Spearhead Machinery
Operator Instruction Manual For

SNIPER XHD (SINGLE)

3.00m cut width, 540 or 1000 PTO input

Vegetation control hydraulic offset flail mower

8999192EN v1.0

IMPORTANT
Verification Of Warranty Registration

Dealer Warranty Information & Registration Verification

It is imperative that the selling dealer registers this machine with Spearhead 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:

https://my.spearheadmachinery.com/warranty/machine-registration/

Should you experience any problems registering a machine in this manner please contact the Spearhead Service Department on 01789 491860.

Confirm to the customer that the machine has been registered in the section below.

Registration Verification

Model Type:		**Sniper XHD (Single)**
Model Number:		**4.99_____**
Serial Numbers:	**Machine:**	**S_____**
	Cutting Implement:	**S_____**
	Other:	
Name Of Owner:		
Name Of Installing Dealer:		
Dealer Address:		
Dealer Signature:		
Date Of Delivery / Installation:		
Date Of Warranty Registration:		

IMPORTANT

At the point of transfer of ownership record the above information. Note the serial number of your machine and always quote it in any communication with us or your dealer. (The serial number plate is located on the machine mainframe.) This is particularly important when ordering spares. Remember to include all numbers and letters.

The information given throughout this manual is correct at the time of publication. However, in the course of constant development of Spearhead machines, changes in specification are inevitable. Should you find the information given in this book to be at variance with the machine in your possession, you are advised to contact the Spearhead Service department where up-to-date information will be provided.

The manual can contain standard and optional features and is not to be used as a machine specification. The machine has been tested and is considered safe if carefully used. Ensure your operator is properly trained in its use and maintenance.

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Sniper XHD (single) Flail Mower

This manual covers the Sniper XHD flail mower which is available in a 3.0m cutting width.

This heavy-duty machine can be front, or rear mounted by decoupling and reversing the headstock which provides added functionality at no extra cost. The Sniper XHD flail mower has a side shift ability to offset the position of the flail mower.

In order to cater for the front and rear mounting options, this machines can be run at 540rpm or 1000rpm. Providing the tractor front and rear drive rotation is consistent with the machine drive rotation, the two drive speeds can be achieved by swapping the drive pulleys over.

It is essential that the guards (including the roller) are always fitted during operation and that the machine is operated in line with the procedures and practices detailed in this manual.

IMPORTANT

This operator's manual should be regarded as part of the machine. Suppliers of both new and second-hand machines are advised to retain documentary evidence that this manual was provided with the machine.

This machine is designed solely for ground vegetation control and must not be used for any other purpose. Use in any other way is considered as contrary to the intended use. Compliance with, and strict adherence to, the conditions of operation, service, and repair, as specified by the manufacturer, also constitute essential elements of the intended use.

This machine should be operated, serviced, and repaired only by persons who are familiar with its characteristics and who are acquainted with the relevant safety procedures.

Accident prevention regulations, all other generally recognised regulations on safety and occupational medicine, and all road traffic regulations must always be observed.

Any arbitrary modifications carried out to this machine may relieve the manufacturer of liability for any resulting damage or injury.

It is potentially hazardous to fit or use any parts other than genuine **Spearhead** parts.

The company disclaims all liability for the consequences of such use which, in addition, voids the machine warranty.

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Contents List

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1 General Information

1.1 Safety

This operation and maintenance manual is intended for the operator. It consists of operating and maintenance instructions for the machine.

It is mandatory to follow these instructions in order to prevent events which could endanger the operator's, bystanders and animals safety, apart from the correct functioning of the machine. In case of doubt do not experiment, call Spearhead Machinery after-sales service instead, or a specialized Spearhead Machinery dealer.

It is mandatory to read these instructions to understand the operating of the machine!

In the case of re-sale of the machine it is necessary to give these instructions to the new owner!

1.1.1 Warning Sign Descriptions

Very important information!

Technical warning!

Safety warning!

1.2 Purpose Of Use

Sniper XHD (single) is a heavy duty professional machine, designed for use on large agriculture and green areas, for mulching maize and other crop residues, grass and bushes on green and abandoned areas.

This machine is very rigid and made for use in hard working conditions.

1.3 Machine Delivery

1.3.1.1 The manufacturer can ensure normal operating of the machine only with use of original spare parts!

1.3.1.2 Spearhead Machinery is not responsible for any damage or injuries, if the user doesn't consider the operating and maintenance instructions in this book!

1.3.1.3 Spearhead Machinery is not responsible for any damage or injuries due to improper use of the machine!

After receiving the machine it is necessary to check that the machine has not been damaged during transport and that it is equipped with all standard and additional equipment (if ordered).

Spearhead Machinery does not accept any responsibility in the case of:

1.3.1.4 Incorrectly maneuvring the machine.
1.3.1.5 Improper maintenance.
1.3.1.6 Unauthorized repairing or modifications on the machine or use of non-genuine spare parts.
1.3.1.7 Not respecting these rules.
1.3.1.8 Overloading of the machine exceeding its technical, operating capabilities and requirements (see Table 2).

1.4 Identification Of The Machine

Each machine is equipped with a serial plate; see Figure 1 that includes the following data in this order:

1. UKCA Conformity Marking.
2. Machine Whole Goods Code (WGC).
3. Serial number of the machine.
4. Mass in kg.
5. Production Year (year of construction).
6. Design conformity standard.
7. Machine Product Group Code.
8. EU Authorised Representative QR scan code.
9. Manufacturer marking with name and address.
10. EAC Eurasian/Russian Conformity Marking.
11. EC European Conformity Marking.
12. Product Group Code.

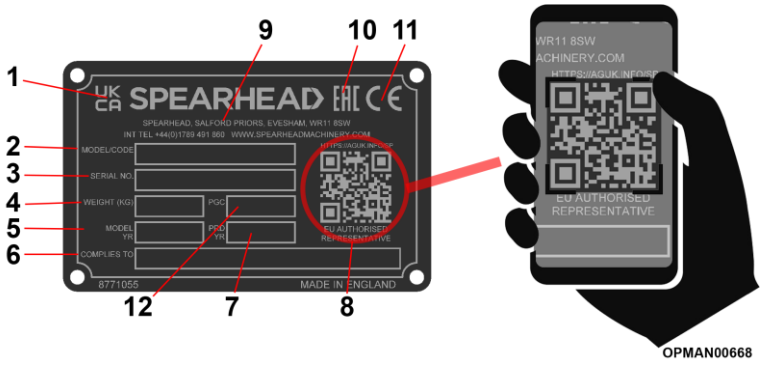

Figure 1 – Serial Plate

Data on the Spearhead manufacturer's plate should always be referred to when requesting assistance and/or requiring replacement spare parts.

This data can identify the machine and its characteristics and specification for its particular time of manufacture, certifying that it responds to current regulations. For this reason, the plate should never therefore be removed nor be used for other purposes; if the machine is dismantled, it should be destroyed to prevent any form of abuse.

By utilising a smart phone and scanning the Authorised Representative QR scan code found on the right-hand side of the serial plate (ref 8, Figure 1.5) using a suitable QR scanning App, you can find details for Spearhead Machinery authorised representatives for its various territories.

2 Technical Data

2.1 General Arrangement

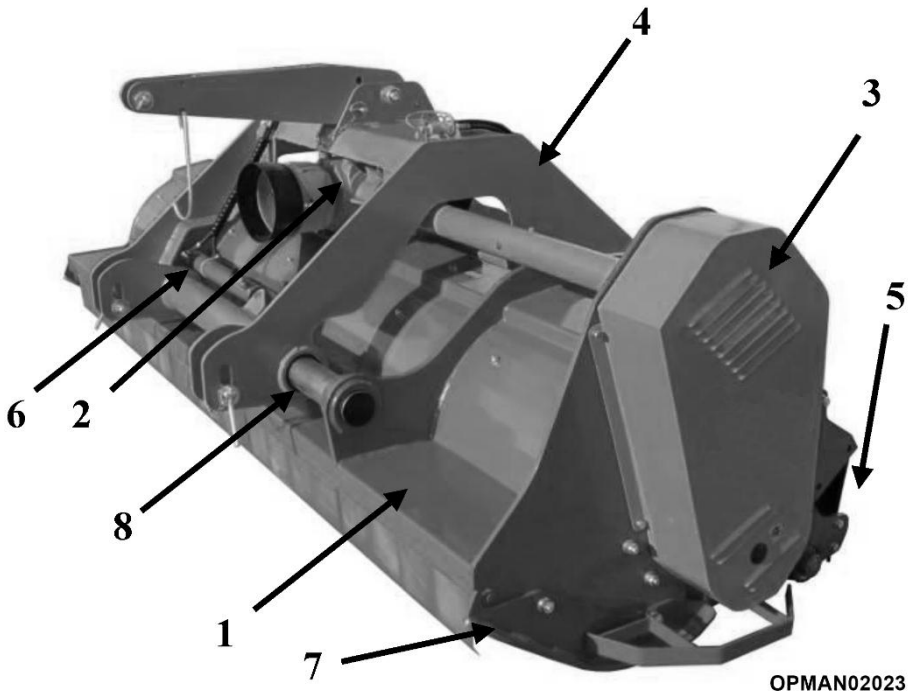

Figure 2

Item No.	Description
1	Cowl
2	Gearbox
3	Belt drive transmission
4	Three-point headstock hitch

Item No.	Description.
5	Rear roller
6	Hydraulic ram
7	Skids
8	Hydraulic offset slide tube

Table 1

2.2 Noise

The sound level of this machine, as measured at the operator's ear, ranges from 70 to 90 dB when the rear window of tractor is open. We recommend the use of ear protectors.

2.3 Optional Equipment

According to the working requirements we recommend the following additional equipment:

- Y-blades
- Double interior wear skin
- Wheels instead of rear roller
- Gearbox 540 rpm
- Chain guard instead of metal flaps
- Hour meter

2.4 Technical Specification

Machine.	Unit.	Sniper 300XHD.
Working width	m	3.00
Machine width	m	3.28
Minimum recommended tractor	kW	75-119
RPM		1000
Flail quantity		26
Cutting capacity	mm	80
Weight	kg	1416
Offset	mm	400
Linkage	Category	2

Table 2

3 Safety

3.1 General Safety Rules

3.1.1.1 Before starting the machine, functionality, road safety and accident prevention rules must be checked.
3.1.1.2 Together with the operating and maintenance rules for the machine it is necessary to consider general health and security rules and warnings.
3.1.1.3 Before starting it is mandatory to understand everything regarding the features and operating of the machine. Reading instructions after operating is too late.
3.1.1.4 Security and warning decals on the machine are very important. Respect them always and ensure they are replaced if they are removed or damaged.
3.1.1.5 Even when using the machine correctly, stones or other objects may accidentally eject a long distance. Ensure all bystanders stand out of the danger area. Special attention must be paid when working near roads or buildings.
3.1.1.6 Use tractor with the cabin.
3.1.1.7 Whenever using public roads, respect traffic rules.
3.1.1.8 Never wear loose or fluttering clothes.
3.1.1.9 Keep the machine clean to avoid fire danger.
3.1.1.10 Before beginning work, check the surrounding area for the likely presence of children and/or animals.
3.1.1.11 Never carry passengers on the machine.
3.1.1.12 Never overload the machine and the tractor. Use the ballast if necessary.
3.1.1.13 Start the machine only if all guards of the machine are all present and fitted properly.
3.1.1.14 It is forbidden to stand in the operating range of the machine.
3.1.1.15 Do not enter the working zone of the PTO shaft. It is dangerous to approach the rotating parts of the machine.
3.1.1.16 Keep a safety distance from driveline and hydraulic parts of the machine (PTO shaft, hydraulic pipes).
3.1.1.17 Before leaving the tractor with the machine attached disconnect the tractor, put the machine firmly on the ground (with the hydraulic lift), apply the hand brake and if the ground is steeply sloping, wedge the tractor.Take out the starting key.
3.1.1.18 Do not enter the zone between the tractor and the machine. It is strongly forbidden to be in this zone if the tractor is not properly disconnected, hand brake applied and starting key removed.

3.2 Attachment To The Tractor And Transport

3.2.1.1 Before attaching or removing the machine from the tractor be sure that the hydraulic lift system is in a neutral position.
3.2.1.2 Check that the category of the 3-point linkage on the tractor corresponds to that one required on the machine.
3.2.1.3 Be careful! There is a danger of injuries when working near or with the 3-point linkage.
3.2.1.4 It is forbidden to be in the zone between the tractor and the machine while working with the hydraulics.
3.2.1.5 Put the 3-point linkage into the position that makes the moving of the machine possible.
3.2.1.6 During transport secure the lever of hydraulic lift to avoid any unplanned moving of the machine.
3.2.1.7 Never leave the tractor cab when the tractor is working.
3.2.1.8 Adjust driving speed to the road conditions.

3.3 PTO Drive

3.3.1.1 Use only PTO shafts with all guards, as provided by the Spearhead Machinery.
3.3.1.2 All guards on the PTO shaft must be in good order.
3.3.1.3 Take care that all guards on the PTO shaft are in proper position during transport or operating. Respect the manufacturers instructions.
3.3.1.4 The PTO shaft must be fitted or removed only with the engine stopped and the starting key removed.
3.3.1.5 The guards of the PTO shaft must be fixed to the machine and to the tractor with chains to prevent rotation.
3.3.1.6 Before starting always check that the speed and the rotational direction correspond to those on the machine.
3.3.1.7 With some tractors a number of rotations depends on the speed and a direction of rotating depends on the direction of driving. Take care about that.
3.3.1.8 Before starting the PTO shaft be sure, that no bystanders are in the danger area.
3.3.1.9 Never try to start the PTO shaft when the tractor engine is switched off.
3.3.1.10 It is forbidden to be in the zone of the PTO driveshaft, when it is engaged.
3.3.1.11 After the PTO is switched off wait for the driveshaft to stop rotating completely. Never approach before it stops.
3.3.1.12 Never carry out maintenance of a machine or tractor while the engine is running. The engine should be switched off and the key removed.
3.3.1.13 If the PTO shaft is damaged, immediately stop operating the machine.

3.4 Hydraulic System

3.4.1.1 Take care! Hydraulic system is under very high pressure.
3.4.1.2 When connecting the hydraulic hoses on the tractor check that the pressure is not too low.
3.4.1.3 We recommend that an official service tests the hydraulic system before operating and than at least ones per year. Damaged or worn hydraulic hoses should be replaced immediately with others of the same specification.
3.4.1.4 When checking hydraulic hoses it is necessary to wear protective clothes and gloves to avoid injuries.
3.4.1.5 The hydraulic oil under high pressure may sweep into the skin causing serious infections. In this case contact a doctor immediately.
3.4.1.6 Before working on the hydraulic system lower the machine, relieve pressure pressure and stop the tractor.
3.4.1.7 Approximately lifespan of hydraulic hoses is 6 years. After that the hydraulic hoses should be replaced to avoid any damage.
3.4.1.8 Used oils and greases must be stored and disposed according to antipollution rules.

3.5 Safety Rules During Use, Maintenance And Servicing

3.5.1.1 Never start the tractor engine if the tractor PTO is engaged.
3.5.1.2 Always remove the starting key after stopping the tractor.
3.5.1.3 Periodically check that bolts and nuts are tightened properly.
3.5.1.4 When carrying out maintenance it is sometimes necessary to lift the machine. It is mandatory to put under the machine an appropriate fixed support to avoid the machine falling or moving potentially causing damage to hydraulics, maintenance personnel or bystanders.
3.5.1.5 Use gloves and appropriate tools whilst changing sharp components of the machine to avoid injuries.
3.5.1.6 Used oils and greases should be removed according to the rules.
3.5.1.7 Always disconnect any electrical cables/connections on the tractor before any welding or other operation when electricity is required.
3.5.1.8 Only original Spearhead spare parts should be installed.

3.6 Warning Decals

Always turn off the engine of the tractor and remove the key before carrying out servicing operations.

Keep at a safety distance from the machine to avoid the risk of flying objects.

Never remove the guards while the parts of the machine are moving. It can injure the hands.

Keep at a safety distance from the machine to avoid the risk of injuring the feet.

It is forbidden to stand on the machine because of the risk of falling!

3.7 List Of Guards

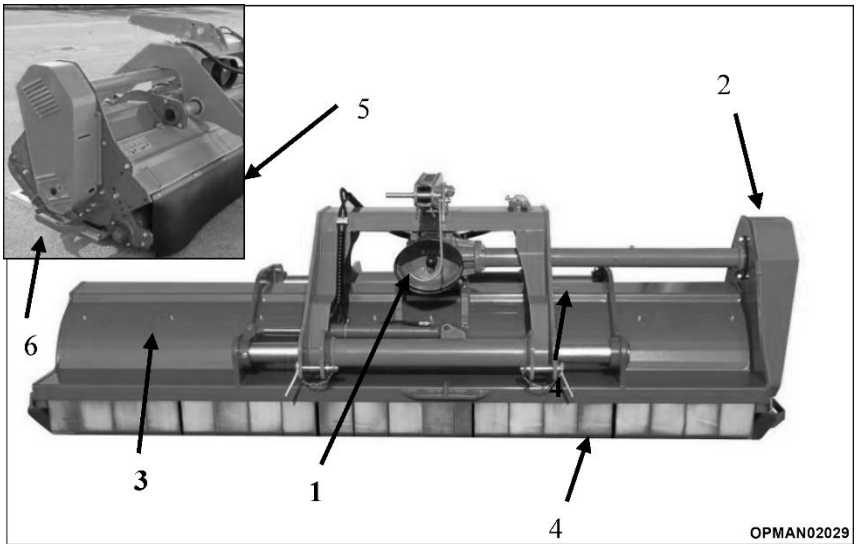

Figure 3

Item No.	Description
1	PTO Guard Cone
2	Belt Guard
3	Warning Decals

Item No.	Description.
4	Front Steel Protection Flap Guard
5	Rear Rubber Protection Flap Guard
6	Side Belt Guard

Table 3

4 Description And Operating Of The Machine

The machine is equipped with hammer flails on the rotor shaft. Hammers are used for material with diameter with diameter Ø 8cm. Optional working Y-blades flails are used for cutting material with diameter Ø 3cm. While rotating flails cut the material and lift the material under the cowl of the machine. The falling material is cut again several times by the rotating hammer flails.

☞ Maximum thickness of material depends on the type and hardness of the material. Stated diameters are valid for fresh wood only.

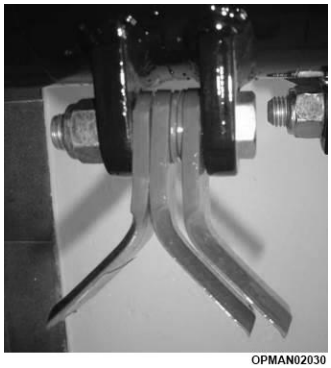

Figure 4

Figure 5

Figure 6

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5 Transport And Attachment Of The Machine

5.1 Transport To The Customer

Unload the machine with special care to avoid any damage. Check that all nuts and bolts are fixed and tightened. Specially check the bolts and nuts for the flails.

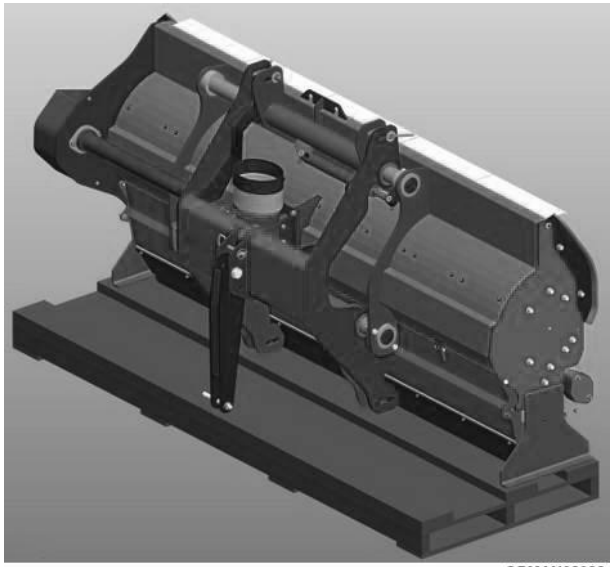

Figure 7
Flail Mower Prepared For Transport (optional packaging)

5.2 Attachment And Detachment From The Tractor

Before using the machine check:

5.2.1.1 That the machine is in good condition
5.2.1.2 That all guards are all present, fitted correctly and in good condition
5.2.1.3 That flails are complete and undamaged
5.2.1.4 That all greasing points are greased well and that the correct quantity of oil is in the gearbox
5.2.1.5 Belts are correctly tensioned
5.2.1.6 The tractor is setup to operate the PTO of the machine at the correct operating rpm and direction of rotation.

When you attach the machine to the tractor, bring the tractor lower linkage near the machine, to the line up the linkage to the pin fitting holes in the machine headstock. Insert the pins and secure them with the spring clips. Fit the top link, raise the machine and adjust the tractor adjustable top link to position the machine to a parallel position to the ground. Adjust the two tractor lower linkage stabilizers to fix the machine to the tractor in a central position. Connect the hydraulic hoses and operate the hydraulic ram to see it works correctly.

☞ 3-point hitch of the machine must be in a parallel with the ground.

The top linkage has two pin fixing positions modes: floating and fixed linkage. Use the floating position whenever working on hilly, uneven terrain to avoid damaging the machine or linkage. The floating position is made by removing the pin, fixing the top linkage bracket, and fitting it to the opposite site of the linkage bracket (see Figure 8).

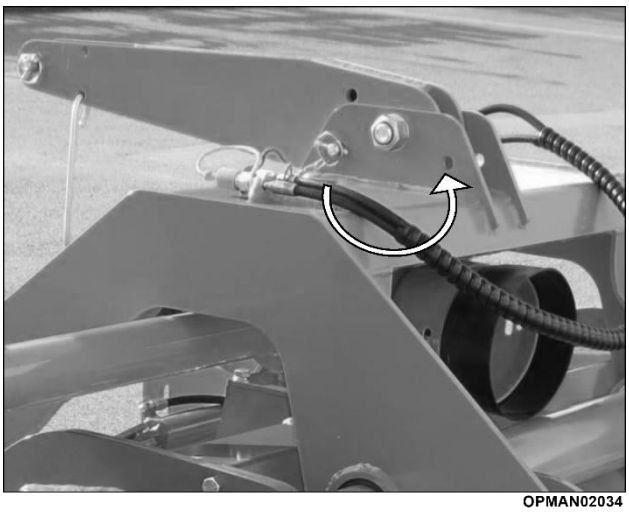

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Figure 8

It is mandatory to use the floating linkage position on hilly or sloping terrain!

Before change the position of the machine (front mount/rear mount) it is mandatory to check that rpm and direction of rotation of the PTO driveshaft of the tractor corresponds to that of the machine.

5.3 Fitting The PTO Shaft

Attach the machine the front or rear of the tractor. Split the two halves of the PTO driveshaft placing one part on the tractor and another on the machine. With the machine laying on the ground, inspect to see the minimum amount of overlap between the two halves of the PTO driveshaft are not less than 1/3 of the total length of the driveshaft (Figure 9). Grease the inner/outer metal sliding tubes before putting them together.

Enter the tractor, start the tractor and raise the machine and stop the tractor. With the machine raised off the ground, inspect to see the minimum amount of clerance between the inner tube yoke of the PTO driveshaft and the outer driveshaft tube is not less than 4-5cm (Figure 10).

If required, and a quantity of 1/3 length overlap between the driveshaft tubes can be maintained, cut and remove a sufficient amount of inner/outer plastic guarding tubes, followed by the metal inner/outer drivetubes. Clean/deburr the edges and then grease the two halves of the the metal inner/outer drivetubes before putting them together.

Too long PTO shaft can seriously damage tractor or flail mower.

Never fit the PTO shaft on the tractor without all guards and chains fitted properly.

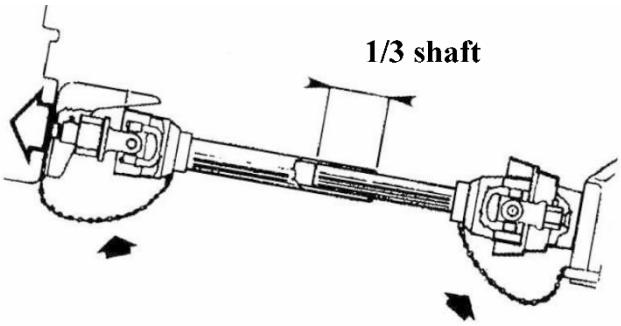

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Figure 9
Appropriate Length Of PTO Shaft With The Machine On The Ground

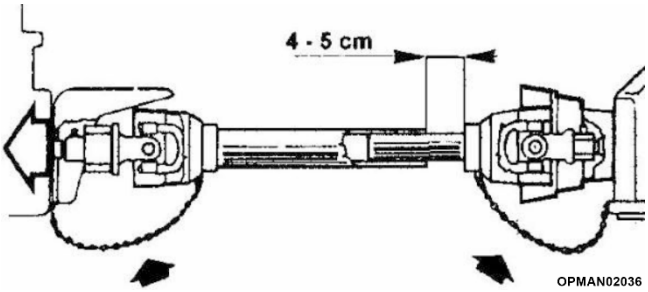

Figure 10
Appropriate Length Of The Guard With The Machine Lifted

5.4 Stability Of The Tractor

When fitting the machine to the tractor always take into account the maximum weight allowed of the attachment and axle load upon the tractor. The front axle of the tractor should always be loaded with a minimum of 20% of the complete weight of the tractor itself. This is very important specially on this machine because of its distance from the tractor machine!

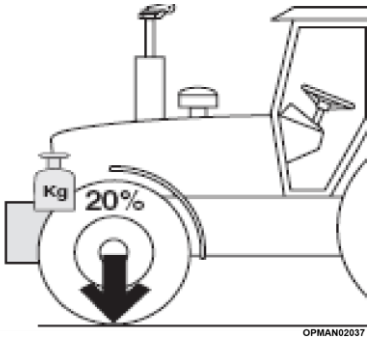

Figure 11

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6 Adjustment

6.1 Working Height Adjustment

The height of cut can be limited due to working conditions and volume of the material. The height of cut can be regulated with the hydraulic system on the tractor and/or adjusting the rear roller on the machine (Figure 13). The minimum height of cut should be between 1-3 cm. The machine should always run on the rear roller and not on the skids.

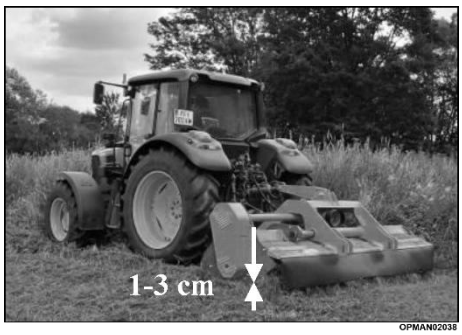

Figure 12

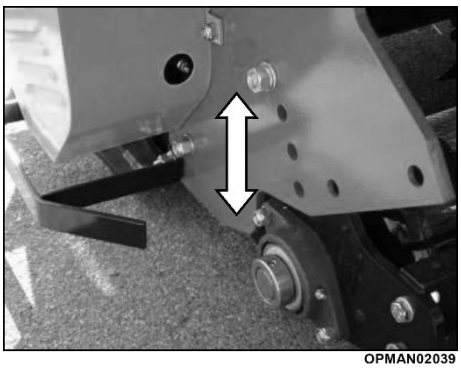

Figure 13

Flails should never touch the ground. The skids are only the protection against irregular collision.

6.2 Offsetting

The machine has a hydraulic offsetting feature as standard (Figure 14). Maximum offset is 53 cm.

Figure 14

6.3 Belt Tension Adjustment

Appropriate belt tension is important for optimal operating of the machine and for longevity of the drivebelts. The flail mower is equipped with an automatic belt tensioner to maintain the correct belt tension in operation.

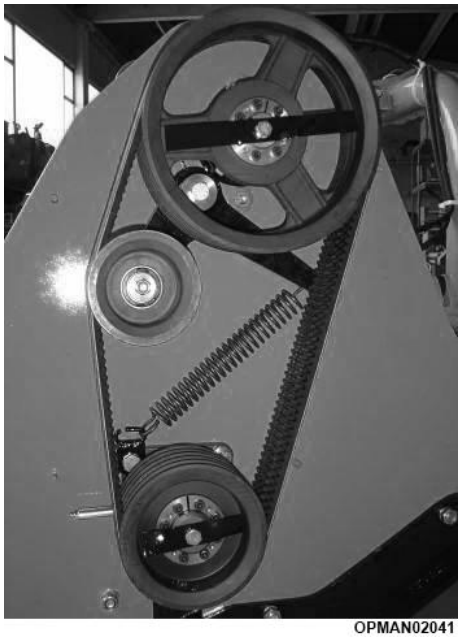

Figure 15

Tension the belts only when tractor is disconnected and starting key taken out.

Appropriate belt tension is achieved when pressing on the centre of the belts with the force of 100 N (i.e. 10 kg). The correct deflection on the belts should be 1.5 cm.

7 Operating

Before operating always check the working area for hard objects such as stones, rocks and wood.

Start the PTO shaft at low, idle tractor rpm and slowly increase rpm until the correct operating speed is reached.

A damaged rotor shaft can induce serious vibrations and can consequently damage or crack the main cowl fabrication. It is necessary to stop the machine immediately, stop PTO shaft, check the rotor shaft and change missing or damaged parts and flails. If the machine is still vibrating it is necessary to rebalance the rotor shaft. Contact your local Spearhead Machinery dealer for support.

When working with the flail mower at low rpm, flails can damage the rotor shaft.

If there is no indication on the machine, inspect the machine and drive pulleys before starting the machine. The maximum rpm of PTO driveshaft should never exceed 1000 rpm as standard.

Figure 16

Working speed is dependent on working conditions and on the material being cut. Optimal speed is between 3-8 km/h. In the case of much more dense grass or other material, it is required to reduce speed to avoid slipping of the belts.

Figure 17

Before reversing the tractor, lift the machine off the ground to avoid damaging it. (Figure 17)

Lift the machine during turning.

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8 Machine Storage

8.1 Machine Removal

After work disconnect the PTO shaft, lift the machine and transport it to an appropriate place.

During transport reduce speed on bumpy roads. The weight of the machine fitted to the tractor can change the driving characteristics of the tractor. Ignoring these change in characteristics may result in driving becoming difficult and damage may occur to the machine itself. During transport the machine must be always in the central, not offset position.

PTO shaft must be disconnected during transport.

When disconnecting the machine respect the warning rules for attaching/removing the machine.

Store the machine on a dry and flat ground to avoid any damage or corrosion.

8.2 Cleaning

To avoid corrosion clean the machine after each working day, especially flails, bearings etc. Be careful to avoid damaging hydraulic hoses, the hydraulic cylinder, bearings and paint.

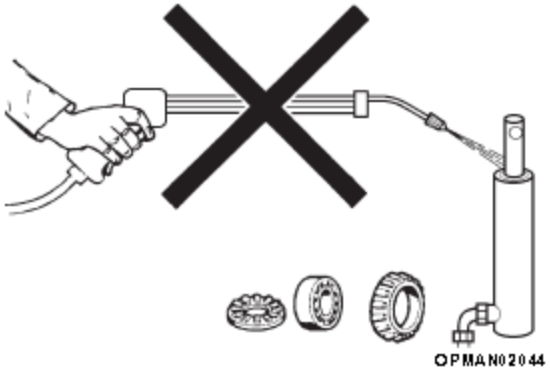

Figure 18

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9 Maintenance

9.1 Maintenance Warnings

All maintenance, cleaning and repair operations must be carried out with the machine firmly lowered to the ground and detached from the tractor, or with disconnected PTO, engine off and starting key out.

The time of maintenance is defined according to the normal use of the machine. If the machine is used in very hard conditions, the time between maintenance operations must be shorter.

Take care that grease nipples on the machine are always clean.

After each maintenance operation check that all guards are fitted on the proper place.

9.2 Gearbox Oil

9.2.1 Oil Change

Sniper XHD (single) machine require the use of **SAE 90** oil.

With reference to Figure 19, to change the oil first unscrew the drain plug screw under the gearbox (3) and let the oil drain. Once drained, refit and tighten the drain plug screw (3).

Remove both screws from the top of the gearbox (1) and the top of the connecting shaft (2). For pouring in use a funnel. Remove the level plug screws from the connecting shaft (4) and gearbox (5) and pour in oil until oil seeps from the level plugs. The level plug screw of the gearbox is found behind the PTO cone (5).

Machine.	Oil Grade.	Guide Quantity.
Sniper 300XHD	SAE 90	4.5 litres

Table 4

Once drained, refit and tighten the pair of fill screws (1/2) and level plug screws (4/5).

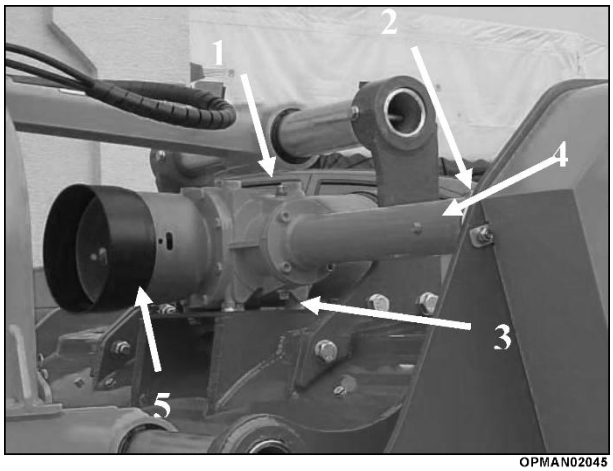

Figure 19

9.3 Greasing

☞ Before carrying any greasing operation read these instructions first.

9.3.1 Grease Point Locations

With reference to the following Figures, the machine has the following 3 greasing points:

- Right bearing on the rotor shaft (Figure 20/1)
- Left bearing on the rotor shaft (Figure 21/2)
- Bearing on the strain pulley (Figure 22)

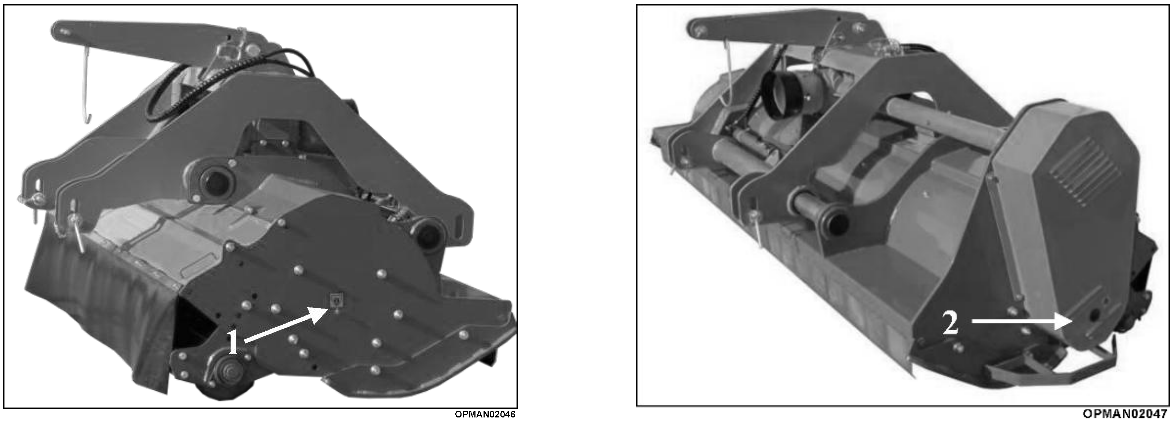

Figure 21

Figure 22

☞ During greasing use gloves. After greasing always wash your hands.

☞ Use type LIS 3 for greasing.

9.3.2 Belt Replacement

The belts are tensioned by an automatic belt tensioner (Figure 22).

To change the belts proceed as follows:

9.3.2.1 Remove the belt shield.

9.3.2.2 Release the belt tensioner (Figure 23) with a 1 metre metal bar lever (not included), featuring a minimum of 10mm diameter hole drilled into it.

9.3.2.3 Put the lever between the belt tensioner and the upper drive pulley (Figure 24).

9.3.2.4 Push the lever down (Figure 24) and fix the lever on the side fabrication of the flail mower with an appropriate bolt (Figure 25).

9.3.2.5 Remove the lever and release the belt tensioner back into the working position.

9.3.2.6 Reinstall the belt shield.

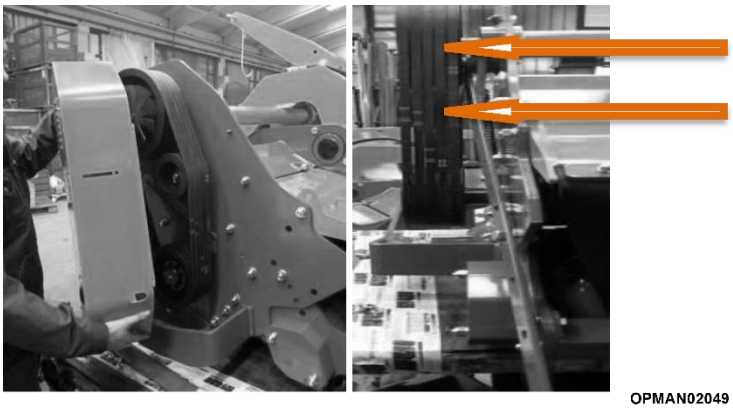

Figure 23

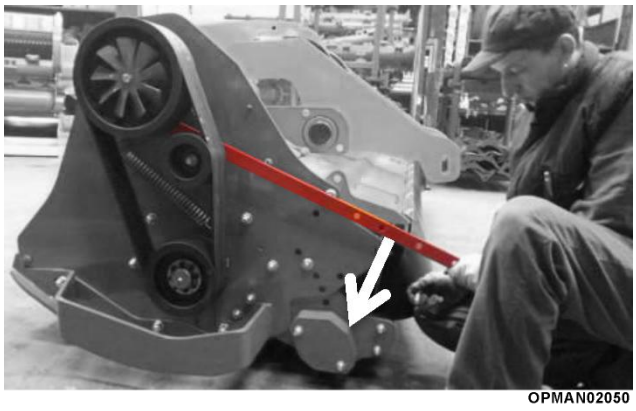

Figure 24

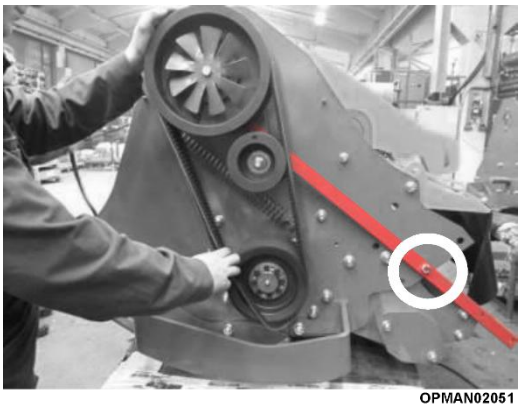

Figure 25

9.4 Maintenance Schedule

9.4.1 Every 2 hours

- Check the belt tension
- Check that all bolts and taper locks are tightened sufficiently

Do the same also after each belt change.

9.4.2 Every 8 hours

- Check to see that all fasteners are tightened
- Check wear and condition of flails
- Tension of drivebelts and tightness of taper locks
- Condition and wellbeing of all driveline safety guards
- Oil level in the gearbox and connecting shaft
- Check that there aren't any foreign parts stuck in the rotor shaft
- Check that the mainframe and the headstock are in good condition
- That all required parts are greased sufficiently

9.4.3 Every 100 hours

- Check and grease the PTO driveshaft

9.4.4 Every 12 months

- Change the oil in the gearbox and connecting shaft and check the belt tension

9.5 Flail Replacement

If you find after work that the flail are damaged, change them. If it is necessary to change only a few flails, always change the broken or worn one and the one directly opposite in order to maintain the balance. If the rotor shaft is vibrating after changing the flails, immediately stop the machine. The machine rotor assembly with flails must be balanced before any work.

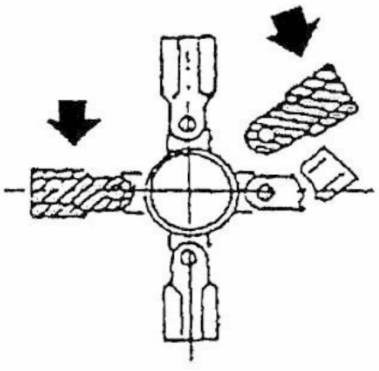

Figure 26

9.6 Machine Storage

At the end of the working season we recommend to clean the complete machine, change broken or worn parts, tighten the fasteners and belts, grease required components and touch up damaged parts with paint. Store the machine on a dry and flat ground, preferably indoors.

9.7 Machine Disassembly And End Of Life

If the machine is out of order, all its parts that might cause dangers have to be made inoffensive. Materials, forming the machine that have to undergo a differentiated division, are:

- Steel
- mineral oil
- rubber
- plastic

All the above mentioned operations and the disposal have to be carried out in total respect of the present provisions of law on the subject.

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10 Troubleshooting

Trouble	Causes	Remedies
Irregular cut	Worn, bent or broken flails	Replace the flails
	Too low RPM	Increase RPM
	Machine is not operating level with the ground	Adjust pitch of machine on the tractor
	Clogged material due to excessive working speed	Reduce the working speed
Noise	Loose fasteners	Tighten fasteners
	Damaged parts of the machine	Find cause of damage and repair components
Gearbox noise	Lack of oil	Fill oil till level mark
	Worn gears	Replace
	Worn bearings	Replace
Machine Vibration	Broken or worn flails	Replace
	Unbalanced rotor	Balance or replace
	Worn rotor bearings	Replace
Excessive movement in joints	Worn pins	Replace
Damaged bearings	Dirty or ungreased bearings	Clean and grease
	Violant impact on the ground when the machine is lowered	Lower machine gently
Belts overheating	Belts slipping	Tension the belts
	Flails are touching the ground	Adjust the height of cut
	Too fast working speed	Reduce the speed

Table 5

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11 Spare Parts

11.1 Genuine Spare Parts

Cost savings associated with the purchase of non-genuine spare parts can be difficult to dismiss, however it is essential to consider the potential safety and longer term performance of the machine and not just the short term financial gains when setting out to repair or refurbish a Spearhead product.

Spearhead Machinery consider all parts not supplied or manufactured by Spearhead Machinery as imitation or copied, it is impossible to guarantee their reliability and they may cause damage to your machine. Genuine Spearhead parts are made to specific standards to give performance and safety. Substitute components may not meet specifications and may fail in a hazardous manner that could cause injury.

Not only can non-genuine spare parts cause damage to the machine, but they may also result in lower performance and invalidate the machine's warranty. To maintain the Spearhead Machinery warranty requires the use of genuine Spearhead Machinery parts.

Spearhead Machinery utilises an interactive parts manual system which uses the machines serial number to give the exact parts required for the that particular machine. Section 11.2 gives guidance on how to use the Spearhead Machinery interactive parts manual system and find correct replacement parts.

It is important to state that **Spearhead Machinery does not sell directly to end users** but instead uses an extensive dealer network to provide to its customer base. Section 11.4 gives guidance to find your nearest Spearhead Machinery dealer.

Purchasing Genuine Spearhead Parts will give you peace of mind that your machines performance won't be compromised and can cost less than you think, so contact your local dealer for a quote before buying non-genuine spare parts.

11.2 How To Obtain The Correct Spare Part Numbers

For correct part numbers; use the Spearhead interactive online parts books. These are available at https://my.spearheadmachinery.com/parts/public-interactive-parts-database/
You will need to enter the machine serial number; see Figure 27.

11.2.1.1 Enter the serial number.

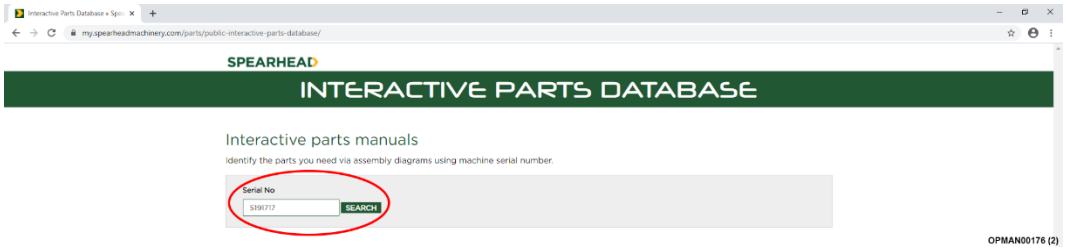

Figure 27 – Type In Serial Number

11.2.1.2 After entering the serial number a specification for the machine will appear. Click on the serial number; see Figure 28.

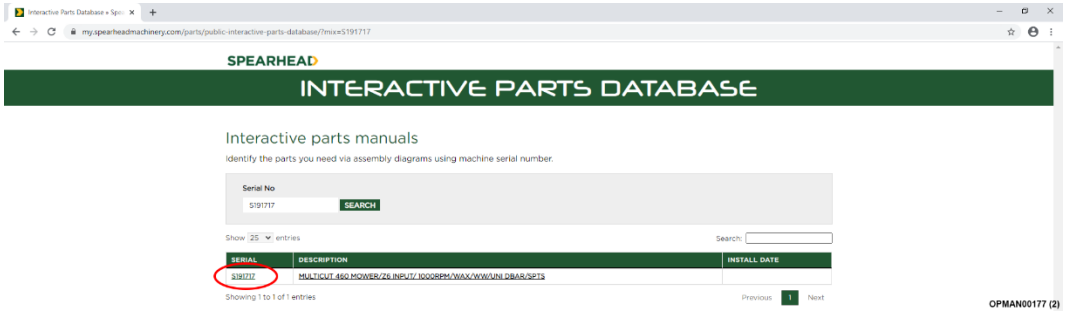

Figure 28 – Click On Serial Number

11.2.1.3 After clicking on the serial number a full parts breakdown, specific to the machine serial number will appear showing the various parts and assemblies of the machine. Click on the specific assembly picture required; see Figure 29.

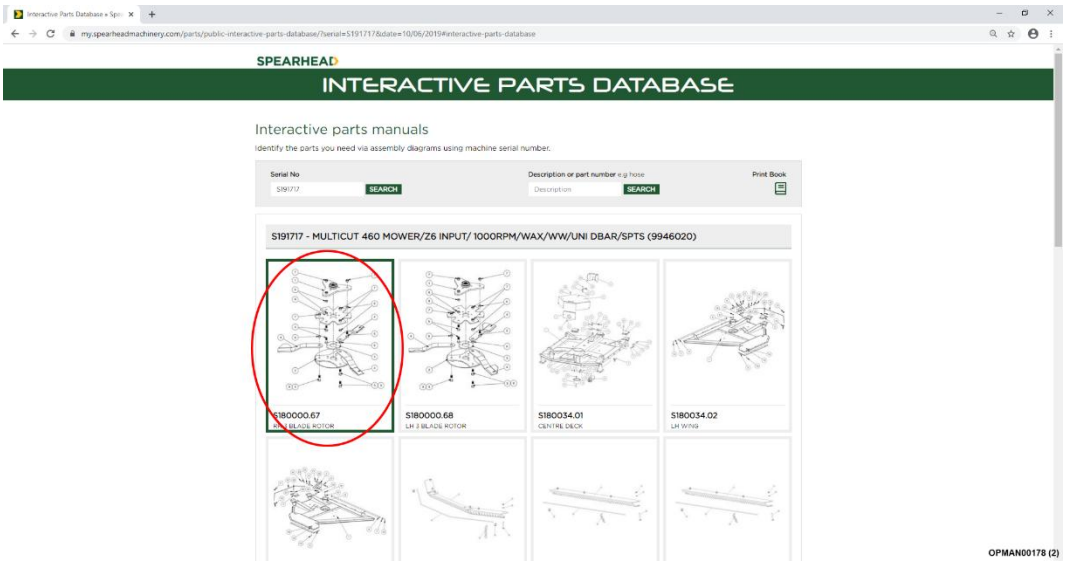

Figure 29 – Click On Assembly

11.2.1.4 You will finally be presented with a full exploded parts breakdown for that particular assembly, giving part numbers and the quantities required; see Figure 30.

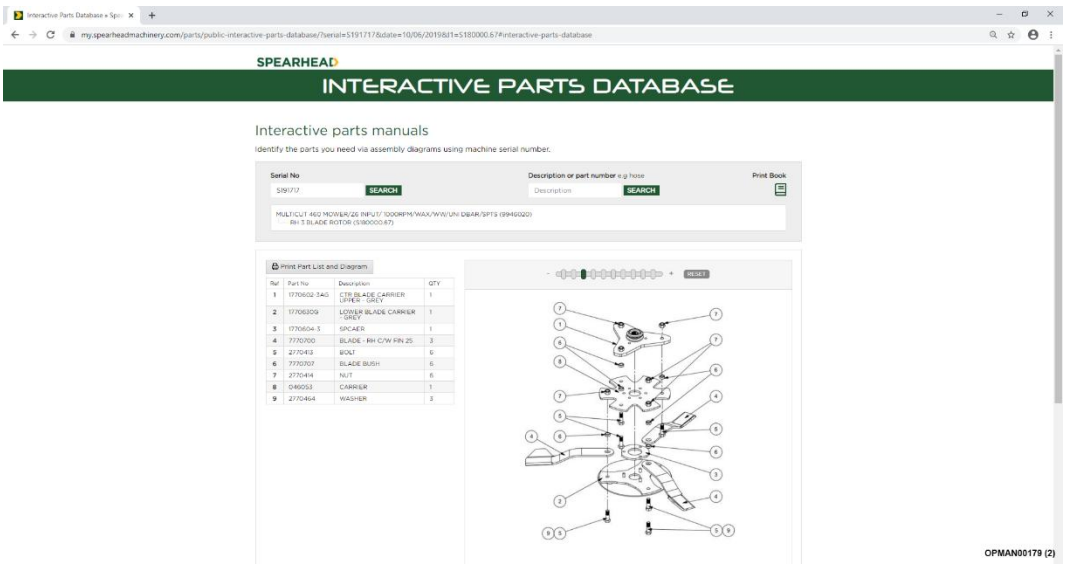

Figure 30 – Exploded Parts Breakdown With Bill Of Materials

11.3 Spare Parts Ordering

It is important to note that when it comes to ordering replacement parts, that this can **only** be carried out through a Spearhead dealer. **Spearhead does not accept direct customer parts orders over email, fax or telephone**.

For guidance on finding your local Spearhead dealer; see Section 11.4.

11.4 Dealer Network

Spearhead has an extensive dealer network which can offer genuine replacement parts.

In order to make it easier to find your local Spearhead dealer, the Spearhead website has a Dealer Locator facility.

http://www.spearheadmachinery.com/dealer-locator/

To find your local Spearhead dealer enter your location or postcode into the “Your location” box and then press “Search”; see Figure 31.

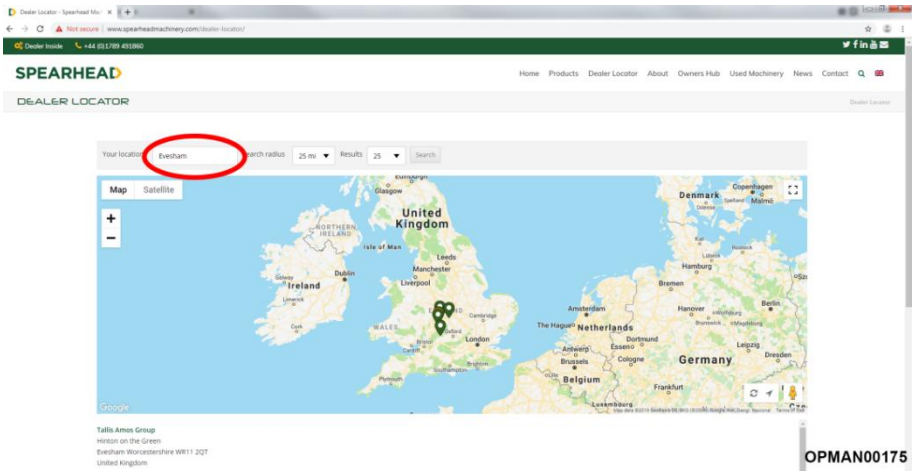

Figure 31 – Dealer Locator

Notes