches are fitted in order to protect the gearboxes. If the blades strike a large obstacle they can suffer damage or break – avoid these conditions wherever possible.
Clutch Maintenance & Settings

WALTERSCHEID Manufacture (Belleville Spring)

Check the condition of the friction discs before use and following periods of storage. Release the tension from the spring, turn the clutch while holding the P.T.O to ensure hub is not seized to linings. (SEE BELOW):

**Warning**
The slip clutch is there to protect the gearbox. If the blades strike a large obstacle they may get damaged or break - avoid these conditions.

TO ENSURE PROPER CLUTCH FUNCTION AFTER LONG PERIODS ON INACTIVITY, FRICTION CLUTCHES SHOULD BE RUN-IN TO PREVENT OXIDATION BUILD UP. THE CLUTCHES ARE SET TO THE PROPER TORQUE SETTING FROM THE FACTORY, USING THE FOLLOWING PROCEDURE WILL PROVIDE THE MOST ACCURATE TORQUE SETTING:

1). TIGHTEN THE FOUR NUTS ON THE INNER CIRCLE WITH A 13MM SPANNER. THE NUTS SHOULD COMPRESS THE BELLEVILLE SPRING AND RELIEVE THE PRESSURE OFF THE FRICTION DISCS IN THE CLUTCH.

2). ROTATE THE SHAFTS BY ONE REVOLUTION, THIS CAN BE DONE BY RUNNING THE MACHINE.

3). RETURN THE FOUR NUTS TO THEIR ORIGINAL LOCATION AND ALLOW THE CLUTCH TO COOL IF NECESSARY. NOTE: THE THREADS ON THE END OF THE STUDS ARE DEFORMED TO PREVENT THE NUTS FROM BEING REMOVED.
<table>
<thead>
<tr>
<th>Type</th>
<th>Position</th>
<th>Part No.</th>
<th>Newtons</th>
<th>Setting (L)</th>
<th>Friction disc</th>
<th>Machine</th>
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<tr>
<td>K90/4T</td>
<td>Centre</td>
<td>5770491</td>
<td>1200Nm</td>
<td>18.00mm</td>
<td>4</td>
<td>460/620</td>
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<tr>
<td>K90/4T</td>
<td>Outer Wing</td>
<td>5770495</td>
<td>1200Nm</td>
<td>18.00mm</td>
<td>4</td>
<td>620</td>
</tr>
<tr>
<td>K90/4T</td>
<td>Inner Wing</td>
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<td>1600Nm</td>
<td>20.90mm</td>
<td>4</td>
<td>620</td>
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**Dansk**

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<thead>
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<th>Reservedelsnummer.</th>
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<th>Indstilling (L)</th>
<th>Belægninger</th>
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<td>K90/4T</td>
<td>Midtersektion</td>
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<td>18.00mm</td>
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<td>460/620</td>
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<td>Vinge</td>
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<td>1200Nm</td>
<td>18.00mm</td>
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<td>620</td>
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<td>Yder vinge</td>
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**Deutsch**

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<th>Type</th>
<th>Position</th>
<th>Teilenummer.</th>
<th>Newtons</th>
<th>Einstellung (L)</th>
<th>Reibscheiben</th>
<th>Maschine</th>
</tr>
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<tbody>
<tr>
<td>K90/4T</td>
<td>Mitte</td>
<td>5770491</td>
<td>1200Nm</td>
<td>18.00mm</td>
<td>4</td>
<td>460/620</td>
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<tr>
<td>K90/4T</td>
<td>Flugel</td>
<td>5770495</td>
<td>1200Nm</td>
<td>18.00mm</td>
<td>4</td>
<td>620</td>
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<tr>
<td>K90/4T</td>
<td>Außen Flugel</td>
<td>5770494</td>
<td>1600Nm</td>
<td>20.90mm</td>
<td>4</td>
<td>620</td>
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</table>
Servicing & Maintenance

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.

Wheels

Warning

Heavy-duty industrial tyres have been fitted to 620 Rotary Cutter for convenience of tyre removal, the wheel rims are of the split rim type.

When removing the wheels only remove the five larger hub nuts. **Never** undo the smaller outer nuts (which are painted red for danger) when removing the wheel.

The outer nuts must not be loosened until the valve has been removed and the inner tube is entirely deflated. **Then, and only then may the outer bolts can be loosened. Failure to observe these precautions could seriously injure and could even result in loss of life.**

If in any doubt consult a tyre repair specialist or Spearhead’s Service Department.

Fig. 15 Wheel

A  Hub nuts
B  Outer nuts (painted red)
Storage

Before storing away, thoroughly wash the machine 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 discoloration or damage to the paintwork.

Grease all grease points until fresh grease shows. Liberally apply used engine oil along the whole length of the hinges of each wing section. The centre clutch coupling and wing shafts must be removed and stored under cover. Smear grease on the chrome ramrods for protection.

After Storage

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

Reassemble the clutch units and tighten the bolts to achieve the correct spring length. Do not over tighten or the clutches will not work.

Check condition of tyres and pressure 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 620 Rotary Cutter 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 1000r.p.m. on the PTO.
Trouble Shooting Guide

Broken or damaged blades
1. Raise cutting height to avoid striking the ground
2. Remove or avoid obstacles such as rocks
3. Check rotor speed
4. Ensure a steady feed into drive (Do not snatch the PTO)
5. Fit optional stump jumpers

Damaged blade holder
1. As above
2. Failure to keep tight centre retaining nut

Damage gearboxes
1. Seized slip clutch.
2. Telescopic shafts bottoming out
3. Engaging drive with too much power / revs
4. Lack of grease on sliding tubes of drive shaft

Damage to PTO shaft
1. Seized slip clutch
2. Telescopic tube bottoming out
3. Engaging drive with too much power / revs
4. Turning too sharp
5. Not enough overlap
6. Lack of grease
7. Build up of Debris under drive shaft

Gearbox overheating
1. Incorrect oil level
2. Incorrect grade of oil
3. Incorrect operating speed
4. Machine overloaded
5. Rubbish around the gearbox reducing air circulation

Slip clutches overheating
1. Machine overloaded
2. Incorrect operating speed
3. Incorrect setting
4. Blades hitting the ground

Oil leak from gearbox
1. Damaged shaft seal check for foreign matter (wire-string)
2. Faulty breather
3. Damaged gasket
4. Incorrect oil level

Metal fatigue on frame
1. Too fast a traveling / operating speed for conditions
2. Wings not floating i.e. following the ground contours (check tractor spool)
3. Used in a manner or condition contra to its intended purpose

Excessive skid wear
1. Set skids above the ground