

# ELIET

MANUAL

**DZC750**



# 1. Introduction

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## 1.1 Read this operation manual carefully

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

## 1.2 Identification data- ELIET OVERSEEDER COMBI DZC 750

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Write the identification data of your machine in the text boxes:

Engine :	<input type="text" value="HONDA GX390 LKE"/>
Stock no :	<input type="text" value="MA 016 020 218"/>
Serial no. :	<input type="text"/>
Year of manufacture :	<input type="text"/>

# 2. Warranty

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## 2.1 Warranty card

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In order to avail of the warranty, please fill out the warranty card and send it to the address below within one month after purchase:

European customers : ELIET EUROPE NV

Diesveldstraat 2

8553 Otegem - Belgium

**T** (+32)(0)56 77 70 88 - **F** (+32)(0)56 77 52 13

[www.elieta.eu](http://www.elieta.eu)

US customers : ELIET USA Inc.

3361 Stafford street (office B) - USA

15204 Pittsburgh (PA) - USA

**T** 412 367 5185 - **F** 412 774 1970

[www.elietausa.com](http://www.elietausa.com)

Read the warranty conditions on the attached warranty card.

Also register your product online on [www.elieta.eu](http://www.elieta.eu).

# 3. Welcome

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## Welcome to the family of ELIET users.

We thank you for the trust that you have placed in ELIET and we are convinced that you have purchased the very best machine. The operating life of your ELIET machine depends to a great extent on how you care for your machine. This manual and the engine manual included will help you on your way. 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 manual carefully before operating the machine. This will prevent incorrect operation of the machine. For your own safety, please observe the safety instructions specified in the relevant chapter. Even if you are thoroughly familiar with operating such equipment, it is still advisable to read these pages carefully.

All ELIET equipment and machines are continually being updated and improved and therefore the specification of your machine may differ slightly in terms of shape, technology and accessories.

The descriptions and technical data in this manual are accurate at the time of printing. Certain illustrations and descriptions may not be applicable to your specific machine, but instead relate to a different version of the machine. We trust therefore that you will understand that the texts and illustrations in this manual cannot give rise to any claims. If you still have questions after reading this manual, please contact your ELIET dealer.

## ELIET AT YOUR SERVICE



### ELIET EUROPE NV

GMT + 1 :

Opening hours: 8 AM - 12 PM and 1 PM to 6 PM  
T (+32) (0)56 77 70 88 - F (+32) (0)56 77 52 13  
service@eliet.eu  
www.eliet.eu

### ELIET USA

GMT + 6

opening hours: 8 AM - 6 PM  
T 412 367 5185 - F 412 774 1970  
Service@elietmachines.com  
www.elietmachines.com

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## 5. Safety symbols

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

### 5.1 For information

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**For your information:**

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

### 5.2 Caution

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**Caution:**

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

### 5.3 Warning

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**Warning:**

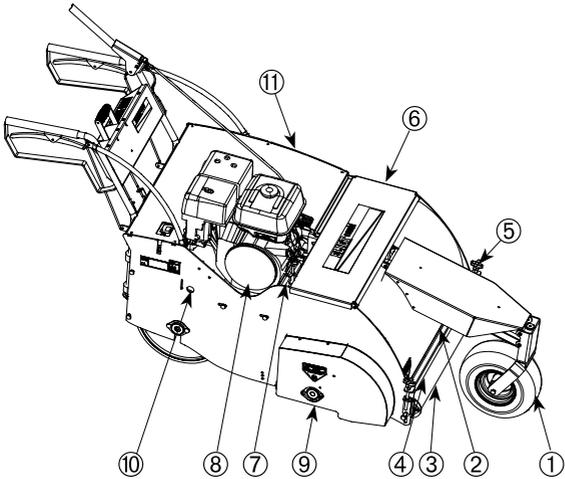
This notice warns you about extreme danger that you must be aware of in these specific circumstances. So for the sake of your own safety, remain alert at all times.

# 6. Main machine parts

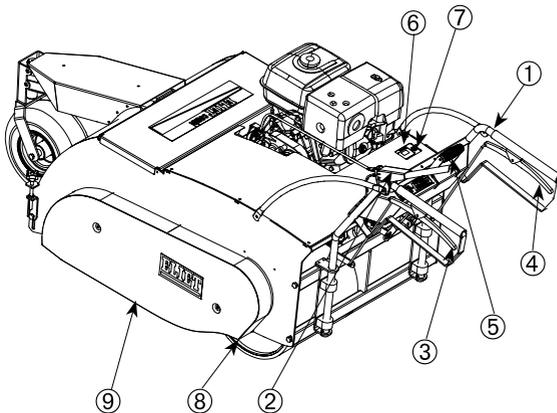
To fully understand the content of this operating manual you need to be fully conversant with the terminology used for the descriptions. This chapter refers to a broad range of machine parts and identifies their names. We recommend that you take the time to study the machine prior to use for a better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

## 6.1 General overview

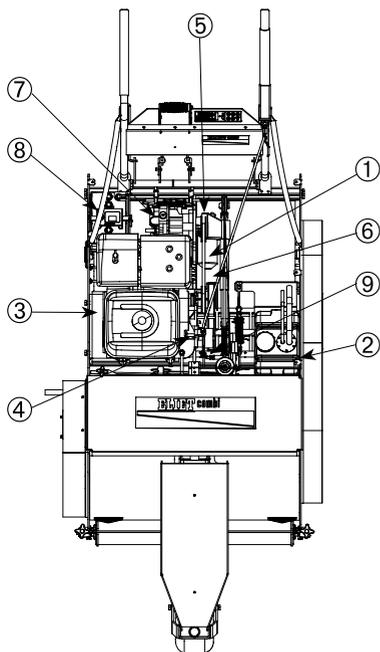
Essential machine parts:



- 1) Swivel caster
- 2) Lifting arm
- 3) Anti-scalping roller
- 4) Roller scraper
- 5) Depth control
- 6) Seed reservoir
- 7) Seed flow rate control
- 8) Engine
- 9) Protective cover for discharge opening
- 10) Oil drain plug
- 11) Large cover plate



- 1) Handlebars
- 2) All-in-one™ control lever
- 3) Operating lever traction left hand roller
- 4) Operating lever traction right hand roller
- 5) Cruise control lever
- 6) Hour counter/RPM counter/maintenance alarm
- 7) Transport lock switch
- 8) Rollers
- 9) Protective cover over transmission

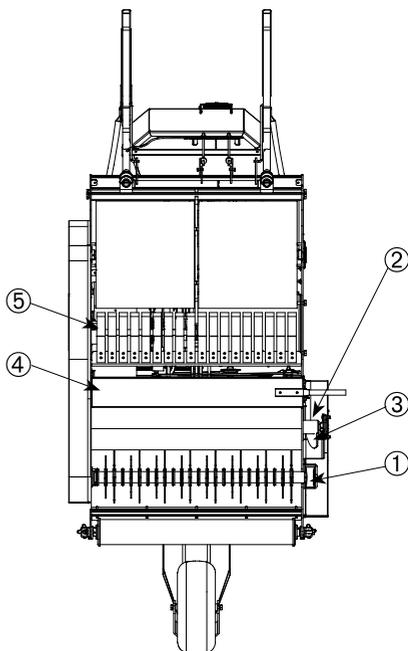


on top - not covered:

- 1) Electric actuator
- 2) Tank for hydraulic oil
- 3) Engine
- 4) Reduction gearbox
- 5) Primary belt drive
- 6) Hydrostat belt drive
- 7) Hydrostat
- 8) Battery
- 9) Camshaft

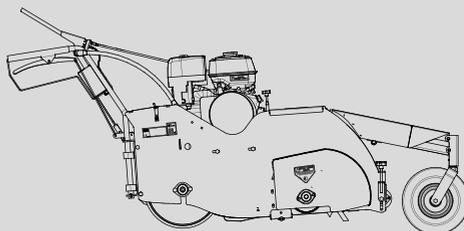
at the bottom of the machine:

- 1) Blade axis
- 2) Discharge jack
- 4) Seed funnels
- 5) Vibration plates

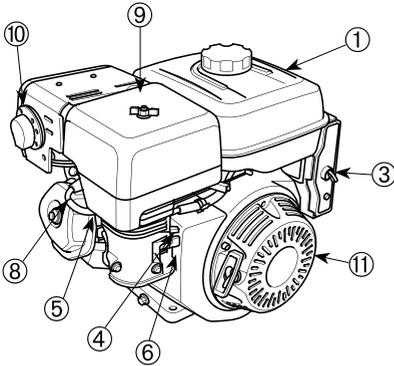


#### For your information::

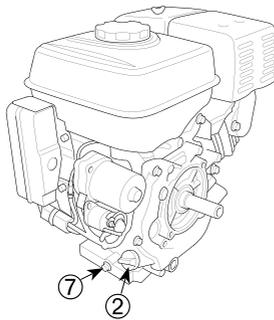
All references to front, rear/back, left and right in this manual are from the view-point of the operator steering the machine.



## 6.2 Engine



- 1) Petrol tank
- 2) Oil filler cap
- 3) Starter lock
- 4) Thrust lever
- 5) Choke lever
- 6) Fuel tap
- 7) Oil drain cap
- 8) Spark plug
- 9) Air filter
- 10) Exhaust
- 11) Ventilation grid



### For your information:

Your authorised ELIET dealer is at your service for any maintenance or advice, ensuring your ELIET machine is always in perfect condition. You can contact him/her for original ELIET parts and lubricants at any time. These service parts are manufactured according to the same strict rules and craftsmanship as the original equipment.



### For your information:

chapter 11 contains an overview of the maintenance requirements and provides advice regarding the maintenance that requires the assistance of an authorised dealer.



### Caution:

For your own safety, only original HONDA or ELIET parts may be mounted this ELIET machine.

## 7. Safety instructions



### 7.1 Safety messages:



#### For your information:

The safety stickers are applied to the machine in clearly visible places. Take notice of the warning messages on these stickers prior to using the machine.



This sticker is glued to the cover of the handlebars. A central spot on the machine, in remains visible for the operator. The sticker is made up of three parts:

1. Before operating the machine the manual should be read and understood.
2. Suitable safety clothing (safety goggles, gloves, ear protection) must be worn whenever and wherever it is required.
3. Working with or performing maintenance on the machine poses the risk of cuts to the hands. Be attentive and cautious.

The second part of the sticker reminds the operator that the engine must be turned off and the spark plug cap removed before starting maintenance on the machine.

The third part of the sticker reminds bystanders to observe a 10 m safe distance when approaching the machine.

This sticker carries stock code BQ 505 010 171.

The first part shows icons that summarise the general safety instructions:



A safety sticker applied behind the large cover of the chain drive warns that no work must be done without the cover in place. Working without the cover poses the immediate risk of clothes or limbs getting caught in the drive and being cut off.

This sticker carries stock code BQ 505 010 130.



This sticker has been applied to the machine in several places:

- Twice on the curved front plate of the machine
- Once on the cover of the discharge opening

The sticker points at the danger of cuts when reaching hands or limbs into the relevant zone. This sticker carries stock code BQ 505 010 070.



#### Identification sticker

This sticker is attached to the right hand side of the machine body. It contains the machine's identification Model

Model no.

Serial no.

Year of manufacture

Engine

Capacity

Weight



#### Guaranteed A-weighted sound power Lw(A):

This sticker also contains the manufacturer's data. The CE label confirms that the machine is in compliance with the applicable European machine directive.

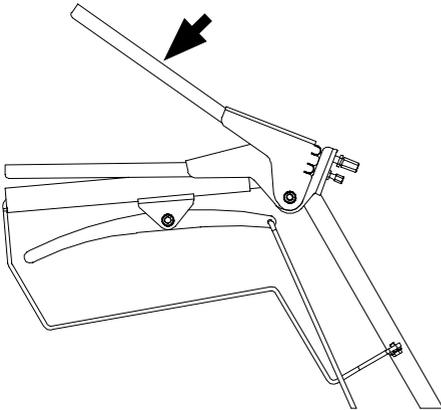
This label is applied to the right hand side of the machine body. The figures on it represent the guaranteed sound power levels (LwA) produced by the machine under normal operating circumstances. (Stock no. BQ 505 112 098)



**Caution:**

Safety stickers that as a result of use or cleaning are either damaged, have been removed or become illegible must be replaced immediately. Stickers can be obtained from any authorised ELIET dealer.

## 7.2 Safety features



**The All-in-one™ control lever (AIOC):**

This black lever, mounted on the handlebars, controls practically all of the machine's drives and key functions.

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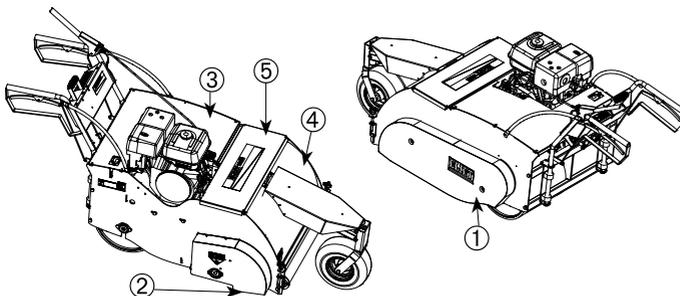
- Activating the blade drive
- Activating the discharge jack
- Opening the seed reservoir
- Command to lower the machine to work depth
- Furthermore, this lever locks the cruise control lever in its desired position. Letting go of the lever interrupts all drives and the machine will come to a halt.

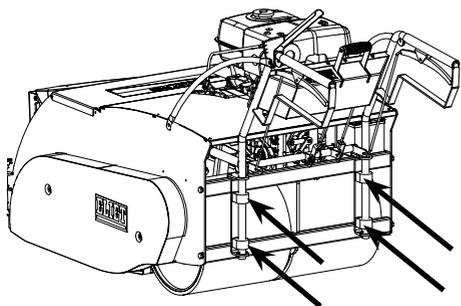
**Protective covers:**

All moving parts are safely shielded by several protective covers.

1. Large protective cover over three chain transmissions.
2. Deflector cover: intercepts flying objects from side ejection and ensures safe deposit of the discharged debris on a strip.
3. Large protective cover: this perforated cap covers the two belt drives, the electric actuator and the camshaft.
4. Curved front plate: an extra safety shield to prevent perforation of the shield over the blade compartment.

5. Seed reservoir lid: prevents users from accidentally reaching into the rotating drum.





**Low-vibration handlebars:** The handlebars are mounted on rubber vibration dampeners and the cover on the handlebars smothers high-frequency vibrations to the hands.

**Sturdy construction:** The robust construction is testimony to the sustainability of the machines and offers a guarantee for the operator's safety under unforeseen circumstances

**Noise reduction:** The powerful engine that provides increased torque by means of a built-in reduction gearbox, takes away the need to work at full throttle. It also decreases the noise by a few decibels. Additional interior rubber cladding absorbs the impact on the plate, resulting in reduced noise and protecting the shields at the same time.

## 7.3 Safety instructions

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### 7.3.1 General safety instructions

- The owner of the machine will keep this manual during its complete service life. A reference guide for the user, it also ensures that the machine is used and maintained correctly at all times. Always refer to this instruction manual if you have any doubts about operations that you are about to perform.
- Always observe the applicable regulations of the Labour Inspectorate to avoid accidents.
- If the instructions stated in this manual are not clear to you, do not hesitate to contact your Eliet dealer for further explanation. The help desk at NV ELIET is at your service to answer all of your questions. (EU +32 56 77 70 88 - USA 412 367 5185 ). (service@eliet.be)
- Under no conditions whatsoever may the original design of the machine be modified without explicit and written consent of ELIET NV.
- Always observe all safety instructions when using this ELIET machine ! Carefully read all the instructions relating to the operation of the machine. They are important for your own personal safety.
- Be sure to read the chapter which is intended for the dealer (see § 8. Dealer's duties) and verify whether the machine was delivered in accordance with the instructions.
- Get advice from the dealer or another professional when purchasing the machine

**For your information:**

Also read the safety instructions in the HONDA engine manual. It contains useful tips about proper use and maintenance of the engine.

- Read and observe all safety messages stickered onto the machine (read § 7.1 for information about the locations of the stickers)

### **7.3.2 Careful and proper use**

- The purpose of this machine is to renovate and rejuvenate an existing lawn. This is done by removing any existing vegetation from the lawn and injecting new grass seed into it. The effect is a considerably higher proportion of young and vital grass, resulting in a better looking lawn with better resistance.
- The machine combines several functions that are executed in one single operation:

**A. Preparatory function:**

- Making seed grooves in the soil (depth between 0 and 30 mm)
- Collecting the dug up soil, moss, felt etc. and transferring it to a strip beside to t

**B. Sowing function:**

- Evenly scattering lawn seed.
- Cutting grooves and sowing the seeds with precision
- Recuperation and racking in the lawn seed
- Closing the grooves and tightening the soil around the seed with a back roller

**Caution:**

this machine is not intended for soil cultivation and must therefore be used only for the above mentioned application.

- Overseeding is a physical effort that requires concentration from the operator. It is therefore advisable to take sufficient breaks as well as adequate food and drink.
- It is unsafe for persons with heart problems and/or balance disturbances to operate the machine.
- Think about what you are doing at every manoeuvre. Do not be tempted to let routine dull your attention. Never act impulsively or on reflex
- Despite the extensive safety features, do not seek out dangerous situations (read an indicative list of risks in appendix B1).

**Warning:**

MOST ACCIDENTS ARE THE RESULT OF CARELESSNESS OR RECKLESS BEHAVIOUR.

- The machine may never be used on pastures, only on existing ornamental lawns.
- It will never be used to work on sites that do not comply with the soil characteristics (read § 9.2 Site characteristics)
- Only work the machine in a forward travelling direction.
- Never operate the machine on frozen soil.
- Never work when light intensity is below 500 Lux.
- The machine may never be used as a means of transport for people or loads.
- Make a thorough inspection of the area where the machine is to be used. Remove roots, stones, sticks, textile, steel wires and other debris. Also pay attention to leads on the surface (electric cables, water, etc.).
- Avoid lawns that contain stones. Choose the slowest operating speed where necessary and reduce the blade depth. Be alert on large stones - immediately lift the machine into transport mode to pass the obstacle.

**Caution:**

the machine's work depth is 30 mm at most; each obstacle in the top layer of the soil therefore constitutes a risk of damage or breakage of the blade system.

- ELIET cannot be held liable for damage to property.
- When the blades are operating and the machine has been set to work depth mode, the operator shall work in - practically - straight lines only. With the machine in this position turning is strictly prohibited.
- Avoid inhaling the machine's exhaust fumes. Exhaust fumes contain toxins, which can lead to poisoning and result in death. Consequently, the engine may never run in a closed environment for more than 30 seconds.

### **7.3.3 Operator's responsibilities**

- The operator of this machine is assumed mature enough and with enough common sense to make decisions by himself.
- All persons using the machine are assumed to be fully conversant with the safety instructions. The operator is fully liable for the use of the machine in regard to himself and to third parties.
- The machine may not be operated by minors. This does not apply to youths over 16 who are learning to operate the machine under the supervision of an experienced operator.
- Children and animals must be kept outside the machine's danger zone. A minimum distance of 10 meters must be observed.
- ELIET advises against lending the machine to others, but if this should occur, it should only be lent to persons who are familiar with it. Always make sure that the user is aware of the potential

hazards and ensure that he/she reads the manual before using the machine. (Appendix B1 contains a list of indicative dangers.)

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



**Warning:**

ONE MOMENT OF THOUGHTLESSNESS OR CARELESSNESS CAN LEAD TO LIFE LONG REGRET.

### 7.3.4 Personal Protective Equipment (PPE)

- The person operating this machine must wear suitable clothing, i.e. covering the entire body. Do not wear loose fitting clothing (a shawl, for instance, is a potential hazard)
- Long hair must be contained using a cap or a headband, or worn in a ponytail.
- Although the risk of personal injury is limited with this ELIET overseeder, the operator's feet are most vulnerable. Sturdy closed shoes with a steel top are highly recommended.
- For protection of the most sensitive senses, ELIET recommends hearing protection.
- Be extra alert when wearing hearing protection: it can impair the ability to hear warning sounds (such as yelling, signal tones, etc.). With this in mind, ELIET strongly advises against hearing protection with a built-in music player.
- As indicated on the safety sticker on the machine, the operator must wear safety gloves and safety goggles in addition to hearing protection.
- Working the soil can cause a large amount of dust, especially under warm and dry weather circumstances. ELIET recommends using a dust mask if your respiratory airways become agitated as a result (masks should comply with the 89/686/EEC standard).

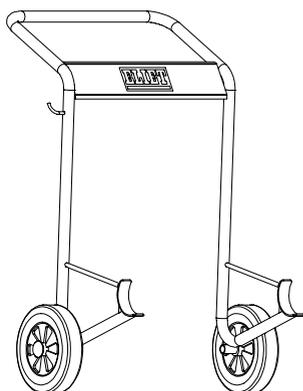


**For your information:**

The operator of the machine can reduce the risk of injury by wearing the proper personal protection equipment.

### 7.3.5 Ergonomics

- Make sure to wear shoes with a proper sole that provide sufficient support.
- Hold the handlebars with both hands.
- Use the wheel traction to steer the machine in the right direction. It is useless to pull or push the handlebar in an attempt to make the machine change direction.
- The DZC 750 weighs over 320 kg; you should therefore never try to lift the machine by the handlebars
- The seed reservoir can hold approximately 12 kg of grass seed. Choosing matching volume seed bags will prevent back problems caused by lifting the bags.

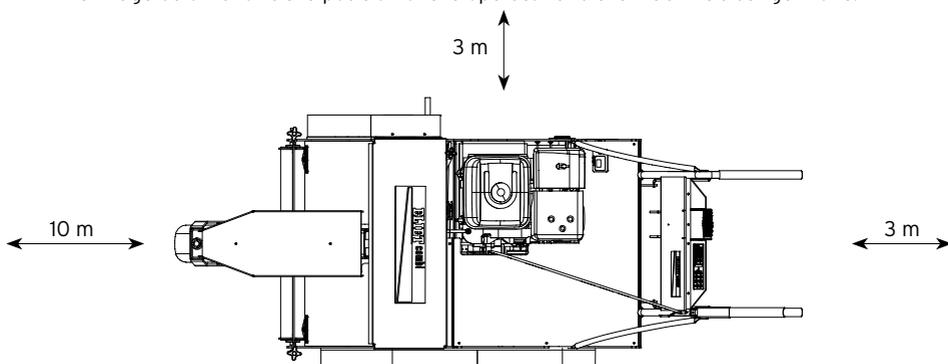


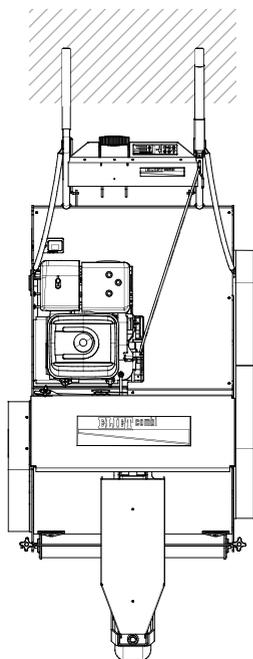
- Using the cruise control lever for operating the wheel traction eliminates having to squeeze the individual traction levers at a long stretch.

- A separate lifting device - the DZC-Jack - is available for lifting the machine to enable inspection of the blades or cleaning the blade compartment (order number: MA 016 001 013) (Read § 11.4.13 Lifting the machine with the DZC jack).

### 7.3.6 Danger zone

The image below shows the position of the operator and the machine's danger zone.





- While working, the operator will always operate the machine from the operating post. This area is safe from flying debris, it provides a clear overview of the machine and all necessary operating tools are within reach.
- For safety's sake, the operator should never allow bystanders within the danger zone which stretches up to 10 m around the machine during work.
- Children and animals must be kept well away from the machine at all times.
- Do not take risks! When someone enters the danger zone, immediately stop your activity by releasing the AIOC\* decoupling lever and switching of the blade axis.
- Shut off the engine when leaving the machine unattended. Remove the key from the starter lock as a precaution.
- Once the motor is running, the operator must focus his full attention on operating the machine.

(\* All-in-one™ Control lever)

### 7.3.7 Periodic maintenance



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

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

- Periodic maintenance is essential. Strictly follow the maintenance schedule in this operating manual (see §11.2).
- The maintenance meter helps you to monitor the number of operating hours (read appendix B4: how the maintenance meter works).
- Inspect the machine prior to every job. (Read § 9.1 and §11.4.1). Any defects must be repaired immediately.
- Always make sure the motor is switched off before performing repairs or maintenance. Always wait until the blades have come to a full stop before performing any action whatsoever.

- If parts must be replaced as a result of wear or failure, you must always turn to your authorised ELIET dealer for original replacement parts. This is of key importance for your own safety.



**Warning:**

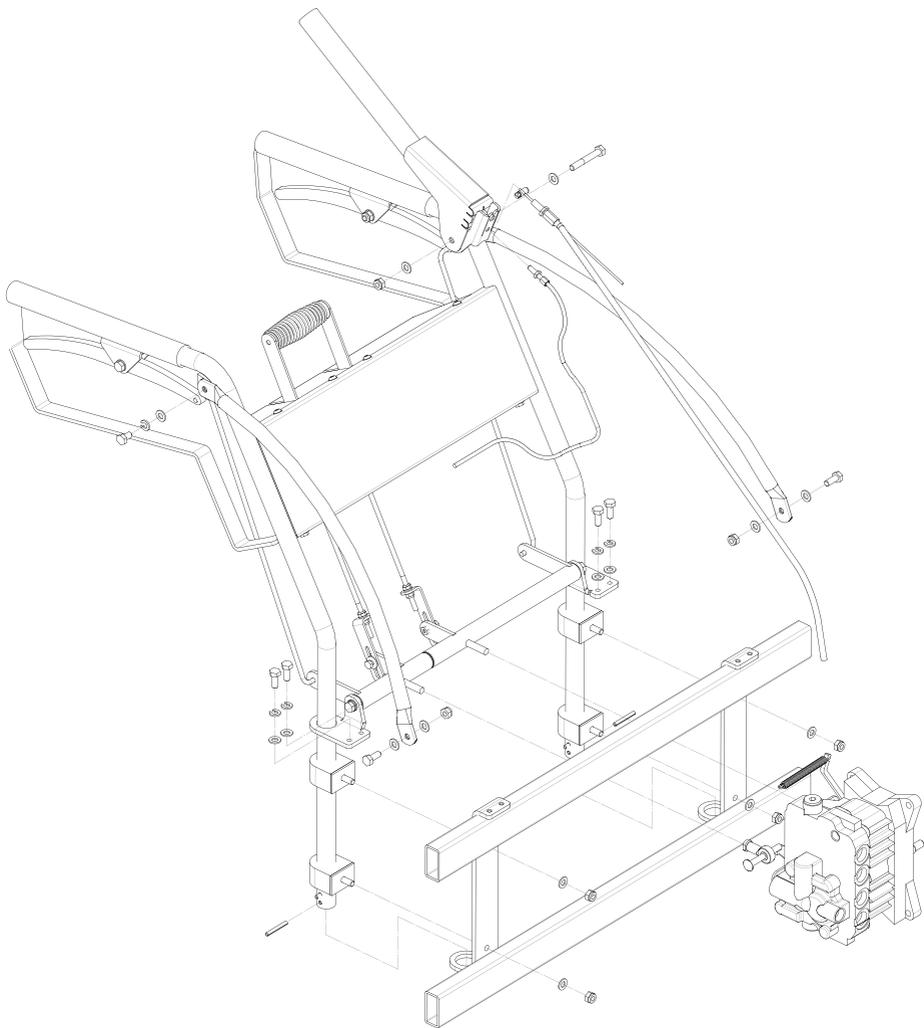
Repairs, maintenance and cleaning must only be performed with the engine disengaged and the spark plug cap decoupled.

### **7.3.8 Limits of the machine**

- ELIET recommends a maximum work depth of 20 mm. In view of your own safety and a long life span of your machine, increasing the work depth is not recommended.
- The DZC 750 should not be used under very low temperature or frosty circumstances.
- The machine weighs 320 kg. Please take this into account when transporting the machine.
- The machine requires a minimum passage width of 930 mm.
- The tread width of the rollers is 725 mm.
- Maximum ground clearance in transport mode is 50 mm.
- The minimum turning circle R is 2300 mm.
- The time required to switch from transport mode to operation mode is 3 seconds.
- Maximum speed forwards: between 0 and 4 km/h or 1.1 m/s.
- Maximum speed in reverse: between 0 and 4 km/h or 1.1 m/s.
- Average operational speed is between 0 and 3 km/h or 0.83 m/s.
- Weight on the front axis: 85 kg; weight on the rear axis: 235 kg.
- The machine's maximum ground pressure is 0.6 kg/cm<sup>2</sup>. Always verify that the surface has sufficient bearing power.
- Average fuel consumption: 3.8 to 4 l/h.

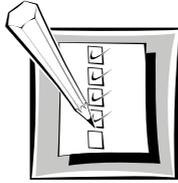
### **7.3.9 In harmony with nature**

- Use the machine in a manner that respects environmental regulations:
  - a) Avoid running the machine without actively using it.
  - b) Avoid spilling petrol while refuelling.
  - c) Oil leaks in the engine or transmission should be repaired immediately.
  - d) Service the engine regularly for optimum combustion.
  - e) Any waste materials resulting from performing maintenance on the machine should always be disposed of properly and in their designated place either for recycling or other environment-friendly processing.



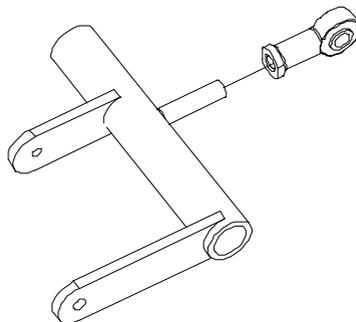
## 8. Dealer's duties

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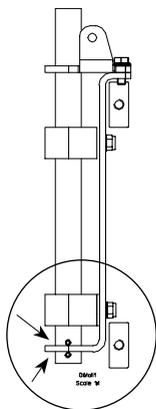


Each ELIET overseed combi that leaves the factory has been subjected to a test run and checked for all functionalities. The machine is then packed for transport.

- The dealer unpacking the machine will check it for any damage occurred during transport.
- The fuel tank will be filled (Read § 9.4 Refuelling).
- Prior to delivery to the customer, the dealer will check the oil level in the machine. (Read § 11.3.3 Checking the oil level).
- The dealer checks that the RPM setting is at the correct level of 3200 RPM
- He then mounts the handlebars onto the machine:
  - at the back of the machine are two joggles, each with a hole of  $\varnothing$  30 mm. Push the tube ends of the handlebars through these holes until the bars rest on the pin.
  - The vibration dampers on the handlebars each contain the end of a bolt (M8). When tilting the machine towards you, you will see that the ends of the bolts correspond with holes at the back of the machine.
  - Slide the protruding rods into the cases of the ball joints.

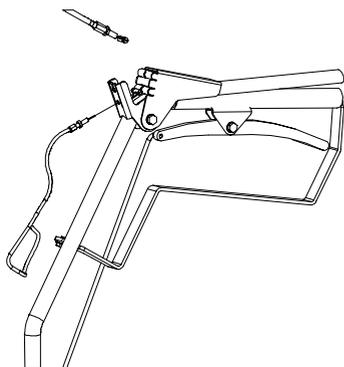


- Place the pinions onto the bolts of the vibration damper and tighten the lock nut (M8) (spanner size 13).

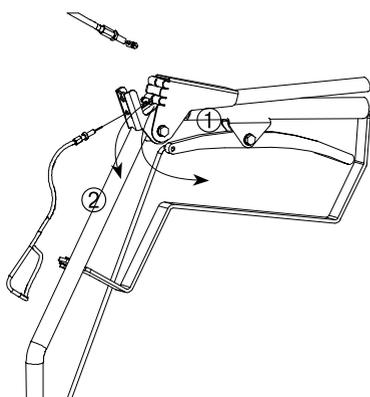


- Also tighten the four bolts (M6) at the top of the holder.

- Tick a locking pin into the bottom of each tube end, under the holder joggle.



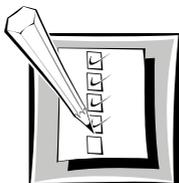
- To either side of the handlebars, mount the plug pins that provide stability to the handlebars. Secure the plug pins with the supplied fixing bolts (M8) (spanner size 13).



- The cable for the All-in-one™ control lever must be wired. Proceed by taking off the black cover plate (read §11.4.12). The belt tensioner now revealed, it can be pressed against the belt with one hand. This releases the pressure on the cable, allowing to hook it back into the AIOC lever. Now screw the adjustment screw at the end of the cable guide back into the handlebars.

- Reset the cable length for the belt tensioner and replace the black cover. (Read § 11.4.3)
  
- The dealer will check that the traction on both rollers is identical while pressing the cruise control lever. The machine must advance in a straight line. (Read § 11.4.9 for the adjustment procedure.)
- The dealer leaves the machine to run for a few minutes and checks that all devices function properly.
- The dealer will set the correct depth setting (15 mm) (read § 9.6.3.2. Setting work depth).
- Every Eliet dealer warrants a long life span of Eliet machines. He will lubricate all grease nipples before delivering the machine to the client. (Read § 11.4.2 General Lubrication treatment.)
  
- Important information for the new owner at the time of delivery:
  - a) The dealer familiarizes the new owner with the machine's operation.
  - b) The dealer informs the new owner of potential dangers.
  - c) The dealer insists that the machine be returned for first maintenance after 10 hours of operation.
  - d) The dealer indicates the points that require regular lubrication.
  - e) The dealer ensures that the warranty card is filled out and signed. This is a precondition for any warranty claim. Please read the attached warranty conditions for more details.
  - f) To enable the client's right to any liability claims, the dealer will register the purchase on the ELIET website: [www.eliyet.eu](http://www.eliyet.eu).

## 9. Operating instructions



### 9.1 Preliminary checks



**Caution:**

Before starting the work, it is recommended to get into the habit of checking the following points:

**Checklist**

- A. Perform a visual inspection of the condition of the machine (read § 11.4.1 Visual check).
- B. Check the oil level. Pull out the dipstick and check that the oil level is not below the minimum mark (If necessary, read § 11.3.3 Checking the oil level of the engine).
- C. Check that the fuel tank contains enough fuel (tank content 6.5 litres). If not, the machine must be refuelled (Read § 9.4 Refuelling).
- D. Check that the air filter is not heavily soiled (if necessary, read § 11.3.1 Cleaning the air filter).
- E. Check that all safety provisions on the machine still function (see § 7.2 Safety features).

After verification and approval of all points on the checklist, the work area can be prepared (read § 9.3 Preparing the work area) and the machine wheeled to it.

### 9.2 Characteristics of the work area

To avoid damaging the machine and to guarantee a quality result of your efforts, the terrain operated on must meet a few conditions:

- The machine will only be used on an ornamental lawn. An ornamental lawn is understood to be soil covered with grass, possibly containing some low-growing weeds (moss, clover, dandelion, daisy, etc.), and that is mowed regularly (once or twice a week).
- The grass must have been cut to a length of 20 mm at most.
- Meadows are excluded from the machine's work area.
- The bottom of the ornamental lawn is flat and does not contain bumps bigger than 20 mm.
- Preferably, the soil does not contain any stones above a depth of 30 mm.
- Check that there are no foreign objects on the lawn (stones, rope, electric cables, steel wires, branches, etc.). Remove any of these objects before operating the machine.

- The soil of the lawn may not be frozen.
- Working a dried out soil under the lawn is useless and had better be avoided.
- Work on a terrain that is wet and soggy after heavy rainfall must be postponed.
- The work speed must be adjusted to hardness and type of soil.
- The maximum allowed (forward) slope gradient is 15°.
- For overseeding purposes, the lateral slope gradient may not exceed 10°.
- Beware that turning the machine requires a minimum surface of 9 m 2 (3 x 3 m). Consequently, it is pointless to use the machine on small surfaces.



**Caution:**

Do not operate the machine on frozen or dried soil.



**For your information:**

The rollers are somewhat profiled in order to prevent grass and dirt from sticking to it. Should the rollers soil too quickly nonetheless, this implies that the terrain is too wet and the work will consequently have to be postponed.

If the terrain does not meet the above mentioned requirements, preparatory activities should be carried out first (read § 9.3 Preparation of the work area).

## 9.3 Preparation of the work area

Overseeding is a cheap and effective way of rejuvenating your lawn. The DZC 750 is a precision overseeder that can bring the seed in optimum growth circumstances under a minimum loss of seed. Some preparation of the terrain is required in order to guarantee an optimum result and enhance growth possibility.

Efficient restoration of the lawn requires the following preparations:

- A. Preparing the terrain
- B. Examine the state of the grass and the soil.
- C. Choice of seed mix, depending on the soil, the use of the lawn and the climate.
- D. Determining the treatment after overseeding to enhance germination.

### A. Preparing the terrain:

- As indicated in § 9.2, the terrain must be free from foreign objects. If it is not, any foreign objects that may hinder a smooth operation must first be removed (stones, branches, ropes, steel wire, electric cables, water hoses, parasol base, pickets, garden furniture, etc.).
- Objects that can't be removed must be marked visibly (tree roots, water drain cover, gas pipes, spraying systems, electric sockets, garden lighting, etc.).
- Also pay attention to any low voltage wires marking the terrain of robotic lawn mowers, electric dog fencing, etc.
- Large stones in the ground must be removed to avoid damage to the blades.
- If the lawn is very uneven in places (height differences in excess of 20 mm), it is recommended to roll the lawn several times, preferably following rainy weather. Fill any deep pits with soil. (Lawn aeration (to approx. 60 mm) can be required after overseeding to prevent the upper soil layer from suffocating.)



#### For your information:

The operable terrain must be checked prior to operation in order to detect any possible problems in advance. (Read § 9.6.2 Planning and determining the track and the work pattern.)

### B. Examine the state of the grass.

Check the current vegetation of your lawn: does it contain a lot of moss or other weeds? What is the grass proportion in the lawn? Does it contain several grass varieties? Are there dense grass patches, or just a few worn grass stalks?

If the proportion of moss vs. grass is  $\frac{3}{4}$  to  $\frac{1}{4}$  per  $m^2$ , do the following:

- Treat the lawn two weeks in advance, preferably before rainfall, with anti-moss spray or a herbicide against broad-leafed weeds.
- Once moss and weeds have died and turned brown and dry, rake them off the lawn (preferably with a dethatching machine). Clean the lawn from the raked debris.
- Just before overseeding, cut the grass to a length of 2 cm at most.

If the proportion of grass vs. weeds or bare spots per  $m^2$  is approximately  $\frac{3}{4}$  to  $\frac{1}{4}$ , proceed as follows:

- Just before overseeding, cut the grass to a length of 2 cm at most.

If pro-active overseeding is the objective (e.g. on a healthy lawn that is rusty after prolonged drought), or when the remainder of mulch has produced a felt layer on the lawn; or if the lawn comprises a mono grass type culture with low resistance, do the following:

- Thoroughly dethatch the existing lawn and clean up the dry and old grass.
- Cut the grass to a length of 2 cm at most.

Once these preparations have been made, overseeding may start. It is recommended to choose the sowing moment prior to a rainy period..

### C. Choice of seed mix depends on the soil, the use of the lawn and the climate.

For an optimum overseeding result it is essential to choose the correct grass mix that corresponds with the soil characteristics and the climate. Ask your seed specialist for advice.

## 9.4 Refuelling

When petrol in the machine is running low, it must be refuelled. The use of fresh petrol is recommended at all times. Use unleaded petrol, preferably with an octane index of 98 or 99.



### Warning:

Under certain conditions, petrol is extremely flammable and highly explosive. Fire breakouts and petrol explosions can inflict severe burns and cause damage to personal property. Consequently, the following points should be observed:

- Never refuel with the engine running. Always allow the engine to cool down for several minutes prior to refuelling.
- Use fresh petrol only. ELIET is environmentally conscious and therefore recommends the use of unleaded petrol. Additives may be used to prolong fuel freshness.
- Store petrol in an approved tank. Keep it out of reach of children.
- Never refuel at the location where the machine will be operated. Keep a distance of at least 10m from the selected work area in view of fire hazard.
- The white fuel tank with a total content of 6.5 litres sits on top of the engine.
- Clean the area around the fuel cap and remove it.
- Attention: a fuel filter may be inserted into the opening of the tank. Refrain from pouring too quickly; allow the petrol sufficient time to penetrate the filter without overflowing.
- If the tank does not contain a sieve, use a hopper with a filter to keep unwanted rubbish from getting into the tank.
- Do not fill the tank completely. Fill up to approximately 10 millimetres from the brim. Never fill it up to the brim.
- Given the flammability of petrol, keep in mind that the hot exhaust is right next to the tank.
- Put the cap back on the fuel tank as quickly as possible. If any petrol is spilled during refilling, the engine should be cleaned immediately.
- Also ensure that clothing does not come in contact with the petrol. If this happens, it must be

changed immediately.

- It is irresponsible and therefore strictly prohibited to refill the tank in immediate proximity to people who are smoking or near open fire.
- If fuel is swallowed or comes in contact with the eyes, consult a doctor immediately.

## 9.5 Starting the petrol engine



### For your information:

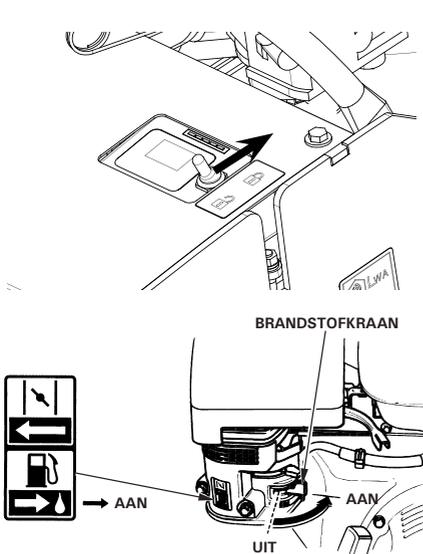
Please also read your engine manual for more information. The 'General' chapter in the manual identifies the key engine functions in § 6.



### Caution:

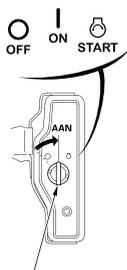
Never start the machine when dust has settled on the engine or between its cooling fins. It reduces proper cooling of the engine and can cause a fire. Furthermore, sand and ground dust can block the motion of any external machine parts.

- If this has not been done when going through the checklist, the engine must be checked for adequate oil (read § 11.3.2 Checking the engine's oil level) and fuel levels (read § 9.4 Refuelling) before starting it.
- Also check that the air filter is clean (read § 11.3.1 Cleaning the air filter) and that the grid covering the opening for suctioning in cooling air is unblocked.

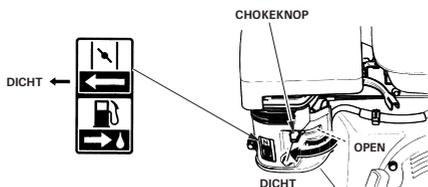


- Prior to starting the machine, ensure that it is in transport mode and check that the transport lock is engaged.

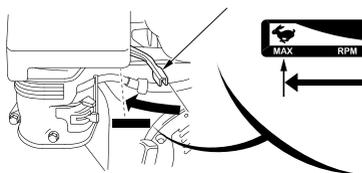
- Open the fuel tap by turning the knob to the ON position. The looking glass under the fuel tap should become filled with petrol.



- Switch the general On/Off switch to ON.



- Close the "CHOKE" by pulling the small lever backwards.



- Put the thrust lever to full thrust (move it to the far left).



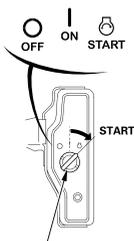
**Warning:**

For optimum protection of your hearing it is recommended to put on hearing protection prior to starting the engine.



**Warning:**

Under no circumstances should you ever allow the motor to run for an extended period (i.e. more 30 seconds) in a closed environment. The exhaust fumes contain toxins that can cause poisoning or suffocation.



- Turn the starter key from 'OFF' to 'START' and leave the starter engine engaged until the engine runs autonomously. Turn the key one step back, to 'ON'.

- Once the engine is running, push back the handle; the CHOKE will open again. This prevents the engine from getting too much fuel. If the choke is not reopened, the engine will slow down and start to smoke heavily, and eventually come to a stop. Restart the engine without opening the CHOKE if this happens.
- Several idle efforts to start the engine may point to a wet spark plug. In that case the spark plug must be cleaned or replaced (see § 11.3.5 Check or replace spark plugs).



**Warning:**

The machine becomes a source of danger when the engine is running. A wrong action can put the machine in motion. In a situation that could lead to loss of control over the operation the engine must be switched off immediately.

Ways to quickly stop the machine:

- release the All-in-one™ lever; all drives will be disengaged immediately.
- Turning the starter key to the OFF position will stop the engine and obviously the driving power.

## 9.6 Operating the machine

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### 9.6.1 Riding the machine



**Warning:**

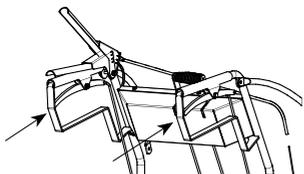
Never run the engine in a closed environment in view of the risk of carbon monoxide poisoning from the exhaust. If the machine is stored inside, doors and windows will be opened for maximum ventilation before starting the engine to move the machine.

#### 9.6.1.1 Riding

The DZC 750 is equipped with three rollers and one swivel caster. The machine can be relocated in work mode or in transport mode.

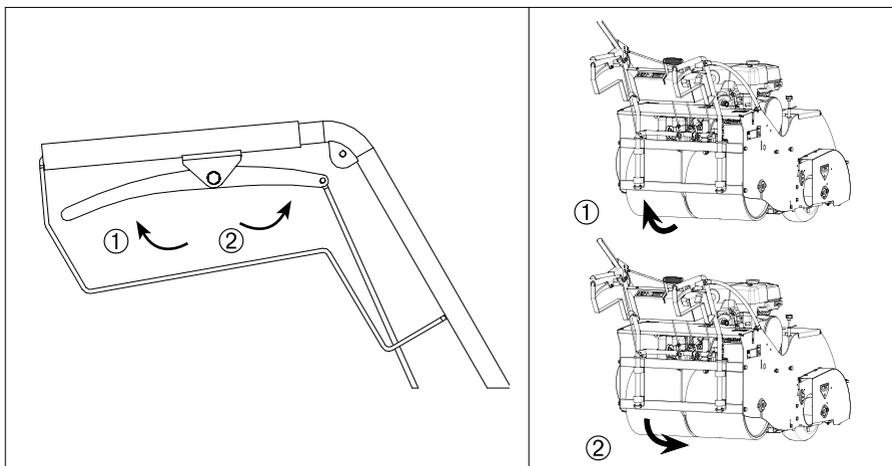
**A. When in transport mode**, the blades will be lifted to maximum height and the machine will consequently lean on its front, on the swivel caster. This swivel caster offers the manoeuvrability that is required for transportation to and from the work area.

**B. In work mode** the blades are set to their work depth. Because in this mode the 24 blades are cutting through the top layer of the lawn, sudden changes of direction which could result in cutting away parts of the lawn must be avoided. For that reason, the machine now rests on **a 75 cm wide roller with minimum manoeuvrability.**



The two rubber rear rollers are each fitted with their own hydrostatic drive.

The control of the traction power on each roller can also be operated separately. To that effect, a lever is provided on both grips of the handlebar.



Each lever hinges at the centre. Pressing the rearmost part of the lever will make the relevant roller rotate forwards (to advance). Pressing the foremost part of the lever will make the relevant roller rotate backwards (to reverse).

The higher the pressure on the lever, the faster the roller will rotate; this allows for control of the riding speed.

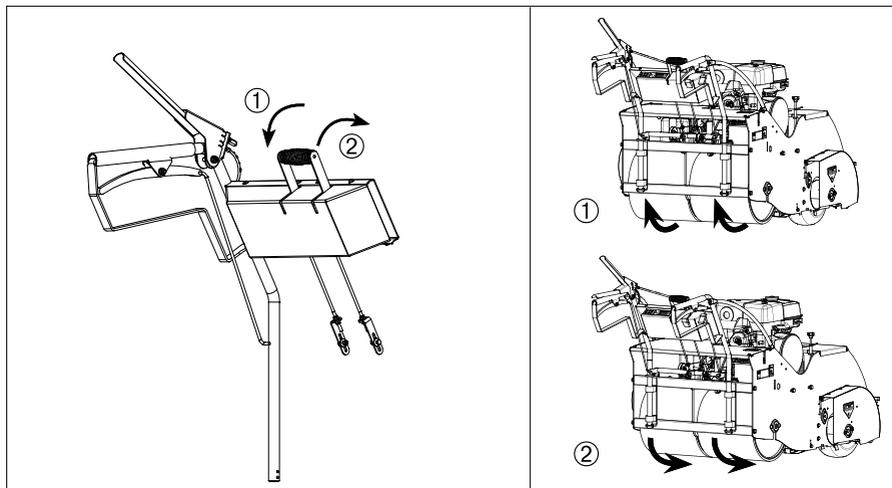


**Caution:**

During transport, the DZC 750 travels on a swivel caster. It has a delayed reaction to the traction difference applied to move the machine in a certain direction. However, as soon as the swivel caster swings to either side, it will put the entire front of the machine in motion. Try to anticipate to this and react by countersteering immediately.

In order to advance or reverse in a straight line, both rollers must rotate in the same direction at the same speed. To realise this, both levers must be pressed evenly. Advancing in a straight line will be the most apparent motion both during transport and overseeding. Consequently, both levers need to be kept in a constant position at a stretch, which could easily lead to tiredness and cramp. To avoid this, ELIET has fitted cruise control onto the machine.

### 9.6.1.2 Cruise Control



The **Cruise control** is a black lever located at the centre of the steering panel. When pressing the lever down, a rod mechanism ensures simultaneous activation of the drive on both rollers, causing the machine to advance in a straight line.

Speed will usually be higher in **transport mode**, which will require quicker adjustment of that speed to circumstances and obstacles on the path of transportation. The operator will therefore constantly have to keep one hand on the cruise control to control the speed.

In **work mode**, the speed will usually be lower, and a quick change of direction will not often be desired. In this mode the main objective is to set a stable and constant speed. Pressing the All-in-one™ control lever (AIOC) to put the machine into work mode will automatically shut a clamp that will hold the cruise control lever in the desired position.

After setting the driving speed the cruise control lever may be released; it will stay locked in the set position. As soon as the AIOC lever is released, the cruise control lever will jump back to zero and the DZC 750 will come to a standstill.

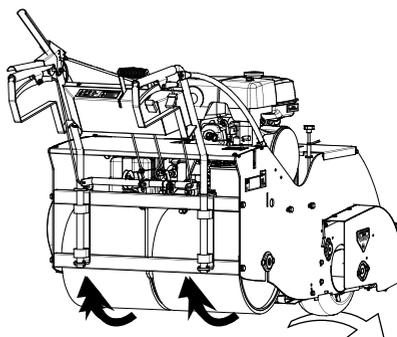
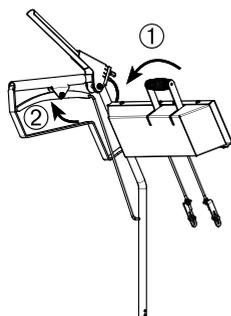
### 9.6.1.3 Turning the machine

Taking a curve with the DZC 750 requires the creation of different traction between the two rollers. This is easily realised by putting different pressure on the traction levers on the handlebar.

to **take a left turn**, the speed of the right hand roller must exceed that of the left hand roller, hence the right hand lever must be squeezed more tightly.

To **take a right turn**, the left hand roller will have to rotate faster than its counterpart. More squeeze on the left lever will have the desired effect.

If **cruise control** is used during the overseeding process (in work mode), extra traction will also be required on the roller positioned on the outside of any turns in the path. Again, the corresponding lever must be squeezed beyond the set cruise control position to realise the turn. Releasing the lever after the turn has been made will reset the traction to the cruise control position.



### 9.6.1.4 Making 180° turns

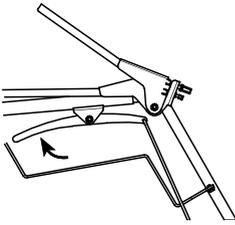
If you reach the end of a strip and want to turn around to overseed the adjoining strip, the machine will have to turn 180 degrees on a limited work area.

During transport it may also be necessary to round a corner or take a short turn. The hydrostatic drive allows for 'zero-turn' manoeuvrability:

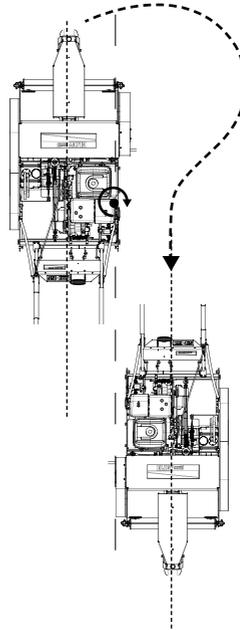
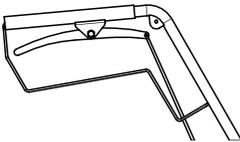
**Radius 1/2 W :** To realise this we push the difference in driving speed between the rollers to an extreme.

By stopping one roller and driving the other, the machine will take a short turn with the centre of the turning circle lying at the outer edge of the still roller.

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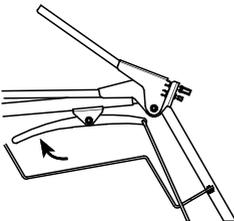


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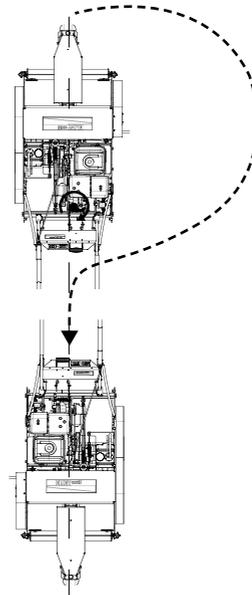
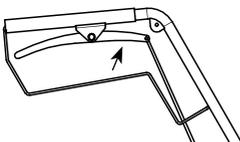


**Radius 0 (Zero-Turn)** : if the space to turn is even more limited, a shorter turn can be realised by placing the centre of the turn between the two rollers. To realise this, one roller (outside of the turn) will be rotated forwards, whereas the other roller (inside of the turn) will be rolled backwards. The machine will now basically turn around its own axis.

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### 9.6.1.5 Avoiding slippage

The steel rollers are covered with a rubber layer which ensures enhanced riding comfort and noise reduction when the machine rides on a paved track. Because the rubber has hardly any profile, the rollers have limited grip force.

A humid surface or a wet lawn increases the risk of slippage which can cause damage to the lawn. This can be avoided as follows:

#### **A. Starting**

The DZC 750 weighs 320 kg. The grip force of the rollers on the surface must overcome this resistance to put the machine into motion from a still position. Well-dosed activation of the traction on both rollers is of key importance in this process. Once the mass is in motion, the inertia helps to reduce the roller resistance which in turn decreases the risk of slippage.

For overseeding activities on a humid surface, it is recommended to bring the machine into motion before lowering the blades to work depth. After all: the blades tucking into the soil as well as the anti-scalping roller increase roller resistance which at the start inevitably causes the rollers to slip.

#### **B. Turning**

Turning also requires resistance: the required swing of the front wheel generates additional roller resistance. Since traction mainly comes from one roller when the machine turns, this can induce slippage on a humid surface (limited grip force combined with extra resistance from turning and starting). The best method to turn the machine is to briefly continue in a straight line with well-dosed traction on both rollers, and then gradually slowing down the inner

roller until it stops while simultaneously increasing the traction speed on the outer roller; this procedure will make the machine turn in one smooth movement.

Friction around the inner roller can be avoided by rotating the inner roller backwards in balance with the turning movement.

### 9.6.1.6 Riding a sideways slope

Lawns are very often slanted or sloped. When overseeding on a slope, the machine will be inclined to bear off towards the valley. If using cruise control under these circumstances, the slope angle must be compensated by putting extra traction on the roller on the valley side.



#### **Caution:**

While riding on a slope, the engine may suddenly stop running. This has to do with the engine's oil safety (Read § 9.8.2 Engine stops running during the work).

### 9.6.1.7 General remarks



#### Caution:

Speed must be reduced while advancing to the work area. The higher the speed, the quicker the reaction required when running into obstacles and the greater the inertia forces that need to be controlled.



#### Warning:

Obstacles in the surface may cause a difference in grip force which may provoke a sudden unintentional turning movement. Be alert.

- Choosing an obstacle-free access route towards the terrain will considerably reduce the risk of damage to the surface.
- Avoid riding the machine across unstable or soggy surfaces. If the rollers slip and the 320kg weighing machine digs itself in, it will be hard to release it. Take account of a surface pressure of 0.6 kg/cm<sup>2</sup>.
- Make sure that the tyre of the swivel caster is inflated to the correct pressure of 2.7 kg or 40 psi.
- If you ever start losing control over the machine, immediately let go of the handlebars so that all operating levers switch back to neutral and all drives are deactivated.
- ELIET cannot be held liable for damage to property.
- If the machine consistently bears off to one direction when using cruise control, the settings must be adjusted (Read § 11.4.9 Adjusting wheel traction).
- For the correct method to ride the machine in and out of a van, read § 10 Transport of the machine.



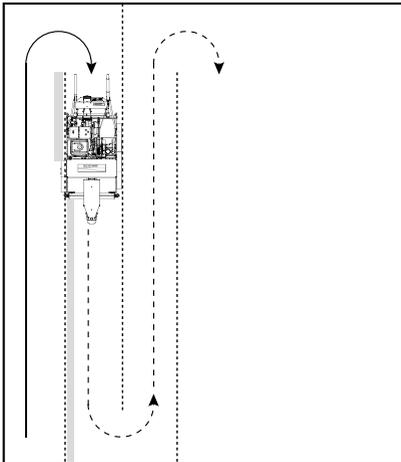
#### For your information:

*MACHINE BREAKAGE OR DEFECTS RESULTING FROM INCOMPETENT DRIVING ARE EXCLUDED FROM THE WARRANTY CONDITIONS.*

## 9.6.2 Planning and determining the track and the work pattern.

- A work pattern will depend on the state of the terrain and the preparations already made. The following criteria apply.
  - Shape of the terrain. Long strokes with few turns enhance the work speed.
  - The terrain's profile. Slight slopes can best be worked by riding the slope lengthwise. For steeper slopes, the best work method is to drive up and down the slope.
  - Which obstacles must be considered? The angle for approaching obstacles depends on where it is easiest to make a turn.
  - Eliminating turning zones. This can be important for an easy and quick finish of the turning zones after completion of the rest of the terrain.
  - If the work is done under windy conditions, the route will be arranged such that the dust produced during the operation will be blown away from the machine.

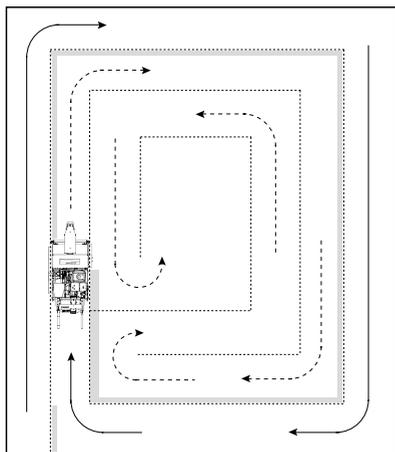
The DZC 750 sets itself apart from other overseeders in that it picks up the cut debris and transports it to the side of the machine. This provides two key benefits: firstly, the grooves don't get covered by debris, which enhances the yield of the seed injection; secondly, the thus assembled debris is easier to clean up afterwards. The collection of the debris must therefore also be taken into account when defining the work route. There are three options:



- **Parallel lanes back and forth:** in this pattern, the debris from the first lane will be deposited on the next lane to be worked. A 180° turn is made at the end of the lane and the machine runs the next lane parallel to the first one. Because the debris from the first lane was deposited on the lane that is now being worked on, it is integrated into and discharged together with the debris of that second lane. The machine now riding in the opposite direction, it deposits the collective debris of the two lanes on the first lane.

**Advantages :** two lanes have only one deposit strip; this method also creates an attractive striping pattern.

**Disadvantage :** many turning points slow down the work.



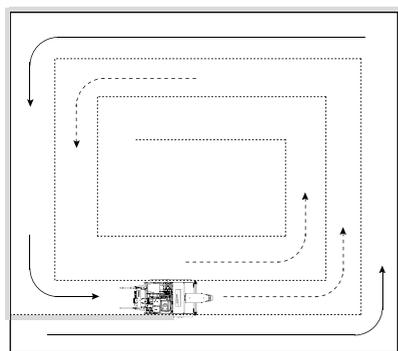
• **Clockwise route** : A spiralled route, starting from the outside and moving inwards by running parallel lanes. Because the discharge channel is on the right side of the machine, the debris of the first lane is deposited on the second lane. The second lane beginning at the starting point of the first lane, the machine picks up the debris from the first lane, feeds it through the entire length of the discharge channel and together with the debris from the second lane, deposits it on the third lane. At the end of the second lane, when ready to start the third lane, we are faced with a debris strip from two lanes. If we were to run the third lane analogous with the second, the machine's discharge channel would be unable to process all the debris and lose some of it. To avoid this from happening, we turn the machine around and ride the third lane parallel to the second, but in the opposite direction. While the machine still picks up the debris from the first and second rounds, it now lands very close to the discharge channel and thus causes limited burden. Loss of debris will be kept to a minimum. The debris strip from lanes one, two and three are now deposited on lane two. Once the third lane is finished, the machine will be turned around again to run the fourth lane in a clockwise direction.

**Advantages:**

the debris of three lanes is collected on one single strip; few turns.

**Disadvantages:**

risk of unintended loss of debris. Concentration is required.



• **Anti-clockwise route** : also involves a spiralled route, similar to the one described earlier. The key difference is that the outer round is started anti-clockwise, and the discharge channel is therefore on the outer side of the route. At the end of the first round, the second round simply begins next to it, in the same direction. The discharge jack deposits the debris from the second round on the first that has just been oversewn. This pattern is followed until overseeding of the terrain is completed.

**Advantages:**

perfect waste deposit with minimum risk of loss or blockage.

No turns.

**Disadvantages:**

Each lane has its own debris strip, which means more cleaning up to do.

## 9.6.3 Machine set-up

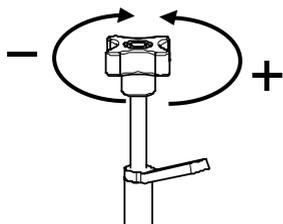
### 9.6.3.1 Setting the seed flow rate

1. The engine must be turned off prior to refilling the seed reservoir.
2. Three things must be checked before refilling the seed reservoir:
  - Verify that the white seed funnels under the seed reservoir are not blocked and free of condensation. Moisture would cause the seed to stick, resulting in blockage of the seed channels.
  - To prevent any seed from being sown during transport, verify that the scatter openings of the seed reservoir close properly when the machine is in transport mode.
  - Check the sides of the seed reservoir for condensation.
3. The seed must be sieved when refilling the seed reservoir to remove any foreign objects (small stones, sticks, grass clippings) that could otherwise prevent proper closing of the seed openings.

Always fill the reservoir to a sufficient level to ensure constant and consistent scattering.

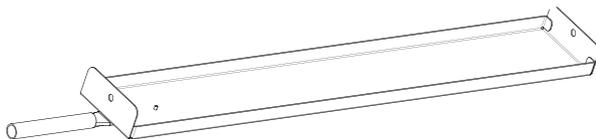
The seed reservoir has a volume of 45 l. At an average seed flow rate of 2 kg per 100 m<sup>2</sup>, one full reservoir will carry sufficient supply to sow a surface of approximately 600 m<sup>2</sup>.

- The desired sowing volume must be set on the seed reservoir prior to sowing. The amount of kg per m<sup>2</sup> will depend on the instructions of the seed supplier, the type of seed and the sower's experience.
- An adjustable bolt controls the scatter openings of the seed reservoir, allowing more or less seed to go through. Setting the bolt is done via an adjusting screw (1) that in turn controls a stop boss (2). Turning up the adjusting screw will open the bolt and enlarge the scatter openings. Pushing down the adjusting screw will conversely close the bolt and decrease the size of the scatter openings.
- **In short: turn the screw head clockwise to decrease the seed flow rate; turn the screw head anti-clockwise to increase the seed flow rate.**



- Always release the lock before turning the screw head.

- Appendix B2 contains a diagram showing the seed flow rate of a standard seed mix in function of the seed reservoir openings (1-10).
- For most standard seed mixes, the ideal setting will be somewhere between 6 and 7.
- This is a rule of thumb for setting the seed flow rate. Since the flow of seed mixes largely depends on the seed size, deviations from the curve presented in the diagram must always be anticipated.
- To determine the exact weight of the seed, proceed as follows. Purchase the seed collector unit that can be ordered separately (order number: MA 01 001 013) and attach it under the scatter zone of the seed funnels. Make a test ride of 13 metres, then weigh the seed that was caught in the collecting unit and multiply that figure by 10. The outcome is the flow rate per 100m<sup>2</sup>.

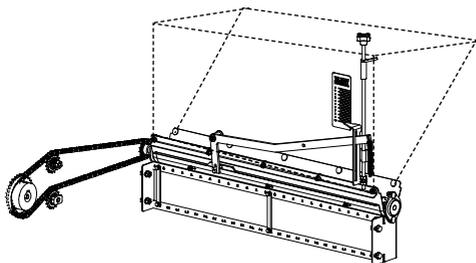


**Caution:**

If seed was already in the seed reservoir and the machine was transported over a great distance to reach the work zone, the seed flow over the first ten metres will not entirely match the set flow rate. This is due to the fact that the rotating drum in the seed reservoir turns when the machine is moved (with the container closed) and thus disturbs the seed composition, which in turn affects the flow of the seed during the first metres after opening the seed reservoir.

**It is therefore recommended not to base the setting of the seed flow rate on the flow rate results of these first metres.**

- After setting the flow rate, the screw head must again be locked with the locking nut.
- It is recommended to ensure that the seed reservoir is adequately filled when overseeding on a slope in the lengthwise direction. This serves to avoid that the seed shifts to one side of the reservoir and consequently is not scattered over the full width of the surface.



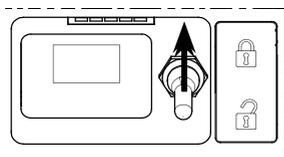
## 1. Setting the work depth

The best depth to sow to ensure easy germination of the seed and quick development of the grass root structure is 5 mm.

Because the seed never falls to the bottom of the groove, the cut of the groove must be deeper than the intended sowing depth. The standard depth setting varies between 15 and 20 mm.

### How to set the depth:

- Place the machine on an even, paved surface (e.g. concrete or tarmac).
- Turn off the engine.
- Switch the starter key to the 'ON' position.
- Lower the machine to work mode by pushing the All-in-one™ control lever (AIOC) downwards until the blades touch the surface.
- Once the swivel caster makes no contact with the surface, engage the transport lock. The machine is now locked in this position.



- Loosen the central fixing bolts (M10 - spanner size 17) on both sides of the anti-scalping roller by half a turn.
- Now turn the star knob clockwise until a 10 mm thick plate fits under the roller. This corresponds to a work depth of 15 to 20 mm.
- Apply this procedure to both sides of the machine.
- Re-tighten the central fixing bolts of the anti-scalping roller (spanner size 17).
- Disengage the transport lock; the machine will automatically lift back into transport mode.
- To check the actual depth it is recommended to run a test prior to starting the overseeding work.
- Place the machine on an even piece of the lawn. Lower the machine to work depth by pushing down the AIOC lever and advance 1 metre. (Read § 9.6.1 Riding the machine)
- Release the AIOC lever to lift the machine back into transport mode.
- Reverse one metre to expose the grooves just created by the machine.
- Measure the grooves at various places and compare the measurements to your desired work depth.

## 9.6.4 Overseeding



### Caution:

The operator must comply with clothing prescriptions and wear the required personal protection (see General safety instructions).

- Proper gardening starts with studying the work area, removing any obstacles and determining a work pattern and a route (read § 9.6.2). It also involves proper preliminary machine inspection and settings (read § 9.1.).
- The overseeding procedure can start as soon as the machine is on the work area, at the beginning of the defined route.
- Always place the machine in a straight line with the intended lane; it avoids having to immediately turn and adjust course while the blades are at work depth.
- Open the engine to full throttle (3200 RPM) (press the button below the LCD screen of the built-in hour counter to switch to RPM counter view).
- Push the All-in-one™ control lever down to engage the blades and the discharge channel system and to lower the machine to work depth. The seed reservoir is now open.
- The machine now becomes a dangerous object, requiring the operator to concentrate on his movements. As long as he is operating the machine, his full attention must be on the job.
- The cruise control lever will now be used to set the appropriate speed.
- The set speed is a matter of preference and depends on the following factors:

### 1. Amount of moss in the grass

### 2. The length of the grass

**Explanation :** The discharge channel rotates at a constant speed and therefore has a constant discharge capacity. The higher the speed of the machine, the larger the supply of materials to be transported through the discharge channel. Given the fact that the available discharge capacity is fixed, the driving speed must be adjusted to the amount of debris (moss, felt, grass) coming off the lawn.

### 3. Humidity of the grass

**Explanation :** as described under § 9.6.1 Riding the machine, slippage of the rollers can be avoided by matching the traction and driving speed to the grip force on the surface. Reduced grip force on a moist surface justifies a lower speed.

### 4. Dryness of the surface

### 5. Type of soil

### 6. Blade depth

### 7. Degree of wear of the blades

**Explanation :** Groove cutting is the heaviest task in the overseeding procedure and while most of the engine capacity will therefore be sent to the blades, that capacity also depends on the force required to cut through the soil, which in turn depends on the factors mentioned above. The higher the driving speed, the higher the amount of soil that needs to be cut per rotation of the blade, and hence the higher the required capacity. The driving speed must therefore also be adjusted to the conditions of the soil.

## 8. Stones in the soil

**Explanation :** Since it is impossible to remove all obstacles from a stone-rich soil, the blades will inevitably hit stones. Stones can damage the blades on impact. A low driving speed will reduce the amount of energy on impact and increase the time the operator has available to react. From a safety point of view it is therefore recommended to reduce speed in rocky or stone-rich areas.

- Once the machine is in motion, the route can be run. For all details about riding, rotating, turning, etc., read § 9.6.1 (Riding the machine).
- Avoid sudden turning movements with the machine at work depth: the blades could cut away entire pieces of the lawn. Such damage would require a long period of recuperation.
- Leaving the seed reservoir uncovered during overseeding allows the operator to monitor the remaining seed volume.
- The debris deposited in a neat strip on the right hand side of the machine also forms a guide for the next lane and will prevent overlapping sowing zones.
- At an average flow rate of 200 g per 100 m<sup>2</sup>, a full reservoir contains enough seed for approximately 800 metres.
- The depth setting must be tested at intervals by measuring the groove depth with a measuring stick.
- Debris appearing from under the rollers is an indication that the discharge jack is losing debris. This can relate to excessive moss amounts or to blockage of the discharge channel. Reduce speed. If the machine continues to lose debris nonetheless, stop the engine and check the discharge jack.
- If despite all preparations, the blades should hit an obstacle in the soil, you must stop the machine and examine the blades (read § 11.7.4 Examining the blades).



### For your information:

Should a situation occur where you seem to be losing control of the machine while the blades are engaged, immediately release the All-in-one™ control lever.

## 9.6.5 Dethatching

The overseeding machine can also act as a dethatcher. The following items must be taken into consideration:

- The preparations with respect to the machine and work area listed for the overseeding procedure also apply to dethatching.
- It is recommended to cut the grass very short before dethatching.

- Contrary to overseeding, dethatching is a superficial operation. The objective of dethatching being to mechanically remove all parasites (moss, felt, weeds, dried grass) from the lawn, the blades should only make slight contact with the soil (3 mm at most).
- Adjust the work depth of the blades to 2 mm (read § 9.6.3.2).
- Since no overseeding is being done, the seed reservoir must be emptied.
- Machine operation is identical to that for overseeding.
- Because dethatching requires less capacity than overseeding, a higher work speed is allowed.
- The same routes can be applied as for overseeding.
- In case of excessive amounts of moss it is recommended to make two runs of the entire surface, the second one perpendicular to the first.
- The waste piles must be cleaned before commencing the second run.
- During dethatching, the seed grooves may get filled with debris. It is therefore recommended to clean out the seed grooves after dethatching and prior to overseeding.

## 9.7 Cleaning the machine



### Warning:

Repairs, maintenance and cleaning must only be performed with the engine disengaged and the spark plug cap decoupled.



### Warning:

Always wear safety gloves when checking defects or performing maintenance to the machine.

Failure to clean the machine will induce quicker wear. A machine functioning suboptimally can compromise the operator's safety.

Failure to clean the machine can cause:

1. increased wear of the bearings
2. Increased wear of covers
3. Jamming of moving parts
4. Reduced cooling
5. Risk of fire
6. Inability to notice cracks or tears
7. Damage to the paint
8. Illegibility of stickers

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

**Tip :** clean the machine immediately after overseeding. Mud and soil then won't have a chance to dry up and stick to parts which makes cleaning and rinsing considerably easier.



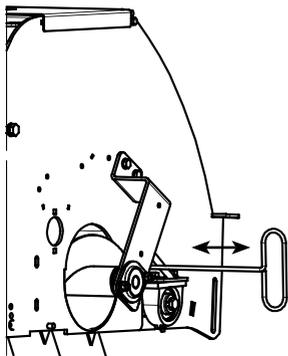
**Caution:**

Wear suitable clothing for cleaning activities. Utility gloves are necessary.

The following points require special attention:

- Always remove the seed from the seed reservoir after an overseeding session (use a vacuum cleaner to remove the seed from the deeper lying areas).
- Also check that the seed funnels are completely free.
- The engine should be clear of dust and dirt. More in particular the cooling fins, the exhaust and the area around the exhaust must be clear. The area around the fuel cap must be kept clean to avoid dirt entering the fuel tank. Blow away any dirt that might block the throttle control.
- Check and clean the air filter on a regular basis.
- Check and lubricate the chain drives.
- The bushings must be cleaned from sand and dirt that sticks to the lubricating grease. After cleaning, apply new lubricant (see § 11.2 Lubricants for a list of lubricants).
- Use a dry cloth or soft brush for cleaning, and penetrating oil with MoS<sub>2</sub> to remove grease and lubricants. The latter is a lubricant and rust solvent at the same time.
- The transmission parts and hinges located under the large cover must be kept dust free as much as possible. (Use the cleaning job to lubricate the chain drives; read § 11.4.2.)
- Remove the dirt above the vibration plates.
- Check whether the blades are damaged or bent (read § 11.4.7 Checking the blades). To enable easy lifting of the machine for inspection of the blades from underneath, ELIET manufactured a special DZC lifting jack (read § 11.4.13 Lifting the machine with a DZC jack).
- Clean the blade compartment and the discharge channel. Use a water sprayer to rinse off any persistent dirt.
- A special hook is available to scrape off the dirt from the blade compartment and the discharge channel. Its length takes away the need of crawling under the machine to perform the maintenance. (stock code: MA 016 001 015).





The hook can be slid through a special opening provided in the discharge outlet. By moving the hook back and forth, the dirt that settled at the front of the discharge channel can be removed.

- Remove the dirt that assembled at the end of the discharge jack near the support bearing. (Failure to do this will lead to damage of the bearing sealings, resulting in increased wear of the support bearing.)
- Clean the traction rollers so any dirt won't cling. Also clean the scraper of the anti-scalping roller.
- Use a dry cloth to remove dirt from the chassis and more specifically from the stickers with safety instructions.
- Use of a steamer to clean the machine is allowed. Do not spray excessive amounts of water on the bearings, electric contacts and filler caps. Water is the number one cause of rust and this must be avoided at all times. Allow the engine to cool down properly before treating it with water.

A number of additional points must be observed in the cleaning procedure before long term storage of the machine (read § 12).

## 9.8 Fault diagnosis

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### 9.8.1 The engine fails to start after idle periods:

If the machine fails to start up after a period of inactivity, this could be the result of either of the following causes:

- a) empty battery
- b) low on petrol
- c) stale petrol
- d) bad spark plug
- e) low on oil



**Caution:**

Before examining possible reasons for the fault, make sure the starter key is in the OFF position.

**a) Empty battery**

Failure to engage the transport lock or to turn the starter key to the OFF position when storing the machine can lead to an empty battery as a result of the LED's power consumption. A volt meter placed between the + and - poles of the battery should read approximately 12 Volt. A - considerably - different reading implies an empty battery that must then be recharged or started with the help of an external battery or jump leads. The engine is equipped with a heavy generator that recharges the battery as soon as the engine comes up.

**b) Low on petrol**

In § 12 - Storing the machine - you are advised to remove any residual petrol before long term storage of the machine. If this slipped your mind, you may have forgotten to refill the machine. Check that the tank is adequately filled and refuel if necessary (read § 9.4 refuelling). Let the starter engine run for a while after refuelling. Close the throttle (choke) - the petrol will be sucked into the line. The motor will start running as soon as the carburettor has filled.

**c) Stale petrol**

Petrol has a limited shelf life. Petrol that has been sitting in petrol tank for more than a few months can cause starter problems. It also smells totally different than fresh petrol. Pump out the contents of the fuel tank and refuel with fresh petrol. (Read § 9.4 Refuelling) (Attention: take extreme caution; stale petrol is still highly flammable.)

**d) Bad spark plug**

Without the proper ignition, it will be impossible to get the engine up and running. You must therefore check the spark plug. (Read § 11.3.5 Checking the spark plug)

**e) Low on oil**

The engine's crankcase is filled with motor oil to lubricate and cool the pistons. Lack of oil can lead to increased wear of the engine. To protect the engine the machine has been equipped with a control switch that will disengage the engine if the machine is low on oil. Check the oil level and refill if necessary (read § 11.3.3 Checking the oil level of the engine).

## **9.8.2 Engine shuts off during operation**

If the engine suddenly shuts off during operation, this can be caused by various factors:

- a) no petrol
- b) lack of oil in the engine
- c) the machine is on a slope
- d) technical defect

**Caution:**

Before examining possible reasons for the fault, the starter key must always be in the OFF position.

Take the following steps to restart the machine in any of the cases below:

**a) No petrol**

If you fail to monitor the petrol level and hence don't notice that the tank is running empty, the machine may surprise you by suddenly turning off. Refuel the machine (read § 9.4 Refuelling) and let the starter engine run for some time after refuelling. Close the throttle (choke) - the petrol will now be sucked into the line. The engine will start running as soon as the carburettor has filled.

**b) Lack of oil in the engine**

Also read § 9.7.1 under e.

**c) Machine is on a slope**

While working on a slope in the lengthwise direction the engine may suddenly stop. This is caused by the oil alarm which works on the basis of level measurement; it detects a false oil level when the machine is in a slanted position. This is enough reason for the system to switch off the engine.

The solution is to wait a few minutes and then restart the engine. The problem will come back if working on the slope is continued. After checking the oil level on an even surface (read § 11.3.3), the oil safety system may be disengaged temporarily. Don't forget to switch it back on after the work is finished. Attention: neither ELIET, nor HONDA accept warranty claims based on a lack of oil in the machine.

If slopes are a recurring factor in a particular area, adding 0.2 litres of extra oil to the tank will solve the problem.

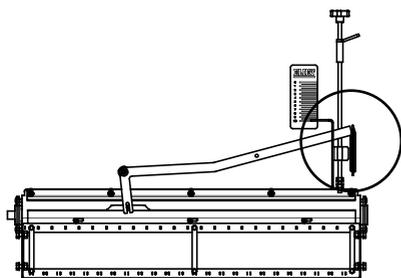
**d) Technical defect**

If neither of the aforementioned inspections identifies the reason, the problem could be of a more technical nature. A defect in the engine or a problem with the carburettor could be the issue. For assistance with these problems, please visit your authorised ELIET dealer or an authorised service centre for the engine brand.

### **9.8.3 Loss of seed during transport**

During transport, the machine leaves a trail of grass seed. This can result in vegetation between paving stones and must therefore be avoided. Possible causes:

- A foreign object (stone, stick) is blocking the scatter openings. When closing the seed reservoir, openings fail to slide shut completely, which causes seed loss.



- The lever used for opening the seed reservoir is pulled down by a tension spring when the reservoir is being closed. If this tension spring is broken or has come loose for some reason, the seed reservoir will not close itself. This will result in unintentional loss of grass seed.

- As a result of dirt in the bolt mechanism that opens and closes the seed reservoir, the tension spring may not be strong enough to shut the bolt when the machine is being lifted. This can be easily spotted: the opening and closing lever will remain in the same position when the machine is lifted or lowered. To solve this problem, clean the crack in the bolt (with compressed air) when the seed reservoir is empty.
- Limited seed loss may also occur when, as a result of blockage, one or more seed funnels have filled up with seed. If that blockage is then cleared by vibrations from riding on a paved surface, the contents of the funnels will flow away. This loss of seed is of a temporary nature and will stop as soon as the filled up funnels are empty again.

#### **9.8.4 Irregular sowing pattern**

If the seed flow rate has been set correctly, the seed on the oversown surface should be hardly visible. The seed visible in the grooves should have constant density along the entire work width. An irregular seeding pattern, i.e. no seed in places and lots of seed in others, can have the following cause.

- The seed coming from the seed reservoir is guided towards the groove via a narrow funnel. The funnels can get blocked as a result of dirt, moisture or a blocked scatter opening. These blockages will usually disappear automatically, and the seed that was stacked in that particular funnel will be scattered in one go, causing an abundance of seed in places. This will obviously be visible in the lawn once the seed starts to grow. It is therefore important to check the funnel channels as soon as irregularities are detected. A transparent plexiglass sheet fitted at the back of the machine enables monitoring of the funnel contents. .

Continual irregularities in the seed flow across the entire work width can be the result of the following:

- A rotating drum fitted at the bottom of the seed reservoir ensures a constant seed flow. It is driven by a chain and runs synchronously with the machine's driving speed. A defective drive will result in an irregular seed flow. Possible causes of a defect:
  - Broken chain
  - Dislocated chain

- The locking pin on the sprocket of the axis of the rotating drum broke down.
- Sprocket on roller came loose
- Locking pins of the rotating drum on the driving axis came loose.

### **9.8.5 Loss of debris**

Under normal circumstances, the debris that is cut away is caught in a reception channel and subsequently discharged to the side of the machine. As a result, the lane that has been worked will remain relatively clean. If a lot of debris is deposited in the work area nonetheless, this can have the following reasons:

- The discharge jack may have a problem processing excessive amounts of moss or very long grass; this can cause the discharge channel to overflow and result in loss of debris. (Read § 9.3 Preparing the work area.)
- Working a humid soil can cause the blades to throw up dirt and wet soil that may subsequently stick to the compartment and the discharge channel. This forms an obstacle for the normal transport route of the debris that will consequently end up outside the discharge channel instead of in it. Cleaning the blade compartment and the discharge channel will solve the problem. (Read § 9.7 Cleaning the machine.)
- Depending on the chosen route (read § 9.6.2) the debris may be deposited on the next lane to be worked. If too much debris piles up after having worked a few strips, the discharge channel will be unable to process it. A loss of debris will be the result. The solution is to review the chosen work pattern.

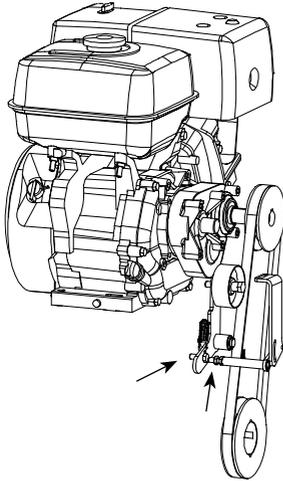
### **9.8.6 A trail of damage to the lawn**

A trail of damage in a worked lane may have the following causes:

- The blades do the ground work and are therefore the first to be examined. An obstacle under the surface may have caused a deformation of one or more blades, resulting in broad unaesthetic cuts. Read § 11.4.7 Checking the blades to detect any irregularities.
- It is possible that an object has wrapped itself around the blade axis and causes a damage trail.
- The vibration plates, all fixed with two bolts, also come in contact with the surface. If one of the bolts of either plate has come loose due to vibration, the plate may become displaced and slide over the other plates, causing a print in the lawn at each strike. Check the vibration system for irregularities.

## 9.8.7 Unintended activation of electric lifting mechanism

If while riding the machine in transport mode, it suddenly starts to lower itself into work mode, this can have the following reasons:



- The command to lift or lower the machine can only be given by operating the All-in-one™ control lever. The mechanism puts a belt tensioner in motion that carries a position detection device. When that device fails to detect the belt tensioner, the electrical actuator will start to lower the machine from transport mode into work mode. If the AIOC lever is not operated, the belt tensioner is kept in place by a spring. If for some reason the spring is broken or has come loose, the belt tensioner can move freely and a sudden shock could throw it out of its neutral position and accidentally activate the actuator.
- When as a result of vibration, the magnetic switch that serves to detect the position of the belt tensioner comes loose, the detection point (bolt head M8) may disappear from the detection range. The switch will now activate the actuator and lower the machine into work mode unintentionally. The same applies when the detection point (bolt head M8) that should detect the magnetic switch, comes loose. (Read § 11.4.11.)

If while in operation, the machine suddenly lifts into transport mode without having received the corresponding command from the operator, the following possible causes can be examined.

- The machine will lift into transport mode when the position detector notices that the belt tensioning roller moves into decoupled status. (In other words: the All-in-one™ control lever is being released.) The AIOC lever and the tensioning roller are connected through a cable. If the cable tag breaks loose or the cable snaps, the tensioning roller will decouple automatically and the machine will move into transport mode. Since the AIOC lever was still pushed down at that point, the operator did not cause the movement. A snapped cable will be noticed quickly: the blades will disengage and the AIOC lever will not return to its neutral position when released.
- As described under 2, when the tensioning roller is in neutral, the position detector will induce activation of the electrical actuator. A loose magnetic switch will make false observations and affect control fortuitously. It is therefore necessary to check the magnetic switch (read § 11.4.11).

## **9.8.8 The machine remains locked in its set height.**

If during operation, the machine fails to respond to the command to return to either the transport or the work mode, the following may have occurred:

### **1. The machine remains in work mode:**

Since the movement from work mode into transport mode is activated by an electrical actuator, the problem must be caused by this actuator or its switch mechanism:

- A magnetic switch is activated when the All-in-one™ control lever is released. In the event the position of the magnetic switch (proximity switch) is destabilised, it will not detect, hence not flip, and as a result the actuator will not be activated. It is also possible that the detection point (bolt head M8) that should move in function of the magnetic switch, has come loose due to vibration. This can be physically observed by checking the position of the switch and the detection point. The switch actions can also be checked via the LEDs on the instrument panel (read § 11.4.11 Adjusting magnetic contacts).
- If the limit switch didn't function upon retraction of the actuator due to a malfunction of either the actuator or the detection point, the actuator will jump to safety mode at the end of the stroke length to prevent the electromotor from burning. Check whether the yellow LED on the magnetic switch or the third LED from the left on the instrument panel are on. If yes, the switch performs its detecting function correctly, which means we have to continue our search. If not the magnetic sensor must be adjusted and the actuator reset. The actuator can be reset by interrupting and re-establishing the current (starter key to OFF, transporter key to ON).
- The limit sensor switches an electric relay that powers up the actuator. The relays are located on the electric print. In the event the relay is blocked, the switch command of a magnetic sensor will have no effect on it; nothing will happen. The relays must therefore be tested. There are two relays on the machine, one to extend the actuator and the other to retract it. Remove the relay from its socket in order to replace it. Order a replacement relay from your authorised ELIET dealer, stock code BE 160 013 000.
- It is also possible that the actuator is faulty. Attaching the wires directly to the poles (+ / -) of the battery (and trying the other way around as well) should induce a movement in either direction. If it doesn't, the actuator must be repaired or replaced by the authorised ELIET dealer. Stock code : BA 700 100 100

- The machine is equipped with a device to lock it into position: the transport lock. This is a switch mounted onto the instrument panel. If due to vibrations the wires to this switch have come loose, an electric circuit will be opened; this has the same effect as engaging the transport lock. The machine obviously blocks in its set position as a result. (If the transport lock is engaged, all LEDs on the instrument panel are off.)

## **2. The machine is blocked in transport mode.**

Just like in work mode, the electrical actuator must receive a signal before taking action. Analogously, the problem will probably have to be found in the controls or in the actuator. The examination will be identical to the earlier mentioned procedure.

- It is unlikely that the magnetic detection for activating the All-in-one™ control lever is the culprit, unless the magnetic switch is dislocated and a static metal object sits in the detection area (read § 11.4.11).
- The issues regarding the limit switch are identical to the ones described earlier, albeit that they apply to the actuator in extended position. Check the second LED (from the left) on the instrument panel.
- The same examination applies for the relays.
- Since a defective actuator can also be the cause of the problem, the same test can be performed as described above.
- The transport lock must also be inspected.

## 10. Transporting the machine



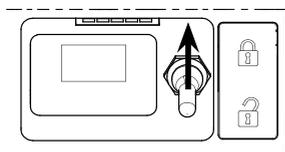
Wear the appropriate clothing for loading and offloading the machine.



### For your information:

also read § 9.6.1 Riding the machine; this chapter contains useful instructions for safely riding the DZC 750.

- Upon reaching the end of the sowing field, release the All-in-one™ control lever (AIOC); all drives will come to a halt and the machine will lift itself into transport mode.



- Turn on the transport lock to lock the machine in transport mode.



### Warning:

Loading and offloading the overseeding machine requires preparation and concentration. You are dealing with a heavy machine that will be hard to control if it should start to slide.

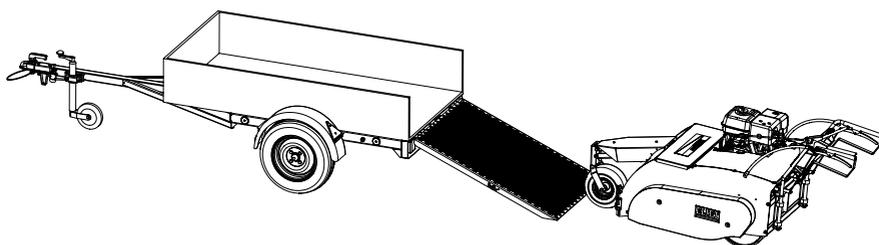
- Lower the engine's RPM for better control of the wheel drive during loading and offloading. This will also reduce the effect of steering errors or loss of grip.
- When driving the machine onto the ramps, keep it in a straight line and avoid steering corrections. .



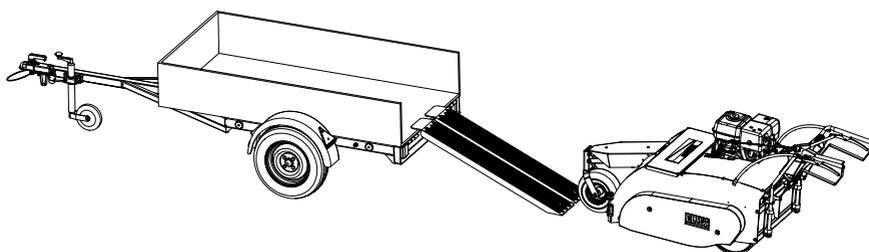
### Caution:

During transport, the DZC 750 travels on a swivel caster. It has a delayed reaction to the traction difference used to move the machine in a certain direction. However, as soon as the swivel caster swings to either side, it will put the entire front of the machine in motion. Try to anticipate to this and react by counter-steering.

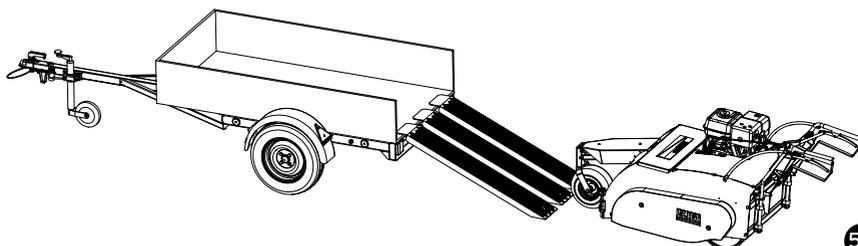
- Ensure that the swivel caster is in a straight position before driving up the ramps. Failure to observe this instruction may induce the need for corrective action while the machine is already on the ramps; this can cause a dangerous situation.
- Bystanders must remain at a safe distance (10 m) during transport, loading and offloading.
- During transport, the machine rests on three points: the two rear rollers and the swivel caster at the front. Preparations for loading and offloading activities must therefore include a transportation route for these three points.
- A ramp the width of a trailer provides the safest loading/offloading method. It provides support for each point, even if a traction difference on the rollers causes a slight deviation from the straight line.



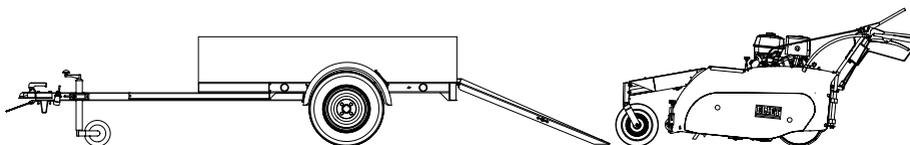
- If only two ramps are used, they must each have a width of at least 35 cm. The ramps put against each other for support of the central swivel caster provides a tread that corresponds to the width of the rollers.



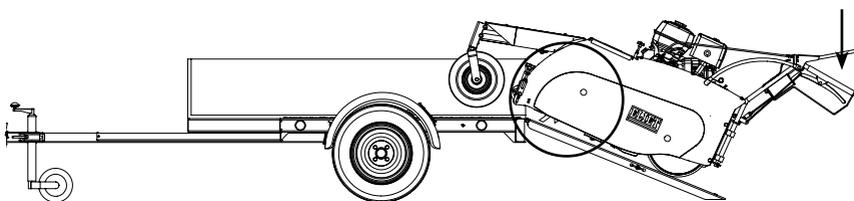
- If only narrower ramps are available (< 25 cm) it is recommended to use at least three of them to provide adequate width to support the machine.



- Use a non-slip ramp for loading the machine into a van or onto a trailer.
- Ensure that the ramps are properly hitched onto the vehicle or trailer. Ensure that the traction cannot detach the ramps.
- The machine weighs over 320 kg; make sure that the ramps have the bearing power to carry both the machine and the operator.
- If loading the machine onto a utility trailer, the trailer itself should be hitched onto a vehicle.
- Under no circumstances should the angle of the incline exceed 25°.
- Inclines must always be ascended in a forward direction and descended in reverse.



- In transport mode, the machine's ground clearance is 8 cm. Take good care at the ramp angle at the top. A dangerous situation can occur if the bottom of the machine were to make contact with the ramp angle and the rollers lose contact and grip on the ramps as a result. Be prepared for this and reduce speed. Lean over or push your weight on the steering wheel at the moment you drive over the ramp angle. This will relieve the front of the machine, reducing the risk of contact; it also puts additional pressure on the back of the machine, allowing better grip of the rollers and reducing their risk of slipping.

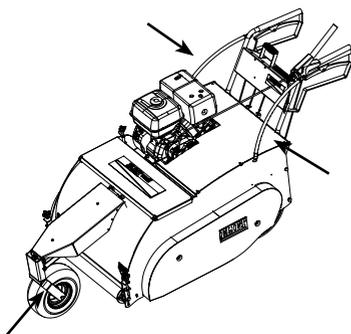


- In the event you threaten to lose control of the machine, immediately release the AIOC lever; if necessary, push the machine away from you and step aside. The hydrostat will slow down the machine or halt it.
- Ask someone to assist you if you feel insecure about loading the machine.
- Ensure that the vehicle has sufficient bearing power to transport the machine..

**Warning:**

Never run the machine for more than 30 seconds in a closed environment where animals or people are present. Exhaust fumes from petrol engines contain toxins that can cause poisoning or suffocation.

- Don't run the engine longer than necessary when (off)loading the overseeder into/from a closed van. Open all the doors of the loading area to ensure sufficient ventilation.



- Make sure the machine is properly attached in the vehicle during transport. Attach ropes to the fixed chassis parts to secure the machine.

- The ropes, belts or tensioner belts used must be in a perfect state and capable of sustaining a tensile load of 500 kg.

**For your information:**

Always close the petrol tap on the machine before transport. Failure to do so may result in excessive amounts of petrol being fed into the engine, causing starter problems and the risk of having to change the spark plug.

- A ramp must be provided if the machine has to drive up a step or curb higher than 50 mm.
- Avoid riding the swivel caster into obstacles at high speed. It might bend the wheel fork.

**For your information::**

Machine breakage or defects resulting from incompetent driving are excluded from the warranty conditions.

# 11. Maintenance

## 11.1 General

**For your information:**

The dealer and his staff are readily at your service and can also rely on the ELIET help desk for support. The combination guarantees you the best joint effort to find a solution for any problems you may have. For repairs or maintenance you can turn to your authorised ELIET dealer or a service centre authorised by the engine manufacturer. Please always submit the model and serial numbers of the machine and the engine, as well as a complete description of the problem.

**Caution:**

Use only original ELIET or HONDA replacement parts for any repairs. These service parts are manufactured according to the same strict quality requirements and craftsmanship as the original equipment.

- Maintenance or repairs that are not described in this manual must be performed by an authorised ELIET dealer.

Maintenance must always be carried out in a room intended for that purpose.

The area must meet the following criteria:

- Spacious
- Easily accessible
- Well lit
- Dust-free
- Clean and tidy
- Quiet

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

**Caution:**

Maintenance performed in an incorrect manner may compromise the operator's safety.

- Maintenance must always be carried out with the engine turned off. As a precaution, the spark plug should also be removed or the lead detached.
- Always wear safety gloves when performing maintenance. Safety goggles may be required for certain operations. These are supplied standard with the machine.

**TIP:** In principle, the maintenance works described may be carried out by a person with technical skills. However, ELIET recommends that the machine be brought to an authorised ELIET service centre for a major overhaul each year.

Your ELIET dealer is always at your service for maintenance and advice. He stocks original ELIET replacement parts and lubricants. His staff can always obtain advice and service from ELIET's help desk in order to provide you with impeccable after-sales service.

## 11.2 Maintenance schedule

Periodic maintenance after 500 hours of operation						
Periodic maintenance after 200 hours of operation						
Periodic maintenance after 100 hours of operation						
Periodic maintenance after 25 hours of operation						
Routine check before each operation						
Description						
	Visual check	§ 11.4.1				
	Blade check	§ 11.4.7				
	Air filter check	§ 11.3.1				
	Oil level check	§ 11.3.3				
	Lubricating chains	§ 11.4.2.4				
	Changing the oil		§ 11.3.4			

Periodic maintenance after 500 hours of operation						
Periodic maintenance after 200 hours of operation						
Periodic maintenance after 100 hours of operation						
Periodic maintenance after 25 hours of operation						
Routine check before each operation						
Description						
	Belt tension check		§ 11.4			
	Checking the spark plug		§ 11.3.5			
	General lubrication treatment		§ 11.4.2			
	Changing the blades			§ 11.4.8		
	Changing the air filter			§ 11.3.2		
	Changing the spark plug			§ 11.3.5		
	Replacing the belt tensioning roller			§ 11.4.5		
	Chain adjustment			§ 11.4.6		
	Replacing the belt				§ 11.4.4	
	Hydrostatic oil replace					§ 11.3.10
	Changing chains and sprockets					§ 11.4.6

## Lubricants

Engine (1.4 L)	MOBIL DELVAC 1330
Hydrostate	MOBIL DTE 13M ISO VG 32
Bearings	NOVATIO PTFE OIL
Joints	NOVATIO CLEARLUBE
Cables	NOVATIO PTFE OIL
Lubricating points	SUNOCO VET MULTI-PURPOSE LR - EP2
Chains	NOVATIO CLEARLUBE & PTFE OIL

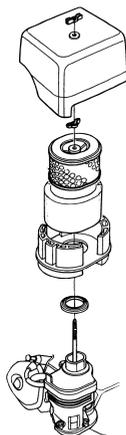
## 11.3 Engine maintenance

### 11.3.1 Cleaning the air filter

The purpose of the air filter is to clear the air that is sucked in for combustion from sand and dust particles. There are two important issues in this respect:

- The filter may not become damaged; a damaged filter could expose the engine to unfiltered air.
- The filter must allow sufficient air to pass through it, ensuring an optimum air-fuel ratio for proper combustion. Regular inspection of the air filter is essential.
- The air filter is located under a black hood on the engine. (Read the 'General description' in § 6.2 Main machine parts.)
- Remove the wing nut to release the filter. .

The filter is built up of two parts:



- The front filter made of spongy material (absorbs coarse dirt). Front filter stock code: 0708-40070;
- The main filter is made of layered paper (absorbs small particles); stock code 17210 ZE 3010. Unscrew the wing nut to remove the filter cartridge.

**How to clean the filter :****For your information:**

Also read the manual of the engine manufacturer.

- The front filter may be cleansed with a little petrol.

**Caution:**

Petrol is highly flammable; avoid open fire or hot objects in the direct vicinity.

- Using compressed air, thoroughly blow dry the filter to eliminate all petrol and dust.
- With a paint brush dipped into motor oil slightly moisturise the outside of the sponge filter. Course dust particles will now stick to the filter more easily.
- The filter cartridge can simply be tapped clean.
- The filter may be cleaned with compressed air, provided that the jet is kept at some distance from the filter and that the air is blown from the inside out.

**Caution:**

Releasing a stream of compressed air too closely to the filter element may cause micro-perforations that will render the filtering properties completely useless.

- Using compressed air, completely clean the plastic hood and the filter socket from dust and dirt.
- After cleaning, remount the filter elements in their original position.

**11.3.2 Changing the air filter**

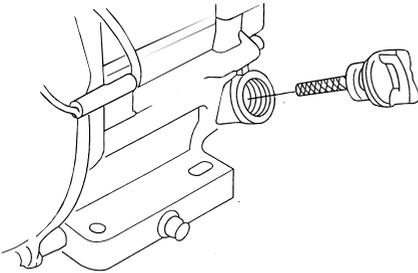
This action is almost identical to cleaning the air filter (see § XXX XXXReference source not found.XXX Cleaning the air filter). The only difference is that in this case, the element is replaced. New air filters suitable for your machine are available from your Eliet dealer or an authorised service centre of the relevant engine brand.

- Front filter: Honda stock code : 0708-40070
- Main filter element made of layered paper. Honda stock code : 17210 ZE 3010

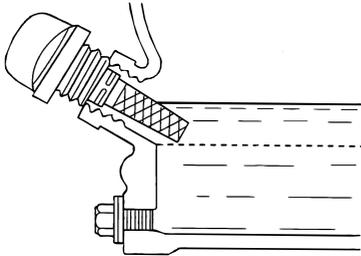
When mounting the filter element, make sure that it sits snugly against the packing ring to avoid false suction.

### 11.3.3 Oil level check

- Place the machine on a flat surface.
- Disengage the engine and leave it for a while to allow the oil to seep back to the oil sump (approx. 5 minutes).
- Turn the starter key to ON and press the All-in-one™ control lever; the machine will lower to work mode. Once the blades touch the surface and the swivel caster is lifted from the ground, engage the transport lock.
- With a clean cloth, clean the area around the filler cap. Refer to the 'General Description' under § 6.2 Main machine parts (page 7) for possible positions of the oil drainage and drain plugs.



- Remove the filler cap with the dipstick attached to it from the crankcase.



- Since the oil level should reach the brim of the filler opening, a low oil level is easy to spot. The oil on the dipstick should touch the maximum mark.

- If the oil tank is not filled to the brim, this indicates a lack of oil.
- It suffices to add some oil via the filler opening until the proper level has been reached.
- Since the location of the filler opening is in a somewhat awkward position, we recommend the use of a tube or special funnel to avoid oil spills. Always clean the funnel before passing any oil through it.
- Only use recommended oil (see the list of recommended oils in § 11.2).
- Immediately remove any spilled oil.

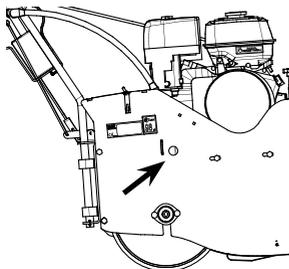


#### Caution:

Avoid any dirt from leaking into the crankcase via the filler cap.

### 11.3.4 Changing the oil

- Make sure that the machine stands on an even surface and that the engine is switched off.
- Turn the starter key to ON and press the All-in-one™ control lever; the machine will lower to work mode. Once the blades touch the surface and the swivel caster is lifted from the ground, engage the transport lock.



- To the right hand side of the chassis is an opening containing a rubber hose with a screw plug. This oil drain is connected to the engine crankcase.

- Have a one litre collection reservoir ready before unscrewing the plug.
- Clean the area around the oil filler cap and unscrew the cap, allowing the crankcase to vent while emptying the tank.
- Now unscrew the plug from the drain with a 22 mm spanner, together with a 19 mm spanner for counter pressure on the rubber hose.
- Empty the full contents (approx.  $1.1 + 0.3 \text{ l} = 1.4 \text{ l}$ ) from the engine. Because the engine crankcase is connected to the reduction gearbox (1/2), the oil also serves to lubricate the gear transmission. Lubrication and cooling of the engine requires 1.1 l oil; 0.3 l oil provides lubrication of the reduction gear.
- Replace the plug on the drain. Wipe away any spilled oil with a clean cloth.
- Refill the engine with fresh 4 stroke oil. ELIET recommends a top quality high-detergent oil: MOBIL DELVAC 1330.
- Slowly add the required oil, approx. 1.4 litres, until it reaches the brim of the filler opening.
- Replace and tighten the filler cap after refilling and wipe away any spilled oil.



#### Warning:

Oil shortage causes severe engine damage. (Any such damage falls outside the scope of the warranty.)



**Warning:**

Respect the environment: bring the oil to an authorised collection point for expert processing or recycling. Never pour oil down the drain.

### 11.3.5 Checking and/or changing the spark plug

For the HONDA GX390 LKE the engine manufacturer suggests the following spark plug: NGK BPR 6 HS.

- Ensure that the machine is in transport mode with the transport lock engaged.
- Switch off the engine and let it cool down.
- The spark plug is located at the far end of the engine (see § 6.2 Main machine parts).
- Pull off the cap of the spark plug.
- Clean the area around the spark plug and rotate it out of the cylinder head (spanner size: Imperial 13/16 inch).
- Using a feeler gauge, check whether the distance between the electrodes is 0.8 mm.
- The spark plug must be replaced if it shows heavy deposits or is very dirty.



Take the following steps to verify ignition quality:

1. Put the spark plug cap back on.
2. Grab the rubber of the spark plug cap and press the outermost electrode against the mass of the engine.
3. Turn the starter key to the 'START' position.
4. Meanwhile, check for sparks between the two electrodes.
5. The spark plug is in good condition if the spark is a clear and continuous beam and is neatly centred between the electrodes.
6. Weak, irregular and off-centre sparks indicate that the spark plug must be changed.

**Caution:**

Placing a new spark plug or replacing an old one must be done with utmost caution, avoiding any possible damage to the screw thread in the cylinder.

- Secure the spark plug with a torque of 20 Nm.

## 11.4 Machine maintenance

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### 11.4.1 Visual check

In order to anticipate any breakage and wear, it is of vital importance to check the machine prior to any work. It will also benefit the life of your machine.

- Check that at full throttle, the machine runs the prescribed RPM (3200 RPM). (The integrated hour counter includes an RPM function). Press the button under the LCD screen to jump to tachometer mode.
- Never attempt to change the default engine settings.
- Check the blades. Blades may bend on impact with a hard object under the surface. To avoid damage to the lawn, bent blades must be straightened (Read § 11.4.7 Checking the blades).
- Check that no dirt is piled up in the blade compartment, the discharge channel or the discharge outlet.
- Check whether the depth setting must be adjusted to compensate for the wear of the blades. (Read § 9.6.3.2 Setting blade depth)
- Check whether any of the plates of the vibration system have come loose. Each plate is attached with two M6 bolts (spanner size 10).
- Check that the seed reservoir closes fully in lifted position.
- Check that all scatter channels are free.
- Check the chains for sufficient lubrication (read § 11.4.2.4 Lubricating chains).
- Check the tyre pressure of the swivel caster (2.7 kg or 40 psi).
- Check that the parts are not deformed, that welded seams are not cracked, and that parts do not show excess play.
- If problems are found, carry out the necessary repairs or maintenance first.

### 11.4.2 General lubrication treatment

ELIET is committed to using high-quality materials that extend a machine's life cycle despite what can be extreme work circumstances.

For this reason, special lubrication products have already been applied in the factory. Periodical and regular lubrication will extend the machine's life and performance. During periods of drought, the frequency of lubrication treatments should be increased.

Lubrication of the parts below must be carried out with care.

- Hinges (see § XXXX XXXReference source not found.XXX)
- Lubricating nipples (see § 11.4.2.2)
- Bearings (see § 11.4.2.3)
- Chains and gears (see § XXX XXXReference source not found.XXX)
- Friction surfaces (see § 11.4.2.5).



**Caution:**

As for other maintenance, the engine must be switched off and the starter key removed from the starter lock before performing any lubricating activities. Always lock the machine into transport mode by engaging the transport lock. Protective gloves must be worn.



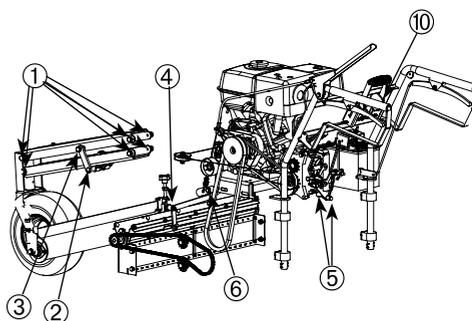
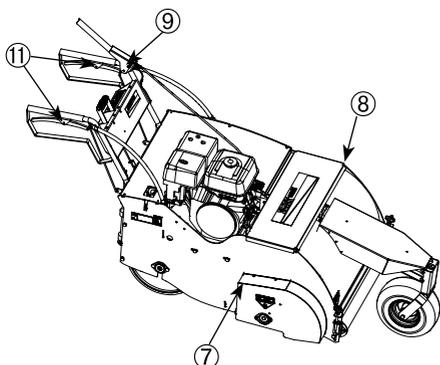
**Caution:**

Most lubricants are flammable. Always read the safety messages on the packaging. Keep away from open fire or hot objects when performing lubrication works.

**LOTS OF DUST => REGULAR CLEANING AND LUBRICATING**

**11.4.2.1 Hinges**

Hinges are places where two moving parts are attached to each other. Because this is a turning point, it involves friction. Friction without lubrication leads to wear, excessive play and finally in breakage. Some of these items require specific attention:



- 1) Eight hinges on the front wheel leg
- 2) The hinging axis of the lever
- 3) Hinge on the push pole with lever and with actuator
- 4) Hinge on the lever of the seed reservoir control
- 5) Hinge on the two bearing arms of the hydrostat
- 6) Hinge on the belt tensioner
- 7) The hinge on the protective cover of the jack outlet
- 8) The hinges on the cover of the seed reservoir
- 9) The hinge on the All-in-one™ control lever
- 10) The hinge on the cruise control lever
- 11) The hinge on the traction levers on the steering wheel

### Lubricating hinges:

- To reach the points indicated, some protective covers and shields will have to be removed. (Read § 11.4.12 if necessary.)
- To avoid wear and subsequent play on hinges, lubricant must be applied to the contact surfaces that undergo friction.
- It is essential to remove all old dirty lubricant and sticking dust before applying fresh lubricant.
- Where possible, the hinging parts must be disassembled for proper cleaning of all elements within.
- To dissolve lubricant, ELIET recommends the use of ELIET NOVATIO KLEENSPRAY-S. Spray the product onto the hinging parts. Leave the product for a few minutes to enable it to perform its degreasing action.
- Wipe the parts clean. Repeat the procedure if necessary to ensure that the parts are completely clean.
- Make sure that all of the cleaning agent is either evaporated or wiped away.



#### Caution:

NOVATIO KLEENSPRAY-S is flammable. Avoid open fire or heat when applying it.

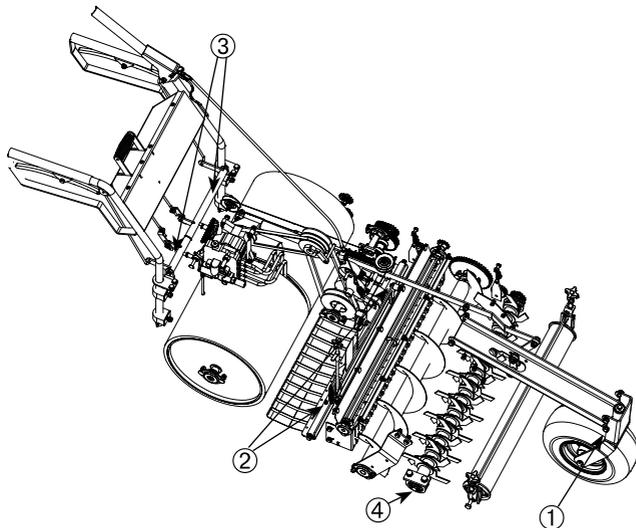
- Apply new lubricant to the friction areas. Ensure that it covers the entire contact surface.
- ELIET recommends NOVATIO CLEARLUBE, a lubricant with an extremely long operating time, great adhesion and resistant to high pressure. It is available in spray cans for easy application.
- Reassemble the hinge and fasten all parts.

### 11.4.2.2 Grease nipples

Grease can be injected along the grease nipples. Grease nipples were provided in the following crucial areas:

- 1) Grease nipple on the turning axis of the front wheel fork (1x)
- 2) Hinges on the axis of the vibrating system (2x)
- 3) Operating axes roller drive (2x)

- 4) Grease nipple on the cast iron bearing support of the blade axis (1x)
- 5) Grease nipple on the cover of the gear transmission (1x)



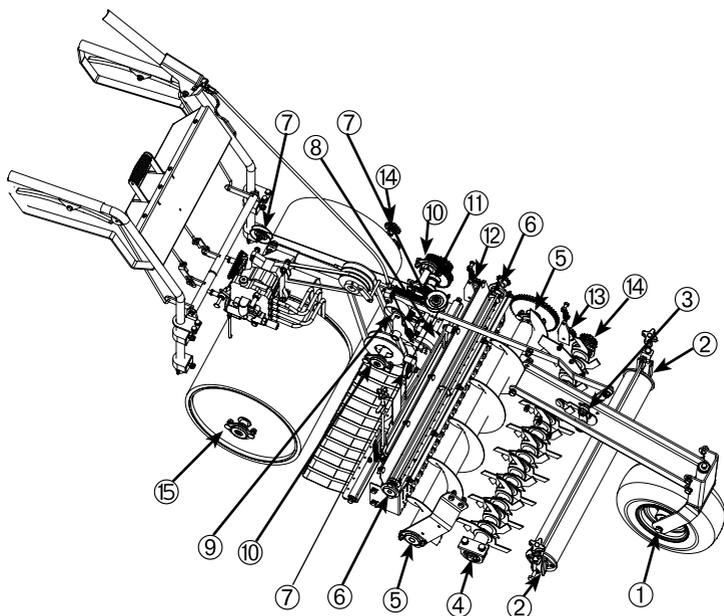
### Grease nipple

- To reach the points indicated, some protective covers and shields will have to be removed. (Read § 11.4.12 if necessary.)
- The old grease may have dried up or washed away or leaked from the system. This may create a hollow air chamber around turning parts, preventing the grease to reach the turning elements and resulting in inadequate greasing.
- An adjusted grease pump can be used to pump grease (MOBIL DELVAC 1330) into the system along the grease nipples.
- Filling up the hollow chambers with new grease will push it against the turning parts.
- By injecting the fresh grease via the grease nipple, the new grease pushes out the old grease, which is usually stuck to the edges. Not only does this procedure provide extra lubrication, it also pushes out dirt and dust.
- Pump the grease into the nipples until a resistance is felt. Old grease will usually come out via the joints.
- Wipe away any excessive grease.

### 11.4.2.3 Bearings

Bearings' biggest enemies are an excessive load, dirt and lack of lubrication. Sowing machines are not the best media to guarantee a long bearing life. Regular maintenance is therefore required.

The following bearings are fitted on the machine:



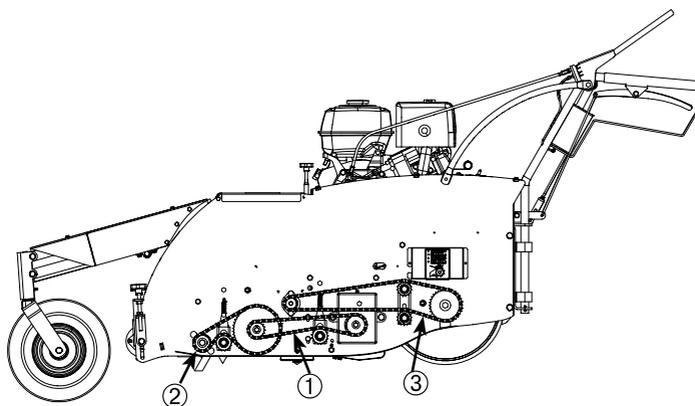
- |  |   |
|--|---|
| 1) Bearings in the felly of the front wheel (2x)   | 9) Bearing on the belt tensioning roller (1x)                   |
| 2) Bearings in the anti-scalping roller (2x)       | 10) Camshaft bearing (2x)                                       |
| 3) Runner bearing for the lifting mechanism (1x)   | 11) Support bearings gear transmission (2x)                     |
| 4) Left bearing on the blade axis (1x)             | 12) Chain tensioner bearing (blade axis - jack) (1x)            |
| 5) Discharge jack bearings (2x)                    | 13) Chain tensioner bearing (gearbox - jack) (1x)               |
| 6) Bearings on the seed reservoir drum (2x)        | 14) Chain tensioner bearing (seed reservoir drum - roller) (2x) |
| 7) Bearings for cable redirection rollers (3x)     | 15) Rear rollers support bearing (2x)                           |
| 8) Bearing on the runner of the eccentric cam (2x) |   |

- To reach the points indicated, some protective covers and shields will have to be removed. (Read § 11.4.12 if necessary.)
- The bearings have dust seals to keep the dirt out. However, the lubricant applied on the bearing at the factory will also become old and dry. To compensate this lack of lubricant, new lubricant must be added from outside.
- To prevent any dirt from penetrating the bearing together with the lubricant, the bearing must be cleaned first.
- Spray NOVATIO KLEENSPRAY onto the bearing seals and joints. The liquid will soak off any dust attached to the bearing.
- Leave the cleaning liquid to work for a few minutes.

- Remove all the dirt clinging to the bearing with a soft cloth.
- Apply a second round of spray to the bearings, particularly on the joints. The cleaner will dissolve the grease that has dried up in the joint. This is necessary to ensure that new grease can penetrate the joint.
- Blow compressed air into the bearing joints to enable the KLEENSPRAY to expel all the dirt.
- Wipe away all the spray and wait 10 minutes to allow any residue to evaporate.
- Now apply a new layer of lubricant. Spray good amounts of NOVATIO PTFE OIL into the joints of the bearing seals and the bearing bushing.
- This is a thin lubricant with great penetrating properties. It is corrosion resistant and moisture and dust repellent and also has great lubricating properties, even at high temperatures.

#### **11.4.2.4 Lubricating chains**

Because chains have a high rotation speed and don't run through an oil reservoir, after some operating hours the applied chain lubricant will have been propelled away or be full of dust and dirt. To avoid wear and tear of chains, they must be lubricated after each operation. The machine has three chain transmissions:



1. Duplex chain for driving the gearbox to the discharge jack
2. Duplex chain for transmission from the discharge jack to the blade axis
3. Simplex chain for transmission from the rollers to the seed reservoir drum

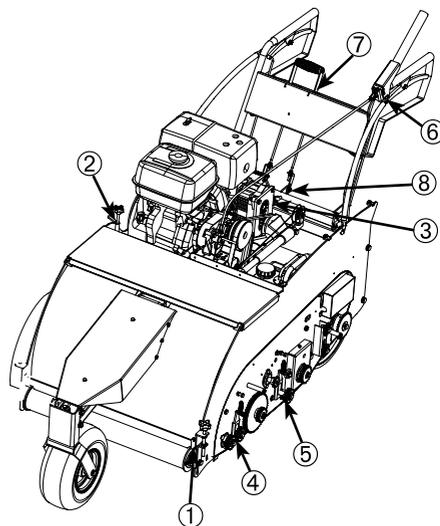
- For easy maintenance, these chain transmissions were all placed under the same protective cover. (Read § 11.4.12 if necessary.)
- We recommend to clean the chain and wipe away the old lubricant that will inevitably contain dust, before applying new lubricant. The use of KLEENSPRAY may help to soak off and dissolve any old grease.
- Wipe away any old lubricant before applying new one.
- Because the chain transmissions are fast-moving drives, a sticky type of oil is best.
- Since both the chain inside and the contact surface with the gears need to be lubricated, ELIET recommends using a combination of two lubricants.

- NOVATIO PTFE OIL, is a very thin oil that will easily penetrate the links.
- NOVATIO CLEARLUBE, a more viscous oil, will cling to the outside of the chain. This lubricant diminishes the friction between the chain and the gears.
- When replacing the protective cover, ensure proper closure to keep the inside free from dust.

### **11.4.2.5 Friction surfaces**

Friction surfaces are all machine parts subject to wear from lateral friction with other parts. Here, too, the message is to apply a film of lubricant between the rubbing parts that will reduce movement resistance and minimise wear. These surfaces include:

- 1) Wire rods for depth setting
- 2) Wire rod for flow rate adjustment on the seed reservoir
- 3) Ball joints on the hydrostat and the guiding axes
- 4) Chain tensioner guide (blade axis - discharge jack)
- 5) Chain tensioner guide (gear box - discharge jack)
- 6) Cable guide for All-in-one™ control lever (AIOC)
- 7) Cable guide from AIOC lever to clamp on cruise control
- 8) Guide fork at the end of the cruise control rods



- Proper functioning of the control levers is crucial and regular lubrication of the cables is therefore of vital importance.
- In particular during dryer periods, operating the machine will produce a lot of dust that settles everywhere, including on the cables.
- Prior to lubricating, the cables must be cleaned. KLEENSPRAY is again an ideal tool.
- Also spray it into the cable guide and simultaneously move the cable back and forth to ensure that the cleaner penetrates the guide.
- Use compressed air to clean the cable guide of both cleaner and dirt.
- Repeat this procedure until the guides are completely clean.

- New lubricant may now be sprayed into the guide. ELIET recommends NOVATIO PTFE OIL.
- The procedure is the same for all other friction surfaces mentioned earlier: first loosen old lubricant with KLEENSPRAY and wipe it away.
- Then spray NOVATIO PTFE OIL on the friction part.

All lubricants indicated are available from your authorised ELIET dealer.

### 11.4.3 Belt tension check and adjustment

The DZC 750 contains two belt drives:

1. a belt drive from the engine crankshaft to the camshaft (axis with a cam for vibration system and access gearbox).
2. Belt drive from engine crankshaft to inward axis of the hydrostatic pump.

The following describes the procedure for tightening the belts.



**Caution:**

Belt tightening must be done with the engine switched off. Remove the key from the starter lock as a precaution.



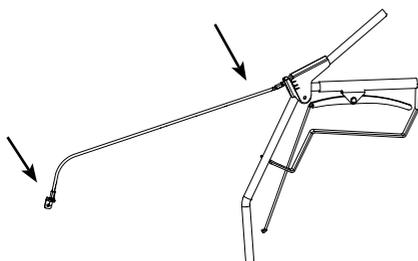
**Caution:**

Always wear suitable clothing for performing this type of maintenance.

#### **first belt drive (engine - camshaft)**

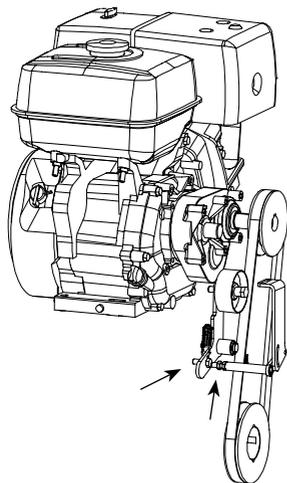
This belt is tightened with a flat pulley that is pulled against the back of the belt when pressing down the All-in-one™ control. This belt drive transmits the largest capacity and therefore also carries the heaviest load. It is also a belt transmission that is frequently switched on and off, and it is therefore subject to slippage.

- Indications that the belt tensioning roller must be adjusted are when the belt starts to make a squeaking sound, or when the AIOC lever resistance is too low.
- The belt tension can be increased by pulling the belt tensioning roller closer to the belt. This requires adjusting the length of the starter cord.



- The cable guide provides two control options. One close to the AIOC lever and one near the belt drive.

- Remove the M6 lock nut (10 mm spanner) and turn the control guide anti-clockwise a couple of turns. Use a (9 mm) spanner if necessary.
- Now test the belt tension.



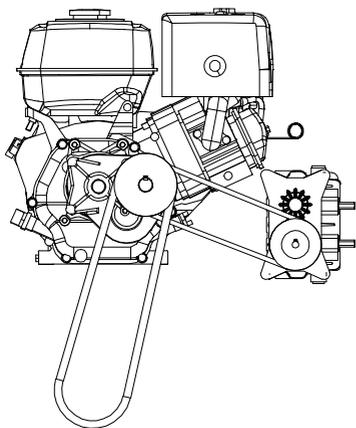
- Near the arm of the tensioning roller is a non-contact magnet switch that detects activation of the AIOC lever. The switch point of this non-contact magnetic switch may have been deranged as a result of adjusting the belt tensioner.

- If this is the case, it must be corrected. (read § 11.4.11 Adjusting magnetic switches)

### **Second belt drive (engine - hydrostatic pump)**

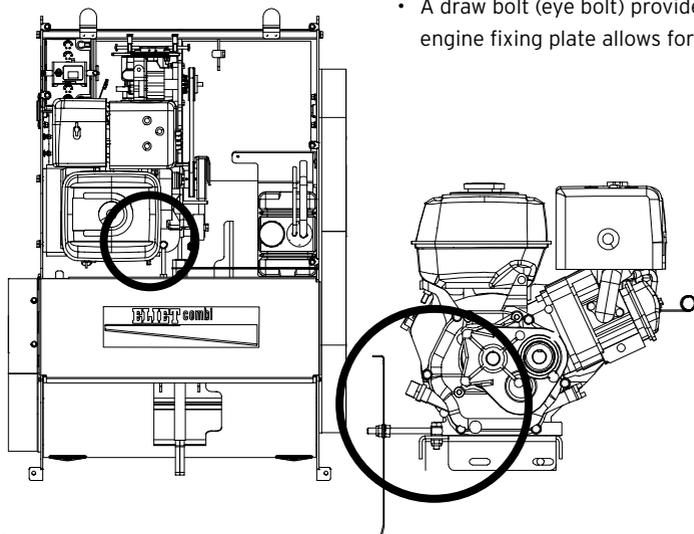
The hydrostatic pump consumes constant and limited capacity. The belt is permanently engaged and suffers but little dynamic load. Wear and stress on this belt are therefore limited.

- If this belt loses tension or starts making a squeaking sound it must also be tightened.



- The ideal tension of the belt can be tested as follows: when the back of the belt is pressed halfway the belt center distance between the two pulleys with a force of 8 kg, the inward move should not exceed 10 mm.

- If it exceeds 10 mm, the belt must be tightened.
- To tighten the belt, the fixing plate of the engine in the compartment must be pushed forward.
- Remove the protective cover to reach the attachment points (read § 11.4.12 Removing the protective covers).
- Four M10 bolts (size 17 spanner) hold the fixing plate in place. Loosen the bolts by one turn.



- A draw bolt (eye bolt) provided at the front of the engine fixing plate allows for easy movement.

- Open the seed reservoir to reach the clamping nut (M10). First loosen the locking nut (M10) at the back end of the seed reservoir. Use two 17 mm spanners.
- Turn the clamping nut clockwise so that the engine plate moves forward and produces extra tension on the belt.
- Repeat the test and the tensioning procedure until the correct belt tension has been achieved.
- Check the alignment of the two pulleys.
- Because the engine plate has been moved in order to tighten the belt, the position of the tensioning roller (first belt drive) has been altered. This affects the detection point of the magnetic contacts. Adjust the magnetic point if necessary (read § 11.4.11).
- Replace the large protective cover to its original position.

#### **11.4.4 Belt replacement**

After many hours of operation, the belts may wear and require replacement. Replacement parts must always be obtained from an authorised ELIET dealer.

Belt : LB 43 (engine crankshaft - camshaft): BA 522 510 900

Belt : SPZ 850 Lw (engine crankshaft - hydrostatic pump): BA 522 608 500



**Caution:**

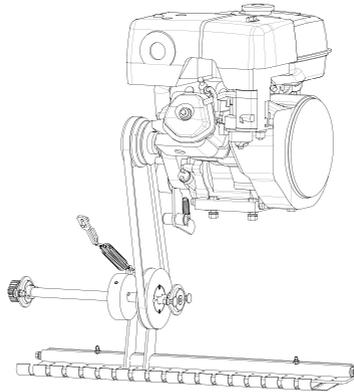
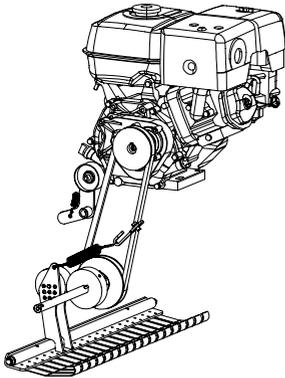
Belt tightening must be done with the engine switched off. Remove the key from the starter lock as a precaution.



**Caution:**

Always wear suitable clothing for this type of maintenance.

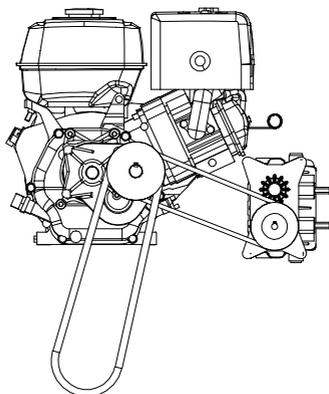
**First Belt drive (engine - camshaft)**



- Start by removing the large black cover plate.(read § 11.4.12)
- Then free the belt on the pulley of the engine crankshaft. Unfasten the belt catcher and belt guiding plate.
- Unfasten the belt catcher so that it can be moved away from the pulley. The pulley is screwed onto the cylinder block with an M8 (13 mm spanner).
- In order to move the belt guiding plate a little further from the pulley, the two fixing bolts (M6) must be loosened one turn (10 mm spanner).
- Lift the belt from the upper pulley.
- The belt fits around the camshaft at the bottom; this must therefore be unfastened in order to change the belt.
- First, unhook the spring that pulls the runner against the eccentric by putting a rope through the eye and pulling it with both hands.
- Loosen the locking nut (M8) of the belt guide a few turns (13 mm spanner).
- The camshaft need not be disassembled completely. Because it is mounted on two pendulum bearings only the right hand bearing will have to be unfastened; the axis can now be turned downwards to free the belt.

- First loosen the two set screws (hex: 3 mm) in the bearing bushing so that the bearing can move freely along the axis.
- Then unfasten the two nuts (M8) that fix the flanges to the centre plate (13 mm spanner) and turn the camshaft downwards.
- The belt can now be removed and replaced.
- Follow the procedure in the reverse order to replace the camshaft, belt catchers and guides.
- For easy reach of the bolts to affix the bearing flange, we recommend to lift the machine at the front with the special lifting vehicle (read § 11.4.13)
- Because the belt is new and unstretched, the cable length for coupling the belt tensioning roller must be reset to its minimum position(read § 11.4.3).
- Once maintenance is completed, replace the black cover plate. (read § 11.4.12.)

### Second Belt drive (engine - hydrostatic pump)



- Remove the large black cover plate (read § 11.4.12).
- To replace the belt to the hydrostatic pump, the belt to the camshaft of the pulley on the crankshaft must be taken away also. (Read § 11.4.4)
- For easy removal of the hydrostat belt, the tension must be reduced.
- Unfasten the four fixing bolts (M10) of the engine support plate by one turn (17 mm spanner)
- The tensioning device of the engine support plate can now be moved backwards. Turn the clamping nut (M10) in the seed reservoir anti-clockwise. If the engine plate does not move backwards automatically as a result of the belt tension, give the locking nut at the back of the seed reservoir a clockwise turn (17 mm spanner).
- First take the belt from the hydrostat; once the belt is loose it is easier to place it over the larger pulley of the adjacent drive.
- When the new belt has been applied, it will have to be tightened. (read § 11.4.3)
- When the belt has the correct tension and alignment, the large black plate cover may be put back in position (read § 11.4.12)

## 11.4.5 Replacing the belt tensioning roller

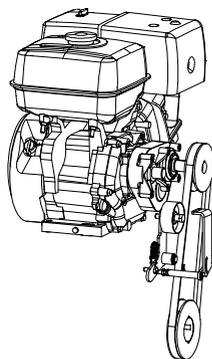
The metal runner that tightens the belt the moment the All-in-one™ control lever is pushed is under extreme pressure:

- the runner runs against the belt at 2300 RPM.
- Due to friction with the belt the latter becomes very hot; lubricants become liquid and will leak from the bearings as a result.
- During periods of drought, dust will inevitably develop when operating the machine. Sand and dust will find their way into the bearings and cause damage.

Due to the combination of these three factors the tensioning roller is sensitive to wear. Regular lubrication can counter accelerated wear. As soon as the bearing starts to make a growling sound, we recommend to replace the tensioning roller as a precaution. Failure to do this will result in blockage of the tensioning roller and consequently, damage or breakage of the belt. The belt may also damage the magnetic sensor when it breaks.

### How to proceed:

- Switch off the engine and remove the starter key from the starter lock.
- Unfasten the large black cover plate (read § 11.4.12).
- Leave the tensioning roller to cool down before disassembling it.
- Unhook the tension spring that keeps the tension arm in a neutral position.



- Unfasten the starlock locking clip at the back of the bolt. This will now have to be replaced also. Stock code starlock BB 011 000 090

- Unfasten the fixing bolt (M8, size 13 spanner).
- The tensioning roller can be ordered from an authorised ELIET dealer under stock code tensioning roller BA 599 005 300.
- Apply some extra lubricant to the bearing joints to avoid dirt penetrating around the new tensioning roller.
- Remount all elements to their original position and securely tighten the tensioning roller.
- Hook the spring back on and verify that it is properly mounted. A loose spring can disrupt control of the electrical height setting mechanism.
- Remount the black cover plate (read § 11.4.12)

## 11.4.6 Chain tightening

The DZC 750 has three chain drives.

- All chain drives are located behind the large protective cover at the left hand side of the machine. Remove this cover. (Read § 11.4.12 Removing protective covers).



### Caution:

Never tighten the chain too tight. Too much driving capacity would be required as a result, leading to extra wear of the chain and sprockets. Furthermore, a high radial tension can harm the cap seals and bearings.

**Note :** when checking the chain tension, also check the chain and the sprocket for extensive wear. If the teeth are worn the sprockets and chain must be replaced. Visit your authorised ELIET dealer for assistance.

**Note :** use this maintenance to lubricate the chain (read § 11.4.2.4).



### Caution:

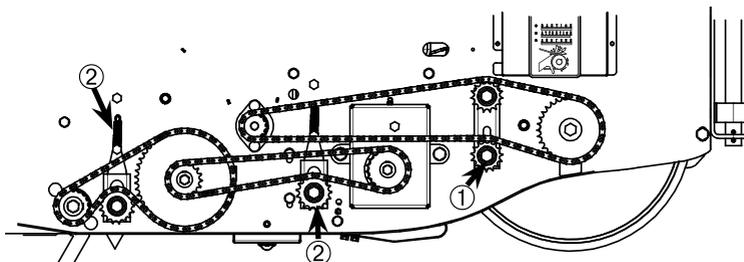
Chain tightening must be done with the engine switched off. Remove the key from the starter lock as a precaution.



### Caution:

Always wear suitable clothing for this type of maintenance.

Because they transmit huge capacity, two of these chains are duplex chains.



1) Chain drive (discharge jack - blade axis).

2) Chain drive (gearbox - discharge jack).

- These chains rotate very quickly; lubrication is therefore essential and the sprockets and chains must be checked regularly.

- Because these chain drives run in one direction only they were fitted with a single operating chain tensioner with permanent tension control. A spring pulls a chain tensioning wheel against the chain and adjusts automatically to the elasticity of the chain. Manual adjustment is unnecessary; regular lubrication of the guide suffices.
- The spring can be replaced if it shows signs of wear; stock code: BV 916 000 020

The third chain drives the roller in the seed reservoir as soon as the machine is set in motion.

- Its capacity and RPM are very limited, hence the choice for a single (simplex) chain.
- This chain may turn forwards and backwards, depending on the direction in which the machine is driving. A chain tensioner with a double function has been provided to accommodate this feature.
- The chain is subject to loss of elasticity after time and it will start to hang loose, with a risk of jumping off the gear under heavy strain. Loose chains require tightening.
- The easiest way to do this is to lift the bottom sprocket.
- Unfasten the nut (M10) holding the sprocket. Use a 17 mm spanner.
- Lift the sprocket and tighten the chain.
- Beware: over-tightening the chain can lead to accelerated wear of the bearings and the chain.
- Replace the protective cover and fasten it.

### **11.4.7 Checking the blades**

- The blades must be checked after each operation.
- Before performing a blade check make sure that the engine is switched off and the starter key removed from the starter lock.
- In transport mode, the machine is not lifted high enough to provide a clear view of the blade axis.
- The DZC jack, a special lifting device to lift the machine to a higher position can be purchased from ELIET under article number MA 01 016 013 (read § 11.4.13).
- The first thing to check is whether the blades show lateral play. If they do, proceed as follows:
  - Unscrew the two fixing bolts (M10) from the cast iron bearing block by one turn (17 mm spanner).
  - Unscrew the setting screws in the bearing bushing (2.5 mm hexagonal spanner).
  - Tighten the bolt (M10) at the centre of the end of the axis (17 mm spanner).
  - If it tightens against the end of the axis without eliminating the play between the blades and the bushings, you will have to insert small thick plates.
  - These plates can be ordered from ELIET (0.5 mm: BS 036 002 505 and 1 mm: BS 036 002 510)

- Once the blade assembly is free of play again, the bearing can be secured and remounted into the compartment.
- The blades must be inspected to check whether they are still straight. A blade may have been bent or twisted after impact with a hard object just below the surface. There is no need to change the blade - it can be bent back to its original shape.



- ELIET developed a special wring rod for the purpose that can be ordered under stock code MA 016 001 014

- The normal length of the blade is 30 mm. Blades that show two-thirds of wear cannot reach the desired groove depth and must be replaced (read §11.4.8).



#### For your information:

This check is a good opportunity to clean the blade compartment.

### 11.4.8 Changing the blades

- The blade axis is built in at the front of the machine with bearings on either side. The axis is driven by a chain on the left.
- The blade axis must be disassembled to change the blades.
- Because the axis cannot be removed from the chassis in transport mode, the machine must be lifted with the DZC jack (read § 11.4.13).



#### Caution:

Changing blades must always be done with the engine switched off. Remove the key from the starter lock as a precaution.

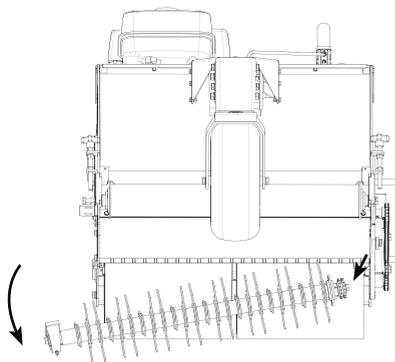


#### Caution:

Always wear suitable clothing for this type of maintenance.

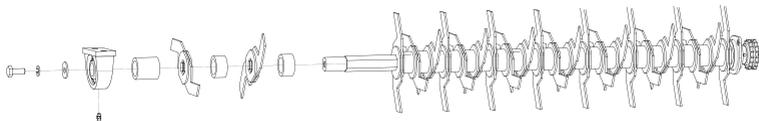
- Remove the cover protecting the chain in order to take away the drive chain of the blade axis. (Read § 11.4.13.)
- Unfasten the chain tensioner by removing the bolt (M8) that holds the extension spring. This can best be done by using an extended wrench (13 mm). In order to avoid damage to the screw

- thread, pull the wrench up to compensate the drawing tension of the spring (13 mm spanner)
- Take away the chain and fully remove the two locking bolts (M8) from the bearing flanges (13 mm spanner).
- The cast iron bearing block is located at the other side of the machine, under the cover plate of the jack outlet. Completely remove the two fixing bolts (M10) from the bearing block (17 mm spanner).



- Tip the axis downwards so that it comes free from the compartment. Now move the entire axis to the left. The sprocket fits neatly through the bearing hole in the compartment.

- The blade axis is built up as a pike with a string of blades and intermediate rings on it. The preferred route is to unfasten the cast iron bearing block and to slide all the elements from the axis from that side.
- Proceed by unfastening the central tightening bolt (M10) (17 mm spanner).
- There are two small locking nuts in the bearing bushing that can be unfastened with a 2.5 mm hexagonal spanner.
- Now all the blades and intermediate bushings can be slid from the axis.
- Check that the hexagonal axis does not show signs of wear (worn down by the blades).
- Sand the axis somewhat (fine sanding paper P100) to remove rust, dirt etc. to ensure that new elements can slide on smoothly.
- A new blade set can be ordered from ELIET under stock code BU 402 101 000.
- Follow the assembly diagram below.



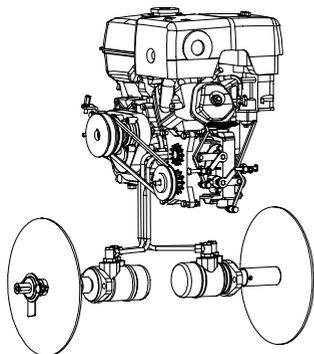


### Caution:

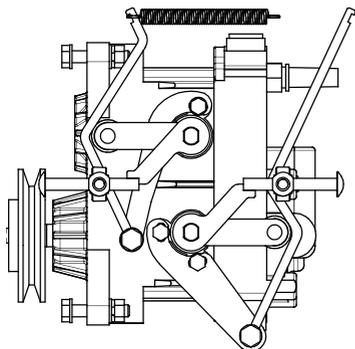
It is of vital importance to strictly adhere to the build-up of the blade axis. The seed funnels are in line with the blades to ensure that the seed is deposited in the grooves. Wrong blade assembly will cause the seed to fall beside the grooves, making the operation with the machine quite useless.

- Two points must be observed when installing new blades: the cut of the blade will point into the right direction; each blade will have a 60° angle as compared to the adjacent blade.
- After placing all the blades and intermediate bushings, the last step is to slide the bearing block onto the cylindrical end of the axis.
- Attention: the bolt that is placed at the top of the axis should put tension on the entire assembly and the bushing of the bearing block must therefore protrude from the end of the axis.
- Due to differences in blade thickness, the end of the axis may protrude from the bearing block. To solve this, pinions must be placed between the bearing and the final bushing to correct the difference.
- Now tighten the entire assembly by securely fastening the central bolt (M10) to eliminate any possible play (17 mm spanner).
- Fix the two fixing screws in the bearing bushing to the axis (2.5 mm hexagonal spanner).
- Now replace the blade axis into the compartment. Ensure that the bearings are installed without tension.
- Lower the machine from the DZC jack.
- Remount the chain drive and replace the large protective cover.
- Readjust the depth setting. (Read § 9.6.3.2)

## 11.4.9 Adjusting wheel traction



The rollers are driven hydrostatically. The hydrostatic pump is mounted in the back of the machine and generates an oil stream and oil pressure that activates the traction engines of the rollers.



The hydrostatic pump physically consists of one block but is made up of two connected pumps. Each pump provides the drive engine of the relevant roller with oil pressure for the driving mechanism. Both pumps run at the same speed and consequently provide equal flow rate and power. Each pump has its own drive: a turnable axis end. Depending on the angle, the oil stream within the pump will be subject to more or less 'choke' and will be redirected. This allows for adjustment and control of the spinning direction and the speed on the rollers.

Alignment of the wheel traction takes place via the operation mechanism of these axis ends.

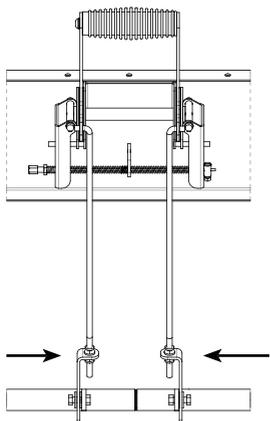
#### **11.4.9.1 Cruise Control**

When cruise control is engaged, it can happen that the machine deviates from its straight course.

- Temporary or 'one-off' deviations can usually be attributed to fluctuations of the rollers' grip on the surface. This, in turn, may have to do with an uneven surface, a heterogeneous structure or a difference in humidity between the left and right roller.
- If the phenomenon occurs on an even surface, the operation of the hydrostatic pumps must be adjusted.

#### **Proceed as follows :**

The cruise control is a relatively simple mechanism. By operating the cruise control lever, a rod mechanism basically activates the operation of the two individual traction levers.



In other words: one lever (hence one movement) turns the two steering axes of the hydrostat evenly at an identical angle. As a result the machine will ride a straight line at constant speed.

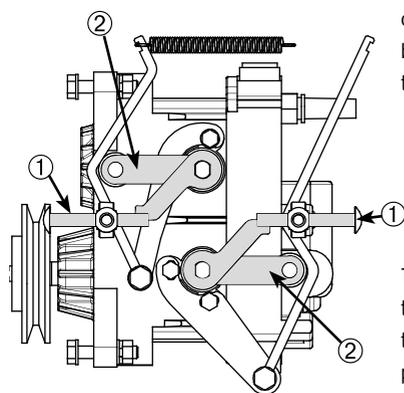
Two rods transfer the movement on the cruise control lever to the steering axes. If under circumstances, the rods become different in length, the movement of the cruise control lever will not be translated into the same angle for each axis. The machine will drift off course as a result. An adjustment device has been provided on both rods.

- For instance: if the machine drifts to the left, the left rod must extended slightly.
- Proceed as follows: unfasten the lowermost nut (M6) on the left rod and turn it clockwise a few turns. Now turn the uppermost nut (M6) against the L-profile to secure the setting.
- Make a test drive and repeat the above procedure until the deviation has been eliminated.
- If the machine drifts towards the right, apply the same procedure to the other rod.

### 11.4.9.2 Individual manual operation

If you are riding the overseeding machine across a nice, even paved surface (concrete, tarmac) without the use of the cruise control and you squeeze both operation levers into their maximum forward position, the machine should maintain a straight course. If it doesn't and systematically deviates from its straight course, the operation mechanism on the steering axes on the hydrostatic pump requires adjustment.

The rods connecting the operation levers to the hydrostat do not avail of an adjustment mechanism, which means that adjustment must be carried out on the mechanism of the hydrostatic pump itself.

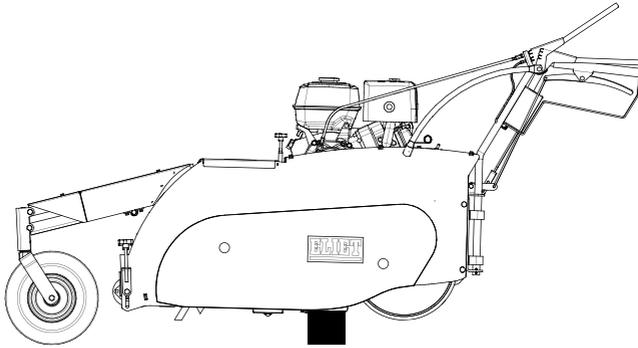


The two axis ends that operate the individual pumps are provided with a bushing with two levers each: one lever ① ends in a polished axis that holds the ball joint. The mechanism of the rods is coupled to this axis.

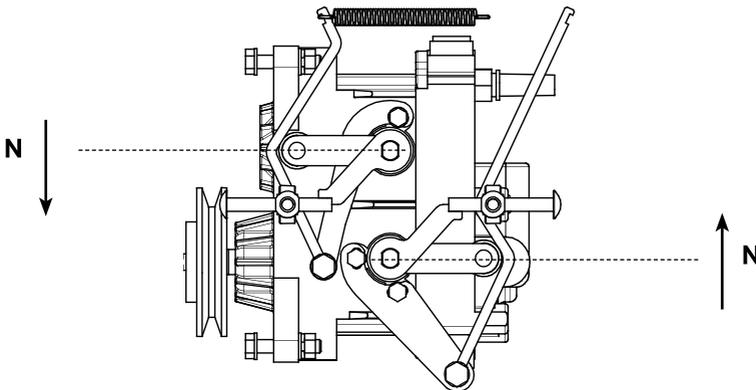
The second lever ② carries a ball bearing at the end that runs over a V-shaped runner. The lowest point of the V constitutes the neutral point of the hydrostatic pump.

This point is the turning point for advancing and reversing and must be adjusted in case a deviation arises between the traction of both pump halves.

- Since this requires very precise alignment and driving the machine is subject to too many external factors, it is recommended to let the rollers run idly while adjusting the traction difference.



- We recommend the following procedure to lift the rollers from the surface:
  - Switch off the engine and turn the starter key to ON.
  - Put the machine in transport mode.
  - Place a bench (LxWxH = 1 m x 10 cm x 10 cm) under the machine just in front of the rollers without letting it make contact.
  - Lower the machine to work depth.
  - Once the swivel caster is lifted from the surface, engage the transport lock.
  - The machine will have tilted over the wooden bench and the rollers will have lifted up.
- Let's return to the example that the machine drifts off to the left. In that case, the right hand roller will rotate faster than the one on the left. There are two options for solving this problem: one is to adjust the zero point of the left pump down, the other is to adjust the zero point of the right pump up.



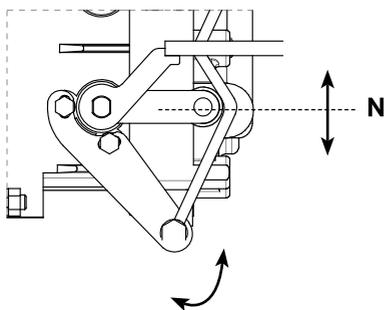
- The chosen method will depend on the situation and can be tested by checking whether a traction difference can be observed even when the traction levers are not operated (i.e. with the pumps in zero position).
- When the rollers touch the surface, the weight of the machine will prevent you from observing a small traction difference in neutral status. That difference can however, be noticed when the rollers are idle.
- Draw a straight chalk line across both rollers; this will allow you to monitor the traction difference.
- Start the engine.



**Caution:**

Do not touch the All-in-one™ control lever: the blades are on the surface!  
Engaging the blades at this point would cause serious damage to the blades and to the surface.

- Check the effect on both rollers. In the neutral position, it will be easy to observe which roller causes the deviation.



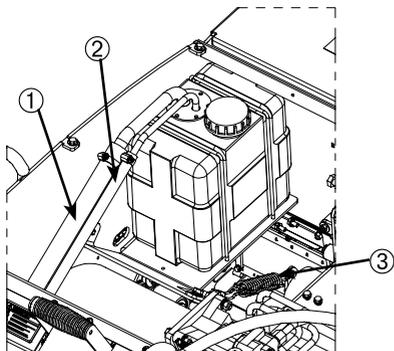
- To adjust the neutral position at the relevant side of the pump, slightly loosen the two bolts (M6) of the fixing plate (spanner size 10). Very carefully move the plate to slightly move the neutral point.

- Proceed until the traction difference is gone.
- Tightly secure the tension bolts (M6) again.
- Adjusting the zero point on the hydrostatic pump will have an effect on the cruise control setting. Readjust it if necessary.

#### **11.4.10 Changing hydrostatic oil**

The hydrostatic circuit is a closed system, fully shielded against dirt. The hydrostatic suction tube also contains a filter to avoid any dirt from entering the pump. Despite these provisions, we recommend to change the oil after 500 hours of operation. Proceed as follows:

- Remove the black protective cover from the machine to reach the hydraulic components. (Read § 11.4.12)
- Have a collection reservoir ready with a volume of at least 6 litres.
- Unfasten the suction lead ① by detaching the strap and sliding the tube from the metal pipe. Place the reservoir under the lead to avoid oil spillage.
- Unfasten the spark plug cap to prevent the engine from starting.
- Turn the starter key to the 'START' position to let the starter engine run. This will drive the hydrostatic pump and the oil in the pump will be pushed to the tank via the return pipe.



- The easiest way to change the oil is to disassemble the black oil reservoir

- Unfasten the return pipe ② by unscrewing the strap. Slide the lead from the tube to the tank.
- First, unhook the spring ③ that pulls the runner against the eccentric by putting a rope through the eye and pulling at it with both hands.
- Cut away any plastic straps that attach the hydraulic leads to the support plate of the tank.
- On the left side of the body, unfasten the three fixing bolts (M8) of the tank support plate (13 mm spanner).
- Carefully remove the tank from the machine, ensuring that no oil spills from the tank.
- Pour the contents (5 l) into the collection reservoir.
- Verify that any sediment on the bottom of the tank is removed together with the oil.
- Now pour 5 litres of fresh hydrostatic oil into the tank. ELIET recommends a high quality oil: MOBIL.
- Replace the tank into the machine and put all other parts back in their original position.
- When everything is back in place and the leads are reconnected, engage the starter engine by turning the starter key to the 'START' position.
- Leave it to run so that the hydrostatic pump can pump the new oil through the leads.
- Add a little bit of oil to the tank. The tank must be filled to 2 cm under the brim.
- Replace the black cover plate on the machine to protect all interior drives.

**Warning:**

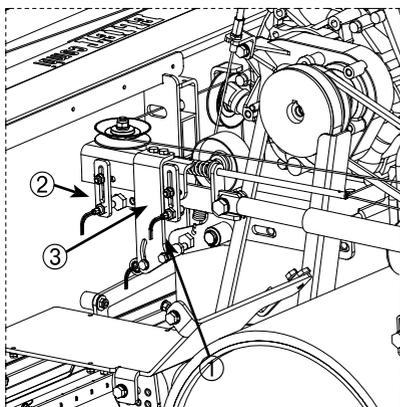
Oil shortage in the hydrostatic pump inevitably causes severe damage. (Any such damage falls outside the scope of the warranty.)

**Warning:**

Respect the environment: bring the oil to an authorised collection point for expert processing or recycling. Never pour oil down the drain.

### 11.4.11 Adjusting the electromagnetic detection

The machine contains three non-contact magnetic contacts:



**1. Magnetic contact for the All-in-one™ lever:** this is the most important switch contact of the entire machine - it detects whether the AIOC has been activated. Consequently, it is this particular switch that gives the command to the electrical actuator to either move the machine to work depth or lift it back to transport mode.

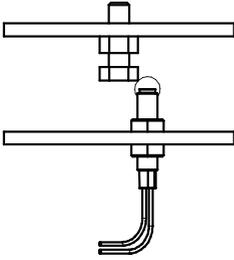
**2. Magnetic contact controlling the end of the stroke of the actuator in extending mode:** this contact defines when the actuator should stop extending to lift the machine into transport mode.

In addition, the operator can influence the transport lifting height by changing the position of this contact.

**3. Magnetic contact controlling the end of the stroke of the actuator in retracting mode:** this contact determines when the actuator may stop retracting, or when it has reached the end of its stroke length

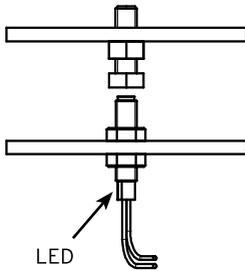
**Caution:**

The two last mentioned magnetic detections also constitute a safety measure to prevent the actuator from getting stuck at the end of its stroke length. The actuator is equipped with an overflow protection device, but it should only be used in the extreme situation that a magnetic contact would stop working. In that case, the actuator can be reset by switching off the power via the transport lock or by turning the starter key to OFF. After many hours of operation and corresponding vibrations, or as a result of tightening the belt tension, etc., the detection function of the electromagnetic contacts may become disarranged. The procedure for readjusting them is described below.

**General information :**

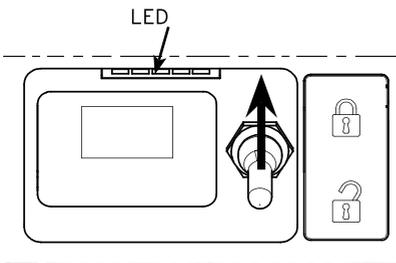
- This type of magnetic contact reacts to metal entering the detection sphere at 2 mm distance from the detection head.

- When the magnetic detection reacts to an object within the detection area, a built-in LED (light emitting diode) will light up inside the magnetic switch.



- First, we check the distance between the head face of the detector and that of the bolt (detection area) for each magnetic switch. ELIET recommends a distance of 2 mm to avoid that torsion of parts could cause the bolt head to touch the detector. The body of the magnetic switch is made of screw thread. Turn the fixing bolts (M8) and adjust the distance if necessary. Alternatively, the detection point can be brought closer to the magnetic switch. This always involves M8 bolts and a locking nut (M8) (13 mm spanner).

- There are 5 LED lights on the instrument panel. They serve to check correct functioning of the electrical system: (from left to right)



**LED 1 :** ON : Tensioning roller in neutral position = All-in-one™ control not activated, so the blades are not running

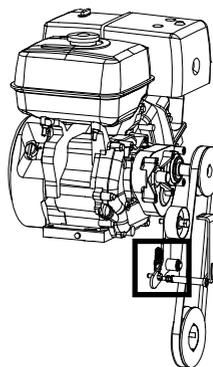
**LED 2 :** ON : limit switch at the end of the extended actuator = machine is in transport mode.

**LED 3 :** ON : limit switch at the end of the retracted actuator = machine is in work mode.

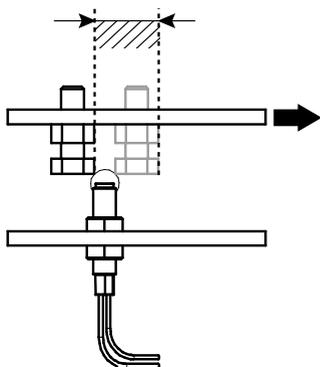
**LED 4 :** ON : Actuator is extending = the machine is moving from work mode into transport mode

**LED 5 :** ON : Actuator is retracting = The machine is moving from transport mode into work mode.

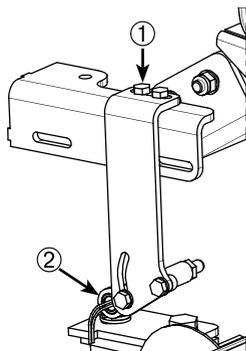
### 11.4.11.1 Adjusting first magnetic contact



- Correct setting of this magnetic contact is of vital importance. Since it is activated when the machine lowers itself to work depth, correct switch timing is crucial. The blades must be at an appropriate speed before making contact with the surface. This benefits the engine and the belt transmission.
- This magnetic switch is built into a tube that comes in the proximity of the arm that moves the belt tensioning roller. As a result, the LED of the magnetic switch will not be visible. Reactivity can also be read from the LEDs on the dashboard.
- Under normal circumstances the magnetic switch registers if the belt tensioner is at zero (not activated). In zero position, the tensioning arm is pulled against a stationary stop. The magnetic switch must therefore be placed such that in zero position, the detection point (bolt head M8) on the tensioning arm always falls within the measuring area around the detection head.
- Because we want the tensioning roller to intervene way before the electrical actuator is activated, it is important that the magnetic switch is placed in such a way that when the tensioning arm is moving away, the detection point falls within the detection area of the detection head as long as possible.



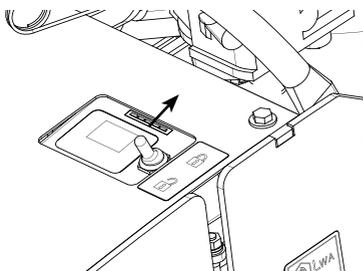
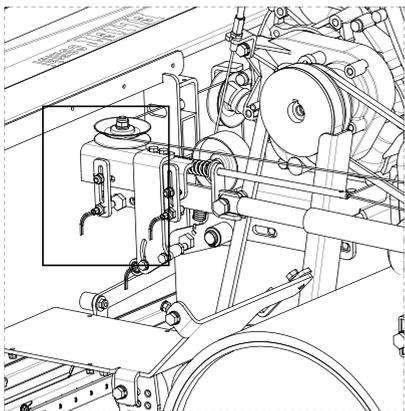
- Based on the above mentioned conditions, the following position prevails.



- There are two adjustment options on the holder of the magnetic switch. On top are two fixing bolts (M6) for lengthwise adjustment. ①. On the bottom are two fixing bolts (M6) for angle adjustment. ②. By combining the two adjustment options, the magnetic switch can be placed in the prescribed position.

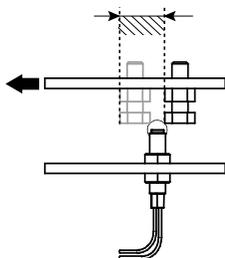
- Check the switch behaviour of the actuator and adjust if necessary. The LEDs on the instrument panel provide a visual of the sensor's switch movements. The first diode from the left will light up red when the magnetic switch detects the detection point. It will go out when the detection point moves outside the detection area. .

#### **11.4.11.2 Adjusting the second magnetic contact**



- This contact must switch just before the actuator-reaches the end of its stroke length.
- Put the starter key in the ON position, press the All-in-one™ control lever and let the machine lower to work depth without the engine running. Engage the transport lock.

- The holder of the magnetic contact allows for sufficient control. Loosen the fixing screw (M6) of the holder by one turn (10 mm spanner) and move the magnetic switch completely outside the range of the detection point.
- Disengage the transport lock.
- The machine will move into transport mode, causing the actuator to extend. As soon as the actuator starts to 'hum' and stops extending, quickly engage the transport lock.

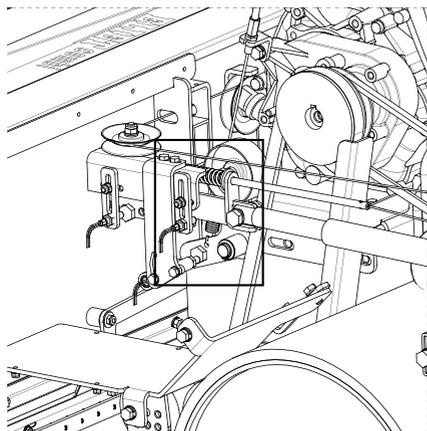


- Now move the holder and position the magnetic switch just before the detection point (in the outward extending direction) and screw the fixing bolt (M6) back on (10 mm spanner).

This setting sets the width of the detection point (bolt head M8 = 13 mm).

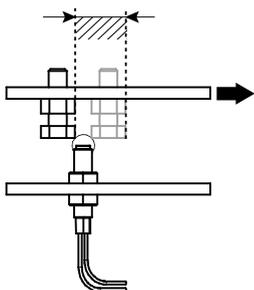
- The radius of the detection area (2 mm) as a safety margin before the end of the stroke length. This suffices to bring the actuator to a halt in time.

### **11.4.11.3 Adjusting the third magnetic contact**



- This magnetic contact must also switch just before the actuator has fully retracted. Prior to adjusting the switch, put the machine in transport mode and turn off the engine. Leave the starter key in the ON position.

- Engage the transport lock.
- Just as for magnet contact two, the holder is equipped with a control device. Unfasten the fixing bolt (M6) of the holder by one turn (10 mm spanner).
- Move the magnet switch completely away from the radius of the detection point. Engage the transport lock and push the All-in-one™ control lever down to lower the machine into work mode.
- Once the actuator has fully retracted (the swivel caster is at maximum height from the surface), quickly engage the transport lock.

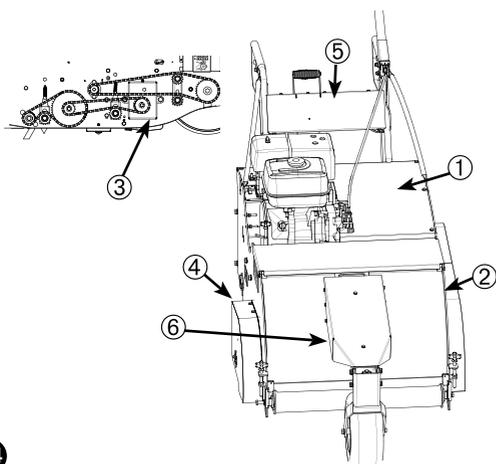


- Now move the holder and position the magnetic switch just before the detection point (in the inward retracting direction) and tightly screw the fixing bolt (M6) back on (spanner size 10 mm).

- This setting provides a safety margin that equals the width of the detection point (= bolt head 13 mm) plus the radius of the detection area (2 mm) to disengage the actuator before it gets to the start of the stroke length.

### 11.4.12 Removing protective covers

The machine has six protective covers.



- 1) Black protective cover: covers the drives inside the machine
- 2) Large chain shield: covers all chain drives
- 3) Gearbox: the cover plate of the gear transmission is located underneath the large shield
- 4) Cover plate on the discharge jack; this plate covers the jack discharge as well as the bearings of the jack and the blade axis.
- 5) Cover on the instrument panel: covers the bottom of the instrument panel that contains the hinge of the cruise control lever.
- 6) Cover on the front wheel leg: covers the machine's lifting mechanism.

- The protective covers must be removed in order to reach the machine parts or drives that require maintenance. Proceed as follows:



**Caution:**

Removing protective covers is considered to be maintenance. Consequently, the engine must be turned off and appropriate clothing must be worn.



**Caution:**

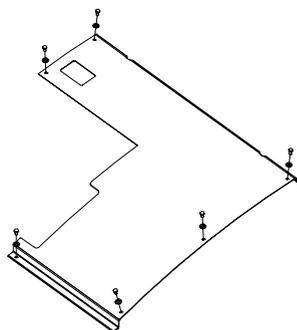
Protective covers are intended to shield off dangerous areas to avoid accidents. It is therefore strictly prohibited to operate the machine or to activate the engine or any drive with any protective cover removed.



**Caution:**

The person who removes a protective cover is aware of the fact that he is creating a dangerous situation and is therefore responsible for establishing safe circumstances by removing the starter key from the lock to avoid that others could start the machine against his will.

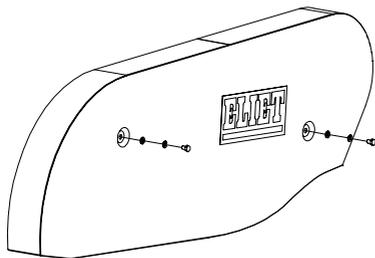
1. The black protective cover is attached with six bolts (M6) (see drawing below). Use a 10 mm socket spanner to unfasten them.



- When removing the cover, beware that it is very flexible and could have sharp edges.

2. The large chain cover is attached to the left side of the machine with two bolts (M8). Because it slightly sinks into the cover, it is best to use a 13 mm ring spanner.

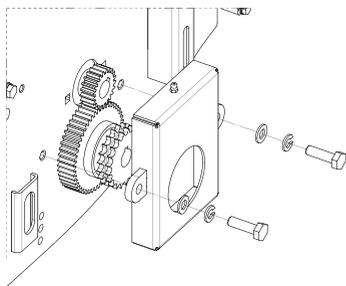
- Make sure to replace the cover neatly against the compartment to avoid dust from penetrating the chain drives.



- Fix the bolts tightly to ensure they cannot come loose as a result of jarring.

3. The gearbox is located behind the chain cover. To reach the gearbox you must therefore remove the chain cover first.

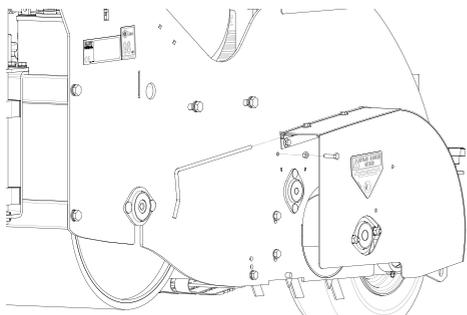
- To remove the cover, the chain drive towards the jack must also be taken away.
- Detach the chain tensioner by unfastening the fixing bolt (M8) from the extension spring, preferably by using an extended socket spanner (13 mm). In order to avoid damage to the screw thread, pull the wrench up to compensate the drawing tension of the spring.
- Remove the chain.
- The cover of the gear is attached by two bolts (M8) (13 mm spanner).
- The purpose of this cover is to keep the lubricant inside the gearbox and the dirt out and it is therefore sealed with silicone paste. As a result it will stick to the side.
- Insert a flat screwdriver between the cover and the side plate of the compartment to prize it off.
- Two felt rings on the seam of the gear provide a seal for the axis opening in the cover.
- The axis opening in the cover is large enough to slide it over the sprocket.
- Before replacing the cover, cut away the remaining silicone paste from the cover and apply new paste.
- Replace the felt rings if they are damaged or torn. You can order them from your authorised ELIET Service Centre under stock code BA 820 203 020.



- Ensure to properly tighten the bolts when replacing the cover against the compartment. Avoid any bending of the joggles on the cover.

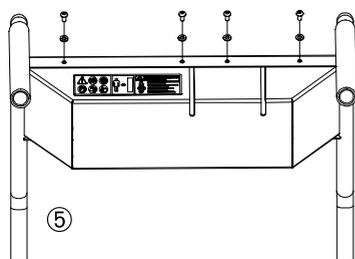
4. The cover over the discharge jack has been designed to lean onto the compartment by its own weight. Hinges have been provided so that in the event of large debris discharge, the cover can open up to avoid blockage.

The operator of the machine may never allow anyone to open the cover while the machine is working.

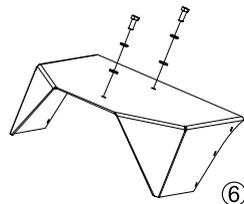


- A lever has been provided on the centre pin of the hinge. To remove the centre pin a locking bolt (M6) must be unfastened first (10 mm spanner).

5. The cover of the instrument panel only serves the aesthetic purpose of covering the hinge and the clamp mechanism of the cruise control lever.



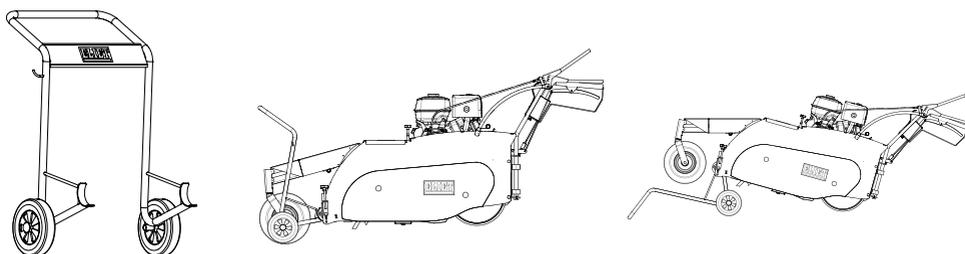
- Four bolts (M5) attach the cover at the top. Unfasten these bolts (8 mm spanner).



6. The plate on the front leg is also provided mainly for aesthetic reasons, but it also covers the hinge and the lever for lifting the machine. The cover is attached at the top with two discrete bolts (M6). The cover can be removed by completely unfastening these two bolts (10 mm spanner).

### **11.4.13 Lifting the machine with a DZC-Jack**

When the machine is in transport mode, the clearance between the compartment and the surface is only 8 mm. That is insufficient for proper inspection or maintenance activities. ELIET therefore developed a lifting vehicle that can lift the machine quickly and effortlessly to 35 cm: the DZC Jack, stock code MA 016 001 013. How to use the DZC jack:



**Caution:**

The DZC 750 weighs 320 kg. Always wear safety shoes with a steel top for maximum protection of your feet

**Caution:**

Keep bystanders at a safe distance while lifting the DZC 750 or when the machine is on the DZC jack.

- Put the machine in transport mode and lock it with the transport lock.
- Insert a wedge behind the two rollers to prevent them from rolling backwards.
- Position the jack with its two wheels on either side of the swivel caster.
- Place the two claws of the jack underneath the anti-scalping roller.
- The handlebar of the jack serves as the lever to lift the machine.

**Caution:**

The weight at the anti-scalping roller is approximately 85 kg. Thanks to the lever, the effective weight that must be pulled down is about 25 kg. For ergonomic reasons and to avoid injuries, ELIET recommends to perform this action with two people.

- Place your foot against the wheel of the jack. Use it as a support to push off while pulling down the lever.
- Push the lever to the ground. The machine will move beyond the tilting point and automatically push the lever to the surface.
- As a precaution, place a wedge under each wheel of the Jack to prevent it from toppling over.
- You now have more ground clearance to perform inspections, cleaning or repair activities.
- When lowering the machine back to the surface, make sure to lift the lever with caution and control. Put your foot against the wheel again to make sure that the jack can't skid.
- Stay alert: the effect of the machine's weight will be felt mainly at the end of the tilting movement.

## 12. Storing the machine

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When storing the machine for an extended period, we recommend that you follow the steps below:

- Clean the entire machine thoroughly. (Read § 9.7 Cleaning the machine.)
- Carry out large maintenance (see § 11.2).
- Check all nuts and bolts and fasten them where necessary. Most bolts require the use of two spanners of 10, 13, 14, 17 or 19 mm and wrenches 4, 5 or 6.
- Empty the fuel tank either by running the engine until the machine runs out of fuel, or by using a siphon to pump the petrol back into the jerrycan (read the safety instructions under § 9.4 Refuelling).
- Remove the spark plug (see § 11.3.5 Checking and/or changing the spark plug). Spray some penetrating oil with MoS<sub>2</sub> into the cylinder. Pull the starter cord until the piston is in its uppermost position. Replace the spark plug.
- Detach the two battery poles when storing the machine for a long time.
- To avoid rust on the machine touch up all chipped areas or treat them with anti-rust grease. Original paints/enamels in the appropriate colours are available from your ELIET dealer.
- Store the machine in a cool, dry storage area, away from possible rain. If necessary, cover it with canvas.
- If the machine is stored outdoors, it must be properly covered with canvas. Avoid direct precipitation on the machine. ELIET highly recommends a sheltered storage place.

## 13. Equipment specifications

### DZC 750

Chassis	Steel plate 5 mm
Dimensions	2350 x 915 x 930 mm
Paint	Epoxipolyester
Weight	320 kg
Engine	Honda GX 390 LKE
Capacity	13 HP / 9,5 kW
Starter	Electric 12V
Engine type	Petrol (reduction 1/2)
Operating width	750 mm
Number of blades	24
Blade type	Permanently sharp blades™
Groove spacing	30 mm
Depth control	0 à -30 mm
Lifting device	Electrical
Debris discharge	Archimedean screw (Ø 160 mm)
Discharge side	Right side
Decoupling	Belt transmission
Transmission (jack)	Chains
Seed reservoir volume	46L/12kg
Flow rate control	0 tot 85 gr/m <sup>2</sup>
Vibrating system/frequency	18 vibrating plates/15 Hz
Roller drive	Hydrostatic
Manoeuvrability	Zero-turn (EZR)
Driving speed	proportionally controllable (L/R) 4 km/h < 0 > 4 km/h
Front wheel	Swivel caster
Tyre size	13 x 5,00-6
Tyre pressure	40 psi/2.8 bar
Comfort	low-vibration handlebars Electric control on handlebars Easy track control
Option	Seed collector unit MA 016 001 006 DZC Jack MA 016 001 013 Blade adjustment tool MA 016 001 014 Scraper MA 016 001 015

# 14. CE-Conformiteitsverklaring



Machine: **OVERSEEDER**  
Type: **ELIET DZC 750**  
Model number: **MA 016 020 218**

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

## **EN 13684: Garden Equipment - Pedestrian controlled lawn aerators and scarifiers - 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 certain procedures set forward in the directive 2000/14/EG annex III/B and directive EN 13684.

Measured sound power level LwA : 97 dB(A)  
Guaranteed A-weighted sound power level : 98 dB(A)

Date: 01/01/2011

Signature:

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

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

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## **Annex 1**

### **Risk analysis**

Please find below a list of hazards and risks connected with transportation or operation of this overseeder. Take good notice of these dangers and avoid risks by following the instructions in the manual. Beware that risks are not limited to the operator: bystanders can be exposed as well. Ensure that bystanders are always kept at a safe distance.

- Danger of flying debris during overseeding activities.
- Injuries from flying debris from the outlet while the machine is in action.
- Injuries from flying debris while lifting the machine into transport mode.
- Bruises or injuries when the machine is lowered, namely at the transfer point between transport mode and work mode.
- Danger of cuts to the feet when engaging the blades with the machine locked in transport mode.
- Injuries from contact with the blades when reaching under the machine.
- Injuries from contact with the blades during deblocking, maintenance or cleaning activities.
- Squeezing or jamming when the seed reservoir lid slams shut.
- Reaching into the rotating drum in the seed reservoir introduces the risk of fractured or bruised fingers.
- Reaching into chain drives when removing chain covers introduces the risk of fractured, entangled or severed fingers or limbs.
- Reaching into belt drives when removing belt covers introduces the risk of fractured, entangled or severed fingers or limbs.
- Reaching behind the cover plate introduces the risk of fractured or severed fingers, feet or other limbs as a result of contact with the discharge jack.
- Jammed or severed fingers or lower limbs caused by the lifting device near the front wheel leg.
- Spraying of feet or knee joints when lower limbs get stuck under the traction rollers.
- Spraying of feet or knee joints when lower limbs get stuck under the swivel caster or anti-scalping roller.
- There is the risk of bruising or becoming wedged between the handlebars and any obstacle whilst moving in reverse or changing direction.
- Injuries caused by the machine toppling over as a result of unsafe transport.
- Physical injury can occur when traversing a terrain that cannot support the weight of the machine.
- Risk of electrocution from creating a short circuit.
- Risk of electrocution from pulling high voltage cables away from the spark plug whilst the engine is running.
- Heat exhaust or heat from the engine can cause scorching.
- Rubbish build-up around the exhaust or poor cleansing of the engine creates a fire hazard.
- Petrol spills also create a fire hazard.
- Heavy inhalation of exhaust fumes can induce intoxication.
- Air passages and the lungs are prone to irritation from breathing in dust particles produced

during operation.

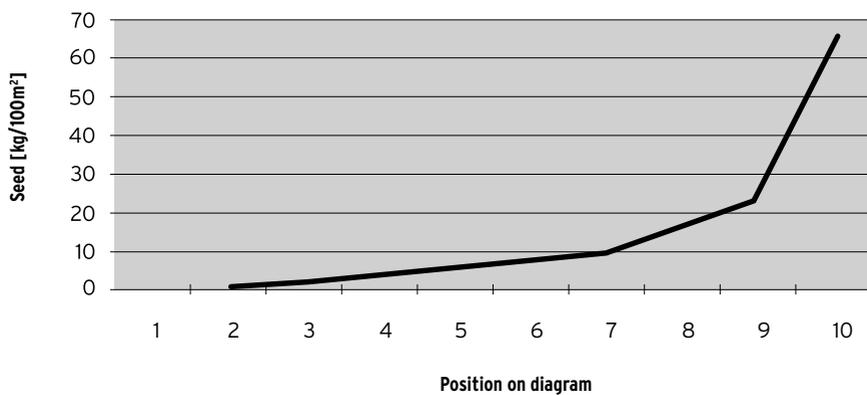
- Hearing loss as a result of not wearing the proper ear plugs or hearing protection during operation.
- Nerve damage or rheumatic disease can develop when exposed to the jarring for too long, without pausing for breaks.
- Back problems caused by lifting the machine in an irresponsible way.
- Risk of perforation of the skin or senses by the oil jet when a hydraulic component breaks.
- ...

The list is not exhaustive and only serves the operator's safety.

## Annex 2

POSITION ON DIAGRAM	SEED/100M <sup>2</sup> [KG/100M <sup>2</sup> ]
1	0
2	0
3	0,39
4	1,55
5	4
6	7
7	10
8	16
9	23
10	65

Overseeder DZC750



## Annex 3

### BOLT HEAD IN ACCORDANCE WITH DIN 931, DIN 912, ...

Screw thread tolerance class		Torque (Nm)	
		8.8	10.9
Normal screw thread type	M4	3,0	4,4
	M5	5,9	8,7
	M6	10	15
	M8	25	36
	M10	49	72
	M12	85	125
	M14	135	200
	M16	210	310
	M18	300	430
	M20	425	610
	M22	580	820
	M24	730	1050
	M27	1100	1550
M30	1450	2100	
Fine screw thread type	M8 x 1	27	39
	M10 x 1,25	52	76
	M12 x 1,5	89	130
	M14 x 1,5	145	215
	M16 x 1,5	225	330
	M18 x 1,5	340	485
	M20 x 1,5	475	680
	M22 x 1,5	630	900
	M24 x 2	800	1150
	M27 x 2	1150	1650
M30 x 2	1650	2350	

(Friction coefficient  $\mu = 0,14$ )

