

# ELIET

MANUAL

# Megaprof

# 1. Introduction

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## 1.1 Carefully read this user manual.

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Eliet machines are designed for safe and reliable use if they are operated in accordance with the instructions given. Carefully read this user manual before using the machine. Failure to observe this may result in personal injury or damage to the equipment.

## 1.2 Identification Data - ELIET Megaprof

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Note the identification data relating to your machine in the boxed areas.

Engine :

Vanguard 3/LC 950 D 582447-0205-E2

Article number :

Serial number :

Year of manufacture :

## 2. Warranty

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### 2.1 Warranty card

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

Also register your purchase on-line via [www.elieta.be](http://www.elieta.be)

ELIET NV

Zwevegemastraat 136

B-8553 Otegem Belgium

# 3. Welcome

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## Welcome to the family of ELIET customers.

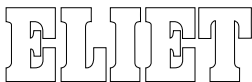
We would like to thank you for the confidence that you have placed in ELIET and we are convinced that you have purchased the very best machine. The operating life of your ELIET machine depends to a great extent on how you care for your machine. This user manual and the engine manual provided will assist you in this respect. 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 stated in the relevant chapter. Even if you are thoroughly familiar with operating such equipment, it is still advisable to read these pages carefully.

ELIET is constantly working on further developments for all machines and devices; bearing this in mind, we also reserve the right to supply equipment that can 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, we request you to contact your ELIET dealer.

## ELIET AT YOUR SERVICE



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B-8553 Otegem  
Belgium

Tel : (+32) (0)56 77 70 88  
Fax : (+32) (0)56 77 52 13  
Email: [service@eliet.be](mailto:service@eliet.be)

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## 5. Operator Safety Warnings

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Certain symbols in this manual are used to provide additional information and to draw your attention to potential risks.

### 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 denote where you can find additional information relating to the subject.

### 5.2 Caution

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**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

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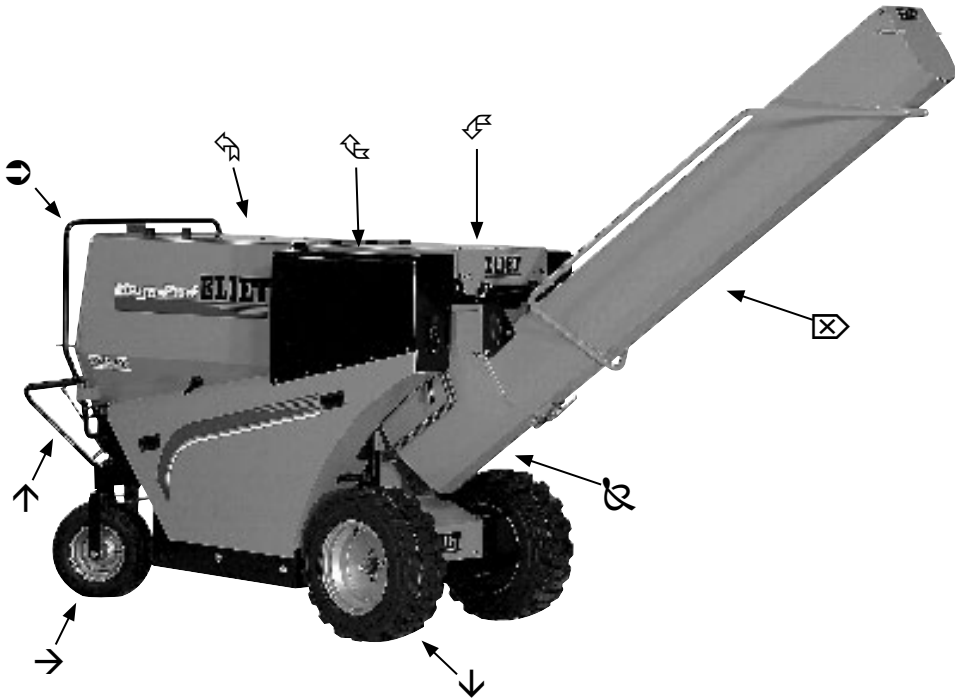


**Warning:**

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.

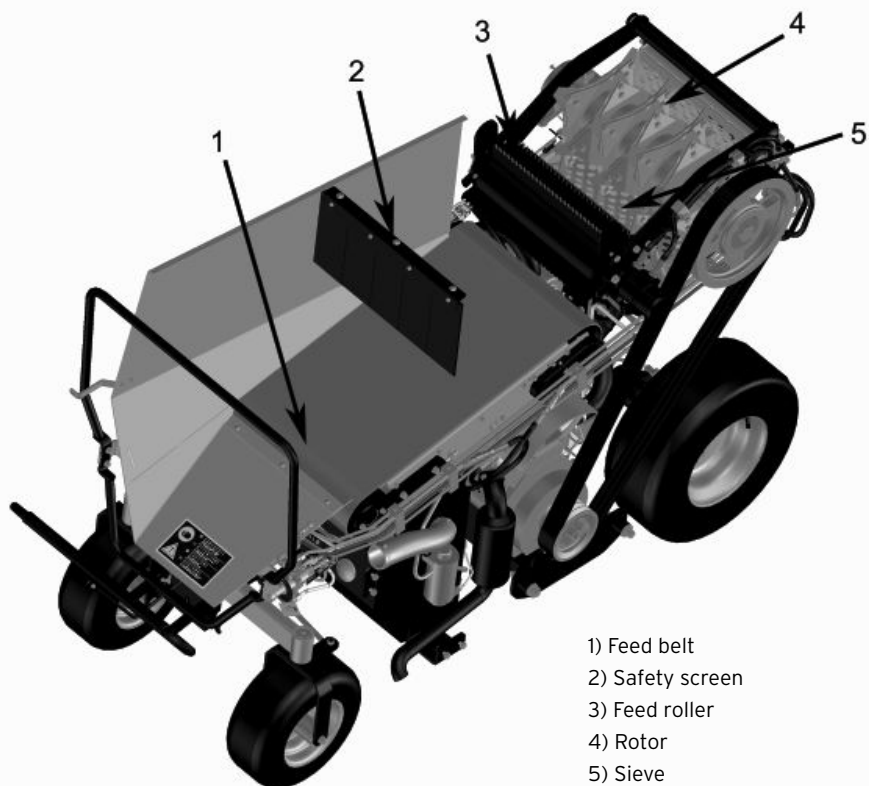


## 6. Principal Parts

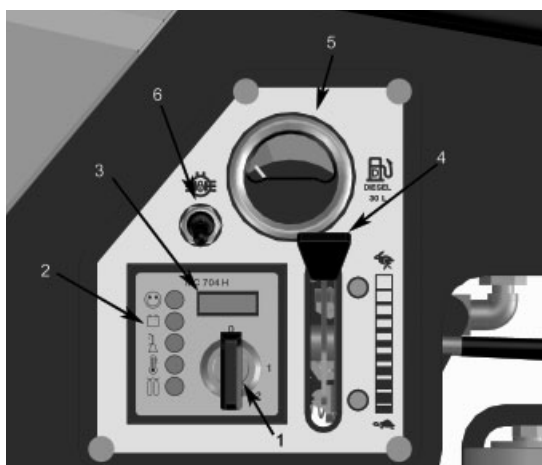


To fully grasp the content of this operator's manual, you need to be fully conversant with the terminology used for the descriptions. This chapter identifies a number of parts. It is a good idea to take time to study the machine beforehand for an improved understanding of the descriptions provided in this user manual.

- 1) Feed hopper
- 2) Safety cover
- 3) Shredding chamber
- 4) Discharge chamber
- 5) Discharge screw
- 6) Control lever of the feed hopper
- 7) Handlebar with control for the wheel drive
- 8) Steerable front wheels
- 9) Driven rear wheels



- 1) Feed belt
- 2) Safety screen
- 3) Feed roller
- 4) Rotor
- 5) Sieve



- 1) Start key
- 2) Diagnostics panel
- 3) Hours run counter
- 4) Throttle
- 5) Fuel gauge
- 6) Split differential

**For Your information:**

References in this manual to the left-hand side, right-hand side, back or front, are viewed from the position where the machine operator is facing the feed hopper of the machine.

**Regularly visit your approved ELIET dealer.**

Your ELIET dealer is at your service, ready to provide you with maintenance or advice so that your ELIET machine always operates at peak efficiency. Genuine ELIET service 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.

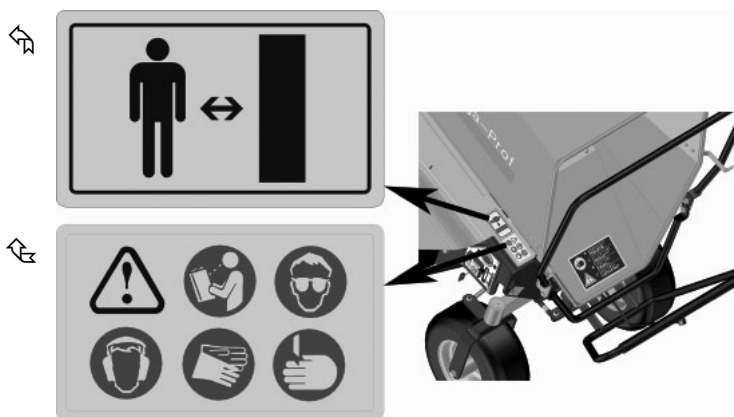
**Caution:**

For your own safety,  
only use genuine ELIET parts on ELIET machines.

## 7. Safety Regulations



### 7.1 Safety messages



Sticker (1) is affixed to the flat safety plates and uses icons to denote the general safety regulations:

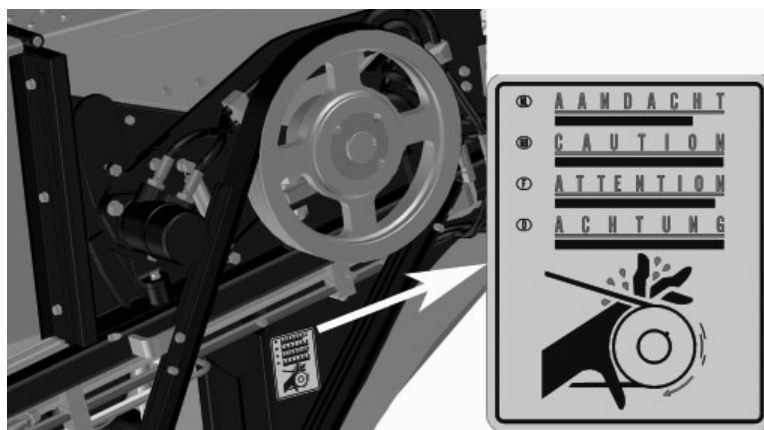
1. Read this user manual carefully in its entirety before attempting to operate this machine.
2. Always wear the appropriate protective clothing when operating the machine (protective gloves, safety goggles, ear defenders).
3. Performing maintenance or operating the machine can result in hand injuries. Be attentive and careful.

Sticker (2) is also affixed to the safety covers and reminds the user that bystanders must keep a minimum distance (10 m) between themselves and the machine.

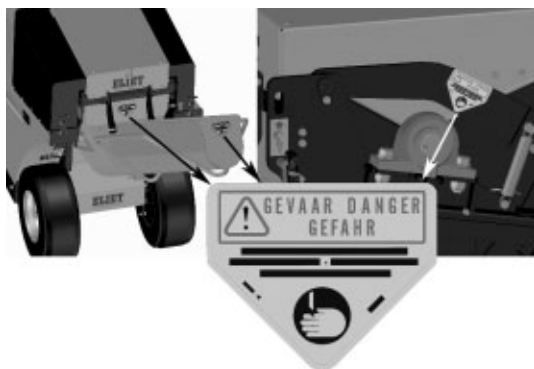


This sticker is affixed to the infeed opening. This sticker warns the user about the dangers of hand injuries and flying debris.

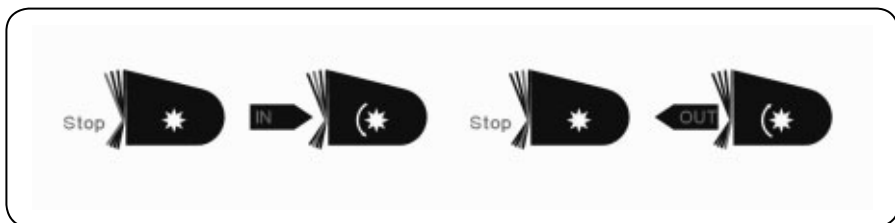
These two risks (that exist when chipping branches) are catered for by the safety screen. This sticker reminds the user how to operate the shredder safely. No attempt should be made to put your hands past the safety screen!



The purpose of the sticker affixed to the chassis is to remind the user about the risks presented by a V-belt.



Sticker is affixed to an arm of the shredder flail and to each output. The aim is to avoid potential hazards that could result in hand injuries.



This sticker is affixed to both sides of the feed hopper and serves as a reminder to the operator when operating the control lever for the feed hopper.

## 7.2 Safety provisions

### Push bar

Control lever for the feed hopper that encloses the entire infeed opening. You can also operate the buffer bracket underneath the hopper with one leg if your hands are not free to do this.

### Safe and ergonomic feed height

The hopper is designed so that it has a low infeed level for easy and ergonomic feeding. The inclined infeed makes for a safe infeed conveyor pressure zone.

### Safety screen

The rubber safety screen is designed to protect the operator from flying debris. No attempt should be made to put your hands past this safety screen !

### Sturdy construction

The robust construction not only adds to the long operating life of the machine, but also provides additional user safety whenever there is an unforeseen emergency.

### Sound absorption

The acoustic housing accommodating the knife drum gives excellent noise reduction whilst shredding, therefore, minimising noise nuisance for both the operator and the surroundings.

### Safe discharge system

The system chosen by ELIET for discharging the chippings is safe and ensures that chippings do not fly out of the discharge pipe. This prevents objects from injuring people and causing damage to the immediate working area.

### Safety system

Safety switches on the discharge screw and the discharge chamber prevent the machine from operating when the safety exclusion zones are not locked out.

### Safety wear

For your safety, we strongly recommend that you use the safety set supplied as standard. It contains your Personal Protective Equipment (PPE), consisting of safety glasses, ear defenders and a pair of riggers gloves.

## 7.3 Safety Regulations

---

### 7.3.1 General Safety Precautions

- The owner must retain the manual during the complete operating life of the machine. 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. Moreover, the Eliet help desk (+32 (0) 56777088) will make every effort to answer your questions.

- Read the chapter that is meant for the Dealer (see Chapter 8) to find out whether the machine has been delivered as per instructions.
- Carefully observe all safety instructions when using the ELIET machine ! Carefully read all the instructions relating to the use of the machine. All of these instructions relate to your personal safety.
- When you purchase the machine, first allow the dealer or a professional to give you some instruction.
- Read and observe all safety messages present on the machine in the form of stickers.
- Under no circumstances may the original design of the machine be modified without the express written permission of ELIET.

### **7.3.2 Careful and Proper Use**

- 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.
- This machine is designed solely for shredding branches, prunings, leaves and all kinds of organic garden debris. Any use other than that for which the machine is designated, is at the risk and responsibility of the operator.
- Never shred frozen branches.
- Never place tools in the feed hopper.
- Never feed materials such as string, metal, plastic into the machine.
- Vary the diameter of the branches that are fed into the machine (do not continually feed in branches that have the maximum diameter of 150 mm). As a guideline, a maximum of 10% of the material to be processed may exceed 120 mm.
- Never use steps or other object to stand on when placing garden waste in the hopper.
- Never work in conditions where the light intensity is less than 500 Lux.
- It should be emphasized that out of deontological reasons, we cannot be held responsible for using our machine for shredding any kind of living beings.

### **7.3.3 Responsibilities of the Operator**

- All persons using the machine are assumed to be 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.
- Disabled persons may only use the machine when they are supervised.
- Children and animals must be kept well away from the machine.
- ELIET recommends 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.**

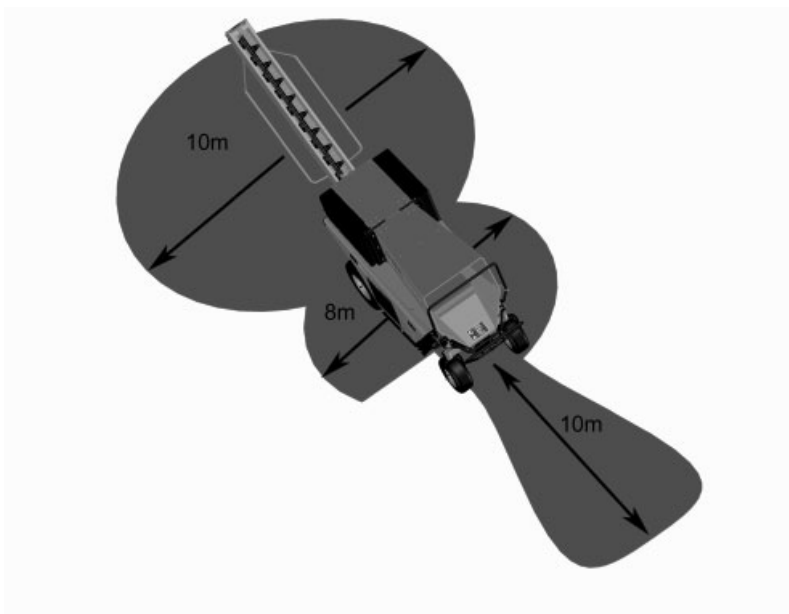
- This machine must only be operated by persons who are in good physical condition. If you become tired during the work, you must take a rest in due time. Persons consuming alcohol or drugs must not operate this machine.



### 7.3.4 Personal Protective Equipment

- You must wear suitable clothing to operate this machine. In other words, clothing that covers the whole body, heavy protective gloves and closed non-slip footwear.
- Do not wear loose fitting clothing (for example, never wear a scarf). Long hair must 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.
- Dust can be produced during shredding. If your airways are irritated by this dust, Eliet recommends that you wear a dust mask in accordance with the 89/686/EC standard.

### 7.3.5 Risk zone



- During the work, do not allow bystanders to enter the risk zone that stretches up to 10 m around the machine.
- Do not take any risks; immediately stop the engine if someone enters the risk zone.
- When leaving the machine, the engine must be switched OFF.
- Once the engine is running, the operator will focus all his attention on operating the machine.

### **7.3.6 Regular maintenance**

- Periodical maintenance is essential. You must therefore strictly follow the maintenance schedule in this user manual (see Chapter 10).
- 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.
- Repairs and maintenance work may only be performed when the engine is at standstill and when the battery is disconnected.



#### **For Your information:**

Also read the engine manual that is also supplied with the machine. This contains the information required for the correct use and maintenance of the engine.

### **7.3.7 Designated Use**

- According to the manufacturer,, branches that have a maximum diameter of 150 mm can be fed into this model.
- The machine weighs 860 kg. Bear this in mind when transporting the machine.
- Maximum ground pressure of the machine is ?????? Always ensure that the ground is capable of withstanding that load.

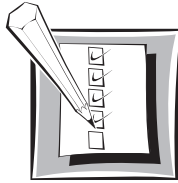
### **7.3.8 Preserving Nature**

Use the machine in a manner that respects environmental regulations.

- a) Avoid running the machine unnecessarily when not at work.
- b) Avoid spilling fuel while refuelling.
- c) Service the engine regularly in order to achieve optimum combustion.

## 8. Dealer Preparation

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- As an ELIET dealer, you should familiarise your customers with the operation of the machine and also point out the possible dangers while using it. The dealer is expected to carefully go over the maintenance points of the machine together with the new owner. The dealer will repeat these instructions until the new owner has fully understood everything.

**In particular, the new owner must be made fully aware of the following fact:**

**After the first 5 operating hours, the blade bolts must be retightened (torque to : 76 Nm).**

- The machine is packed without oil or petrol. The Dealer is expected to replenish with the correct oil and petrol as per the instructions contained in this manual (or in the engine manuals).
- The Dealer performs a test run on the machine and checks whether everything is operating correctly.
- The dealer also checks whether the bolts for the blades are tight enough.
- Lastly, the dealer makes sure that the warranty card is filled in completely and signed. This prevents any warranty disputes. In this respect, read the aforementioned warranty conditions.

## 9. Operating Instructions



### 9.1 Preliminary Checks



**Caution:**

Before you start work, always perform the checks shown in the list below

**Checklist**

- Check whether there is sufficient oil in the machine (see 11.3.1).
- Check whether the fuel tank is completely full. If it is not full, top up with fuel. The engine runs on diesel. Only use diesel that is suitable for vehicles.



**Caution :**

Do not use ordinary domestic fuel oil. The diesel engine cannot run on this fuel. This fuel will contaminate the motor and have an adverse effect on its performance. The use of domestic fuel oil can lead to possible engine problems.

- Make sure that the air filter is not clogged (if necessary, see Chapter 12.4.)
  - Make sure that the blades are firmly in place and in good condition. If they need to be sharpened, this must be done first (see 13.1). Check the blades for cracks and nicks and if necessary, immediately replace them (see Chapter 13.2).
  - Verify that all of the machine's safety items are operating correctly (see Chapter 7.2).
- After 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 Filling with fuel

The level of fuel is indicated on the fuel gauge on the instrument panel. As soon as the indication on the gauge reaches the end of the red zone, it is advisable to replenish the fuel. When the minimum indication is reached, the fuel tank still contains 8 litres of fuel. Only use clean fresh diesel.



### Caution :

The engine manufacturer advises against the use of ordinary domestic fuel oil as a fuel for the engine.



### Warning:

Under certain conditions, diesel is extremely flammable and extremely explosive. Fire and explosion caused by diesel can result in serious burns or damage to property.

Thus, always take note of the following points.

- Topping up with fuel may never occur while an engine is running. Always allow a few minutes for the engine to cool off before topping up with fuel.
- Store the fuel in an approved tank. Keep this tank out of reach of children.
- Never top up fuel at a location where work will be performed later. Always keep all persons at least 10 m away from the work area. This is to prevent any fire risk.
- Clean the area around the fuel tank cap (1) and then remove this cap.

Never fill the tank completely. Top up with fuel until the level of fuel is approximately 30 mm from the top of the tank. Thus, do not fill the tank completely to the opening in the tank.

- A full tank contains approximately 30 litres of fuel.
- Always use a funnel to pour the fuel into the tank. Suitable funnels can be obtained from your ELIET dealer.
- Refit the cap onto the tank as soon as possible.
- Be careful not to spill diesel onto clothing. If diesel does come into contact with your clothing, change this clothing at once.
- It is unsafe and thus expressly forbidden to fill the fuel tank in the vicinity of smokers or a naked flame.
- If fuel comes into contact with the eyes or is taken internally, immediately rinse the eyes with copious amounts of water, and if necessary, obtain medical attention.



## 9.3 Preparing the Work Area

- First, clear the area where the machine will be used. Moreover, the paths along which plant trimmings are removed, must be kept clear, so that the operator does not trip over them. The operator must also ensure that his safety is not compromised.
- You must never operate the machine when it is on a (forward, rearward or lateral) slope.

- The material to be shredded is sorted beforehand. In this way, the operator is sure that no foreign objects will enter the machine with the material to be shredded.
- Foreign objects are defined as: any non-organic object or material that exceeds the prescribed maximum diameter (e.g. metal, stone, plastic, pvc, string, etc.). Some of these can cause serious damage to your machine or can be ejected, virtually as projectiles towards the user.
- Always position the machine so that the wind will blow the dust produced away from the engine.
- Make sure that the machine is positioned so that it still has enough room to leave the work area after a pile of chippings have been deposited.
- Make sure that the vegetation on the ground in the work area does not come into contact with the hot exhaust thus causing a fire.
- Never run the machine in an enclosed area. If this is done, there is a danger of being poisoned by the fumes from the engine.

## 9.4 Starting the diesel engine



### For Your Information

Also read the engine manual.

- Before starting the engine, check whether adequate oil and fuel is present in the engine. If necessary, read the following sections:

Checking the oil level of the engine

Filling with fuel



### Caution

Never start the machine if the air inlet for the cooling radiator is obstructed (to prevent the engine from overheating).

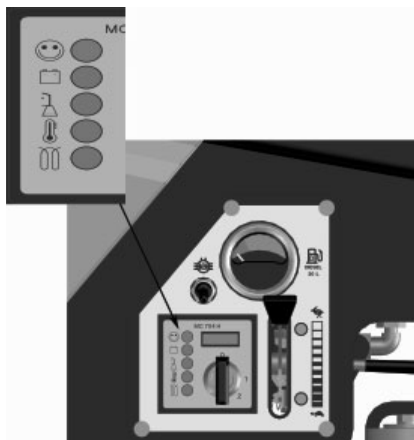
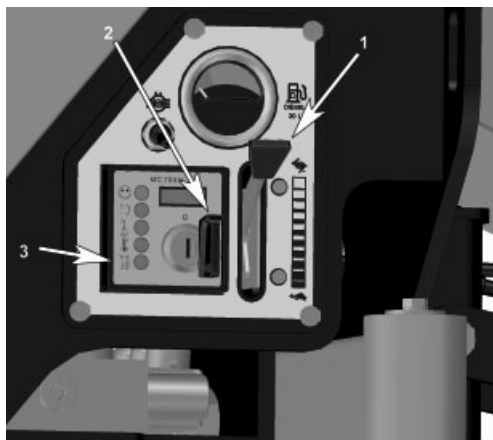
- Also check that the radiator is not clogged due to the presence of dust or leaf debris. If necessary, clean the radiator (read the section about cleaning the radiator).



### Warning

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

- Insert the start key.
- Select a low speed (1).



- Move the key to position 1 and check whether all lamps flash. This checks the operation of the lamps.
- Then move the key between positions 1 and 2 until the lamp of the glow plug extinguishes (2 and 3).
- Turn the key further to position 2 so that the engine starts.
- Allow the engine to warm up for several minutes unloaded and adjust the speed to the desired level (1).



#### Caution

When allowing the engine to warm up unloaded, select a speed where the belt does not hit due to resonance.



#### Warning

The blade shaft is driven directly by the engine. The blades remain engaged. This means that the machine becomes dangerous as soon as the engine starts running. The engine must therefore be switched off immediately if you encounter a situation in which you no longer have control over the work.

Switching OFF the machine:

+

## 9.5 Driving with the machine



The ELIET Mega Prof weighs 860 kg and cannot be moved by the operator without the aid of the wheel drive.

Each of the two large traction wheels is driven by a hydraulic motor.

- The diesel engine must be running before the hydraulic system can operate. Start the engine in accordance with the procedure described in chapter 9.4.
  - Move the throttle to half speed.
- Move the control lever that surrounds the inlet to the STOP position.
  - Make sure that the handlebar is folded upwards and locked with the pin.
  - A rotatable handle is also mounted on the handlebar. This is used to control the drive to the wheels.
  - If you turn the handle forwards, the machine moves forwards. The more you turn the handle, the more the ground speed increases in this direction of travel. If you turn the handle backwards, the will move backwards at a speed that depends on how far the handle is turned.
  - To drive the machine in a certain direction, move the complete handlebar. To turn to the left, push the handlebar to the left. To move the small steering wheels to the right, push the handlebar to the right.
  - When the machine is moving, there is less resistance when you move the handlebar.

TIP: First try to familiarise yourself with the driving characteristics of a self-propelled machine at a large quiet location away from bystanders.





**Note:**

You can also use the throttle to adjust the driving speed (read the previous tip before you use the machine at speed).



• The differential divides up the traction to both wheels and compensates for the difference in turning speed between the wheels when turning. If the differential is not locked, the two traction wheels rotate independently from each other and do not oppose each other. This is advantageous when turning in delicate locations (e.g. on artificial lawns) where it is not desirable to leave tracks behind. If you wish to have an equal traction force on both wheels, you can lock the differential by moving the switch on the control panel.

The differential is locked when the switch is in the uppermost position.



• Take account of the fact that a machine with a locked differential is easier to drive. The same rotation of the handle produces greater acceleration and the driving speed is also increased. This characteristic is useful in order to drive faster over large distances on flat ground covered with tarmac.

**Caution:**

The higher driving speed obtained when the differential is locked requires enhanced awareness. The machine has a large mass and a high inertia.

## 9.6 Using the Machine

- After the shredder has been correctly set-up in its operating area (read Chapter 9.3), it can be made ready.
- You must fold the handlebar downwards in order to be able to feed wood into the feed hopper without encountering any obstructions. To do this, pull the locking pin (1) backwards and push the handlebar downwards at the same time.



### Caution:

After the handlebar has been folded down, do not drive the machine (do not operate the driving system) !

- If the discharge screw has been removed or folded up for transportation, you will first have to put it in its operating position before starting the engine. (Read the chapter about assembling and disassembling the discharge screw).
- Start the engine in accordance with the procedure described in chapter 9.4.
- If the engine has not yet warmed up, first allow it to warm up before commencing the shredding.



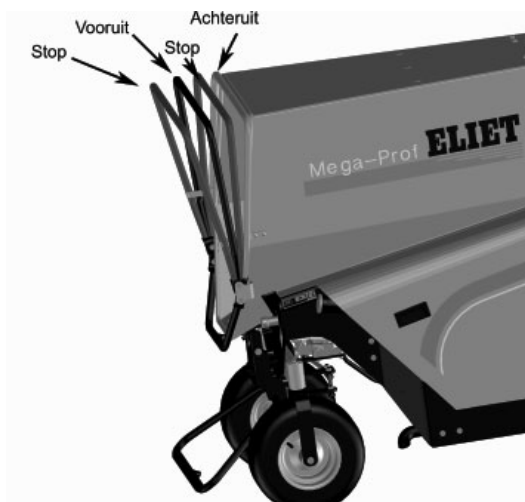
### Caution

Once the engine is running, the blades are rotating, thus anything that is inserted into the feed hopper is irrevocably shredded.

### Caution :

Wear proper clothing, protective gloves and safety equipment as instructed in this manual (see 7.3).

- The operator must be careful when performing work. While he is operating the machine, he must focus his concentration completely on the work.
- The engine is run at full speed before feeding in the wood.
- Set the control lever to position 2. The feed mechanism (belt and roller) and the discharge system (screw) start to rotate (see illustration of switching positions).



- Now the garden waste can be fed in. The maximum lifting height of the feed roller is 180 mm. However, the shredding capacity is designed for a lower figure. Never feed in wood whose diameter exceeds 150 mm.
- Make sure that the garden waste does not contain any foreign objects.
- Insert long branches (> 1500mm) until they are gripped by the feed roller. Throw smaller items of garden waste onto the feed belt so that they are transported to the roller.
- You can use a shovel or fork to make it easier to feed in small items of garden waste. However, never insert these tools past the rubber screen next to the feed hopper.



#### Warning

The operator may never bend forwards inside the hopper while the feed mechanism is operating.



#### Warning

Although the machine is designed to avoid material kickback, there is still a risk of these chippings flying out of the feed hopper. The risk is most acute when feeding in a bare branch with a diameter of > 70 mm if the feed roller starts to grip the branch and lifts it, so that a gap is created underneath the feed roller. Remain alert and make sure that you are standing next to the hopper if this happens.

In order to increase efficiency, select the correct feed speed with this depending on the type and thickness of the garden waste to be processed. The machine is equipped with a speed controller.



- You can use a rotary switch to adjust the feed speed (from 1 to 10). The datum position is as indicated on the illustration.
- If you wish to stop material feed, simply move the control lever forwards.
- To remove what has already been fed in, move the control lever completely backwards towards you.
- The discharge screw will continue to discharge at a constant speed. The anti-blocking system has no effect on the operation of the screw. The discharge screw will only stop rotating if you move the control lever for the feed mechanism to the “stop” position.
- The machine is equipped with an anti-blocking system that automatically interrupts the feed as soon as the engine reaches a critical speed. This system intervenes autonomously so that the operator only has to concern himself with feeding in garden waste.
- However, when feeding in long branches whose diameter comes close to the maximum diameter that can be processed, it is recommended that you remain in the vicinity so that you can manually intervene if the machine is about to become blocked.
  - a. You can adjust the feed speed.
  - b. You can interrupt the feed yourself for a short period by moving the control lever forwards (3).
  - c. If necessary, you can pull the wood back by pulling the control lever backwards (1).

**Tips for optimum use:**

- Caution the ABM system controls the load using the feed roller and conveyor belt. However, neither the ABM nor the operator has any control over garden waste that has already passed the feed roller.
  - When feeding in jagged branches (nodes, forked branches), make sure that these are optimally positioned underneath the roller. If necessary, stop the roller when branches are half-way down and reposition the branches so that the machine does not become "choked".
  - It is recommended to shred trunks with the foliage still on them. Trunks without foliage present a certain risk. Make sure that the end of the trunk is not positioned transversely when it passes underneath the feed roller. For the machine, this is equivalent to the load posed by a branch whose diameter is the same as the length of the end of the trunk that is positioned transversely. Needless to say that this is often too much for the machine. It is therefore recommended that you always feed in trunks against the wall of the hopper. This enables the trunk to be guided and there is less chance that the end of the trunk will end up in a transverse position.
  - Exercise caution when simultaneously feeding in several branches that have different diameters. The branch with the thickest diameter will lift the feed roller, and smaller branches will be pulled in by the blades in an uncontrolled manner. This can pose problems for the machine. It is recommended to feed in branches that have the same diameter.
- Always estimate the processing capacity of the quantity to be fed in. Take into account the fact that it is not always only the new garden waste fed in that determines the required capacity, but also the amount of chippings that continue to rotate in the shredding chamber where they become even smaller, that consume part of the shredding capacity.
- If a large amount of leafy garden waste is fed in all at once, the machine will require some time to process it. Take into account that a great deal of shredding capacity is not required for new wood feed. As soon as you hear that the engine has reached the required maximum speed, you can once again use the full capacity.
- When continuing to shred damp garden waste that offers little resistance, you must regularly check whether chippings have stuck to each other and started to accumulate in the collector. If this is allowed to happen, part of the calibration sieve will become blocked. This means that there will be less room for the chippings to leave the shredding chamber. This also means that the machine will require more time to process a certain amount of chippings, thus the efficiency of the machine will decrease.
- If you detect an accumulation of chippings in the collector chamber, it is good idea to first remove them. (Read the chapter about removing accumulations in the collector).
  - In extreme cases, the screw can suddenly become blocked. You can easily unblock this by allowing the screw to rotate in the opposite direction for a brief period. (Read the chapter about unblocking the screw).

If you notice a strange noise during the work, immediately stop the work. Stop the engine and investigate the cause of the defect. Before proceeding, perform the necessary repairs.

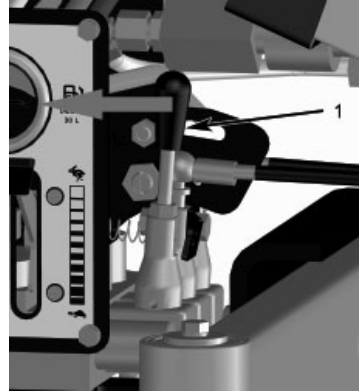
## 9.7 Solving problems

### 9.7.1 Blockage of the discharge screw

If you notice that the shredder suddenly slows down a great deal, quickly check whether the discharge screw is still rotating. In extreme cases, a piece of wood can become jammed and block the screw. Unblocking the discharge screw

- Immediately stop wood feed by pushing the control lever forwards.
- You can use a special handle (that is concealed underneath the feed hopper) to change the direction of rotation of the screw. To do this, move the small handle forwards.
- Move the handle forwards and backwards so that the screw alternately rotates to the left and to the right for a short time.

Caution : You may only allow the screw to rotate in the opposite direction for a short time. Otherwise, chippings underneath the collector will be compressed. This can result in deformation.

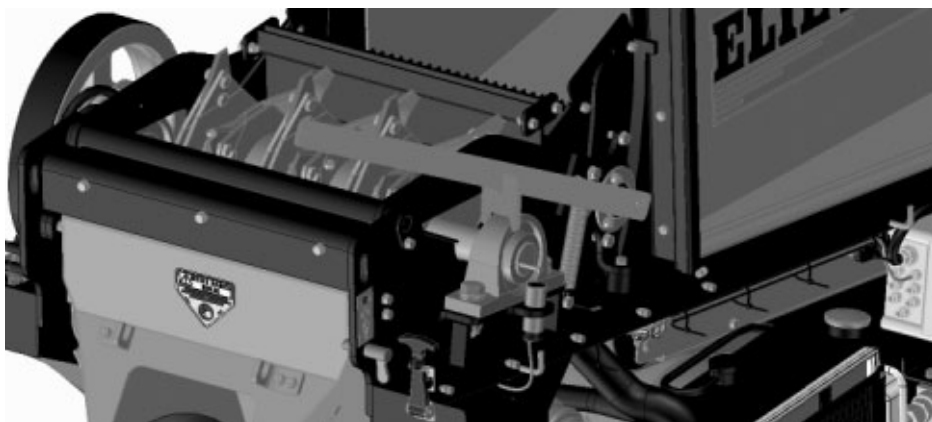


### 9.7.2 Blocking of the rotor

During the shredding, the machine has become “choked” and the engine has stopped. The engine cannot be started because the rotor has become jammed on a piece of wood. In this case, unblock the rotor as follows:

- Stop the engine and remove the start key (9,4).
- Remove the lateral safety covers (11.3.2).
- Open the shredding chamber (11.3.3).
  
- Unhook the lever found on the left-hand side of the machine.
- This lever has two functions for unblocking a jammed rotor:
  - a. To lift the feed roller in order to remove the garden waste that is located underneath the roller.
  - b. To dislodge the rotor that is possibly jammed on a piece of wood.
  
- a. Lifting the feed roller
  - Fit the eye at one end of the lever down over the shaft journal on the left-hand side of the feed roller.

- Resting on the bearing assy, you can now use the lever to lift the feed roller.
- Find an object that is +/- 15 cm high (e.g. a piece of wood).
- Place the object underneath the rubber buffer beside the arm of the feed roller.



The roller is now lifted and remains in this position. You can now remove all of the garden waste or the thick branch that was underneath the feed roller via the load hopper.

#### b. Dislodging the rotor

- A chain hangs from the other end of the lever.
- Place the lever with its bridge on the pulley.
- Insert the chain between the spokes of the pulley and hook these onto the lever.
- You can now unblock the rotor by moving the lever downwards in a circular motion.
- Repeat this several times until the rotor is unblocked and the jammed piece of wood is dislodged.



#### Warning

The blades are razor-sharp. Even if you are already wearing suitable gloves, be extremely careful and avoid any contact with the blades.

## 9.7.3 Engine stops and the Overheating lamp is lit



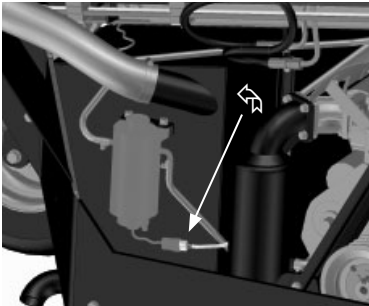
A number of reasons explain why the engine reverts to safety mode and is stopped by the electronics.

- Water in the fuel filter
- A cooling problem
- A lack of lubrication

### Trouble-shooting

#### a. Water in the fuel filter

- Remove the safety cover at the right-hand side (11.2.1).
- Disconnect the electrical flying lead of the diesel filter (1).



- Turn the start key to position 1.
- Check whether the temperature indicator is still into an alarm condition.
- If an alarm is no longer displayed on the control panel, this means that the diesel filter contains too much water.

- Remove the key and drain off the water in the diesel filter (see 11.3.6).

In future, use a better quality of diesel fuel and avoid condensation in the diesel tank.

- If the indicator lamp is still lit, this indicates a problem with the engine cooling.
- Allow the engine to cool down and check for possible causes of overheating.

1. Check the level of cooling liquid in the radiator (engine must have cooled down before removing the plug !).
2. Possible leak in radiator or loose hose coupling.
3. Blocked radiator : inadequate flow of cold air
4. Accumulation of dirt in the cocoon around the engine
5. Fan problem (belt broken)
6. Inadequate lubrication



### **9.7.4 Engine stops from lack of fuel**

Due to inattentiveness, engine has ran out of fuel whilst running, and has stopped. Restarting the engine.

- Remove the safety cover on the right-hand side (see 11.3.2).
- Fill the diesel tank (see 9.2).
- Manually bleed the fuel lines and the filter. To this effect, a priming pump (3) is provided on the fuel filter (repeatedly press and release the button on top of the diesel filter).
- Refit the safety cover.
- Start the engine.



### **9.7.5 Engine no longer runs and the machine must be moved.**

Since the hydraulic pump is powered by the diesel engine, in the event of a defective engine, all hydraulic functions are lost. The wheel drive is also hydraulic. How can you still move the heavy machine in this situation ?

You can try to push the machine a short distance on flat, hard ground. However, the following recommendations must be observed :

- This action involves at least 2 persons.
- Move the black control lever for the feed mechanism to the “Stop” position.
- Fold down the handlebar to the transport position and lock this using the pin.
- Turn the handle on the handlebar and push the machine forwards at the same time.
- You will probably find it difficult to move the machine. You will encounter resistance from the hydraulic drive components.

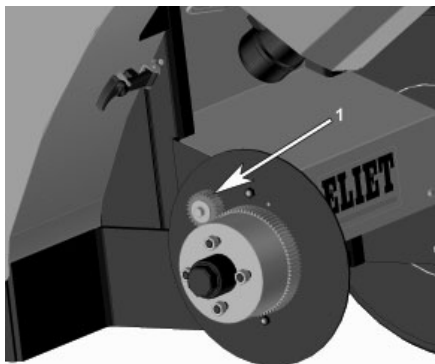
If the distance is too great, or if the ground is uneven, you can disconnect the wheels from the drive system. After doing this, the machine will offer less resistance and can also be towed by another vehicle.

Proceed as follows.

- Support machine underneath a fixed and robust part of the chassis. Make sure that the support cannot sink into the ground.
- Remove the wheel (see 11.4.3).
- You can now remove the small driven gearwheel (1). To do this, unscrew the M8 securing bolt (13 mm spanner) and slide the gearwheel off the shaft (if necessary, with the help of a crowbar).
- Refit the wheel onto the hub and firmly tighten it.
- Repeat the procedure for the other wheel.
- Make sure that the machine is always firmly supported so that it does not tip over.

**Warning:**

Always bear in mind that the machine weighs 860 kg. Moreover, such a large mass becomes uncontrollable when it is put into motion.



When this procedure has been done for both wheels, the machine can be more easily pushed or towed.

**Warning:**

Exercise care on a slope : the machine is still in neutral !

The machine no longer has the hydraulic brake available and is in neutral. Therefore avoid slopes.

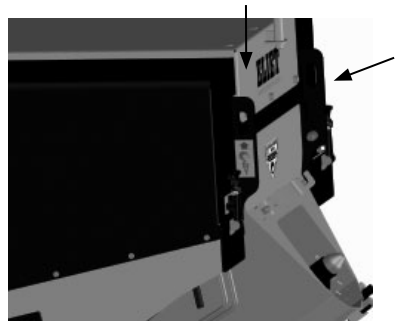
If the engine no longer runs due to the rotor being blocked, and it is not possible to unblock it in the work area, you can consider releasing the drive belt. The engine can then be restarted, so that the machine can again be driven under its own power. How to proceed ?

- Remove the large safety covers at both sides.
- The engine bed plate as a whole is suspended by four bolts to the machine. Loosen the bolts by partially unscrewing the M12 nuts (19 mm A/F spanner).
- Move the engine bed plate therefore releasing belt tension. The play that is now apparent on the belt is adequate to remove this from the pulley. The simplest solution is to remove the belt on the large pulley.

## 10. Transporting the Machine



- Make sure to clear the shredding chamber before moving the machine. Make sure that the feed opening is free of branches.
- Before transporting the machine, it is advisable to disassemble the discharge screw so that the machine is more compact. (Read the section about removing the discharge system).
- Use slip-resistant ramps to load the machine into a van or a trailer. Each ramp must be at least 400 mm wide. The load capacity must be based on a weight of 900 kg.
- Make sure that a sufficiently large exit zone (10 m) is available behind the ramps.
- Make sure that the ramps are securely attached to the vehicle or trailer.
- Make sure that the parking brake of the vehicle is ON.
- The forwards or backwards slope may never exceed 15%.
- The maximum permissible lateral slope angle for the chipper/shredder is 8 %.
- Be careful and composed when loading and unloading the chipper/shredder machine so that it does not tip over and cause an accident.
- When walking down a slope, move down backwards facing the machine. CAUTION : When walking down a slope, the machine can suddenly gain momentum due to its own weight. Make sure that a sufficiently large exit zone (10 m) is available behind the ramps.
- Before transporting the machine, firmly secure it to the vehicle. Use sturdy parts of the vehicle's chassis to attach ropes.
- The machine has 4 attachment points that can be used to secure ropes or attachment systems.



Do not overload the vehicle or means of transport. The machine weighs 860 kg.

# 11. Maintenance



## 11.1 General stipulations



### For Your information:

The dealer's personnel are always at your service.

The ELIET dealer can always rely on comprehensive support from ELIET NV, so that they can work together to find a solution for any problem that you may have. For a repair or for the maintenance of the engine, you can always contact your ELIET dealer or a maintenance service that is approved by the engine manufacturer. If you need to contact these services, please provide us with the Model Number and Serial Number of both the machine and the engine, and also describe the problem in detail.



### 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.

• For your safety,, use only genuine ELIET parts on ELIET machines.

Perform maintenance in a room intended for this purpose. This area must have the following features:

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

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



### Caution

Maintenance performed in an incorrect manner can subsequently compromise the safety of the operator.

- Always make sure that the engine is switched OFF before performing maintenance work. Always remove the key from the ignition lock.
- When performing maintenance, always wear gloves, and also safety glasses for some operations. These are supplied with the machine.

**TIP:**

The maintenance work described can essentially be performed by any person who possesses the requisite technical knowledge. However, ELIET recommends that the machine should be handed in to an ELIET dealer for a major overhaul each year.

Your ELIET dealer is always at your service for maintenance and advice. He stocks genuine ELIET service parts and lubricants. His personnel can always obtain advice and service from ELIET, so that they can provide you with an impeccable after-sales service.

**Warning:**

If you have to remove the safety covers before performing maintenance, you must correctly refit these safety covers after performing the maintenance. The safety covers are provided to guarantee your safety.

**NEVER WORK WITHOUT THE SAFETY COVERS FITTED !**

## 11.2 Maintenance Schedule

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(Summary see Appendix B and C)

### 11.2.1 Cleaning the Machine

We recommend that the machine is cleaned in accordance with the instructions in 11.5.1 every time that it is used. Failure to clean the machine results in :

- Increased wear on bearings, seals and drive belts
- A greater risk of fire
- Decreased cooling of the engine
- Decreased performance
- Inability to detect fractures or cracks
- Damage to paint coats and safety stickers

**Warning**

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

**Caution**

Wear suitable clothing when cleaning. Gloves are required.

Cleaning of the machine is not only limited to cleaning the external parts. Remove all safety covers so that you can also clean the concealed zones. A number of points require special attention.

- Radiator (see 11.2.2)
  - Air filter (see 12.4)
  - Electrical cables and switching components
  - Deposits of fine wood dust underneath the cocoon around the engine
  - Chippings from the grooves of the drive belt
  - Battery
  - Zones around the bearing of the rotor
  - Zone around the bearing of the discharge screw
  - Feed belt bearings
  - Hydraulic valves
- When cleaning, use a dry cloth, soft brush, etc. To remove grease and lubricant, use penetrating oil containing molybdenum disulphide. This spray lubricates and also dissolves rust.
- After brushing away lubricant, it is important to apply new lubricant in order to guarantee the optimum operation of the machine.
- Compressed air is a useful resource that enables easy cleaning of a number of components.
- Pressure-washing of the machine is permitted. However, never point the water jet for long periods in the direction of bearings, electrical contacts or filler caps. Water is known to be the main cause of corrosion and must, therefore, be avoided at all times. Allow the engine to cool down prior to hosing it down using a jet of cold water.
- Before storing the machine, completely empty the feed hopper and the discharge collector. Acidic sap from some types of garden waste can attack the paint and corrode the bare metal surfaces so that rust forms more quickly.

### **11.2.2 Routine check**

Before and after working with the machine, it is advisable to make an inspection and check certain points. This enables you to intervene in time and prevent defects from occurring. This will extend the operating life of your machine.

- Before making an inspection, you must switch OFF the engine and remove the key from the ignition lock.
- Remove both large safety covers (see 11.3.2).
- Check the oil level in the engine crankcase (see 12.1.1).
- Check the hydraulic circuit for any leaks.
- Check the cooling system for any leaks.
- Clean the grill in front of the radiator and blow through the radiator (caution : the cooling fins of the radiator are sharp : thus always wear gloves).
- Check the level of cooling liquid (1).
- Check the air filter, and if necessary, clean it.

- Remove all dust, wood residues, chippings, etc. that have been left behind underneath safety screens (in order to prevent fire).
- Check for, and if necessary, remove any chippings that had become lodged in the grooves of the drive belt.
- Check the tension of the belt by hand.
- Open the shredding chamber and check the blades for wear. Check at random whether the blade bolts are tight enough (read 11.3.3 and 13.1).
- Check the automatic cleaning assembly (see 11.4.6).
- Check the machine for signs of deformation or cracks.
- Check that none of the bolts are loose.

### **11.2.3 Maintenance (after 100 hours and/or bi-annually)**

- General lubrication (see 13.8)
- Renewing the engine oil (see 12.2)
- Checking the fan belt (see 12.8)
- Checking the level of battery acid.

### **11.2.4 Major overhaul (after 200 hours and/or annually)**

- General lubrication (see 13.8)
- Renewing oil filter (see 12.3)
- Checking the level of battery acid.
- Renewing hydraulic oil + renewing filter (see 13.5)
- Renewing domestic heating oil filter (see 12.7)
- Renewing cooling liquid

## 11.3 Various preparatory actions

### 11.3.1 Remove discharge screw or place in transport position.



Two models of discharge screws exist.

The discharge system in the standard version of the Mega Prof has a 1200 mm screw channel for a conveying height of 1500 mm.

A discharge system with a 2070 mm screw channel for a conveying height of 2000 mm is also available as an option. Since the dimensions of the discharge screw are different here, a different securing system and an alternative method for placing the machine in the transport position are provided.



**Caution:**

When removing the discharge channel or placing it in the transport position, you must always use the special cover plate supplied to seal off the discharge opening of the collector that becomes visible.

#### 11.3.1.1 Standard discharge screw

**Placing the discharge screw in the transport position:**

- To reduce the length of the machine during transportation, you can move the discharge channel upwards and lock it in this position. But first allow the collector chamber and the screw to continue to rotate until all chippings have disappeared.
- Always make sure that the machine is completely switched OFF before releasing the discharge channel. Release the clamp that secures the discharge channel to be collector.
- Remove the clamp from the collector.
- Then turn the discharge screw to the right.
- Opening can be more difficult than expected : The conical clamp connection between the two halves of the screw can be tight. Pull or turn the transport screw alongside the discharge flap at the top of the discharge channel. This will make it easier to separate the two halves of the screw.
- Lock the screw with the special pin provided for this purpose.



**Warning:**

Always make sure that the discharge screw is definitely locked in the transport position. This prevents the screw from falling downwards by itself when the machine is moving and thus eliminates the consequences arising from this happening.

**Removing the discharge screw:**

After the lock for the discharge channel has been released, position yourself underneath the discharge channel so that it rests on your shoulder. Hold the screw on both sides and swing the discharge travel through an angle of approximately 45°. Then lift the discharge channel until the pivoting point of the screw is evenly removed from the hinge support.

**Caution:**

The complete discharge channel weighs 27 kg.  
Do not underestimate this weight.

**11.3.1.2 Special discharge screw for a conveying height of 2000 mm****Placing the discharge screw in the transport position:**

- To reduce the length of the machine during transportation, you can move the discharge channel upwards so that it lies completely on top of the machine. But first allow the collector chamber and the screw to continue to rotate until all chippings have disappeared.
- Always make sure that the machine is completely switched OFF before releasing the discharge channel. Release the clamp that secures the discharge channel to be collector.
- Remove the clamp from the collector.
- The discharge channel is equipped with two handles. This requires two people : Grasp the handles and swing the discharge channel upwards. After the discharge channel has passed the vertical position, allow it to gently drop downwards until its entire weight is supported by the machine.
- Make sure that the discharge channel is lowered gently onto the machine.

**Removing the discharge screw:**

- In order to remove the discharge screw from the machine, it must first be swung forwards into the transport position.
- Pull the long hinge pin out of the hinge for the discharge channel with the collector. Before doing this, first remove the split pin from the hinge pin.
- The discharge channel is now disconnected from the machine and, with the help of a second person, you can now remove the shredder.

**Caution:**

The 2070 mm discharge channel weighs 50 kg. Be fully aware of this weight in order to prevent injury when lifting.

### 11.3.1.3 Refitting the discharge screw (same procedure for both versions):

The screw must be refitted taking the following points into account:

- Ensure that both ends of the hinge pins are fully seated in the hinge support.
- Swing the discharge channel downwards.
- Check (extremely carefully) whether the conical end of the screw from the collector is correctly connected to the screw in the discharge channel.
- When the screw starts to rotate, position the two parts so that the connection describes a spiral line.
- Make sure that the safety switch is correctly depressed when the discharge channel presses against the collector.
- Make sure that wood chippings or dirt are not present between the groove of the discharge channel with the collector.
- Always lock in the correct manner.
- If the clamp is not tight enough, adjust it by screwing the tensioning pin further inwards.

## 11.3.2 Removing and fitting the safety covers



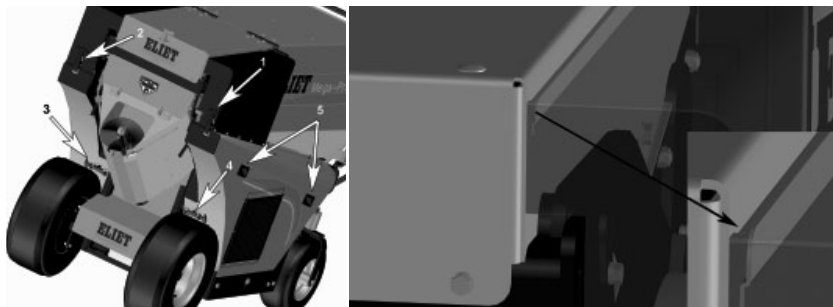
### Warning:

If you wish to remove the safety covers, always first switch OFF the engine and remove the key from the ignition lock.

### 11.3.2.1 Removing the large safety covers

Remove the bolts (1, 2, 3, 4) securing the motor hood.

- Each side of the hood is equipped with two handles that enable you to firmly grasp the hood.



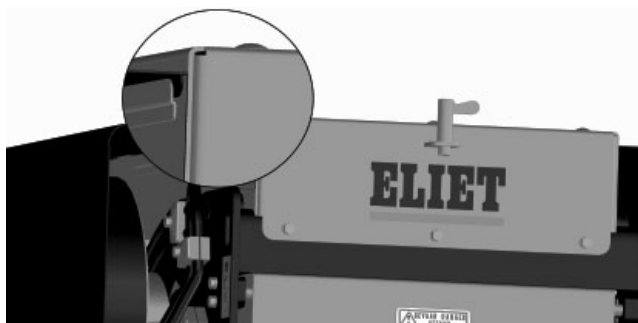
- To remove the hood : first gently lift it upwards until the safety cover at the top becomes detached.
- Then move the cover away from the machine.
- Handle the safety covers with care and store them in a safe and isolated location during the maintenance. Make sure that they do not fall over or become damaged. This would make it difficult to refit them.

### 11.3.2.2 Refitting the large safety covers

- Refitting the safety covers requires some practice. Moreover, it is important to do this correctly, because they are an extremely important part of the safety provisions on your machine, and these covers protect you against possible danger.
- Always handle the safety covers carefully in order to prevent damage to the covers or the machine.
- Always use the two handles when moving the safety cover. This enables you to firmly grasp the safety cover and position it more easily.

During refitting, take account of the following points:

1. Move the safety cover towards the machine until it is approximately 5 cm above the actual position of the machine.
2. At the side of the belt drive, make sure that the safety cover fits underneath the belt guides.



3. Push the safety cover slightly towards the front of the machine, so that the edge of the cover hooks onto the rear of the chassis.
4. Then allow the cover to rest completely on the chassis of the machine and press gently on the round part of the cover until it is firmly seated on the chassis.
5. Check whether the safety cover is firmly seated on the chassis at the following locations:
  1. Check the groove between the feed hopper and the safety cover.
  2. Make sure that the safety cover is firmly seated against the wide edge of the chassis.
  3. Check whether the gearbox is firmly sealed.
  4. Check whether the safety cover at the top is pushed fully downwards.
  5. Check whether the rubber seal between the radiator and the safety cover is firmly sealed.
  6. Refit the rubber boot bolts.

### **11.3.3 Opening the shredding chamber**

To gain access to the blades, there are two procedures to gain access to the shredding chamber:

- For a quick check of the blades or a minor intervention (read 11.3.4)
- Extensive maintenance to the blades (read 11.3.5)



#### **Warning:**

When you wish to inspect the condition of the blades or perform maintenance on the blades, always first switch OFF the engine and remove the key from the ignition lock.

### **11.3.4 Quick check of the blades:**

- Remove the discharge screw (read 11.3.1).
  - Turn the small locking pin (on the rear of the machine) forwards until the pin protrudes.
  - Two black locks are located on each side of the collector.
  - Press your foot against the chassis and pull both handles backwards at the same time.
  - Take into account that the collector weighs 40 kg.
  - Turn the collector as a whole away from you around the hinge point.
  - Turn the collector further upwards until this side takes into place behind the locking pin.
  - Make sure that the locking pin protrudes completely so that the collector does not accidentally swing closed.
  - Now you can easily inspect the blades underneath.
- 
- To reclose the shredding chamber, you simply remove the locking pin so that the collector closes due to its own weight.
  - Always check whether the collector is firmly secured by the two black clamps.

### **11.3.5 Extensive maintenance to the blades**

- Remove both large safety covers at the side (read 11.3.2).
  - Loosen the 3 M8 bolts (13 mm spanner) and then screw the cover on the shredding chamber open around the central hinge.
- 
- It may be necessary to use a crowbar to prise open the first few centimetres of the cover.
  - When prising open the cover, part of the bottom of the flap will come into contact with the blades. Turn the rotor as required (turn the pulley) until you can fully open the cover.
- 
- CAUTION : The cover weighs approximately 35 kg.



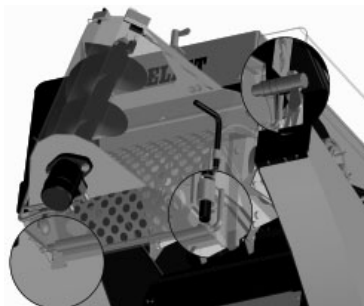
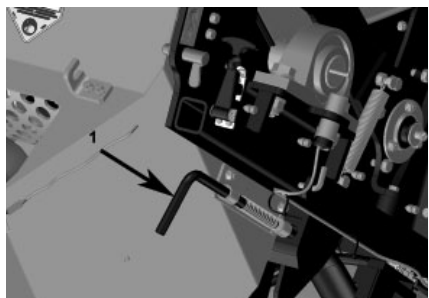
- You now have a comprehensive view of the blade shaft. You can now perform maintenance on the blades whilst adopting a posture that is ergonomically viable.

- When reclosing the shredding chamber, carefully support the cover to prevent it from slamming shut. The bottom of the cover thus once again comes into contact with the rotor. Turn the rotor in order to completely reclose the shredding chamber.

- Screw in the bolts being careful not to damage the screw thread.

### **11.3.6 Opening the calibration sieve in the collector**

- Open the collector as described in 11.3.4.
- The calibration sieve is secured by two long pins in the collector tray.
- First, remove the locating pin from the end of the pin.
- Using pliers, remove the top pin.
- Then open the calibration grill in order to gain access to the collector chamber.



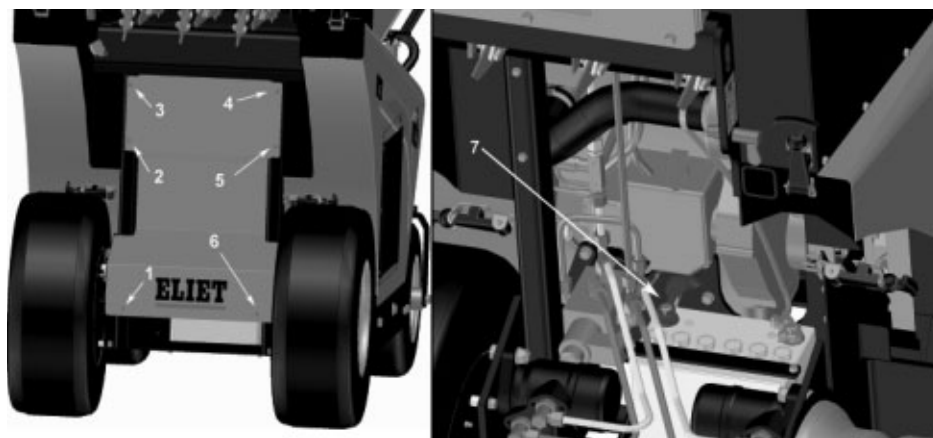
- Before you reclose the calibration sieve, remove all chippings from the collector chamber. Make sure that chippings are not wedged between the sieve and the collector.
- Apply a small quantity of lubricating grease to the pin so that it slides in easily.

### 11.3.7 Access to the battery and the components for the wheel drive

In order to top up or disconnect the battery, or in order to gain easy access to all hydraulic components for the wheel drive or split differential, you must remove the safety cover at the rear of the machine.

- Swing the collector upwards, as described in 11.3.4.
- The orange safety cover is secured by 6 M6 bolts (see illustration 1-6).
- Remove these bolts (10 mm spanner) and remove the cover.

**TIP:** To disconnect the battery : first disconnect the negative pole (black wire) and then disconnect the positive pole (red wire) (13 mm spanner).



### 11.3.8 Swinging open the feed hopper

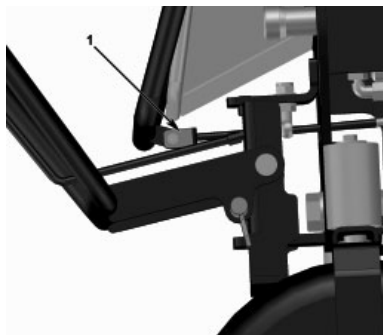
The entire hopper can be lifted and tipped to one side via a central hinge in order to gain easy access to the engine and everything that is located underneath the hopper.



**Warning:**

Before tipping the feed hopper to one side, first switch OFF the engine and remove the key from the ignition lock.

- Remove both safety covers at the side (see 11.3.2.1).
- Swing the handlebar downwards to the operating position (see 9.6)
- Remove the only bolt (10 mm spanner) that secures the hopper to the chassis. This is the M6 bolt that secures the control lever for the feed mechanism to the connecting rod that is routed to the hydraulic distribution valve.



- Undo the two quick-release couplings of the hydraulic pipes that supply the oil to the hydraulic drive motor of the conveyor belt.
- Using a hoist, lift the feed hopper.
- Use a hoisting belt that you secure to two attachment points, as shown in the illustration.



**Caution:**

NEVER allow the motor to run if the quick-release couplings of the hydraulic hoses are disconnected.

This can cause severe damage to other hydraulic motors.



## 12. Maintenance of the motor

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### 12.1 Checking the oil level + topping up the engine oil

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#### 12.1.1 Checking the oil level

In the event of a great lack of oil being detected in the engine, the electronics on the machine reverts to the safety mode and switches the engine OFF. Of course, the machine will then have already operated for a long time with insufficient lubrication. To prevent this, regular checking of the oil level is of paramount importance.

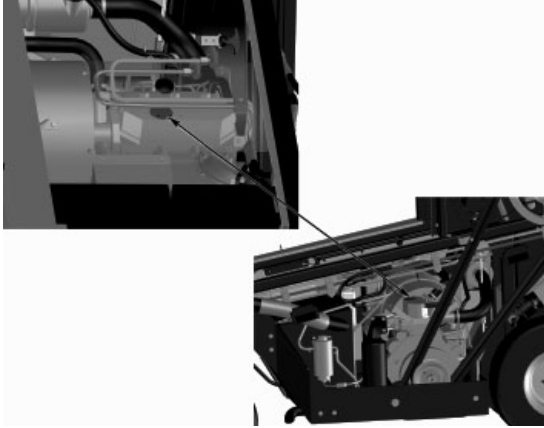
- Park the machine on a level surface so that the engine mounting plate is perfectly horizontal.
- Allow the engine to cool down for approximately 15 minutes.
- Remove the right-hand safety cover (see 11.3.2.1).
- Have a clean cloth ready.



- Look for the dipstick at the rear of the engine (that is provided for measuring the oil level).
- Remove the dipstick (2) from the tube and clean it with a piece of kitchen towel. Insert the dipstick into the crankcase and then remove it. The oil level must reach the "F" mark.
- If this is not the case, then the oil must be topped up (Caution : Do not top up with too much oil!).



## 12.1.2 Topping up the engine oil



- For the topping up, a large filling opening is provided in the valve cover above the engines. Reach with your hand to the tunnel cocoon and unscrew the filler cap.

- Look for the opening provided in the tunnel cocoon (around the engine) and top up with new oil using a filling hose or a suitable funnel.

- If you do not have a suitable funnel, it is advisable to lift up the feed hopper slightly so that you can easily reach the top of the engine. (see 11.3.5).

- Before topping up the oil, first remove the dipstick so that ventilation is still possible in the crankcase.
- Only top up with the recommended oil (see reference list at the rear of this manual).
- During the topping up, check the oil level in order to prevent overfilling.
- Immediately wipe away any spilt oil.



### Caution:

Make sure that no dirt enters the crankcase via the filler cap.

## 12.2 Renewing the engine oil



It is advisable to regularly renew the engine oil. For this 3-cylinder engine, this should be done every 100 hours.

- Ensure that the engine is parked on a level surface and is switched OFF.
- Allow the engine to run until the oil is not too thick; then switch OFF the engine.
- Locate the oil drain plug that is located underneath the crankcase.
- Place a 3.5 litre container underneath the machine.
- Using a SW 17 spanner, remove the (M10) drain plug via the opening underneath the engine mounting plate.
- Refit the drain plug and tighten it using a torque of 25 Nm.
- Fill the engine with new oil (+/- 3.3 l) until the oil level reaches the "Full" mark on the dipstick. (see 12.1.1)



#### For Your information:

The distance between the Min. and Max. levels on the dipstick represents approximately 1 litre of oil.

- Allow the machine to idle for 5 minutes.
- After 5 minutes, recheck the oil level. If necessary, top up the oil.
- Remove any spilt oil and check the engine for leaks.



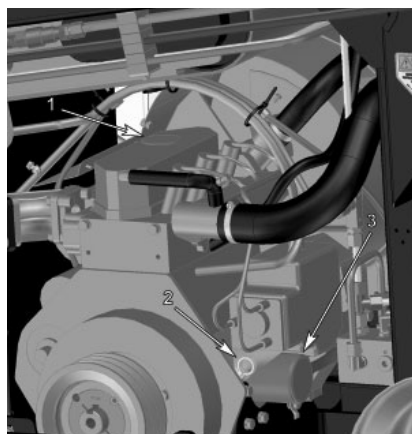
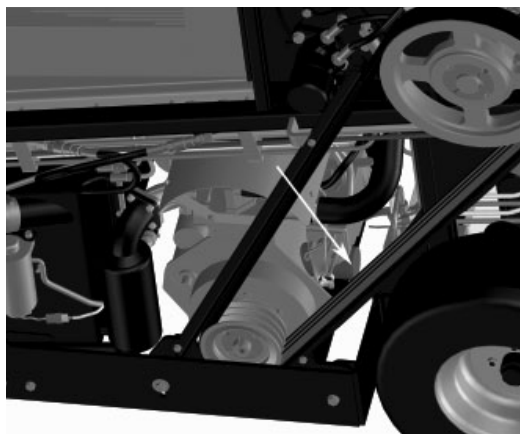
#### Warning:

Insufficient oil in the engine can cause irrevocable serious damage to the engine.

## 12.3 Renewing the oil filter

Make a habit of renewing the oil filter every second time that the oil is renewed (every 200 hours).

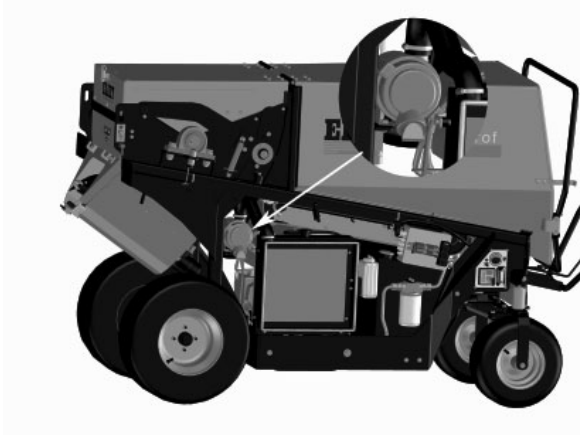
- The oil filter is located on the side of the engine just above the oil sump.
- First drain the oil (see § 12.2).
- Place a container underneath the filter.
- Unscrew the oil filter.
- Smear some new oil on the seal of the new filter.
- Tighten the new filter until the seal comes into contact with the filter adapter.
- Fully tighten the new filter by turning it an additional half to three-quarters of a turn.
- Now, fill the engine with new engine oil (see 12.2).



## 12.4 Cleaning the air filter

The diesel engine is equipped with a Donaldson cartridge filter. The filter cartridge consists of layers of paper and must regularly be dedusted.

- Remove the left-hand safety cover (see 11.3.2.1).
- Locate the air filter that is in the chassis cavity behind the engine.



- Undo the two quick-release couplings and remove the cover.
- Remove the filter element.
- Use compressed air to clean the filter cartridge. Always do this by blowing from the inside outwards.
- Also clean the filter cover and the filter housing. If necessary, also clean the edge (that the lips of the filter cap slide into) so that the filter housing can be firmly closed.
- Refit the filter element into the filter housing with the opening facing rearwards.
- Refit the cap and close the quick-release couplings.



### Caution

The sealing cap of the filter has a top. This is indicated by an arrow and the marking "UP" (see illustration).

INFO : The air filter receives its air from the chamber in front of the radiator. Prevent too many leaves or other objects from sticking to the grill. If this happens, the engine will be cooled less and the chamber in front of the radiator will be a partial vacuum. A shortage of inlet air will adversely affect the performance of the engine.

## 12.5 Renewing the air filter

This is identical to cleaning the air cleaner (see Chapter 12.4). The only difference is that the cartridge is renewed. New air cleaners of the correct type are available from your ELIET Dealer or from an authorized Briggs & Stratton service centre.

## 12.6 Draining water from the fuel filter

The fuel filter is equipped with a water separator with a water level sensor. The filter may contain up to 80 cc of condensed water before the level sensor triggers an alarm on the control panel.

Draining the water collector:



- Place a drain tray underneath the filter.
- Disconnect the cable (1) for the water detection and remove the ventilation plug.
- Unscrew the drain plug (2) approximately 1 turn and drain the water until only pure diesel flows out of the filter.
- Refit and tighten the drain plug and ventilation plug.
- Reconnect the water detection cables.
- Bleed the fuel lines (prime) (pump button (3) above the fuel filter).
- Start the engine and check for leaks.
- If necessary, wipe away any spilled fuel

## 12.7 Renewing the fuel filter

The fuel filter contains a renewable filter cartridge. The engine manufacturer recommends that this fuel filter is replaced between 600 and 800 operating hours.

- Place a drain tray underneath the filter.
- Disconnect the cables for the water detection.
- Remove the drain plug and renew the O-ring.
- Unscrew the contaminated fuel filter.
- Screw that the new fuel filter onto the housing until the seal comes into contact with the adapter. Then turn the filter an additional 1/3 of a turn in order to firmly secure the filter.
- Place a new O-ring onto the drain plug, then refit and tighten the drain plug.
- Reconnect the cables for the water detection.
- Bleed the fuel lines (priming).
- Start the engine and check for leaks.
- If necessary, wipe away any spilled diesel.

## 12.8 Tensioning or renewing V-belt of engine

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It is important to regularly check the tension of the V-belt (every 200 hours) because optimal cooling is extremely important for the engine. The V-belt drives the water pump and the cooling fan. The V-belt can be tensioned via the pulley on the alternator.

- Swing the entire feed hopper upwards (see 11.3.8)
- Loosen both bolts of the alternator.
- Using a lever, push the alternator to the right in order to apply extra tension to the belt.
- Tighten both bolts. (12 mm spanner).
- Check the tension on the belt. A deflection of 9.5 to 11.5 mm is desirable when a 10 kg load is applied on the belt.
- If necessary, apply more tension to the belt.
- Torque the bolts to 19 Nm.

## 12.9 Topping up the cooling liquid

---

The diesel engine is cooled by water. When the engine is running, the liquid that flows through the cooling circuit has an operational temperature of 80 till 90°.

A small reservoir next to the cooling circuit supplies extra liquid to compensate for evaporation. You must regularly check the level of this extra liquid and, if necessary, top it up.

- Before doing this, you must make sure that the engine is switched OFF and that the key is removed from the ignition lock.
- The reservoir is mounted next to the radiator. Remove the large safety cover on the left-hand side of the machine (see 11.3.2.1).
- Only use distilled water or an appropriate product (available in a specialist store for engines).
- Top up the reservoir to the "Max." mark.



**Warning:**

Wait until the engine has cooled down completely before removing the radiator plug.

## 13. Maintenance of the machine



### 13.1 Checking and grinding the blades

Sharp blades will provide the machine with optimum performance and maximum operating speed. Before you use the machine (before each session, that is) enhance your own work comfort by taking some time to check the blades, and if necessary, sharpen them.

**SHARP BLADES = MAXIMUM OUTPUT**

#### Preliminary warnings

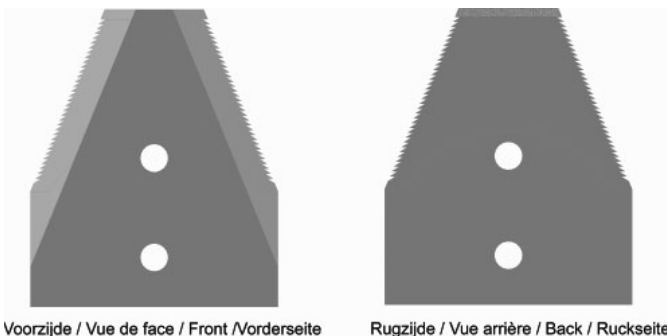
- Always wear safety glasses and ear defenders when grinding blades. You must also wear gloves during maintenance work.
- NEVER try to move the blades with your hands in order to turn the blade shaft. Instead, use the large pulley to turn the rotor.
- The blade has two cutting edges (reversible blade). In other words, when grinding the blade, you must be aware of fact that there is another razor-sharp edge on the blade.
- Remove all wood dust and chippings from the collector and around the blade shaft. This prevents fire caused by glowing metal fragments produced during grinding.
- For your own safety : Always remove the key from the ignition lock.
- Remove the left-hand and the right-hand covers (see 11.2.1).
- Open the cover that provides access to the top of the shredding chamber (see 11.2.3).



#### For your information:

This does not have to be disassembled in order to grind the blades. For this, you can use any small angle grinder that is equipped with a grinding disk for steel.

- The rotor contains 24 RESIST PRO™ blades. The top rear of these blades has a tungsten carbide coating (also called wolfram carbide) that is approximately 15 mm high. This layer of abrasion-resistant high carbon steel enhances the operating life of the top of the blade. In order to keep this layer intact, you may never grind to the rear of the top of the blade.
- The grinding is performed by moving the grinding disk along the bevelled edge.
- Maintain the existing bevel angle.
- Avoid prolonged grinding in the same location (avoid local discoloration of the blades as this indicates heating that can change the structure of the material at a certain location).



- The top of the blade is subjected to the heaviest loads during shredding. Consequently, it is recommended to grind to the top of the blade as little as possible so that it is not weakened too much. Correct and timely sharpening of the blades will extend their operating life.
- After the grinding, carefully close the shredding chamber and refit all safety covers in order to enhance the safety of the operator (see 11.3.2.2).
- If the top of the blade starts to become round, this will result in decreased efficiency during the shredding. Then it is high time to reverse or renew the blades.

## 13.2 Reversing and renewing the blades

Blades sharpened at regular intervals ensure a blade life in excess of 150 hours for each blade edge. When a blade edge is worn out, you can reverse it and use it for a further 150 hours. If both blade edges are worn, renew the blade as a set.

To reverse a blade, proceed as follows.



### Warning

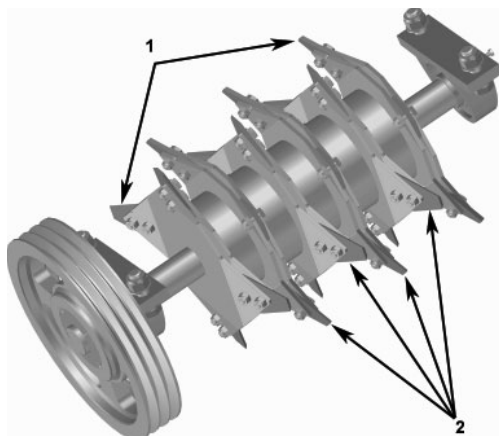
Wear protective gloves as the blades are razor-sharp !

- Remove the key of the machine from the ignition lock.
- Remove the left-hand and the right-hand covers (see 11.3.2.1).
- Open the cover of the shredding chamber (see 11.3.5).



### For your information

Reverse the blades as a set of two as shown in the photographs.



- Disassemble the blades by removing the two M10 bolts on each blade. Avoid injuring your hands by always using two long ring spanners. (17 mm spanner).
- If the bolts are damaged, immediately replace them.
- Do not pull the blades out with your hands, use a pair of pliers for this.

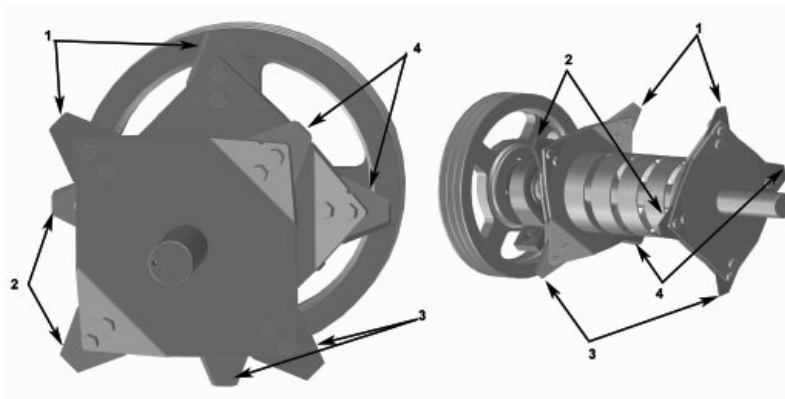
When the reversing or renewing the blades, you must take note of the following rules: In order to understand these rules, the blade shaft is divided into two groups :

Blade group 1 : this group includes the two outermost blades.

Blade group 2 : this group includes the blades that are located between the two outermost blade disks.

### 13.2.1 Renewing the blades of group 1

(Blade pair 1, 2, 3 and 4)





**Rule :** make sure that the rear of the blades in blade group 1 always point towards the side walls of the shredding chamber.

In order to implement this rule consistently, perform the procedure below in a logical manner:

- Remove a blade from the left-hand blade disk, rotate it through 180° and fit it in the same position, but to the right-hand disk. Rotate the blade from the right-hand disk through 180 degrees and then fit it in the opening that appears in the left-hand disk. Repeat these steps until all 8 blades of both disks for group 1 are reversed and fitted.
- Always clean the blades and blade holders before refitting them.

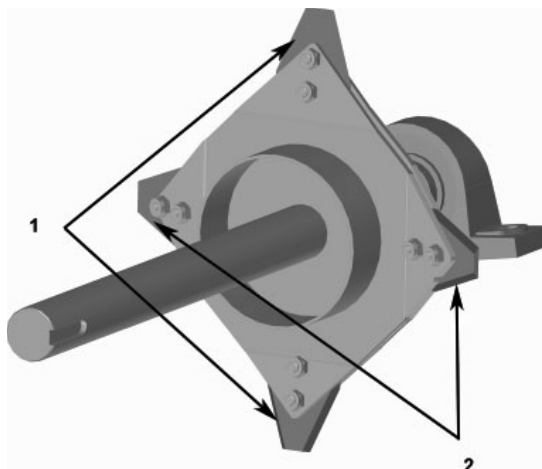
### **13.2.2 Renewing the blades of group 2**

(Blade pairs 1 and 2)

**Rule :** each blade plate has four positions. In two positions, an angled blade is fitted, and in two other positions, a straight blade is fitted. The front of the angled blades must always point towards the axis of the rotor. in the case of the straight blades, the front of one blade must point to the right, and the front of the other blade must point to the left.

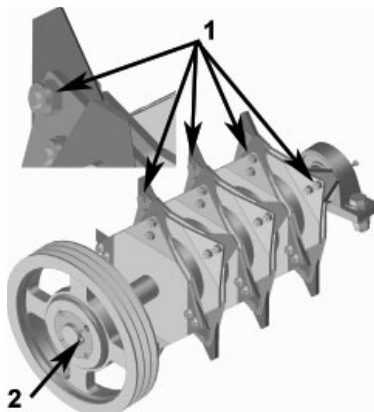
In order to implement this rule consistently, perform the procedure below in a logical manner:

- Disassemble two blades that are mounted diametrically opposite each other. Turn them through 180° and interchange them. Now do the same with two remaining blades. Repeat this for the three remaining blades of group 2.
- Always clean the blades and blade holders before refitting them.



### To renew the blades, proceed as follows.

- The new set of RESIST PRO™ blades can be obtained from your ELIET dealer by stating the article number BU 101 300 900.
- Renewing the blades simply consist of removing the old blades and refitting new blades.
- First remove any dirt between the blade plates before inserting a new blade. To do so, use a stripping knife.
- Respect their rules stated for reversing the blades.
- If the blades are renewed, always fit new bolts and nuts.



### General comments

- When fitting the blades, you must firmly tighten the bolts (torque to 76 Nm).
- In particular, do not forget to make sure that nuts (1) are positioned on the left-hand side when the mounting the blades. Reminder : "The nuts must be positioned on the key way (2) side, or on the pulley side.
- After reversing or renewing the blades, always check the tension of the blade bolts after the first 5 operating hours, and if necessary, tighten them.



### Caution:

Blades that are incorrectly or badly mounted can cause damage to the machine. Moreover, they pose a danger to operators and bystanders.

Failure to retighten the blades after the first 5 operating hours after reversing or renewing the blades, can cause serious damage to the machine.

The owner is not entitled to make any claim for damage and consequential loss under the warranty if this results from inadequate maintenance of the blades.

## 13.3 Tightening the drive belt

The machine is equipped with a long drive belt. After operating for a few hours, this belt stretches so that it loses its tension. Inadequate tension and heavy loading will cause the belt to slip, thus increasing wear and reducing the operating life. Regular checking of the belt tension is thus recommended (every 100 hours).

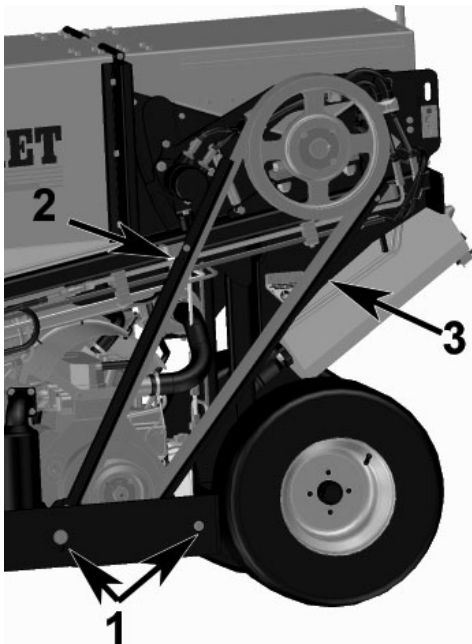


### Caution :

When fitting a new belt, it is recommended to tension it after it has operated for 10 hours.

- As for every maintenance activity, do not forget to switch OFF the engine and remove the key from lock.
- Remove both safety covers at the side (see 11.3.2.1).
- You tension the belt by tipping the mounting plate of the engine. For this, loosen the 4 (M12) securing bolts (1) of the engine support (19 mm spanner).

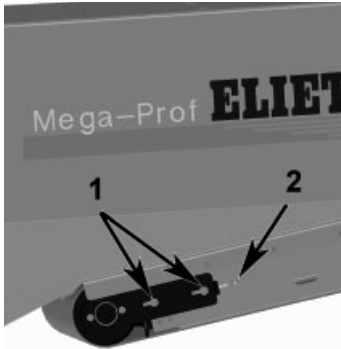
The bolts do not have to be completely unscrewed; 2 turns is sufficient to release the tension.



- Disassembled the two belt guides (at the top and the bottom) (2 and 3) and pull them away from the belt (M8 - 13 mm spanner).
- Adjust the belt tension by tipping the mounting plate of the engine forwards.
- The correct belt tension is obtained when you obtain a deflection of 10 mm on the belt when placing a load of 4.5 kg at a point halfway between the centres of the pulleys.
- When the correct tension is obtained, tighten the 4 bolts (torque to 86 Nm).
- Refit the belt guides and adjust them so that a gap of 3 to 5 mm exists between the guide and the belt.
- Carefully refit all safety covers.

## 13.4 Tensioning the feed belt

Although the feed belt moves slowly and is subjected to a low dynamic load, it will also stretch in the course of time. The conveyor belt must therefore be regularly tensioned (every 200 hours).

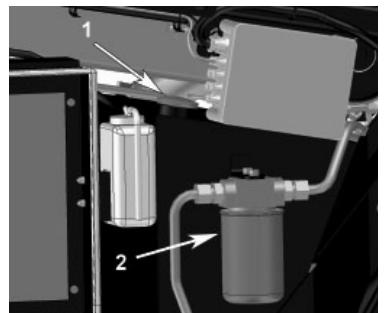


- The feed belt is part of the feed hopper. In order to perform this maintenance easily, the feed hopper must be completely swung upwards (see 11.3.8).
  - Around the front roller, you will find two tensioners that are secured by four bolts.
  - Measure the distance at both sides between the rear of the guide plate and the body of the conveyor belt (see illustration).
  - Slightly loosen these four (M10) bolts (1) without completely removing them.
  - Loosen the (M6) tensioning bolt more so that the tensioner presses the roller forwards and gradually tensions the belt.
- Make sure that the belt is evenly tensioned at both sides said that the roller is not at an angle.
  - The tension is correct when you can only pull the underside of the belt 30 mm away from the body.
  - Before retightening the securing bolts, first measure whether the adjustment on the tensioners is identical on both sides.
  - After the bolts (1) have been retightened, remove the tension on the tensioning bolt (2) and make sure that it does not come into contact with the tensioner.
- Finally, also retighten the lock nut.
- Then carefully refit all of the safety covers.

## 13.5 Renew the hydraulic oil + oil filter

Although the hydraulic system is of the closed type, the oil will become contaminated in the course of time. This contamination is continuously removed by a hydraulic filter. Contamination of this filter will reduce the flow of oil so that cavitation damage can occur. It is therefore recommended to renew the oil and also the filter every 500 hours.

- In order to gain easy access to all of the relevant parts, you first remove the large safety cover on the left-hand side of the machine (see 11.3.2.1).
- Open the filler opening (1) of the hydraulic tank.
- Use an external pump to suck all of the oil out of the tank.
- Unscrew the hydraulic oil filter (2).



- Smear some new oil on the seal of the new filter.
- Tighten the filter by hand until the seal comes into contact with the seating of the filter holder.
- Tighten the filter by turning it a further 1/3 of a turn.
- Fill the tank with new hydraulic oil (capacity +/- 45 l).
- Choose an oil that has a viscosity level of 46 (see reference list in annex).
- Clean up any spilled oil.
- Then carefully refit all of the safety covers.

## 13.6 Checking and topping out the battery acid

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The electrical voltage (12 V) in a wet battery is produced by a chemical reaction within the battery. The battery liquid is one of the reagents in this chemical process. During use, part of this liquid evaporates in the course of time, and the battery has to be regenerate. It is recommended to regularly check the level of battery acid.

Remove the rear cover plate from the machine in order to gain easy access to the battery (see 11.3.7).

The housing of the battery is transparent so that you can check that level of the acid in each of the 6 compartments.

If the level does not to reach maximum in a cell, it must be topped up with acid until the maximum level is reached.

## 13.7 Checking the automatic cleaning assemblies

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A number of cleaning provisions are provided on the machine in order to prevent contamination at the most critical locations:

- Scrapers on the conveyor belt (see 13.7.1)
- Drain opening in collector (see 13.7.2)
- Sealing of the radiator grill (see 13.7.3)

### 13.7.1 Scrapers on the conveyor belt

---

- The front and rear of the conveyor belt is equipped with nylon scrapers in order to prevent too much dirt from falling onto the engine.
- During use, these scrapers become worn; they must then also be adjusted. To do this, place a 0.5 mm feeler gauge between the scraper strip and the feed roller.
- If the feeling it can be easily moved backwards and forwards, then the scraper strip must be adjusted. To do this, loosen the (M6) bolts of the metal clamping plate (SW4 Allen key).
- Push the nylon strip forwards so that it once again comes into contact with the full width of the belt.
- Then firmly retighten the clamping plate.

### **13.7.2 Drain hole in the collector**

- The collector is equipped with a small hole underneath to drain away water and fine debris that is not transported by the screw. However, this hole can become blocked.
- Insert a thin nail into the hole in order to unclog it.

### **13.7.3 Sealing of the radiator grill**

- It is important that dirt does not stick to the radiator so that a continuous flow of air is maintained.
- In order to prevent dirt from entering via the joints, the housing for the radiator is sealed as much as possible.
- Thus regularly check whether the rubber sealing strips are still correctly mounted and whether they form a perfect seal against the large safety cover.

## **13.8 General lubrication**

Since the shredders often operate in extreme conditions, Eliet only uses high-quality materials. ELIET therefore uses special lubricants as from the early stages of the assembly.

The following parts require regular lubrication :

Hinge points and surfaces that can create friction. (see 13.8.1).

Lubrication nipples (see 13.8.2)

Bearings (see 13.8.3)

Chains and gearwheels (see 13.8.4)



#### **Caution :**

Before performing the lubrication, you must switch OFF the engine and remove the key from the starting lock. Gloves are also mandatory for this maintenance.

### **13.8.1 Lubricating the hinge points**

This group, for example, includes the following points on the machine :

- Hinge of the handlebar
- Locking pin of the handlebar
- Hinge points of the handle for the wheel drive
- Hinge points of the front wheel steering
- Joint in the rod for the valve-operated wheel drive
- Ball joints of the front wheel drive rod
- Hinge point of the front wheel shaft

- Hinge of the control lever of the feed mechanism
- Ball joints on the hydraulic valves
- Throttle control lever pivot point
- Pivot point of the throttle valve on the engine
- Nylon sealing plates in front of the feed roller guide.
- Hinge point of the feed roller
- Main hinge of the feed hopper and cover of the shredding chamber
- Connecting cone of the discharge screw
- Hinge of the collector
- Locking pin of the collector

**Procedure to be followed :**

- Whenever possible, disassemble the hinge or the joint.
- Spray a MoS<sub>2</sub>-based penetrating oil onto the parts that create friction and allow the oil to penetrate.
- Brush away all old lubricant and dirt.
- Where parts are not accessible, blow compressed air into the joint hinges in order to remove all dirt and old lubricant.
- After the hinge points are clean again, apply new lubricant.
- ELIET recommends Novatio Clearlube as a lubricant for the hinge points and ball joints. Novatio PFT grease is recommended for surfaces that create friction.
- Wipe away all excess lubricant.

### **13.8.2 Apply lubricant via the nipples**

This group, for example, includes the following points on the machine :

- Grease nipple on the bearing blocks of the blade shaft
- Grease nipple for gear transmission system for traction wheels
- Grease nipple for chain drive of the feed belt
- Uppermost floating bearing of the discharge screw

Procedure to be followed :

- Clean the nipple.
- Using a suitable grease gun, apply new lubricant in the nipple.
- ELIET recommends Sunoco Multi Purpose Grease.
- You only have to pump the grease gun once or twice in order to adequately distribute the grease.
- Wipe away the grease that comes out of the grooves.



**Caution:**

Be particularly careful when pumping new grease into the ball bearings.  
The pressure that can build up in a grease gun can break the seals.

### **13.8.3 Lubricating the bearings**

This group, for example, includes the following points on the machine :

- Bearing in the hub of the front wheels
- Bearing for the pivot point of the front wheel fork
- Bearing of the feed roller
- Bearing of the feed belt

Procedure to be followed :

- Spray a MoS<sub>2</sub>-based penetrating oil onto the bearing and the immediate vicinity of the bearing and allow the oil to penetrate.
- Brush away any external sticking dirt.
- Spray penetrating oil again into the bearing grooves.
- Allow the bearing to rotate for a short period, possibly start the drive that moves the bearing (Caution: : make sure that dangerous zones are well protected)
- Remove the dirt that is forced out with the penetrating oil.
- Use compressed air to blow all of the penetrating oil out of the bearing and the bearing grooves.
- Apply new lubricating oil. For this, ELIET recommends Novatio ClearLube as a lubricant.
- Wipe away all excess lubricant.

### **13.8.4 Lubricating chains and gearwheels**

This group, for example, includes the following points on the machine :

- Gear transmission on the traction wheels
- Chain drive of the feed belt
- Gear ring of the starter mechanism on the diesel engine. Most of these drives already have a grease nipple on their cover plates so that interim lubrication can be quickly performed. However, it is also necessary to perform accurate and thorough lubrication after this interim lubrication via these grease nipples.

Procedure to be followed :

- Remove/disassemble the covers and/or parts in order to expose the drive.
- Wipe away all grease and lubricant in and around the drive.
- Use MoS<sub>2</sub>-based penetrating oil to dissolve the old lubricant.

After the drive is again clean and all dirt and grease has been removed, applying the new lubricant.

- Use a small brush to apply grease to the teeth of the gearwheels. For this, use Sunoco Multi Purpose Grease or any other product of the same quality.
- On the chains, it is better to use a thin liquid lubricant that can also penetrate into the chain. For this, ELIET recommends the Clear Lube lubricating spray from Novatio.
- After applying the lubricant, carefully refit the parts or covers so that dust and dirt are kept out as far as possible.
- All these greases are available from your ELIET Dealer.



## 14. Storing the machine

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- Clean the machine (see 11.2.1).
- Before storing the machine for long periods, we recommended that you first perform the following steps.
- Perform a major overhaul (see 11.2.4).
- Check all nuts and bolts for correct tightness. Drain the fuel tank. Simply run the engine until the fuel tank is out of fuel and the engine stops. Alternatively, use a siphoning kit to dispense the remaining fuel into the jerry can (see the safety instructions in 9.2).
- Apply a new coat of paint or grease to locations where the paint is no longer present in order to prevent rust. You can obtain original paint of the same colour from your ELIET dealer.
- Store the machine in a dry place that is protected from rain, and if necessary, cover it with a tarpaulin.
- Always allow the machine to cool down before storage.
- If the machine is to be stored outside, it must be well protected with a tarpaulin. Ensure that water does not directly fall onto the machine. ELIET strongly recommends that the machine is stored at a location that is well protected from the weather, etc.

# 15. Equipment specifications

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Max. branch size .....	150 mm
Material throughput	
Dimensions .....	1250 x 520 x 1100 mm
Storage dimensions	
Feed opening.....	820x700 mm
Feed height .....	<600 mm
Transport wheels .....	Pneumatic tyres
Total Weight .....	.900 kg
Blade drum .....	.50 mm
.....	.6 double steel blade disks
.....	.24 HS steel blades
Drive.....	.Vanguard 26.5 HP diesel engine

## EC-Declaration Of Conformity - Mega Prof

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Machine: **WOOD CHIPPER**  
Type: **ELIET MEGA PROF**  
Model number: **MA 018 010 130**

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

### **EN 13525: Forestry machinery : wood 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 to the procedures set forward in the directive 2000/14/EG annex III/B clause 50 and directive EN 13525.

Measured sound power level LwA : 114 dB(A)  
Guaranteed A-weighted sound power level : 115 dB(A)

Date: 01/01/2011

Signature:



Frederic LIETAER  
Managing Director ELIET EUROPE NV  
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## **Appendix A**

### **Specifications of the lubricants and the fuel**

Engine oil .....	Synthetic oil for service "CF or CF-4"
Content oilbase .....	3.3l SAE 10 W 30 / SAE 10 W-40 /SAE 10W-50
Fuel .....	Diesel of at least 40 cetane
Content fueltank .....	(30l) (Not ordinary domestic fuel oil)
Hydraulic oil .....	Viscosity 46 cst / High viscosity index
Content hydraulics 45l .....	In accordance with DIN 51524 Part 3 HVLP.
.....	VB SUNOCO Sunvis 846 WR HV
Grease bearings .....	NOVATIO PTFE OIL
Wheels reduction gearbox grease .....	SUNOCO MULTI-PURPOSE GREASE LR - EP2

## **Appendix B**

### **Normal maintenance schedule**

Daily (after each use): .....	Cleaning the machine	§11.5.1
Every 25 hours: .....	General lubrication	§11.5.2
Every 100 hours (bi-annually): .....	Maintenance	§11.5.3
Every 200 hours (annually): .....	Detailed maintenance	§11.5.4

### **Special maintenance schedules**

#### **After 5 operating hours**

- For a new machine: Clean the machine ..... §11.5.1
- After reversing the blades: Clean the machine ..... §11.5.1
- After renewing the blades: Clean the machine ..... §11.5.1

#### **Extra:**

- Tighten the blade bolts.
- Check whether the bolts of the bearings on the main shaft are still tight.
- Check the belt tension on the main shaft
- Perform a visual check for faults (leaks, damage caused by operation, etc.).

#### **After 50 operating hours**

- For a new machine
- General lubrication ..... §11.5.2
- Renewing engine oil + oil filter ..... §11.3.3
- Check level of battery acid
- Renewing hydraulic oil + renewing filter ..... §11.4.6

## Appendix C: Table of maintenance

System	Work to be performed	Normal schedule				Special schedule	
		Daily	Every 25 hours	Every 100 hours	Every 200 hours	After 5 op. hours <sup>(1)</sup>	After 50 op. hours <sup>(2)</sup>
General	Cleaning the machine	§11.2.1					
	Routine check	§11.2.2	§11.2.2	§11.2.2	§11.2.2	§11.2.2	§11.2.2
	General lubrication		§13.8	§13.8	§13.8	§13.8	§13.8
Hydraulic oil	Renewing hydraulic oil + renewing filter				§13.5		§13.5
Engine	Checking the oil level	§12.1	§12.1	§12.1	§12.1		§12.1
	Renewing the engine oil			§12.2			
	Renewing the oil filter				§12.3		§12.3
	Renewing the cooling liquid				§12.9		
Battery	Checking the battery acid				§13.6		
Rotor	Checking the blades	§11.3.4	§11.3.4	§11.3.4	§11.3.4		
	Tightening the blade bolts					<b>Important</b>	
	Controle bolts main axis					<b>Important</b>	

<sup>(1)</sup> For a new machine  
After reversing the blades  
After renewing the blades

<sup>(2)</sup> For a new machine