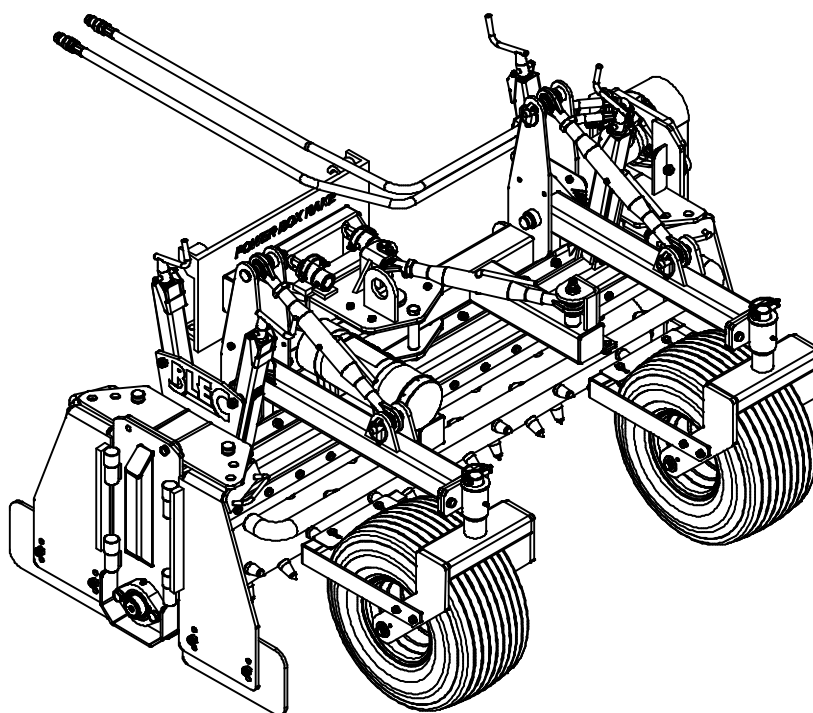


# REDEXIM-BLEC POWER BOX RAKE 150 HH

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**Serial number:**

Translation of the original manual



**ATTENTION:**



IT IS OF THE UTMOST IMPORTANCE TO READ THIS USER MANUAL CAREFULLY PRIOR TO USING THE POWER BOX RAKE IN ORDER TO USE THE MACHINE SAFELY AND TO OBTAIN THE BEST RESULTS.

## FOREWORD

Congratulation on your Power Box Rake purchase. For safe and long-lasting operation of this Power Box Rake, it is necessary to read and to understand this user manual. It is impossible to work safely with this machine *without* complete knowledge of the content of the user manual.

The Power Box Rake is not a machine that works independently. It is the user's responsibility to use the correct shovel or other towing vehicle. The user must also check the towing vehicle/Power Box Rake combination on safety aspects such as noise level, user instructions and risk analysis.

The following pages deal initially with the general safety instructions. Every user should know these safety instructions and apply them. At the end of this page, a registration card is inserted. This registration card should be returned to enable us to deal with potential future claims.

This user manual lists many instructions that are numbered in sequence. You should follow this sequence. A  is an indication of a safety instruction. A  means a tip and/or note.

All information and technical specifications provided at the moment that this document is published are the most recent ones. Design specifications may be changed without prior notice.

This document is a translation of the original operating instructions.  
Upon request, the original operating instructions are available in Dutch.

## WARRANTY CONDITIONS

WITH DELIVERY THIS BLEC-REDEXIM MACHINE IS GUARANTEED AGAINST MATERIAL DEFECTS.

THIS WARRANTY IS VALID FOR A PERIOD OF 12 MONTHS FROM THE PURCHASE DATE.

BLEC-REDEXIM WARRANTIES ARE SUBJECT TO THE 'GENERAL CONDITIONS FOR SUPPLY OF PLANT AND MACHINERY FOR EXPORT, NUMBER 188' THAT ARE PUBLISHED UNDER THE AUSPICES OF THE UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE.

## REGISTRATION CARD

For your own information, fill in the table below:

Serial number of the machine	
Dealer name	
Date of purchase	
Remarks	

## !! SAFETY INSTRUCTIONS !!

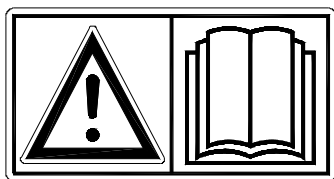


Figure 1

The BLEC Power Box Rake is designed for safe use. This can only be achieved if you completely follow the safety instructions described in this manual.

**Read and understand** (Figure 1) the manual *before* you start using the BLEC-Redexim machine.

If the machine is not used as described in this manual, this can result in injuries and/or damage to the machine.

### INTENDED USE OF THE MACHINE AND OBLIGATIONS OF THE USER

Treating fields/lawns is the only purpose of the machine. Any other use is improper. The manufacturer will not accept any liability for damage resulting from improper use. All risks occurring with this are entirely at the expense of the user.

All persons assigned to operate, maintain and repair the **machine** by the owner must completely read and understand the operation manual and in particular the chapter of **Safety Instructions**.

The machine is manufactured according to the latest technical understanding and is safe to use.

Modifications to the Power Box Rake (including its operations) that have a negative impact on safety must be rectified immediately.

The user is **obliged to check** the Power Box Rake for **visible damage and defects** before using the Power Box Rake.

For safety reasons it is in principle not permitted to make changes or adjustments to the Power Box Rake (except those approved by the manufacturer). **If modifications to the Power Box Rake have been made, then the current CE marking is cancelled. The person that has made these modifications has to apply for a new CE marking himself.**

Following the use, maintenance and repair instructions prescribed by the manufacturer is also considered proper use of this machine.

The user is responsible for a **safe combination of the Power Box Rake and the towing vehicle. This entire combination must be tested** for noise, safety, risk and user friendliness. User instructions should also be drafted.

Dress appropriately during work activities to the Power Box Rake. Wear sturdy shoes with steel toecaps, long trousers and tie up long hair. Do not wear loose clothing.

The general applicable health & safety (Dutch: ARBO) regulations must also be followed in addition to the instructions in this user manual.

Relevant traffic regulations also apply in case of using public roads.

## REQUIREMENTS FOR THE ENVIRONMENT AND TOWING VEHICLES

Inspect the area to be treated *before* using the Power Box Rake.

As described in the Technical Data, always use the Power Box Rake in combination with a towing vehicle that is suitable for this job.

Do not use the Power Box Rake in the dark, in heavy rain/storm or on slopes with an angle larger than 20 degrees.

## REQUIREMENTS DURING MAINTENANCE, REPAIR AND ADJUSTMENTS

Keep a record of the repair activities.

When unskilled people use, maintain or repair the machine, this could result in injuries to the user *and* to third parties. **This must be avoided!**

Use only original BLEC parts for maintenance or repairs because of the safety of the machine *and* of the user.

Only authorised technical personnel may carry out repairs to the Power Box Rake.

In case of maintenance, adjusting and repairs, it is necessary to block the Power Box Rake in order to prevent sinking away, driving off and/or sliding off.

If a hydraulic installation is present, you should **always** make it pressure-free *before* working on this installation.

Used oil/grease is harmful to the environment. Dispose of these substances according to the regulations that apply in your location.

## REQUIREMENTS PRIOR TO AND DURING WORK ACTIVITIES TO THE MACHINE

Attach the Power Box Rake to the towing vehicle according to the regulations. (**Danger of injuries!**)

**NEVER** use the Power Box Rake in the absence of protective guards and safety stickers.

Check the Power Box Rake for loose bolts, nuts and components *before* every operation.

Check whether you have a clear field of vision – both close by and far away – *before* you start moving.

All persons who are going to operate the Power Box Rake must be familiar with all the functions and control elements of the Power Box Rake *before* starting any work activities.

**NEVER** crawl under the Power Box Rake. If necessary, tip over the Power Box Rake to work at the bottom side.

If present, check the hydraulic hoses regularly and replace these when the hydraulic hoses are damaged or appear old. The hoses that are replaced should comply with the technical requirements of the manufacturer.

## SAFETY STICKERS

Safety stickers are located on both sides of the Power Box Rake (Figures 2 and 3). These safety stickers must always be clearly visible and legible and must be replaced if they have become damaged.



Figure 2

- In case of maintenance, adjustments and repair, **always switch OFF the engine of the towing vehicle.**
- Keep a **distance of minimum 4 metres** if the machine is operating (except the operator).

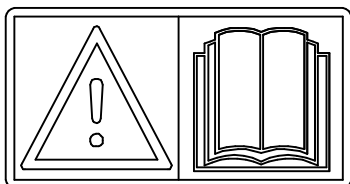
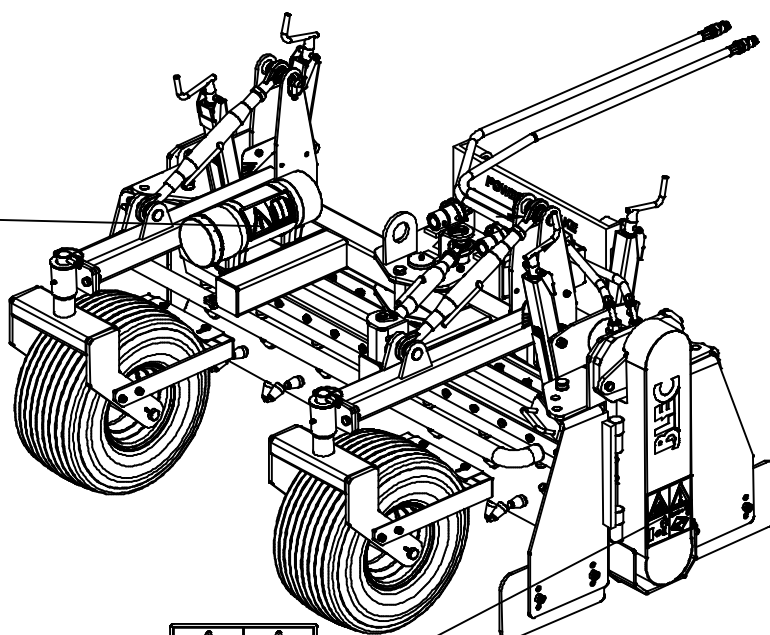


Figure 3

- Prior to using the machine, the operators of the machine **must read the user manual carefully.**

### Location of the Safety Stickers



921.280.402

Figure 4



## EU DECLARATION

We – **Redexim BV, Utrechtseweg 127, 3702 AC Zeist, Holland** – declare entirely under our own responsibility that the product:

**POWER BOX RAKE WITH A MACHINE NUMBER AS INDICATED ON THE MACHINE  
AND INDICATED IN THIS MANUAL**

to which this declaration refers, complies with the stipulation of the 2006/42/EC machine directive and with the NEN-EN-ISO 12100 : 2010 and NEN-EN-ISO 13857 : 2008 norms.

Zeist, 26/09/2016

A.C. Bos  
Manager Operations & Logistics  
Redexim Holland

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## 1. TECHNICAL DATA

<b>Type</b>	<b>150HH</b>
Recommended shovel	Avant or a similar shovel with minimum 30 hp.
Hydraulic connection value	1x double-acting valve (drive of the rotor)
	Flow minimum 33 litres/minute (14.5 gallons/minute)
Working width	1.5 m (4'9")
Working depth	50-100mm (1.9"-3.9")
Tyre pressure	1-2 bar
Weight of the Power Box Rake	420 kg
Power Box Rake dimensions (l x w x h)	1.6 x 1.73 x 1 m (63" x 68" x 39")
Grease	EP2
Standard components	<ul style="list-style-type: none"><li>– Adjustable set of wheels</li><li>– Adjustable blocking screen</li><li>– Adjustable side-screens</li><li>– Rotating coupling plate</li></ul>

## 2. GENERAL DESCRIPTION

The Blec Power Box Rake is designed to carry out various tasks, including cultivating, raking, levelling and earth-moving.

A heavy rotor with special carbide teeth is mounted on it. The rotor is hydraulically propelled and can rotate in both directions. The rotor can be adjusted to the left and to the right in order to move rocks, etcetera to the side. The abridged operation of the various functions is:

- **Cultivating**

The rotor can be lowered into the ground and grind the soil. The side plates are used to keep the soil in the machine, to sweep the waste in front of the machine and to keep the treated soil clean.

- **Raking**

Rocks / stones can be raked to the side(s) by adjusting the working depth in such a manner that the rotor teeth just touch the ground and by adjusting the rotor to the side(s).

- **Levelling**

You can level the ground accurately by adjusting the machine in such a manner that the rotor teeth touch the high points in the field and move the soil to lower lying parts of the field.



### 3. FIRST INSTALLATION

The machine should be prepared for use as follows:

1. Attach cables to the hoisting points **(1)** (see Figure 3).

**Power Box Rake 150HH: Make sure that the crane and hoisting cable can handle minimum 850 kg (1875 lbs).**

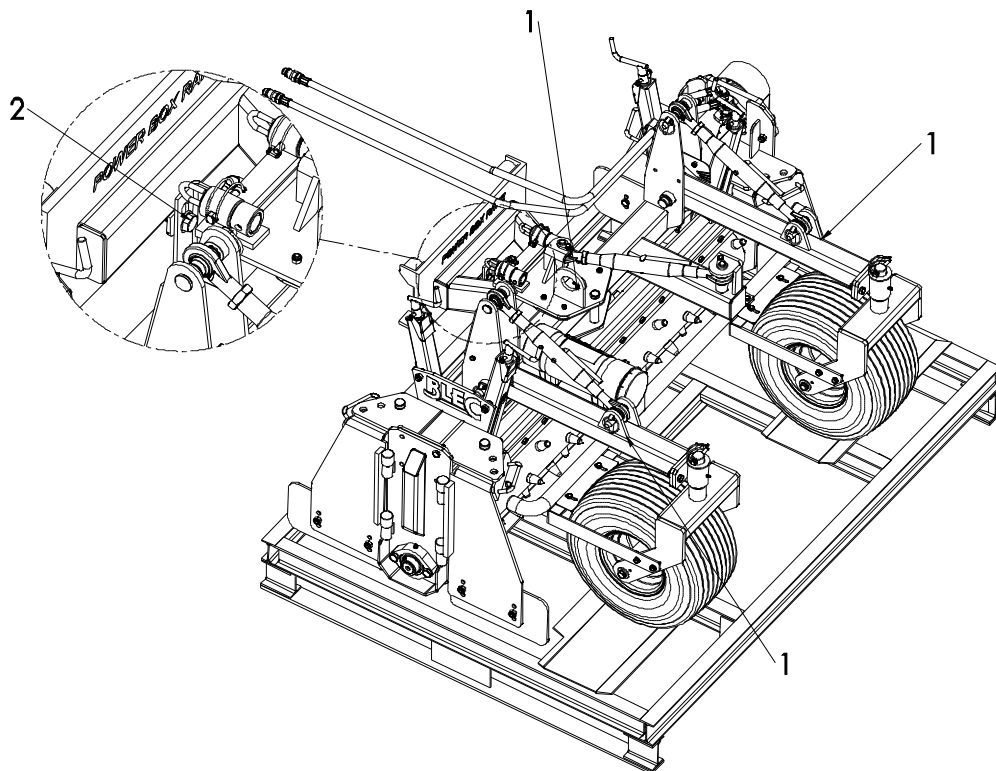
2. Lift the machine including the pallet approx. 100mm (4") off the ground.
3. Loosen the pallet by removing the bolt and nut **(2)**.
4. Pull the pallet from under the machine.
5. Slowly lower the machine until it stands safely on the ground.



**!! KEEP A SAFE DISTANCE. THE MACHINE MAY START TO SLIDE DURING HOISTING !!**



**!! NEVER CRAWL UNDER THE MACHINE !!**



**Figure 5**

## 4. ATTACHING AND DETACHING

Attaching and detaching the Power Box Rake has to be done carefully. Follow the instructions below:

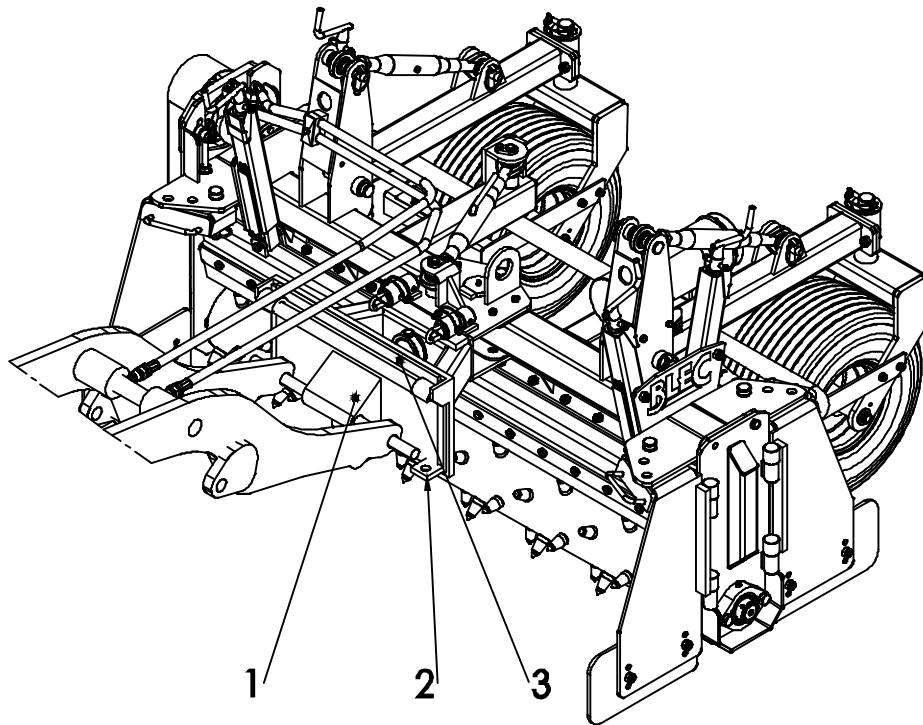


Figure 6

### 4.1 ATTACHING TO THE SHOVEL

Prior to attaching the shovel, check the following the points:

- Check whether the Power Box Rake is undamaged and whether it is safe to attach and use the machine.
- Check whether the bolts and nuts are tightened with the correct torque.
- Check whether all safety stickers are on the machine and whether these are undamaged and easily readable. **Never** use the machine if it has damaged or unreadable stickers.

The Power Box Rake can be attached to the shovel by means of the coupling plate in the following manner (see Figure 6):

1. Carefully drive the shovel forward until the coupling plate (1) can be attached to the Power Box Rake.
2. Tilt the coupling plate (1) so that the pins (3) of the coupling plate are precisely aligned with the props of the Power Box Rake.
3. Lift the coupling plate.



**!! Make sure that the shovel and the Power Box Rake cannot move while you are attaching them !!**



**!! Switch off the engine *before* attaching the Power Box Rake !!**

4. Secure the coupling plate using the fastening pins (2).
5. Subsequently, mount the hydraulic hoses.

## 4.2 DETACHING THE POWER BOX RAKE

The machine has to be detached in the following manner (see Figure 6):

1. Drive to a spot where the shovel and Power Box Rake are in a horizontal position.
2. Carefully place the Power Box Rake on the ground. Make sure that there is no tension on the coupling plate **(1)**.



**!! Make sure that the Power Box Rake and the shovel cannot move while you are detaching them !!**



**!! Switch off the engine of the shovel *before* detaching the Power Box Rake !!**

3. Dismount the hydraulic hoses.
4. Disconnect the coupling plate by removing the pins **(2)**.
5. Slowly lower the coupling plate **(1)**.
6. Carefully drive the shovel backwards.

## 5. TRANSPORTING THE POWER BOX RAKE

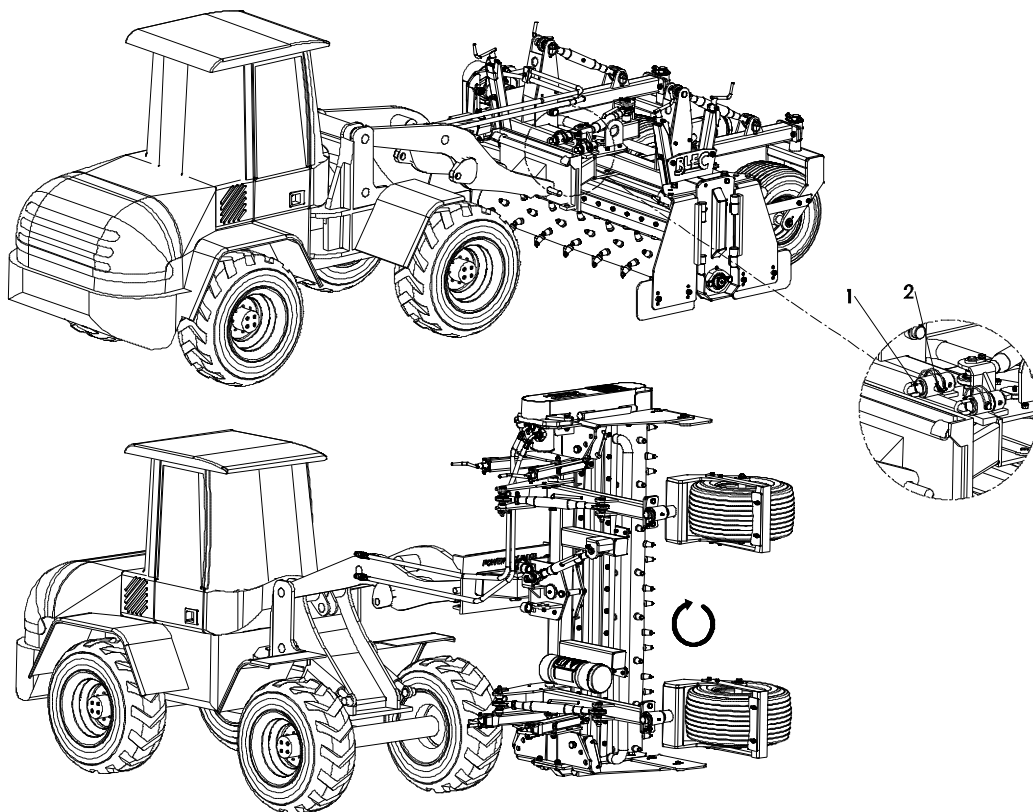


Figure 7

The user is responsible for transporting the Power Box Rake over public roads. Verify the national legislation regarding the regulations. In view of the machine's weight, it is not advised to drive faster than 20 km/h (12.4 mph) with a raised Power Box Rake. Higher speeds are dangerous for people and can damage the shovel and Power Box Rake.



**!! The machine must be raised minimum 30cm above the ground to drive safely !!**

Make sure during transport that the locking pin **(1)** is completely blocked and secured using the included pin **(2)** (see Figure 7).

## **5.1 TRANSPORTING THROUGH A NARROW GATE**

The Power Box Rake is designed to rotate 90° in order to get the machine within the shovel's dimensions (see Figure 7).

To be able to rotate the Power Box Rake, the following has to be done:

1. Remove the locking pins **(1 + 2)**.
2. Raise the machine approx. 1 metre above the ground.
3. Subsequently, rotate the frame slowly until the bushes are realigned.
4. Remount the pins and locking pins **(1 + 2)**.

## **6. SAFETY WHEN USING THE POWER BOX RAKE**

Before using the Power Box Rake, you should check the following:

1. Are there slopes? The maximum slope is 20 degrees for this machine. Always go from top to bottom.
2. Are there hard objects in the ground? If so, use the Power Box Rake at adjusted speed.
3. Is there danger of flying objects (e.g., golf balls) that distract the attention of the driver? If so, the Power Box Rake **CANNOT** be used.
4. Is there danger of sinking/sliding away? If so, postpone the treatment.
5. If the soil is frozen or very wet, postpone the activities until conditions improve.
6. Do NOT make sharp curves when the Power Box Rake touches the ground.

## 7. PROCEDURES

The start procedure is **VERY** important. Follow the described procedure precisely, because otherwise the Power Box Rake can get damaged. The rotor can rotate in both directions. It is important to stop the rotor *before* reversing the rotating direction. Changing the rotating direction too fast can damage the hydraulic engine.

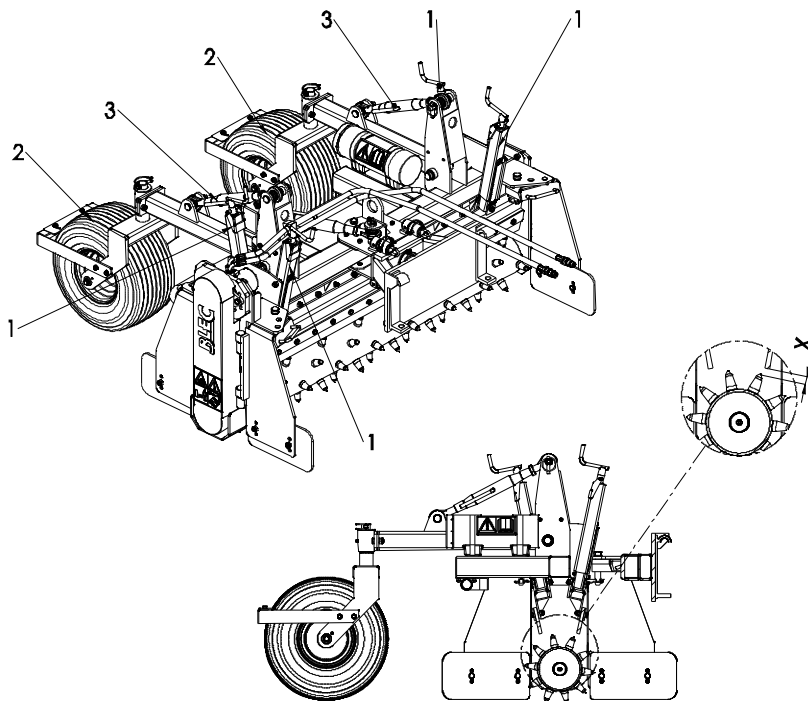


**!! Redexim-BLEC does not accept responsibility for damage to the hydraulic engine due to operating errors by the operator !!**

### 7.1 STARTING TO CULTIVATE

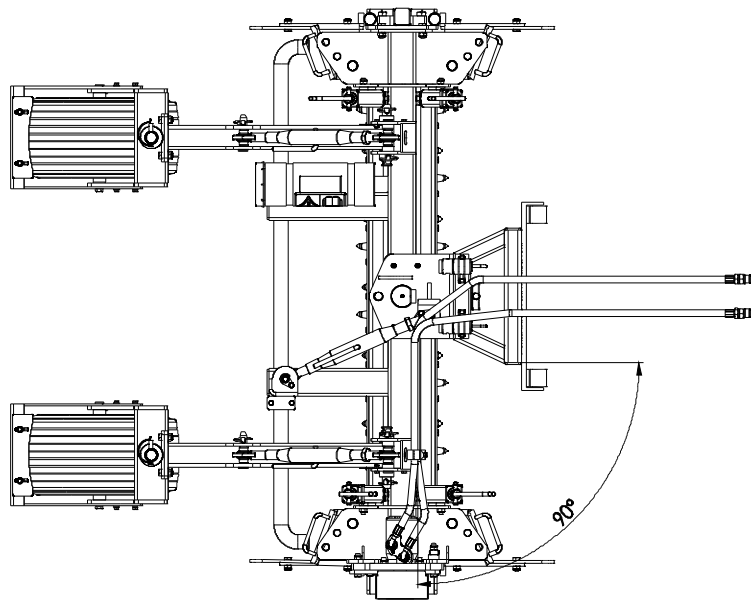
The Power Box Rake can cultivate soil effectively at a depth between 50-100mm.

1. Raise the guide plate by turning the spindles **(1)** inward. Make sure that there is minimum 60mm distance between the rotor and the rubber plate **(X)** (Figure 8).



**Figure 8**

2. Make sure that the rotor frame is perpendicular to the shovel (Figure 9).
3. Lower the machine until the rotor is just above the ground, but does not touch it.
4. Set the engine of the shovel to approx. 1,200 rpm and engage the rotor. Pay attention: the rotating direction must be opposite to the driving direction!
5. Increase the number of revolutions of the engine to approx. 2,000 rpm. This ensures that the number of revolutions of the rotor increases.



**Figure 9**

6. Start moving the shovel and lower the Power Box Rake until it touches the ground. It is essential to drive slowly (1-2 km/h). Soil and rocks will now accumulate in front of the rotor, they will be forced over the rotor, and this will leave a level condition of the field behind the machine.
7. To adjust the working depth, the wheels **(2)** can be put higher or lower by turning the spindles **(3)**. The settings can be seen on the indicators (Figure 8).

**Stopping occurs as follows:**

1. Reduce the speed and the number of revolutions of the engine.
2. Lift the machine off the ground.
3. Switch OFF the rotor.

## 7.2 STARTING TO LEVEL

The Power Box Rake can move soil, rocks, rubble, etc. This can be done by using the machine to pull the material forward.

1. Lower the guide plate by turning the spindles **(1)** inward. Make sure that there is a minimum distance **(X)** between the rotor and the rubber plate; make sure that the rubber plate just does not touch the teeth (Figure 8).
2. Make sure that the rotor frame is perpendicular to the shovel (Figure 9).
3. Both side plates **(2)** must be placed in such a manner that they point straight forward. This can be done by placing the locking pins **(1)** in the rear hole (Figure 10).

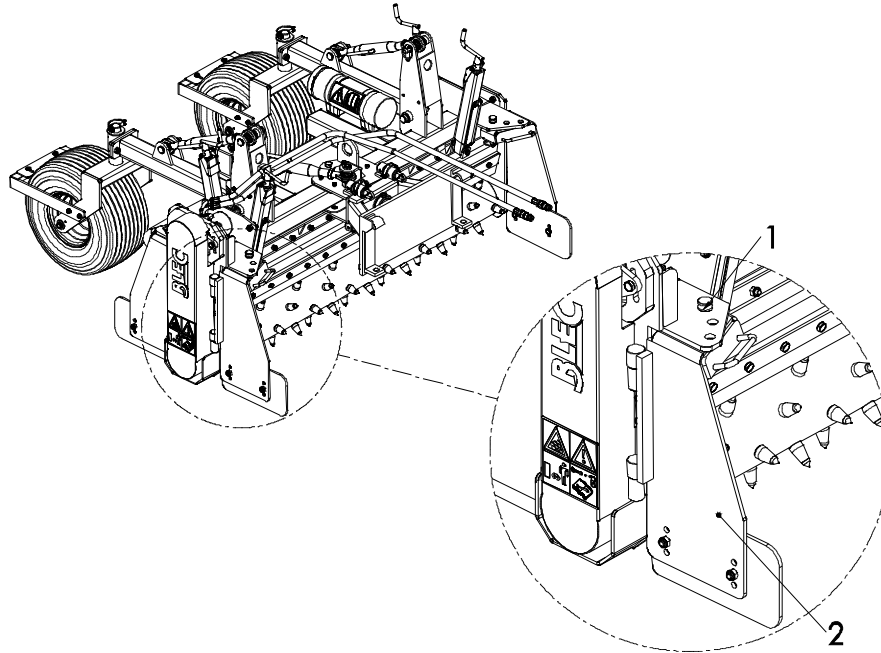


Figure 10

4. Make sure that the working depth is set so that the teeth of the rotor do not cut the soil. To adjust the working depth, the wheels **(2)** can be put higher or lower by turning the spindles **(3)** (Figure 8).
5. Lower the machine until the rotor is just above the ground, but does not touch it.
6. Set the engine of the shovel to approx. 1,200 rpm and engage the rotor. Pay attention: the rotating direction must be opposite to the driving direction!
7. Increase the number of revolutions of the engine to approx. 2,000 rpm. This ensures that the number of revolutions of the rotor increases.
8. Start moving the shovel and lower the Power Box Rake until it sinks into the ground. Rubble and rocks will now accumulate at the front of the rotor and shifted forwards. The fine material will be forced over the rotor and this will leave a level condition of the field behind the machine.  
The high parts of the surface are levelled and the lower parts are filled with soil. The machine pushes large pieces of rubble and rocks forward and by raising the machine slowly, these pieces can be laid aside at the end of the surface that is treated.
9. The Power Box Rake is mounted onto a rotation frame. The frame can be fixed (see Figure 7) using the included pin and locking pin **(1 + 2)**. It is also possible to set the frame floating in order to make the job easier on an unlevelled terrain. This can be done by simply removing the pins and locking pins **(1 + 2)**

### Stopping occurs as follows:

1. Reduce the speed
2. Lift the machine off the ground.
3. Switch OFF the PTO.

## 7.3 STARTING TO RAKE

The Power Box Rake can move soil, rocks, rubble, etc. to the side of the surface that is treated. When the surface to be treated is entirely raked, it is ready for further treatment e.g., sowing grass.

1. Lower the guide plate by turning the spindles **(1)** inward. Make sure that there is a minimum distance **(X)** between the rotor and the rubber plate; make sure that the rubber plate just does not touch the teeth (Figure 8).
2. Remove the side plates (3) of the machine.

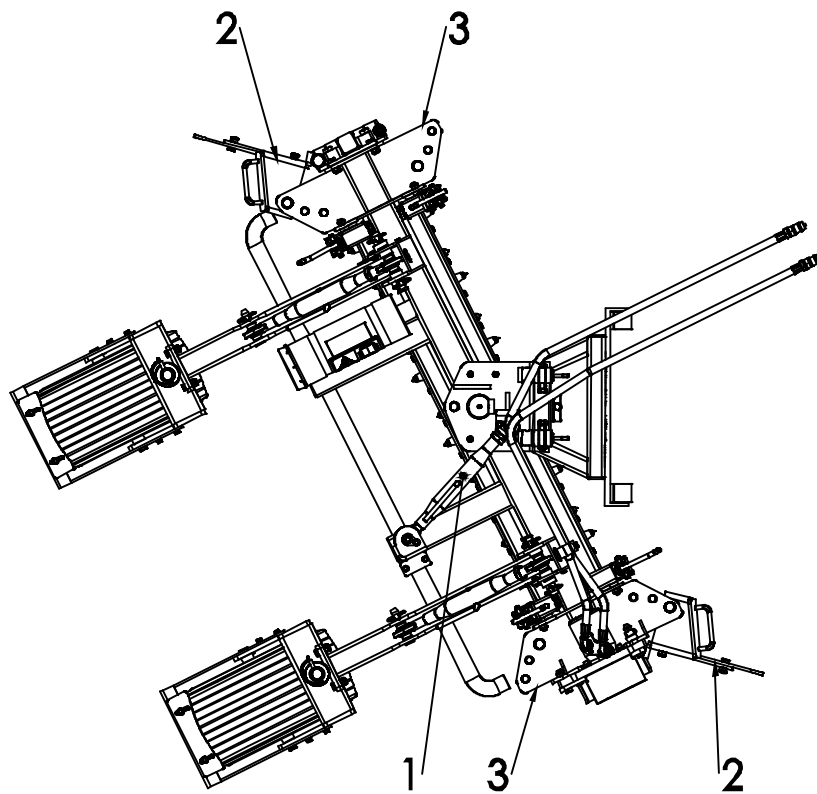
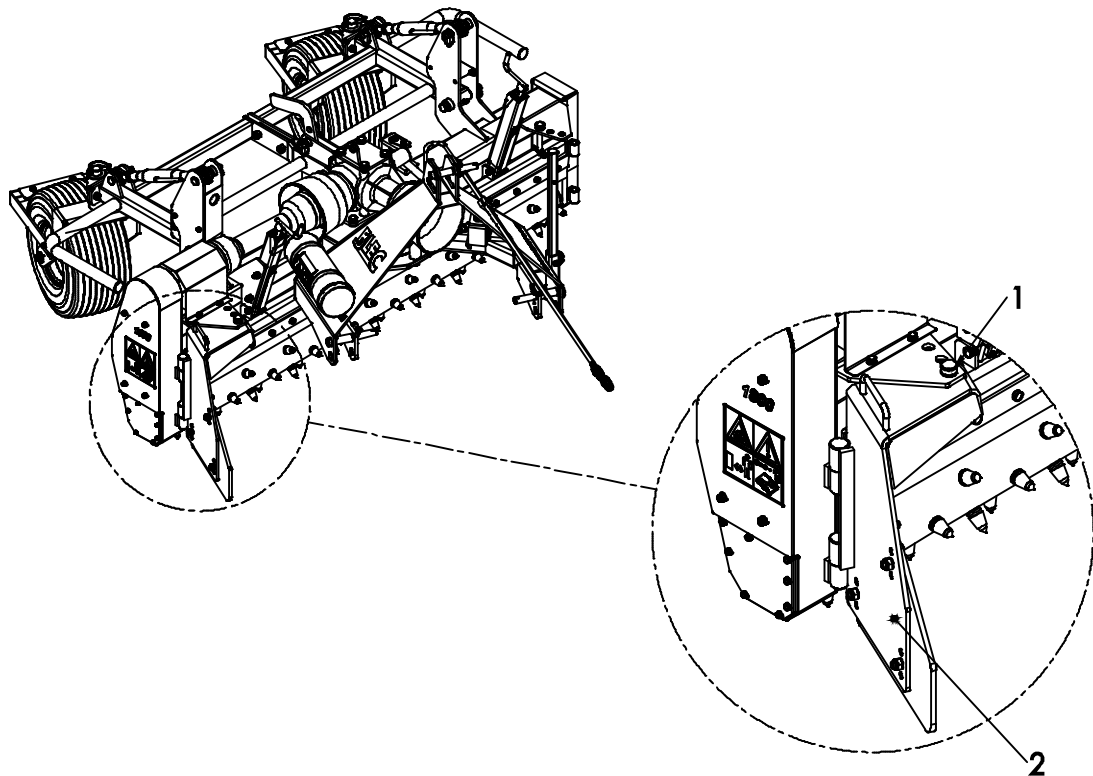


Figure 11

3. Rotate the rotor by turning the spindle **(1)** inwards (Figure 11) so that the material is moved to the left-hand side.



4. Adjust the right-hand side plates **(2)** by placing the pin **(1)** in the foremost hole. Now the side plates are turned to the extreme outside (Figure 12).



**Figure 12**

5. Make sure that the working depth is set so that the teeth of the rotor cut the soil at approx. 10-15cm. To adjust the working depth, the wheels **(2)** can be put higher or lower by turning the spindles **(3)** (Figure 9).
6. Lower the machine until the rotor is just above the ground, but does not touch it.
7. Set the engine of the shovel to approx. 1,200 rpm and engage the rotor. Pay attention: the rotating direction must be opposite to the driving direction!
8. Increase the number of revolutions of the engine to approx. 2,000 rpm. This ensures that the number of revolutions of the rotor increases.
9. Check the treated surface. The surface should be level and without rubble or rocks.
10. To obtain a finer finish, it might be necessary to drive slower or to raise the Power Box Rake by means of the spindles **(3)**.
11. Pay attention that the machine always drives in the same direction. Do NOT drive back and forth along the same track; otherwise the rocks and rubble are not moved to the side of the surface.  
You can do this by driving in ever-increasing circles.  
Or, by starting in the centre of the field and driving back and forth along the already treated strip, making sure that the machine can move the material outwards.

👉 **It is recommended to drive backwards; this ensures that the wheels do not drive over the surface that was already treated.**

## 8. TROUBLE SHOOTING (PROBLEM ANALYSIS)

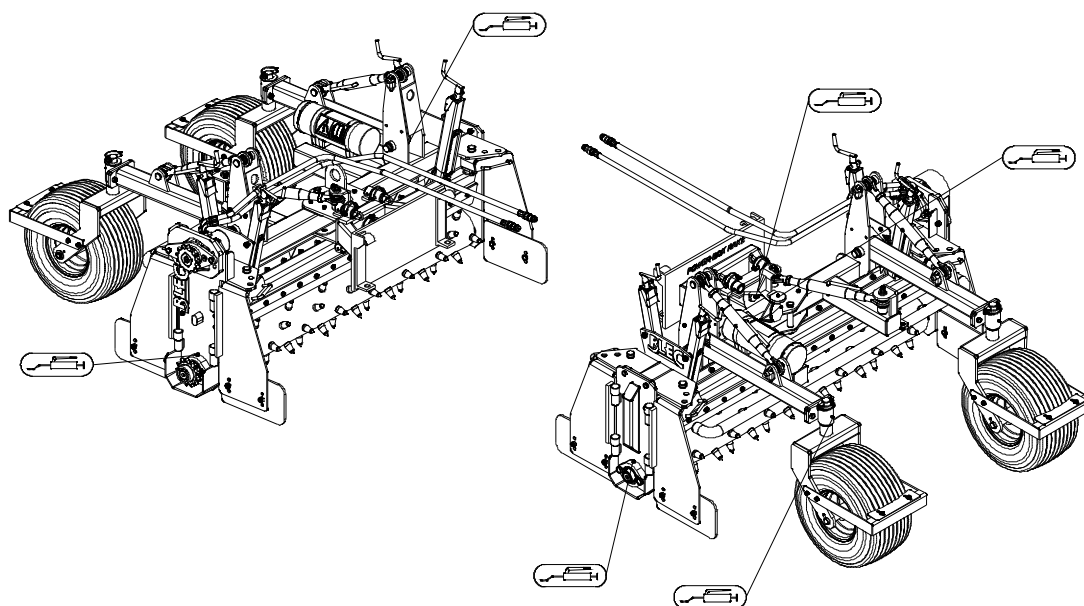
Problem	Possible cause	Solution
Too much damage to the treated ground	<ul style="list-style-type: none"> <li>– Rotor teeth are damaged.</li> <li>– Not driving in a straight line.</li> <li>– Soil is too wet.</li> <li>– Machine is adjusted too deep.</li> </ul>	<ul style="list-style-type: none"> <li>– Mount new teeth.</li> <li>– Try to drive in a straight line.</li> <li>– Postpone the work until the soil is sufficiently dry.</li> <li>– Adjust the machine to less depth.</li> </ul>
Machine vibrates.	<ul style="list-style-type: none"> <li>– Obstacle(s) between the teeth</li> <li>– Worn or broken teeth</li> <li>– Rotor is bent.</li> </ul>	<ul style="list-style-type: none"> <li>– Remove the obstacle(s).</li> <li>– Replace with new teeth.</li> <li>– Replace the rotor.</li> </ul>
Working depth is not achieved.	<ul style="list-style-type: none"> <li>– Rear wheels are not adjusted correctly.</li> <li>– Subsoil is too hard.</li> <li>– Driving speed is too high.</li> </ul>	<ul style="list-style-type: none"> <li>– Adjust the rear wheels correctly.</li> <li>– Lower the driving speed or pass over the soil more than once.</li> <li>– Reduce the driving speed.</li> </ul>
Too small granulating of the soil	<ul style="list-style-type: none"> <li>– Driving speed is too low.</li> <li>– Guide plate is too low.</li> <li>– Number of revolutions is too high.</li> </ul>	<ul style="list-style-type: none"> <li>– Increase the driving speed.</li> <li>– Set the guide plate bar higher.</li> <li>– Reduce the number of revolutions.</li> </ul>
Too coarse treatment of the soil	<ul style="list-style-type: none"> <li>– Driving speed is too high.</li> <li>– Subsoil is too wet.</li> <li>– Guide plate is too high.</li> <li>– Number of revolutions is too low.</li> </ul>	<ul style="list-style-type: none"> <li>– Reduce the driving speed.</li> <li>– Wait for better conditions.</li> <li>– Lower the guide plate.</li> <li>– Increase the number of revolutions.</li> </ul>
Treated subsoil is not level.	<ul style="list-style-type: none"> <li>– Rear wheels are not adjusted correctly.</li> </ul>	<ul style="list-style-type: none"> <li>– Set both rear wheels to the same depth; use the indicator.</li> </ul>
Rotor is jammed.	<ul style="list-style-type: none"> <li>– Subsoil is too wet.</li> <li>– Obstacle(s) between the rotor and the frame</li> <li>– Guide plate is too low.</li> <li>– Driving speed is too high.</li> <li>– Too much overgrowth</li> </ul>	<ul style="list-style-type: none"> <li>– Wait for better conditions.</li> <li>– Remove the obstacle(s).</li> <li>– Adjust the guide bar.</li> <li>– Reduce the driving speed.</li> <li>– Cut the overgrowth.</li> </ul>

## 9. MAINTENANCE

Time schedule	Check / Grease point	Method
Before <b>every</b> use	Check for loose bolts / nuts.	Tighten loose bolts / nuts with the correct tightening moment.
	Attach the machine to the shovel and operate the machine for 5 minutes.	Listen and observe any strange movements / sounds.
	Presence and readability of the safety stickers (Figure 4)	Replace these if not present or damaged.
After <b>every</b> use	Clean the rotor.	Remove sand and dirt from the rotor.
	Grease points of the wheel frame	Use EP2 grease – 1 shot
After the <b>first</b> 20 working hours (new or repaired)	Check for loose bolts / nuts.	Tighten loose bolts / nuts with the correct tightening moment.
	Attach the machine to the shovel and operate the machine for 5 minutes.	Listen and observe any strange movements / sounds.
After <b>every</b> 50 hours	Check the tension of the drive chain.	If necessary, tighten the chain (see Section 9.1).
	Check whether the drive chains are greased adequately.	Grease the drive chains.
	Grease the rotation point of the frame.	Use EP2 grease – 1 shot
After <b>every</b> 100 hours	Top up the lubrication points with grease.	Use EP2 grease – 1 shot

## 9.1 TECHNICAL INFORMATION LUBRICATION POINTS

To guarantee the proper functioning of the Power Box Rake, the lubrication points at both sides of the machine (Figure 13) must be greased periodically. Grease these points according to the table in Chapter 9.



**Figure 13**

## 9.2 CHAIN TENSION

The chain tension is important and should be checked regularly. It is also important to regularly clean and lubricate the chain and sprocket wheel when necessary (Figure 14).

1. Remove the protective cover.



**!! Make sure that the shovel is blocked well and cannot move on its own accord !!**

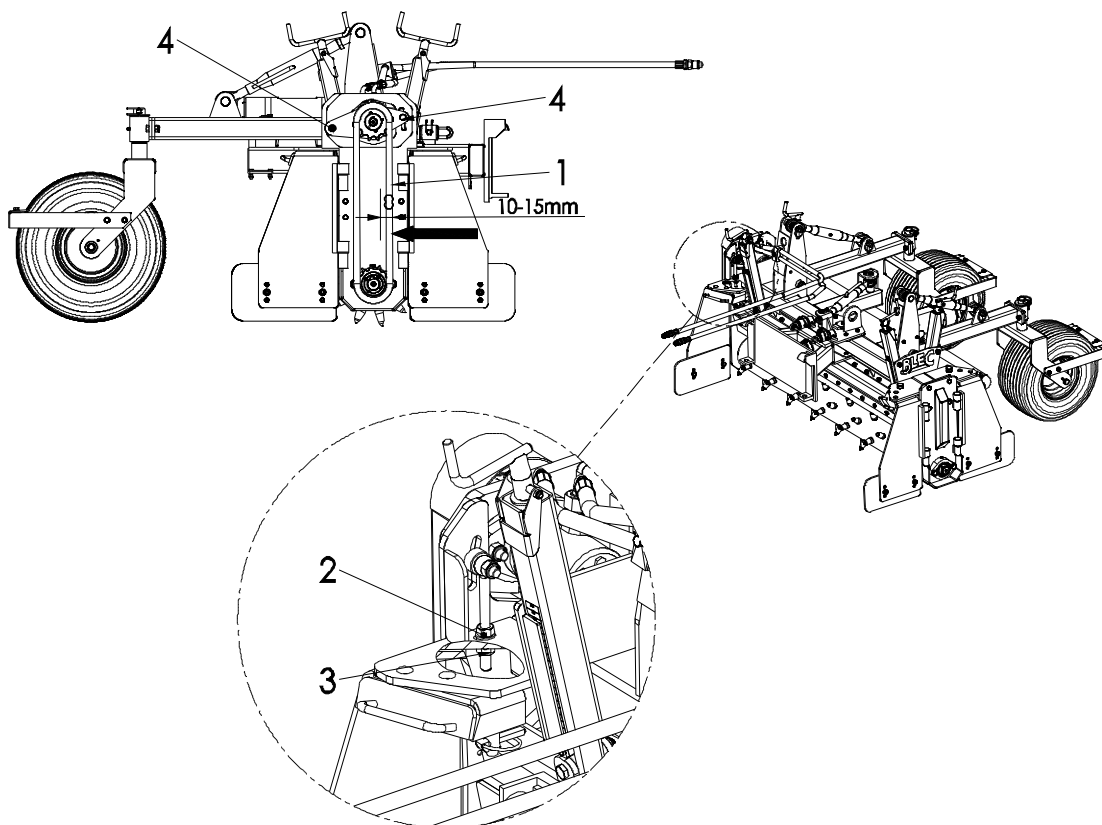


**!! Switch off the shovel before descending !!**



**!! Make sure that the Power Box Rake stands firmly on the ground and is blocked against sliding before descending from the shovel !!**

2. You should be able to push in the chain **(1)** between 10 mm (0.4") and 15 mm (0.6"). If this is not possible, you need to adjust the chain tension.
3. Loosen the nuts **(2, 3 and 4)**.
4. Rotate the nuts **(2 + 3)** until you reach the desired chain tension.
5. Retighten the nuts **(2, 3 and 4)**.
6. Place the protective cover back on the machine.



**Figure 14**