

Spearhead Machinery
Operator Instruction Manual For

BARRIER MOWER

80cm cut width

Vegetation control hydraulic drive offset rotary mower

8999159EN 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:		Barrier Mower
Model Number:		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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Barrier Rotary Mower

This manual includes instructions for installation, use and maintenance of the Spearhead Barrier rotary mower in the following sections and is simply called “Mower” throughout this manual.

The Barrier Mower models described in this Instruction Manual are available in various build configurations, which include:

- Barrier Mower 80cm – Single, left-hand (LH); rear mount.
- Barrier Mower 80cm – Single, right-hand (RH); rear mount.
- Barrier Mower 80cm – Dual; rear mount.
- Barrier Mower 80cm – Single, left-hand (LH); front mount.
- Barrier Mower 80cm – Single, right-hand (RH); front mount.
- Barrier Mower 80cm – Dual; front mount.

The Mower has been designed and built to be used for cutting grass or small shrubs (maximum diameter 10mm). Any other use is deemed improper and, therefore, potentially dangerous for the safety of the operator or of any exposed persons. This manual is an integral part of the Mower, defining the safe capabilities for which it was built, and contains all the information required for its proper and safe use.

Regular machine operation depends on its correct use and adequate maintenance: it is advisable, therefore, to follow these instructions carefully to prevent any situation that could compromise the machine’s operation and durability. It is also important to follow what is described in this manual. Spearhead declines any liability resulting from negligence of the machine and not observing these instructions; this will result in the warranty being annulled.

It is mandatory to verify upon delivery that the Mower is integral and complete in all its parts. Any complaints must be presented in writing within 24 hours from receiving the machine. Spearhead can however be contacted at any time for immediate and precise technical assistance and anything required for correct operation and performance of the machine. Upon receiving the machine, carefully read the manual and carefully follow the instructions contained in it.

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

1	Description and Main Characteristics.....	8
	1.1 Mower Description	8
	1.2 Intended Usage.....	9
	1.2.1 Allowed Uses.....	9
	1.2.2 Improper Uses.....	9
	1.3 Machine Identification	10
	1.4 Technical Data	11
	1.5 Sound Level	11
2	Safety.....	12
	2.1 Level Of Danger.....	12
	2.2 Terminology.....	12
	2.3 Danger Plates And Warning	14
	2.3.1 Proposition 65.....	16
	2.4 Clothing	17
	2.5 Ecology And Pollution	17
	2.5.1 Disposal.....	17
	2.5.2 Storage	17
	2.6 Safe Use.....	18
	2.7 Safe Maintenance	19
3	Installing The Mower.....	20
	3.1 Transport	20
	3.1.1 Application To The Tractor	20
4	Usage Instructions	22
	4.1 Before Use	22
	4.2 Transporting The Machine	22
	4.3 Machine Settings.....	23
	4.3.1 Adjustment Of Working Height.....	23
	4.4 Using The Mower	24
	4.5 After Use.....	25
	4.6 Safety Devices	25
	4.7 Machine Transport Procedure	26
5	Maintenance	28
	5.1 Periodic Maintenance.....	29
	5.1.1 Maintenance On The Blades.....	29
	5.2 Cleaning The Mower	30
	5.3 Lubricants.....	30
6	Troubleshooting	32
7	Spare Parts	34
	7.1 How To Obtain The Correct Spare Part Numbers	34
	7.2 Spare Parts Ordering	35
	7.3 Dealer Network	35

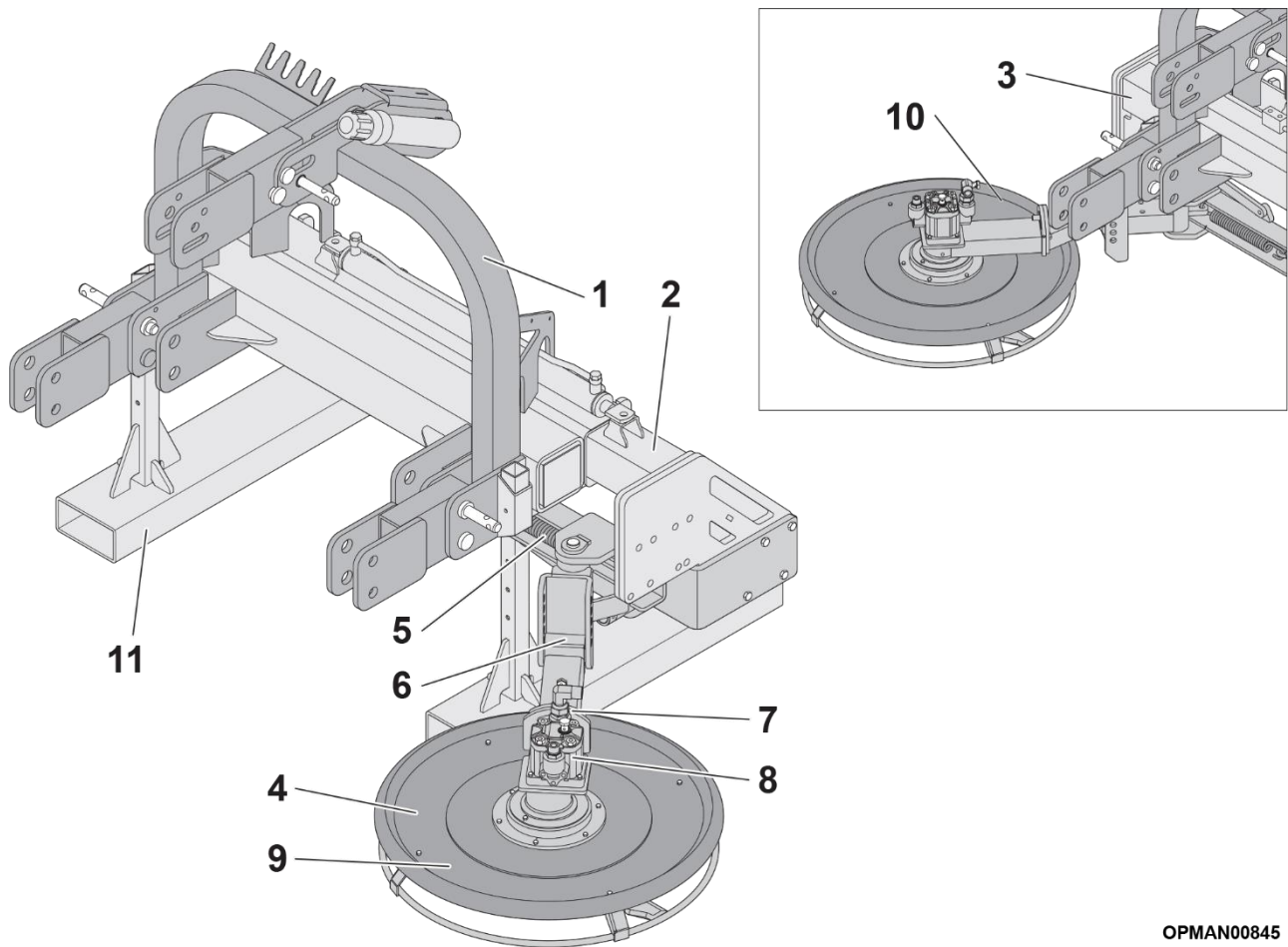
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1 Description and Main Characteristics

1.1 Mower Description

With reference to Figure 1, the Mower has been designed and built to be used for cutting grass or small shrubs (maximum diameter 10mm). Any other use is deemed improper and, therefore, potentially dangerous for the safety of the operator or of any exposed persons.

The Mower consists of the following parts:



OPMAN00845

(Front mount right-hand (RH) model shown)

Figure 1

Item No.	Description.
1	Headstock
2	Offset Arm
3	Offset Arm (Dual version)
4	Blade Cowl
5	Breakback Spring
6	Height Adjustment Arm

Item No.	Description.
7	Head Angling Slot
8	Motor
9	Head Assembly
10	Head Assembly (Dual version)
11	Leg Stand

Table 1

Referring to Figure 1, the barrier mower essentially consists of a mechanical system designed to cut grass and small shrubs.

The position of the blades during the cutting stage is protected by a cowl (4). The blade shaft is driven by a hydraulic motor (8) hydraulically controlled by a tractor. A spring operated mechanical breakback system (5) prevents the head assembly (9) from hitting obstacles, for example poles, tree trunks, etc., which may be found on the machine's trajectory. Once the obstacle has been cleared, opposite movement occurs with the head returning in position.

When working on non-flat ground, the cutting unit adapts itself to the terrain by means of an adjustable slot (7). The height of the barrier mower can be adjusted by moving the relative pin in the height adjustment arm (6). A transport locking system, when raised, keeps the machine in the transport position, thus reducing the machine width when not working and during road transport.

1.2 Intended Usage

1.2.1 Allowed Uses

The Mower has been designed and built to be used for cutting grass or small shrubs.

When the Mower works it guarantees the required level of safety even in the presence of a significant malfunction of its components or hazardous operating conditions, however, always within the permitted uses.

With reference to the above, the following are considered allowed uses:

- Using the Mower for cutting grass or small shrubs.

The Mower must not be used for purposes other than those described in this manual.

1.2.2 Improper Uses

The Mower, due to its typical construction, may also be suitable for uses other than from those foreseen by the manufacturer. For this reason, Spearhead has selected, as non-exhaustive examples, a series of improper uses that can be reasonably foreseen, which are:

- Using the Mower to mow or cut tree branches.
- Using the Mower to cut hedges.
- Using the Mower for mowing near frequented areas.

The uses listed above and those not specifically indicated in this manual, including reasonably foreseeable improper uses, are **strictly prohibited**.



Spearhead declines any and all liability for damages caused by the Mower to persons, animals or property, resulting from use other than that described in this manual, or due to damage caused by negligence or by not observing the instructions contained in this manual.

1.3 Machine Identification

Each machine is equipped with a serial plate; see Figure 2 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.

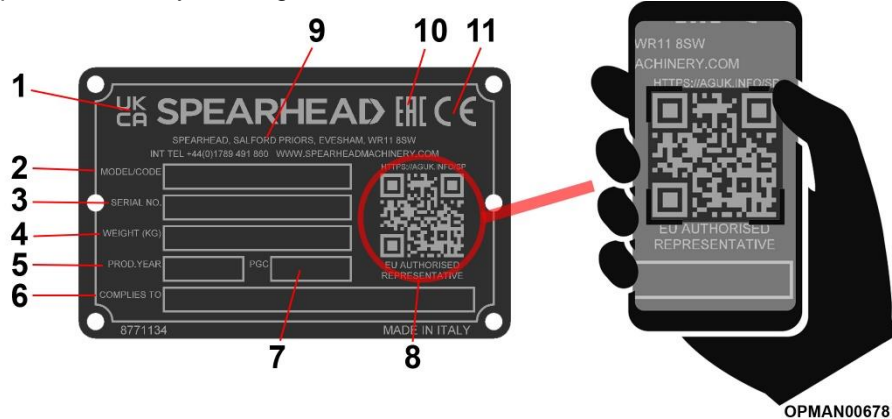


Figure 2 – Serial Plate

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 2) using a suitable QR scanning App, you can find details for Spearhead Machinery authorised representatives for its various territories.

1.4 Technical Data

The following table shows the technical data that characterise the barrier mower, including the overall dimensions once fastened to the carrying tractor.

Model	Cutting Diameter (cm)	Number of Blades	Weight (kg)	Flow Rate (l/min)	Tractor Spools Required	Hitch Type
Rear Mount Single	80	2	310	70	2	CAT II
Rear Mount Dual	80	4	415	70	4	CAT II
Front Mount Single	80	2	355	70	2	CAT II
Front Mount Dual	80	4	465	70	4	CAT II

Table 2

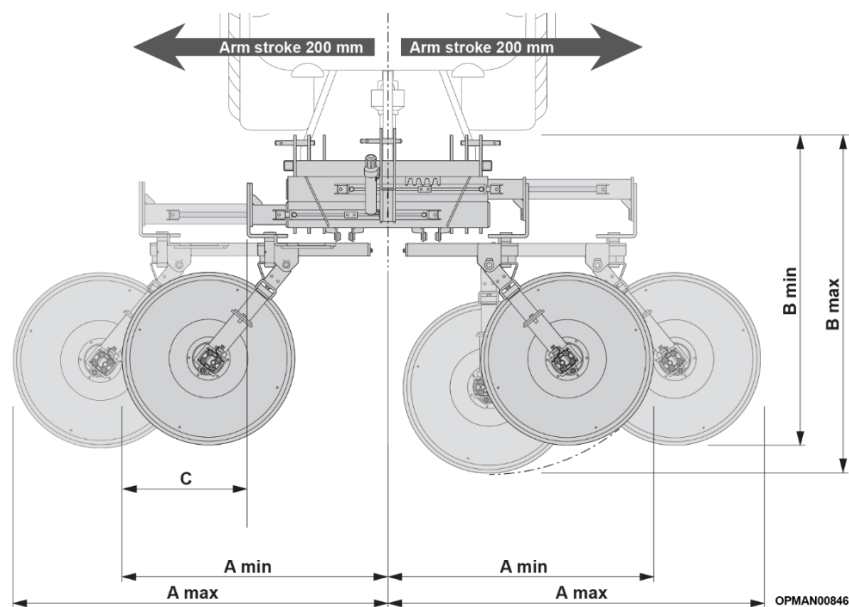


Figure 3 – Working Dimensions
(Rear mount model shown)

Model	A min/max (cm)	B min/max (cm)	C min/max (cm)
Barrier Mower	135/195	161/175	63

Table 3

1.5 Sound Level

The air noise level created by the Mower under operating conditions was detected using a sound level meter with integrator.

The measurements were carried out at the operator station with the Mower activated empty. Tests performed under the conditions indicated by the standard produced the following results:

Equivalent weighted sound pressure average level: $L_{pAm} = 99.8 \text{ dB(A)}$.
-Sound power level: $L_{wA} = 114.1 \text{ dB(A)}$.

2 Safety

2.1 Level Of Danger

The safety of the operator and exposed persons is the main concern of the designer and the manufacturer of the machine. When designing a new machine, one tries to plan for all possible danger situations and risks connected to using the machine, adopting the steps necessary to make the equipment as safe as possible. **The number of accidents remains very high however, especially due to incautious and awkward use of the machine. It is therefore recommended to carefully read this manual and this section, regarding safety standards, avoiding behaviour that is inappropriate or in contrast with the instructions contained in this manual**

Pay attention to the following danger signal where contained in this manual and follow safety instructions.



DANGER! This signal warns that if the described operations are not carried out properly, they will cause serious injury, death or long-term health risks.



WARNING! This signal warns that if the described operations are not carried out properly, they may cause serious injury, death or long-term health risks.



CAUTION! This signal warns that if the described operations are not carried out properly, they may cause damage to the machine.

2.2 Terminology

The indicated levels of danger refer to specific risk situation that may occur during machine use and may involve the same machine, the operator and any exposed persons. With the purpose of highlighting situations or operations that may result in risks, the meanings of terms used in this manual are indicated here:

- **HAZARDOUS AREA:** Any area in and/or around a machine where the presence of an exposed person constitutes a risk to the health and safety of said person.
- **EXPOSED PERSON:** A person fully or partly in a hazardous area.
- **OPERATOR:** The person or personnel in charge of the installation, the operation, the adjusting, the cleaning, the repairing and the moving of the machine.
- **USER:** the person, entity or company, who purchased or rented the machine and intends to use it according to the intended use foreseen by the manufacturer.
- **SPECIALISED PERSONNEL:** any person specifically trained and approved to carry out maintenance or repair interventions that require particular knowledge of the machine, its operation, the installed safety devices, intervention modes. It must be capable of recognising danger present on the actual machine, therefore avoiding at risk situations.
- **RISK:** a combination of the probability and seriousness of injury or damage to health which can arise in a dangerous situation.
- **GUARD:** a part of the machine that is used to specifically guarantee protection by way of a material barrier.

- **PROTECTION DEVICE:** a device that reduces risk (unlike the guard) either on its own or together with the guard.
- **INTENDED USE:** the use of the machine in accordance with the information provided in the operator's manual.
- **REASONABLE FORESEEABLE MISUSE:** the use of the machine different to the information provided in the operator's instructions, which may be the result of readily predictable human behaviour.
- **GENUINE SPEARHEAD DEALER/ AUTHORIZED TRACTOR DEALER:** The Genuine Spearhead Dealer/ Authorized Tractor Dealer, legally authorised by the Manufacturer, is formed by specialised staff able to carry out all types of assistance, maintenance and repair work, even of a certain complexity, required to maintain the machine in perfect working order.



WARNING! Carefully read the following rules. If the instructions described are not followed, a situation may arise which causes irreparable damage to the machine or property, or injury – even severe – to people or animals.

Spearhead declines all responsibility for damage caused by not complying with the safety and injury prevention regulations described below. Spearhead also declines any responsibility for damage caused by improper use of the machine and/ or as a result of modifications made without authorisation by the manufacturer.

2.3 Danger Plates And Warning

The Mower is equipped with pictograms (labels) warning about residual risks present on the machine that it were not possible to eliminate. Figure 4 shows the meaning of symbols contained in the pictograms. The operator must memorise the meaning of the symbols.

The labels should always be kept clean and replaced immediately if they are fully or partially detached or damaged.



Keep clear from the moving machine;
Keep at a safe distance.
Keep away from moving parts.



Keep hands away from the cutting area.



Greasing point.



Use the protection mask

Use protection gloves

Use protection muffs

Use the protective overalls

Use protective footwear



Keep clear from the moving machine;
Keep at a safe distance.
Keep away from moving parts.



Read the use and maintenance manual with care prior to starting up the machine.



Risk of cutting off feet. Keep at a safe distance. Do not remove protections before halting and disconnecting the machine.



Always disconnect the machine from the tractor prior to any maintenance and/or lubrication work.



Risk of cutting off hands. Keep at a safe distance. Do not remove protections before halting and disconnecting the machine.



Always disconnect the machine from the tractor prior to any maintenance and/or lubrication work.



Risk of falling. It is prohibited to climb onto the machine.



Risk of ejected objects. Stay at a safe distance.



Risk of entanglement in the PTO shaft. Keep away from moving parts.



Risk of cutting off hands. Keep at a safe distance. Do not remove protections before halting and disconnecting the machine.



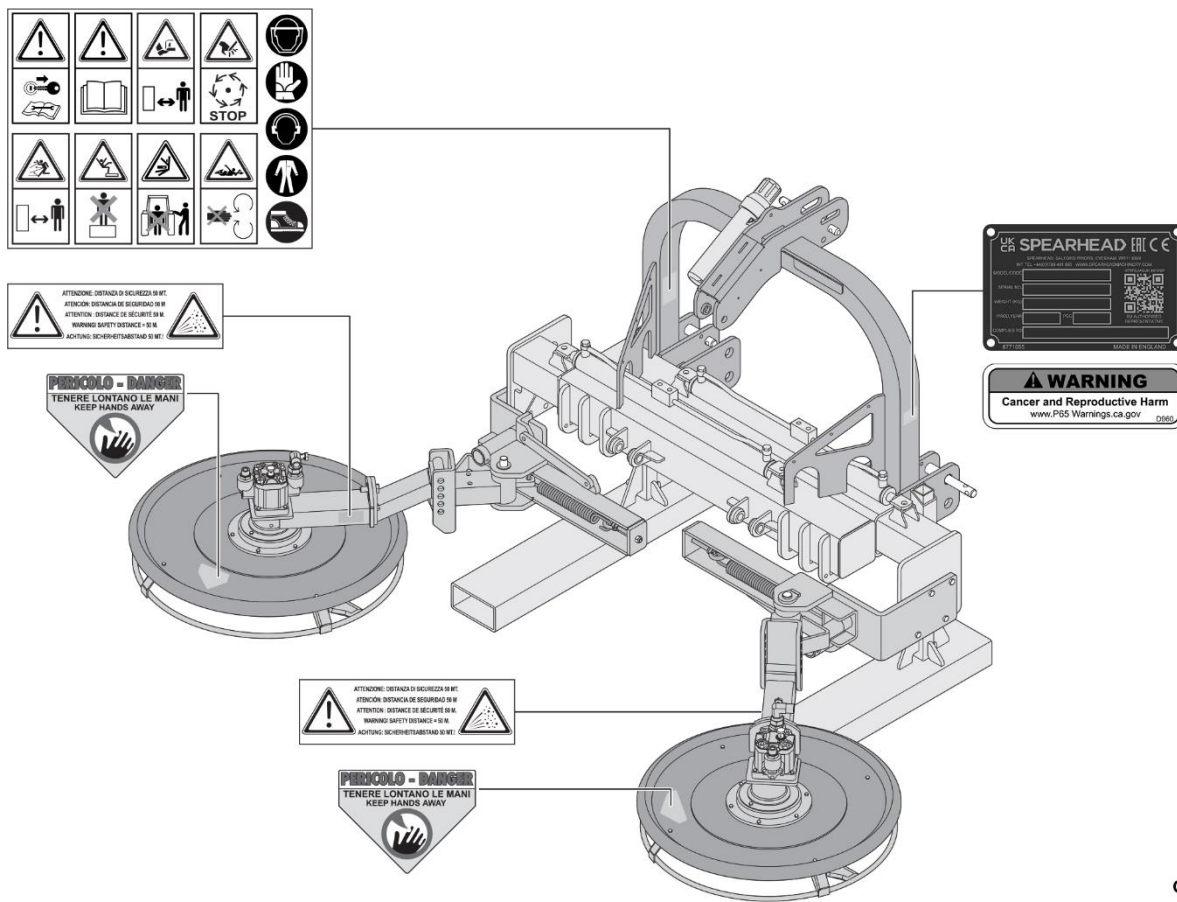
Risk of crushing. Do not stand between the machine and the tractor.



Operating, servicing and maintaining this equipment can expose you to chemicals which are known to the State of California to cause cancer and birth defects or other reproductive harm.

Figure 4

Figure 5 shows an indication of the precise points on the machine where labels are usually applied by the manufacturer.



OPMAN00850

(Rear mount model shown)

Figure 5

2.3.1 Proposition 65



Operating, servicing and maintaining this equipment can expose you to chemicals including gasoline, diesel fuel, lubricants, petroleum products, engine exhaust, carbon monoxide, and phthalates, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves and wash your hands frequently when servicing your vehicle. Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

This website, operated by California's Office of Environmental Health Hazard Assessment, provides information about these chemicals and how individuals may be exposed to them.

2.4 Clothing

In general, it is necessary to wear suitable clothing for the work to be carried out. In particular, as far as Mower use, obey the following provisions:

- **It is mandatory** to use clothing, which is as suitable as possible, meaning not too loose and without any protruding or moving parts (for example ties or necklaces). Do not wear belts, rings and chains. Always use sturdy safety footwear. Long hair must be tied using a specific cap.
- **It is mandatory** to use protective goggles or a mask before proceeding with the work in order to protect the face and eyes from vegetable fragments which may be projected outwards during mowing.
- **It is mandatory** to use protective muffs in order to safeguard hearing from noise from the equipment during work.

2.5 Ecology And Pollution

Below are the minimum provisions to be followed in order to reduce the risk of environmental impact connected to the use of the machine:

- If the Country where the machine is used foresees specific sound emission limits, it is best to adapt to the provisions in these standards, if necessary, being supplied with suitable protective equipment (earplugs, muffs, etc.).
- **It is mandatory** to respect current legislation of the Country where the Mower is used, related to use and disposal of lubricants and products used for machine cleaning and maintenance, observing the recommendations of the manufacturer of those products.
- If replacing worn parts or during demolition, one must follow anti-pollution laws foreseen in the country where the Mower is used.
- **It is prohibited** to pour products used for cleaning or polluting substances into the sewerage drain, on the ground, in watercourses, or into the environment.
- **It is mandatory** to collect products used for cleaning and polluting substances in appropriate containers, store them and deliver them to companies authorised for their disposal.

2.5.1 Disposal

If the Mower is decided to be disposed of, it is best to take a few precautions in order to avoid the risk of environmental pollution. The various parts of the machine must be treated as if they were special waste. One must proceed by taking apart the equipment, grouping the various parts and components in similar parts (rubber, metal, plastic, etc.), providing for disposal of these parts separately, according to existing anti-pollution laws of the Country where the machine was used. Please note that, in general, **exhausted lubricating oil, rubber parts and scrap metals are special waste.**

2.5.2 Storage

If the machine is to be set aside for a long period, it is recommended to:

- Treat the Mower according to the instructions contained in the "5.2. Cleaning the Mower" paragraph;
- Check the machine and have any damaged parts replaced;
- Fully tighten all screws and bolts, in particular those which secure the blades;
- Perform a general thorough lubrication;
- Place the Mower in a dry area where it cannot be touched by persons not authorised to use it.
- Protect the entire machine with a tarpaulin.

If these operations are carried out properly, the user will find the Mower in perfect condition when it is required again.

If the Mower is to be dismantled, comply with the relative anti-pollution legislation of the Country of use.

It should not be forgotten that the Manufacturer is always available if you require any assistance or spare parts.

2.6 Safe Use

The Mower has been designed and built to be used for cutting grass or small shrubs (maximum diameter 10mm). Any other use is deemed improper and therefore strictly prohibited.

- **It is prohibited** to use the Mower in ways that are different from the indications contained in the paragraph "1.6. Intended use".
- **It is prohibited** to use or have the Mower used by anyone who has not read and completely understood the information contained in this manual.
- **It is prohibited** to use or have the Mower used by personnel that are not competent or properly trained or not in good health or physical condition.
- **It is forbidden** to drive the agricultural tractor attached to the Mower or have it driven by personnel without an appropriate driving licence.
- **It is forbidden** to approach or stop near the Mower when the machine is running.
- **It is forbidden** to stop between the agricultural tractor and the Mower if the combustion engine is running.
- **It is forbidden** to abandon the driver's seat on the agricultural tractor with the combustion engine running when the Mower is running.
- **It is forbidden** to alter, tamper with or bypass the safety devices provided by the manufacturer.
- **It is forbidden** to operate when the labels indicating the warning signs are missing or damaged. Have them immediately replaced with other labels having the same meaning.
- **It is forbidden** to use the Mower when even one split pin, elastic pins or shims supplied with the machine is missing.
- **It is prohibited** to come close and/or touch moving parts during the work.
- **It is prohibited** to tamper with, remove, damage or exclude any part of the machine.
- **It is forbidden** to deposit items on the Mower which can harm persons or animals, or damage property should they fall.
- **It is forbidden** to abandon the Mower and leave it unattended. The machine and the work area should always be monitored.
- **It is forbidden** to transport persons or items on board the Mower while driving with the tractor.
- **It is mandatory** to check that all the safety devices of the Mower are intact and functional before using it.
- **It is mandatory** to check that the agricultural tractor on which the Mower is installed is of adequate power, weight and configuration, compatible with the model fitted.
- **It is mandatory** to set the control lever of the lifter in the blocked position before connecting or disconnecting the Mower from the three-point hitch of the tractor.
- **It is mandatory** to comply with highway regulations in force in the country where the Mower is used.
- **It is mandatory** to verify that the ground on which the tractor moves is level and sturdy, before using the machine.
- **It is mandatory** for the environment where the machine operates to have adequate lighting. Insufficient or excessive lighting may pose a risk to the operator.
- **It is mandatory** to familiarize yourself with the control devices and their functions prior to starting work;
- **It is mandatory** to use suitable clothing. Strictly avoid long or loose clothing that could be caught in any way by moving parts. Wear suitable helmets, glasses, gloves, footwear, etc.
- **It is mandatory** to lower the Mower attached to the lifter unit, switch the combustion engine off and remove the ignition key from the dashboard of the tractor before leaving the driver's seat and engaging the parking brake.
- **It is mandatory** for the interventions and adjustments to always be performed with the machine switched off and disconnected from the power.
- **It is mandatory** to stop the machine and inspect it if abnormal vibration is noted or have it inspected by personnel assigned by the manufacturer until the causes are identified and eliminated.
- **It is mandatory** to contact a dealer if the machine stops during operations or a component malfunction.
- **It is mandatory** to always verify, before starting up the Mower, that no persons and/or animals are within 50 metres in any direction from the machine.
- **It is mandatory**, if the agricultural tractor has no closed cabin, for the operator to use ear protectors and a dust mask if the working ground lifts a considerable amount of dust. Ensure that the tractor is fitted with a Rollover Protection Structure (ROPS).
- **It is mandatory** to periodically verify that the screws and bolts are tightened and secure, especially those that secure the blades and the head assembly to the rest of barrier mower frame.
- **It is mandatory** to use the types of lubricating oils indicated by the manufacturer.
- **It is mandatory** to periodically check the integrity and functionality of the safety devices.

- **It is mandatory** to comply with the laws in force in the country of installation on the use and disposal of products used for cleaning and performing maintenance on the machine, considering the recommendations of the manufacturer of the given products.
- **It is mandatory** for the Mower to be handled without being subjected to impact with other objects which could compromise the optimal functionality.
- **It is mandatory** for the Mower to be lifted adequately and with suitable lifting accessories and harness and according to the regulations in force in the country where these operations take place.
- **It is mandatory** for maintenance on the Mower to only be performed by skilled and specialized personnel, in strict compliance with the instructions in this manual, and any worn or damaged parts should be replaced.
- **It is mandatory** to always use original spare parts when carrying out repairs and maintenance.
- **It is mandatory** to set the Mower in a safe place which is protected from the elements, when the work is completed.

The Mower has been designed and built in accordance with current safety regulations. Special maintenance (repairs) must only be performed by qualified personnel and original spare parts must be used.

2.7 Safe Maintenance

In order to guarantee safe maintenance of the Mower it is necessary to respect the following provisions:

- **It is prohibited** to remove or tamper with the safety devices.
- **Periodically check** safety device integrity and operation.
- **Periodically check** screws and bolts tightness.
- **It is mandatory** to periodically verify the condition of the hoses. They must not be cut or have abrasions, otherwise immediately replace them with other hoses having the same characteristics.
- **It is mandatory** to comply with the recommended oils.
- **It is mandatory** to switch the tractor engine off and always disconnect the input PTO shaft before cleaning or performing maintenance on the Mower.
- **It is mandatory** to strictly perform maintenance on the Mower according to the instructions in this manual and replace the damaged or worn parts with original spare parts only.
- **It is mandatory** for maintenance on the Mower to only be performed by skilled and specialized personnel, in strict compliance with the instructions in this manual.
- **It is mandatory** to always use original spare parts when performing repairs and maintenance on the Mower. Using non-original parts immediately renders the warranty null and void and can compromise the durability and reliability of the machine.
- **It is mandatory** for parts or components of the Mower to be lifted adequately and with suitable lifting accessories and harness and according to the regulations in force in the country where these operations take place.
- **It is forbidden** to perform welding, flame-cutting or with a tool or holes on the structure of the Mower.
- **The dangers** signalled on the machine by way of pictograms (labels) of suitable dimensions, applied on the Mower in easy to see places.
- These signals give the proper indications in an essential manner in order to avoid danger and prevent the risk of damage or injury. These signs must always be kept clean and immediately replaced when removed, even partially, or damaged: **it is prohibited** to operate the Mower when even one of these signs is missing from the spot where it was installed by the Manufacturer.
- **It is mandatory** to save and keep this manual for the entire life of the Mower.

3 Installing The Mower

Before starting to use the Mower, **it is mandatory** to read and perfectly understand the instructions contained below.



WARNING! Read the instructions contained in the chapter, "2. General Safety And Accident Prevention Standards".

3.1 Transport

The Mower is supplied fully assembled and protected with a "heat-shrink" plastic cover. Handles protrude from the cover for lifting and vertical handling of the mower with straps or cables able to withstand the machine's weight.

To transport by carriage, make sure that the Mower is securely anchored to the floor with suitable standard ropes or straps, in accordance with the requirements set out in the "4.5. After Use" paragraph.



WARNING! The machine must be lifted with maximum care and by using lifting devices suitable for the weight and size of the same.



WARNING! Due to the danger of this operation, it must be performed by expert and responsible personnel. For the lifting device to be used **it is mandatory** to comply with the safety regulations prescribed by the laws in force in the country where the machine is used. Do not touch the Mower and do not stop within the operating range of the crane.

After transportation, remove the protection film and check that the machine was not damaged in any way. Spearhead cannot be held responsible for any damage caused by handling carried out any differently from that described in the manual.

3.1.1 Application To The Tractor



WARNING! Clean and clear the installation area from any obstruction before starting to work. The area must be specifically closed off and personnel not assigned to the works must be made to move away. The available means must be verified to be intact and suitable. The operator must also tighten all the bolts and fittings properly, using suitable tools.



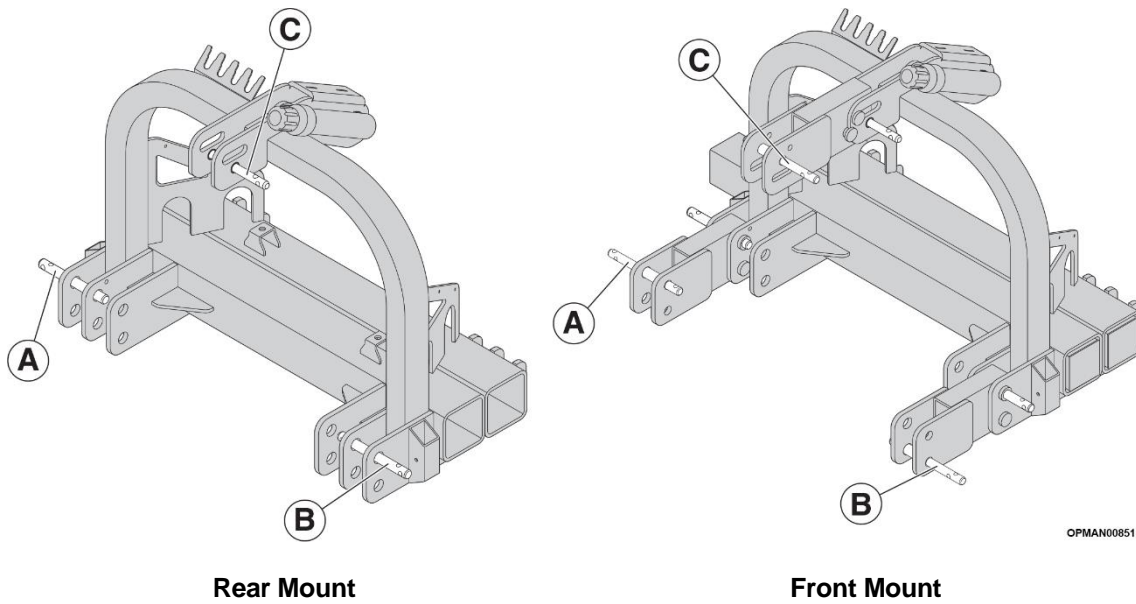
DANGER! All the following assembly and installation operations must be carried out with the tractor engine switched off.

The application of the mower to the tractor must take place on flat ground. All the mowers are applicable to any tractor equipped with a universal three-point hitch.

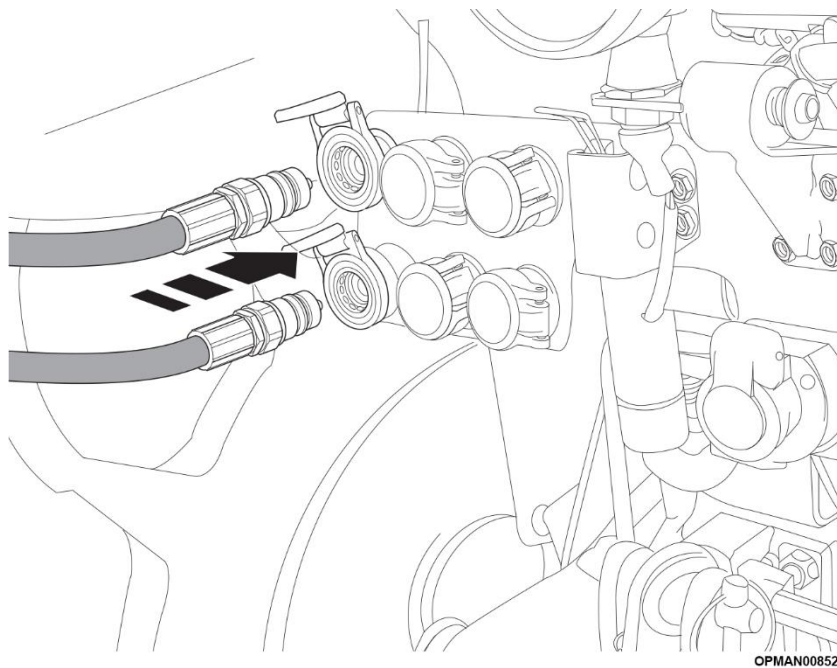
The Manufacturer declines all responsibility for the breakage of the tractor.

Proceed as follows for the coupling (see Figure 6):

- Use appropriate protective gloves to move the tractor back until the tractor lower link arms are inside the plates (A) and (B). Insert the pin into the pre-set hole and secure it with the split pins.
- Switch the tractor off and engage the parking brake.
- Lock the lower link arms on the tractor with the appropriate chains and parallel tighteners: this precaution must take place in order to avoid any sideways movement of the Mower.

**Figure 6**

- Connect the top link (C), securing it with the appropriate pins and split pins, and use the tie-rod to adjust correctly, making sure that the upper surface of the Mower is parallel to the ground.
- Connect the hydraulic hoses of the mower to the hydraulic services on the tractor (Figure 7).

**Figure 7**

WARNING! Make sure the hydraulic hoses are connected correctly.

4 Usage Instructions

4.1 Before Use

Prior to starting up the Mower, carry out the following operations;

- Check that all the screws and nuts are fastened, especially those that secure the blades and the head assembly to the rest of barrier mower frame.
- Check that all lubricants are to the right level and that all wearing components are checked for wear and tear and deterioration.
- Make sure the working height is adjusted to the desired level.
- Ensure that all moving components on the barrier mower are in good working order.
- Check that all hydraulic hoses are in good working order.
- Check correct operation of the hydraulic services of the tractor.



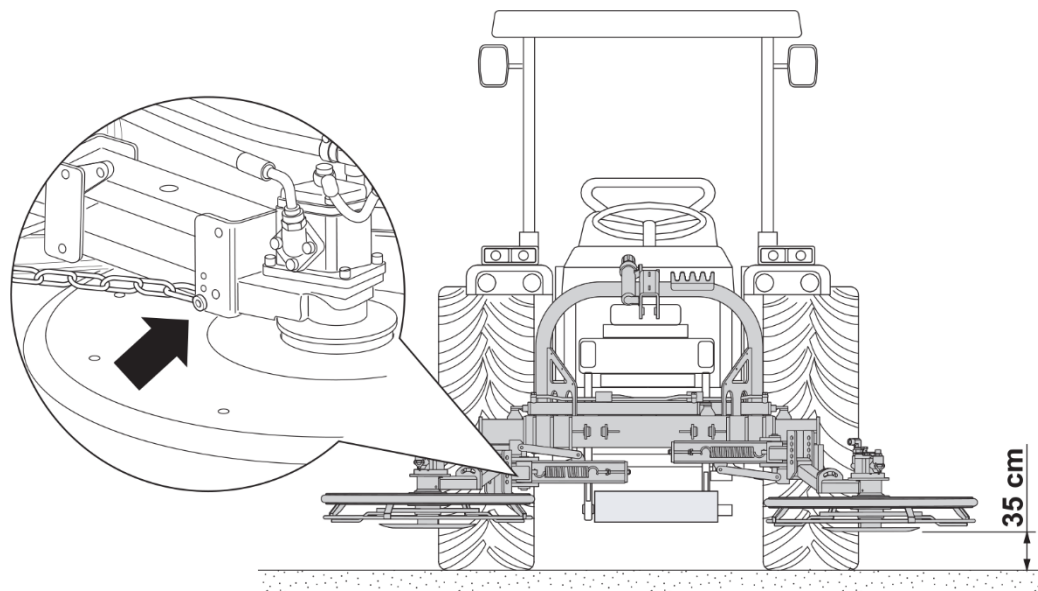
WARNING! Before operating the Mower, check the efficiency of the power systems and familiarize yourself with the controls.

4.2 Transporting The Machine

During transport and every time, the Mower must be lifted with the tractor it is fastened to, the lifting device should be adjusted so that the machine is lifted from the ground by about 35 cm (see Figure 8). The Mower offset arm must be fully closed and appropriately fastened using the locking chain (see Figure 8).

Furthermore, verify that all blocking devices are activated so that the Mower is absolutely safe.

For transporting the Mower light, on a trailer for example, ensure that its properly anchored to the surface with suitable standard ropes or straps, in accordance with the requirements of “4.5. After use” paragraph.



(Rear mount model shown)

Figure 8

OPMAN00853

4.3 Machine Settings

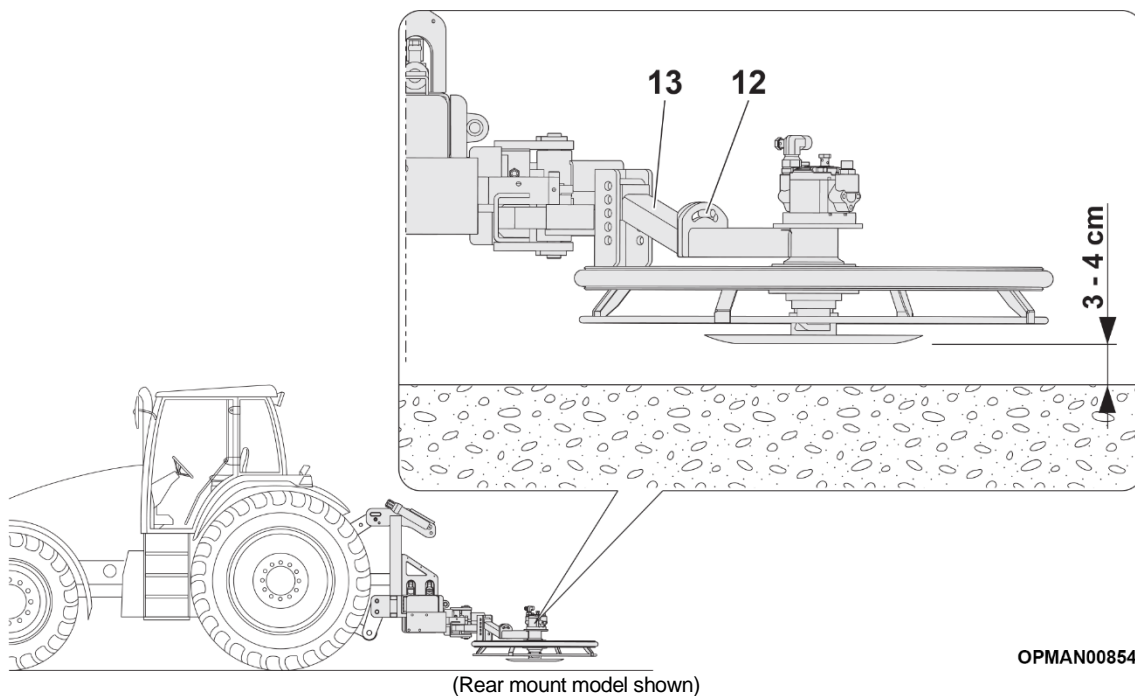
A number of adjustments can be made on the Mower to help the operator in the various working conditions that may arise.

4.3.1 Adjustment Of Working Height

To get a good finish, the Mower cutting head must be perfectly parallel to the ground.

To correctly adjust the working height of the Mower, it is necessary:

- To gradually and completely lower the Mower, with the tractor off and the emergency brake on, using the lifter, to ground level;
- Adjust the cutting height by adjusting the head angling slot (12) and the height adjustment arm (13) (see Figure 9) until the required position is reached where the blades are approximately 3-4cm from the ground.



OPMAN00854

Figure 9

4.4 Using The Mower

After having familiarized yourself well with the controls, worn the PPE (personal protective equipment) required, set the machine in the desired working position, and having connected the gearbox and secured it properly to the tractor PTO by means of the input PTO shaft and hydraulic hoses to the tractor's hydraulic services, start the tractor engine, disengage the parking brake, and engage the hydraulic motor of the Mower using the relevant tractor controls while maintaining the engine at low rpm.

Before starting work, make sure that there are no exposed persons and/or animals near the machine. Otherwise, have them move away.

N.B: Spearhead recommends that you always use a tractor equipped with a closed cab.

On start-up, move slowly with the tractor, gradually and slowly lower the Mower until it reaches the ground. Then, the engine can be brought to the work speed.

It is recommended not to press the accelerator pedal rapidly when the tractor is stationary, and the PTO is engaged, and the Mower is not running. This can cause damage to the machine and the tractor.

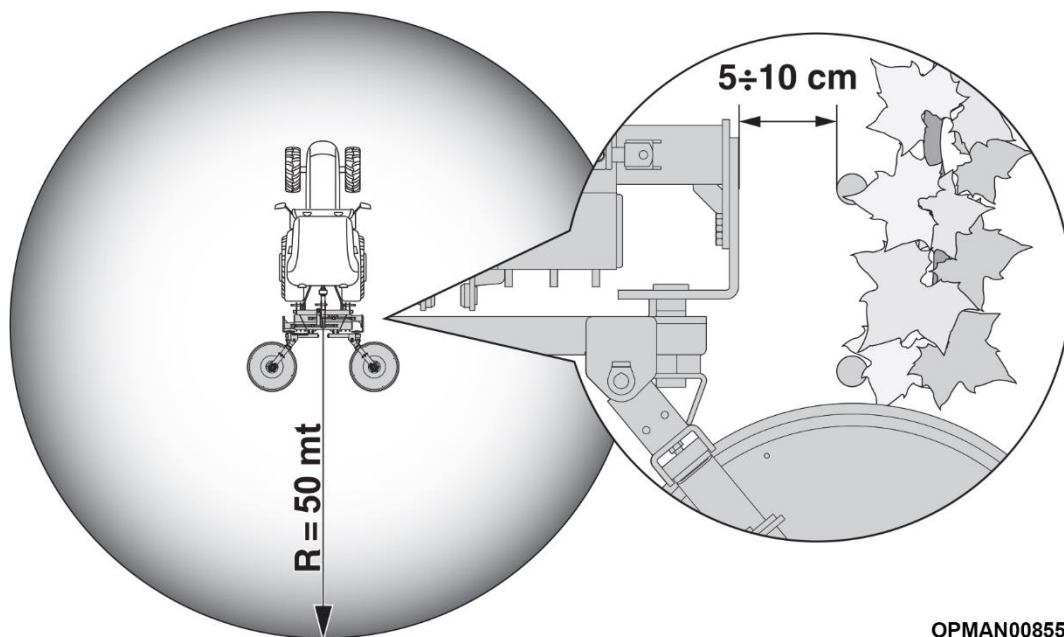
It is important to maintain the offset arm a minimum distance of at least 5-10cm away from any obstacles (trees, shrubs, poles e.t.c.) as shown in Figure 10.



WARNING! The speed of the tractor with the mower working must never exceed 5km/h in order to avoid breakage or damage.



DANGER! During work, stones or other objects found in the terrain can be lifted and projected by the rotating blades. Constantly check that there are no persons or animals within the operating range of the Mower (Figure 10).



(Rear mount model shown)

OPMAN00855

Figure 10



WARNING! Spearhead declines any and all liability for damages caused by the Mower to persons, animals or property, resulting from use other than that described in this manual, or due to damage caused by negligence or by not observing the instructions contained in this manual.

During transportation and any time when it becomes necessary to lift the Mower, it is necessary to adjust the tractor linkage so that the Mower itself is lifted more than about 30-35cm from the ground.

Avoid driving on public roads when the Mower is dirty with earth, grass or at any time when it produces dirt or obstructs the traffic on the roads.

4.5 After Use

Store the equipment, preferably in a covered area, on a suitable and flat surface. Follow the instructions in the "2.5.2. Storage" paragraph of this manual.

4.6 Safety Devices

There are safety devices in the Mower to safeguard the operator.



WARNING! The safety devices must not be tampered or excluded. They should always be kept in perfect working order.

The following are installed:

- The **warning pictograms of the residual risk** essentially indicate an existing danger, a prohibition or requirements that are to be met for the operator's safety and for the Mower to operate correctly and remain intact.

4.7 Machine Transport Procedure



WARNING! Proceed at a moderate speed, as the mass of the tractor with rotary mower lifted changes the stability of the tractor-machine unit, influencing the steering and braking capacity.

It is important to remember that the front axle should have sufficient weight with a load equal to at least 20% of the weight of the agricultural tractor. Check the overall weight and stability of the tractor using the formula indicated below and apply the appropriate weights if necessary.

Influence of the weight of the rotary mower	less than or equal	Influence of the weight of the tractor
$M \times (S + E)$	\leq	$0.2 \times T \times i \times Z \times (D + I)$

where:

- i** tractor wheelbase
- D** distance of the front axle from the front ballast
- S** distance between the centre of the rear axle and the centre of the lower link arms of the tractor
- E** distance of the centre of the lower link arms of the tractor from the centre of gravity of the rotary mower (750mm)
- T** weight of the tractor + 75kg (operator)
- Z** weight of the ballast
- M** weight of the rotary mower, see "1.4. Technical Data" paragraph

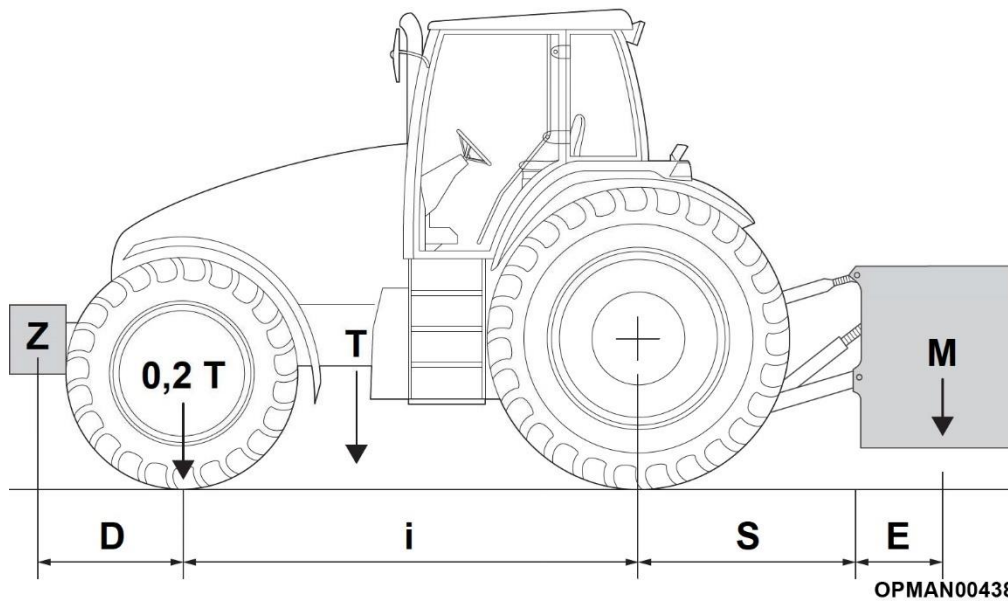


Figure 11

If the machine is combined with an agricultural tractor registered and approved before 6th May 1997, it is also necessary check the compliance with the following relation:

$$M < 0.3 \times T$$

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5 Maintenance

Routine maintenance operations are listed below. More extensive maintenance operations (re-pairs of parts or components) can be carried out by specialised personnel authorised by the manufacturer.



WARNING! The schedule is for information purposes only and depends on normal operation conditions. Conditions can in fact change depending on the service, the environment and on frequency of use. If conditions are particularly awkward, the frequency of maintenance operations should be amended accordingly.



WARNING! Before performing any maintenance, it is mandatory to make sure that the hydraulic hoses of the Mower are disconnected from the tractor.



WARNING! After maintenance, always restore any safety devices that may have been removed, so that they are in place before new work is started.

Greasing points should be cleaned carefully before lubrication, to prevent mud, dust or foreign bodies from mixing with the lubricant.

- **It is mandatory** that any repair and/or maintenance intervention be carried out by an operator with suitable physical and intellectual requirements.
- **It is mandatory** for routine maintenance operations to be carried out by a technician specialised in mechanics and hydraulics.
- **It is mandatory** to verify that during maintenance or repair operations; unauthorised personnel are kept away from the Mower.
- **It is prohibited** to deactivate protection and safety devices. When it becomes necessary to deactivate these devices in order to carry out more extensive maintenance, the operation must only be completed for more extensive maintenance and only by a maintenance mechanic, who will guarantee operator safety and avoid any damage to the machine, as well as restoring the effectiveness of the same devices at the end of maintenance operations.
- **It is recommended** to perform all maintenance that is not covered in this manual in an authorised service centre.
- Before restarting the Mower after lubrication and/or maintenance, **it is mandatory** to wait for the authorization of the mechanical maintenance technician who must verify that:
 - the works have been completed;
 - the Mower works perfectly;
 - the safety devices are in their correct place and fully functional;
 - no other operations are being performed on the Mower or on the tractor.

5.1 Periodic Maintenance

In order to guarantee proper operation of the Mower and improved operator safety, it is necessary to periodically intervene with controls and maintenance operations listed in the table shown below.

	First Use	Every 8 Work Hours	Every 50 Work Hours	Every 400 Work Hours
General check	X			
Tightening of screws and bolts	X	X		
Check blade wear	X	X		
Careful machine cleaning				X
Check presence of foreign bodies in the blades (grass, wire, nylon e.t.c.)	X	X	X	X

Table 4



WARNING! The machine must be checked by authorised personnel if any of its parts are worn or in poor condition.



WARNING! Replace the hydraulic hoses each time they are damaged or, in any case, before the sixth year.

5.1.1 Maintenance On The Blades

The blades with which the Mower is equipped are suitable for working on grounds of normal condition. **It is mandatory** to check their integrity and the degree of wear every day. When damage occurs in the blades during work, **it is mandatory** to replace them immediately. **Replacing a single blade is generally not recommended.** This can only be done when the other blade is in excellent condition but in any case, in order not to compromise the proper operation of the rotor, **it is mandatory** to also replace the other blade so as not to cause an imbalance in the rotor. **It is recommended** to always replace all blades and not just the damaged one, in order to guarantee proper operation.

To replace worn or broken blade it is necessary to (Figure 12):

- position the Mower and tractor on flat ground;
- raise the Mower with the linkages to the maximum height possible;
- place adequate support stands under the Mower on both sides for the machine to be perfectly stable;
- stop the tractor and put on the emergency brake;
- unscrew the blade nut (16);
- remove the blade bush (17) and bolt;
- remove and replace the old blade and replace with a new one;
- fit the new blade and new blade bolt, bush and nut;
- firmly tighten;

Repeat the process on the other blade.



CAUTION! Only use original spare parts.

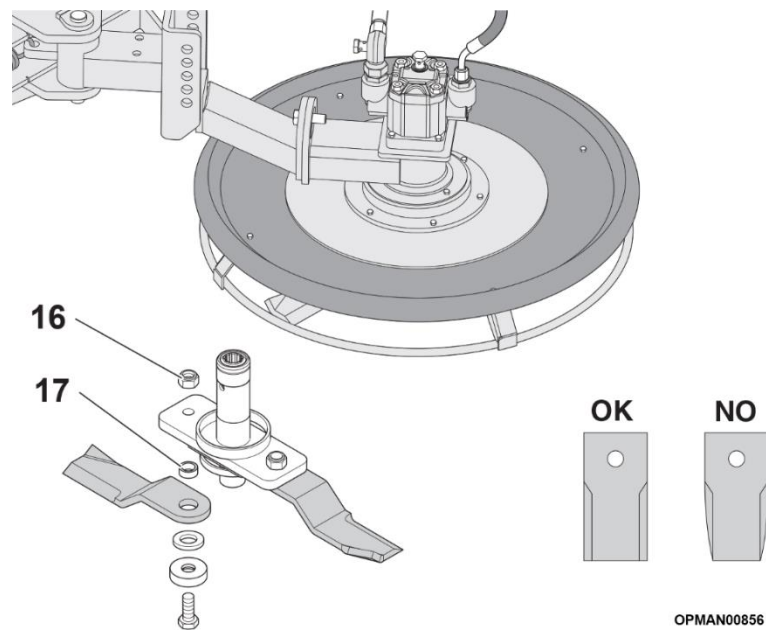


Figure 12

5.2 Cleaning The Mower



DANGER! This operation is extremely hazardous so the following instructions must be followed.

- Wear protective gloves and shut off the engine of the agricultural tractor, subsequently disconnecting the input PTO shaft;
- For cleaning at the end of work, before completely stopping the machine, leave it on for 20-30 seconds so that any material residue is ejected;
- The Mower must be cleaned using an air jet, water with non-hazardous chemicals and cloths.
- Eliminate any residue of material or dust from the external surface of the machine.

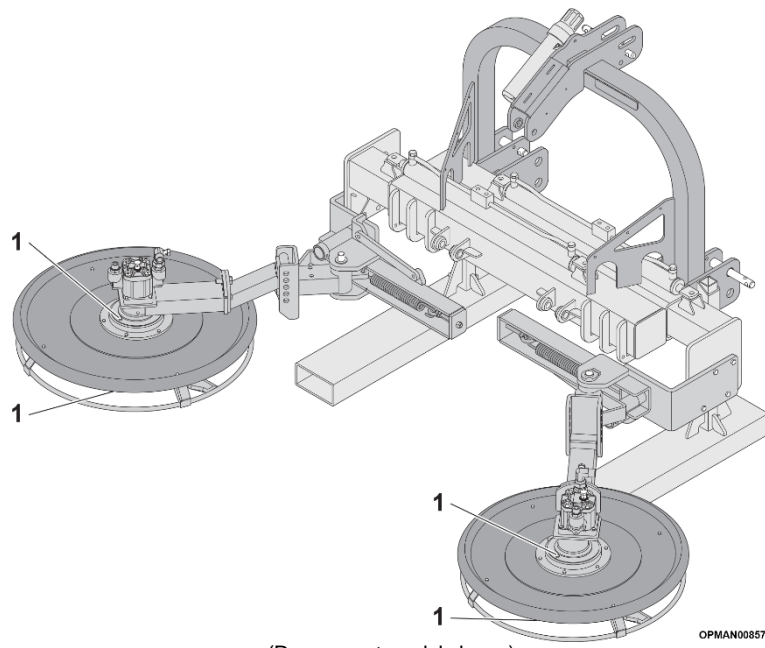
Operations to be carried out are the following:

- Hoist the machine using appropriate lifting equipment on a flat non-slip surface.
- Wash the entire inside of the body and the cutters with a jet of water, at a distance at least one and a half metres away;
- Check the condition of the cutters and its pivoting fasteners;
- Eliminate any residue of material or dust from the external surface of the machine.

5.3 Lubricants

With reference to Figure 13, the following lubricants are to be used for the different parts of the machine:

- For all (1) greasing points: SHELL RETINAX WB 2 equivalent is recommended.



(Rear mount model shown)

Figure 13

6 Troubleshooting

If the Mower malfunctions, search the causes and the solution of the problems in the following table:

Problem	Cause	Remedy
Abnormal power consumption during work	Worn blade	Replace blades
The Mower bounces on the ground or vibrates	Foreign bodies stuck between the blades	Clean the rotor and blades
	Blade mounted incorrectly	Check and re-install the blades
	Worn or broken blades	Replace the blades
The Mower does not cut	Material blocked between the blades	Remove the material from the blades
	Faulty hydraulic motor	Contact authorised service centre

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7 Spare Parts

7.1 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 14.

7.1.1.1 Enter the serial number.

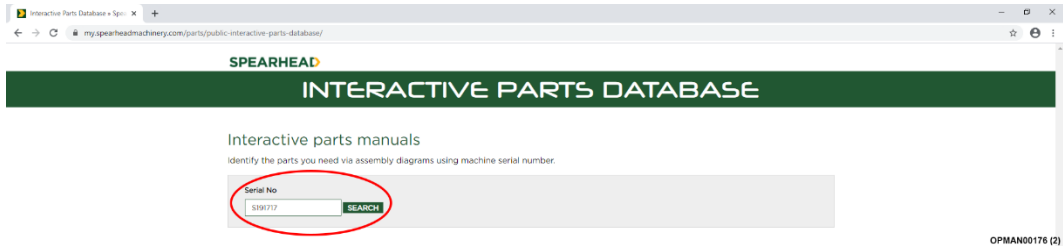


Figure 14 – Type In Serial Number

7.1.1.2 After entering the serial number a specification for the machine will appear. Click on the serial number; see Figure 15.

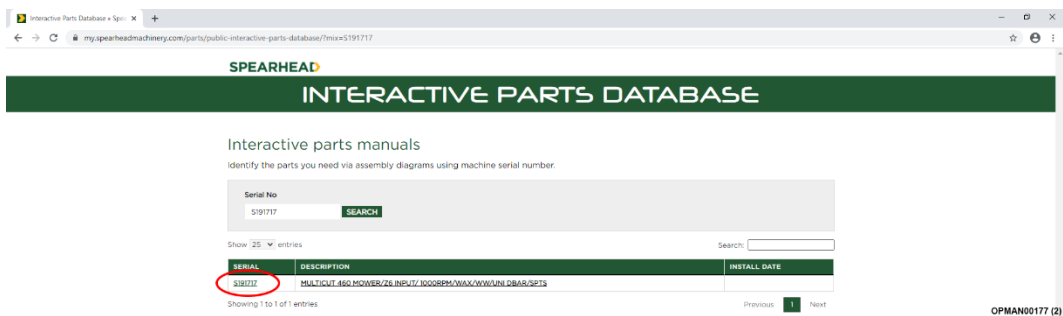


Figure 15 – Click On Serial Number

7.1.1.3 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 16.

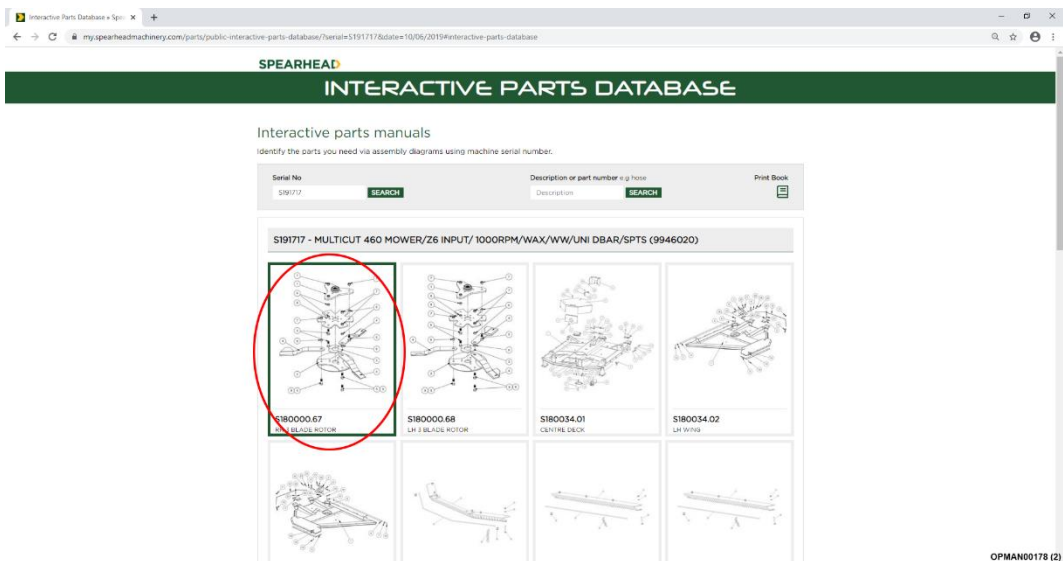


Figure 16 – Click On Assembly

- 7.1.1.4 You will finally be presented with a full exploded parts breakdown for that particular assembly, giving part numbers and the quantities required; see Figure 17.

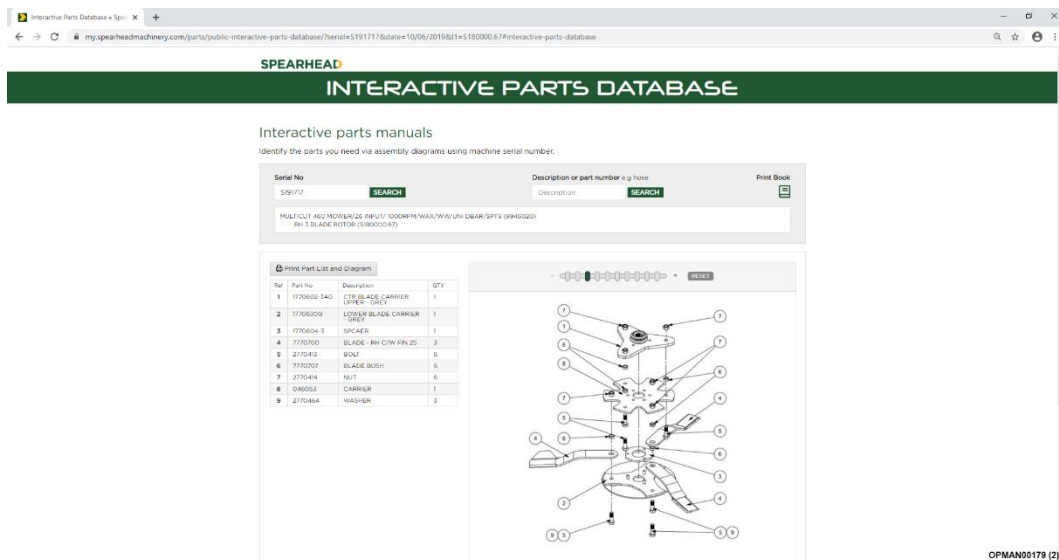


Figure 17 – Exploded Parts Breakdown With Bill Of Materials

7.2 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 7.3.

7.3 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 18.

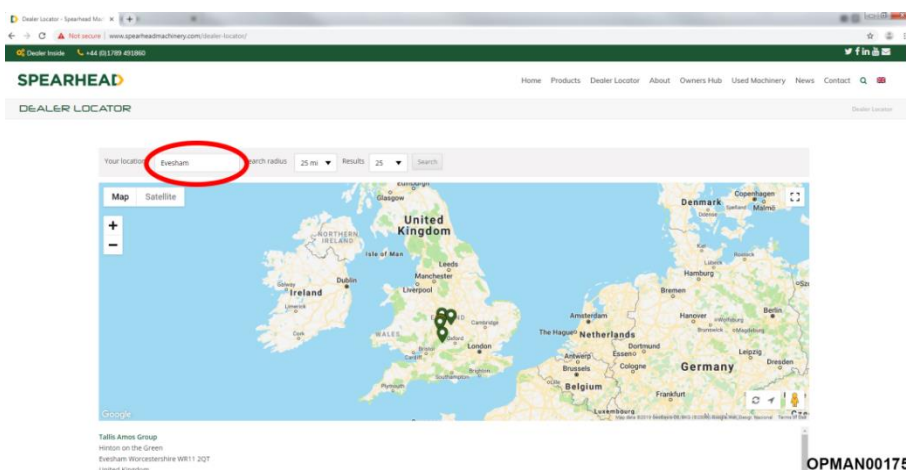


Figure 18 – Dealer Locator

Notes

Notes