



RI 62-82 Barrier Mower

User manual

EN

1. edition



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 **Made in Denmark**
Designed and manufactured



 **GREENTEC**

Cutting Edge Technology

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RI 62-82 Barrier Mower

User manual

1. edition – October 2023
(Original version)

! IMPORTANT !

For correct operation, this **GreenTec RI 62-82 Barrier Mower** must be mounted on an approved multi carrier with an approved vehicle.

It is important that the operator is given both the user manual, spare parts book, and all other relevant technical documentation for both the tool carrier, attachment tool and vehicle before the machine is put into use for the first time.

It is important that the operator fully understands the contents of the instruction material before using the machine.

This user manual must accompany the machine and must always be available to the operator.

In case of later resale of the machine, all relevant technical documentation must be handed over to the new owner.

The content of the user manual is based on information, standards, and regulations, valid at the time of publication.

As our products are under continuous development and improvement, changes to the specifications may occur.

If there is information that differs from the current machine, updated instructions can be found on our [webpage](#) or by contacting [GreenTec After-sales service](#) department at: service@greentec.eu

Manufacturer, name, and address (a)



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Danmark

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Web: www.greentec.eu

Preface

Dear Customer!

Your new GreenTec machine is designed based on almost 30 years of experience with vehicle-mounted machines for maintaining green areas.

The machine is manufactured based on the latest technology and approved safety regulations, standards, and regulations.

We want to make a product available in a way that does not cause damage or misunderstandings either during use, during transport or during maintenance of the machine.

The user manual contains information and instructions that are important and useful for maintaining the operational safety, reliability, and value of the GreenTec machine.

Therefore, read this user manual carefully, as it will make you familiar with assembly, use, care, and maintenance. **Pay particular attention to instructions regarding safety!**

You are welcome to visit our website www.greentec.eu - where you can find technical documentation and access the latest updates to instruction- and spare parts books on our entire product range.

We hope that you will be satisfied with your new GreenTec machine!



Kind regards:



John Christensen

Co-owner, Product Development
GreenTec A/S

GreenTec's vision is to develop and sell quality machines for the maintenance of green areas, i.e., in agriculture, industry, airports and the municipal sector. Through innovative product development, we strive to become a leader in our field.

All machines are developed in a simple, functional, and production-friendly design in close cooperation with dealers and end users. It is our goal to cover all needs in the market segment with a minimum of 2 different proposed solutions.

Through in-depth analysis and counselling, the customer must be offered the best possible solution, where individual needs can also be met through the modular structure of the product range.

The aim is also to offer the best possible after-sales service and a fast and efficient supply of spare parts.

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(Letters in headings (x) refer to Machinery Regulation (EU) 2023/1230, Paragraph 1.7.4.2, "Contents of the instructions" sections a – u)

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Declaration of conformity (c)

Acc. to Machinery Regulation (EU) 2023/1230 Annex V.A

MANUFACTURER: GreenTec A/S
ADDRESS: Merkurvej 25
LOCATION: DK-6000 Kolding



We, **GreenTec A/S**, hereby declare that the machine:

TYPE:	PRODUCT:	APPROVED WITH:
Barrier Mower	RI 62 (9990062L-25, 9990062R-25, 9990062L-40, 9990062R-40)	FOX Multi Carrier HXF 2302 Multi Carrier HXF 2802 Multi Carrier HXF 2802 Tele Multi Carrier
	RI 82 (9990082L-25, 9990082R-25, 9990082L-40, 9990082R-40)	Puma 2303 Multi Carrier Puma 2803 Multi Carrier Puma 2803 Tele Multi Carrier

Table 1 – Machines covered by declaration of conformity

- is manufactured in conformity with both the European Parliament and Council Regulation (EU) 2023/1230, and UK Statutory Instrument 2008 No. 1597: The Supply of Machinery (Safety) Regulations 2008, with references to the following standards associated with its design, construction, and production:

NAME:	DESCRIPTION:
BS/EN ISO 12100:2011	Safety of machinery – General principles for design – Risk assessment and risk reduction
BS/EN ISO 14120:2015	Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards
BS/EN ISO 4413:2010	Hydraulic fluid power – General rules and safety requirements for systems and their components

Table 2 – Declared international standards

The declaration only applies if the machines stated above are used in accordance with the operating instructions.

When connecting the above-mentioned machines to a vehicle and/or with a multi carrier other than those mentioned above, it is the responsibility of the owner and operator to ensure that the vehicle and the assembled machines meet the applicable requirements in the relevant directives for this.

Date: 01.10.2023

A handwritten signature in black ink, appearing to read 'John Christensen', is written over a light blue horizontal line.

John Christensen

Co-owner, Product Development
GreenTec A/S

1) Machine data and useful info (b)

Before the machine is put into use for the first time, the dealer is responsible for ensuring that the buyer receives this document and that the machine is correctly registered via the Extranet on GreenTec's website:

<https://extranet.greentec.eu/login>

If in doubt regarding login information, please contact GreenTec After-sales service: service@greentec.eu

The dealer/importer must also ensure that the buyer and operator fully understand the contents before the machine is put into use.

If the machine is re-sold, all the supplied technical documentation must be handed over to the new owner and must also always accompany the machine.

The fields below are filled in, for future use when ordering spare parts or other enquiries:

1.1) Registration of Greentec machine data

DATA TO BE ENTERED BY THE DEALER VIA THE GREENTEC EXTRANET!

Machine description:

Serial number:

Sales date:

Dealer:

E-mail:

Phone:

Table 3 – Machine data form



1.2) Name plate

All GreenTec's machines are equipped with a name plate.

The nameplate contains important information relating to the machine, including a unique serial number used for identification.

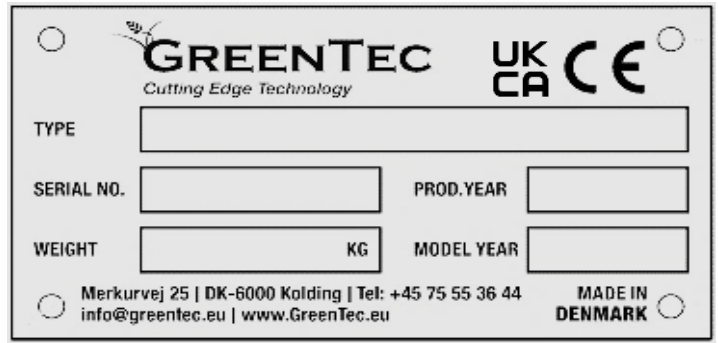


Figure 1 – Name plate for GreenTec machine

CONTENT OF THE NAME PLATE:	
Type:	Machine model and type number.
Serial No.:	Unique serial number of the machine.
Prod. year:	Production year.
Weight:	Weight of the machine <i>without</i> optional equipment (kg.)
Model year:	The year of development of the machine model.
<i>The nameplate also provides address information for the manufacturer.</i>	

Table 4 – Content of GreenTec name plate

1.3) Warranty terms

- GreenTec must be notified in writing of errors or defects in the sold machine **no later than 8 days** after the error was or should have been registered by the end-user. If not notified within this period, the customer is not entitled to submit claims regarding errors or defects.
- GreenTec is entitled and obliged to remedy all errors and defects within the specified coverage of the product warranty, being able to decide freely whether such remediation must take place in the form of repair or replacement of the defective part(s).
- Warranted parts, can be re-called upon by GreenTec for inspection, if needed. Unless otherwise agreed, warranted parts must be available for return, free of charge, to GreenTec's After-sales service department - **no later than 14 days** after replacement.
- When warranty work is carried out, **always** make sure to have the original invoices for any spare parts used, and timesheets for the labour and working hours available as documentation.

THE WARRANTY COVERS:	THE WARRANTY DOES NOT COVER:
✓ Defective or faulty design and/or materials.	✗ Normal wear and tear.
✓ Improper or faulty workmanship.	✗ Insufficient service and maintenance.
✓ Original GreenTec parts and materials.	✗ Improper use and/or handling of the machine.
<i>GreenTec's warranty obligation is conditioned to the customer documenting that an identified deficiency or fault is not due to any of the above circumstances.</i>	✗ Overloading of the machine and equipment.
<i>GreenTec assumes no liability for any of the mentioned points, including loss of profits, lost earnings, and other consequential financial loss. Please read through GreenTec's overall terms and conditions of sale and delivery here: https://greentec.eu/about-us/terms-and-conditions-of-sale-and-delivery/</i>	✗ Incorrect installation and/or mounting.
	✗ Use of non-original spare parts and materials.
	✗ Any 3rd party modifications made to the machine.
	✗ Hydraulic- and/or gear oil, lubricants, or any other propellants.
	✗ Compensation for transport or any consequential costs.
	✗ Any damage and defects due to violation of road and/or traffic regulations.
<i>(Labour costs associated with a warranty are always settled at a fixed standard rate, agreed between GreenTec and our dealers)</i>	

Table 5 – Warranty coverage

1.4) Complaints

Risk for the goods is transferred to the customer immediately upon delivery. Complaints about goods must be made in writing and submitted to GreenTec without undue delay and **no later than 8 days after delivery**. If GreenTec has not received a complaint within the mentioned time limit, the customers lose all rights to complain about the quantity and quality of the goods delivered.

GreenTec has the right and obligation to remedy all errors resulting from defective design, materials, and workmanship. GreenTec decides whether the remedy must be in the form of repair or replacement of the defective part(s).

If GreenTec chooses to repair the goods, the customer is obliged to deliver and collect the goods from a workshop indicated by GreenTec, without GreenTec incurring costs in this context.

If GreenTec chooses to replace the defective part(s), customers must send the defective part(s) to GreenTec without GreenTec incurring costs in this regard. Instead, GreenTec is entitled to supply replacement goods.

GreenTec's liability only applies to defects, in connection with the sold goods, which are indicated within 2 years from the delivery date.

GreenTec assumes no responsibility for defects that exceed what is stipulated in this provision. This applies to losses resulting from such a deficiency, including loss of profit, lost earnings, and other financial loss.

1.5) Use with other manufactures than Greentec

NOTICE

When installing other makes of attachment tools than GreenTec, a new risk assessment of the equipment used must be submitted. If the boom mower is fitted with an unapproved attachment tool, the basis for risk assessment will no longer apply, and thereby the validity and guarantee of the declaration of conformity.

It is every operator's own responsibility to risk assess this interconnection before using the machine.

2) General information

2.1) Use of the user manual

Read this user manual thoroughly before assembling and putting the machine into use. If you have any questions, contact your local dealer or GreenTec's after-sales service department.

NOTICE

The illustrations in this user manual have the sole purpose of instructing, informing, and substantiating the general procedures and instructions.

Illustrations may appear different from the actual machine, e.g., by being fitted with additional equipment and/or in a different size variant.

2.2) Definitions of information signs

The following definitions apply throughout this user manual:

⚠ DANGER

DANGER!

Warns of a potential situation that could result in death or permanent disabling injury if instructions are not followed carefully!

⚠ WARNING

WARNING!

Warns of a potential situation that could result in partially disabling injuries or serious bodily injury if the instructions are not followed carefully!

⚠ CAUTION

CAUTION!

Warns of a potential situation that could result in serious damage to the machine or equipment if the instructions are not followed carefully!

NOTICE

NOTICE!

Specific or general information deemed important or useful.

2.3) Definitions, terms, and descriptions

Operator:	Daily user and/or operator of the machine.
Owner:	Owner, buyer and/or those who are responsible for the operator and maintenance.
Multi carrier:	Boom mower, multi carrier, support arm / lift arm which controls, handles, and carries attachment tools during operation.
Attachment tool:	Attachment tool that is handled and carried by multi carrier during operation.
Vehicle:	Machine that transports multi carrier + attachment tool during operation.
RH / LH	RH: Right-sided unit / LH: Left-sided unit.

Table 6 – Definitions, terms and descriptions

3) Safety

3.1) Local legislation in the country where the machine is used

The use of the machine may be restricted by the legislation of the countries where it is used. It is important that the responsible owner and operator familiarize themselves with the country's laws and regulations regarding cutting, cutting and maintenance of fences and hedges.

3.2) Warnings, prohibitions, and instructions

Instructions come from the applicable national accident prevention regulations, which the operator and operator must comply with:

WARNING

For all types of work on the machine, it must be disconnected from all hydraulics!

WARNING

Only authorized personnel may carry out service and maintenance on the machine!

CAUTION

Read the user manual carefully before using the machine!

3.3) Safety labelling

The machine is marked with safety and warning labels, these are placed at the identified dangers to which you are exposed when working with and staying near the machine.

3.3.1) Personal safety equipment

It is recommended that the following safety equipment is worn when working with or performing maintenance on the machine:



Working suit



Safety shoes



Safety glasses



Hearing protection



Safety helmet



Protective gloves

Figure 2 – Safety labelling: personal safety equipment

The recommended safety equipment together with the points of attention mentioned in this and the following section cover the precautions GreenTec has deemed necessary for use. The varying circumstances that may arise when working with this machine cannot always be predicted.

No good advice can replace "common sense", "due care" and "attention", but the above recommendations are a good start to safe use of the GreenTec machine.

3.3.2) Warning labels

Warning labels that identify the dangers to which you are exposed when working with and when staying near the machine:

WARNING LABELS:











	Warning! Read relevant user manuals carefully before using this machine.		Warning! Check every 8 hours of use that all bolts/nuts are tight!
	Follow all instructions and safety regulations when using the machine.		
	Warning! Beware of oil in case of skin contact or inhalation of oil vapors, as well as high pressure in case of leakage or handling.		Warning! Flying objects/material.
	Switch off the engine, remove the key and apply the handbrake before maintenance or repair work.		Make sure to keep a safety distance from the machine during use.
	Warning! Rotating blades/knives!		
	Keep away from the rotor blades/knives during use. Never remove protective screens/caps!		

Figure 3 – Safety labeling: warning labels

3.4) Working in publicly accessible places

When working in publicly accessible places, such as roadsides, consideration must be given to the presence of others in the area.

Immediately stop the machinery when, for example, pedestrians, cyclists, horse riders etc. approach the safety zone. Only resume work when they are at a safe distance again.

When the machine is used on public roads, applicable traffic laws must be observed in every event.

3.4.1) Warnings signs in public places

- The work area should be marked with appropriate signage, this is a legal requirement in public places.
- Signage must be clear and correctly placed so that the danger is made clear.
- Contact the local road authority for detailed information on applicable legislation.
- The local road authority should be notified before work begins on a public road.

3.4.2) Use of warnings signs

- On two-way roads, signage must occur in both directions
- The work should be within 1 km of signage.
- Only carry out work when visibility is good and when the risk is the least – e.g., outside rush hour.
- The vehicle must be equipped with flashing orange light beams.
- Vehicles should be in a conspicuous colour and the operator should be wearing visible clothing.
- Remaining material should be removed from the road and pavement as soon as practicable and at suitable intervals.
- The work must be carried out before warning signs are removed.
- Collect all road signs as soon as the work is completed.

3.4.3) Suggested signage when working on public roads


	Mandatory sign:
	"Keep left" White and blue arrow signage. Visibly marked on the back of the machine.
	Warning sign:
	"Road work" Supplementary text for work carried out at a suitable distance. Example: "Verge cutting 0-1 km"
	Warning sign:
	"Road narrowing" Adding text: "One lane only"

Figure 4 – Proposed signage for work on public roads

NOTICE

The above signage applies within i.e., EU mainland, where traffic passes on the left of the machine working in the direction of travel.

Signage, use of and colors on arrow signs as well as indications depend on the language, laws, and regulations of the individual country.

3.5) Recommendations for optimal security and operation (I)

⚠ DANGER

Always be aware of the following risks when using the machine:

To achieve optimal safety and operation, it is important that the operator understands how dangerous the machine is, and foresees the danger before it occurs:

- ⚠** You may get stuck when the machinery is engaged or disengaged and when the lift arm system or boom mower is moved out or in, up or down and forwards or backwards.
- ⚠** The machinery can tip over when the lift arm system or boom mower is raised.
- ⚠** You can be caught by the rotating shaft from the PTO.
- ⚠** You can be hit or caught by the moving parts, e.g., flails, blades, knives, drive shaft and wings from mounted attachment tools, or hit by flying materials or machine parts in case of machine damage.
- ⚠** The attachment tools are powered by hydraulic oil from the hydraulic system in the machine or from the vehicle.
- ⚠** The operator of the vehicle should know how the hydraulic oil should be handled! (Read in the safety data sheet for the oil)
- ⚠** Oil splashes under high pressure from damaged fittings or hydraulic hoses can penetrate the skin and cause serious injury.
- ⚠** Accidents due to collisions with other vehicles or dropped objects on the road.

3.5.1) Safety distances

When using the machinery, there is a risk that the attachment tool may throw flying objects-/material. Depending on the driving conditions, there will be the possibility that serious fragments can come flying and damage people or equipment.

- **Always comply with the specified safety distances (SDF/SDR) to the machinery.**

When using the machinery there is a risk of being hit or caught by the moving parts, e.g. flails, blades, knives, drive shaft and wings from mounted attachment tools, as well as being hit by flying materials or machine parts in the event of machine damage.

- **Always comply with the specified safety radius (SR) for the machinery.**



During commissioning, no people or animals must **under no circumstances** enter the safety zones marked on the drawings!

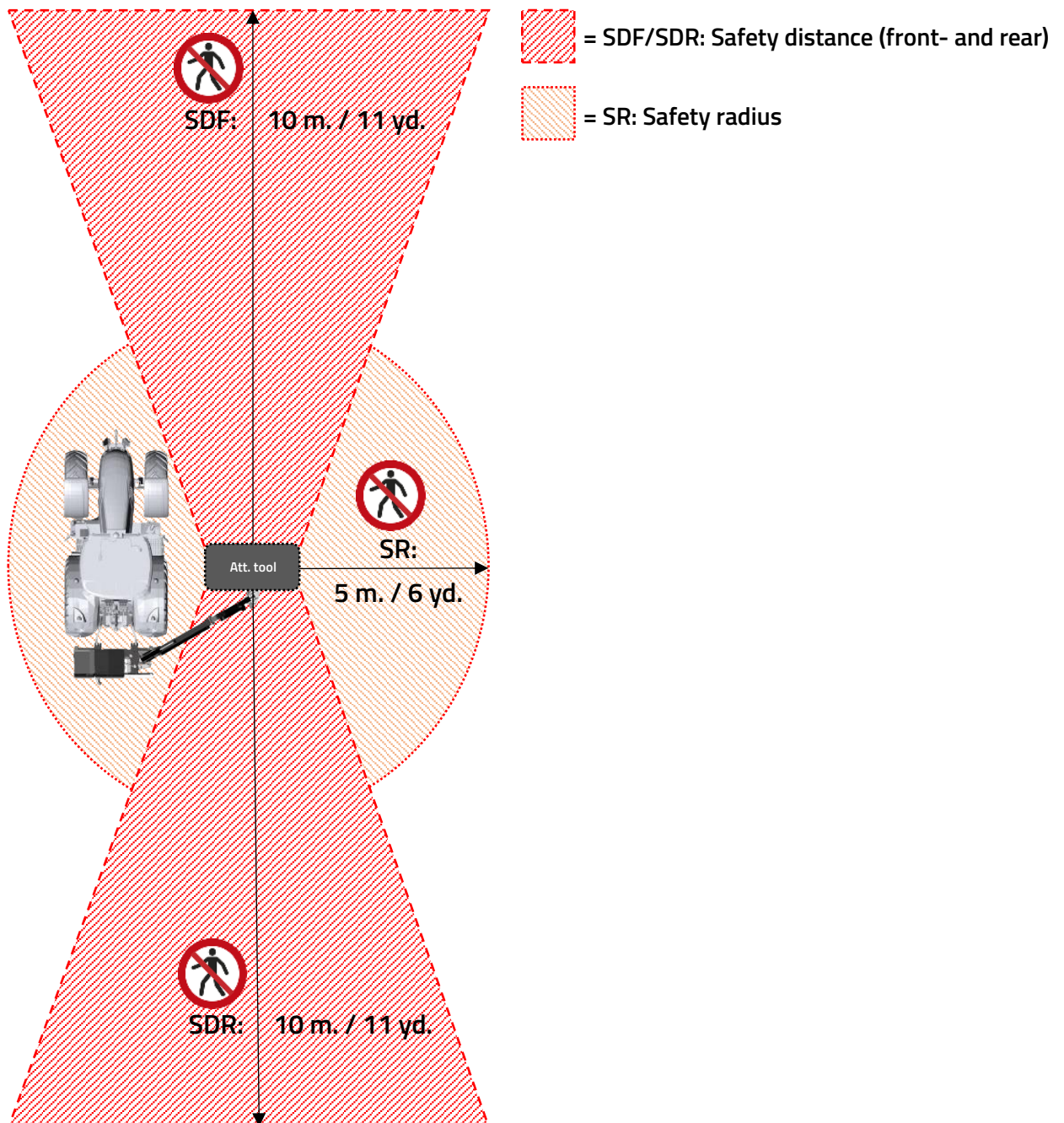


Figure 5 – Safety zones (Vehicle/attachment tool)

3.5.1.1) Overhead power lines

Always pay attention to overhead power lines and work at a safe distance from them! Between electricity masts, there will always be a risk of touching the overhead lines. A safe working distance depends on the voltage of the power lines. **Always observe the specified minimum safety distance!**



The higher the voltage, the greater the distance required between the power lines and the machinery! When in doubt – always contact the local power company for safety instructions!

NOTICE

The safety instructions comply with the instructions of applicable international organizations and legal requirements in various decrees on safety for carrying out work in the vicinity of electrical installations → Sikkerhedsstyrelsen (DK), HSE (UK), BAuA (DE) and OSHA (US).

DANGER

During commissioning, persons, machinery, tools and other materials must under no circumstances come within the gray area marked on the drawings!

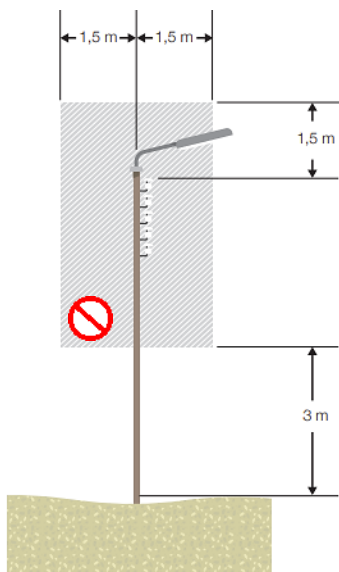
CAUTION

The safety distances do not apply to agricultural machinery if the total machinery incl. its driver does not exceed a height of 4 m./13 ft. in the case of low-voltage electrical installations and 4.5 m./14.75 ft. in the case of high-voltage electrical installations.

If the agricultural machinery is higher than this, the following safety distances must always be observed!

Low voltage overhead lines* (0 – 0,4 kV)

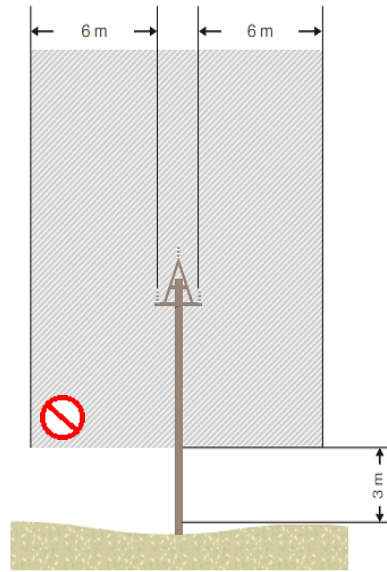
Horizontal distance: **1,5 m. / 5 ft.**
Vertical distance: **3 m. / 10 ft.**



* In the case of low-voltage overhead lines, work can be done above the masts by observing a safety distance of 1.5 m. / 5 ft.

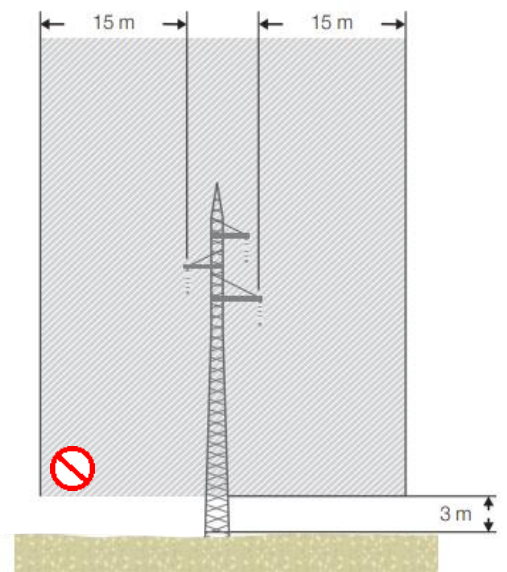
High voltage overhead lines (10 – 40 kV)

Horizontal distance: **6 m. / 20 ft.**
Vertical distance: **3 m. / 10 ft.**



High voltage overhead lines* (40 – 400 kV)

Horizontal distance: **15 m. / 50 ft.**
Vertical distance: **3 m. / 10 ft.**



* At a higher voltage than +400 kV: Safety distance must be determined by the network owner/operating manager or registered professional engineer.

Figure 6 – Safety zones (Overhead power lines)

3.6) Necessary safety measures (m)

NOTICE

The machine must be used in the following ways:

- ✓ Make sure that the operator of the machine has read this user manual, as well as the user manuals for both the attachment tool and the vehicle used.
- ✓ Ensure that the operator of the machine has been trained in the use of the machine.
- ✓ Use hearing protection if the machine is operated from a cabin that is not soundproof or if the cabin windows are open.
- ✓ Ensure that all warning labels are always visible and that none of them are missing, damaged or illegible.
- ✓ Check that all safety screens are correctly fitted and that there are no damaged or loose parts.
- ✓ Ensure that all hydraulic pipes and hoses are positioned correctly to avoid rubbing, stretching, pinching, or kinking damage to them.
- ✓ Check the work area and remove any rope, poles, large stones, and other dangerous objects before starting work.
- ✓ Drive at a safe speed that is tailored to the terrain and any other vehicles and obstacles.
- ✓ Make sure the vehicle is stable and meets the machine manufacturer's minimum weight recommendations - if necessary, use additional counterweight.
- ✓ Pay attention to power lines, if in doubt about the distance, contact the local power plant.
- ✓ It is recommended to use impact resistant screens on the vehicle.
- ✓ Check that the machine's fittings, screws, and couplings are in good condition.
- ✓ Follow the manufacturer's instructions for removing and installing the machine from the vehicle.
- ✓ Disconnect the hydraulics to the machine, stop the engine, pull the handbrake, and remove the key before leaving the cab.
- ✓ If necessary, remove nuisance material residues left behind from the area.
- ✓ Great care must be taken when inspecting, repairing, or doing other work on the stationary machine.
- ✓ Always use protective gloves, safety shoes, safety glasses and appropriate tools to perform the work.

3.7) Warnings on how the machine must not be used (h)

⚠ DANGER

The machine must never be used in the following ways:

- ✗ Do not operate the machine until relevant user manuals have been read and understood. Likewise, the operator must be familiar with the operating levers according to the user manual for the connected attachment tool!
- ✗ Do not operate the machine if there are others within the safety distances of the machine!
- ✗ Never let an inexperienced person operate the machine without supervision!
- ✗ Do not go inside the machine's working area / safety zone!
- ✗ Never try to locate a hydraulic leak by hand, use a piece of cardboard instead!
- ✗ Never allow children to play on or near the machine!
- ✗ Do not perform any maintenance or adjustment without first removing the hydraulic pressure from the machinery, lowering the boom mower to the ground, stopping the vehicle engine, and applying the parking brake and removing the key!
- ✗ Do not use and/or mount the machine on a vehicle that does not comply with the manufacturer's specifications!
- ✗ Never use the machine if the hydraulic system shows signs of damage / defects!
- ✗ Do not stop the engine while the hydraulic pressure is activated!
- ✗ Never attempt to use the machine for any purpose other than that for which it is intended!
- ✗ Do not leave the vehicle cabin without removing the ignition key!
- ✗ Do not transport the machine while the hydraulic pressure to the attachment tool is activated!
- ✗ Do not use a machine that has not been maintained or if any of its screens are missing or damaged!
- ✗ Never operate the vehicle or any of the control levers from a position other than the driver's seat!
- ✗ Do not drive with mounted attachment tools where rotating parts are facing the cabin, as this entails the risk of stones and material residues being hurled at the driver!








3.8) Safety instructions for maintenance, adjustment, and inspection (s)

NOTICE

The machine must be maintained in the following ways:

- ✘ The operator must ensure that all maintenance, inspection, and assembly work is carried out by authorized and qualified specialist personnel who, after thorough reading of relevant instruction materials, possess sufficient knowledge.
- ✘ Maintenance, inspection, and assembly work may only be carried out with the hydraulics disconnected.
- ✘ When carrying out maintenance work under the boom mower etc., securing with suitable support elements must be carried out.
- ✘ When replacing attachment tools, the hydraulic system is checked for residual pressure. A possible residual pressure is reduced to zero (0 bar / 0 psi).
- ✘ Use only suitable tools and wear heavy-duty gloves, safety shoes and safety glasses.
- ✘ Handle the hydraulic oil and grease according to regulations. Always be familiar with the safety data sheets.
- ✘ Immediately after finishing work, all safety and protective devices must be installed and activated again.

3.9) Safety instructions for the operator / user

-  It is important to familiarize yourself with all operating elements and equipment and their function before starting the work. Once the work has started, it may be too late.
-  Check the immediate area before starting and during operation of the work the machine is to perform (people, children, animals, or obstacles, e.g., stones, fence posts, steel wire).
-  Ensure sufficient visibility and a well-lit work area. The safety distances specified in the attachment tool's user manual must be followed without fail.
-  The operator must be fresh and rested before using the machine, and take breaks when tired, to ensure his own safety and that of others.
-  The operator should ensure varying working positions and take frequent breaks to avoid disorders in the musculoskeletal system.
-  The operator must not leave the driver's seat while driving, and it is not permitted to have the attachment tool, or the boom mower activated during transport.
-  When working near high-voltage lines, additional distance and caution are required.

4) Machine description (d)

4.1) Overview and equipment



Variants of GreenTec RI Barrier Mower

9990062R-25/40

RI 62, RIGHT (25 OR 40 L/MIN.)

9990062L-25/40


RI 62, LEFT (25 OR 40 L/MIN.)

9990082R-25/40

RI 82, RIGHT (25 OR 40 L/MIN.)

9990082L-25/40

RI 82, LEFT (25 OR 40 L/MIN.)

 **0.6-0.8 m**
Horizontal working width

 **25-40 l/min.**
Min. oil flow

 **3-4 km/h**
Max. driving speed

 **2-year warranty**
High quality materials = long life

The RI 62-82 Barrier Mower is the ideal solution for maintaining grass under fences, guardrails and in orchards. The machine easily navigates around obstacles such as fence posts, guardrails, or trees.

The RI 62-82 Barrier Mower is mounted on tractors and loaders using the FOX Multi Carrier or selected Multi Carriers in the PUMA-series. It is also possible to mount the Barrier Mower on excavators.

The circular-shaped cutting head is mounted on a **spring-loaded arm system**, which ensures that the Barrier Mower swings back/turns around fence posts, guardrails, or trees, so that cutting is done as close to the edge as possible.

The pressure from the spiral spring can be adjusted to the environment in which the work is done, e.g. for thin plastic poles or for robust metal poles. This prevents unnecessary damage to poles and trees.

The arm system on the RI 62-82 Barrier Mower has a **"tilt" function**, where the cutting head can be adjusted using the top-link to adapt to the terrain.

The machine's **blade rotor with 3 blades** creates a good suction effect, and a **support disc** is mounted under the knives, which ensures the machine's good ground following ability.

Around the edge of the RI 62-82 Barrier Mower, **rubber protection** is fitted to further protect both the machine and the surroundings.

When mounting the RI 62-82 Barrier Mower to a Multi Carrier on a tractor, a forward speed of between **3-4 km/h (1.86-2.48 mph)** can be maintained.

The Barrier Mower has a working width of **0.62-0.82 m (24.41-32.28")** and a net weight of **45-58 kg. (99-128 lbs.)** and is characterized by its ability to perform uniform mowing.

Perfect mowing quality

2 strong updraft blades.

Circular shaped design

Pivots around obstacles.

Rubber protection

Prevents damage to posts and trees.

EQUIPMENT OVERVIEW:

Basic mount w/ 2,5 m hydraulic hoses	✔ Standard
Spring-loaded arm system	✔ Standard
Adjustable suspension for terrain adaptation	✔ Standard
Blade rotor incl. support disc	✔ Standard
Rubber protection	✔ Standard
Optional 25 or 40 l/min. motor	✔ Standard
Adapter-kit for mounting	⊖ Option

Table 7 – Overview of equipment

NOTICE

See the section in the user manual about [optional equipment](#) – page 26, and get more information about the different options for the machine on GreenTec's [webpage](#).

4.2) Use of the machine

4.2.1) Intended use of the machine (g)

NOTICE

For any use of the machine other than that described in this section, GreenTec is not liable for damages as a result. The risk then rests solely with the operator and/or the user.

The RI Barrier Mower is available in different sizes, but they all have the same basic construction and operation and are therefore the same. The machine is used to carry out the work of edging and grass cutting under fencing wire, fences at horse pens, guardrails etc.

See the machine specifications for multi carriers intended for use with the RI Barrier Mower ([Specifications](#) – page 27)

4.2.2) Application and restrictions of the machine (h)

The RI Barrier Mower can, in combination with a multi carrier, be front or rear mounted on a wide variety of vehicles such as compact tractors, loaders and multi carriers.

Minimum unladen weight of the vehicle from 1.200 – 4.500 kg (2.646 – 9.921 lbs.), depending on the model and size of the multi carrier incl. attachment tool.

GreenTec designs many different types of suspensions, loader brackets and adapters for many different vehicles.

The capacity of the machine depends on the specifications of the attachment tool used, the hydraulic pressure it is supplied with, the type and amount of material to be processed and the speed at which it is driven.

⚠ DANGER

The owner of the machine / operations manager is responsible for observing the following rules:

- The vehicle on which the machine is mounted must meet the requirements for machines approved for agriculture.
- All safety values must under no circumstances be exceeded. (Safety distances, pressure, flow, rpm, etc.)
- Never use the machine with an attachment tool without fitted guards.
- The machine must never be used to transport people, animals or other equipment than described in this user manual. The multi carrier and/or attachment tool must never be used as a "crane" or other form of lifting equipment.
- That the stability of the supporting vehicle is sufficient. See section: [Stability \(o\)](#) – page 40-41, as well as the user manual for the multi carrier and vehicle used.

⚠ DANGER

Safety shields on the used attachment tool can never work 100%! Depending on the driving conditions, there will be a possibility that serious fragments/material can come flying and damage people or equipment. Always keep your distance!

4.3) Components of the machine

4.3.1) Basic mount w/ 2.5 m hydraulic hoses

The basic mount for mounting the RI Barrier Mower on a selected multi carrier consists of a steel bracket with included bolts and nuts.

The base bracket is adapted to the model of multi carrier which the Barrier Mower must be mounted on: either FOX or PUMA.

A 2.5-meter hose set is also included with the base mounting bracket, for connection between the RI 62-82 Barrier Mower and the selected multi carrier.

All parts are bolted together and can be separated for easy and efficient mounting between attachment tool and multi carrier.

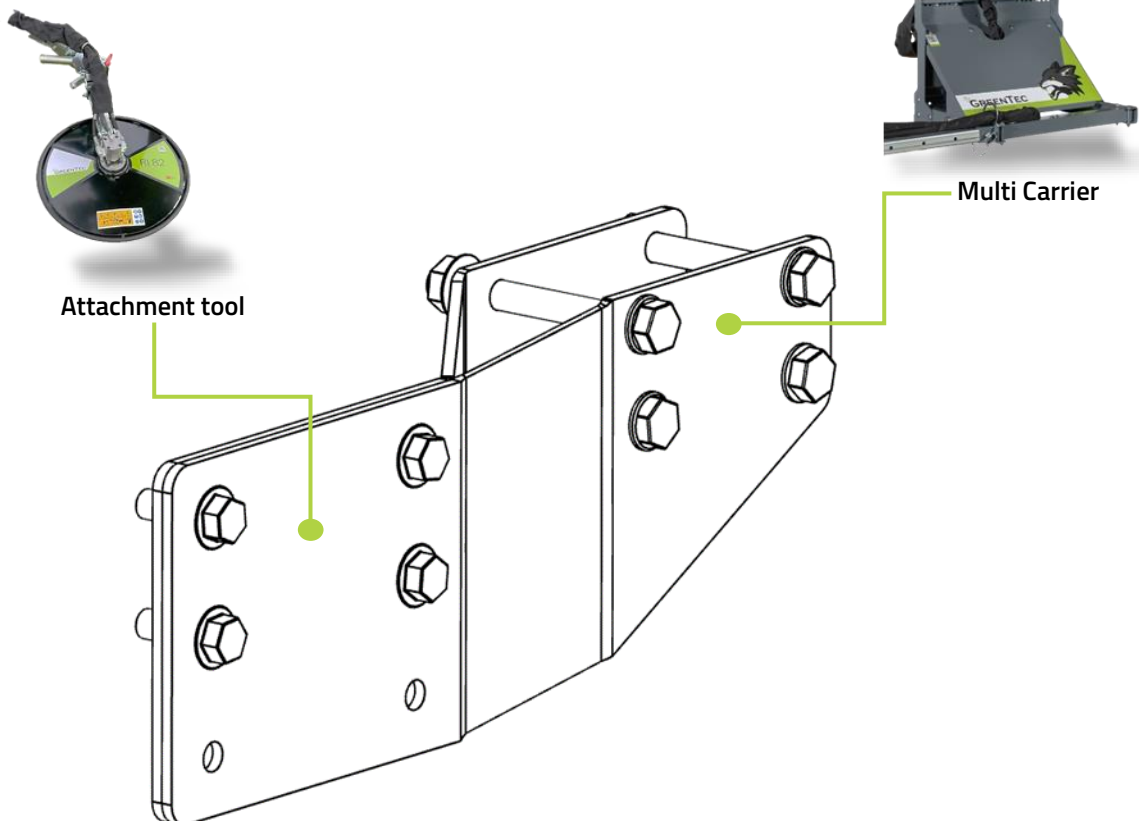


Example of basic bracket for RI 62-82 ↔ FOX Multi Carrier

NOTICE

The base bracket for mounting must be selected at the time of purchase, based on the multi carrier on which the RI Barrier Mower is to be mounted.

See section: [Adapter-kit for mounting](#) – page 26.



Function of base bracket for RI 62-82 ↔ FOX Multi Carrier

4.3.2) Spring-loaded arm system

The spring-actuated arm system ensures that the Barrier Mower swings back/turns around fence posts, guardrails, or trees, so that it gets as close to the edge as possible, without the risk of these taking damage or falling over.

The function consists of a strong spring, connected to a chain-link that is connected to the machine's arm system.

This "break-back" function works both as collision protection for the machine, but also as pre-pressure on the rotatable cutting head when mowing.

When the Barrier Mower meets fence posts, guardrails, or trees, the cutting head is pushed backwards. The spring will here expand and ensure that the cutting head returns to its original position as it drives along the edge of the road and possibly meets obstacles.

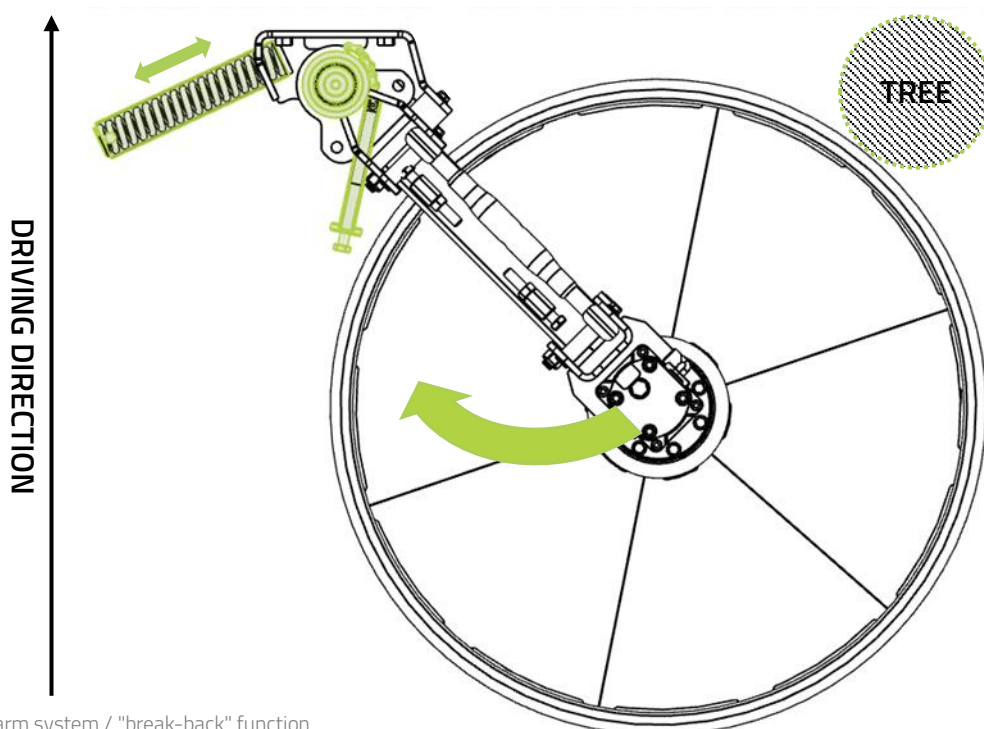


Spring-loaded arm system / "break-back" function

NOTICE

The spring-loaded arm system must be locked in place with the red safety pin soon as the machine is not being used or transported. See section: [Transport of attachment tool on a vehicle \(p\)](#) – page 45-46.

The machine should only be in working position and unfolded in such a way that the "break-back" system on the Barrier Mower is activate during use.



Function of spring-loaded arm system / "break-back" function

4.3.3) Adjustable suspension for terrain adaptation

The suspension between the RI Barrier Mower and the Multi Carrier is adjustable and can adjust both the working height and the angle of the cutting head itself.

The working height on the suspension is adjusted to a fixed level using the top-link, and the angle of the cutting head is adjusted using 2x screws at each end of the adjustable suspension of the RI Barrier Mower.

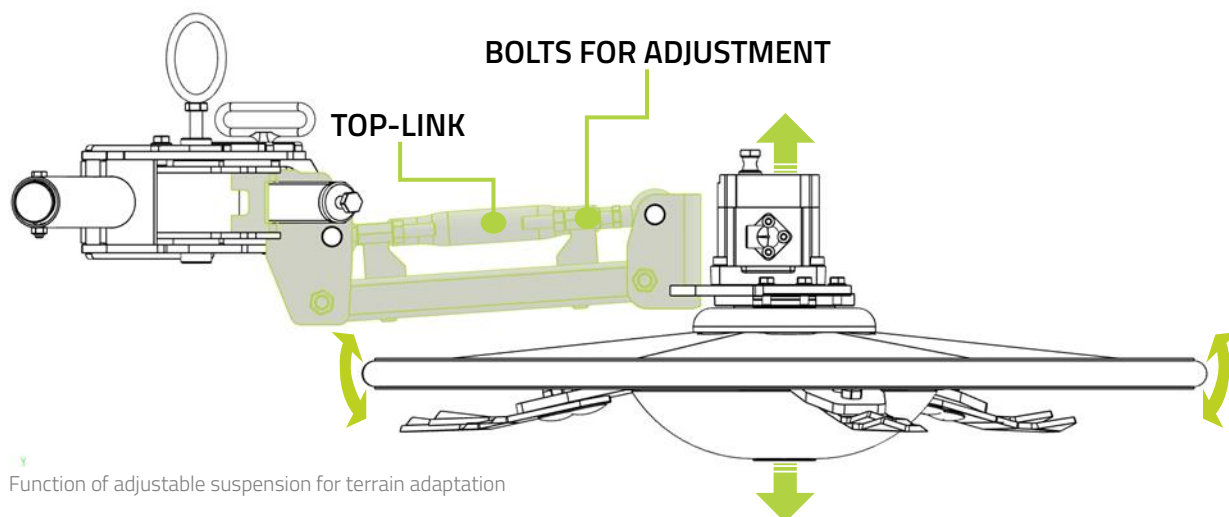
NOTICE

The angle of the cutting head can be set to either be fixed or in free movement.

See section: [Setting and adjusting the machine \(r\)](#) – page 49-53.



Adjustable suspension on RI Barrier Mower



4.3.4) Blade rotor incl. support disc

The blade rotor with three blades ensures a good suction effect, and gives a perfect cutting result and shredding of the material.

A support disc is mounted under the blade rotor, which ensures stability during mowing and prevents the blades from hitting the ground and possibly foreign bodies during work.

The blade rotor itself on the RI Barrier Mowe must run at a recommended speed of 2200–2500 RPM.

The speed of the rotor is proportional to the RI Barrier Mower's recommended oil flow of 25 or 40 l/min @ 190 bar. (6.60 or 10.57 gpm @ 2756 psi)

The blades can be placed in two positions on the knife holder:

The **innermost position** is used e.g. in orchards, where the smaller diameter of the blades ensures that the stems and roots of the trees are not damaged when using the machine.

The **outermost position** is used for normal grass/edge cutting, where max. diameter while using the machine.

See section: [Setting and adjusting the machine \(r\)](#) – page 49–53.



Blade rotor with hardened steel blades



If the revolutions are exceeded, the machine's risk assessment and warranty will be void.



When handling blades/knives etc. there is a risk of injury due to the very sharp cutting edges. Recommended safety equipment must always be used! See section: [Personal safety equipment](#) – page 6.

DATA: BLADE ROTOR AND BLADES

Cutting diameter:	RI 62: 550–580 mm (21.65–22.84") RI 82: 750–780 mm (29.53–30.71")
Cutting surface:	70 mm (2.76")
Blade thickness:	6 mm (0.24")
Hole diameter:	25,5 mm (1.00")
Max. material thickness:	Grass surfaces
Max. speed:	2200–2500 RPM
Number of blades:	3 pcs.
• Length:	50 mm (1.97")
• Width:	180 mm (7.09")
• Material:	Hardened steel

Table 8 – Data sheet: Blade rotor and blades

4.3.5) Rubber protection

The RI Barrier Mower is built with a solid ring of rubber around the cutting head to protect i.e., poles and trees when using the machine.

The rubber ring is lightly steel reinforced to better resist breakage, and runs all the way around the cutting head of the machine.

The rubber ring reduces the shocks/impacts that the cutting head and suspension are exposed to when using the RI Barrier Mower.

NOTICE

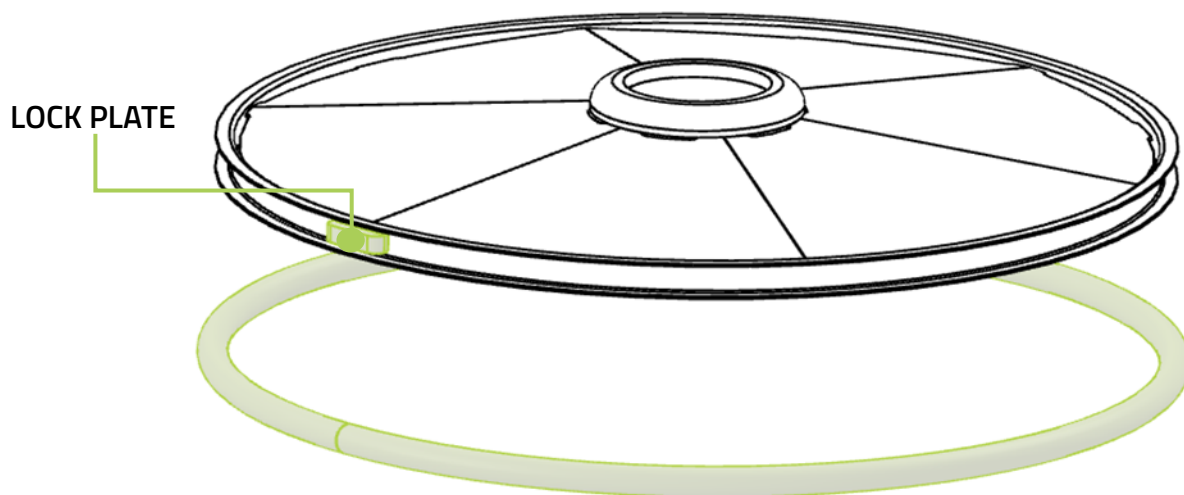
Rubber protection must always be intact and in reasonable condition.

The rubber protection must be replaced if broken etc.

See section: [Daily and routine inspections \(e\)](#) – page 61.



Rubber protection around cutting head



4.3.6) Oil motor: 25 or 40 l/min.

The oil motor on the RI Barrier Mower is a two-way hydraulic gear motor with an external drain connection. This engine does not have a built-in anti-cavitation and overpressure valve.

The motor receives oil either directly from the vehicle's double-acting outlet, or from the multi carrier's hydraulic system.

With a performance of 25 or 40 l/min @ 190 bar, the motor drives the blade rotor of the RI Barrier Mower at 2200-2500 RPM.

It is connected using 1 x DA-outlet, **pressure** and **return** incl. an external **drain**-connection.



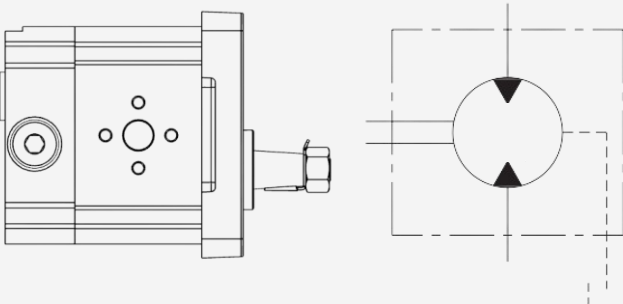
Hydraulic gear motor

CAUTION

If the recommended oil flow and pressures are exceeded, the machine's risk assessment and warranty will be void. It is the operator's responsibility to ensure that both inlet pressure, return pressure and external drain are within the recommended [specifications](#) – page 27 + [Mounting and connecting the machine \(i\)](#) – page 33-38.

DATA: OIL MOTOR

Displacement:	11,4 or 16 cm ³ (0.70 or 0.98 in ³)
Rotation:	Bi-directional w. external drain.
Operating pressure (continuous):	25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi) *
• Recommended return pressure (continuous):	5 bar (72.51 psi) *
• Max. allowed return pressure (peak):	15 bar (217.55 psi) *
• Max. allowed drain pressure (peak):	2 bar (29.0 psi) *
Torque (rotational force):	33 or 48 Nm (24.34 or 35.4 lbf·ft)
Seals type:	NBR
Operating temperature:	-20... +85 °C
Required contamination class:	ISO 4406: 20/18/15



* Pay particular attention to the performance of the vehicle's double-acting outlet and connection of the external drain connection. The recommended specifications for return and drain pressure on the hydraulic motor cannot be exceeded.

It can result in serious damage to the motor if the regulations for oil flow and pressure are not strictly followed.

Table 9 – Data sheet: Oil motor

4.4) Approved multi carriers and optional equipment (n)

WARNING

Remember that when assembling with multi carriers and optional equipment other than those produced or approved by GreenTec, it is every operator's own responsibility to ensure that the vehicle and the assembled machine meet the applicable requirements and relevant directives for this!

When mounting on other manufacturers of multi carriers than approved by GreenTec, a new risk assessment of the machinery and equipment must be submitted!

The operational safety of the machine can only be guaranteed if it is used in accordance with its intended use!

If the machine is mounted with an unapproved multi carrier, the basis for risk assessment is void, and thereby the validity and guarantee of the declaration of conformity!

The RI Barrier Mower is intended for assembly with the following approved multi carriers and possible optional equipment:

APPROVED MULTI CARRIERS:	
FOX Multi Carrier	✓ Approved
HXF 2302 Multi Carrier	✓ Approved
HXF 2802 Multi Carrier	✓ Approved
HXF 2802 Tele Multi Carrier	✓ Approved
PUMA 2303 Multi Carrier	✓ Approved
PUMA 2803 Multi Carrier	✓ Approved
PUMA 2803 Tele Multi Carrier	✓ Approved
APPROVED OPTIONAL EQUIPMENT:	
Adapter-kit for mounting	✓ Approved
OTHER MANUFACTURERS:	
N/A	

Table 10 – Approved multi carriers and optional equipment

4.5) Optional equipment

4.5.1) Adapter-kit for mounting

Greentec produces various adapter-kits for use in mounting the attachment tool on different boom mowers, multi carrier and/or vehicles. An adapter-kit is selected when purchasing the machine, and basically consists of the following components:

- Connection- /adapter plate
- Bolts/nuts
- Hose kit incl. fittings adapted to the multi carrier *

Below is a list of the available adapter solutions for mounting the Ri Barrier Mower on selected multi carriers:

NOTICE

* An oil flow divider incl. hose kit and fittings are used with some adapter-kits for both GreenTec machines and other manufacturers.

Further information and data regarding adapter-kits can be found on the product page of the attachment tool and in GreenTec's product database:

<https://greentec.eu/support/>



Adapter for mounting: Ri Barrier Mower ↔ PUMA 2303

ADAPTER-KITS FOR MOUNTING:

OPTE1295	RI 62-82 ↔ FOX Multi Carrier (40 l/min.)
OPTE1295.1	RI 62-82 ↔ FOX Multi Carrier (25 l/min.)
OPTE1296	RI 62-82 ↔ Universal w. flow divider (40 l/min.)
OPTE1296.1	RI 62-82 ↔ Universal w. flow divider (25 l/min.)
OPTE1297	RI 62-82 ↔ HXF 2802-2802T (40 l/min, right)
OPTE1297.1	RI 62-82 ↔ HXF 2802-2802T (40 l/min, left)
OPTE1297.2	RI 62-82 ↔ HXF 2802-2802T (25 l/min, right)
OPTE1297.3	RI 62-82 ↔ HXF 2802-2802T (25 l/min, left)
OPTE1298	RI 62-82 ↔ HXF 2302 (right)
OPTE1298.1	RI 62-82 ↔ HXF 2302 (left)
OPTE4295	RI 62-82 ↔ PUMA 2303 (right)
OPTE4295.1	RI 62-82 ↔ PUMA 2303 (left)
N/A	RI 62-82 ↔ HXF 2803-2803T (40 l/min, right)
N/A	RI 62-82 ↔ HXF 2803-2803T (40 l/min, left)
N/A	RI 62-82 ↔ HXF 2803-2803T (25 l/min, right)
N/A	RI 62-82 ↔ HXF 2803-2803T (25 l/min, left)

Table 11 – Adapter-kits for mounting on multi carrier

4.6) Specifications


DATA: RI 62-82 BARRIER MOWER	
Height (incl. motor):	310 mm (12.21")
Diameter (cutting head):	RI 62: 620 mm (24.41")
	RI 82: 820 mm (32.28")
Working width:	RI 62: 550-580 mm (21.65-22.84")
	RI 82: 750-780 mm (29.53-30.71")
Cutting height:	30-35 mm (1.18- 1.38")
Weight:	RI 62: 45 kg. (99 lbs.)
	RI 82: 58 kg. (128 lbs.)
Recommended weight (Vehicle):	1.200 – 4.500 kg. (2.646 – 9.921 lbs.) (Always see section: Stability (o) – page 40-41)
Oil motor:	11,4 or 16 cm ³ (0.70 or 0.98 in ³) gearmotor
Required oil outlets:	1 x DA + external non-pressurized drain connection
Oil requirements:	25 or 40 l/min @ 190 bar
	(6.60 or 10.57 gpm @ 2756 psi)
• Recommended return pressure (continuous):	5 bar (72.51 psi) *
• Max. allowed return pressure (peak):	15 bar (217.55 psi) *
• Max. allowed drain pressure (peak):	2 bar (29.0 psi) *
Tightening torque (Knife bolts):	114 Nm (84.08 lbf·ft)
Max. RPM (Blade rotor):	2200-2500 RPM
Max. branch thickness:	Grass surfaces.
Driving speed:	Max. 3-4 km/h (1.86-2.49 mph)
Working season:	All year.
A-weighted sound level:	Less than < 85 dB(A)
Materials:	Hydraulic hoses: Steel reinforced rubber coated
	Other components: Cast iron and aluminium
Paint:	Black (Gloss 70-80) = RAL 9005 (Graphite Black) 
Lubrication:	See section: Lubrication of the machine – page 69. Type: Texaco Multifak® T EP 2 lithium-grease or equivalent.

Table 12 –Data sheet: Machine specifications

WARNING

* The oil motor needs a minimum return line pressure to ensure correct working conditions.

It is recommended to always have a return pressure of up to 5 bar (72.5 psi) on the return line at the oil motor. The drain pressure on the oil motor must never exceed the return pressure.

If the drain line pressure gets higher than the return line pressure while using the machine, the oil motor will be damaged and the warranty for this will be void.

4.7) Noise measurement of airborne noise (u)

Noise measurements were carried out on the machine under normal operating conditions at GreenTec A/S in Denmark, with a Delta OHM sound meter - type HD 8701.

Measurements were carried out 1 meter from the machine's critical noise generators (blade rotor) at a height of 1.60 meters (5.25 ft.) from the ground, with starting and using the attachment tool.

Noise level changes in relation to the season and the material being processed; therefore, the noise level may differ to a lesser extent.

The multi carrier's noise level will always be lower than the noise level from the attachment tools, as well as the noise from the vehicle in use.

Always follow the precautions intended for the attachment tool and multi carrier and/or vehicle used.

See section: [Safety](#) – page 6-15.

A-WEIGHTED SOUND POWER LEVEL:

RI 62-82 Barrier Mower	Less than < 85 dB(A)
-------------------------------	----------------------

Table 13 – Measurement of A-weighted sound power level

5) Instructions for using the machine (k)

5.1) GreenTec.eu – Explore and learn!

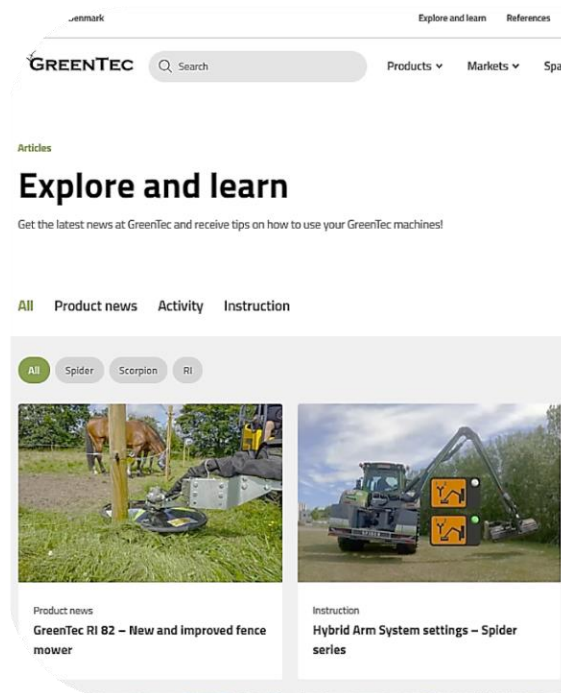
On GreenTec's website there is the section: "Explore and learn":

<https://greentec.eu/explore-learn/>

The page contains useful videos and other guidance material on how to use your GreenTec machines as best as possible.

The "Explore and Learn" page can be used as an interactive supplement to the user manual for the machine, with e.g., video guides and articles regarding practical use and maintenance of your GreenTec machine.

Whether you are just starting out or a seasoned professional with GreenTec's machines, the "Explore and Learn" page can be useful for anyone who wants to learn more about their attachment tools and/or multi carriers.



Explore and learn page on GreenTec's website

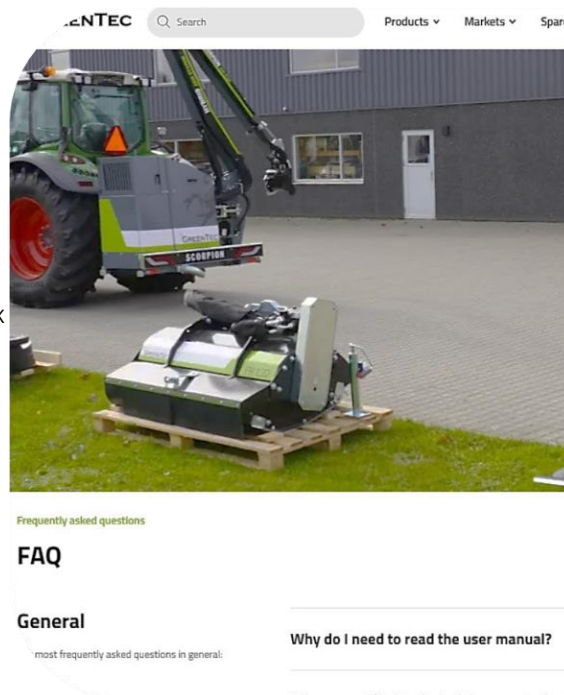
5.2) GreenTec.eu – FAQ

On GreenTec's website there is the section "FAQ":

<https://greentec.eu/support/faq/>

The page contains a collection of the most frequently asked questions regarding technology, use, service, and maintenance of GreenTec machines and equipment.

The "FAQ" page can also be used as a supplement and reference work together with the user manual for the GreenTec machine.



The FAQ page on GreenTec's website

5.3) Instructions regarding delivery of the machine

Upon delivery of the GreenTec machine, the following is immediately checked:

1. Check the machine and all included parts for transport damage.
In case of transport damage, please see section:
[Transport damage](#) – page 30.
2. Check that the following components are included with the RI Barrier Mower:

NOTICE

In the event of deficiencies and/or defects upon delivery, contact the dealer immediately!



Example of delivery of pallet with RI Barrier Mower

CHECKLIST UPON DELIVERY (PER MACHINE):

1x RI Barrier Mower	(Right- or left sided model)
1x Adapter bracket for mounting	(Incl. bolts and nuts)
1x Hose-kit + fittings	(Hydraulic hoses: Pressure , return - and drain -hose)
1x User manual	
1x Spare parts book	

Table 14 – Checklist for delivery of machine

5.3.1) Transport damage

Upon delivery of the machine, both the machine and accompanying equipment are immediately checked for visible signs of transport damage.

If a machine and/or equipment with transport damage is received, it is important that an objection is immediately made to the condition of the shipment, and that **the receipt is signed off with reservations!**

NOTICE

If it is not noted that the item is damaged or is received with reservations, it is received as undamaged upon delivery, and all compensation claims are waived.

GreenTec is not liable for damages incurred during transport. The carrier, on the other hand, is liable for damages.

Contact your dealer immediately if damaged goods have been received, or if the shipment is rejected because it is damaged.

5.4) Instructions for mounting, connecting, and disconnecting (j)

Initial mounting and connection of the machine should always be carried out by the dealer with the necessary knowledge and experience!

When the RI Barrier Mower is mounted for the first time with an approved multi carrier on the vehicle, in some cases it may be necessary to make further adjustments, especially in relation to stabilization - this should also be carried out at the dealer of the machine.

See section: [Preparing the machine for use](#) – page 39-43.

DANGER

The instructions for the machine must be completely understood before any attempts are made to mount, connect, or use the machine. If in doubt, contact the dealer of the machine!

WARNING

When mounting and connecting to multi carriers other than those produced or approved by GreenTec, it is every operator's own responsibility to ensure that the vehicle and the assembled machine meet the applicable requirements and relevant directives for this!

When mounting with other makes of multi carriers than specified by GreenTec, a new risk assessment of machines and equipment must be submitted before use!

If an attachment tool is mounted on an unapproved multi carrier, the basis for risk assessment ceases, and thereby the validity and guarantee of the declaration of conformity!

5.4.1) Preparation of vehicle and operator

Before attachment tools and other machinery are put into use, it is important that the vehicle incl. operator is properly prepared. This must be done both to achieve maximum safety and to ensure optimal operation during use.

As extra security, safety glass/windows (polycarbonate), safety nets and/or other protective devices can be fitted to the vehicle when it is used together with GreenTec's machines.

In general, the driver of the vehicle should always use safety equipment to reduce the risk of serious injuries such as:

- Eye protection: Net/visor (EN ISO 16321-3:2022) and/or safety glasses (EN ISO 16321-1:2022)
- Hearing protection (EN 352-1:2020), safety helmet (EN 397 + A1:2012), gloves and visible work clothes.

If the vehicle does not have a cab, safety glasses/shields, hearing protection and a helmet must be used:

- Bare skin should be protected with suitable thick clothing against possible plant debris that can hit the driver of the vehicle. See section: [Personal safety equipment](#) – page 6.

5.4.2) Preparation of attachment tool

Before the attachment tool is ready for assembly and use, it is also important that its components are mounted and/or adjusted correctly in order to achieve both maximum safety and to ensure optimal operation during use.

The RI Barrier Mower is supplied as sub-components as an adapter kit for mounting incl. a hydraulic hose kit. These parts must be installed before the attachment tool is ready for assembly and connection to a multi carrier:

PREPARATION OF ATTACHMENT TOOL: RI BARRIER MOWER

1. Mount 3x hydraulic hoses (**Pressure, return and drain**) on the RI Barrier Mower's oil motor, and then lead them all through the suspension's lifting eye.

Hydraulic hoses and fittings are tightened based on size according to [Table 26](#) – page 64.



NOTICE

Hydraulic fittings are in adapted sizes, which ensures error-free installation of the hydraulic hoses on the oil motor.

WARNING

Pay special attention to the fact that hydraulic hoses and fittings are assembled and installed in a clean environment, to avoid dirt and grime getting into the hydraulic system.

2. Mount the selected adapter bracket to the RI Barrier Mowers's mounting plate, using the supplied bolts and nuts.

Bolts and nuts are tightened based on size according to [Table 25](#) – page 63.



Table 15 – Preparation of attachment tool: RI Barrier Mower

5.4.3) Mounting and connecting the machine (i)

The mounting and connection procedure may differ from vehicle to vehicle! For this, always use the instructions of the vehicle used in combination with both the multi carrier and the instructions of the attachment tool.

Assembly on different types of vehicles with different multi carriers is broadly the same procedure, but always investigate the procedure for the combination of machines used on your own.

Common to all GreenTec attachment tools is that these are mounted either by bolting on to the standard attachment, or via mechanical quick-change.

Depending on which adapter/mounting bracket is used, these must be mounted depending on the multi carrier, and bolts/nuts must be tightened according to [Table 25](#) – page 63.

DANGER

Never use the multi carrier with a mounted attachment tool on an unstable or unsuitable vehicle!

There must be no people or animals near the vehicle due to the risk of collision and/or overturning!

Never allow other people to stand on or near the lift system during work due to the risk of crushing!

The vehicle and the machine must be operated from the driver's seat of the vehicle!

WARNING

Mounting and connection of the machine must only be carried out by professionals who have knowledge and understanding of hydraulic systems, in order to avoid pollution of the environment, leaks and contamination of the closed hydraulic system!

WARNING

Installation of attachment tools and multi carriers on a vehicle must take place on a level and safe surface!

Great care must always be taken when attachment tools with a connected multi carrier are mounted and connected to the vehicle!

5.4.3.1) Mounting and connecting the RI Barrier Mower on a multi carrier:

NOTICE

The mounting instructions show and explain how the RI Barrier Mower is mounted on an approved multi carrier.

The connection instructions assume that the approved multi carrier on the vehicle has already been installed and connected correctly according to its instruction material.

MOUNTING AND CONNECTING: RI BARRIER MOWER

3. Using a pallet, place the RI Barrier Mower on a firm and stable surface, with good maneuvering space around the machine:

(Picture)

4. Drive the vehicle with mounted multi carrier around the side of the attachment tool, so that the operator have a good view of the machine from the driver's cab and where the adapter bracket on the multi carrier can reach the adapter bracket on the attachment tool without being in its outer position:

(Picture)

5. The adapter bracket of the multi carrier is slowly moved to the adapter bracket of the attachment tool and the 2 machines are carefully linked together:

(Picture)

Table 16 – Mounting and connecting the RI Barrier Mower on multi carrier (1/3)

6. The adapter bracket and mounting bracket on the multi carrier are connected using the included bolts and nuts.

Bolts and nuts are tightened based on size according to [Table 25](#) – page 63.

(Picture)

The attachment tool can now be safely lifted from the ground using the multi carrier's lift/arm system:

⚠ WARNING

The operator must always ensure that the attachment tool is completely fastened before it is lifted from the ground!

7. 3x hydraulic hoses from the attachment tool are connected to the double-acting oil outlet on the multi carrier

(Picture)

**DK : TRYK
UK: PRESSURE
D: DRÜCK**

The attachment tool must depending on the model be supplied with:
(25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi)

**DK : RETUR
UK: RETURN
D: RÜCKLAUF**

The return back pressure on the attachment tool must be between
5-15 bar (73-217 psi) *

**DK : DRÆN
UK: DRAIN
D: LECK**

The drain connection on the attachment tool must have a back pressure of max.
2 bar (29 psi) and must never be connected to the return connection!

* The oil motor on the attachment tool needs a minimum return line pressure to ensure correct working conditions.

GreenTec's machines run with an open hydraulic circuit that includes a pumping station, engine, and oil tank. One of the advantages of an open circuit is greater heat reduction compared to a closed circuit.

Hydraulic oil is pumped from the tank, through the components and back to the tank. Here the oil loses heat before it is run through the system again.

Table 17 – Mounting and connecting the RI Barrier Mower on multi carrier (2/3)

⚠ WARNING

The drain pressure must never exceed the return pressure on the machine!

A higher back pressure than permitted on the drain connection results in serious damage to the oil motor and the warranty for this is void!

The drain connection must therefore always be routed by itself as a pressureless tank connection and must never be connected to the return connection!

⚠ WARNING

Always remember to turn the locks on the hydraulic quick couplings to avoid accidental disconnection when a branch sweeps over the quick couplings!

If one of the hydraulic connections is broken loose during use, the oil motor will be damaged and the warranty for this will be void!

⚠ CAUTION

Before connecting the hydraulic quick couplings, the inserts must be carefully cleaned to avoid contamination and wear on the seals.

Use suitable protective components such as plugs and caps when quick couplings are not in use to prevent unnecessary wear or damage.

Impacts, such as falling to the ground, can damage a hydraulic quick coupling. Take precautions to avoid this type of impact.

⚠ CAUTION

Hydraulic hoses must always be routed and installed so that they can move freely with the movements of the attachment tool and the multi carrier, without getting pinched, detached or otherwise damaging the machine or other equipment!

8. As soon as the attachment tool and multi carrier are fully connected, prepare the machinery for transport from the section on:

(Picture)

[Transport of attachment tools on a vehicle \(p\)](#) – page 45-46.

9. Drive the machinery out to a large area with firm ground, plenty of space and no people/animals in a minimum radius 20 meters.

Start the multi carrier here, without starting the attachment tool, and follow all the procedures for initial start-up, use and stability in the following section:

(Picture)

[Preparing the machine for use](#) – page 39-43.

Table 18 – Mounting and connecting the RI Barrier Mower on multi carrier (3/3)

5.4.3.2) Un-mounting and disconnecting the RI Barrier Mower on the multi carrier:

Un-mounting and disconnecting the RI Barrier Mower is done in the reverse order, cf. section on [Mounting and connecting the RI Barrier Mower on multi carrier](#) – page 34-37.

WARNING

Un-mounting and disconnection of the attachment tool must take place on a flat and safe surface!

Great care must always be taken when un-mounting the attachment tool and disconnecting the multi carrier!

CAUTION

The attachment tool must always be un-mounted before the multi carrier is disconnected and removed from the vehicle!

When un-mounting and/or replacing attachment tools, always check the hydraulic system for residual pressure!

A possible residual pressure in the system is reduced to zero (**0 bar / 0 psi**) *before* disconnecting the hydraulic hoses!

When un-mounting the multi carrier, follow the instruction material for the multi carrier used!

NOTICE

The attachment tool can be advantageously placed on a transport pallet when un-mounting and disconnecting. The attachment tool can thus be moved around more easily.

5.5) Preparing the machine for use

After complete mounting and connection of the attachment tool to the multi carrier/vehicle, the following procedures in this section are carried out before putting the machine into use:

5.5.1) Procedures before start-up and use

The operator of the machine must always have read and understood the instruction material, for both vehicle, multi carrier and the attachment tool in use!

Before start-up and use, be sure to have reviewed all points, instructions and procedures in the following sections of this user manual:

- [Safety](#) – page 6-15.
- [Instructions for using the machine \(k\)](#) – page 29-30.
- [Instructions for mounting, connecting, and disconnecting \(j\)](#) – page 31-38.
- [Stability \(o\)](#) – page 40-41.
- [Daily and routine inspections \(e\)](#) – page 61-62.

5.5.2) Training of machine operators before use

The GreenTec attachment tool may only be used mounted with multi carriers approved by GreenTec, and on an approved vehicle as a single unit.

The operator of a vehicle with a multi carrier and attachment tool mounted must therefore both review and understand the instruction material for the attachment tool as well as the instruction material for the multi carrier and the vehicle used, before putting the machine into use.

The operator must be competent and fully capable of working with this machine in a safe and efficient manner before using it in a public place.



The instructions must be completely understood before attempting to mount, connect or use the machine.

If there is any doubt, contact the dealer or GreenTec's After-sales service!

GreenTec offers paid commissioning at the customer's place when purchasing a machine!

5.5.3) Stability (o)

When driving with the attachment tool, the operator must always be aware that the machine's center of gravity shifts during work:

⚠ DANGER

After mounting and connection it must always be ensured that the complete vehicle is stable enough to be able to carry the multi carrier with the attachment tool attached.

Especially that the vehicle is stable enough sideways, also when the attachment tool is working at a greater height and hangs on the side of the vehicle, as well as when driving on an uneven surface and/or in a bend!

NOTICE

Depending on the weight and stability of the vehicle used with the multi carrier and attachment tool, it may be necessary to use front-side or rear weights to maintain stable rear axle pressure on the opposite wheels from which the attachment tool is mounted.

The suggestions below are only indicative in terms of stability and are not a direct instruction to strengthen the stability of the specific vehicle.

It is recommended that the dealer of the vehicle be contacted, for specific advice on increased stability, and/or for advice and guidance on tire pressure etc. for the vehicle on which you want to mount the multi carrier and attachment tool.

5.5.3.1) Checking the stability:

⚠ CAUTION

Carefully examine the stability of the vehicle/multi carrier with the attachment tool mounted!

Slowly operate the attachment tool all the way to the outer position using the multi carrier's arm system. Leave the attachment tool at a low height: Max. ½ meter (1.5 ft.) above the ground.

(The attachment tool **is not to be started** during this check!)

Perform the following procedures:

1. Ensure that the machine is in working position with the multi carrier arm system fully extended to the outer position. Let the attachment tool be max. ½ meter (1.5 ft.) above the ground.
2. Carefully move the vehicle with the multi carrier mounted, as well as move the working angle of the attachment tool around the entire range of movement: both horizontally and vertically.
 - a. Is the vehicle stable on all 4 wheels?
 - b. Are the lift arms stable?
3. Is the vehicle stable when turning and driving around - also on uneven terrain?

4. Assessment is made in each individual situation, and it is the full responsibility of the operator and operators to ensure that the vehicle does not overturn or tip over. If the vehicle and multi carrier are stable, the attachment tool can be moved up step-by-step.
5. If the operator judges that the vehicle and multi carrier are not stable, the vehicle must be stabilized. (Follow the user manual for the vehicle in use!)

5.5.3.2) Stability can be increased by:

- Mounting counterweights on the vehicle and/or multi carrier.
- Top up water in the vehicle's tyres. (Check with the tire manufacturer, and remember frost protection at temperatures close to or below freezing)
- Track width of the vehicle; the longer the wheels are out, the greater the stability. (To be examined at the vehicle dealer)
- Stabilizer on the front axle, especially on the attachment tool's side. (To be examined at the vehicle dealer)



It is especially important that the operator has an understanding of the stability and that you must always drive according to the conditions!

Never use the multi carrier with attachment tools on an unstable or unsuitable vehicle.

5.5.3.3) Factors influencing stability:

- The centre of gravity of the machine combination and the height at which work is being done in combination with the weight hanging out on the side of the vehicle.
- Weight, counterweight, track width and vehicle wheelbase.
- Acceleration, braking, turning and the relative position of the attachment tool during these manoeuvres.
- The nature of the terrain: are you driving uphill, downhill or on a slope? What is the type of surface: soft, hard, or uneven?
- Pay special attention to the fact that articulated loaders shift the weight balance significantly more to the side, the sharper the turn.

5.5.4) Initial start-up and commissioning

The initial start-up of the machine for use, like the initial mounting and connection of the machine, should always be carried out by the dealer with the necessary knowledge and experience.

When the attachment tool is to be used for the first time with an approved multi carrier on the vehicle, it is recommended to always go through the steps below to ensure an optimal and safe first start-up of your machine:

PROCEDURES FOR INITIAL START-UP AND COMMISSIONING:	
1. Check the stability of the machinery:	Before the first start-up and commissioning, it must always be ensured that the complete vehicle is stable enough to be able to carry the multi carrier with the attachment tool attached. (See section: Checking the stability – page 40-41)
2. Check the bolts of the machinery:	Make sure that all bolt assemblies on the machinery are correctly tightened, especially bolts for the blades and bolts at the adapter bracket for between the attachment tool and the multi carrier. (See section: Tightening of bolts – page 63)
3. Start the machinery for the first time by activating the oil supply from the multi carrier:	Let the machine run for approx. 5 minutes at idle with low revs, to warm up the hydraulic oil before use.
4. Inspect the hydraulic system for leaks:	Hydraulic hoses and fittings are inspected for possible leaks and are tightened. (See section: Tightening of hydraulic hoses- and fittings – page 64)
5. Check and prove the pressure specifications of the machinery:	Max. allowed pressure: 25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi) Max. return backpressure: 5- 15 bar (72.51 psi – 217.55 psi) * Max. allowed drain backpressure: 2 bar (29 psi) * (See section: Checking pressure- and flow specifications – page 67)

Table 19 – Procedures for initial start-up and commissioning



Always check and prove the pressure specifications by measuring at each start-up!

The driver of the vehicle must know how the oil should be handled (Always see the safety data sheet for the hydraulic oil used!)

Oil splashes under high pressure from damaged fittings or hydraulic hoses can penetrate the skin and cause serious injuries!



The drain pressure must: never exceed the return pressure on the machine!

A higher back pressure than permitted on the drain connection results in serious damage to the oil motor and the warranty for this is void!

The drain connection must always be routed by itself as a pressureless tank connection and must never be connected to the return connection!

⚠ CAUTION

Always start up carefully when using for the first time and only drive in a private area until familiarity is achieved in using the machinery with the attachment tool mounted!

NOTICE

GreenTec recommends running the machinery at slow idle before use to warm up the hydraulic oil. It helps to protect the hydraulic components and significantly extend the life of both the motor and the pump!

5.6) Operation of the machine (e)

This section describes the handling of the machine, the operator's workplace when the machine is used, as well as operation and use of the machine.

5.6.1) Operator's workplace (f)

The attachment tool must always be mounted on an approved multi carrier using a vehicle and therefore the attachment tool is handled when operating from the vehicle.

⚠ WARNING

The operator must take breaks if this is deemed necessary and be aware of the strain from the working position.

⚠ CAUTION

Very much depending on how the multi carrier/attachment tool is positioned in relation to the operator, there may be stressful working positions.

It is important that the operator can follow and control the work of the equipment, while at the same time being aware of the course of the road, traffic conditions etc.

It is many things at once, and often with a twist on the back and/or neck. In the long term, this can put a strain on the body's musculoskeletal system, and it is therefore recommended to take appropriate breaks as needed during use.

NOTICE

Know and understand the operation of both the vehicle and the multi carrier, in order to control the attachment tool safely.

The assembled machinery must be operated so that it is controlled in the most appropriate way, according to their instruction material.

The operator's workplace is always the vehicle's cab, where the multi carrier and attachment tool's control panels etc. are placed.

5.6.2) Transport of attachment tool on a vehicle (p)

When transporting a multi carrier with a mounted attachment tool, the most appropriate transport position depends equally on the combination of vehicle, multi carrier and attachment tool.

Since there are different models of multi carriers, as well as options for mounting additional equipment, it is important to find the best transport position for exactly your combination of machines.

The installation of various additional equipment can limit the position of the attachment tool during transport, and the design of the vehicle can also change the possibilities for the transport position of attachment tool.

Common to all transport positions for attachment tools is that the positioning must not block either visibility or light/lamps; both on the vehicle as well as on any light beam on multi carrier.

DANGER

ALWAYS drive with ALL safety guards on, e.g., blades, when transporting all types of attachment tools.

Likewise, always try to turn attachment tools towards/along the vehicle and away from other traffic and pedestrians.

WARNING

When driving on public roads, it is always the operator's responsibility to always comply with applicable traffic laws and regulations!

GreenTec cannot be held responsible for any violations of traffic laws and regulations while driving with tools carriers and/or attachment tools!

The attachment tool must not cover either the vehicle's or multi carrier's lights and/or the operator's view! Otherwise, additional lighting should be installed!

5.6.2.1) Transport position: RI Barrier Mower

To put the RI Barrier Mower in transport position, the movement of the [spring-loaded arm system](#) is locked using the **red safety pin** as soon as the machine is transported around or not in use.

The machine should only be in working position and unfolded in such a way that the "break-back"-function on the Barrier Mower is activated during use:



RI Barrier Mower in retracted and locked position (Transport position)



RI Barrier Mower in extended and unlocked position (Working position)



FOX Multi Carrier mounted with RI Barrier Mower in transport position. The attachment tool is turned inwards towards the vehicle, for maximum traffic safety.



FOX Multi Carrier mounted with RI Barrier Mower in working position. The attachment tool can be further extended in reach using the Multi Carrier's arm system.

5.6.3) Start of attachment tool

The attachment tool can be started as soon as it is mounted correctly, and the multi carrier is in the working position. See sections: [Instructions for mounting, connection and disconnection \(j\)](#) – page 31-38 + [Preparing the machine for use](#) – page 39-43 + [Operation of the machine \(e\)](#) – page 44-58.

⚠ DANGER

Always make sure to check the immediate area around the machine and the vehicle before starting and during operation of the work the machine must perform. The size of the area depends on which attachment tool is used.

Always handle heavy machinery with care and caution, and always follow the regulations described in the attachment tool, multi carrier and vehicle user manual!

The attachment tool must always be started at the lowest oil supply / RPMs from the multi carrier:

1. The multi carrier is started by applying low oil flow the vehicle's hydraulic system.
(Always refer to and follow the instructions of the vehicle / multi carrier used as these will vary!)

NOTICE

For PTO-driven machines: Always start with the attachment tool hovering above the ground, and preferably in a place where there is room for extra movement, to find the correct PTO RPM.

2. The attachment tool is started using the multi carrier's controls, and the blades/knives rotate at low revolutions. A slow start is advised until the blades/knives reach their recommended speed.
3. Let the attachment tool run without load for 5-10 min., until the hydraulic oil in the system is heated up.
4. When the hydraulic oil is at operating temperature, the optimum oil flow 25-40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi) for the machine is found as follows:
 - a. With the attachment tool running at low oil flow/rpm from the vehicle / multi carrier's hydraulic system, the oil flow from the hydraulic system is slowly increased.
 - b. Stop increasing the oil flow when the optimum oil flow of 25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi) is achieved, or until the multi carrier incl. the movements of the attachment tool are smooth and continuous. (Here, several movements may be made at the same time - move the control panel/joystick!)

⚠ WARNING

The correct oil flow from the vehicle ensures the most comfortable use of both the multi carrier and the functions of the attachment tool and minimizes fuel consumption and heat in the hydraulic system.

The flow specifications (l/min @ bar or gpm @ psi) must always be kept within the regulations for multi carrier and attachment tool and must never be exceeded.

See sections: [Specifications](#) – page 27 + [Mounting and connection of the machine \(j\)](#) – page 33-38.

5.6.4) Stop of attachment tool

The attachment tool must always be stopped at the lowest oil supply / RPMs from the multi carrier:

1. The attachment tool is stopped by first running it down to a low oil flow / low RPM on the vehicle!
(Always refer to and follow the vehicle instructions used as these will vary from vehicle to vehicle!)
2. The attachment tool is stopped completely using the multi carrier's controls, and the rotation of the blades/knives stops.
3. Allow the attachment tool to run without load until it stops, then turn off the vehicle's hydraulic system.

⚠ DANGER

Many attachment tools have heavy blades or rotors. Therefore, these will often rotate for up to 30 seconds after the hydraulic supply is cut off!

Never go near attachment tools without making sure that the rotating parts have come to a complete stop!

5.6.5) Setting and adjusting the machine (r)

Setting and adjusting the machine always depends on the vehicle and/or multi carrier that is mounted together with the attachment tool.

In general, both vehicle incl. multi carrier, is handled and adjusted so that the attachment tool that is mounted does the best possible job, in the safest way.

Common to all attachment tools is that they must be mounted on a multi carrier, connected, and then moved from the transport position into the work position.

Handling of specific multi carriers is described in their user manuals! Check the instruction material for the multi carrier used!

CAUTION

Pay special attention to any collision protection function / "Break-back" function when the multi carrier is set and adjusted to working position with the attachment tool attached! See section: [Driving instructions](#) – page 54-57.

The following pages describe the functions for setting and adjusting the RI Barrier Mower:

5.6.5.1) Setting the working height

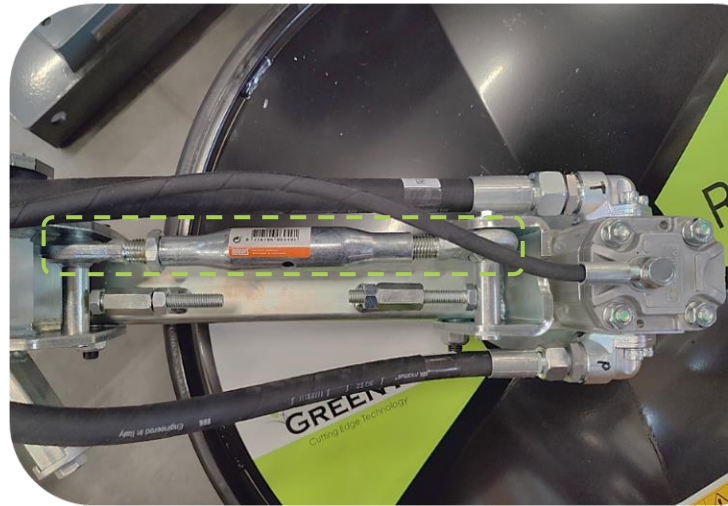
The adjustable suspension on the RI Barrier Mower makes it possible to set the working height on the suspension itself, relative to the multi carrier.

The height of the suspension is adjusted using a top-link with counter nut, clamped at each end of the suspension.

How the working height must be set depends on both the multi carrier but also the vehicle and its lift functions.

As a general rule, the working height must always be adjusted so that the support disc under the cutting head runs easily over the grass surface.

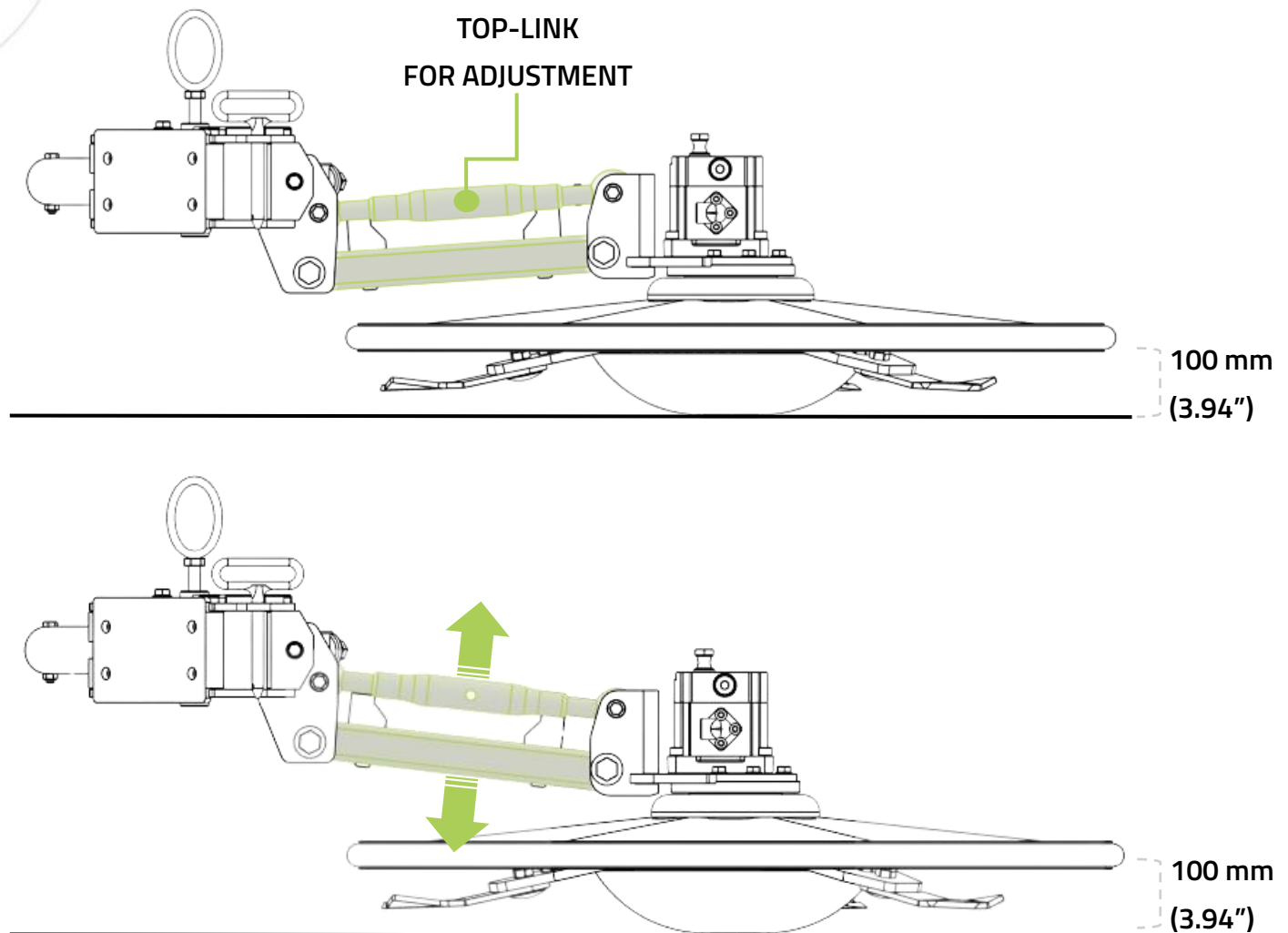
With the correct setting, the optimal cutting height for the RI Barrier Mower will be approx. **30-35 mm (1.18-1.38")**



Position of the top-link for adjusting the working height of the suspension

NOTICE

If the working height is set too low, the "break-back" function on the suspension will be activated more often than is beneficial, as the machine will drag too much across the ground's surface.



Function and adjustment of suspension: working height

5.6.5.2) Adjusting the "tilt"-function

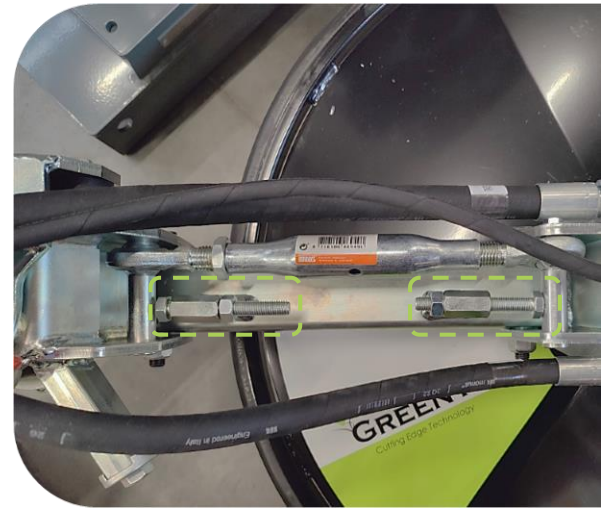
The adjustable suspension on the RI Barrier Mower makes it possible to adjust the "tilt"/inclination of the mowing head, so that grass surfaces with a slight slope of approx. 10° in both directions.

The "tilt"-function on the suspension is adjusted using 2 screws (M12 x 90) w/ a counter lock nut, at each end of the suspension.

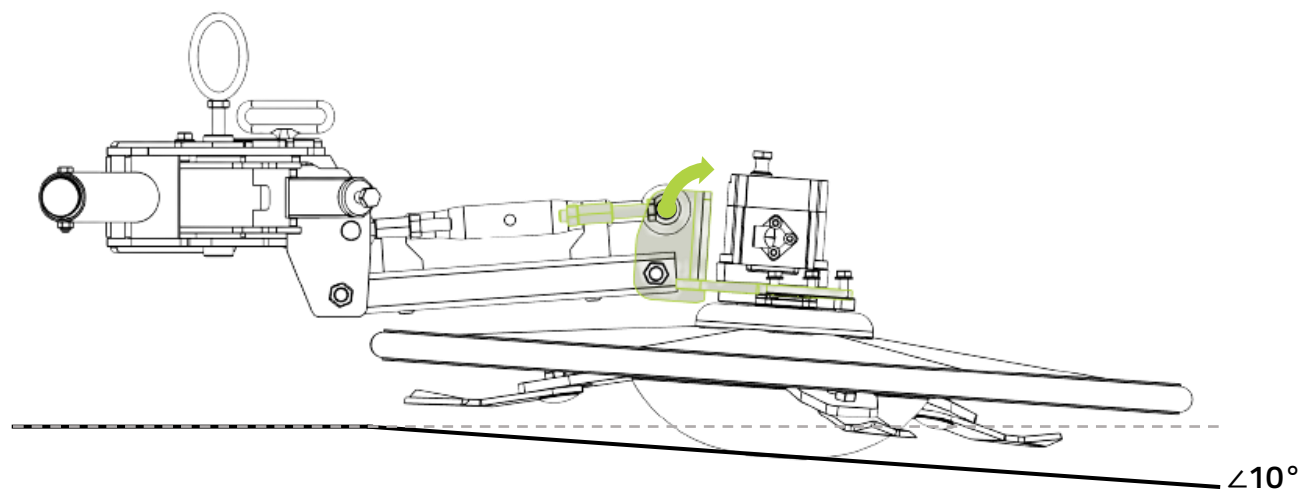
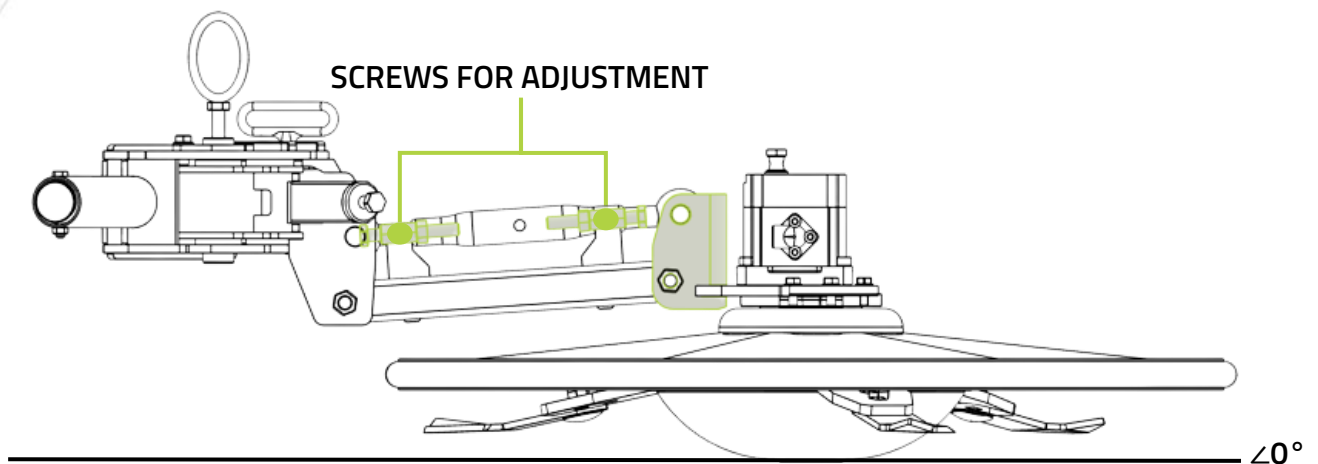
NOTICE

The screws must be adjusted so that the entire cutting head runs parallel to the grass surface.

Otherwise, an uneven cutting result will be achieved.




Position of screws for adjusting the "tilt"-function




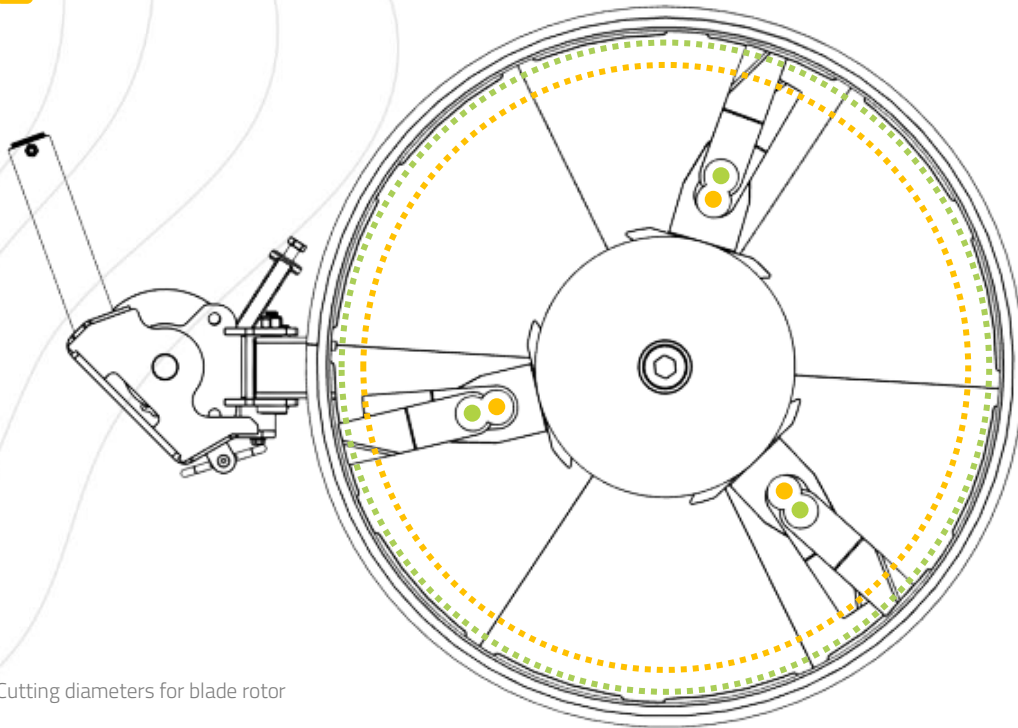
Function and adjustment of suspension: "tilt-function"

5.6.5.3) Setting the cutting diameter

The RI Barrier Mower's blade rotor can be set to cut in 2 different diameters:

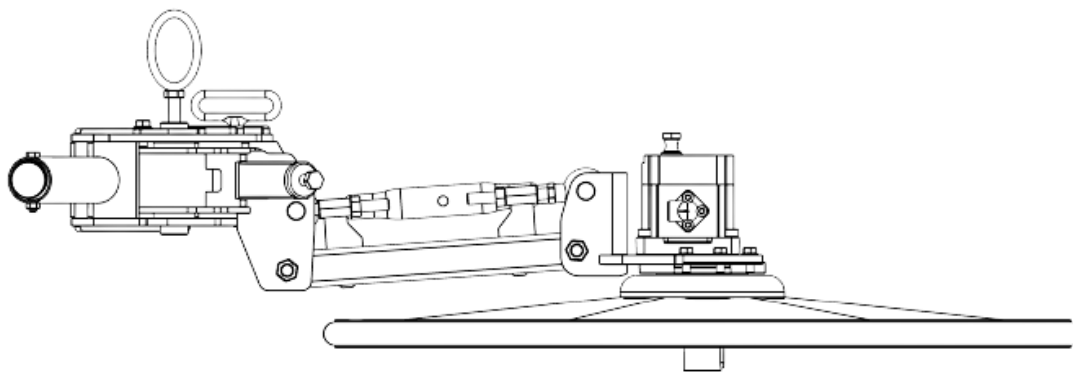
 = RI 62: 580 mm (22.84") / RI 82: 780 mm (30.71")

 = RI 62: 550 mm (21.65") / RI 82: 750 mm (29.53")

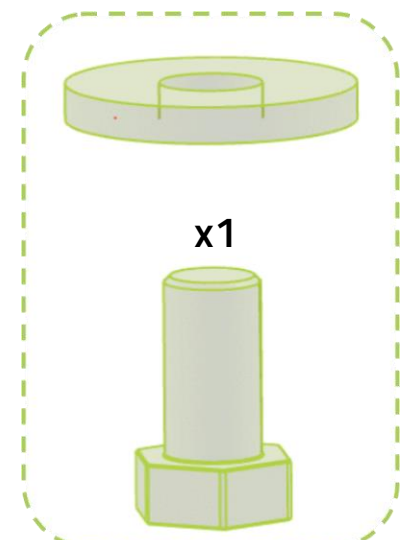
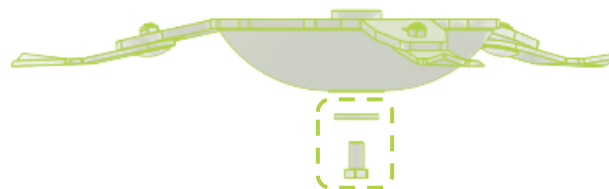


Cutting diameters for blade rotor

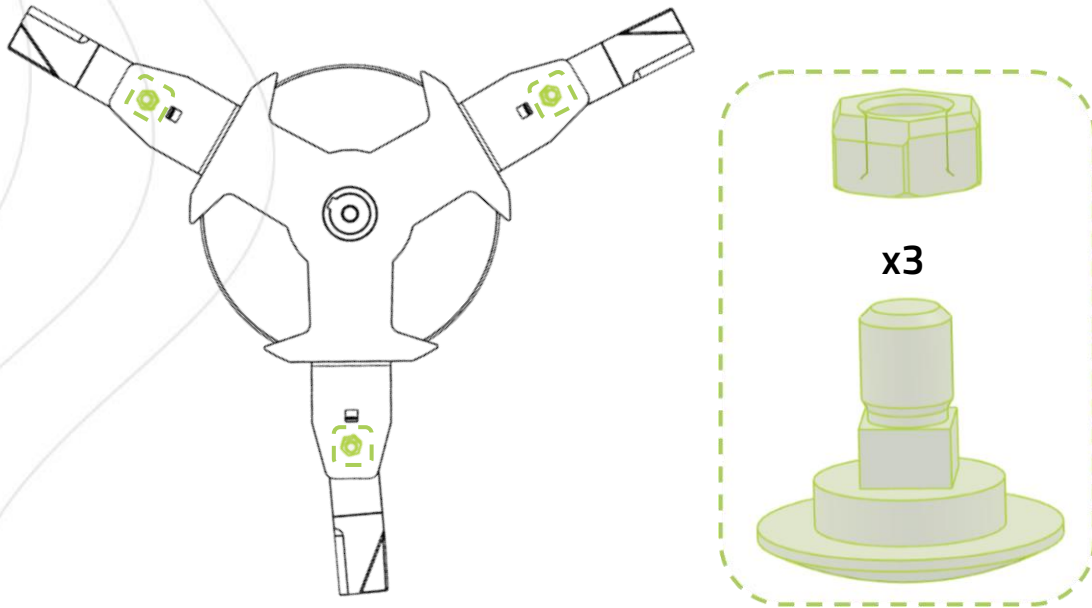
1. Support disc- /blade holder on the underside of the RI Barrier Mower's cutting head is removed using a set screw (M16 x 25) and a washer:



Removing the support disc- /blade holder

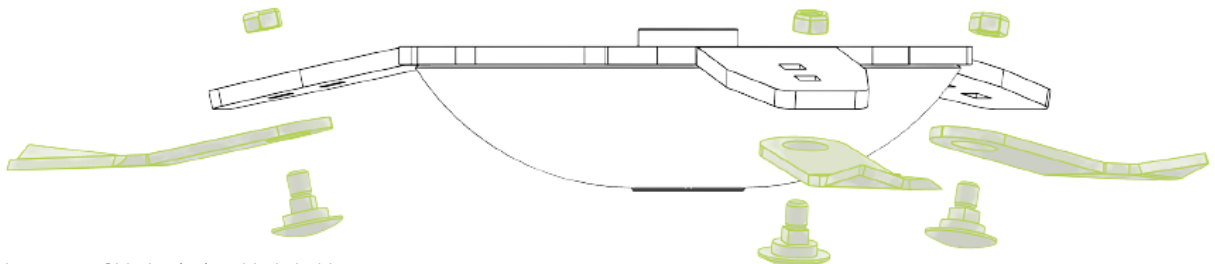


2. With the support disc- /blade holder detached from the cutting head, loosen and remove all 3x blade bolts (M12 x 1.5) at the blades:



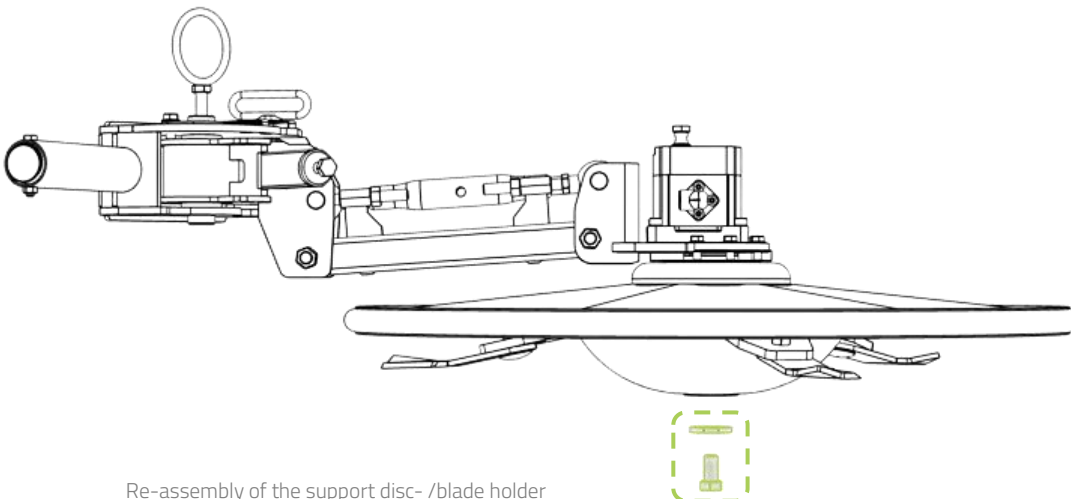
Removal of blade bolts (x3) on blade holder

3. The blades are moved to either the inner/outer hole on each blade holder. Blade bolts and nuts (M12 x 1.5) are then tightened with: **114 Nm (84.08 lbf-ft)**



Placement of blades (x3) on blade holders

4. With the blades attached to the knife holders, the support plate on the underside of the RI Barrier Mower's cutting head can be mounted again using the set screw and washer. The set screw (M16 x 25) is then tightened with: **197 Nm (145.30 lbf-ft)**



Re-assembly of the support disc- /blade holder

5.6.6) Driving instructions

The machinery must always be operated and used in the most appropriate way, so that you achieve the best possible result and the greatest safety during use.

⚠ DANGER

The machinery must at all times be used within the limitations of the machine's safety instructions, intended use and area of application, so that it is always used for its intended purpose.

See sections: [Safety – page 6-15](#) + [Intended use of the machine \(g\) + Application and restrictions of the machine \(h\) – page 18](#).

⚠ DANGER

Under no circumstances should people or animals stay within the working area of the machinery during use!

NOTICE

Specific driving instructions cannot be described in this user manual alone.

Always use the vehicle's mounted multi carrier incl. the attachment tool's instructional material for guidance on correct driving and use, in combination with the information given in this section.

The prescribed driving instructions with the attachment tool are based on the operator having understood both the operation and functions of the vehicle, the multi carrier and the attachment tool, as well as having carried out a complete implementation of all instructions in the section: [Preparing the machine for use](#) – page 39-43.

All the functions of both the vehicle, the operation of the multi carrier, and the functions of the attachment tool should be understood with the operator, as it is a combination of these that determines the result of the e.g., fence and hedge cutting.

DRIVING INSTRUCTIONS: RI BARRIER MOWER

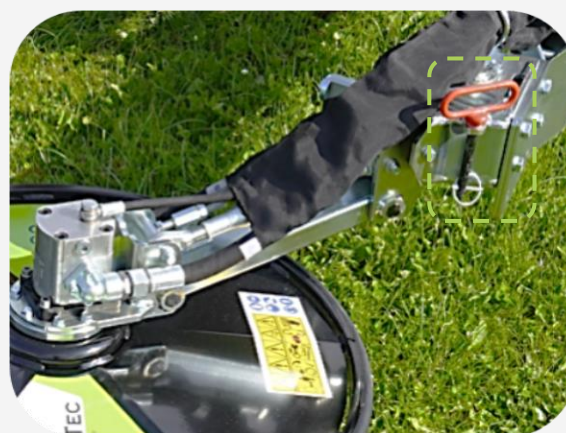
1. Depending on the multi carrier used, its arm system is adapted to be used with the RI Barrier Mower.

The arm system on the multi carrier is activated either mechanically or electro-hydraulically using its control panel. *



2. Remove the red safety pin incl. lynch pin from the suspension on the RI Barrier Mower. Place this in the free hole on the opposite side of the suspension.

The cutting head is now in working position and turned outwards, so that the "break-back" function of the RI Barrier Mower is activated during use.



3. Use the vehicle and the selected multi carrier's functions to steer and position the RI Barrier Mower to the position that is most appropriate for the work to be performed. **

The working height of the RI Barrier Mower is adjusted via the multi carrier/vehicle's lift system so that it is the appropriate height in relation to the terrain/fence line.



* Mechanical deployment of arm system: FOX, HXF 2302 & 2802, PUMA 2303 & 2803.

Electro-hydraulic telescopic arm system: HXF 2802 Tele, PUMA 2803 Tele.

** Use the vehicle's and multi carrier's instruction material for correct setting and positioning.

Table 20 – Driving instructions: RI Barrier Mower (1/3)

4. Always use the RI Barrier Mower so that the cutting head runs parallel to the surface of the ground. If there is a major difference in the material and/or the contours of the ground, the working height of the machine is corrected so that the material meets the blades/knives straight on.

If the RI Barrier Mower's support disc is all the way down and touching the ground, a mowing height of approx. 30-35 mm (1.18-1.38") is achieved.

See section: [Setting and adjusting the machine \(r\)](#) – page 49-53.



5. The direction of travel with the RI Barrier Mower must take place forward and must follow the contour of the ground and/or the line of the "fence".

The "break-back" function on the RI Barrier Mower is only activated in the forward direction.



Table 21 – Driving instructions: RI Barrier Mower (2/3)



When mounting the multi carrier and the RI Barrier Mower on the back of a vehicle, it must be ensured that the RI Barrier Mower is turned so that the "Break-back" function is activated in the opposite direction to the direction of travel. (See image below!)

If the "Break-back" function is not activated in the correct direction, the RI Barrier Mower incl. multi carrier is damaged.



6. The forward speed when using the RI Barrier Mower must be max. 3-4 km/h (1.86-2.49 mph) and must always be adjusted so that the cutting result is optimal.

In the beginning, it is recommended to drive the RI Barrier Mower slowly so that the blades can maintain the recommended speed.



Table 22 – Driving instructions: RI Barrier Mower (3/3)

⚠ DANGER

If blades/knives are blocked: Stop the machine, stop the vehicle, remove the ignition key, apply the parking brake and wear safety glasses and gloves before attempting to remove material/unwanted objects from the blades/knives.

See section: [Start-up after unintended / accidental stoppage \(q\)](#) – page 58.

5.6.7) Start-up after unintended / accidental stoppage (q)

NOTICE

In case of accidental stoppage of attachment tool and/or multi carrier, always follow the instructions given in the machines' user manuals.

See section: [Safety instructions for maintenance, adjustment, and inspection \(s\)](#)
– page 15

An unintended stoppage of operation can occur at any time. There can be various reasons, but often downtime can be avoided if the operator uses and maintains the machine correctly and avoids hitting:



- Bigger rocks
- Tree stumps
- Fence wire
- Manhole covers
- Litter/trash
- Plastic and/or other packaging
- Bicycles/scrap

If the attachment tool hits any of the above objects, strong vibrations and/or increased noise will typically occur.

In the event of signs of strong vibration/noise in connection with the above, or in the event of e.g. leakage, lost and/or loose parts on the machine, the operator should do the following:

1. Stop the machinery immediately.
2. Tilt the attachment tool around and lower to a low height so that the machine's elements can be inspected.
3. **Pull the handbrake, switch off the vehicle, take out the key and make sure that the machinery has come to a complete stop!**
4. Attachment tools and multi carriers are inspected and checked:
 - If foreign bodies are found, these are released manually. (Fence wire, plastic etc.)
 - Check machine parts for cracks, breaks, missing parts, or any other damage.
 - Do not continue driving until all damage has been repaired.

Follow the recommendations below for starting the machinery after a shutdown:

- Follow the recommendations below for starting up after a shutdown:
- Restart the attachment tool slowly. (See the user manual for used multi carriers + section in this user manual: [Start of attachment tool](#) – page 47.
- Pay particular attention that both the attachment tool and the multi carrier work according to all guidelines stated in their user manuals.



6) Inspection and maintenance (e, r)

To ensure a long working life of the machine, good and careful inspection and maintenance is required.

Remember that the machine is designed to withstand the harshest conditions, and that with a little care and attention it will be able to give you many years of trouble-free operation.

To avoid problems and ensure that the warranty covers, always use original [GreenTec spare parts](#) and make sure that the machine is not used for anything other than described in this user manual.



The owner or operator must ensure that the machine is only used, maintained, inspected, and repaired by persons who are familiar with the procedures associated with it and are instructed in the associated dangers.

If doubts arise in connection with some of the procedures mentioned, contact an authorized specialist workshop or importer/retailer (See: www.greentec.eu)

Repair work that is not described in the user manual may only be carried out by authorized specialist workshops.

IGNORING ONE OR MORE OF THE SAFETY INSTRUCTIONS MAY MEAN:

⚠ DANGER

Great danger to people due to mechanical and chemical influences!

⚠ WARNING

Danger to the environment due to leakage of hydraulic oil! Damage and defects to the attachment tool, multi carrier or the towing vehicle!

NOTICE

The warranty on the machine is void if one or more of the safety instructions are disregarded.

GreenTec is not liable for compensation claims for damages caused by incorrect use of the machine and incorrect connection or connected equipment, or by incorrect maintenance of the machine!

6.1) Instructions for safe maintenance and adjustment (s)

To avoid accidents during maintenance and adjustment, the following points must always be observed:

⚠ DANGER

All work on the machine must only be done when the machine is stopped, the vehicle is switched off, the handbrake is applied, and the key is removed from the ignition lock on the vehicle!

During maintenance work on lifted attachment tool, securing with suitable support elements must be carried out!

Only use suitable tools and use the prescribed personal protective equipment prescribed in this user manual!

Great care should be taken when working with the machines, as there is a danger of fingers and hands being trapped by e.g. drive belts, pulleys, blade blades, rotors, guards etc.!

⚠ WARNING

Immediately after finishing maintenance work, all safety and protective devices etc. mounted and activated again! During maintenance, you can often come into contact with hydraulic oil, gearbox oil and grease. Always avoid skin contact, inhalation, etc.!

Always use the correct protective equipment and use the safety data sheets for these!

ALWAYS dispose of oil and grease in a regulatory and environmentally sound manner!

6.1.1) Properly move your GreenTec machine

GreenTec recommends moving machines and attachment tools around on their supplied support devices/stands, or transport pallets (EU standard) if support devices are not available.

If machines are to be moved, always use a forklift or pallet lifter. Always check the weight of your GreenTec machine under the machine specifications.

Materials and components used in connection with moving the machine must be approved for *more than the stated weight of the machine*.

⚠ DANGER

There is a risk of crushing as the machine can turn/overturn during transport.

There must not be people on both sides of the machine during lifting, or in the area where the machine can tilt.

Never try to lift or move the multi carrier with the attachment tool attached! Attachment tools and multi carriers are moved separately from time to time as long as they are not mounted on a vehicle!

6.2) Daily and routine inspections (e)

⚠ CAUTION

Before starting up a new machine, a daily inspection is carried out before starting up, and again already after **3-5 operating hours**. After this, a daily inspection after using the machine is sufficient, combined with a six-monthly inspection of the machine! (Every 6 months)

At the beginning of the machine's service life, extra attention should be paid to the tightening of bolts, lubrication, shielding and if any belt tension on attachment tools.

NOTICE

Always remember to check the entire machinery, both vehicle, multi carrier and the attachment tool used.

It is important that the operator knows the machines and carries out the daily and routine inspections necessary for the vehicle, the multi carrier and the attachment tools used.

For correct inspection and maintenance, the user manuals for the respective machines must be used at all times. (Vehicle, multi carrier and attachment tool)
Always be safe in the daily routines and inspection of machines!

Daily inspection is always carried out after the first 3-5 operating hours. All points MUST be reviewed!
Thereafter, a daily inspection is carried out each time the machine is used:

DAILY INSPECTION OF THE MACHINE:	
1. General overall impression of the machine:	Possible damage and/or errors must be corrected immediately.
2. Intact guards/shielding, incl. rubber protection on attachment tools + if any, shielding of belt housing:	All forms of guards/shielding must be intact.
3. Cracks in the frame's sides, corners and around the mounting points:	Also look for dents and/or bent parts.
4. Loose parts or missing bolts:	Retighten all bolts! (See section: Tightening of bolts – page 63)
5. Inspect the hydraulic system for leaks:	Check all hydraulic hoses incl. fittings + motor, flow divider etc. (See section: Tightening of hydraulic hoses- and fittings – page 64)
6. Check hydraulic hoses and hose protection for correct guidance:	Check for twisted hoses, wear marks and/or displaced hose protection. (See section: Hydraulic hoses – page 65)
7. Lubrication of the entire machine:	Best done after finished work, as the components on the machine are hot here and possible water/moisture is thereby pressed out of e.g. bearings, bushings etc. (See section: Lubrication of the machine – page 69)

Table 23 – Checklist for daily inspections: Before and after commissioning

Semi-annual inspection is always carried out after every 6 months. All points MUST be reviewed!

Thereafter, a daily inspection is carried out each time the machine is used:

SEMI-ANNUAL INSPECTION OF THE MACHINE:	
1. General review of machinery:	Do a careful daily inspection. Cleaning and maintenance/lubrication so that general maintenance is minimized. (See Table 23 – page 61)
2. Clean the entire machine of loose branches and dirt:	Wash and then lubricate the machine with anti-corrosion oil/grease where this is relevant. Especially on worn areas/parts of the machine! (See section: Cleaning/washing the machine – page 68)
3. Carefully check the condition of all hydraulic hoses:	Be aware that hoses do not rub against edges, flanges, bolts and the like. Hose protections are correctly fitted so that the hoses are always protected as best as possible. (See section: Hydraulic hoses – page 65)
4. Examine all bearings, and possibly shafts, rivets and bushings on the machine:	See section: Bearings, shafts, pins, and bushings – page 66)
5. Store the machine well protected and dry:	Protect especially the hydraulic couplings on the attachment tool and multi carrier, and possibly bearings on work equipment against continuous rain, moisture, and temperature fluctuations. (See section: Storage of the machine – page 71)

Table 24 – Checklist for semi-annual inspection: preventive maintenance

6.3) Tightening of bolts and hydraulic connections

6.3.1) Tightening of bolts and nuts

All bolts and nuts on the machine are provided with quality class marking. Ordinary machine steel bolts have quality class 8.8: bolts marked with 8.8, and nuts marked with 8.

Hardened steel bolts may be marked 10.9 or 12.9: bolts marked 10.9 or 12.9, and nuts marked 10 or 12.

Individual bolts and nuts have no markings: these are always ordinary steel bolts and/or nuts in quality class 8.8 / 8.

Below are the nominal mounting torques for steel bolts/set screws within ISO 4014/ISO 4017-standard:



Bolts / steel set screws

TIGHTENING OF BOLTS:			Regular steel bolts/set screws (Strength class 8.8) *	Hardened steel bolts/set screws (Strength class 10.9) *	Hardened steel bolts/set screws (Strength class 12.9) *
mm	mm	mm			
M6	1,00	10	9,8 Nm (7.23 lbf·ft)	14,0 Nm (10.33 lbf·ft)	17,0 Nm (12.54 lbf·ft)
M8	1,25	13	24,0 Nm (17.70 lbf·ft)	33,0 Nm (24.34 lbf·ft)	40,0 Nm (29.50 lbf·ft)
M10	1,50	16	47,0 Nm (34.67 lbf·ft)	65,0 Nm (47.94 lbf·ft)	79,0 Nm (58.27 lbf·ft)
M12	1,75	18	81,0 Nm (59.74 lbf·ft)	114,0 Nm (84.08 lbf·ft)	136,0 Nm (100.30 lbf·ft)
M14	2,00	21	128,0 Nm (94.40 lbf·ft)	181,0 Nm (133.50 lbf·ft)	217,0 Nm (160.05 lbf·ft)
M16	2,00	24	197,0 Nm (145.30 lbf·ft)	277,0 Nm (204.30 lbf·ft)	333,0 Nm (245.60 lbf·ft)
M18	2,50	27	275,0 Nm (202.83 lbf·ft)	386,0 Nm (284.70 lbf·ft)	463,0 Nm (341.50 lbf·ft)
M20	2,50	30	385,0 Nm (283.96 lbf·ft)	541,0 Nm (399.00 lbf·ft)	649,0 Nm (478.70 lbf·ft)
M22	2,50	34	518,0 Nm (382.06 lbf·ft)	728,0 Nm (536.90 lbf·ft)	874,0 Nm (644.60 lbf·ft)
M24	3,00	36	635,0 Nm (468.35 lbf·ft)	935,0 Nm (689.60 lbf·ft)	1120,0 Nm (826.00 lbf·ft)

* Indicative values: Bolts and steel set screws (± 5%)

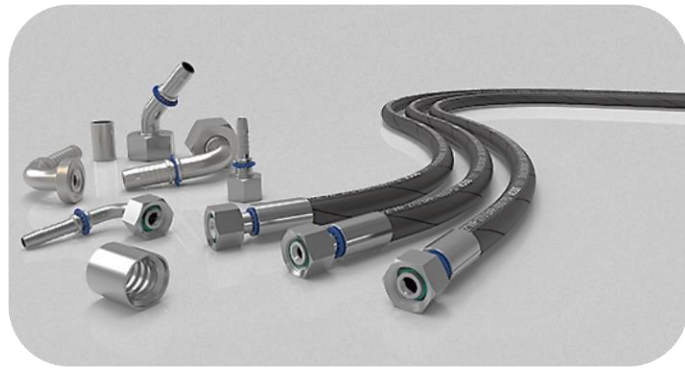
Table 25 – Tightening torques for bolts

6.3.2) Tightening of hydraulic hoses- and fittings

The hydraulic hoses and fittings used, are all produced with metric threads.

Hydraulic connections are available in 2 series:

- Light-series (L): Used on hydraulic connections where the pressure does not exceed 250 bar.
- Heavy-series (S): Used on hydraulic connections where the pressure exceeds 250 bar, and up to 320 bar.



Hydraulic hoses and fittings

TENSIONING OF HYDRAULIC HOSES AND FITTINGS:

Size:	Series:	Tightening torque (Nm): *
M12	L 6	20,0 Nm (14.75 lbf·ft)
M14	L 8	30,0 Nm (22.13 lbf·ft)
M16	L 10	40,0 Nm (29.50 lbf·ft)
M18	L 12	50,0 Nm (36.88 lbf·ft)
M22	L 15	70,0 Nm (51.63 lbf·ft)
M26	L 18	90,0 Nm (66.38 lbf·ft)
M30	L 22	120,0 Nm (88.50 lbf·ft)
M36	L 28	160,0 Nm (118.00 lbf·ft)
M14	S 6	25,0 Nm (18.44 lbf·ft)
M16	S 8	40,0 Nm (29.50 lbf·ft)
M18	S 10	50,0 Nm (36.88 lbf·ft)
M20	S 12	60,0 Nm (44.25 lbf·ft)
M24	S 16	85,0 Nm (62.69 lbf·ft)
M30	S 20	140,0 Nm (103.26 lbf·ft)
M36	S 25	190,0 Nm (140.14 lbf·ft)

* Indicative values: Hydraulic connections ($\pm 5\%$)

Table 26 – Tightening torques for hydraulic hoses and fittings

6.4) Hydraulic hoses

⚠ WARNING

When inspecting hydraulic hoses, any damage/defect must be rectified immediately. When searching for leaks, due to the danger, suitable aids must be used: protective glasses, work gloves + a piece of cardboard that quickly reveals a leak! Thin jets of hydraulic oil under high pressure can penetrate the skin and cause serious injuries! In the event of injuries of this nature, seek immediate medical attention: **DANGER OF INFECTION!**

Check the condition of all hoses at regular inspections. Pay particular attention that they do not rub against edges, flanges, bolts etc., and that the stocking is correctly fitted, so that the hoses are always protected as best as possible.

Check all hydraulic hoses and fittings daily. Any damage or leakage must be repaired immediately. Hoses with damage/defects must be replaced.

GreenTec's hydraulic systems work at a very high pressure: from approx. 200 bar up to 320 bar (2900 – 4621 psi) Use only original hoses. A burst hose can be very dangerous!

When replacing hydraulic hoses, avoid twisting hoses and fittings.

- Use 2 spanners to loosen and tighten the hoses!
- Avoid over-tightening! (Correct tightening torques are given in the [Table 26](#) – page 64)
- If fittings or screw connections continue to leak, these must be replaced!

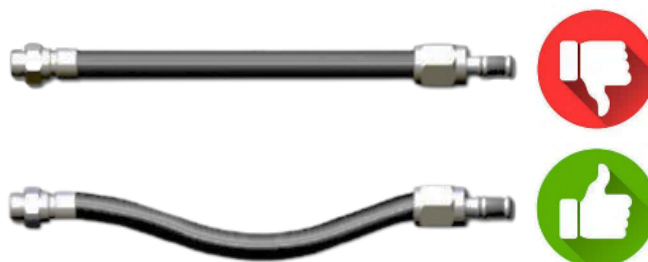
⚠ WARNING

A flexible hose must not be twisted during installation, as this will significantly reduce the life of the hose and may cause the connections to loosen. To determine if a hose is twisted or not, the specification line running the length of the hose must be straight. **If the specification line spirals around the hose, the hose is twisted:**



⚠ WARNING

A flexible hose must never be stretched tightly between two fittings. Approx. 5 to 8 percent of the total length should be allowed as slack to allow free movement under pressure. Under pressure, a flexible hose is compressed in length and expands in diameter.



NOTICE

The warranty of the hydraulic hoses is limited to the replacement of hoses due to defective material or manufacturing. The warranty for hydraulic hoses is void if:

- Hoses are damaged due to wear and tear.
- If the hoses have been cut or pinched during work.
- If threads etc. are damaged due to over-tightening.

6.5) Bearings, shafts, pins, and bushings

6.5.1) Ball bearings

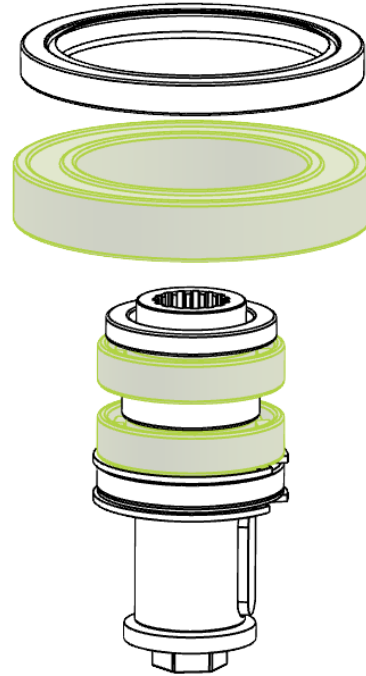
It is always recommended to carry out a regular monitoring of the operating conditions of the bearings on the shaft of the blade rotor.

Elements that should be checked from the bearings regularly during operation of the machine includes **noise, vibration, and temperature**.

In general, if bearings are used under correctly specified conditions, they will survive for the full manufacturer's estimated service life (hours).

NOTICE

The bearings on the attachment tool are approved for more than twice the rotation speed of the blade rotor.



Ball bearings on the shaft of the blade rotor

Bearings etc. most often fail as a result of errors that could have been avoided: incorrect assembly after replacement, handling or lubrication, ingress of foreign bodies or abnormal heat generation.

The bearing housing on the RI Barrier Mower is sealed and can therefore be considered "maintenance-free", as they are all sealed and do not require relubrication.

Rubber seals on both sides prevent loss of lubrication, and the bearings are pre-assembled from the factory with the correct amount of lubricant. Likewise, rubber seals prevent dirt, grime and moisture from entering the bearings to avoid rust and ensure that the lubrication is not washed away.

CAUTION

If sudden higher noise, vibration, or temperature level than normally perceived is experienced on the attachment tool, contact the dealer of the machine immediately!

6.6) Checking pressure- and flow specifications

During service and maintenance of the machine, there may be a need to check, diagnose or verify the pressure and or flow specifications of the attachment tool. The total pressure of the machine is measured using manometers and/or flow meters.

There is a large selection of pressure gauges, flow meters, test couplings and other digital equipment for measuring and testing hydraulic systems. When choosing the right equipment, it is important to have details in place about: connection, thread size, accuracy, and compatibility.

- **Manometer** – A manometer is a measuring instrument for measuring the physical pressure (bar/psi) with which the hydraulic oil in the system is delivered.
- **Flowmeter** – A flow meter is a measuring instrument for measuring the flow rate (l/min/gpm) with which the hydraulic oil is delivered.
- **Test coupling** – A test coupling/test nipple makes it easy and safe to connect analog or digital measuring instruments to the system to make pressure and flow measurements.

6.6.1) Correct measurement of pressure and flow

The table below shows which pressure and flow specifications the attachment tool must work with.

See section: [Specifications](#) – page 27.

NOTICE

If there is a need to measure pressure and/or flow on the attachment tool, it is recommended to fit a test coupling for measurement. Measurement of pressure and flow should always be carried out at the flanges of the hydraulic motor, in order to achieve the most correct measurement.

CAUTION

To keep test couplings as clean as possible while they are not in use, it is recommended to use a rubber cap to put over the nipple so that dust/dirt does not enter the coupling when it is not connected to measurement and test equipment.

MEASUREMENT OF PRESSURE AND FLOW: RI BARRIER MOWER

P-hose (Pressure): 1/2" – L15 (M22 x 1,5)	25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi)
T-hose (Tank/Return): 3/4" – L22 (M30 x 2,0)	Min. 5 bar (72.51 psi) / Max. 15 bar (217.55 psi)
D-hose (Drain): 1/4" – L10 (M16 x 1,5)	Max. 0-2 bar (0-29 psi)

Placement of test coupling/test nipple:

When pressure and/or flow is measured on the attachment tool, it is measured just in front of the machine's hydraulic motor.

That is between connection of motor flanges and hydraulic hoses: (This applies to all 3 hydraulic hoses: **Pressure**, **Return**, and **Drain**.)

Start-up multi carrier and attachment tool under normal operating conditions, and then operate the various functions of the machine.

Simultaneously read the manometer during use!



Table 27 – Measurement of pressure and flow: RI Barrier Mower

6.7) Cleaning/washing the machine

CAUTION

Be careful when using high-pressure cleaner close to the paint!

Steam cleaners are used with great care around the machine's labels/stickers!

Avoid harsh cleaning agents to avoid discoloration or damage to the paint!

It is important to store the machine covered so that it is protected from rain and sunlight. It must be placed on a flat surface or pallet!

Make sure that when storing the machine, there is no risk of it tipping over or falling down. Make sure for a suitable storage location or support of the machine!

Lubricate the machine with anti-corrosion oil afterwards, especially on the worn parts, also on the blades, rotors and internal shields of the attachment tool. This minimizes the formation of rust and prolongs the shelf life significantly!

See section: [Lubrication of the machine](#) – page 69.

6.8) Lubrication of the machine

There are no moving parts on the RI Barrier Mower that require lubrication. The bearings around the axis of the blade rotor have rubber seals and are therefore maintenance-free.

See section: [Ball bearings](#) – page 66.

6.8.1) Worn / blank metal parts

It is an advantage after cleaning the machine to coat the knives/blades and the support plate with any brand of anti-corrosion oil, so that the base metal is protected against rust build-up and the service life is extended.

Lubricate the machine with anti-corrosion oil afterwards, especially on the worn and shiny parts, but also on the blades, rotors and internal shields of the attachment tool. This minimizes the formation of rust and significantly extends the shelf life!

Lubrication will also help the blades/knives make a cleaner cut.

With each application of anti-corrosion oil, this is polished into the surface with a paper towel or similar.

⚠ DANGER

Anti-corrosion oils are dangerous to the skin and by inhalation! Know and use all safety regulations when using the oil!

NOTICE

GreenTec always recommends lubricating both the attachment tool and the multi carrier after the end of a work cycle, as the points that have been most heavily loaded are still hot, and possibly dirt, acid, moisture, water, and grass are squeezed out immediately.

Always refer to the user manual for the multi carrier in use!

6.9) Storage of the machine

Always store the machine so that it is protected from moisture, wind, and weather. Before putting the machine away for storage, it must be washed and dried carefully. Also remove all traces of leaves / branches and dirt.

⚠ CAUTION

GreenTec's machines **MUST** be stored dry, due to the risk of water in bearings, bushings and possibly electrical parts.

⚠ CAUTION

Do not leave hydraulic hoses lying on the floor. They pose a tripping risk and there is a chance of contamination of hydraulic interconnections!

Always lay all hoses over the machine/tool!

⚠ CAUTION

Always store attachment tools in a cleaned and dried condition! Dirt attracts moisture and will thus result in increased rust formation!

Damage to the paint must be repaired immediately!

6.10) Disposal of machine/machine parts

NOTICE

To ensure the most environmentally sound disposal method, the machine/machine parts must be disassembled, and the disassembled parts sorted into the following categories below:

DISPOSAL OF MACHINE PARTS:

Rubber and plastic parts	Belts, rubber curtains, support wheels, plastic components, etc.
Technical components	Motors, valve blocks, hydraulic hoses, etc.
Iron and Metal	Plates, profile pipes, tubes, bearing housings, knives, blades, pulleys, etc.
Chemistry	Hydraulic oil, grease etc.

Table 28 – Overview of the disposal/scraping of machine parts

7) Troubleshooting the machine

7.1) Troubleshooting procedures

If the RI Barrier Mower does not work correctly, the source of the error must be located on the machine. Faulty conditions on the machinery can be isolated by examining the following:

1. Where on the machinery is there an error / faulty condition?

(Errors can occur on the **attachment tool**, on the **multi carrier** and/or on the **vehicle** used)

NOTICE

When troubleshooting the multi carrier and/or vehicle, refer to the instruction materials for these.

2. What type of error /faulty condition?

- Is the error / failure **mechanical**? (Error on the mechanical parts)
- Is the error / failure **hydraulic**? (Error on the hydraulic parts)
- Is the error / failure **electrical**? (Error on the multi carrier and/or the vehicle's electrical system)

TROUBLESHOOTING INDEX: RI BARRIER MOWER

PROBLEM:	CAUSE:	SOLUTION:
Lack of power/power transmission	Insufficient oil pressure and/or flow to the attachment tool.	Examine and check the hydraulic supply from the vehicle/multi carrier to the attachment tool.
Oil motor leaking	Too high drain pressure shoots the oil seal out of the engine: Max. 0-2 bar (Max. 0 – 29 psi)	Check and verify the machine's recommended pressure specifications. See section: Mounting and connection of the machine (i) – page 33-37 + Checking pressure- and flow specifications – page 67.
Poor cutting quality	Worn blades/knives	Replace or sharpen blades/knives.
	Driving too fast.	Reduce forward speed: Max. 3-4 km/h (1.86-2.49 mph)
	Revolutions on blades/knives too low.	Check and adjust for correct oil flow: 25 or 40 l/min @ 190 bar (6.60 or 10.57 gpm @ 2756 psi) = 2200-2500 RPM
	Thickness of material.	Material reference: Grass surfaces Reduce material.

(continued) →

Abnormal vibration level	High shock load.	Reduce forward speed: Max. 3-4 km/h (1.86-2.49 mph) Reduce material.
	Defective bearings.	Replace bearings.
Abnormal noise level	Defective bearings.	Replace bearings.

Table 29 – Identifying error / faulty conditions

8) Appendix

8.1) Hydraulic diagrams

NOTICE

Contact GreenTec's After-sales service department.

NOTES:

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A series of horizontal dashed lines spanning the width of the page, providing a guide for handwriting practice. The lines are evenly spaced and extend across the entire width of the page, leaving a small margin on the left side.



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