

User Manual and Parts Book

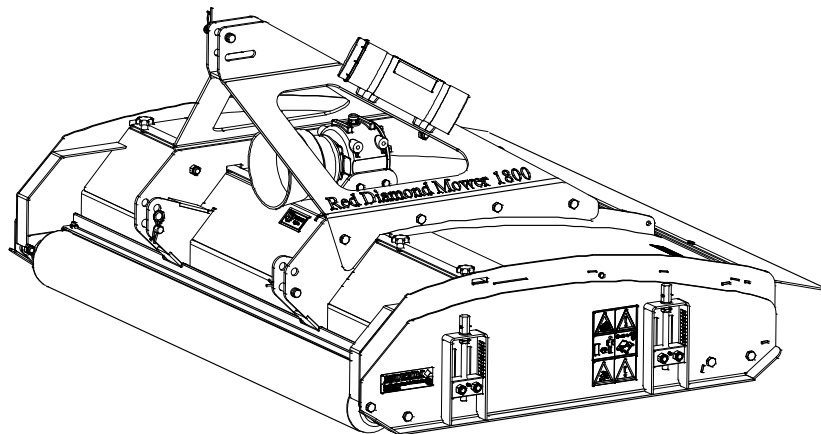


Red Diamond Mower 1800

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Serial number:

Translation of the original user manual



ATTENTION:
IT IS OF THE UTMOST IMPORTANCE TO READ THIS USER MANUAL
CAREFULLY PRIOR TO USING THE RED DIAMOND MOWER IN ORDER TO USE
THE MACHINE SAFELY AND TO OBTAIN THE BEST RESULTS.

1507 English 955.180.000



FOREWORD

Congratulations on your purchase of a Red Diamond Mower. For safe and long-lasting operation of the Red Diamond Mower, 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 Red Diamond Mower is not a machine that works independently. It is the user's responsibility to use the correct tractor. The user must also check the tractor/Red Diamond Mower 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

AT THE TIME OF DELIVERY THE RED DIAMOND MOWER IS GUARANTEED AGAINST MATERIAL DEFECTS.

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

RED DIAMOND MOWER 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 !

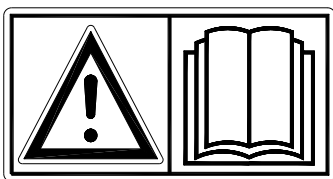


Figure 1

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

1. The user must be an expert in using the machine. The machine should be professionally adjusted for cultivating the subsoil.

The manufacturer will not accept any liability for unprofessional use and its resulting damage. All risks occurring with this are entirely at the expense of the user. Following the use, maintenance and repair instructions prescribed by the manufacturer is also considered professional use of this machine.

Inspect the area to be treated *before* using the Red Diamond Mower. Remove loose obstacles and avoid irregularities.

2. The Red Diamond Mower is manufactured according to the latest technical understanding and is safe to use.

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!**

Always use the Red Diamond Mower in combination with the correct tractor as described in the technical data.

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

The user is responsible for a **safe Tractor/Red Diamond Mower combination**. **This entire combination must be tested** for noise, safety, risk and user friendliness. User instructions should also be drafted.

4. The user is **obliged to check** the Red Diamond Mower for **visible damage and defects** before using the Red Diamond Mower. Modifications to the Red Diamond Mower (including its operations) that have a negative impact on safety must be rectified immediately. For safety reasons it is in principle not permitted to make changes or adjustments to the Red Diamond Mower (except those approved by the manufacturer).

If **modifications** to the Red Diamond Mower 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**.

Check the Red Diamond Mower for loose bolts, nuts and components *before* every operation.

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

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

NEVER use the Red Diamond Mower in the absence of safety stickers.

NEVER crawl under the Red Diamond Mower.
If necessary, tilt the Red Diamond Mower.

NEVER step off the tractor while the motor is running.

When carrying out maintenance, adjustments and repairs, it is necessary to block the Red Diamond Mower in order to prevent it from sinking away, driving off and/or sliding off.

Always switch off the tractor motor, take the tractor's key out of the ignition and disconnect the PTO in case of maintenance, adjusting and repairs. (Fig.2)

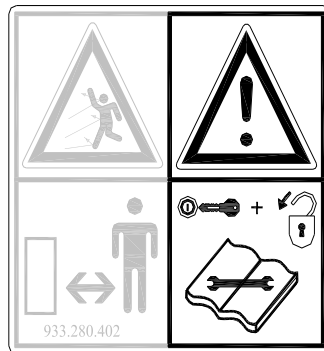


Figure 2

Use only original Red Diamond Mower 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 Red Diamond Mower.

Keep a record of the repair activities.

5. 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.

Transporting persons is not permitted!

Do not use the Red Diamond Mower in the dark, in heavy rain/storm or on slopes with an angle larger than 20 degrees.

6. All persons that are going to operate the Red Diamond Mower must be familiar with all the functions and control elements of the Red Diamond Mower *before* starting any work activities.
Attach the Red Diamond Mower to the towing vehicle according to the regulations.
(Danger of injuries!)

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

Safety stickers (Figure 2, 3, 4 and 5) with an identical meaning are attached to both sides of the Red Diamond Mower. These safety stickers must always be clearly visible and legible and must be replaced if they have become damaged.

During operation, **NO persons without the proper protection gear are allowed within the danger zone** of the Red Diamond Mower, because there is danger of physical injuries caused by flying particles or substances (Figure 3).



Figure 3



Figure 4

Keep a distance of minimum 4 metres! (Figure 4)

During operation, **NO persons are allowed within the danger zone** of the **Red Diamond Mower**, because there is danger of physical injuries caused by moving components. (Figure 5)



Figure 5

Pay attention to the permitted lifting capacity of the towing vehicle.

Dress appropriately. Wear sturdy shoes with steel toecaps, long trousers and tie up long hair. Do not wear loose clothing.

Use the proper personal protection gear according to the applicable health & safety (Dutch acronym: ARBO) and safety regulations.

7. Position of the Red Diamond Mower 1800 safety stickers. (Figure 6)

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

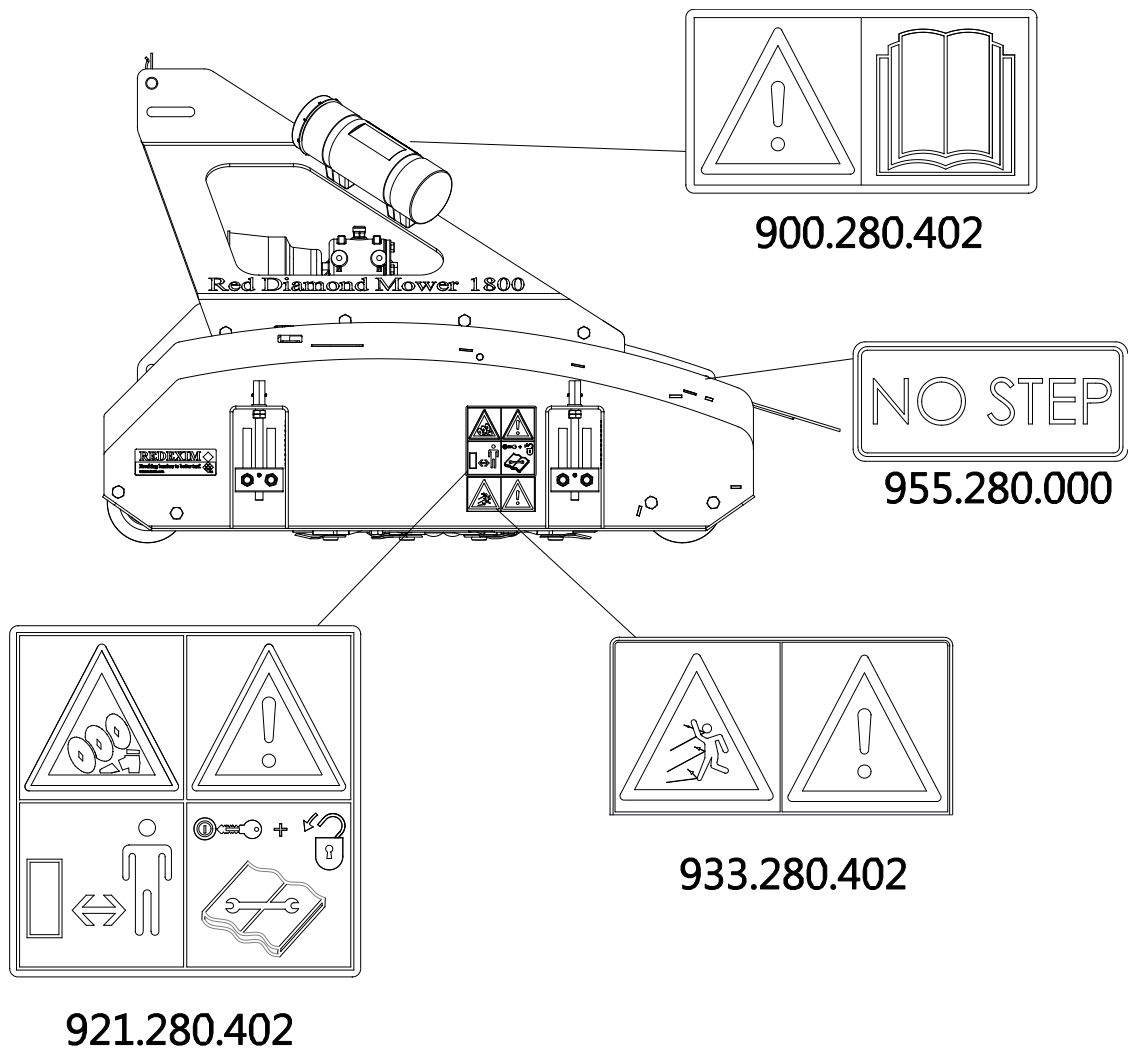


Figure 6



EU DECLARATION

We

Redexim BV
Utrechtseweg 127
3702 AC Zeist, Holland

declare – entirely on its own responsibility – that the product:

**RED DIAMOND MOWER WITH MACHINE NUMBER AS INDICATED ON THE MACHINE
AND IN THIS MANUAL,**

to which this declaration relates is according to the stipulation of the 2006/42/EC directive for machines.

Zeist, 11-02-2015

A handwritten signature in blue ink, appearing to be 'A.C. Bos', written over a faint rectangular stamp area.

A.C. Bos
Manager Operations & Logistics
Redexim Holland

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1.0 TECHNICAL DATA

Working width	1.8m (70.9")
Mowing height	12mm-112mm
Working speed	The working speed depends on the conditions and the required result. It is maximum 20 km/h (12.4 mph).
Maximum capacity per hour	36,000m ² (397500ft ²)
Weight	560 kg (1235 lbs)
Dimensions	L x W x H 1542 x 1970 x 992 (mm) 60.7"x 77.6" x 39"
Three-point connection	Cat. 1
Gearbox oil to be used	SAE 140
Bearing grease to be used	EP2
Recommended tractor	25 -35 HP
Minimum lift capacity of the tractor 610mm (24") from the lifting balls	560 kg (1235 lbs)
PTO revs	540 rpm
Standard items	PTO

2.0 GENERAL DESCRIPTION

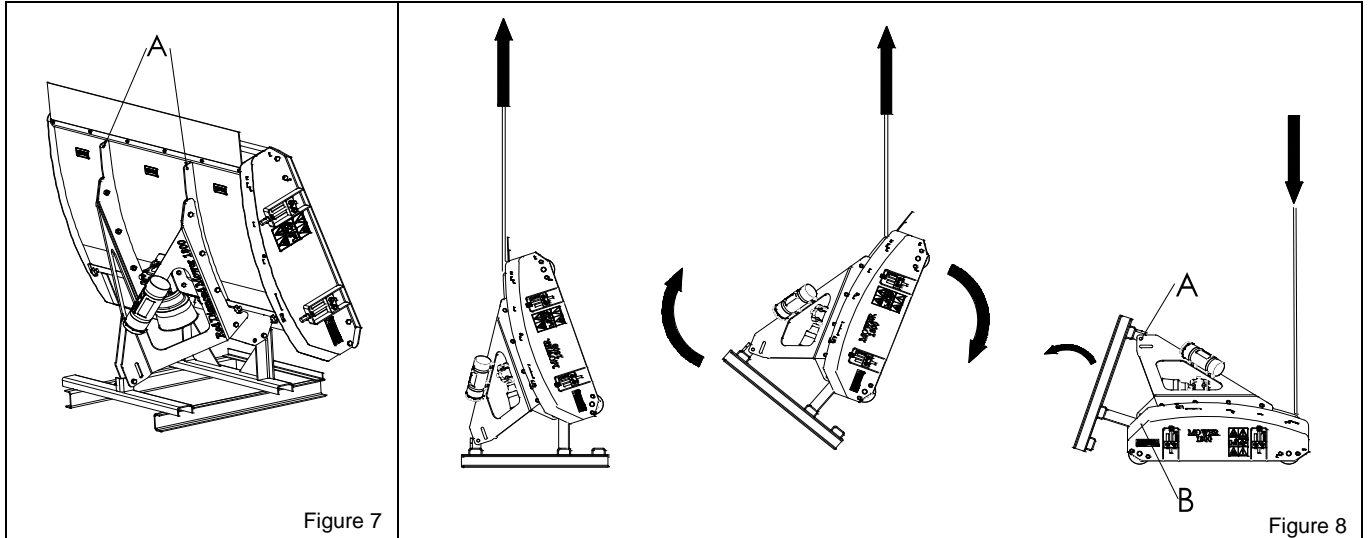
The Red Diamond Mower is a machine for mowing grass.

3.0 FIRST INSTALLATION – TAKING THE MACHINE OFF THE PALLET

The machine is placed vertically on the pallet. To remove the pallet and to place the machine horizontally on the ground, you take the following steps:

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

1. Attach a cable to the fixing holes A at the backside of the machine (at both sides of the machine) (see Figure 7).



 **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. Lift the machine including the pallet of approx. 500 mm (20”) off the ground. (zie Fig.8)

 **!! NEVER crawl under the machine !!**

3. Tilt the machine (see Figure 8).

 **!! Attention: the machine can swing dangerously !!**

4. Slowly lower the machine until it touches the ground. (zie Fig.8)
5. Remove the pallet by removing the pins A and B. (see Figure 8)
6. Attach the machine to a tractor. (See Chapter 4.0 for instructions about attaching to the tractor.)

 **Use the proper tractor (please refer to the specifications).**

 **Turn off the tractor and secure the tractor/Red Diamond Mower combination against driving off and/or sliding off.**

4.0 ATTACHING THE MACHINE TO THE TRACTOR

Checking procedure before starting to attach the Red Diamond Mower:

- Check the Red Diamond Mower 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 whether all safety stickers are present on the machine and are not damaged.

NEVER use the machine without these items.

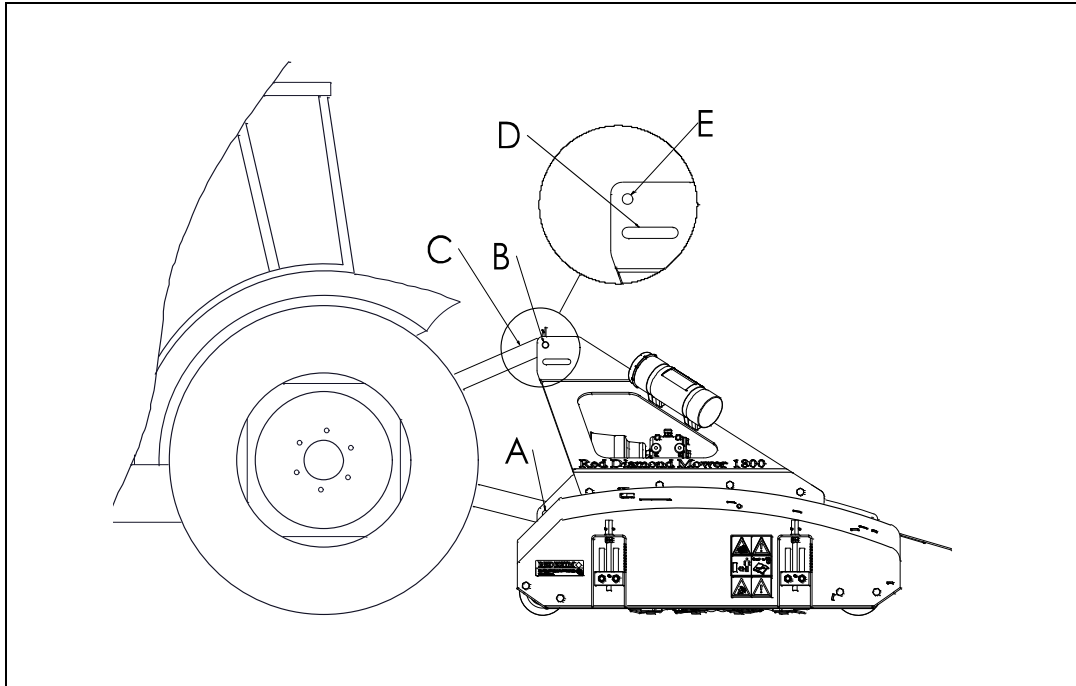


Figure 9

The Red Diamond Mower can be attached to the tractor by means of the 3-point attachment.

The procedure is as follows: (see Figure 9)

1. Remove the 3-point pins A and B.
2. Drive the tractor carefully backwards so that the lower connecting arms can be attached to the frame.
 - ⚠ **!! Make sure that the tractor is blocked well and cannot move on its own accord !!**
 - ⚠ **!! Switch off the tractor before descending !!**
3. Connect the lower connecting arms to the 3-point connecting plates using the pins A and secure these with the supplied locking pins.
4. Set the stabilizer of the tractor to 100 mm lateral stroke.
5. Connect the top rod C to the frame with pin B; secure pin B with the supplied locking pin.
 - ⚠ **!! Use Float Position D for towing while operating the Red Diamond Mower and Fixed Position E for transport !!**
 - ⚠ **!! Make sure that all the securing pins are locked !!**
6. Insert the top rod C while rotating it, until the Red Diamond Mower is positioned horizontally to the underground.
7. Connect the PTO with the Red Diamond Mower.
8. Start the tractor and lift the Red Diamond Mower off the underground.

5.0 THE POWER TAKE-OFF (PTO)

The PTO is a very important component. It also takes care of safe use of the machine, provided it is installed and maintained in the correct manner. The PTO has its own CE certification. Read the PTO manual. This manual is located on the PTO.

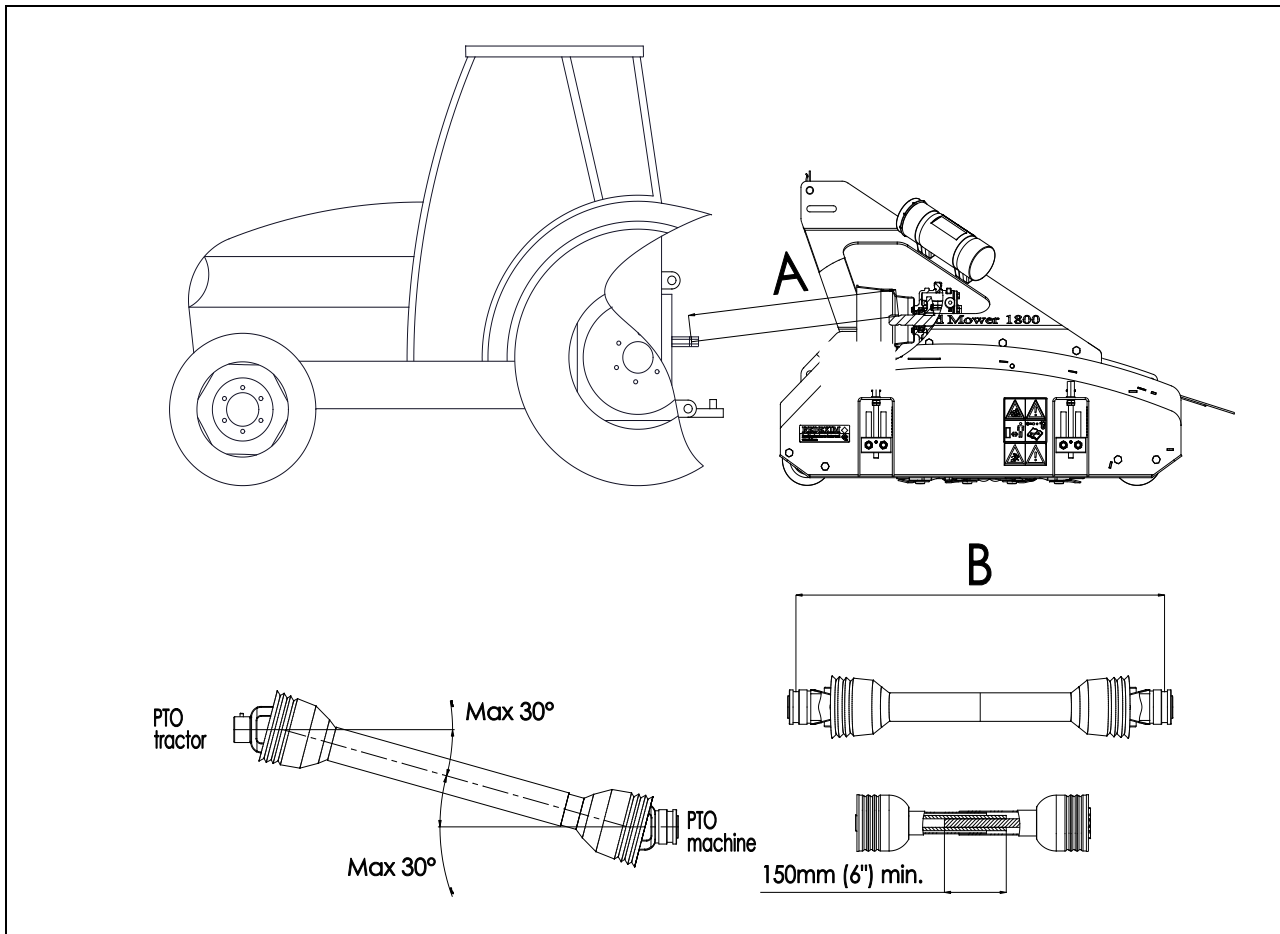


Figure 10

5.1 LENGTH OF THE PTO

The length of the PTO is very important. If it is too long, it can damage the drive of the tractor and/or the Red Diamond Mower. If the overlapping length of the cylinders becomes less than 150 mm (6") at any time, it can damage the PTO.



The length changes when the machine is lifted or when a different tractor is used!

In order to set the PTO to the correct length, when a new one has been purchased or when a different tractor is used, follow these steps: (see Figure 10)

1. Measure the distance between the PTO's connection to the tractor and to the Red Diamond Mower, from groove to groove, when the machine is connected to the tractor and positioned on the ground at the right angle.
2. Measure the distance B of the PTO in its shortest position from the locking pin to the locking bolt.
3. Divide the PTO in two parts and remove the protection cap at both ends.

4. The ends of the cylinders and the ends of the protection caps must be made shorter: $(B-A) + 75 \text{ mm (3")}$.
5. Smooth off all components, use some grease, and then assemble all components.
6. Mount the PTO to the side of the Red Diamond Mower.
7. Attach the other end of the PTO to the tractor.
8. Check the overlap of the cylinders.



**Never use the machine if it has a damaged PTO protection cap.
First replace any damaged parts!**

5.2 USING THE PTO

The following items must be checked for correct use of the PTO:

1. While working the angle of the pivot pins may not exceed 30 degrees.
2. The pivot pins of the PTO on the tractor and on the machine must always be aligned.
3. The overlap of the cylinders must always be minimum 150 mm.
4. Never use the machine if it has a damaged PTO protection cap.
5. For lubrication, please refer to Chapter 12.0 'Maintenance'.

6.0 MOUNTING / REPLACING THE KNIVES

A total of six knives should be mounted on the knife plates. The knives are loosened by turning nut A (see Figure 11).

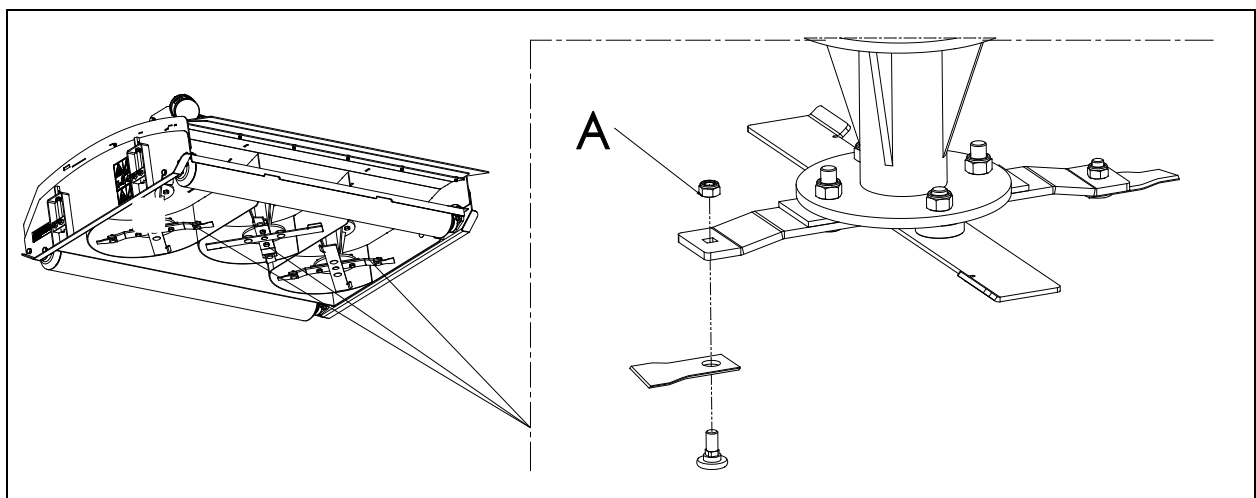


Figure 11

7.0 ADJUSTING THE MOWING HEIGHT

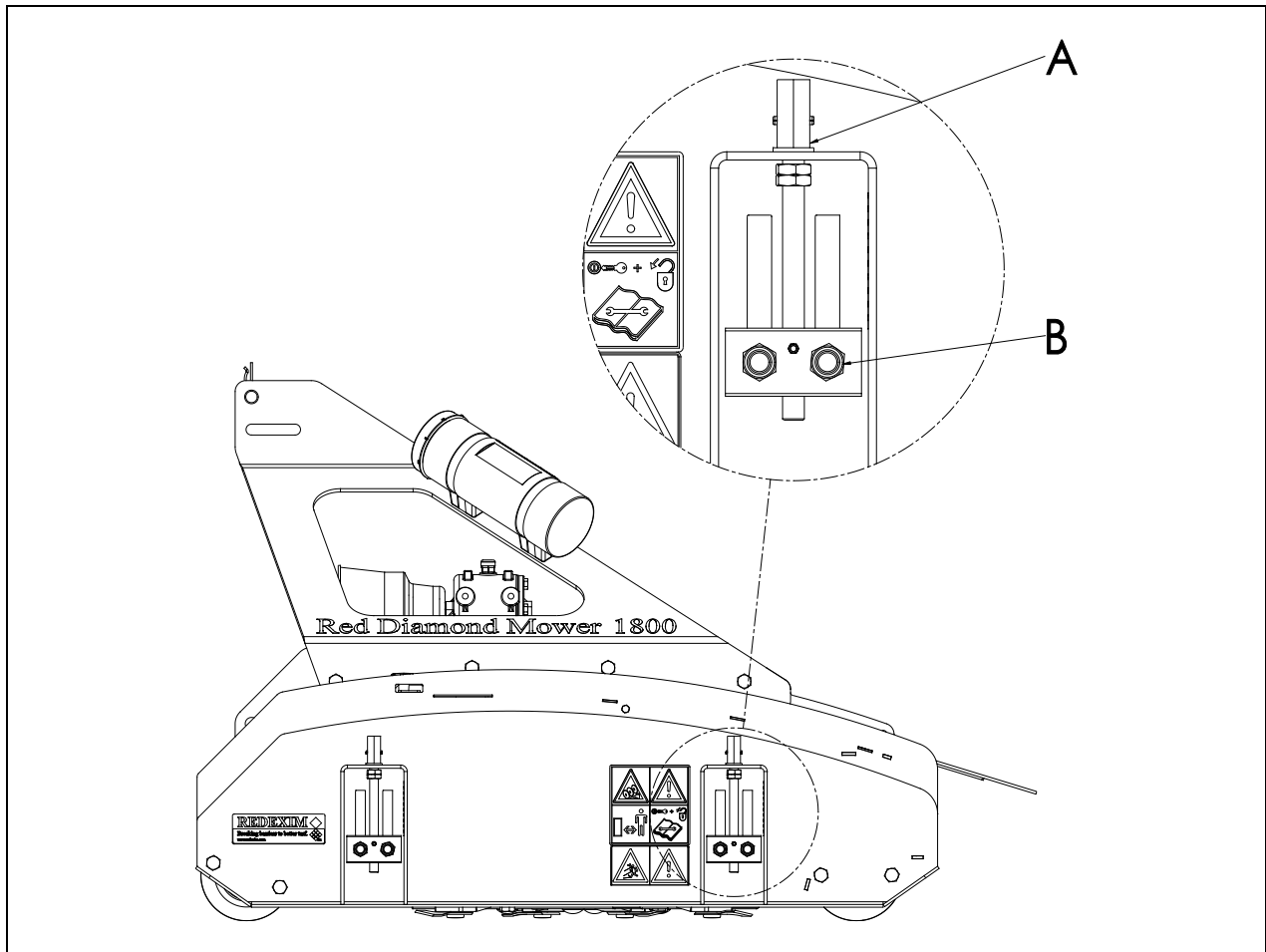


Figure 12

The mowing height is altered by adjusting the four bolts at the sides of the frame (see Figure 12).

Adjusting:

1. Loosen the bolts B.
2. Adjust the machine until you reach the required mowing height by turning spindle head A.
3. Tighten the bolts B.
4. Check the mowing height by operating the machine on a few metres.
If necessary, readjust the mowing height.

8.0 TRANSPORT OF THE RED DIAMOND MOWER

The user is responsible for transporting the Red Diamond Mower in back of the tractor on public roads. Verify the national legislation regarding the regulations. On open fields while the machine is raised and if circumstances allow this, the maximum permitted speed is 12 km/h (8 mph) due to the weight of the Red Diamond Mower. A higher speed can be dangerous for the driver and/or the public and can even damage the machine.



Make sure that the uppermost top rod is attached and is pressurized in the transport position (position E)! See Chapter 4.0, figure 9. If this is not done, the machine can incur serious damage.



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

9.0 DRIVING SPEED

The driving speed depends on the conditions and the required result. It is maximum 20 km/h (12.4 mph).

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

10.0 USING THE RED DIAMOND MOWER

Before using the Red Diamond Mower 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. Always go from top to bottom.
4. Is there danger of flying objects (e.g., balls) that distract the attention of the driver? If so, the Red Diamond Mower **CANNOT** be used.
5. Is there danger of sinking/sliding away? If so, postpone the processing until conditions improve.
6. If the soil is very wet, postpone the activities until conditions improve.

11.0 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 Red Diamond Mower 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 Red Diamond Mower !!

2. Drive to the spot where the processing should take place.
3. Carefully lower the Red Diamond Mower onto the ground.



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



!! Switch off the tractor before descending !!

4. Adjust the mowing height as described in Chapter 7.0.
5. If required, the top rod can be placed in the slotted hole D in the towing position (see Chapter 4.0, figure 9).

6. Raise the Red Diamond Mower slightly so that the rollers just don't touch the ground and engage the tractor in the proper gear.
 - ⚠ **!! Pay attention to the maximum permitted PTO angle when the top rod is connected to slotted hole D !!**
7. Adjust the tractor engine to around 1200 rpm and engage the PTO.
8. Slowly lower the machine until the rollers are on the ground.
9. Drive forwards and increase the rotational speed until the PTO rotational speed of 540 rpm is achieved.
10. For the first track:
 - Check whether the required mowing height is achieved. If necessary, adjust it as described in Chapter 7.0.

Stopping occurs as follows:

1. Decrease the engine revs to approx. 1200 rpm.
2. Lift the machine slightly off the ground.
3. Switch the PTO off as soon as the rollers no longer touch the subsoil.
4. Lift the machine even more.
5. Go to the next location and start again as described above.

12.0 DETACHING THE RED DIAMOND MOWER

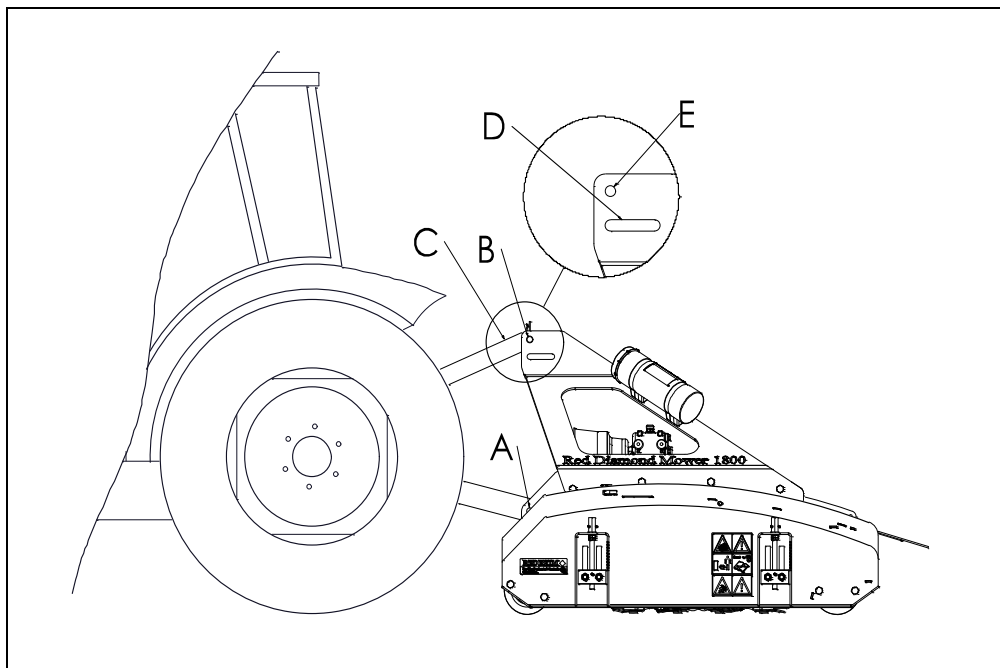


Figure 13

The machine can be detached from the tractor in the following manner (See Figure 13):

1. Drive the Red Diamond Mower to a parking area with a firm/flat surface.
 - ⚠ **!! Make sure that the tractor is blocked well and cannot move on its own accord !!**
 - ⚠ **!! Switch off the tractor before descending !!**
2. Lower the machine onto the ground.
3. Make sure that the machine cannot move on its own accord by blocking the rear roller.
4. Remove the top rod C.
5. Loosen the PTO at the side of the tractor.

6. Disconnect the lower connecting arms of the tractor.



!! Make sure that the Red Diamond Mower stands stable and cannot roll away and/or slide off !!

7. Start the tractor and drive off.

13.0 TROUBLE SHOOTING (PROBLEM ANALYSIS)

Problem	Possible cause	Solution
Machine vibrates.	<ul style="list-style-type: none"> - Obstacle(s) between the knives - Worn or broken knives. - Crooked knife bar 	<ul style="list-style-type: none"> - Remove the obstacle(s). - Replace with new knives. - Straighten or replace the knife bar.
Mowing height is not achieved. / Sloppy mowing view	<ul style="list-style-type: none"> - Mowing height is not adjusted correctly. - Driving speed is too high. - Grass is wet. 	<ul style="list-style-type: none"> - Adjust the mowing height properly. - Lower the driving speed. - Wait for drier conditions.
Knives do not rotate.	<ul style="list-style-type: none"> - The V-belts that drive the knives slip. - Obstacle(s) between the knives 	<ul style="list-style-type: none"> - Pull the V-belts taut. - Remove the obstacle(s).

14.0 MAINTENANCE

Time schedule	Check / Grease point	Method
Before every use	<ul style="list-style-type: none"> - Check for loose bolts / nuts. - Check the oil level in the gearbox. - Presence and readability of the safety stickers - Loose hanging parts around the PTO 	<ul style="list-style-type: none"> - Tighten loose bolts / nuts with the correct tightening moment. - Use SAE140. - Replace these if not present or damaged. - Tighten the parts so that they cannot reach the PTO.
After every use	<ul style="list-style-type: none"> - Clean the machine. 	<ul style="list-style-type: none"> - Watch out for the bearings if a high-pressure sprayer is used.

<p>After the first 20 working hours (new or repaired)</p>	<ul style="list-style-type: none"> - Lubricate the PTO and bearings. - Check for loose bolts / nuts. - Check the oil level in the gearbox. - Check the gearbox for oil leaks. - Loose hanging parts around the PTO - Check the tension of the V-belts. 	<ul style="list-style-type: none"> - Use EP2 grease - Tighten loose bolts / nuts with the correct tightening moment. - Use SAE140. - Repair the leaks / damage and replace the seals / sealing paste. - Tighten the parts so that they cannot reach the PTO. - If needed, adjust it (see Section 14.2).
<p>Every 50 working hours</p>	<ul style="list-style-type: none"> - Lubricate the PTO and bearings of the machine. - Check for loose bolts / nuts. - Check the oil level in the gearbox. - Check the gearbox for oil leaks. - Loose hanging parts around the PTO - Check the tension of the V-belts. 	<ul style="list-style-type: none"> - Use EP2 grease (Zie fig.14) - Tighten loose bolts / nuts with the correct tightening moment. - Use SAE140. - Repair the leaks / damage and replace the seals / sealing paste. - Tighten the parts so that they cannot reach the PTO. - If needed, adjust it (see Section 14.2).
<p>After every 500 working hours</p>	<ul style="list-style-type: none"> - Change the oil in the gearbox. 	<ul style="list-style-type: none"> - Use SAE140.

14.1 LUBRICATING POINTS

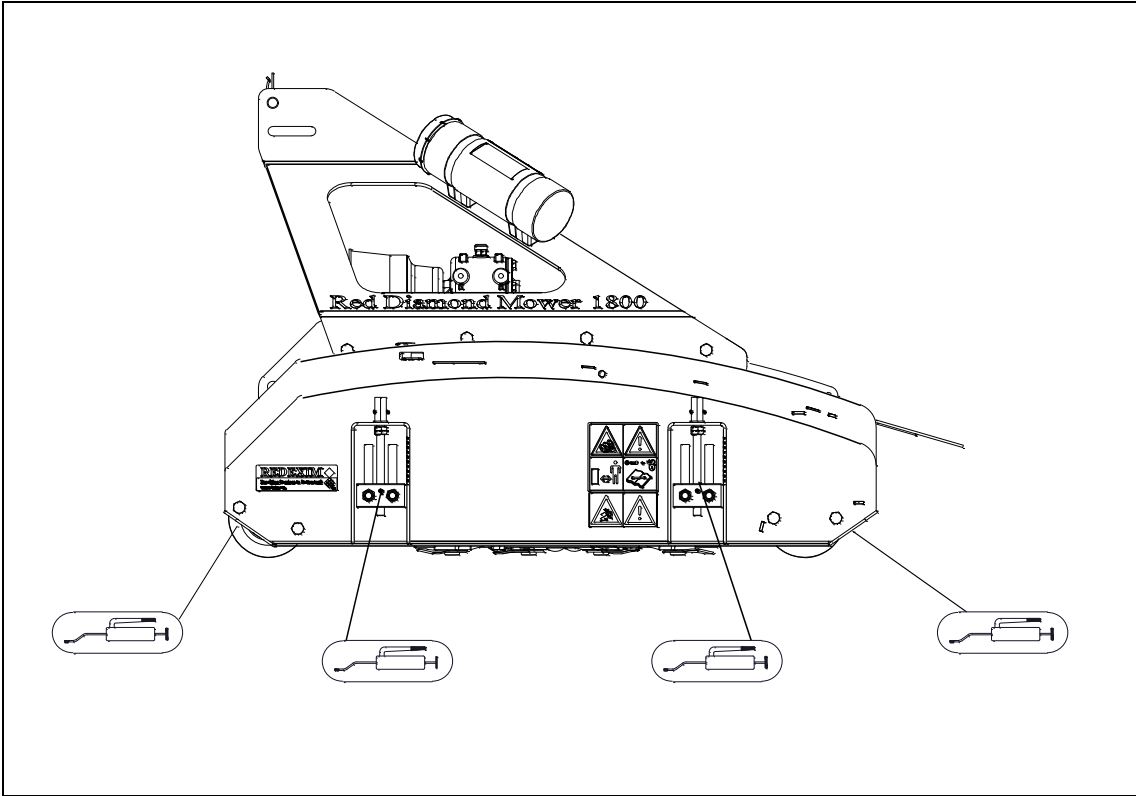


Figure 14

14.2 ADJUSTING THE TENSION OF THE V-BELTS

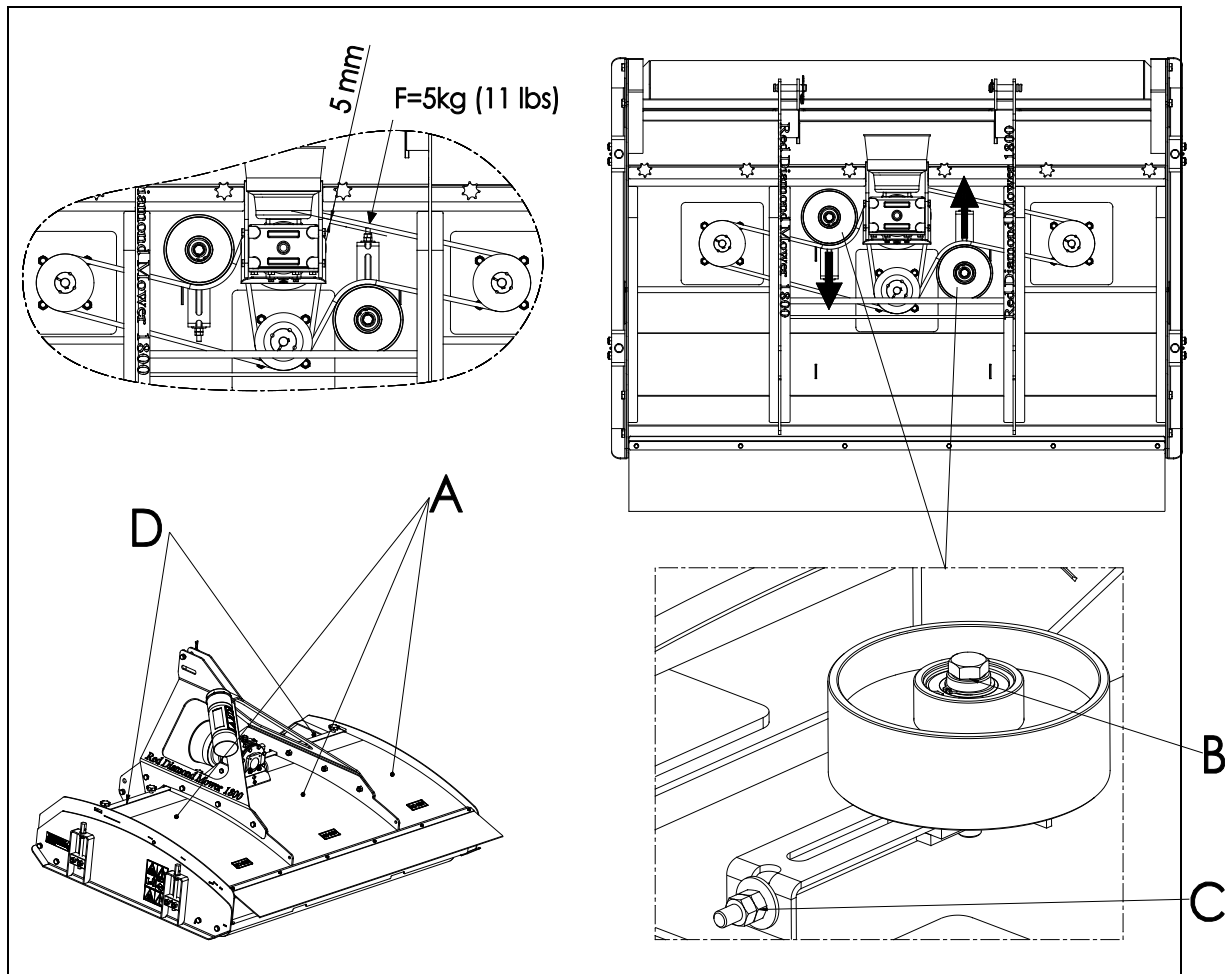


Figure 15

The Red Diamond Mower is standard equipped with adjustable tension pulleys that keep the V-belts taut.

Depending on the intensity of using the machine, the driveline could be affected by wear and tear.

These V-belts should then be tightened.

Adjustment is carried out as follows (see Figure 15):



!! Make sure that the Red Diamond Mower is blocked well and cannot move on its own accord !!



!! Make sure that the PTO is detached from the Red Diamond Mower !!

1. Remove the protective caps A by removing mounting strips D.
2. Apply a force of 5 kg (11 lbs.) on the centre of the bottom part of the belt (see Figure 15).
3. It should be possible to press the belt 5 mm (1/5").
4. If this is not correct, you need to readjust the belt tension.
5. Loosen nut B slightly.
6. Turn nut C until the correct tension has been reached.
7. Tighten nut B again.
8. Place the protective caps A and secure them using the mounting strips D.