

POWER BOX RAKE 800



Translation of the original user manual



2412 English 952.120.012 EN



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EU – DECLARATION OF CONFORMITY



We,

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Kwekerijweg 8

3709 JA Zeist, The Netherlands

declare that this “EU - DECLARATION OF CONFORMITY” is issued under our sole responsibility and belongs to the following product:

POWER BOX RAKE 800 WITH MACHINE NUMBER AS INDICATED ON THE MACHINE AND IN THIS MANUAL,

to which this declaration refers, complies with stipulation of:

2006/42/EC Machinery Directive

and with the standards:

- **ISO 12100-1:2010** Safety of machinery - General principles for design - Risk assessment and risk reduction
- **ISO 13857:2019** Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
- **ISO 4254-1:2015** Agricultural machinery - Safety - Part 1: General requirements
- **ISO 4254-5:2018** Agricultural machinery - Safety - Part 5: Power-driven soil-working machines

Zeist, 03-01-2022

A handwritten signature in blue ink, appearing to read 'C.H.G. de Bree', written over a light blue horizontal line.

C.H.G. de Bree

Redexim Handel- en Exploitatie Maatschappij B.V.

UK – DECLARATION OF CONFORMITY



We,

Redexim Handel- en Exploitatie Maatschappij B.V.

Kwekerijweg 8

3709 JA Zeist, The Netherlands

declare that this “UK - DECLARATION OF CONFORMITY” is issued under our sole responsibility and belongs to the following product:

POWER BOX RAKE 800 WITH MACHINE NUMBER AS INDICATED ON THE MACHINE AND IN THIS MANUAL,

to which this declaration refers, complies with stipulation of:

S.I. 2008 No. 1597 HEALTH AND SAFETY The Supply of Machinery (Safety) Regulations 2008

and with the standards:

- **ISO 12100-1:2010** Safety of machinery - General principles for design - Risk assessment and risk reduction
- **ISO 13857:2019** Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
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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 tractor 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 REDEXIM MACHINE IS GUARANTEED AGAINST MATERIAL DEFECTS.

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

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 !!

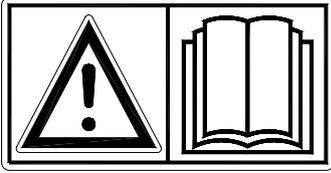


Figure 1

The 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 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.

Dress appropriately during work activities with the machine. 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 details, 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 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 pipelines regularly and replace these when the hydraulic pipelines 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.

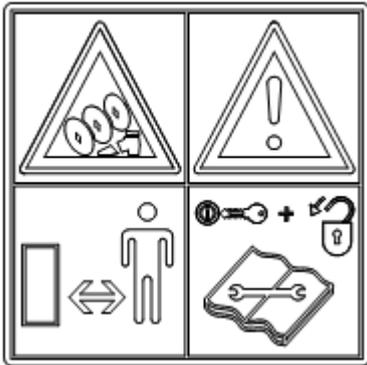


Figure 2
921.280.402

- 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).

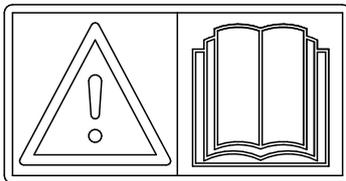


Figure 3
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- Prior to using the machine, the operators of the machine **must read the user manual carefully.**

LOCATION OF THE SAFETY STICKERS

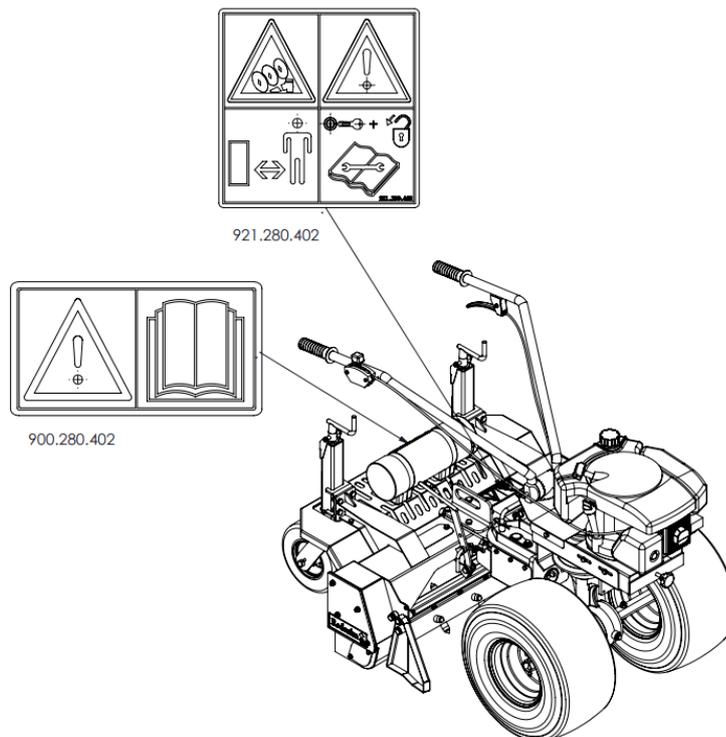


Figure 4

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1. TECHNICAL DATA

Type	Power Box Rake 80
Recommended vehicle	12 PK
Working width	0.8 m (31.5")
Maximum working depth	75 mm (3")
Attached machine	BCS 740 2-wheel tractor
Weight of the Power Box Rake	92 Kg (202.4 lbs)
Weight including the BCS 2-wheel tractor	234 Kg (515 lbs)
Power Box Rake dimensions (l x w x h)	0.7 x 1 x 0.71 m (27.6" x 39.4" x 28")
Dimensions of the Power Box Rake including the BCS 2-wheel tractor (L x W x H)	1.95 x 1 x 1.35 (76.8" x 39.4" x 53.1")
Gearbox oil	80W-90 (0.35 litres)

2. GENERAL DESCRIPTION

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

The Power Box Rake will be attached to a BCS 740 2-wheel tractor, which drives the rotor. The rotor is mounted using special carbide teeth.

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 Power Box Rake must be prepared for first use as follows (see Figure 5):

- 1 Remove the protective cover (1) by loosening the bolts and washers (2).
- 2 Attach the Power Box Rake to the BCS 740 and fasten it using the nuts and washers included in the delivery.
- 3 Mount the protective cover (1) using the bolts and washers (2).
- 4 Now the machine is ready for use.

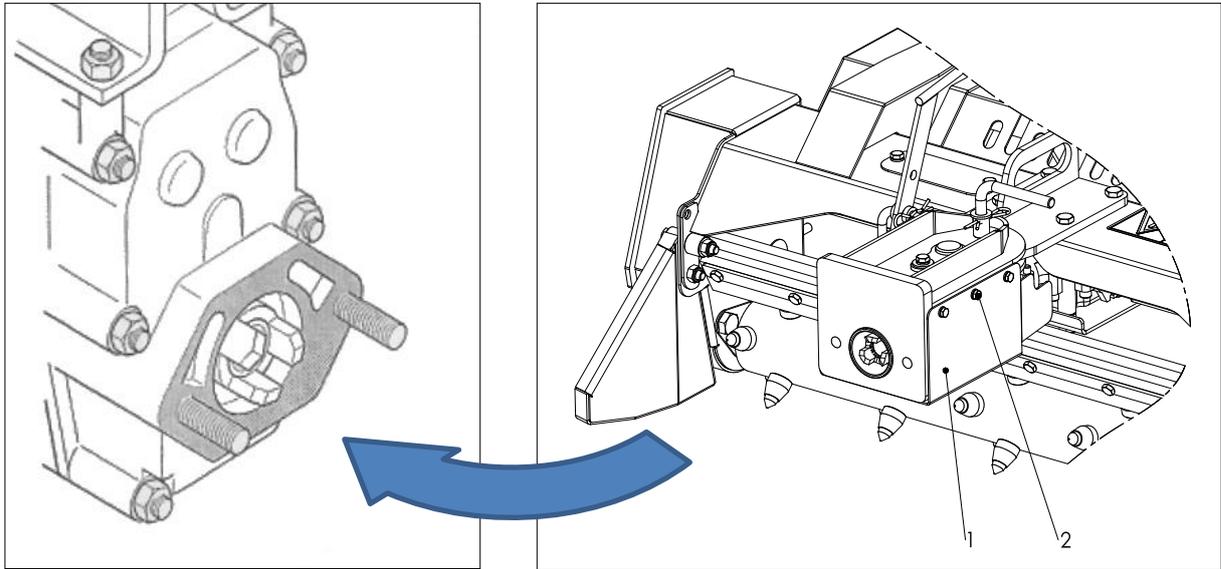


Figure 5

4. TRANSPORTING THE POWER BOX RAKE

The user is responsible for transporting the Power Box Rake over public roads. Verify the national legislation regarding the regulations.

5. 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.

1. START/STOP PROCEDURE

The start procedure is **VERY** important. Follow the described procedure precisely, because otherwise the Power Box Rake can get damaged.

6.1 STARTING TO CULTIVATE

The Power Box Rake can cultivate soil effectively at a depth between 50-75mm (Figure 6).

1. Set the required depth using the spindles (1) at the rear of the machine.
2. Make sure that the rotor frame is perpendicular to the 2-wheel tractor.
3. You can now start treating the surface.

!! Consult the manual of the 2-wheel tractor for its proper operation !!

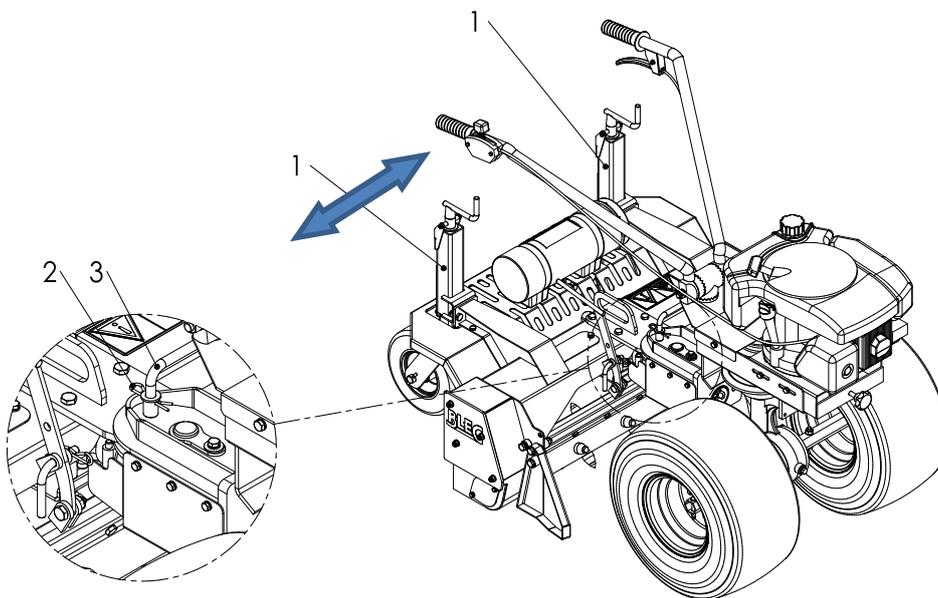


Figure 6

Stopping occurs as follows:

1. Stop the 2-wheel tractor.
2. Switch off the PTO drive on the 2-wheel tractor.
3. Adjust the machine using the spindles (1), until the rotor is at approx. 100mm distance from the subsoil.

6.2 STARTING TO LEVEL

The Power Box Rake can move soil, rocks, rubble, etc. This can be done by pulling the material forward using the machine (Figure 6).

1. Set the required working depth by turning the spindles (1).
2. Make sure that the rotor frame is perpendicular to the 2-wheel tractor.
3. Make sure that the working depth is set so that the teeth of the rotor do not cut the soil.
4. Now the machine is ready for use.

!! Consult the manual of the 2-wheel tractor for its proper operation !!

Stopping occurs as follows:

1. Stop the 2-wheel tractor.
2. Switch off the PTO drive on the 2-wheel tractor.
3. Adjust the machine using the spindles (1), until the rotor is at approx. 100mm distance from the subsoil.

6.3 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 (Figure 6).

1. Set the required working depth by turning the spindles (1).
2. Set the required angle of the rotor by removing the locking clip (2) and subsequently, by removing the pin (3).
The Power Box Rake can rotate to the left or to the right. This way you can select to which side the treated material will be disposed.
3. Return the pin (3) and secure it using the locking clip (2).
Now the machine is ready for use.

!! Consult the manual of the 2-wheel tractor for its proper operation !!

Stopping occurs as follows:

1. Stop the 2-wheel tractor.
2. Switch off the PTO drive on the 2-wheel tractor.
3. Adjust the machine using the spindles (1), until the rotor is at approx. 100mm distance from the subsoil.

2. TROUBLE SHOOTING (PROBLEM ANALYSIS)

Problem	Possible cause	Solution
Too much damage to the treated ground	<ul style="list-style-type: none"> – Damaged rotor teeth – Not driving in a straight line – Soil is too wet. – Machine is adjusted too deep. 	<ul style="list-style-type: none"> – Mount new teeth. – Try to drive in a straight line. – Postpone the work until the soil is sufficiently dry. – Adjust the machine to less depth.
Slipping wheels of the 2-wheel tractor	<ul style="list-style-type: none"> – Too many rocks – Soil is too hard. – Driving speed is too high. 	<ul style="list-style-type: none"> – Adjust the working depth. – Adjust the working depth. – Reduce the speed.
Machine vibrates.	<ul style="list-style-type: none"> – Obstacle(s) between the teeth – Worn or broken teeth – Rotor is bent. 	<ul style="list-style-type: none"> – Remove the obstacle(s). – Replace with new teeth. – Replace the rotor.
Working depth is not achieved.	<ul style="list-style-type: none"> – Rear wheels are not adjusted correctly. – Subsoil is too hard. – Driving speed is too high. 	<ul style="list-style-type: none"> – Adjust the rear wheels correctly. – Make several passes. – Reduce the speed.
Too small granulating of the soil	<ul style="list-style-type: none"> – Driving speed is too low. 	<ul style="list-style-type: none"> – Increase the driving speed.
Too coarse treatment of the soil	<ul style="list-style-type: none"> – Driving speed is too high. – Subsoil is too wet. 	<ul style="list-style-type: none"> – Reduce the driving speed. – Wait for better conditions.
Treated subsoil is not level.	<ul style="list-style-type: none"> – Rear wheels are not adjusted correctly. 	<ul style="list-style-type: none"> – Set both rear wheels to the same depth; use the indicators.
Rotor is jammed.	<ul style="list-style-type: none"> – Subsoil is too wet. – Obstacle(s) between the rotor and the frame – Too much overgrowth 	<ul style="list-style-type: none"> – Wait for better conditions. – Remove the obstacle(s). – Cut the overgrowth.

3. MAINTENANCE

Time schedule	Check / Grease point	Method
Before every use	Check for loose bolts / nuts.	Tighten loose bolts / nuts with the correct tightening moment.
	Let the machine's engine run 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 every use	Clean the rotor.	Remove sand and dirt from the rotor.
	Grease points of the wheel frame	Use EP2 grease – 1 shot
After the first 20 working hours (new or repaired)	Check for loose bolts / nuts.	Tighten loose bolts / nuts with the correct tightening moment.
	Let the machine's engine run for 5 minutes.	Listen and observe any strange movements / sounds.
After every 50 hours	Check the tension of the drive chain.	If necessary, tighten the chain (see Chapter 9.1).
	Grease the pin of the rotation point.	Use EP2 grease – 1 shot
After every 100 hours	Top up the lubrication points with grease.	Use EP2 grease – 1 shot
After every 500 hours or after one (1) year	Check whether there is sufficient grease in the chain drive box.	Fill the chain drive box up to 0,4 litres of EP0 grease.
	Change the oil in the gearbox	Use 0,35L (0.1 gal.) GL-5 80W90 for the gearbox

!! Please refer to the tractor's user manual for maintaining the 2-wheel tractor !!

4. TECHNICAL INFORMATION: LUBRICATION POINTS

To guarantee the proper functioning of the Power Box Rake, the lubrication points at both sides of the machine (Figure 7) must be greased periodically. Grease these points according to the table in Chapter 8.

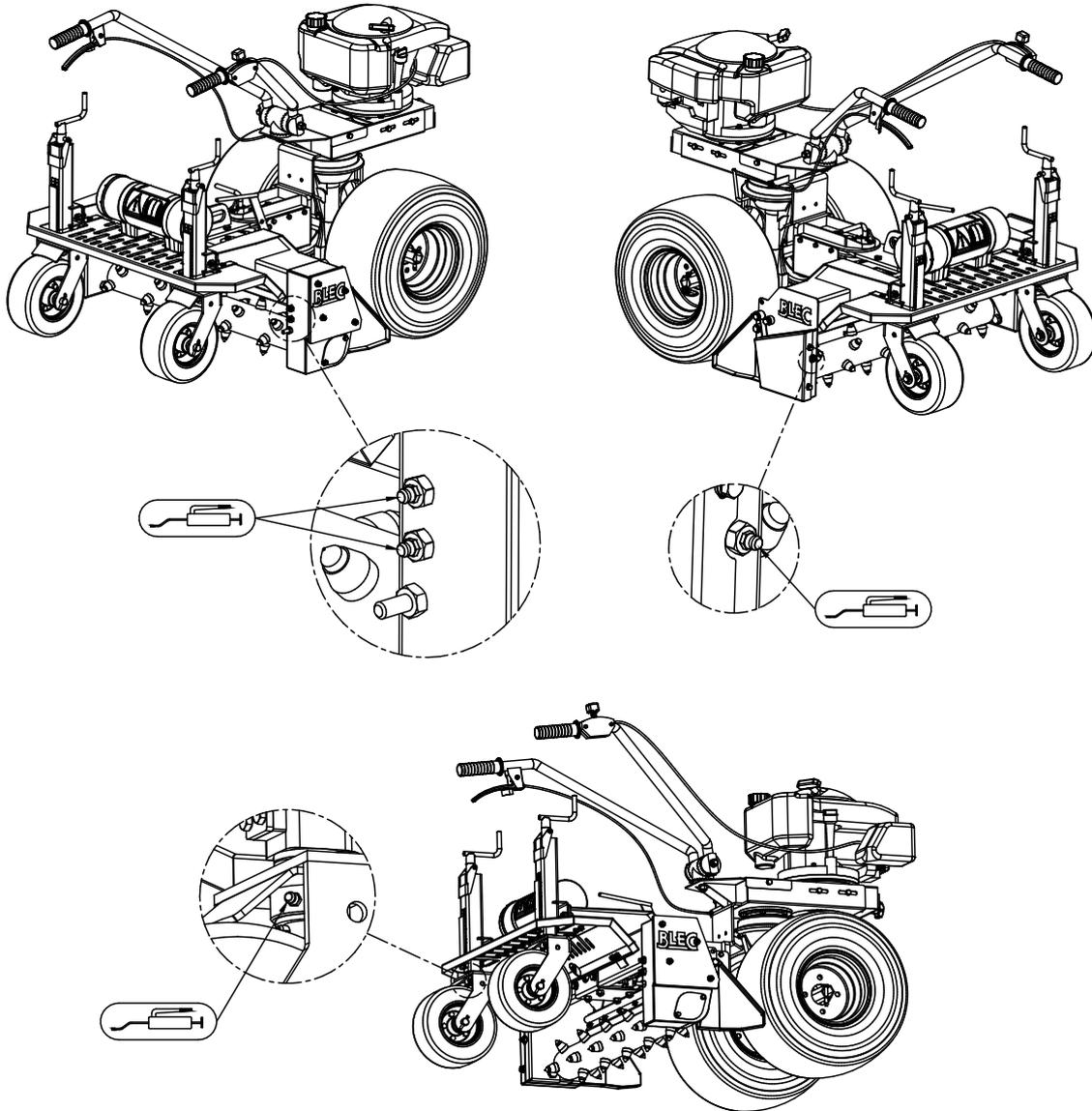


Figure 7

!! Consult the manual of the 2-wheel tractor for its proper maintenance instructions !!

9.1 TECHNICAL INFORMATION: CHAIN TENSION

The chain tension is important and should be checked regularly. It is also important to regularly clean and lubricate the chain and chain wheels when necessary (Figure 8).

1. Remove the protective cover.



!! Make sure that the Power Box Rake is blocked well and cannot move on its own accord !!



!! Switch off the 2-wheel tractor !!

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.

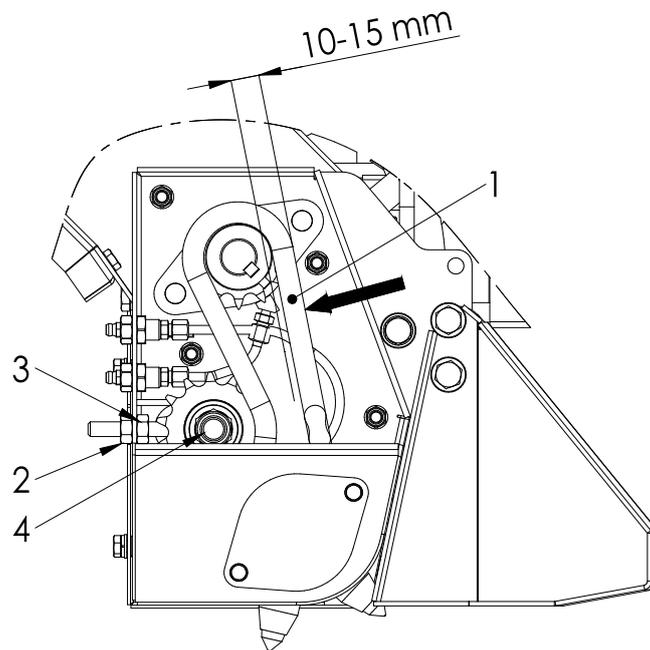


Figure 8