

User Manual and Parts Book

REDEXIM-BLEC LASER-GRADER 2400

Serial number:

Original manual

Redexim



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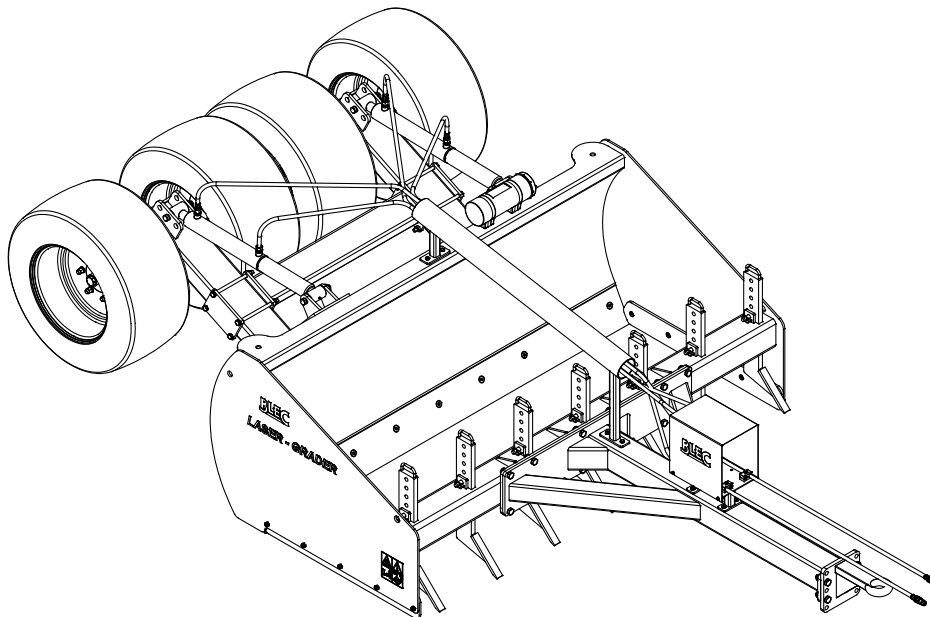
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ATTENTION:

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



1810 English 952.120.006

FOREWORD

Congratulation on your Laser-Grader purchase. For safe and long-lasting operation of this Laser-Grader, 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 Laser-Grader 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/Laser-Grader 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.

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 !!

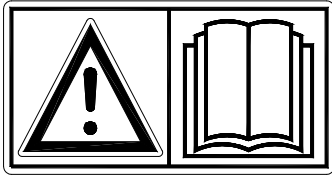


Figure 1

The BLEC Laser-Grader 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 Laser-Grader (including its operations) that have a negative impact on safety must be rectified immediately.

The user is **obliged to check** the Laser-Grader for **visible damage and defects** before using the Laser-Grader.

For safety reasons it is in principle not permitted to make changes or adjustments to the Laser-Grader (except those approved by the manufacturer). **If modifications to the Laser-Grader 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 Laser-Grader 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 Laser-Grader. 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 Laser-Grader. Remove loose obstacles and avoid irregularities.

As described in the Technical Data, always use the Laser-Grader in combination with a towing vehicle that is suitable for this job.

Do not use the Laser-Grader 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 Laser-Grader.

In case of maintenance, adjusting and repairs, it is necessary to block the Laser-Grader 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 Laser-Grader to the towing vehicle according to the regulations. (**Danger of injuries!**)

NEVER use the Laser-Grader in the absence of protective guards and safety stickers.

Check the Laser-Grader 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 Laser-Grader must be familiar with all the functions and control elements of the Laser-Grader *before* starting any work activities.

NEVER crawl under the Laser-Grader. If necessary, tip over the Laser-Grader 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 Laser-Grader (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).**

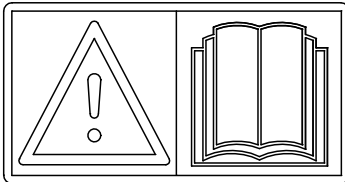


Figure 3

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

Location of the Safety Stickers

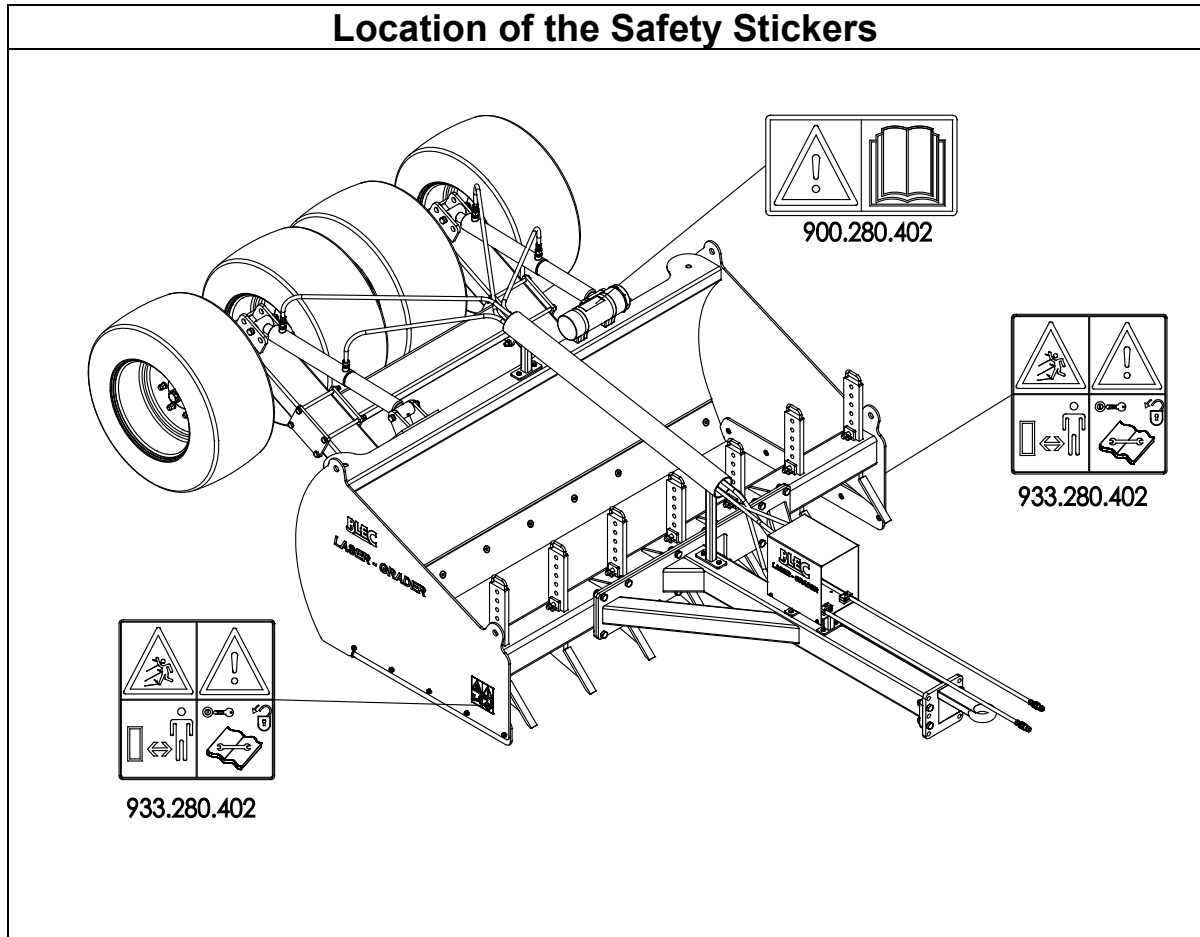


Figure 4



EU DECLARATION

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

LASER-GRADER 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

Type	2400
Capacity of the towing vehicle	50 - 150 hp
Hydraulic connection of the tractor	Double-acting valve (hydraulic connection to tractor with free hydraulic oil return)
Working width	2.4 m (94.5")
Working speed	Depending on the conditions and the required result
Weight of the Laser-Grader	1,415 kg (3120 lbs)
Dimensions (L x W x H)	4.7x2.48x1.2 m (185"x97.6"x47.1")
Number of ripping tines	7
Working depth of the ripping tines	0-75 mm (1"-2.9")
Wheel pressure	1.5 bar
Grease	EP 2
Standard components	– Set of ripping tines – Hydraulisch wielstel
Optional	– Laser Pole kit

2. GENERAL DESCRIPTION

The Laser-Grader can spread and level soil. The machine is equipped with a number of ripping tines that can be adjusted individually. These ripping tines can loosen up hard soil prior to levelling it.

The height of the wheels can be adjusted independently per set of two. To move the two frames independently, it is necessary to remove the connecting pipe between the frames.

3. FIRST INSTALLATION

When using the Laser-Grader for the first time, the machine has to be prepared as follows:

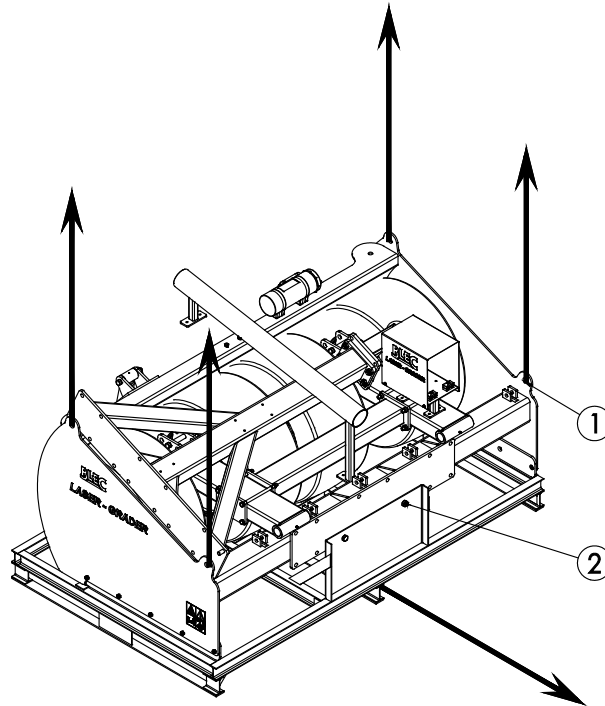


Figure 5

1. Using a crane, remove the tow bar, the pipe for the hydraulic hoses, the hydraulic cover, the wheels and the wheel set from the machine.



MAKE SURE THAT THE CABLE/CRANE/LIFT CAN HOIST MINIMUM TWICE THE WEIGHT OF THE MACHINE. (SEE CHAPTER 1.0 'TECHNICAL DATA' FOR THE WEIGHT DETAILS.)

2. Remove the bolts and nuts (2) that attach the machine to the pallet.
3. Attach cables to the hoisting points (1) (see Figure 5).
4. Using a crane, lift the machine approx. 100mm (4") off the ground.
5. Pull the pallet from under the machine. Subsequently, carefully place the machine on the ground.



!! NEVER CRAWL UNDER THE MACHINE !!

6. Mount the tow bar.
7. Mount the hydraulic cover.
8. Mount the wheel frame and attach the hydraulic cylinders to the frame.
9. Mount the hydraulic hoses and couplings.
10. Mount the wheels.



See the Parts Manual for detailed information about mounting.

4. ATTACHING AND DETACHING THE LASER-GRADER

Attaching and detaching the Laser-Grader has to be done carefully. Follow the instructions below:

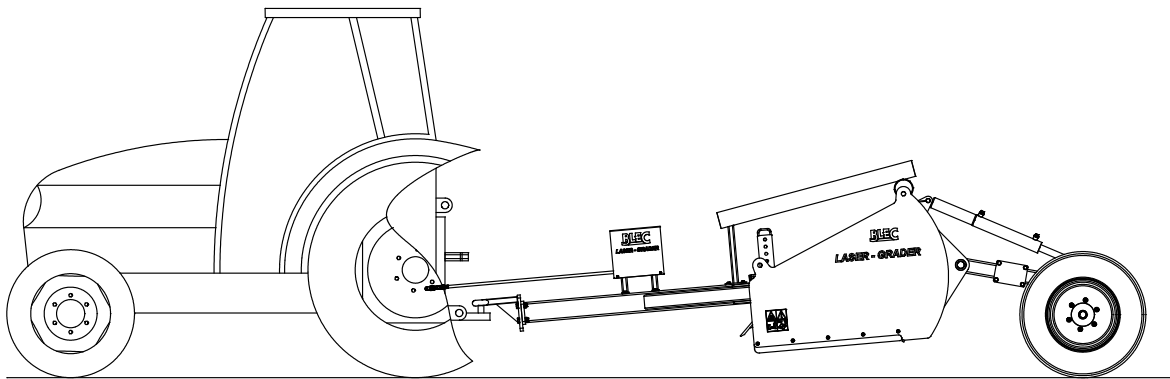


Figure 6

4.1 ATTACHING

Checking procedure before starting to attach the Laser-Grader.

- Check the Laser-Grader for visually discernible damage and repair this if safe operation of the machine is no longer guaranteed.
- Check whether all the nuts and bolts are tight.
- Check the hydraulic components for damage and leaks and repair these if necessary.
- Check whether all protection caps and all safety stickers are present on the machine and are not damaged.
NEVER use the machine without these items.

The attachment procedure is as follows (Figure 6):

1. Carefully drive the tractor backwards so that the towing hook can be attached to the tractor.



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



!! Switch off the tractor before descending !!

2. Attach the Laser-Grader to the tractor by inserting the pin of the tractor's hitch point through the towing hook of the Laser-Grader and secure the pin.
3. Attach the hydraulic hoses to the tractor.
4. Start the tractor and activate the hydraulic port of the lifting mechanism. Lift the machine.

4.2 DETACHING

The machine can be detached from the tractor in the following manner (See Figure 6):

1. Drive the Laser-Grader to a parking area with a firm/flat surface.



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

2. Carefully lower the Laser-Grader onto the ground by activating the hydraulic port for the set of wheels.



!! Make sure that the Laser-Grader stands stable on the ground *before* descending from the tractor !!



!! Switch off the tractor before descending !!

3. Detach the tow bar from the tractor.
4. Detach the hydraulic hoses.



!! Make sure that the Laser-Grader is stable !!

5. Start the tractor and drive off.

5. MACHINE SETTINGS

The Laser-Grader has several options for setting the machine optimally.

5.1 ADJUSTING THE DRAWBAR EYE

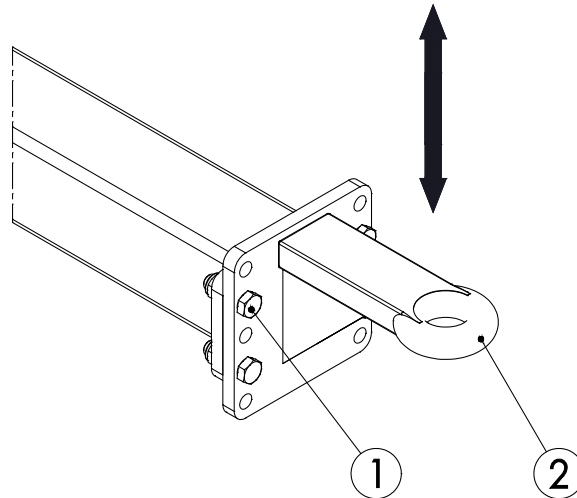


Figure 7

The height of the drawbar eye on the tractor can be adjusted (Figure 7).

1. Remove the bolts and nuts (1).
2. Move the drawbar eye (2) to the required height.
3. Mount the bolts and nuts (1).



!! Make sure that the four bolts are tightened very well !!

5.2 ADJUSTING THE RIPPING TINES

The Laser-Grader is equipped with adjustable ripping tines (Figure 8). If the soil is too hard and the levelling knife cannot cut the soil, the ripping tines can turn over the soil. These ripping tines can loosen up the soil up to a depth of 25 - 75 mm. The ripping tines can be adjusted as follows:



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

1. Lift the Laser-Grader of the ground by means of the wheel set.



!! Switch off the tractor before descending !!



!! Make sure that the Laser-Grader is stable !!

2. Get a firm grip of the ripping tines (1).
3. Remove the pin (2) and the locking clip (3).
4. Lower the ripping tines (1) to the required depth.
5. Mount the pin (2) and the locking clip (3).

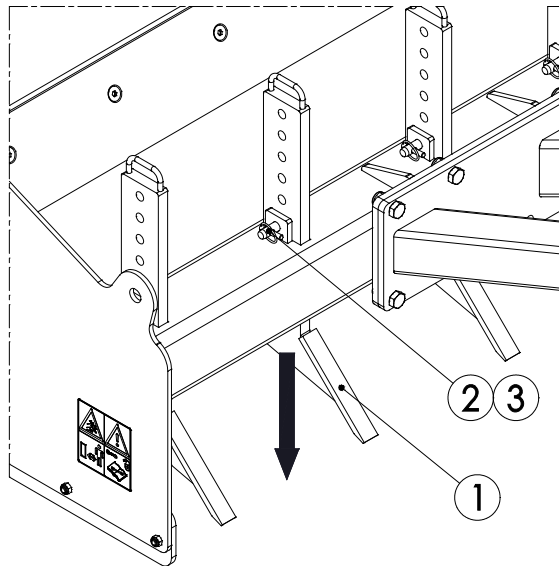


Figure 8

- ⚠ **!! Do NOT make curves in the soil using the ripping tines; this can damage the machine !!**
- ⚠ **!! The ripping tines are NOT suitable for treating the soil at a depth of more than 75 mm !!**

5.3 ADJUSTING THE LIFT-HEIGHT OF THE WHEELS

It is possible to adjust the lift-height of the Laser-Grader's wheels (Figure 9). The height can be adjusted as follows:

1. Remove the locking pin (1) including the locking clip (2).
2. Place the pin (1) in the required hole and secure it using the locking clip (2).

- ⚠ **!! Make sure that the left-hand pin and the right-hand pin are in the same hole !!**

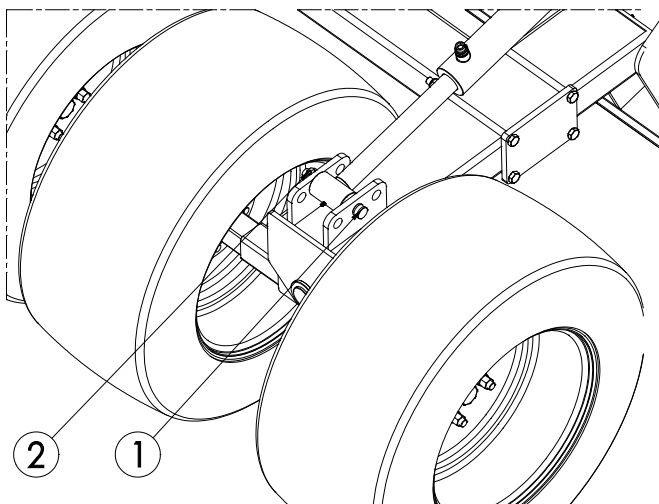


Figure 9

6. TRANSPORTING THE LASER-GRADER

The user is responsible for transporting the Laser-Grader on 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 Laser-Grader. Higher speeds are dangerous and can damage the tractor and the Laser-Grader.



When the machine is raised off the ground, the front axle of the tractor has to support minimum 20% of its weight.

7. SAFETY WHEN USING THE LASER-GRADER

Before using the Laser-Grader, you should check the following:

7.1 DRIVING SPEED

Driving speed is limited to 12 km/h (7.5mph).

It is NOT recommended to drive faster because that will damage or cause excessive wear & tear to the machine and damage the subsoil.

7.2 USING THE LASER-GRADER

Before using the Laser-Grader in a location, you should check the following items:

1. Are there loose objects in the field? First remove these objects.
2. Are there slopes? The maximum slope is 20 degrees for this machine.
3. Are there cables/pipes buried in the ground? If so, determine their depth and adjust the working depth of the machine to 60% of the depth of the cables/pipes.
4. Is there danger of flying objects (e.g., balls) that distract the attention of the driver? If so, the Laser-Grader **CANNOT** be used.
5. Is there danger of sinking/sliding away? If so, postpone the processing until conditions improve.
6. If the soil is frozen or very wet, postpone the activities until conditions improve.
7. Do not make sharp turns.



If a double-adjustment laser system is used, the connection between the wheel sets must be removed.

7.3 START/STOP PROCEDURE

The start procedure is **VERY** important. If this procedure is not executed as described below, it might result in serious damage to the machine.

The start procedure is as follows:

1. Check the Laser-Grader for loose components and look whether all components function properly.



!! If loose components are observed or components do not function properly, the problems must be solved *before* using the Laser-Grader !!

2. Drive to the spot where the processing should take place.
3. Engage the tractor in the correct gear.
4. Slowly lower the machine until it reaches the required working depth. The maximum depth that can be removed per round is 20 - 30 mm.
5. Make sure that the tow bar is horizontal in the working position. If not, adjust the height of the drawbar eye (see Section 5.1).
6. If there is a rear-wheel, make sure that it **always** touches the ground; otherwise, it is possible that the Laser-Grader buries itself deeper into the ground and does not achieve a level condition of the surface that is treated.

Stopping occurs as follows:

1. Slowly lift the machine off the ground.
2. Go to the next location and start again as described above.

8. TROUBLE SHOOTING (PROBLEM ANALYSIS)

Problem	Possible cause	Solution
Treated surface is not level.	Wheel cylinders are not set to the same height.	Put the left-hand pin and the right-hand pin in the same hole.
	Wheel pressure is not equal.	Inflate the wheels up to the indicated wheel pressure.
The tractor does not have sufficient traction.	Soil is too wet.	Postpone treating the soil.
	Machine is adjusted too deep.	Raise the machine so that the working depth becomes less deep.

9. MAINTENANCE

Time schedule	Check / Grease point	Method
Before every use	Check for loose bolts / nuts.	Tighten loose bolts / nuts with the correct tightening moment.
	Presence and readability of the safety stickers (Figure 4)	Replace these if not present or damaged.
	Check whether the ripping tines are at the same height.	Set the ripping tines at the same height.
	Check the wheel pressure.	Set the wheel pressure at 1.5 bar.
	Check the hydraulic system.	Replace or repair damaged components.
After every use	Clean the machine.	Remove sand and dirt from the machine.
After the first 20 working hours (new or repaired)	Check for loose bolts / nuts.	Tighten loose bolts/nuts with the correct tightening moment.
After every 50 hours	Provide the lubrication points with grease.	Gebruik EP 2 smeervet - 1 shot
	Check the wheel pressure.	Set the wheel pressure at 1.5 bar.
	Check the wheel bolts.	If necessary, tighten the wheel bolts.

10. TECHNICAL INFORMATION: LUBRICATION POINTS

To guarantee the proper functioning of the Laser-Grader, the lubrication points at both sides of the machine (Figure 10) must be greased periodically. Grease these points according to the table in Chapter 9.

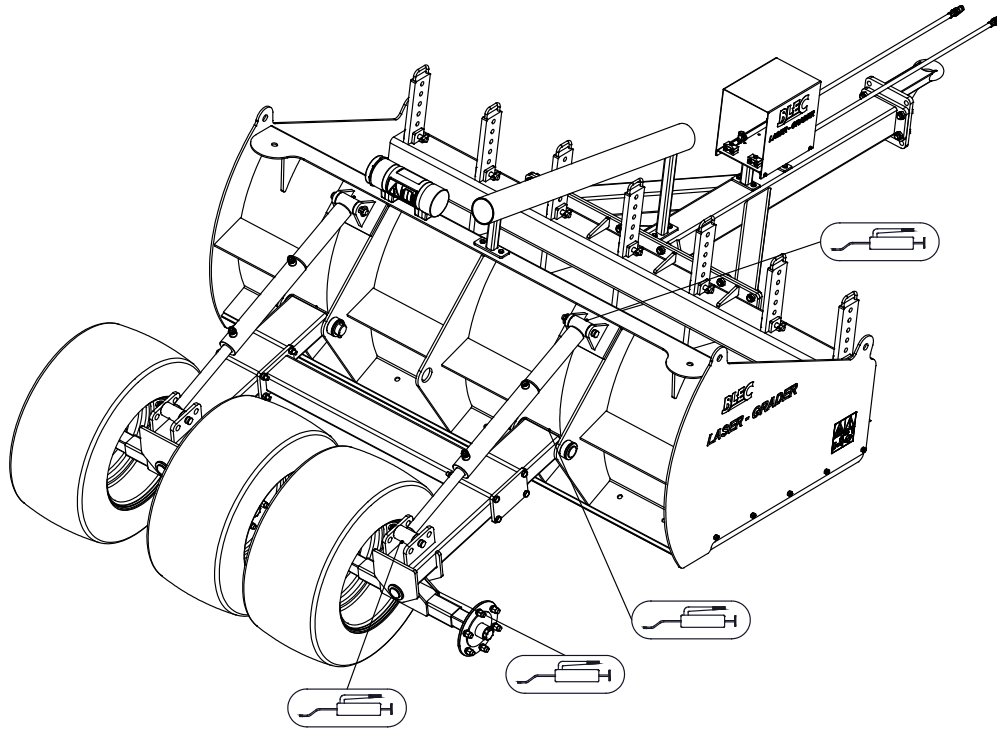


Figure 10