

ELLIET[®]

MANUAL

Major



You will find information about the actual use and maintenance of the machine.

Read it carefully and keep it in a safe place.



Please also keep your **purchasing invoice** or the proof of receipt together with this booklet.



Register your product online at **www.eliyet.eu**



Attention: When putting a new machine into operation you must check the tension of all blade bolts during the first five working hours. Should this warning not be heeded, a blade may become loose. Serious consequential damage may occur in relation to your new machine and the operator may be in grave danger of suffering injuries or death may even be the result. ELIET can, as a consequence, not be held liable for the consequences of this negligence. Any claims on the warranty will also no longer apply.

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1. Introduction



1.1 Read the operating instructions

Eliet machines have been designed for safe and reliable use as long as they are operated in accordance with the instructions described. Carefully read the operating instructions before using the machine. Failure to do so can result in personal injury or damage to the equipment.

1.2 Identification details - ELIET MAJOR

Note the identification details of your machine in the space provided

Article number:	<input type="text" value="MA"/>
Serial number:	<input type="text"/>
Year of construction:	<input type="text" value="20"/>

2. Warranty



2.1 Warranty card

In order to lay claim on the guarantee, the completed guarantee card should be sent to the address below with in one month of purchase:

ELIET EUROPE NV, Diesveldstraat 2, B - 8553 Otegem (België)
Tel. +32 56 77 70 88 - Fax +32 56 77 52 13

REGISTER YOUR PRODUCT ONLINE AT WWW.ELIET.EU.

Read the warranty conditions on the attached warranty card.



For your information :

Technical problems or faults due to faulty maintenance mean that the customer will not be entitled in any way to make a claim on the warranty. Chapter 11 shows in a well-organised manner the maintenance intervals and provides advice for the maintenance type for which an official dealer should be consulted.

3. Welcome



Welcome to the family of ELIET customers.

We would like to thank you for the confidence 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. If you follow the instructions and suggestions in these manuals, your ELIET machine will operate for a very long time in optimal condition.

Read this instruction manual carefully before operating this machine. This will prevent you from operating the device incorrectly. For your own safety, take into account 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.

At ELIET all our machines and devices are subjected to a policy of continuous change 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. In turn, we trust that you will understand that the texts and illustrations in this manual cannot lead to any claims. If you still have any questions after you have read this manual, please contact your ELIET dealer. Find an official ELIET dealer near you at **www.elieta.eu**.

ELIET AT YOUR SERVICE

During office hours our help desk will make every effort to answer your questions :

European customers

GMT +1: van 8.00 AM tot 18.00 PM

Tel: +32 56 77 70 88

Fax: +32 56 77 52 13

Service@eliet.be

US customers

Ph (+001) 412 367 5185

Fax (+001) 412 774 1970

usinfo@elietusa.com

www.elietausa.com

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5. Operator safety warnings

ELIET cannot foresee every situation in which a risk or danger can occur. The warnings in this user manual, the labels on the machine are therefore, not comprehensive. Even though this will be minimal, a residue risk will always be present. If you apply a working method, action or technique as the user that is not explicitly recommended by ELIET, ensure in any case that this will not represent a danger for bystanders.



A number of symbols (“For your information”, “Caution”, “Warning”) are used in this user manual to provide additional information and to highlight dangers.

5.1 For your information



For your information:

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

5.2 Caution



Caution:

This notice identifies safe usage habits. This is done to prevent incorrect actions that can result in personal injury or damage to the machine.

5.3 Warning



Warning

This notice is used to warn you about extreme danger that you must be aware of in these specific circumstances. Thus remain alert, in order to ensure your own safety.

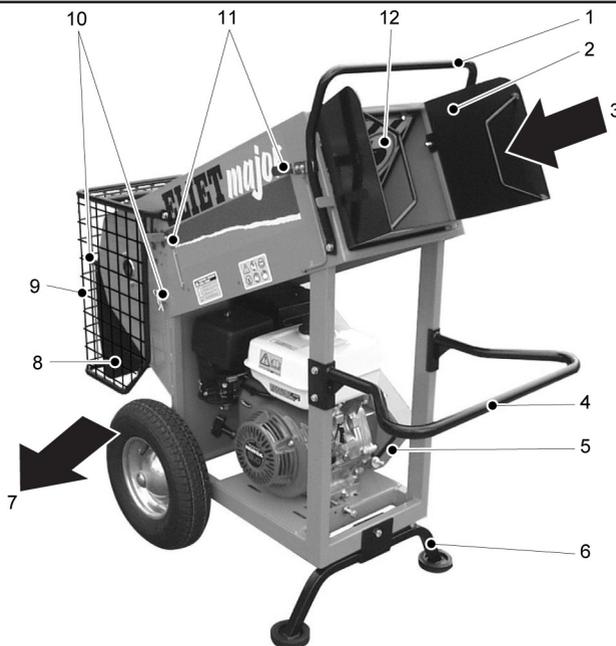
These safety measures can only warn and not remove the danger. Using common sense and observing the guidelines contained in this manual are essential to prevent accidents.

6. Main parts



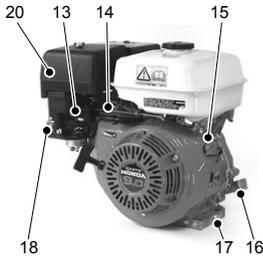
To fully understand the content of this operator's manual you need to be fully conversant with the terminology used for the descriptions. In this chapter you can find a set of parts identified by name. It is a good idea to take time to study the machine beforehand for an improved understanding of the descriptions provided in this user manual.

6.1. Machine Survey

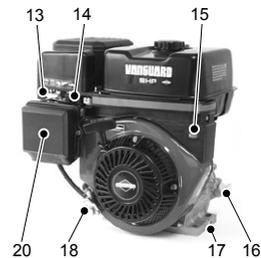


- | | |
|--------------------|--|
| 1) Emergency lever | 7) Output |
| 2) Input hopper | 8) Splash guard on output |
| 3) Input | 9) Safety net |
| 4) Steering handle | 10) Sliding spindles for removal of screen |
| 5) Drive guard | 11) Safety switch |
| 6) Balance base | 12) Safety shield |

6.2 Engines



HONDA
GX270 (9 HP)



BRIGGS & STRATTON
VANGUARD (9 HP)



- 13) Choke
- 14) Speed adjustment
- 15) ON/OFF switch
- 16) Oil filler cap / dip stick

- 17) Oil drain plug
- 18) Petrol tap
- 19) Electric motor
- 20) Air filter



For your information:

If the manual refers to the terms in front, behind, left and right, then this is always as viewed by the operator standing at the machine input.



For your information:

Your ELIET dealer is at your service, ready to provide you with maintenance or advice so that your ELIET machine always remains in optimal condition. Original ELIET parts and lubricants can be obtained from your ELIET dealer. These service parts are manufactured to the same stringent accuracy requirements and standard of craftsmanship as the original equipment. (Find your nearest dealer by visiting www.elieta.eu.)



Caution:

For your own safety, only genuine service parts should be installed on ELIET machines. (Find your nearest dealer by visiting www.elieta.eu.)

7. Safety instructions



7.1 Safety messages

Safety stickers or relief images have been affixed on to visible areas of the machine. Make a note of the icons and warning messages specified on these stickers.



This sticker is attached to the safety net and warns against the danger of injury to hands. The screen on the shredding chamber should only be opened once the knives have come to a complete standstill. The motor should always be switched off before lifting the safety net.



This sticker is attached to the drive belt guard. The sticker points out the danger which can occur if the guard is removed while the motor is rotating. Never operate the machine if the guard is not in place.



This sticker is attached to the side of the machine. It provides a summary of the general safety regulations by using icons:

1. Before operating the machines the manual should be read and understood.
2. Suitable safety clothing (gloves, safety glasses, ear defenders) should be worn when operating the machine.
3. Operating or carrying out maintenance on the machine presents the risk of injury to hands. Be alert and careful.



This sticker is attached to the machine at engine height. This sticker reminds the operator to switch off the engine and release the spark plug cap before carrying out maintenance on the machine.



This sticker is attached in the input opening. The sticker emphatically points out the risk of injury to hands which is inherent in wood shredding. The sticker reminds the operator how to operate the shredder in the safest possible way. It is prohibited to insert your hands beyond the safety shield!



This sticker is attached to the safety shield. Once the safety shield is lifted the risk of cuts and injury due to flying wood chips becomes very real. This very visual sticker aims to draw your attention to these hazards.



Caution:

For your safety, use only genuine ELIET parts on ELIET machines. The list of original replacement parts and their ordering code can be consulted online by visiting www.elieta.eu.

7.2 Safety provisions



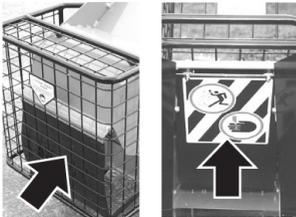
Emergency lever:

This lever is located around the input opening. By pushing this lever backwards, the engine is switched OFF.



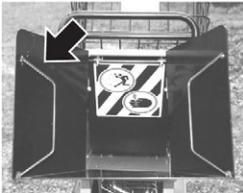
Safety net:

This net encloses the rear of the machine. When the net is raised, the engine is switched OFF. This net prevents you from inserting your hands into the rotating blades.



Safety shields:

First of all the machine is equipped with a steel plate located in the input opening. Its function is to protect the operator against flying wood chips. It is strictly forbidden for the operator to insert his hands beyond this steel plate. Secondly, the machine features a rubber protective flap at the rear of the machine. This serves to slow down flying chips.



Input Hopper:

This hopper is fitted on the input opening in the direction of the operator. If the operator was to ignore the warning and insert his hands beyond the protective plate, then this hopper would restrict the access to the shredding chamber to the extent that injury caused by the blades along the input opening is virtually impossible.



Belt guard:

The guard ensures that the rotating parts which could cause injury are sufficiently guarded.



Safety kit:

With regard to your safety ELIET strongly recommends the use of the supplied safety kit. This kit consist of safety glasses, ear defenders and a pair of working gloves.

7.3 Safety instructions

7.3.1 General safety instructions

- The Owner Manual must stay with the unit during its complete service life. It serves as a reference for the user, and enables the machine to be used and maintained in accordance with the correct instructions. Always refer to this instruction manual if you have any doubts about an action 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. In addition, the ELIET help desk is at your service during office hours to answer any queries you may have: (EU +32 56 77 70 88).
- Read the chapter meant for the dealer (see : Chapter 8) and immediately verify whether the machine has been delivered in accordance with the instructions.
- After you purchase the machine, allow the dealer or a professional to give you some instruction regarding the correct use.
- Carefully observe all safety instructions when using the ELIET machine ! Carefully read all the instructions relating to the use of the machine. All these instructions relate to your personal safety.
- Always observe the applicable regulations of the Labour Inspectorate to avoid accidents.
- Read and observe all safety messages posted on the machine in the form of stickers or icons.
- Under no conditions whatsoever may the original design of the machine be modified without written consent of ELIET EUROPE NV (Belgium).

7.3.2 Careful and security-conscious use

- This machine is designed solely for chipping branches material, prunings, leaves and all kinds of organic garden debris. Any use other than the designated operation is at the risk and responsibility of the operator.
- As chipping involves ongoing considerable physical effort, take regular breaks for food intake, rest and drinking.
- It is unsafe for persons suffering heart problems and/or having balance disturbances to operate the machine.
- Think about what you are doing whenever you operate the machine. Do not be tempted to let routine dull your attention. Never act impulsively or in reflex.
- Despite the extensive safety features, do not seek out dangerous situations. (Annex 7 contains an indicative list of dangers. Please read it.)
- Never work with a machine that has not been fully assembled. Check the finish of the machine to ensure compliance with the instructions provided in this manual.
- You must never use the machine without a feeding hopper.
- Never use the chipper when the wheels have not been mounted.
- Never use a step when feeding garden waste into the machine.
- Do not constantly feed thick branches with a maximum diameter of 55 mm into the machine. It applies as a guideline that a maximum of 10% of the material to be processed may have a branch thickness that is larger than 50 mm.
- Never attempt to shred branches that are frozen.
- Burning objects must never be inserted into the machine (for example, a cigarette or charcoal).

- Do not feed foreign materials. (Strings, stones, metal, plastic, textile, etc.)
- For deontological reasons, Eliet accept no responsibility whatsoever for any accidental injury to pets or persons caused by its machines.
- You must never use metal tools to push garden waste into the loading hopper.
- Take care to preclude any tools falling into the in-feed funnel.
- Never work in conditions where light intensity is less than 500 Lux.
- Always work on a stable and flat surface.
- Never use the machine when it is on a gradient.
- Never use the machine when it is raining and avoid water directly falling on the machine that is being supplied by power.
- Avoid electrocution : Never perform any actions or work with the machine when your feet are in water or when your hands or feet are wet.
- Never attempt to change a machine setting and never perform maintenance when the motor is running.
- The machine may cause an explosion when you work near flammable products, fumes, etc.

7.3.3 Responsibilities of the Operator

- All persons using the machine are assumed to be fully conversant with the safety instructions. **The operator is fully liable for the use of the machine in regard to himself and to third parties.**
- It is assumed that the operator of this machine is mature enough and has enough common sense to make decisions by himself.
- Underage persons must not operate the machine. However, this does not apply to youths above the age of 16 years, who are learning to operate the machine under the supervision of an experienced operator.
- A disabled person may only operate the machine when under the supervision of an experienced operator.
- Children (younger than 16 years of age) and animals must be kept well away (> 3 m) from the machine.
- ELIET recommend that the machine should not be lent to others. However, if this is done, only lend it to persons who are conversant with the machine. **Always ensure that the user is aware of the potential hazards, and ensure that he reads the manual before he uses the machine.**

(An indicative list of potential hazards can be found in Annex 7.)

- This machine must only be operated by persons who are in good physical condition. If you become tired during the work, take a rest in due time. Persons consuming alcohol or drugs must not operate this machine.
- The user must draw up a list that registers the number of hours worked. This will ensure that the repetitive maintenance schedule can be followed correctly in relation to the machine.

7.3.4 Personal Protective Equipment (PPE)

- You must wear suitable clothing to operate this machine. That is, clothing covering the whole body, heavy protective gloves and closed non-slip footwear.
- Do not wear loose fitting clothing (a shawl, for instance, should be avoided by all means). Long hair should be contained using a cap or a headband, or worn in a ponytail.

- For the protection of the most sensitive senses, Eliet recommends ear defenders and safety goggles.
- You must pay more attention and be more careful when wearing ear protection because noises that announce a danger (such as shouting, signal sounds) will only be heard to a limited degree.
- ELIET do not recommend using a Walk man or a portable MP3 player whilst working.
- Chipping may result in dust production. If this dust irritates your lungs, we recommend that you wear a dust mask in accordance with the following standard: directive 89/686/EC.

7.3.5 Danger zone

- During the work, do not allow bystanders to enter the risk zone that stretches up to 3 m around the machine.
- By preference, the operator should stand at the back of the hopper if he or she wishes to deposit green waste in the hopper. Do not bend over the feed hopper. This will ensure you remain outside the projection field of chips that may possibly fly out through the anti-projection flaps.
- Contact with moving parts may cause injury or damage. Ensure, therefore, that hands, feet or loose clothing are well away from moving parts.
- You must only operate the machine when it is in its normal working condition.
- The machine must not be tilted to reduce the standard feed-in height when chipping.
- Do not take any risks and immediately stop the machine as soon as anyone enters the danger area. (Read section 9.3.2, Switching off the motor.)
- Children and animals must be kept well away from the machine.
- When leaving the machine, the motor must be switched off.
- Once the motor is running, focus all your attention on operating the machine.

7.3.6 Periodic maintenance

- Periodic maintenance is essential. For this reason, strictly follow the maintenance schedule in this user manual
- Draw up a maintenance register in which you keep the performed maintenance updated in detail.
- The blades must be checked to determine their sharpness to ensure the good operation of your machine. Sharpen the blades on time.
- Always check the blade bolts for tightness within a run-in period of 5 hours after installing new blades or reversing used blades. This also applies to the first 5 hours when the machine is put into operation.
- Regularly cleaning the machine is essential.
- When parts must be renewed as a result of wear or failure, you must always request genuine ELIET service parts from your ELIET dealer. This is important in the interests of your own safety. (Find an official ELIET dealer near you by visiting .)
- The list of original replacement parts and their ordering code can be consulted online by visiting www.eliet.eu
- Always ensure the motor is switched off and the plug disconnected before performing repairs or maintenance. Always wait until the blades come to a complete standstill before carrying out any operation.
- Always wear suitable clothing for performing maintenance.

Use the machine in an environmentally friendly way:

- Do not leave the machine on when it is not being used.

- Do not waste petrol during refuelling.
- Service the motor on a regular basis in order to maintain constant combustion.

7.3.7 Guidelines related to the electric machines

On machines powered by an electric motor, the following guidelines must be observed as well:

- The machine may only be connected to an earthed circuit.
- The circuit must be protected by a RCD (Residual Current Device) with a minimum sensitivity of 30.mA
- If connection is to be made to a socket which is located outside, this socket must conform to IP65.
- The machine must not be operated during rainy weather.

8. Dealer preparation



Warning :

As an ELIET dealer you **must** familiarize your customers with the **functioning of the machine** and also **point out the possible dangers** while using it. You are expected to carefully go over the maintenance points of the machine together with the new owner. Repeat these instructions until the new owner has fully understood everything.



Warning :

The manufacturer, ELIET wish to re-emphasise that the Dealer must expressly point out to the customers that they must examine the bolts which retain the chipping blades for security of fixings **within the first 5 operating hours**.

**ALL BLADE BOLTS MUST BE TIGHTENED CORRECTLY AFTER THE FIRST 5 OPERATING HOURS DUE TO SAFETY CONSIDERATIONS.
(TIGHTENING TORQUE : 10 NM.)**

Ignoring this operation may cause serious injury and may even lead to death. In addition to damaging the machine, the client shall lose all entitlement to make a claim on the warranty. See the list with tightening torques in the annex.

- ELIET machines are packaged in accordance with common rules that apply for such transportation. Deliveries will always be ex factory. ELIET cannot, therefore, be held liable for damages that occur during transportation.
- Should you notice damage to the packaging when goods are accepted, always check the state of the machine to ensure it is not damaged. Report any deviation on the delivery order before signing off for receipt.
- Should the machine be damaged, you should always immediately submit a complaint to the shipping company.

When the machine has been removed from its packaging, it is still not completely assembled. The dealer must finish the assembly. Below we provide a few guidelines :

- First, the steering handle is installed. This is secured in the holes provided by two M6 bolts. (use a 10mm ring spanner)
- The hopper at the front of the input opening is unfolded and secured with the 2 M6 bolts, pinions and nuts respectively.
- The wheels are slid onto the wheel shafts. Some lubricating grease (Sunoco Multipurpose LR-EP2) may be applied to the roller bearings beforehand. Finally, the wheels on the shafts are locked using the starlock caps supplied.
- The dealer adjusts the belt tension in accordance with the description in the maintenance section of this instruction manual. Each ELIET-dealer is responsible for the long operating life of the ELIET machine. He will lubricate all hinge points of the machine again before delivering the machine to the customer.
- The machine is packed without oil or petrol. The dealer will apply these in accordance with the instructions in this manual (or the instructions in the engine manual).
- For petrol engines, the engine speed is set at 3200 rpm.
- The dealer performs a test run on the machine and checks that everything works correctly (for example.: Safety net, emergency stop,...).
- Finally the dealer ensures the guarantee card is completed and signed in order to avoid disputes in any warranty cases. Please refer to the guarantee conditions for further information.

**Caution:**

In the case of a petrol engine, the dealer will pay particular attention to the correct adjustment of the speed of the machine. If the speed has been set too high, this will cause additional vibration which in turn will cause increased wear in due course. If the speed has been set too low, the machine will lose power.

9. Operating instructions



9.1 Preliminary checks



Caution:

Before using the machine, it is recommended to make a habit of checking the following points.

Checklist

1. Satisfy yourself that the chipping blades are firmly in place and in good condition. For safety's sake, tighten the blade bolts. (SW 10) (See the list with the tightening torque for bolts in annex 6). If the blades need sharpening, this should be performed first. Check the blades and the blade holder for cracks and nicks and replace immediately as needed (see § 11.4.3, Reversing and replacing blades).
2. Check whether there is sufficient oil in the machine. To this end, remove the dipstick and check the oil level has not dropped below the minimum level. (See if necessary §11.4.2 Checking the oil level in the engine).
3. Check beforehand whether the fuel tank is completely full. If this is not the case, it should be topped up with fuel (see §9.2 Refuelling).
4. Check the level of contamination in the air filter (see if necessary §11.4.3 Cleaning the air filter).
5. Check whether the screen at the rear of the machine is secure, and has been fastened correctly.
6. Check whether the belt is still sufficiently tensioned (see §11.4.5 Checking the belt tension). If not, this can be adjusted (see §11.5.5 Adjusting the belt tension).
7. Before using the machine, check whether all guards are in position and whether they have been correctly secured.
8. Check whether all safety provisions on the machine still operate.
9. Check whether all safety precautions on the machine are still functioning (see §7.2 Safety precautions)

Once these items have been checked and approved, you can prepare the area of operation (see Chapter 9.3) and move the machine to the work site.

9.2 Refuelling

When there is insufficient petrol in the machine it must be filled up. It is advisable to always use fresh petrol. Preferably unleaded petrol with 98 or 99 octane should be used.



Warning:

Under certain conditions, petrol is extremely flammable and explosive. Fire and explosions caused by petrol can result in serious burns or damage to property. The following points should therefore be taken into consideration:

- Topping up with petrol should never take place while the engine is rotating.
- Always allow the engine to cool off for a few minutes before topping up with fuel.
- Only use fresh petrol.
- For environmental reasons, ELIET recommends the use of unleaded petrol. Additives may be added in order to extend the freshness life.
- Store petrol in an approved tank. Keep this tank out of reach of children.
- Never top up with petrol in a place where work will be carried out later. Keep a distance of at least 10 metres away from a chosen working area. This to prevent any fire risk.
- Clean the area around the fuel tank cap and remove it. Do not fill the tank up completely. Fill it up till the fuel is about 10mm away from the top edge. In other words, do not fill the tank right up to the opening.
- Always use a funnel or spout to pour the petrol into the tank. Suitable funnels can be obtained from your ELIET dealer.
- Replace the cap on the tank as soon as possible. If petrol is spilt during filling, the engine must be cleaned immediately.
- Also, ensure clothing does not come into contact with petrol. If this does happen, clothing should be changed immediately.
- It is unsafe and therefore expressly forbidden to fill the tank in the vicinity of smokers or a naked flame.
- A doctor should be consulted immediately if fuel is swallowed or comes into contact with eyes.

9.3 Preparing the work site

- Clear the area first where the machine is to be used.
- In addition, the paths along which the plant trimmings are removed, must be kept clear, thus releasing you from the worries of tripping up over them. Also ensure your safety is not compromised.
- On slopes, never operate the machine (no forward, backward or lateral slope.).
- The material to be chipped is to be sorted beforehand. In this way, you can be sure that no foreign objects will enter the machine with the material to be chipped.
- Foreign objects are defined as : Any non-organic object or branchy material in excess of the stated capacity (such as metal, stone, plastic, PVC, cords,...). Some of this can cause serious damage to your machine or can be ejected, virtually as projectiles towards the user.

**For your information:**

As the chips fall down, it can be useful to place a plastic under the machine. This makes cleaning up after work a lot easier

9.4 Starting the engine

**Caution:**

Never start the machine if there is dust or dirt on the engine or between the cooling fins of the engine. This prevents optimal cooling of the engine and more importantly can cause fire.

**Warning:**

The drive shaft for the blades is directly driven by the engine. The blades cannot be disengaged. The machine is therefore dangerous as soon as the engine is running. Consequently, the engine must be switched OFF immediately if a situation occurs where a person loses control of the work. How to switch the machine off quickly:

1. By pushing the emergency stop lever backwards, the engine is switched OFF.
2. The engine can be switched off using the stop switch or the rotary knob.
3. By raising the safety net, the engine is also switched OFF.

- Always ensure that all chippings have been removed from the chipping chamber before starting the machine. If required, empty the chipping chamber.
- Ensure the feed hopper is empty (no garden waste, no tools, etc).
- It should be noted that the engine can only be started if the emergency stop lever and the safety net are in the correct position.

9.4.1 Petrol engine

**For your information:**

The starting procedure for the engine can vary slightly from one engine make to another. Please also refer to the engine manual. The 'General' chapter in §6. Main parts shows various types.

Before starting the engine, check whether there is sufficient oil and fuel in the engine, if this has not already been checked previously.

For the inspection and replenishment of the oil level please refer to §11.4.2 Checking the oil level in the engine.

For filling up with petrol please refer to §9.2 Refuelling.

- If the petrol tank is equipped with a fuel shut-off valve, ensure that this is in the OPEN position.
- Depending on the type of engine, move the lever, or turn the knob to the ON position.
- Move the choke lever to CLOSE.
- Move the throttle (control lever) to full throttle, which is represented by the illustration of a hare.



Warning:

Before starting up the machine, be sure to wear the supplied ear defenders.

- Start the engine by pulling strongly on the starter cord.
- Once the engine is running, quickly move the choke lever to OPEN. This to prevent the engine being flooded with petrol. If this action is omitted, the motor will slow down and will start to smoke fiercely. Eventually, it will stop. Simply restart the engine without using the choke.
- If the engine cannot be restarted, it will be because the spark plug is covered in grease and it should be cleaned or replaced (see §11.5.2 Checking or changing the spark plug)

9.4.2 Electric motor

- It is forbidden to use the machine during rainy weather.
- The extension cable to be used should be earthed.
- Ensure the machine is not too far away from the wall socket. If the extension cable is too long, this will result in considerable resistance with a corresponding loss in power.
- Check whether the red knob on the machine is depressed so that the engine will not start automatically once the power has been switched on. To be on the safe side, first connect the extension cable to the machine before connecting the extension cable to mains supply. Ensure people are well away from the machine when the cable is connected to the mains supply.
- Before connecting the cable to the motor, make a loop with the cable around a tube on the machine frame. This to prevent the machine plug from being pulled out when the machine is moved.
- Start the motor by pressing the black button.
- Always allow the engine to run up to speed before inserting the wood to be shredded.

9.5 Stopping the Motor

RAISING SAFETY NET = ENGINE SWITCHED OFF

9.5.2 Petrol engine

- To stop the engine, move the throttle (control lever) or turn the knob to the OFF position.
- The machine can also be switched OFF by moving the emergency stop lever backwards.
- If fitted, close the fuel shut-off valve.

9.5.2 Electric motor

- The motor is switched off again using the red button.
- When the motor has cut out due to overloading, simply repeat the start up procedure. However, clear the shredding chamber first (read Chapter 9.6.3).



Caution:

Never pull the cord when disconnecting the plug. This would pull the cables from the cord from the connection clamps in the plug. A wire that has become loose represents a real danger of short circuit and electrocution. Therefore, always use the grip of the plug to pull it away.

9.6 Working with the machine



Caution:

As long as the engine has not completely stopped after it has been switched OFF, the blades continue to rotate. Consequently, do not perform any maintenance work whilst the blades are still rotating.



Warning:

Guards offer protection against rotating parts. When the engine is running, never place hands or other limbs behind these guards.

9.6.1 Prior to starting the work

Please note the following safety regulations before using the machine.

- The operator should wear the clothing, gloves and means of protection as stipulated in this manual (see §7.3 General safety regulations).
- A good gardener is well organised and plans his work. This will enable him to have an overview of the work and to avoid accidents and incorrect actions with the machine.

- The wood is systematically stacked before commencing the work : Thick branches, thin branches, leaves and damp products. Ensure that the material does not contain any foreign objects.
- Ensure the power supply cable is routed so that it does not hinder the feeding of wood to be chipped. And such in order to prevent the operator from stumbling.
- The motor must only be started once arrived at the work site.
- Never use a machine with a petrol engine in an enclosed area. This can cause poisoning as a result of engine fumes.

9.6.2 During the work

- When inserting the material, always hold it firmly. The wood is pulled into the machine by the rotation of the drive shaft for the blades and the teeth on the blades. If the operator does not continue to hold the wood firmly, it will automatically be pulled into the machine much too quickly which will inevitably lead to the machine jamming. The operator himself will therefore control the feed rate by feeding the wood in slower or faster. This feed rate will vary according to the thickness of the branch.
- The operator will listen attentively to the engine speed when feeding in the wood. If he notices that the speed of the engine drops significantly, he will immediately pull the wood back in order to allow the engine to speed up again.

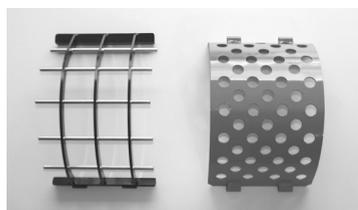


Caution:

When feeding in wood, the operator must never insert his hands beyond the steel shield. By raising the plate, the operator removes his own protection against wood chips flying out of the machine.



- If mainly leaves or damp products are to be shredded using the standard screen, the openings can become blocked. As a solution to this problem ELIET offers a "screen for damp products". This screen can also be obtained from your ELIET dealer. (art.n°. MA 003 001 001)



- When inserting branches, first the thickest end of the branch will have to be introduced into the feed hopper.
- As the chips fall onto the floor behind the machine, regularly check the pile of chips behind the machine is not obstructing the motor output or exhaust. Therefore either move the machine backwards in good time or tidy up the chips while the machine is working.
- If only a small volume of leaves is to be processed, they can easily be shredded using the standard screen. However, in this case, ELIET recommends that leaves and branches should be shredded alternately. The wood chips will prevent the screen openings from becoming blocked.
- The work should be halted immediately if strange noises are heard during the work. Stop the engine (using the emergency stop lever) and investigate the cause of the defect. Before pro-

ceeding, perform the necessary repairs.

- If the operator notices that, despite all preparations, a foreign object has still found its way into the machine, he immediately switches off the engine. He removes the foreign object and checks for any damage. In the event of damage, this is first repaired.
- In principle, the engine should switch itself OFF when the safety net is raised. If this is not the case because of a defect in the electrical circuit, the operator should switch the machine off immediately and not use it again until the defect has been corrected.

9.6.3 What to do about motor stalling

Motor stalling can be traced to overloading, overfeeding, discharge blockage or the power supply being down. You can very simply restart the chipper in these cases. Proceed as follows :

1. Check the petrol level in the petrol tank. (§9.2 Refuelling)
2. Remove all branches from the feed-in opening.
3. Pull the starter cord briefly. This will determine whether the drive shaft for the blades is still obstructed. Stop pulling as soon as you encounter resistance, and the cord cannot be pulled any further. There is no point in pulling hard on the cord, as this can only cause the cord to break or overload the starting mechanism.
4. If the drive shaft for the blades is stuck, the shredder housing should be emptied. To this end, open the screen. The screen is secured by two sliding pins. Remove the top sliding pin after removing the circlips. The screen can now be folded down.



Caution:

Always wear gloves when performing maintenance. You will be near the blades when emptying the chipping chamber. They are razor-sharp and, therefore, represent a real risk of leading to cutting injuries. Take care and try to avoid all contact.



Warning:

If the machine topples over, petrol can leak out. In certain conditions petrol can be highly flammable and very explosive. Petrol fire and explosion can cause severe burns or damage to properties.

5. Remove all wood chips and debris from the shredding chamber. Carefully refit the screen and check whether this has been done correctly.
6. Lower the safety net and start up the shredder (as per the start up procedure described in §9.4 Starting the engine).
7. Perform the work more carefully in future in order to avoid jamming the machine.

10. Transporting the machine

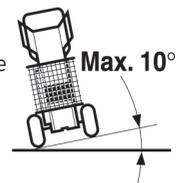


- Do allow only responsible adults move or transport the machine.
- In addition, do make sure children, persons untrained in the use of the machine or animals do not enter within 3 m radius when transporting the machine.
- If you wish to move the machine, always wait until the content of the chipping chamber has disappeared regardless of the quantity this may entail. Ensure the feed-in opening is free of branchy material.
- When moving the machine over greater distances (over 1 m), always take care to turn off the motor.
- If the machine is tipped over for whatever reason, turn it upright it as soon as possible. This prevents the oil in the crankcase from getting onto the air filter. As these filters are expensive, it is best to prevent this.
- Use anti-slip ramps when loading the machine in a van or on a trailer. Ensure that these are well secured to the vehicle or trailer.
- Under no circumstances should the ramp slope exceed 25°.
- Never drive or put the machine on a surface that cannot support the machine and the person. (For your information : Take into account a net weight of 90 kg for the machine.)

- The drive shaft for the blades should be positioned in front when ascending a slope.
- The drive shaft for the blades should be positioned last when descending a slope.

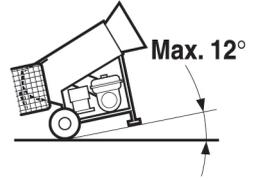


- Never use the machine for transporting objects or people.
- It is critical to judiciously select the traffic route in such a way as to release yourself from the worries of tripping up over some obstacles.
- Preferably, the transportation route is flat and even-surfaced.
- Ensure there is a sufficiently large run-out distance behind the ramps (4 m).
- Ensure the parking brake of the vehicle is on.
- Be careful and composed when loading and unloading the chipper so that the machine does not tip over and give rise to an accident.
- The maximum allowable sideways gradient for the shredder is 10°.
- Make sure to properly secure the machine to the vehicle during



transportation.

- During transport never tilt the shredder by more than 12° because this could cause the machine to topple over.
- Do not overload the vehicle. The chipper weighs approximately 90 kg net.



11. Maintenance



11.1 General

ELIET recommend that the machine should be brought to an official ELIET dealer for a major overhaul each year. (Find an authorized ELIET dealer near you by visiting www.eliyet.eu.) Your ELIET dealer is always at your service for maintenance and advice. Your dealer will stock genuine ELIET service parts and lubricants. Your dealer's staff can always obtain advice and service from ELIET's help desk so that they can provide you with an impeccable after-sales service.



Caution:

Only use genuine ELIET replacement parts. These service parts are manufactured to the same strict quality control requirements and degree of craftsmanship as the original equipment. The list of original replacement parts and their ordering code can be consulted online by visiting www.eliyet.eu.

Perform maintenance in a room intended for this purpose. This room must be

- Spacious
- Dust-free
- Easy access
- Clean and tidy
- Well lit
- Quiet

These characteristics are important to enable maintenance to be performed in an optimal manner.

**Warning:**

Maintenance performed in an incorrect manner can subsequently compromise the safety of the operator. Damage or consequential damage that arises from a lack of or from faulty maintenance will mean that the warranty shall no longer apply. Therefore, have maintenance performed by engineers with experience and who know what they are doing.

**Caution:**

Always ensure that the motor is switched off before performing maintenance work.

**Caution:**

When performing maintenance, always wear gloves, and also safety glasses for some operations. These are supplied as standard with the machine.

11.2 Maintenance schedules

11.2.1 Lubricants

Engine (0,75l)	SUNOCO SUPER DENALUBE SAE 20 W 50 API SF / CC
Hinge points	NOVATIO WHITE SUPREME GREASE
Wheel shafts	SUNOCO VET MULTI-PURPOSE LR - EP2

11.2.2 Special maintenance

A. Special maintenance of the blades

The blades will take up their final position once they have been mounted on the blade shaft after a short break-in period. This can cause the tension on the bolts to decrease, with the risk that the blades may become dislodged between the blade plates. This can cause irrevocable fatigue failure of the blade shaft. This must be prevented by scheduling extra maintenance after the brief bedding-in period.

WHEN :

Within the first five operating hours after commissioning the new machine

Within the first 5 hours after reversing the blades

Within the first 5 hours after replacing the blades.

WHAT : Check the tightening torque of the bolt connections securing the blades and tighten

**Caution:**

Use a calibrated torque wrench.

**Warning:**

Should this special maintenance not be performed, the blades may become loose while working. This will heavily damage your machine and represents a great risk involving permanent injury or even death with regard to the user and/or bystanders. Every damage and/or consequential damage as a result of this negligence will fall outside the scope of the warranty.

11.2.3 Periodic maintenance schedule

A. Routine checks before each job.

- Visual inspection of machine condition
- Checking oil level in engine
- Cleaning the air filter
- Check the machine for signs of abnormal wear or fractures
- Check the bolts for looseness (blades, wheels, bearings, motor, etc.).
- Sharpening the blades
- Checking the belt tension
- Machine cleaning

B. Maintenance after every 20 working hours

- Daily maintenance (§ 11.2.3.A).
- Changing the engine oil
- Checking or changing the spark plug
- Changing the air filter.
- General lubrication
- Adjusting the belt tension
- Turning and/or replacing the blades

11.3 Cleaning the machine

11.3.1 The importance of cleaning

ELIET recommend cleaning the machine after each use. We recommend using every cleaning event to perform an inspection where you check component and machine integrity. You can, thus, intervene on time to prevent faults and failures. This will ensure that the service life of your machine is improved.

Not cleaning the machine will lead to :

- Increased wear rate

- Increased risk of fire
- Reduced motor cooling
- Increased risk of short circuit
- Reduced performance
- Safety stickers becoming illegible
- Not noticing breaks or wear at an early stage

NOTE : You will no longer be entitled to any warranty should you fail to perform proper care and maintenance on a daily basis.



Warning:

If the machine does not operate optimally, this can compromise the safety of the user.



Warning:

Wood residue, chippings and fine dust can accumulate under the guards and cause a fire due to being heated. Avoid such dirt near electric components or the motor. Clean the machine thoroughly on a daily basis.



Caution:

Wear suitable clothing for cleaning. Gloves are required.

11.3.2 What does cleaning mean ?

Check the whole of the machine when cleaning and subject it to an inspection if required. Check that the parts are not deformed, welded seams are not cracked, and that parts do not exhibit excess play.

Important items :

- Blade shaft welding seams
- Bolts for blade attachment
- Blade shaft retaining bolt
- Anti-projection flaps in feed hopper
- The cooling air intake of the motor must be spotless at all times. Ensure that none of the air intakes are obstructed. The area around the filling place of the fuel tank should be held clean at all times, to keep the fuel tank from being polluted.
- The bearings should be kept clean at all times. After cleaning, lubricate.

If any problems are found, first conduct the necessary replacements and/or repairs. Visit your official ELIET dealer. (Find an authorized ELIET dealer near you by visiting www.eliyet.eu.)

Cleaning the machine means more than just cleaning the outside. Open all protections so that

you can also clean the concealed areas.

Special attention must be paid to the following items :

- The accumulation of dirt (chippings, wood residue, dust, sand, stuck on garden waste, etc.) Inside the machine must be removed. Use a soft brush or a vacuum cleaner to remove this dirt.
- Dirt build-up around the blade shaft should be removed to make sure it can not hamper motor bearing sealing. To find out how to open and close the chipping chamber.
- Remove all dirt that has become stuck to the inside of the chipping chamber.
- Using a dry cloth, remove any dirt from the frame. Pay special attention to places where stickers with safety messages are displayed. (Do not use any cleaning products that affect paint or stickers.)
- Stickers used to indicate safety messages that are no longer legible, must be immediately replaced. Obtain these original stickers from your ELIET dealer.
- Compressed air is a handy tool to easily blow out and, thus, clean a number of parts.
- A steamer may be used for cleaning, but the water should not be overly pointed at bearings, protection covers and filler caps. Water is the number one cause of rust and this must be avoided at all times. Allow the engine to cool down properly before treating it with water.
- Using a vacuum cleaner is efficient for removing dirt at locations that are not always easy to access.



Warning:

If safety guards need to be removed to perform maintenance work, refit them correctly once the maintenance has been performed. Guards are provided to ensure your safety.

11.4 Routine checks before each job.

11.4.1 Visual inspection

Check for deformation of parts, cracking of joints or too much play in parts. If abnormalities can be established, the necessary repair work should be carried out. Check whether the machine is running at the prescribed speed (3200 rpm) (a revolution counter can be obtained from your ELIET dealer). Never attempt to change the standard setting of the engine.

11.4.2 Checking the oil level in the engine

Refer to the 'General description' section in §6. Main parts for possible locations of the oil dipstick and oil drainage and filler plugs.

- Take a clean cloth.
- Pull the oil level dipstick out of the oil filler opening.
- Usually, the oil level cannot be correctly read immediately. Wipe the dipstick clean, place it back in the oil filler opening, but do not tighten it.
- Pull the dipstick out again, and read the correct oil level.
- If the oil on the dipstick is between the minimum and maximum level, then there this is suf-

ficient oil.

If the oil level is too low it can be filled up via the oil filler plug. Only use the recommended oil. Do not add too much at a time and regularly check the oil level.

11.4.3 Cleaning the air filter

- The type of air filter can vary slightly depending on the make and type of engine.
- Locate the air filter underneath the black protective cap beside the petrol tank on the machine.
- Release the black protective cap.
- There are two types of filter. As well as the common sponge filter, there is a filter which consists of laminated paper like the air filter in a car.
- The sponge filter can be cleaned by rinsing it out with some petrol and blowing compressed air through it.
- The paper filter type can only be cleaned by dusting it off or by blowing compressed air through it.
- Once cleaned, all items should be reassembled in their original position.



Caution:

If the machine accidentally falls over, it should be placed upright again as soon as possible. When the engine ends up in an unusual position it is possible for oil from the crankcase to flow onto the air filter via the carburettor. As oil on the paper of the filter prevents air from passing through, the filter has to be replaced.

11.4.4 Sharpening the blades

The machine offers the highest efficiency and has the highest operating speed when the blades are sharp. Enhance your own working comfort by taking some time to check the blades, and if necessary, sharpen them for every job.

SHARP BLADES = MAXIMUM EFFICIENCY



For your information:

The blades do not have to be disassembled for grinding. Use for this a small angle grinder equipped with a grinding disc suitable for steel.



Warning:

Always wear safety glasses and ear defenders when sharpening the blades. Gloves are also compulsory when commencing maintenance work.

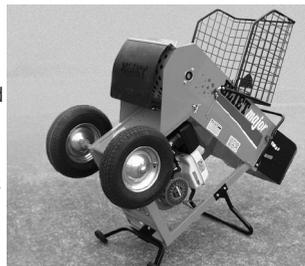


Warning:

If the machine topples over, petrol can leak out of the filler plug of the reservoir. Use a siphon to pump excess petrol from the reservoir because sparks from grinding can cause fire.

- Tip the machine forwards so it is resting on the front support and the steering handle (see illustration).
- Move the safety net forwards and dismantle the screen located at the rear of the machine. By pulling the two sliding pins.

Tip: Use circlips to hold up the rubber flap which hangs at the rear of the machine as protection against flying chips.



- When sharpening, rub the grindstone or the angle grinder along the bevelled cutting edge. Ensure the cutting edge keeps the same angle. The top of the blade endures the heaviest load during shredding. This should therefore be sharpened as little as possible so that it is not weakened. Correct and timely sharpening of the blades will extend their operating life.



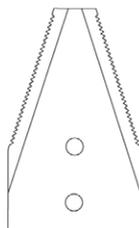
For your information:

As soon as the top of the cutting edge becomes blunt, the blades have reached the end of their working life and they should be replaced or turned.

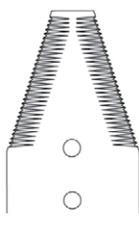


A blade has two sides:

- The front of the blade has the two chamfered cutting edges.. **(V)**
- The rear clearly shows the tooth profiling of the cutting area **(A)**



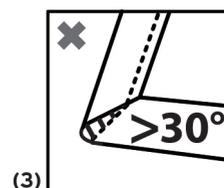
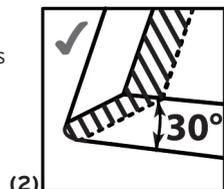
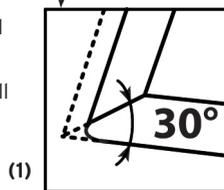
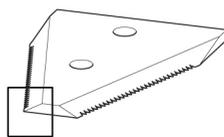
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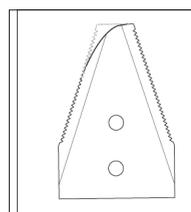
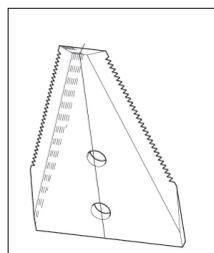
(A)

A sharp blade edge and a correct cutting angle are essential for efficient chipping. Blades must be correctly ground to ensure these two features can be realised.

- If blades become blunt, the sharp cutting edge will become worn and will be upset to form a wider rib. **(1)**
- By grinding a little metal from the cutting edge, you can again obtain a sharp cutting edge from this wide rib. **(2)**
- Grinding is performed by moving the grinding disc along the angled cutting edge.
- Note : By regularly grinding, you will only have to grind away a small adjustment of the metal each time to again obtain a sharp cutting edge. This will ensure for very short grinding times and you will always have the best possible cutting edge. (ELIET recommend the following : Every 10 working hours.)
- Avoid grinding at the same location for a longer period of time. This will prevent local discolouration of the blades, which would indicate heating and, therefore, the material structure at these places will change and the hardness will decrease.
- It is extremely important that the existing cutting angle be respected when grinding. **(3 : Incorrectly ground blade)**
- If the cutting angle is not maintained, blades will be stopped in the wood due to a blunt angle **(4)** of an interrupted cutting angle **(5)** and a lot of power will be lost. Too sharp a cutting angle **(6, 7)** will give rise to a weakened cutting edge and, therefore, blade life will be considerably shortened (see figures 4, 5, 6 and 7).

**(4)****(5)****(6)****(7)**

- Never grind the rear side of a blade. The profiling is on the rear with regard to RESIST/6™ blades. If you grind away the teeth, the blade will lose a great deal of its cutting force.
- The top of the blade is subjected to the heaviest loads during chipping. You should, therefore, grind them as little as possible to avoid weakening.
- After all, a little of the material is removed every time they are ground and, therefore, the active cutting edge becomes smaller. You can continue grinding up to halfway the width of the blade tip. If you exceed this limit, you will be compromising blade life of the unused cutting edge. We recommend reversing the blades at this point (see § 11.4.3 Reversing and replacing chipper blades).
- If the tip of the blade is rounded-off, chipping efficiency will be reduced. In this event, further grinding of the blade serves no purpose. This is the time to reverse or replace the blades. (See § 11.4.3 Reversing and changing blades.)



11.4.5 Checking the belt tension



Warning:

Only check the belt tension once the engine has been switched off. Disconnect the spark plug cap. Pull the plug from the wall socket.

- The drive guard contains a black round cap. This should be pulled out of the hole.
- Through the opening the V-belt can clearly be seen. If the belt is pressed down using your thumb (applied pressure is $\pm 7,5$ kg) it should only move by 1 cm. If this is the case, the belt is sufficiently tensioned.
- Replace the rubber cap in the opening once the belt tension has been checked.
- If the belt tension appears to be too slack or too tight, it should be adjusted. If the belt tension is too slack, it will bang against the protective cap.
- During the running-in period, a new belt will expand slightly. It is therefore advisable to adjust the belt after it has been operating for 10 hours (See § 11.5.5).



11.5 Maintenance after 20 operating hours

11.5.1 Changing the engine oil

- Ensure the engine is resting on a level surface and is switched OFF.
- Locate the plug screwed into the crankcase at the rear of the engine at the bottom of the engine base. (See the engine manual).
- Keep a 1 litre receptacle nearby before unscrewing the plug.
- Allow all of the oil (approx. 0.75 litres) to drain from the engine.
- Refit and tighten the plug into the drain. Use a clean cloth to wipe away any spilt oil.
- Refill the engine with new four-stroke oil. For this purpose ELIET recommends a top quality oil with a high detergent content : SUNOCO DENALUBE SAE 20W50 API SF / CC.
- Add approx. 0.75 litres of oil via the oil filler opening. Remove any spilt oil once filling has finished. Allow some time for the oil to fill the crankcase before measuring the oil level with the dipstick.
- Place the dipstick in the filler opening without screwing it tight. Remove it and check the oil on the dipstick reaches the upper level mark. If not, add more oil.



Warning:

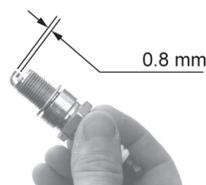
Too little oil in the engine leads to irrevocable serious engine damage.

11.5.2 Checking or changing the spark plug

ELIET recommends the following makes of spark plug:

B&S Vanguard 9 pk	Champion QC 12 YC
Honda GX 270 9 pk	NGK BPR 6 ES

- Switch OFF the engine and pull the cable off the spark plug.
- Clean the area around the spark plug and remove it from the cylinder head.
- Using feeler gauges, check whether the distance between the electrodes is 0.8 mm.
- If the spark plug has suffered too much corrosion or contamination, it should be replaced.
- To check the quality of the ignition, proceed as follows:
 1. Refit spark plug cap onto spark plug.
 2. Hold the rubber part of the spark plug cap and press the outer electrode against the frame of the engine.
 3. Pull the starter cord.
 4. Check the sparks between the electrodes.
 5. If the sparks are bright and located exactly between the centres of the electrodes, then the spark plug is still OK.
 6. If the sparks are weak, irregular and not located exactly between the centres of the electrodes, then the spark plug must be renewed.



Caution

Refitting an old or replacing a new spark plug should be performed with the greatest care in order to avoid damaging the screw thread in the motor. Torque the spark plug to 20 Nm.

11.5.3 Changing the air filter

- This action is completely identical to cleaning the air filter (see §11.4.3 Cleaning the air filter).
- A new air filter of the correct type is available from your ELIET dealer or from a service centre approved for this type of engine.

11.5.4 General lubrication

ELIET feels it is important to use high-quality materials because these will prolong the life of the machines which are sometimes used in rather extreme working conditions. Special lubricants have therefore already been used in the factory. ELIET also recommends lubrication of the following parts on a regular basis:

- Bearings,
- Hinge point

A. Bearing lubrication



Caution:

As is the case for all maintenance work, the engine/motor is switched OFF. Disconnect spark plug cap or plug from wall socket (as appropriate). Gloves are essential as blades are razor-sharp and can cause deep cuts.

- Put the safety net up right and fold down the screen.
- Spray some penetrating oil containing molybdenum disulphide onto the bearing bushes of the drive shaft for the blades, and allow the oil to penetrate.
- Using a cloth, remove all dirt lodged around the joints of these bearings. Spray some more penetrating oil in the joints of the bearing seal so the oil can get into the bearings.
- Wipe away all excess spray.
- Spray Novatio White Supreme Grease in the joints of the bearing seals.
- If required, spray the complete drive shaft for the blades with penetrating oil. As penetrating oil containing molybdenum disulphide dissolves rust, this treatment can only be beneficial.



A. Hinge point lubrication

The hinge points include: the two hinge points on the screen, base hinge point and the hinge points on the safety net at the output.

- First spray hinge points with penetrating oil. Allow the oil to penetrate for a few minutes
- Use a cloth or a wad of paper to wipe away any old grease or dirt. Once hinge points have been cleaned, spray Novatio White Supreme grease into the hinge joints.



All greases listed in this manual are available from your ELIET dealer www.elieta.eu.

11.5.5 Adjusting the belt tension

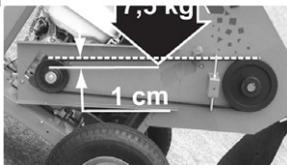


Caution:

The engine should always be switched off and the spark plug cap should be disconnected when adjusting the belt tension.

- To adjust the belt tension, remove the guard. To this end, remove the four M6 bolts (without nuts). The guard is also secured to the chassis by means of an M6 bolt equipped with a dome nut, and an M8 bolt at the front of the guard. Two ring spanners should be used here (10 mm and 13 mm).

- To check the exact belt tension, a 7.5 kg weight is suspended from the V-belt. If the belt sags by 1 cm, the belt tension is correct (see figure).
- Adjust the belt tension by sliding the engine block forwards. To this end, four M8 bolts on the engine block should be unscrewed (2 x 13 mm ring spanners). Slightly turn the M10 bolt at the front of the engine backwards after releasing the lock nuts. The engine block can now be pushed forwards using the nut at the rear of the engine.
- Prior to releasing the engine, use a felt tip to mark the chassis plate at the side of the engine block. This will save time later when aligning the pulleys.
- Tighten the (M10) bolt at the rear until the correct tension is obtained. The bolt is secured with a lock nut.
- Align the two pulleys by re tightening the bolt at front of the engine. The pulleys are correctly aligned if they touch a straight piece of wood held against them in four places (see figure).



CORRECT TENSION + CORRECT ALIGNMENT = LONG BELT OPERATING LIFE

- After the correct tension and alignment have been obtained, the position of the engine may be locked by firmly re tightening the four engine (M8) bolts (using 2 x 13 mm ring spanners).
- The guard should only be refitted in its original position once everything has been carefully rechecked.

11.5.6 Reversing and replacing the blades

If the blades are regularly ground, a blade life of more than 50 hours can be guaranteed per cutting edge. When one cutting edge is totally used, you can reverse the blade and you will have another 50 hours. If both blade edges are worn, replace the blade as a whole.



Caution:

Any entitlement to claim on the guarantee will be excluded in case of damage or consequential damage that occurs due to faulty maintenance of the blades. Consult your official ELIET dealer for advice if required.

11.5.6.1 Work method for reversing the blades



Warning:

Wear protective gloves as the blades are razor sharp!

- Disconnect spark plug cable by way of precaution.
- Place the machine on the front base and the steering handle in the same way as when the blades are sharpened. Be careful not to spill petrol from the reservoir.
- Remove the screen by pulling out the two sliding pins. This will increase the accessibility to the shredding chamber. Secure the rubber flap using circlips.



For your information:

When turning the blades, dismantle and reinstall one blade at a time. This ensures the work is performed in an orderly manner.

- Before removing the blades, release and remove the two M8 bolts. If the bolts are damaged, they should be replaced. The blades are pulled out with gripping tongs.
- Zone A : For the blades on the outermost blade disks, proceed as follows. Remove a blade from the left-hand side, rotate it through 180° and fit it in the same position, but in the right-hand blade disk. The blade from the right-hand blade disk is rotated through 180 degrees and fitted in the vacant hole in the left-hand disk. Repeat this procedure for all blades of zone A (see figure).
- Once all blades in zone A have been turned, recheck whether the chamfered cutting edges point towards the centre of the shredding chamber and not towards the wall plate. If this is not the case, two blades have not been turned correctly.
- Zone B : For the blade disks enclosed between the blade disks in zone A, proceed as follows. The blades in zone B are disassembled, rotated through 180° and refitted on the opposite side of the blade disk. The blade which must be removed is turned 180° and placed into the vacant position in the blade disk. This action is repeated until all blades have been turned (zone B as per figure) Once all blades in zone B have been turned, the chamfered cutting edges of each blade must point towards the shaft itself. If this is not the case, the procedure has not been performed correctly, and the fault must be rectified.



11.5.6.2 Work method for replacing the blades

New sets of blades are available from your ELIET dealer under the following part number :
BU 401 200 302.



Warning:

Wear protective gloves as the blades are razor sharp!

- When replacing blades, simply remove the old blades and replace them with new ones. When fitting new blades in the outermost blade disks (zone A), ensure that the chamfered side of the cutting edge always points towards the centre of the shredding chamber. The blades in zone B are inserted between the disk plates whilst ensuring the chamfered side of the cutting edge always points towards the shaft, via the angle formed by the blade disk.



- When replacing the blades, the nuts and bolts should be replaced at the same time. Your ELIET dealer always has new blades in stock.
- Once the blades have been disassembled, remove the dirt which is stuck between the two plate halves before reassembling the blade. To this end, a filling-knife may be used.
- When refitting the blades, the bolts should be tightened securely. If the bolts are damaged they should be replaced. It is advisable to check whether all bolts have been tightened before the screen is reassembled.
- Ensure the nut is always on the left-hand side of the disk when replacing the bolts in the disk. This to ensure the rotation of the drive shaft for the blades locks the nuts.
- During the next operation after fitting new blades, it should be taken into account that new blades still have to settle. This means that they become slightly loose between the plates. **The blade bolts should therefore be re tightened after five operating hours.**



Caution:

Incorrectly or poorly installed blades may lead to breakdowns or damage to the machine. Operators and bystanders are also put at risk.



Caution:

After replacing the chipping blades, always check the bolts for correct tightness after expiry of the first 5 hour run. Failing to do this may have serious consequences for the operator and for the machine.

12. Storing the machine

Storing preparations

- Clean the machine (see § 11.3 Cleaning the machine).
- Carry out detailed maintenance (see § 11.5 Maintenance after 20 operating hours).
- Check all nuts and bolts and retighten if necessary. For checking the majority of bolts two 10, 13 and 17 mm open-ended spanners and 4, 5 and 6 mm Allen keys may be used.
- Remove all fuel from the tank. This can be achieved by simply allowing the machine to run until all fuel has been used up. If necessary, use a siphon to transfer the petrol into a Jerry can (see safety regulations at § 9.2 Refuelling).
- Disassemble the spark plug (see § 11.5.2 Checking or changing the spark plug). Spray some penetrating oil containing molybdenum disulphide into the cylinder via the spark plug hole. Pull the starter cord until the piston reaches its highest position. Refit the spark plug.
- Touch up areas where the paint has been damaged or treat with a lubricant in order to prevent corrosion. Original paint in the same colour can be obtained from the ELIET dealer.
- Always allow the engine to cool down before storage.
- If the machine is to be stored outside, it must be well protected with tarpaulin. Ensure water does not directly fall onto the machine. ELIET strongly recommends the machine is stored in a sheltered location.
- Ensure the machine is not within the reach of children.
- Never position the machine in the immediate environment of a heat source or a naked flame. (Keep at least a 2 m distance.)

13. Equipment Specifications

Engine	9,0 pk B&S Vanguard
	9,0 pk Honda GX 270
Capacity	55 mm
Yield (full wheelbarrows/hour)	24
Blade shaft	Steel ax diameter 25mm
Blades	20 HS-steel (reversible)
	4 double steel blades
Chipping technology	ELIET Chopping principle™
Chipping width	350 mm
Feed-in opening	350x300 mm
Feed height	900 mm
Wheels	air tires 4.00 x 8
Nominal dimensions (LxWxH)	1290x630x1280 mm
Transmission	V-belt Gates Guard Power XPA 1600
Chassis	steel plate 2,5 - 3 mm
Sound Power Lw(A)	
Weight	90 kg
Available options	Screen for leaves and damp products

14. EC-Declaration Of Conformity - MAJOR

Machine: **SHREDDER**
Type: **ELIET MAJOR**
Model number: **MA 003 010 000**
MA 003 010 108
MA 003 010 208

The previously mentioned machine has been designed and manufactured to comply with the following European CE regulations :

"EN 13683: Garden Equipment -Integrally powered shredders/chippers -Safety"

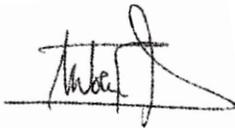
ELIET mfg. cy. hereby declares that after performing a hazard analysis, it is fully aware of the potential hazards and risks associated with the machine. In this knowledge, the necessary steps have been taken in line with Machine Directive 2006/42/EC in order to ensure absolute operator safety for the operator, when the machine is used correctly.

The value of the measured sound power level and the guaranteed sound power level were obtained according the procedures set forward in the directive 2000/14/EG annex III/B clause 50 and directive EN 13683.

Measured sound power level LwA : 111 dB(A)
Guaranteed A-weighted sound power level : 112 dB(A)

Date: 01/01/2011

Signature:



Frederic LIETAER
Managing Director ELIET EUROPE NV
Date of birth: 02/01/1975

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info@eliet.eu - www.eliet.eu

Annexes:

B1 List with torque values

Bolt head acc. to. DIN 931,912 ed.	Thread	Strength	
		8.8	10.9
Normal thread	M4	3,0	4,4
	M5	5,9	8,7
	M6	10	15
	M8	25	36
	M10	49	72
	M12	85	125
	M14	135	200
	M16	210	310
	M18	300	430
	M20	425	610
	M22	580	820
	M24	730	1050
	M27	1100	1550
	M30	1450	2100
Fine thread	M8 x 1	27	39
	M10 x 1.25	52	76
	M12 x 1.5	89	130
	M14 x 1.5	145	215
	M16 x 1.5	225	330
	M18 x 1.5	340	485
	M20 x 1.5	475	680
	M22 x 1.5	630	900
	M24 x 2	800	1150
	M27 x 2	1150	1650
M30 x 2	1650	2350	

(where friction factor $\leftrightarrow = 0.14$)

B2 Hazard analysis

Below you will find a list of dangers and risks that are linked to storing away, transporting or using the chipper. Take note of these dangers and avoid these risks by following the instructions contained in this manual. Be aware that it is not just the user who runs a risk but also third parties can be exposed to these risks. Ensure that bystanders are always kept at a safe distance.

- Injury to hands due to reaching into the infeed opening past the anti-projection flaps.
- Injury due to the projection of chippings through the feed-in opening because the anti-projection flaps have been pressed open.
- Danger of suffering heavy injuries or death because a machine part (blades, bolts, etc.) have become loose because there has been a lack of checking and maintenance.
- Danger of suffering injuries due to projection along the feed and discharge sides after a foreign object has been introduced (stone, metal, textile, PVC, etc.).
- Injuries caused by chippings flying out from the discharge opening when the machine is in operation.
- Cutting injuries to hands due to injury from the blade shaft coasting to a stop on opening the chipping chamber.
- Cutting injuries to hands when disassembling the blade shaft.
- Cutting injuries due to the blade shaft falling after being disassembled.
- Strangulation or constriction by loose clothing getting caught in moving parts.
- Injuries caused by the machine tipping due to unsafe transport.
- Danger of suffering burns due to chippings and wood residue that is blocking the cooling air ducts.
- Irritation of the airways or lung problems due to inhaling the dust produced.
- Hearing disorder due to insufficient protection of the ears during the work.
- Bruising or injury when feeding materials, due to the power of the blades on the wood.
- Bruising or injury due to the kick-back of wood when being introduced in the feeding hopper.
- Mental disturbance or rheumatic disorder due to shredding for a long time at a time without taking breaks.
- Joint pain due to vibration transfer when continuously inserting thick branches.
- Injuries following contact with the blades for blockage clearance, maintenance or cleaning the machine.
- Back problems caused by lifting the machine in an irresponsible way.
- Danger due to bruising or injury when the machine falls shut when injudiciously folding it.
- Injury due to a fall while driving over a substrate that cannot carry the weight of a person and machine.
- Electrocutation danger due to working in rainy weather or under conditions of water shock on the machine.
- Danger of electrocutation through contact with damaged wiring within the machine housing.

This is not a comprehensive list and is provided for information purposes only to safeguard the safety of the user.

B 3 Warranty conditions

Dear Customer,

We thank you for purchasing an ELIET product. Congratulations on your purchase of this machine which is sure to meet your expectations and needs over the coming years. At Eliet, we do everything to ensure that our products function correctly. That is why your product qualifies for a two year guarantee.

What is warranty ?

At Eliet, we have strict quality rules on designing and manufacturing products. The priorities given by these rules are to guarantee a long service life and permanent safety. That is why at Eliet, we are willing to repair at no charge hidden defects or faults during the whole run-in period (aka the warranty period), provided the prescribed procedure is followed.

Warranty conditions

ELIET's warranty obligations for new machines is 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 :

- after two years of private use.
- after twelve months or 100 running hours of rental use.
- after twelve months or 100 running hours in semi-professional or in professional use.

To be eligible to obtain warranty the customer is invited to register the newly purchased machine with ELIET. You should complete the registration card online on Eliet's website : www.eliety.eu.

If you don't have access to the Internet, please complete the attached registration card in its entirety and return it to ELIET.

II. What is covered by the warranty ?

- Wear items are not covered by the warranty conditions : (such as blades, bearings, belts, chains, gearwheels, tyres, bulbs, fuses, etc).
- If failures are found to be caused by improper use, neglect or consequential damages by an external source (fall, chippings, foreign objects, accident).
- If failures are found to be caused by improper maintenance of the machine, that is not in accordance with the prescribed periodic maintenance.
- When a defect is caused by improper repair made by anyone other than an authorized ELIET dealer or after using not genuine Eliet service parts.
- When the defect is caused by making improper changes to the original design of the machine.
- When the fault develops when the machine has been used not in accordance with the instructions contained within this manual.
- When the prescribed warranty procedure has not been adhered to or when the warranty pe-

riod has expired.

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

III. Procedure

- **Step 1 :** On the date of purchase, the customer should register his/her purchase online by completing the registration card at www.elieta.eu. In addition, the enclosed registration card should be completed in its entirety on the day of purchase. The first part of the form should be returned to ELIET within one month. The customer should 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 this verified by the authorized ELIET dealer. If the dealer feels that there is a factory defect, the dealer may invoke the warranty, under the terms specified.
- **Step 3 :** Every warranty application must be accompanied by a fully completed official application form. Copies of this warranty application are available to dealers at ELIET or even at an importer/agent.
- **Step 4 :** The dealer then 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.
- **Step 5 :** The warranty form should be stapled to the purchase invoice and mailed to ELIET or an importer/agent of ELIET.
- **Step 6 :** ELIET will send the parts ordered to the dealer under the regular delivery and payment conditions.
- **Step 7 :** The defective part will be examined by the technical department first prior to approving or rejecting the warranty. ELIET reserve the right to solely decide whether or not the customer has complied with the conditions for the validity of this guarantee, i.e. 1 year or 2 years. Faulty components shall become the property of ELIET.
- **Step 8 :** When a warranty claim is found to be valid, ELIET will credit the warranty parts. Customers shall never be entitled to apply for a refund of labour costs.

IV. In case of damage caused by transport

- All goods are supplied ex factory. Transport risks are borne by the customer. It follows, that ELIET highly recommend to check the goods for damage on arrival.
- Any damage found should be stated on the delivery form before signing. Make sure the driver of the haulage company puts his signature next to the damage on your copy.
- In the absence of a written and signed declaration on the delivery form, the insurance of the haulage company will not accept any liability.
- Damages can be claimed from the hauler using a copy of the delivery form and a covering letter stating your complaint.
- The damaged machine should be kept in its original condition until the hauler's insurer has performed any examination.

REGISTRATIONCARD**ELIET CUSTOMER SERVICE**

To be able to claim the full rights to which you are entitled, it is important to register within a month after the date of purchase. Therefore, fill out this registration form and return the first registration card to the ELIET Customer Service. Your purchase should be registered on the ELIET website: www.eliel.be

REGISTRATIEKAART**ELIET KLANTDIENST**

Om als klant aanspraak te kunnen maken op waarborg dient men zich binnen de maand na aankoop bij ELIET te registreren. Hiervoor vult u onderstaand document volledig in en stuurt het eerste deel van deze registratiekaart naar de ELIET klantendienst terug. Registreer uw aankoop op de ELIET website: www.eliel.be

CARTE**SERVICE**

Pour profiter de tous les avantages auxquels vous êtes éligible, il est important de vous inscrire dans le mois suivant l'achat. Complétez ce document et renvoyez le premier volet de cette carte d'inscription au Service Clientèle ELIET. Enregistrez votre achat sur le site Internet ELIET: www.eliel.be

ELIET
 Registration card
 Registratiekaart
 Carte d'enregistrement
 Registratiekaart

 ELIET Customer Service
 Zuiverenstraat 136
 B-8653 Oeghem
 Belgium
Customer Identity / Klantgegevens / Données du Client / Kundendaten

Name / Naam / Nom / Name		First Name / Voornaam / Prénom / Vornaam	
Street / Straat / Rue / Strasse		Nr / Nr / N° / Nr	
City code / Post / Code Postal / Postleitzahl		Box / Bus / Boîte / App.	
City / Plaats / Ville / Stadt		Country / Land / Pays / Land	
Telephone / Telefoon / Téléphone / Telefon-Nr.		Fax / Fax / Télécopieur / Fax	
E-mail			

Machine identity / Machinegegevens / Données de machine / Daten Maschine

Model / Model / Modèle / Model		Year of manufacture / Besoort / L'année de construction / Baujahr	
Article Code / Artikel code / Code d'article / Artikel-Nr.		Serialnumber / Seriennummer / Numéro de série / Serien-Nr.	
Date / Datum / Date / Datum			
Signature Handtekening Signature Unterschrift		Stamp of dealer Stempel van handelaar Cachet de revendeur Stempel Fachhändler	

I declare that all information that was filled in is correct and truthful. I also declare to have read and understood the operation manual and the warranty conditions.
 Ik verklaar dat al deze gegevens waarheidsgetrouw werden ingevuld. Hierdoor geef ik te kennen de garantievoorwaarden en het gebruiksgedrag te hebben gelezen en begrepen.
 Je déclare que tous les données complétées sont correctes et véridiques. Je déclare également d'avoir lu et compris les notes de mode d'emploi et les conditions de garantie.
 Ich erkläre hiermit, dass alle angegebenen Daten korrekt und wahrheitsgemäß gemacht wurden. Ich erkläre ebenso, dass ich die Garantiebedingungen gelesen und verstanden habe.

Put a crossmark to which application this machine was used
 Zet een kruis bij de toepassing waarbij deze machine wordt ingezet
 Indiquez avec une croix l'environnement dans lequel la machine a été utilisée.
 Kreuzen Sie an, für welche Art von Gebrauch die Maschine bestimmt ist.

- Home use / Particulier gebruik / Usage particulier / Private Nutzung
 Professional Landscaping / Hoveniersbedrijf / Usage Professionnel / Gewerbliche Nutzung
 Forestry / Bosbouw / Forêt / Forstbetrieb
 Public Groundscare / Openbare groenvoorziening / Espaces Verts Public / Öffentliche Grünflächenversorgung
 Rental / Verhuur / Location / Vermietung

Dit document dient binnen de maand na aankoop teruggestuurd te worden naar de ELIET Klantendienst.

This document has to be returned to ELIET Customer Service within a month after purchase.

Renvoyez ce document au Service après-vente ELIET dans le mois suivant à la date d'achat.

Dieses Dokument muss innerhalb eines Monats nach Kaufdatum an den ELIET Kundendienst zurückgeschickt werden.

B4 Major PTO

Safety precautions

- **Long funnel:** the funnel from the Major PTO is EXTRA long so that the user'S HANDS cannot come into contact with the blades.



Connecting propeller shaft

- Ensure that the net from the Major is closed and clicked shut. If the net is not secured, the propeller shaft cannot be secured to the major.
 - Connect the tractor to the major's 3-point connector. The machine can only be used if all three points are secure.
 - Use the upper connection of the 3-point connector to adjust so that the major hangs flat.
- 
- The white ring on the propeller shaft's connection slides back. Until the propeller shaft has been clicked into place, it has not been connected properly.
 - If the major is connected to a tractor with a capacity greater than 16pk, use a propeller shaft with a slip coupling. ELIET is not responsible for damage to the machine as a result of using a tractor with an excessive output capacity.
- 

Using the machine

- The major PTO runs at a PTO speed of 540 rpm. Eliet is not responsible for damage to the machine if excessive PTO speed is used.
- Set your tractor's accelerator so that the revolutions are 540 RPM.
- Set de machine flat on the ground before starting. The major may not be used in transport mode.
- Ensure that the DISCHARGE pipe from the major does not become blocked with cuttings; if the pile of cuttings becomes too big, raise the 3-point 5 cm from the ground and move the machine.
- Ensure that no damage is caused by the cuttings that lie under the machine when moving the tractor.
- If you hear a strange noise, when there is a blockage or during other unforeseen circumstanceS, the propeller shaft must be switched off immediately.

Maintenance Major PTO

- When carrying out maintenance work, the propeller shaft must be disconnected at all times.
- In order to open the safety net, the propeller shaft must first be switched off. Only then can the lever be moved so that the net can be released.



Belt tension adjustment

- In order to adjust the belt tension, the protection cap must be removed. To do so, the 4 M6 bolts (without nut) must be unscrewed. The cap is also fixed to the chassis with an M6 bolt which has a cap nut and an M8 bolt at the front of the cap. Two ring spanners (10 mm and 13 mm) are required for this.
- In order to check the exact belt tension, a weight of 7.5 kg must be hung on the V-belt. If the belt sags 1 cm, the belt tension is correct.
- Tension the belt by sliding the flat plate on the chassis forwards. The plate bolts must be unscrewed in order to do so (2 x ring spanners 13).
- Before unscrewing the machine, a felt-pen must be used to make two points on the chassis plate. This will save time afterwards when lining up the pulleys.
- If the correct tension and alignment is achieved, the plate can be locked by tightening the bolts (M8) (2 x ring spanner 13).
- Only once everything has been checked carefully can the protective cap be replaced in its original position.



