

**ELLIETT®**

MANUAL

# **SPIKER**



**This manual contains practical information about the use and maintenance of your machine. Read it carefully and keep it safely for future reference.**



Please also keep your purchasing invoice and/or receipt together with this booklet.



**Register your product online on [www.eli.eu](http://www.eli.eu)**

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# 1. Introduction

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## 1.1 Read this operating manual carefully

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ELIET machines are designed for safe and reliable use if they are operated in accordance with the instructions provided. Carefully read these operating instructions before using the machine. Failure to do so may result in personal injury or damage to the equipment.

## 1.2 Identification data - ELIET Spiker

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Note the identification data relating to your machine in the text boxes:

Type number:

MA 007 000 902

Serial number:

Year of manufacture:

20

## 2. Warranty

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### 2.1 Warranty card

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To be eligible to obtain warranty you must send the completed warranty card within one month from the date of purchase to the address stated below:

European customers:

US customers:

ELIET EUROPE NV

ELIET USA Inc.

Diesveldstraat 2

3361 Stafford Street (office B)

B-8553 Otegem

15204 Pittsburgh (PA)

Ph (+32)(0)56 77 70 88 - Fax (+32)(0)56 77 52 13

Ph (+001) 412 367 5185 - Fax (+001)412 774 1970

E-mail: [service@eliet.eu](mailto:service@eliet.eu), [www.eliet.eu](http://www.eliet.eu)

E-mail: [usinfo@elietusa.com](mailto:usinfo@elietusa.com), [www.elietusa.com](http://www.elietusa.com)

Read the warranty conditions on the attached warranty card.

### 3. Welcome

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#### **Welcome to the family of ELIET users.**

We thank you for the trust that you have placed in ELIET and we are convinced that you have purchased the very best machine. The operating life of your ELIET machine depends to a great extent on how you care for your machine. This manual will help you on your way. If you follow the instructions and suggestions in this manual, your ELIET machine will operate for a very long time in optimal condition.

Read this manual carefully before operating the machine. This will prevent incorrect operation of the machine.

For your own safety, please observe the safety instructions specified in the relevant chapter. Even if you are thoroughly familiar with operating such equipment, it is still advisable to read these pages carefully.

All ELIET equipment and machines are continually being updated and improved and therefore the specification of your machine may differ slightly in terms of shape, technology and accessories. The descriptions and technical data in this manual are accurate at the time of printing. Certain illustrations and descriptions may not be applicable to your specific machine, but instead relate to a different version of the machine. We trust therefore that you will understand that the texts and illustrations in this manual cannot give rise to any claims.

If you still have questions after you have read this manual, please contact your ELIET dealer.

#### **ELIET AT YOUR SERVICE**



Diesveldstraat 2  
B-8553 Otegem  
Belgium

Ph (+32) (0)56 77 70 88  
Fax (+32) (0)56 77 52 13  
E-mail: [service@eliet.be](mailto:service@eliet.be)

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## 5. Operator safety warnings

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This operating manual contains certain symbols to provide additional information and to highlight dangers.

### 5.1 For your information

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**For your information:**

This symbol is used to draw your attention to specific information and/or actions, or to indicate where you can find additional information relating to the subject.

### 5.2 Caution

---



**Caution:**

This symbol suggests safe practices. The purpose is to prevent incorrect operation that could result in personal injury or damage to the machine.

### 5.3 Warning

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**Warning:**

This notice warns you about extreme danger that you must be aware of in these specific circumstances. So for the sake of your own safety, remain alert at all times.

## 6. Main parts

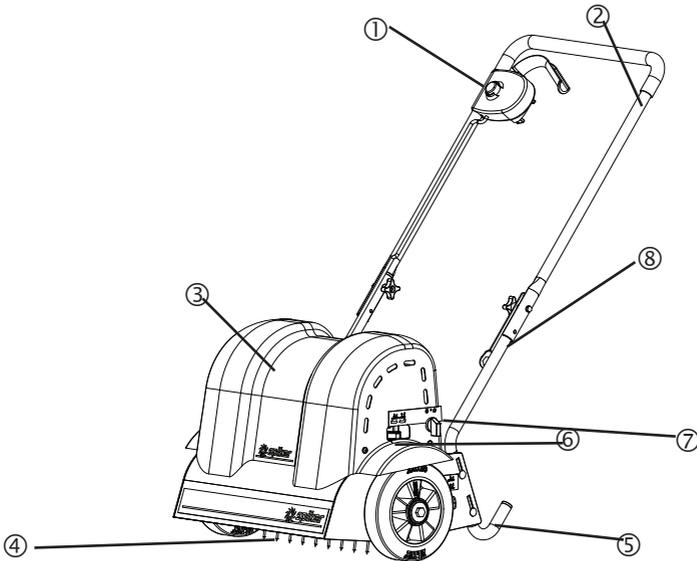
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To fully understand the content of this operating manual you need to be fully conversant with the terminology used for the descriptions. This chapter refers to a broad range of machine parts and identifies their names. We recommend that you take the time to study the machine prior to its use for a better understanding of the descriptions provided in this operating manual.

### 6.1 Overall view

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- 1. Operating handle
- 2. Height-adjustable steering handle
- 3. Engine
- 4. Spikes

- 5. Feet
- 6. Depth adjustment
- 7. Switch
- 8. Foldable steering handle



**For your information:**

References to front, rear/back, left and right in this manual are from the viewpoint of the operator steering the machine.



**For your information:**

Your ELIET dealer remains at your service for any maintenance or advice, ensuring your ELIET machine is always in perfect condition. You can contact him for original ELIET parts and lubricants at any time. These service parts are manufactured according to the same strict rules and craftsmanship as the original equipment. Find an ELIET dealer near you on **[www.elieta.eu](http://www.elieta.eu)**.



**Let op:**

For your own safety, only original parts may be mounted on ELIET machines.

# 7. Safety instructions



## 7.1 Safety messages



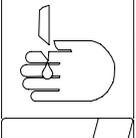
This sticker is affixed on the rear cover and warns the user not to open the cover while the machine is running. This sticker provides a summary of the general safety regulations by using icons: Art. no: BQ 505 010 360



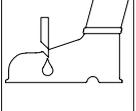
1. Before operating the machine the manual should be read and understood.



2. Suitable safety clothing (gloves, safety goggles, ear defenders) should be worn when operating the machine.

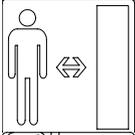


3. Working with or performing maintenance on the machine poses the risk of cuts to hands and feet. Be attentive and cautious

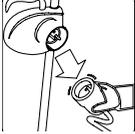




4. Be careful with spattering dirt.



5. Keep bystanders at a safe distance while operating the machine.



6. This is electrical equipment.

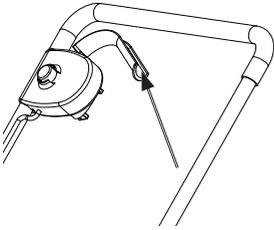


This unique sticker contains all machine identification data.

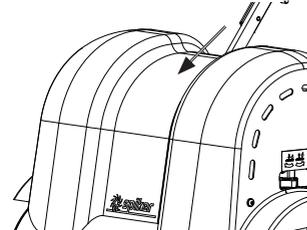
- Year of manufacture
- Model
- Type number
- Serial number
- Power
- Weight
- Guaranteed A-weighted noise level

In addition, the sticker bears the manufacturer's company information. The sticker bears the seal of conformity with European standards in the form of a CE label.

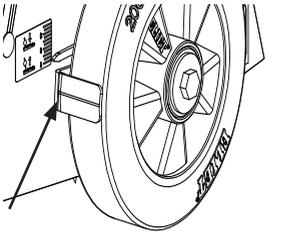
## 7.2 Safety features



**Operating handle:** When the operating handle is released, the engine immediately comes to a stop.



**Protective belt cover:** The cover ensures that all rotating parts of the drive that might cause injuries are adequately shielded.



### Wheel scrapers:

The wheels are equipped with wheel scrapers. The tyre tread stays clean, allowing the machine to be more stable and giving a better cut edge.



### Warning:

Never attempt to circumvent or switch off safety devices.

The safety measures were designed for your safety.

Before using the machine, the operator should check that the safety device works properly. Any defects must be repaired.

## 7.3 Safety instructions

### 7.3.1 General safety instructions



**Warning:**

MOST ACCIDENTS ARE CAUSED BY CARELESSNESS OR RECKLESS BEHAVIOUR.

- The owner of the machine shall keep this manual throughout its service life. A reference guide for the user, it also ensures that the machine is used and maintained correctly at all times. Always refer to this instruction manual if you have any doubts about an operation that you are about to perform.
- If the instructions stated in this manual are not clear to you, do not hesitate to contact your ELIET dealer for further explanation. The help desk at ELIET is at your service to answer all of your questions on +32 56 77 70 88.
- Be sure to read the chapter which is intended for the dealer and verify whether the machine was delivered in accordance with the instructions.
- During operation of the ELIET machine all safety instructions must be observed. Make sure to read all the instructions about how to operate the machine. All these instructions are for your own safety.
- Get advice from the dealer or another professional when purchasing the machine.
- Read and observe all safety messages stickered on the machine.

### 7.3.2 Careful and cautious use

- Think about what you are doing at every manoeuvre. Do not be tempted to let routine dull your attention. Never act impulsively or on reflex.
- Despite the extensive safety features, do not seek out dangerous situations.
- This machine serves to loosen and remove the moss and thatch growing on the bottom layer of your lawn. This machine shall be used for this purpose only.
- Dethatching is a surface operation. The spikes should only touch the upper surface. The maximum spike depth is 25 millimetres. If the setting is too deep, this increases the risk of quick wear.  
ELIET accepts no liability for damage resulting from improper spike settings.
- Never dethatch when the ground is frozen.
- It is recommended to work on a dry lawn. Wet lawns increase the risk of accidents; extra care is necessary under these circumstances.
- If the lawn is too dehydrated after a period of drought, dethatching is not recommended. The dust generated from the lawn would increase wear to the machine. In addition, dethatching would have a negative effect on the lawn in this case.

- Never work when light intensity is below 500 Lux.
- Under no conditions whatsoever may the original design of the machine be modified without explicit and written consent of ELIET.
- The machine may never be used as a means of transport for people or loads.
- Make a thorough inspection of the area where the machine is to be used. Remove sticks, stones, wires and debris, but also take account of electric cables, water pipes, sprinkler heads, drain covers, etc.
- The engine must be switched off as soon as the machine is taken off the lawn and pushed across a hard surface.

### **7.3.3 User's responsibilities**

- All persons using the machine are assumed to be fully conversant with the safety instructions. They are fully liable for the use of the machine in regard to themselves and third parties.
- The operator of this machine is assumed to be mature enough and to have enough common sense to make decisions by himself.
- The machine may not be operated by minors. However, this does not apply to youths over the age of 16 who are learning to operate the machine under the supervision of an experienced user. This manual must be read before use.
- Children and animals must be kept well away from the machine.
- ELIET advises against lending the machine to others. However, if this should occur, it should only be lent to persons who are familiar it. Always make sure that the user is aware of the potential hazards and ensure that he/she reads the manual before using the machine.

This machine must only be operated by persons who are well rested and in a good physical condition. Take a rest if you become tired while operating the machine. Do not operate the machine after alcohol consumption.



**Warning:**

ONE MOMENT OF INATTENTION OR CARELESSNESS COULD TURN INTO A LIFE-LONG REGRET.

### 7.3.4 Personal Protective Equipment (PPE)



#### **For your information:**

Personal protective equipment reduces the risks run by the operator.

- The person operating this machine must wear suitable clothing. This means clothing covering the entire body, protective gloves and closed footwear.
- Since your feet run the highest risk when operating the machine, sturdy, closed non-slip shoes are a must. Shoes with a steel top are highly recommended.
- For protection of the most sensitive senses, ELIET recommends hearing protection and safety goggles.
- Dethatching can produce a considerable amount of dust. If it irritates your respiratory airways, ELIET recommends you wear a dust mask (in compliance with the 89/686/EEC standard).

### 7.3.5 Danger zone

The safe position for the operator is behind the machine, with both hands on the handlebar.

- Never allow bystanders within the danger zone - a circle of 10 m around the machine - during operation.
- Do not take any risks! Stop the blade drive as soon as someone enters the danger zone.
- Shut off the engine when leaving the machine unattended.
- Once the engine is running, focus all your attention on operating the machine.

### 7.3.6 Periodic maintenance



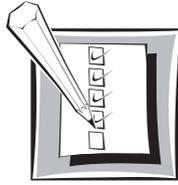
#### **For your information:**

For your own safety and in the interest of extending the life of the machine, this machine should undergo regular maintenance.

- Periodic maintenance is essential. You should therefore strictly follow the maintenance schedule in this operating manual. A maintenance meter helps you keep track of the hours of operation of the machine.
- If parts require replacement due to wear or failure always request genuine ELIET replacement parts from your ELIET dealer. This is of key importance for your own safety.
- Repairs, maintenance and cleaning must only be performed with the engine switched off.

## 8. Dealer's duties

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### 8.1 Unpacking the machine

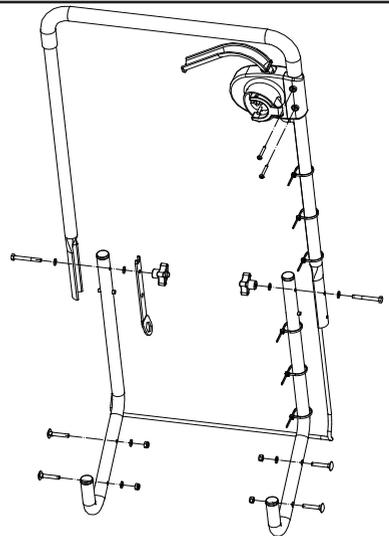
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- Set the box on an even surface.
- Cut open the top of the box and pull out the flaps.
- Take the parts of the handlebar out of the box.
- Carefully pull the machine out of the box.

### 8.2 Mounting the handlebar

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- Mount the handlebar as described in the drawing:
- Fasten the 2 nuts with the star screw on both sides of the handlebar and do not forget to attach the wheel spanner on the left side of the handlebar.
- Attach the start button to the handlebar with the 2 star screws.
- Guide the cable down along the handlebar using the straps.
- Attach the handlebar at the bottom of the machine by fastening the 4 bolts with nuts into the holes provided in the machine. The machine may only rest on its feet when it is slightly tilted backwards.



## 8.3 Other duties



### **Warning:**

As an ELIET dealer you must familiarise your customers with the operation of the machine and also point out the possible dangers involved in its use. Together with the new owner you are expected to carefully go over the maintenance points of the machine. These instructions must be repeated until the new owner has fully understood everything.

As the manufacturer, ELIET wishes to re-emphasise that the dealer must expressly point out to the customers that they must re-tighten all bolts of the machine after the first 5 operating hours.

- The dealer shall make a final test drive and check that all devices operate properly.
- The dealer shall check that all safety features work perfectly.
- Every ELIET dealer warrants a long life span of ELIET machines. He shall lubricate all hinges before delivering the machine to the client.
- Important information for the new owner at the time of delivery:
- The dealer shall familiarise the new owner with the operation of the machine.
- The dealer shall inform the new owner of potential dangers.
- The dealer shall insist that the machine be returned for a first service after 10 hours of operation (belt tightening is required).

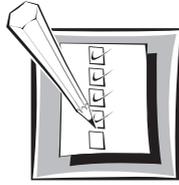


### **Caution:**

The dealer shall ensure that the warranty card is filled out and signed. This is to avoid any warranty disputes. Please read the warranty conditions.

## 9. Operating instructions

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### 9.1 Preliminary checks

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**Caution:**

Try making a habit of checking the following points before getting to work with the machine:

#### 9.1.1 Checklist

- Check the total number of hours the machine has operated and compare this to the maintenance table.
- Check the wear of the spikes.
- Check whether the depth has been set correctly.
- Check that all protective covers are present and properly in place.
- Check that all safety devices on the machine are still operating properly.

Once these points have been checked and approved, the work area can be prepared and the machine can be moved onto it.

### 9.2 Preparing the work area

---

- Never work when light intensity is below 500 Lux.
- Besides the machine, the work area must also comply with certain conditions, which must be verified prior to starting the work.
- Examine the work area and remove any foreign objects from the lawn before starting the work.
- Foreign objects include, among other things, metal, stone, plastic, pvc, bones, rope; but also molehills, branches, water hoses, etc. Some of these can cause severe damage to your machine or lead to breakage.
- Foreign objects that cannot be removed (such as drain covers, built-in power outlets, water sprinklers, tree roots) must be visibly marked as a risk area.
- Always cut the grass before dethatching. The grass should preferably be no longer than 30 millimetres.
- A mowed lawn also displays any foreign objects.

- Dethatching a lawn that is still very wet after rain is not recommended.
- Plan your course so that the wind blows the dust produced away from the engine.
- Use of the machine on extremely dry soil is not recommended for the following reasons:
  - The grass will recover much slower than usual.
  - The lawn will be badly damaged.
  - The spikes will wear faster and require replacement sooner.
  - More dust will be produced, making the engine dirty more quickly.
  - The soil will dehydrate even more than was the case already.
- We strongly recommend that you treat the grass with an anti-moss herbicide or a weed killer approximately 1 week prior to dethatching so as to ensure that the moss is dead and dry. It will help the grass to thicken more easily after dethatching.

## 9.3 Starting the engine



### Caution:

Never start the machine when dust has settled on the engine or between its cooling fins. It reduces proper cooling of the engine and can cause a fire.



### Warning:

If ever control over the machine is lost, the quickest way to stop the engine is by releasing the operating handle.

### 9.3.1 Electric engine

Always use an approved extension cord that is not defective. The capacity of the extension cord must be sufficient. The sockets must conform to IP 65. Such extension cords can be obtained from any authorised ELIET dealer.

- Plug the extension cord into the machine.
- Make sure the plug is pushed in all the way, so that it is firmly connected to the machine.
- Ensure that nobody is standing close to the machine and extend the extension cord completely until reaching the nearest power outlet.
- First plug the extension cord into the power socket. Always ensure that the socket conforms to IP 65.
- Take the socket that is closest to the work area so that a short extension cord can be used (max. 20 m). An extension cord that is too long creates considerable resistance and hence some loss of engine capacity.
- If the plug of the extension cord does not correspond to that of the machine, a suitable exten-

sion cord can be ordered from the ELIET dealer (search for an authorised ELIET dealer in your area [www.elieta.eu](http://www.elieta.eu))



**Warning:**

Make sure that the machine is not exposed to water during use (e.g.: rain, irrigation system ...). This could lead to a short circuit. Moreover, the user could be electrocuted.

- Lift the machine so that it rests on its feet and the spikes do not touch the ground.
- Press in the yellow start button, pull the operating handle toward the handlebar and the engine will start silently.
- If the machine vibrates abnormally or produces a vibration noise when it is running without a load, the machine should be immediately switched off and the cause of this imbalance should be investigated.



**Caution:**

Always be careful with each action; when wearing hearing protection one often cannot hear the engine running.

## 9.4 Operating the machine

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**Caution:**

As long as the engine has not come to a full stop after turning it off, the spikes will continue to spin. Do not perform any maintenance work before they have come to a halt.



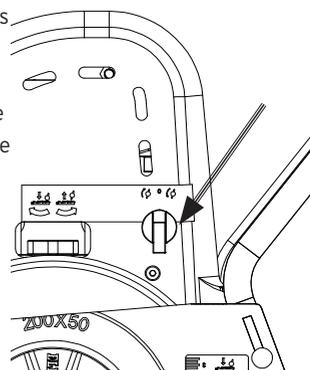
**Warning:**

The protective belt cover offers protection against rotating parts. Therefore, you must never reach behind this cover with your hands or any other body parts while the engine is running.

### 9.4.1 Before starting the work

Pay attention to the following safety instructions before starting to operate the machine.

- The operator must wear clothing, gloves and other protective equipment as prescribed in this manual.
- The operator must be alert while he is working. As long as he is operating the machine, his full attention must be on the job.
- Only ever work with the machine if visibility is sufficient. There must be adequate light levels.
- A good gardener works efficiently and according to a well-defined plan. It allows him to keep an overview of his work and prevents accidents or wrong manoeuvres with the machine.
- Once the engine is running, it is recommended to allow it to warm up. This is to achieve the best possible performance.
- The rotation direction of the spikes can be changed by means of a rotating knob on the left hand side of the spiker. When the spikes point anti-clockwise, the machine pulls itself forward, as it were, which makes the work easier. The raking efficiency is slightly lower than when the spikes rotate clockwise. This way of working is ideal to rake your lawn again in-between seasons where necessary. When the spikes rotate clockwise, they rotate against the direction of driving, which makes moving across the lawn more difficult. However, the raking efficiency is optimal, and the raking is therefore more thorough.



#### Caution:

Turn off the engine to change the rotation direction. Do not change the rotation direction while the engine is running.

### 9.4.2 During the work

For dethatching the following procedure must be followed:

- Always place the machine on the lawn before switching on the engine.
- Push the handlebar down slightly to lift the spikes from the ground. The machine rests on its 2 feet.
- Allow the engine to acquire the proper speed.
- Lower the spikes down to the ground.
- Push the machine forward at medium speed. The slower the dethatching process, the better the result.

- Avoid standing still with the machine as this can cause deep marks in the lawn.
- Efficient dethatching involves two runs of the entire surface, the second one perpendicular to the first.
- Be advised that dethatching is not the same as rotary cultivation. Both processes have their own specific purpose and are carried out with specific machines.
- Cease the operation immediately when you hear unfamiliar noises. Stop the engine and examine the cause of the noise. Perform any necessary repairs before continuing.
- Should any foreign objects have landed under the machine despite proper preparations, immediately switch off the machine. Remove the foreign object and check for damage. Any defects must be repaired before resuming operation.

Follow the procedure below to change direction:

- Release the operating handle.
- Push the handlebar down slightly to lift the spikes up from the ground. They should be lifted approximately 3 to 4 centimetres from the surface.
- Roll the machine to where dethatching needs to take place next.
- Allow the engine to acquire the proper speed.
- Lower the spikes down to the ground.
- Push the machine forward again at medium speed.



**Caution:**

The engine must be switched off before crossing a paved surface.

## 9.5 After finishing the work

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### 9.5.1 Cleaning the machine

- Failure to clean the machine will lead to quicker wear. Any suboptimal performance of the machine can compromise the operator's safety.

Failure to clean the machine can cause:

1. increased wear of bearings
2. increased wear of seals
3. reduced cooling
4. fire hazard
5. inability to notice cracks or tears
6. damage to the paint
7. illegibility of stickers

- It is therefore recommended to clean the machine after each use. Cleaning the machine can also be regarded as a visual check. It offers an opportunity to promptly notice any breakage or need for lubrication.

The following points require special attention:

- The engine should be clear of dust and dirt.
- The bushings must be cleaned of sand and dirt that has become stuck in the lubricating grease. Reapply lubricating grease after wiping the bushings.
- Use a dry cloth to remove dirt from the chassis and more specifically from the stickers with safety instructions.
- Use a dry cloth or soft brush for any cleaning. Use penetrating oil with MoS<sub>2</sub> to remove grease and lubricants. This spray is a lubricant and rust solvent at the same time.

## 9.6 Lawn treatment after dethatching.

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- After dethatching it is essential to thoroughly remove the raked moss to avoid it from reattaching to the soil.
- **Overseeding:** To thicken up the lawn quickly after dethatching, new grass must be sown in the open spaces. Working the seed into the soil has preference over sowing on top of the existing grass. It allows faster germination of the seed and quicker thickening of the lawn. Watering the lawn at regular intervals is required. The overseeder from ELIET's product range is highly suitable for renovating your lawn.
- **Fertilisation:** To help recovery of the existing lawn a balanced fertilising treatment is recommended. It also stimulates growth of the sown grass. The choice of fertiliser depends on the soil, acidity and type of grass. Ask advice from a supplier of fertilising products.
- **Aeration:** Very often the soil under the lawn has been pressed together from walking or driving on it. The grass does not get enough air as a result. It also prevents easy drainage of rain water and fertilisers. These are causes for slow growth of the grass and increased growth of surface parasites, such as moss. Opening up the soil requires aeration at a deeper level.
- **Sanding:** Sanding the lawn can help to provide air to the top layer. Sanding can best be done after dethatching or aeration. Sharp sand is the best choice.
- **Irrigation:** Protecting itself from drought, grass will slow down its own growth during continuous sunny weather and high temperatures. Regular watering is recommended if a period of drought starts after dethatching. A humid soil below the grass is of key importance for the absorption of fertilisers, continued growth and recovery of the lawn.

## 10. Transporting the machine



- The engine must always be turned off when the machine is moved for transport.
- Only adults are permitted to move or transport the machine.
- During transport, children, unauthorised people or animals must not be allowed within a 3 m radius of the machine.
- Carefully choose a clear and free transport path, preferably one with as few obstructions as possible. The transport route is preferably flat, with an even surface.
- Use non-slip planks for loading the machine into a van or onto a trailer. Ensure that the planks are properly fastened to the vehicle or trailer.
- Attention and care while loading and offloading the machine can prevent it from tipping over and causing an accident.

Mount the planks in a forward direction.



Descend the planks in a forward direction.



- Make sure the machine is properly attached inside the vehicle during transport. Attach ropes to the fixed chassis parts to secure the machine.
- The handlebar of the machine folds down for more compact transport. To this end, loosen both nuts on either side of the handlebar; slightly push the arms of the handlebar inwards and finally fold the handlebar forwards. This way the machine could also be transported inside the boot of a vehicle if necessary.

# 11. Maintenance



## 11.1 General



### For your information:

The dealer staff are always ready to help. Moreover, the ELIET dealer can always rely on ELIET's full support. The combination guarantees you the best joint effort to find a solution for any problems you may have. For repairs or maintenance you can turn to your authorised ELIET dealer or a service centre authorised by the engine manufacturer. Please always submit the model and serial numbers of the machine and the engine, as well as a complete description of the problem. Only use original ELIET replacement parts. These service parts are manufactured according to the same strict quality requirements and craftsmanship as the original equipment. For your own safety, only genuine parts should be mounted on ELIET machines.

- Maintenance must always be carried out in an area intended for that purpose. This area must meet the following criteria:
  - Spacious
  - Well-lit
  - Tidy
  - Easily accessible
  - Dust-free
  - Quiet

These characteristics are important for a proper performance of the maintenance works..



### Caution:

Maintenance performed in an incorrect manner may compromise the operator's safety. Maintenance should be always carried out with the engine turned off. Always wear safety gloves when performing maintenance. Additionally, safety goggles may be required for certain operations.

- In principle, the maintenance works described may be carried out by any person with technical skills. Nevertheless, ELIET recommends that the machine be brought to an official ELIET dealer for a major overhaul each year.
- Your ELIET dealer is always at your service for maintenance and advice. He stocks genuine ELIET replacement parts and lubricants. His staff can always obtain advice and service from ELIET's help desk in order to provide you with an impeccable after-sales service.

## 11.2 Lubricants

Scharnierpunten	NOVATIO PTFE OIL
Wielassen	SUNOCO VET MULTI-PURPOSE LR - EP2

## 11.3 Routine checks before each operation

### 11.3.1 Visual check

Check that the parts are not deformed, that welded seams are not cracked, and that parts do not show excess play. If problems are found, carry out the necessary repairs first.

### 11.3.2 Checking and setting the depth control

CORRECT DEPTH SETTING = MAXIMUM EFFICIENCY



**Caution:**

This maintenance may only be carried out with the engine off and once the spikes have come to a complete stop.

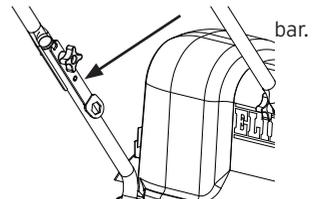


**Warning:**

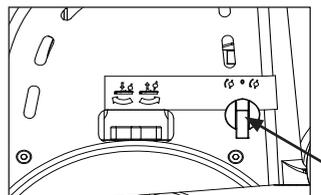
Wear gloves to perform this procedure.

Before turning the depth adjustment knobs, loosen the bolts on the wheels.

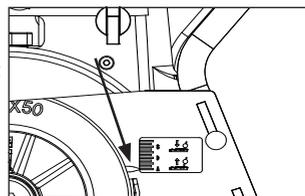
- Carefully place the scarifier on an even and hard surface. Make sure that the spikes do not get damaged.
- Remove the spanner from the bottom right of the handle-
- Slightly loosen the outer nut on the left and right wheel.



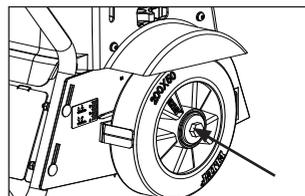
- Turn the star knob clockwise to raise the spikes, and anti-clockwise to lower the spikes.



- Check whether both wheels have been set at the same height using the height meter.



- Check that the front side of the spiker is horizontal; if not, depth adjustment must be carried out again.



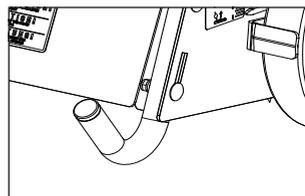
- Tighten the outer nut on the left and right front wheel to secure the depth setting.

#### For your information:



After adjusting the depth, the height of the feet should be adjusted, so that the machine rests only on the wheels during operation. This is done using the other end of the spanner that is included with the machine.

- Loosen the nuts on the inside of the feet and adjust the height so that the spiker only rests on its feet when the machine is tilted slightly backwards.
- Replace the spanner in the left handlebar.



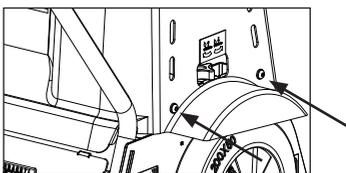
### 11.3.3 Belt tension check



#### Warning:

Only check the belt tension with the engine off. In order to be able to check the belt tension the cover must be removed from the belt and the engine. Wearing gloves is mandatory.

- Remove the 4 Allen-screws from the belt-protection. (n° 4)



- Press the two free belt parts towards each other. For sufficient belt tension and trouble-free operation of the spikes, a one centimetre distance

between them should remain when pressing the two belt parts together in relaxed condition. No adjustment of the belt tension is required in that case.

- If the belt tension proves to be too loose or too tight, it must be adjusted. A loose drive belt will bang against the protective cover.
- Because a new belt will expand somewhat during the first period of operation, it is recommended to adjust the tension after 10 hours of operation.

## 11.4 Maintenance after 20 hours of operation

### 11.4.1 General lubrication treatment

ELIET is committed to using high-quality materials that extend a machine's life cycle despite sometimes dusty work circumstances.

For this reason, special lubrication products have already been applied in the factory. ELIET also recommends lubricating all the parts below on a regular basis:

- bearings
- hinges

#### a. Lubricating bearings



#### Caution:

As applies to all maintenance work, the engine must be turned off. Unplug the machine. Utility gloves are essential.

Bearings that are used under dusty circumstances benefit from regular cleaning and lubrication.

- Tilt the machine backwards by pushing the handlebar down. This way, it is easy to access the spike axle.

Before lubricating the bearings they must be cleared of old lubricant and deposits. Cleaning spray aimed at the bearings and in the bearing joints will do the job easily. ELIET recommends NOVATIO KLEENSPRAY-S.

- Allow it to work for a few minutes so that it can enter the bearing as well.
- Let the bearings run while blowing away all deposits and cleaning agent with compressed air. Repeat the above procedure if not all dirt was removed.
- Check that the bearing does not show excessive play. Also check that the bearing runs smoothly. In the event of defects, consult your ELIET dealer for a bearing replacement in order to avoid future inconvenience.
- Re-apply a high-quality lubricant. Spray NOVATIO NOVA PTFE OIL into the joints of the bearing seal.
- Wipe away any excessive lubricant.
- Place the spiker back on the wheels.

## b. Lubricating hinges

To avoid wear of hinging parts or friction zones, apply lubricant regularly.

Pay special attention to the following areas:

- Tilting point of the protection plate at the back of the spiker.
- Hinge of the handle for the clutch.

Follow this procedure:

- First spray the friction zones with cleaner. Allow it to sit for a while. ELIET recommends NOVATIO KLEENSPRAY-S.
- Wipe away old lubricant with a cloth or paper tissue.
- Once the friction zones are clean, new lubricant can be applied to the contact areas. We recommend NOVATIO PTFE OIL or SUNOCO MULTIPURPOSE LR - EP2. All lubricants indicated are available from your ELIET dealer.

## 11.4.2 Belt tension adjustment

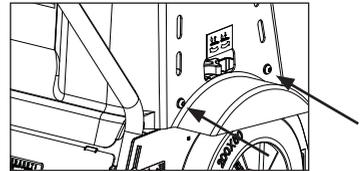


### Caution:

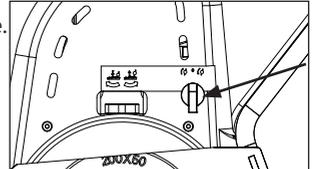
When adjusting the belt tension the engine must be turned off and the plug disconnected at all times.

Gloves are mandatory whenever contact with the spikes could occur.

- Remove the four Allen screws (M4) from the protective belt cover.



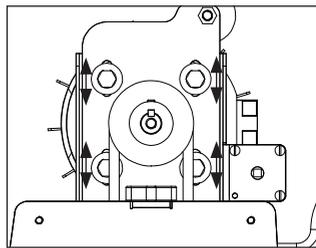
- Remove the crosshead screw from the switch for the axle drive. Then remove the switch of the protective cover.



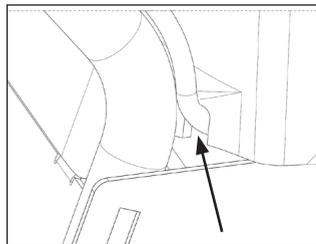
- Loosen the cover carefully, be careful with the switch mechanism.

- Press the two free belt parts towards each other. If, when squeezed together in relaxed condition, the distance between them is considerably less than 1 centimetre, the belt tension will be insufficient in tightened condition. The tension will have to be adjusted.

- Loosen the locknuts and slide the engine block up or down, depending on the belt tension.



- Tighten the 4 bolts (M10) evenly until the 2 free belt parts can be pressed together to up to 1 cm from each other in relaxed condition.
- Attach the protective belt cover. When replacing the protective cover make sure that the cable on the back right of the spiker runs in the provided space.



- Replace the switch and fasten it.
- Tighten the four Allen screws again.

### 11.4.3 Replacing the spikes

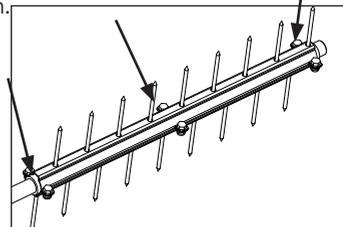


**Warning:**  
Wearing gloves is mandatory!

- We strongly recommend NOT to replace only one or just a few spikes since this interferes with a uniform operation of the machine across the entire width.

To replace the spikes, first loosen the 6 bolts of the axle cover.

After that, the spikes can be pulled out, or knocked out with a hammer.



- Clean the nylon distance collars. If the axle shows heavy wear at the location of the spikes, it must be replaced as well.
- Clean the axle thoroughly. Use sandpaper if necessary.
- Check both bearings for signs of play. Rotating the bearings will quickly reveal any bearing noise. If there is any, replace the bearings together with the spikes.

- Place the new spikes on the axle in the correct order.
- Two adjacent spikes always face each other in a 180° angle.
- Replace the covers and tighten the bolts and nuts.



**For your information:**

All original parts are available from your authorised ELIET dealer. For your nearest dealer: **[www.eliyet.eu](http://www.eliyet.eu)**

## 12. Storing the machine

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Clean the machine.

When storing the machine for an extended period, it is recommended to follow the steps below:

- Carry out a major overhaul.
- Check all nuts and bolts and tighten them where necessary.
- To avoid rust on the machine touch up all chipped areas or treat them with anti-rust grease. Original paints/enamels in the appropriate colours are available from your ELIET dealer.
- Store the machine in a cool, dry storage area, away from possible rain. If necessary, cover it with canvas.
- Always allow the engine to cool down before storage.
- If the machine is stored outdoors, it must be properly covered with canvas. Avoid direct precipitation on the machine. ELIET highly recommends a sheltered storage place.

# 13. Equipment specifications

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Handlebar .....	Foldable
Working width .....	38 cm
Clutch .....	By means of vertical belt tension
Depth control .....	Front: stepless
Total weight .....	33 kg
Wheels .....	Plastic wheels on roller bearings
.....	Diameter 200 mm
Fixed robust spikes .....	18 pieces
.....	.diam. 4.2 mm

# 14. EC Declaration of Conformity



Machine: Scarifier  
Model: Spiker  
Type: MA 007 000 902

This specific machine has been designed and manufactured in accordance with the following standards:

- PrEN 13684 Garden equipment - Pedestrian controlled lawn aerators and scarifiers - Safety
- DIN 33402: Body measures

The ELIET machine factory hereby declares that after performing a hazard analysis, it is fully aware of the potential hazards and risks associated with the machine. Based upon this knowledge, the necessary steps have been taken in line with Machine Directive 2006/42/EEC in order to ensure full operator safety when the machine is used correctly.

The value of the measured sound power and the guaranteed sound power were obtained by applying the procedures described in European Directive 2000/14/EC Annex III/B 49 and based on certain regulations from EN 13684.

Date: 01/2008

Signature:

A handwritten signature in black ink, appearing to read 'Frederic LIETAER', written over a horizontal line.

Frederic LIETAER  
Business Manager ELIET EUROPE NV  
born 02/01/1975

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Diesveldstraat 2  
B - 8553 Otegem  
Belgium  
Phone: +32 56 77 70 88  
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E-mail: info@eliet.be

## B 1 Warranty conditions

Dear Customer,

We thank you for purchasing an ELIET product. Congratulations on your purchase of this machine which is sure to exceed your expectations and needs over the coming years. At ELIET, we do everything to ensure that our products function properly. That is why your product comes with a two-year warranty.

### What is warranty?

At ELIET, the design and production of our products are subject to strict quality rules. The purpose of these rules is to guarantee a long service life and permanent safety. That is why ELIET is happy to repair any hidden defects or faults during the whole run-in period (i.e. the warranty period) free of charge, provided the prescribed procedure is followed.

### Warranty conditions

ELIET's warranty obligations for new machines are governed by the following conditions.

#### **I. Warranty period**

The warranty period starts the day the dealer delivers the machine to the customer (maximum one week after the purchase) and expires: :

- for private use: after two years.
- for rental use: after twelve months or 100 hours of operation.
- for semi-professional and/or professional use: after twelve months or 100 hours of operation.

To apply for this warranty the customer must register the purchased product with ELIET and complete the registration details on the website:

**www.elieta.eu**. If you do not have access to the Internet, please complete the attached registration card and return it to ELIET.

#### **II. The warranty does not apply to the following parts or in the following cases.**

- Worn items (such as spikes, bearings, belts, chains, gearwheels, tyres, bulbs, fuses, etc).
- Defects caused by improper use, neglect or consequential damage by an external source (fall, chippings, foreign objects, accident).
- Defects caused by improper maintenance of the machine, hence contrary to the prescribed periodic maintenance.
- Wanneer een defect optreedt door ondeskundige reparatie door een niet door ELIET erkende dealer of na gebruik van niet-originele ELIET-onderdelen.
- Wanneer het defect het resultaat is van het aanbrengen op onrechtmatige wijze van wijzigingen aan het oorspronkelijke ontwerp van de machine.
- Faults occurring as a result of machine use contrary to the instructions contained in this manual.
- Failure to observe the prescribed warranty procedure or expiry of the warranty period.

- For all problems relating to the engine, please contact an authorised service centre of the engine manufacturer.

### III. Procedure

- **Step 1:** On the date of purchase, the customer registers his/her purchase online by completing the registration card on [www.elieta.eu](http://www.elieta.eu). In addition, the enclosed registration card is completed in its entirety on the day of purchase. The first part of the card has to be returned to ELIET within one month. The customer is required to keep all remaining parts of the card along with the purchase invoice for the duration of the warranty period.
- **Step 2:** In the event of a defect becoming apparent, the customer shall have it verified by the authorised ELIET dealer. If the dealer finds a manufacturing defect, he may invoke the warranty under the terms specified.
- **Step 3:** Every warranty application must be accompanied by a fully completed official application form. Dealers may request application forms from ELIET or from an ELIET importer/agent.
- **Step 4:** The dealer orders the parts needed to perform the repairs. Next, the dealer faxes the order form together with the completed warranty form and a copy of the registration card to ELIET.
- **Step 5:** The warranty form must be stapled to the purchase invoice and sent to ELIET or an importer/agent of ELIET.
- **Step 6:** ELIET sends the parts ordered to the dealer under the regular delivery and payment conditions.
- **Step 7:** The defective part will be examined by ELIET's technical department prior to approving or rejecting the warranty. ELIET reserves the right to unilaterally decide whether or not the customer has complied with all the conditions applicable to the one or two-year warranty. Faulty components automatically become the property of ELIET.
- **Step 8:** When a warranty claim is found to be valid, ELIET will credit the warranted parts. Customers shall never be entitled to a refund of labour costs.

### IV. In the event of damage caused by transport

- All goods are supplied ex works. Transport risks shall be borne by the customer. ELIET therefore recommends checking the goods for damage on delivery.
- Any damage found must be detailed on the delivery form before signing. Make sure the driver of the transport company puts his signature next to the details about the damage on your copy.
- Bij ontstentenis van een geschreven en getekende verklaring op de leveringsbon zal de transportverzekering iedere aansprakelijkheid weigeren.
- Claims for damages must be submitted to the carrier and shall include a copy of the delivery form and a covering letter detailing your complaint.
- The damaged machine should be kept in its original condition until the carrier's insurer has performed an examination.

