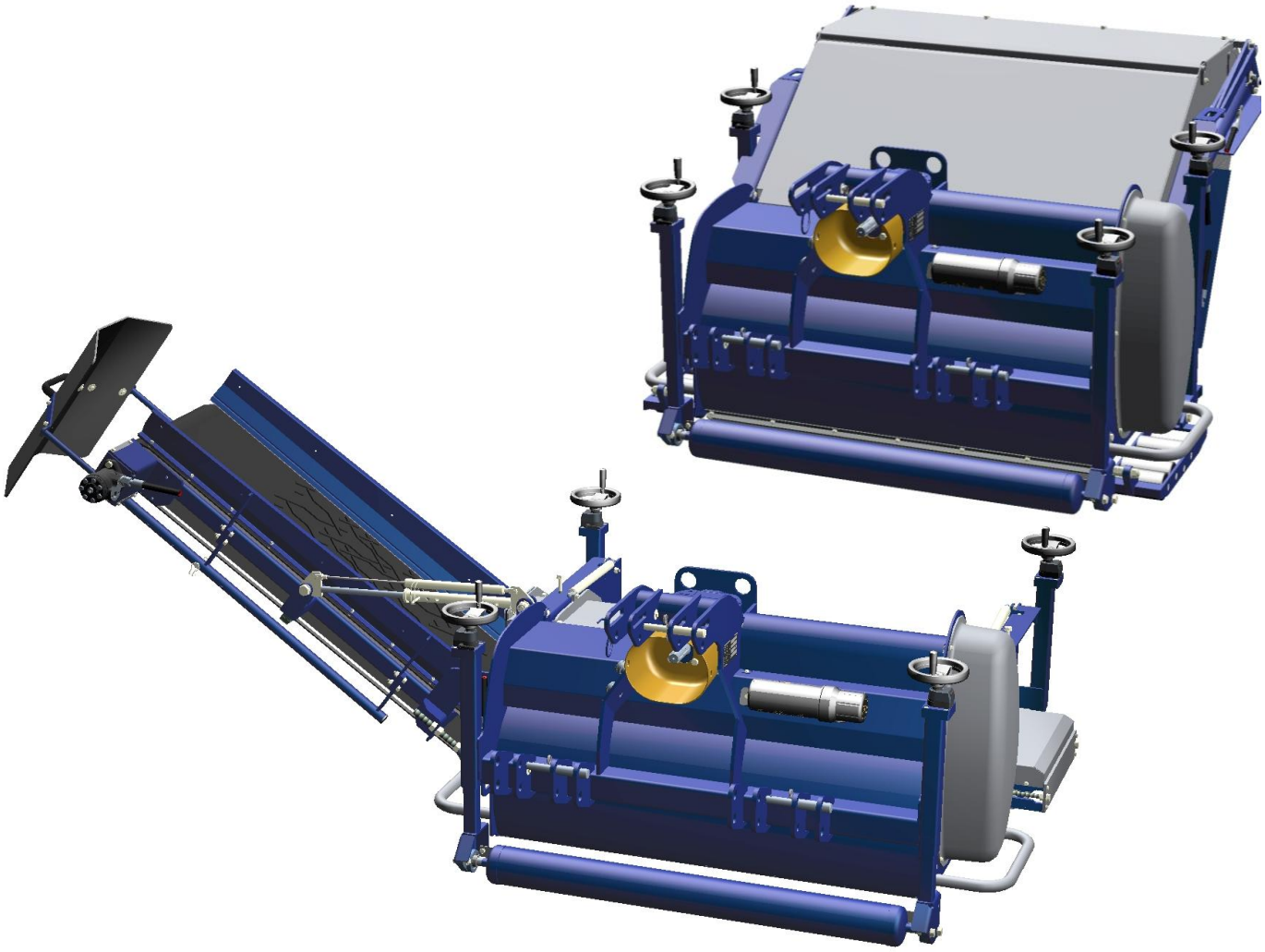
# FTM 1200 1500

# MODULAR

## User Manual



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# Foreword

We would like to start by congratulating you on purchasing an Koro by Imants machine. By opting for this machine, you have chosen a quality product. Your machine will bring you years of enjoyment if used properly.

This user manual is an important document for the proper use of the machine. You will find in it all the information required to use the machine safely and optimally.

We recommend that you read this manual thoroughly and that you study and follow all the instructions before starting up the machine. Illustrations in this manual may differ from the configuration of your machine; they are designed to be used as diagrams to explain a working principle.

Please contact your point of sale / dealer should there be any questions or ambiguities as regards this manual.

We update our manuals regularly. Your suggestions help us make our manuals even more user-friendly. You can e-mail your suggestions to info@imants.nl with ‘manuals’ as the subject line.

Imants BV accepts no liability for any direct or consequential damage resulting from the improper use of the machine.

# Use this manual

***1.*** Instructions used in this manual are always *printed in italic.*

**2.** In this guide, some sections of text requiring special attention are framed with a border.

Text bordered in red warns of dangerous situations which must be avoided at any cost.

Text bordered in orange cautions on some aspects which are not immediately dangerous, but should ideally be avoided.

Text bordered in blue provides additional information aimed at facilitating or improving the use of the machine.

**3.** Warning pictograms used in the manual but not present on the machine in the form of stickers.

**Do not stay within the lift range of the three-point hitch when operating it. Danger of the whole body being crushed.**

This danger can cause very serious injury or even death.

- It is forbidden to stay within the lift range of the three-point hitch when operating it.
- Operate the control handles for the three-point hitch only from the designated workplace and never when you are within the lift range between tractor and machine.

**Do not go under the machine! Danger of the whole body being crushed if the machine comes down unexpectedly**

This danger can cause very serious injury or even death.

- It is forbidden to go under the machine while it has not been brought back on the ground or while the lifted machine has not been secured against a sudden fall.

| | |
|---|---|
|  | **The maximum hydraulic system pressure should not exceed 200 bar** |

**4.** Operating pictograms used in the manual but not present on the machine in the form of stickers.

| | | | | | |
|---|---|---|---|---|---|
| Hitch | Tractive power control  | Position control  | Downwards  | Upwards  | Working depth  |
| PTO | PTO on  | PTO 1000 RPM  | PTO off  | | |
| Tractor | Front wheel drive  | Direction of travel  | Engage gear  | Engine speed up  | Engine speed down  |
| Hydraulics | Cylinder in floating position  | Cylinder in  | Cylinder out  | Pressure gauge  | |
| General | Off  | On  | Recycle  | Hook  | |

# 1 Introduction

The Koro by Imants modular Field TopMaker has been developed for use in the professional restoration and maintenance of grass fields such as golf courses and sports fields. The machine has a modular structure. The basic frame (1) can be equipped with a digging rotor (2) or scarification rotor (3). The material to be removed is collected in a collector box unit (5) or removed via a side arm conveyor (4).

This machine can be used to perform work including:

- Fraise mowing
- Aerating
- Scarifying

The machine is only suitable for treating grass fields with no obstacles such as stones, tree stumps, etc.

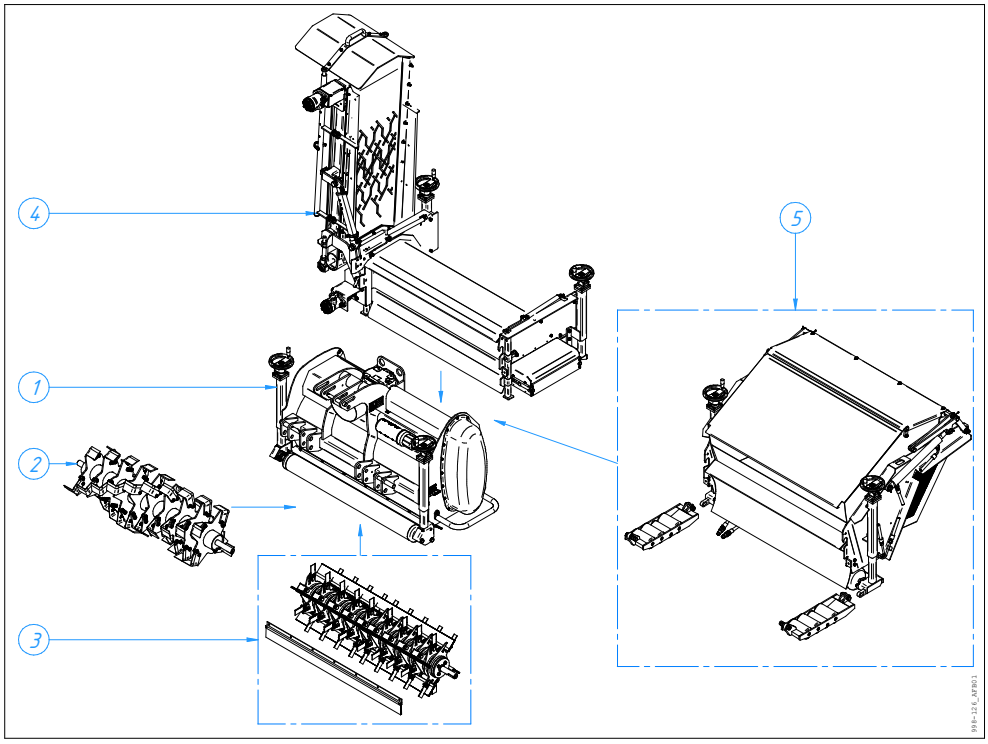
The most common and recommended configurations are:

- Basic frame with digging rotor and side arm conveyor (1-2-4)
- Basic frame with scarification rotor and collector box unit (1-3-5)

A tractor provides the power needed to drive and tow the machine. The mechanical power of the tractor is transferred to the gear box of the machine via a PTO drive shaft and must reach a speed of 540 rpm. The oil to power the side arm conveyor and to tip the collector box unit is provided by the tractor.

The machine is controlled by the driver of the tractor from the driver's seat.

The machine is provided with coupling points for a tractor with category I or II hitch.



# 2 General safety instructions

The user must hold a valid tractor driving licence in order to operate the machine.

The user must have reached the minimum age of 16 years, unless the local law requires that the minimum age should be higher. The highest age limit shall prevail.

The user of the machine is responsible at all times for compliance with local safety regulations and guidelines.

The user must have read through the whole contents of this manual and must follow to the letter the instructions therein.

Keep this manual and that of the PTO drive shaft within reach.

Use the machine solely for the purpose it was intended for.

No one should be standing between the machine and the tractor while these are being coupled or uncoupled.

All safety devices are to be mounted on the machine and must function properly. Never remove or open a cover when machine is rotating.

Always follow the specifications and requirements set by the manufacturer of the tractor in relation to its use. Please refer to Tractor manual.

Always comply with the requirements regarding the minimum load of the front and rear axles, given by the tractor manufacturer.

**Standing on or within the range** of the machine during work is **prohibited**. This also includes transport.

The maximum load of the tractor tyres, given by the tyre manufacturer, should not be exceeded in the operation of the machine.

Warning labels should always be legible.

Modifications, additions or developments on or to the machine are not allowed without the written permission of Imants BV. This includes welding on load bearing parts. Without this written authorisation, Imants BV's responsibility for the CE marking will lapse and go over to the buyer.

Maintain the machine as indicated further in this manual. Only perform this work when the machine is at a complete stop. Remove the key from the ignition lock of the tractor.

Work under a lifted machine may only take place if the machine is properly supported.

For reasons of quality and safety, use original Imants parts exclusively.

# 3 Residual risks

**Even if all the safety precautions are met and the machine is used in accordance with the requirements, there are still residual risks due to:**

- Contact with rotating parts of the machine
- Injury caused by ejected material
- Pinching by hinged parts
- Human errors (e.g. fatigue, mental overload, etc.)

Every machine has inherent hazards. It is therefore always recommended to exercise the greatest caution while performing work.

**Working safely depends on the staff that operates the machine.**

# 4 Specifications for collector box unit combination

| | | FTM 1200 | FTM 1500 |
|---|---|---|---|
| **Dimensions** | | | |
| Working width | [mm] | 1200 | 1500 |
| Machine witdth | [mm] | 1715 | 2015 |
| Machine length | [mm] | 1795 | 1795 |
| Height | [mm] | 1045 | 1045 |
| Distance centre of gravity | [mm] | 605 | 605 |
| Machine witdth (transport) | [mm] | 1715 | 2015 |
| Machine witdth (work) | [mm] | 1715 | 2015 |
| Machine length (tipped) | [mm] | 2725 | 2725 |
| Height (transport) | [mm] | 1045 | 1045 |
| Height (tipped) | [mm] | 1985 | 1985 |
| **Machine weight** | | | |
| Weight | [kg] | 655 | 735 |
| **Working speed** | | | |
| Max. working speed | [km/h] | 1.5 | 1.5 |
| **Working depth** | | | |
| Max. workingdepth | [mm] | 50 | 50 |
| **Power** | | | |
| Min. Power | [kW/pk] | 15 / 20 | 22 / 30 |
| Max. power | [kW/pk] | 22 / 30 | 30 / 40 |
| **PTO drive shaft** | | | |
| Driving speed | [min-1] | 540 | 540 |
| PTO drive shaft type | | W2300 | W2300 |
| Torque limiter protection | | K64/1R | K64/1R |
| Set torque | [Nm] | 1100 | 1100 |
| **Hydraulic connections** | | | |
| Max. operating pressure | [bar] | 150 | 150 |
| Max. oil yield | [L/min] | 20 | 20 |
| **Noise level** | | | |
| Noise level | [dB(A)] | 80 | 80 |

# 5 Specifications for side arm conveyor combination

| | FTM 1200 | FTM 1500 |
|---|---|---|
| **Dimensions** | | |
| Working width [mm] | 1200 | 1500 |
| Machine witdth [mm] | 2375 | 2675 |
| Machine length [mm] | 1425 | 1425 |
| Height [mm] | 2060 | 2460 |
| Distance centre of gravity [mm] | 605 | 605 |
| Machine witdth (transport) [mm] | 2375 | 2675 |
| Machine witdth (work) [mm] | 3350 | 3550 |
| Machine length (tipped) [mm] | - | - |
| Height (transport) [mm] | 2060 | 2460 |
| Height (tipped) [mm] | - | - |
| **Machine weight** | | |
| Weight [kg] | 695 | 790 |
| **Working speed** | | |
| Max. working speed [km/h] | 1.5 | 1.5 |
| **Working depth** | | |
| Max. workingdepth [mm] | 50 | 50 |
| **Power** | | |
| Min. Power [kW/pk] | 15 / 20 | 22 / 30 |
| Max. power [kW/pk] | 22 / 30 | 30 / 40 |
| **PTO drive shaft** | | |
| Driving speed [min-1] | 540 | 540 |
| PTO drive shaft type | W2300 | W2300 |
| Torque limiter protection | K64/1R | K64/1R |
| Set torque [Nm] | 1100 | 1100 |
| **Hydraulic connections** | | |
| Max. operating pressure [bar] | 150 | 150 |
| Max. oil yield [L/min] | 20 | 20 |
| **Noise level** | | |
| Noise level [dB(A)] | 80 | 80 |

# 6 Warning stickers

**Risk of tractor and machine unexpectedly starting up and rolling off while carrying out work on the machine, such as installation, setup, troubleshooting, cleaning, maintenance and repairs.**

This danger can cause very serious injury or even death.

- Before any intervention on the machine, secure the tractor and machine against accidental start-up and roll-off.
- Read the relevant sections in the user manual and follow the instructions.

**Danger of hand or arm being pulled inward or gripped by powered unsecured chain or belt drive**

This danger causes serious bodily injury with loss of body parts on arm or hand.

Never open or remove the protections of chain or belt drives while the tractor engine is running in connection with the powered PTO drive shaft / coupled hydraulic drive.

**Danger of the whole body being crushed. Do not stand in the path of the backward swivel range of the machine's moving parts**

This danger can cause very serious injury and even death.

- Keep a safe distance from the moving parts of the machine while the tractor engine is running.
- Ensure that people take into account that they have to be at a suitably safe distance from the moving parts of the machine.

**Danger of feet sustaining cuts or being amputated. Keep away from accessible moving parts that are part of the work process!**

This danger can cause very severe injury possibly leading to the loss of body parts.

- Do not insert your feet into the hazardous area while the tractor engine is running in connection with the PTO drive shaft / hydraulic/electronic system.
- Wait until the moving parts of the machine have come to a complete halt before you insert your foot into the hazardous area.


**Danger of fingers and hands sustaining cuts or being amputated. Keep away from accessible moving parts that are part of the work process!**

This danger can cause very severe injury possibly leading to the loss of body parts.

- Never insert your hands or arms into the hazardous area while the tractor engine is running in connection with the PTO / hydraulic/electronic system.
- Wait until the moving parts of the machine have come to a complete halt before you reach into the hazardous area with your hand and/or arm.

**Do not stand in the danger area of the machine! Risk of materials or objects being hurled around by the machine or ejected out of the machine.**

These hazards can cause very serious bodily injury.

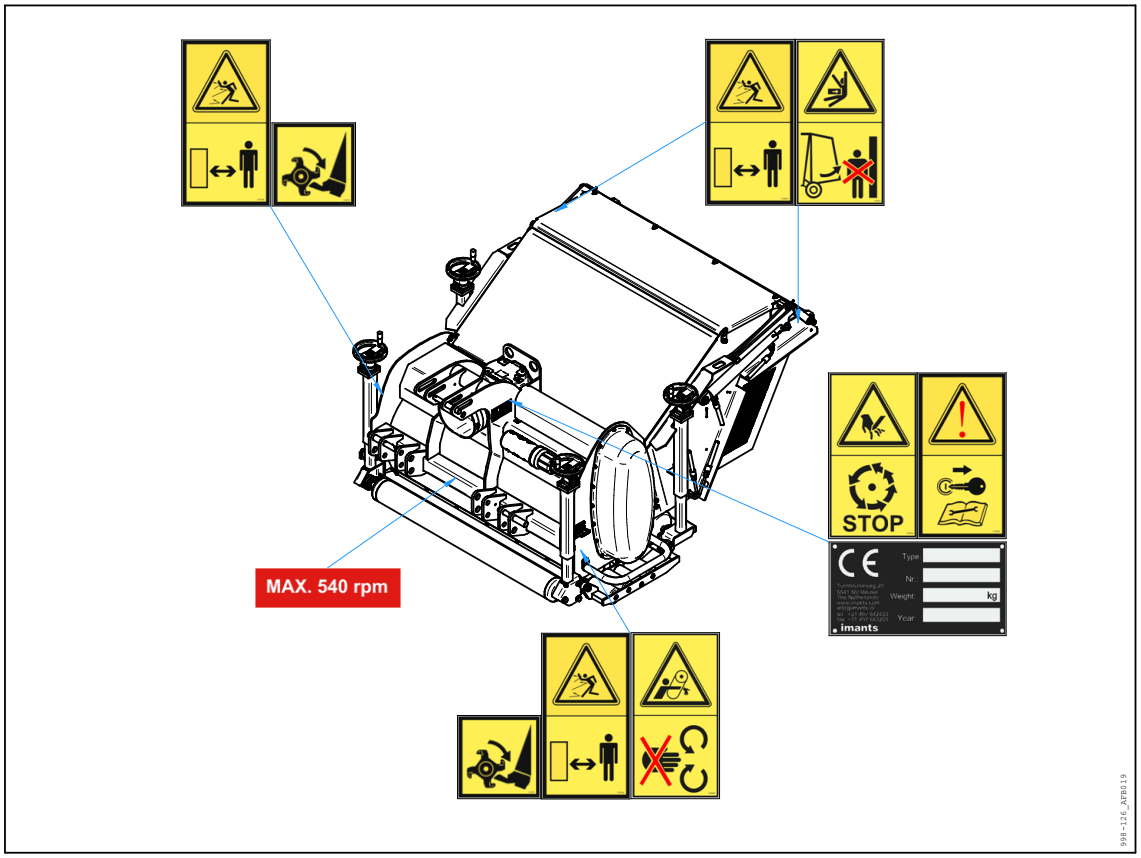
- Keep at a proper distance from the danger area of the machine.
- Make sure that people remain at a safe distance from the machine while the tractor engine is running.

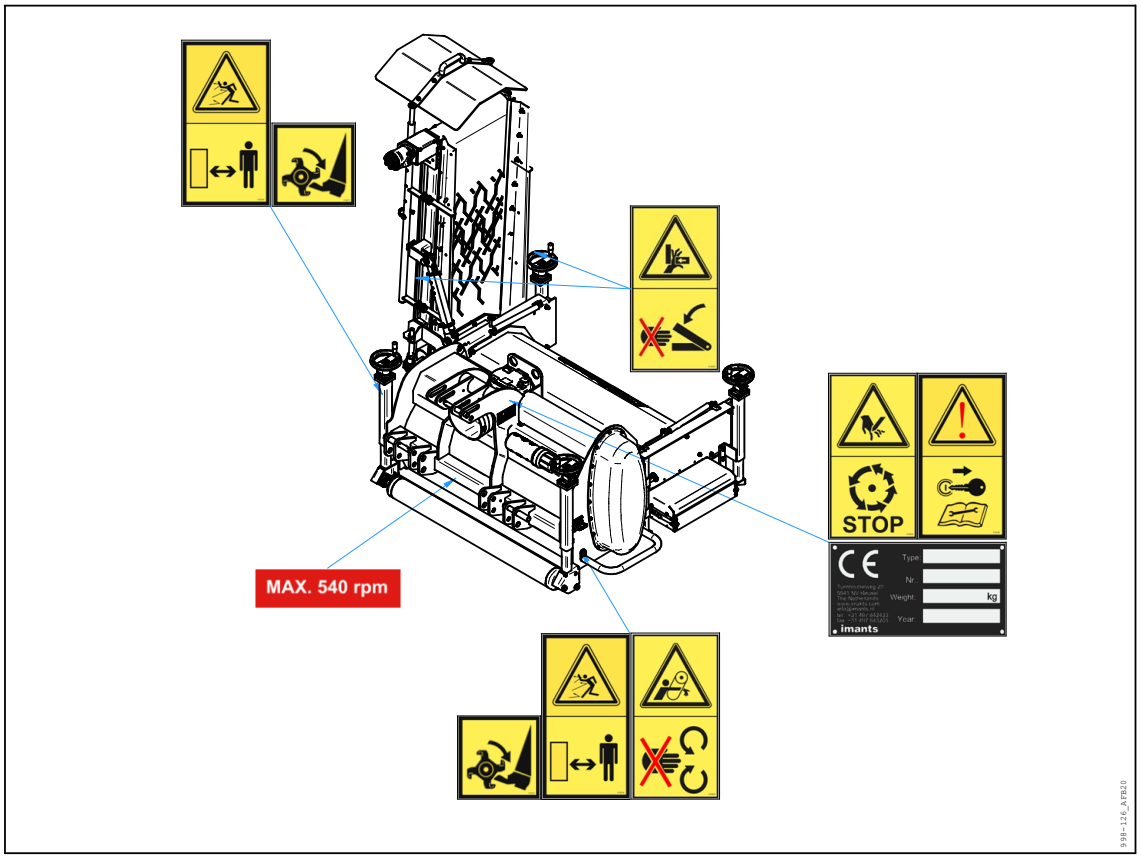
**Crush hazard. Keep fingers or hands away from the moving, accessible parts of the machine!**

This danger causes serious bodily injury with loss of body parts on arm or hand.

Never insert your hands or arms into the hazardous area while the tractor engine is running in connection with the PTO drive shaft / hydraulic system.

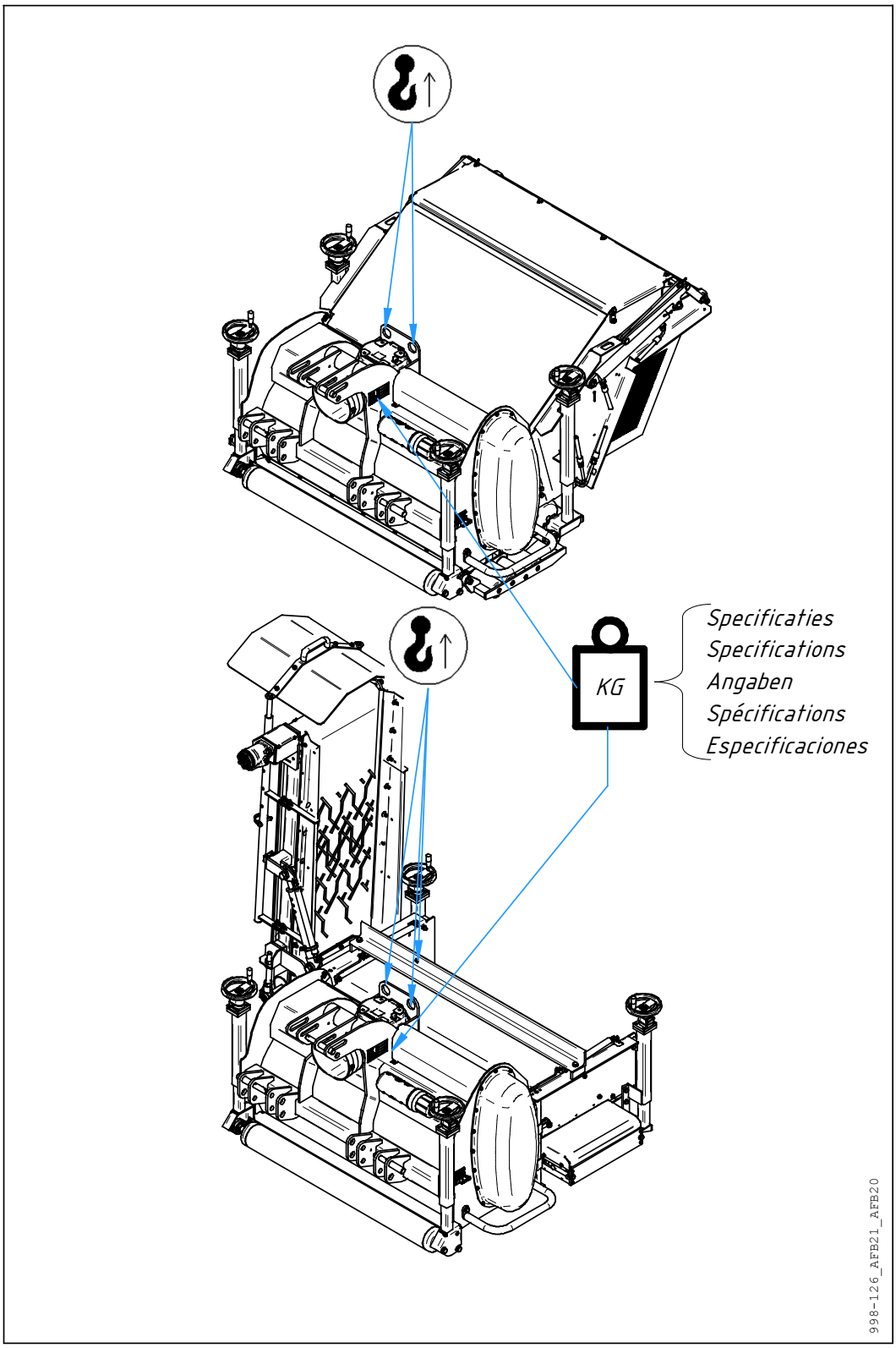
# 7 Location of the nameplate and warning stickers on the machine



# 8 Machine operation

## 8.1 Loading and unloading



## 8.2 Commissioning

- Before any intervention on the machine, secure the tractor and machine against accidental start-up and roll-off.
- Read the relevant sections in the user manual and follow the instructions.

1. *Couple the machine to the tractor (see Section on coupling and uncoupling)*



2. ***Do not** connect the PTO drive shaft yet*

3. *Carefully read the manufacturer's instructions for the PTO drive shaft*
4. *Shorten the PTO drive shaft*
5. *Connect the overload or freewheel clutch on the machine side*
6. *Connect the PTO shaft to the tractor*

If not shortened correctly, a PTO drive shaft can cause serious damage to the tractor and machine. This means that the CE-marking of the PTO drive shaft is no longer valid.

Connect the overload clutch in accordance with the requirements of the PTO drive shaft manufacturer.

Check whether the clearance around the PTO drive shaft is sufficient whatever the operating conditions. The PTO drive shaft will sustain damage if there is too little clearance.

Take into account the maximum drive capacity of your tractor for the gear box of your machine. Only this will prevent damage from overload. Please refer to the machine specifications.

The adjustment of the PTO drive shaft only applies to the current type of tractor. You may need to readjust the PTO drive shaft when you couple the machine to another tractor.

# 8.3 Coupling and uncoupling the machine

## 8.3.1 Connection and disconnection of basic frame or complete machine

**Coupling**

1. *Set the tractor lift arms at equal height.*
2. *Check that the PTO drive shaft slides in and out easily (lubricate!)*
3. *Steer people away from the danger area between the tractor and machine.*
4. *Drive the tractor towards the machine, leaving a space (approx. 25 cm) between the tractor and the machine.*
5. *Secure the tractor so that it won't start up or roll off unexpectedly.*
6. *Connect the PTO drive shaft and (the power supply lines).*
7. *Reverse a little closer to the machine with the tractor. Couple the three-point linkage on the tractor to the machine. Use the three pins and lock them with a linch pin.*
8. *Secure the lift arms of the tractor with the stabilizer bars.*
9. *Raise the machine so that it is in the transport position.* ***Be aware of the max. lifting height.***
10. *Check whether the clearance around the PTO drive shaft is sufficient whatever the operating conditions. The PTO drive shaft will sustain damage if there is too little clearance.*
11. *By performing a visual inspection, check that the three-point linkage is properly locked before driving away.*

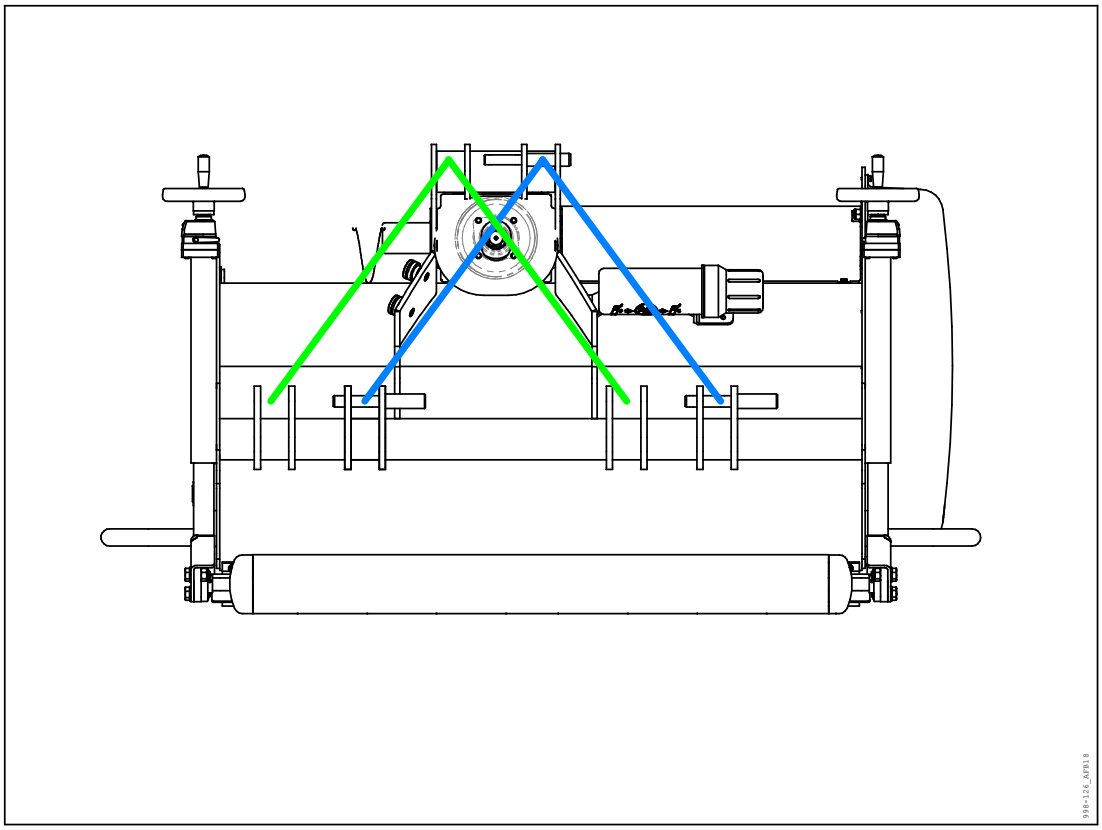
**Uncoupling**

1. *Lower rollers ensuring that digging/scarification rotor can't touch the ground.*
2. *Position the machine on a flat and firm surface.*
3. *Release the pressure from the hydraulic system.*
4. *Disconnect the three-point linkage.*
5. *Drive the tractor forward about 25 cm.*
6. *Secure the tractor and the machine so that they won't start up or roll off unexpectedly.*
7. *Disconnect the PTO drive shaft.*
8. *Place the PTO drive shaft in the appropriate chain.*
9. *Disconnect the power supply lines.*

## 8.3.1.1 Hanging machine off-centre

**Finishing edges. The machine can be hung off-centre for this**

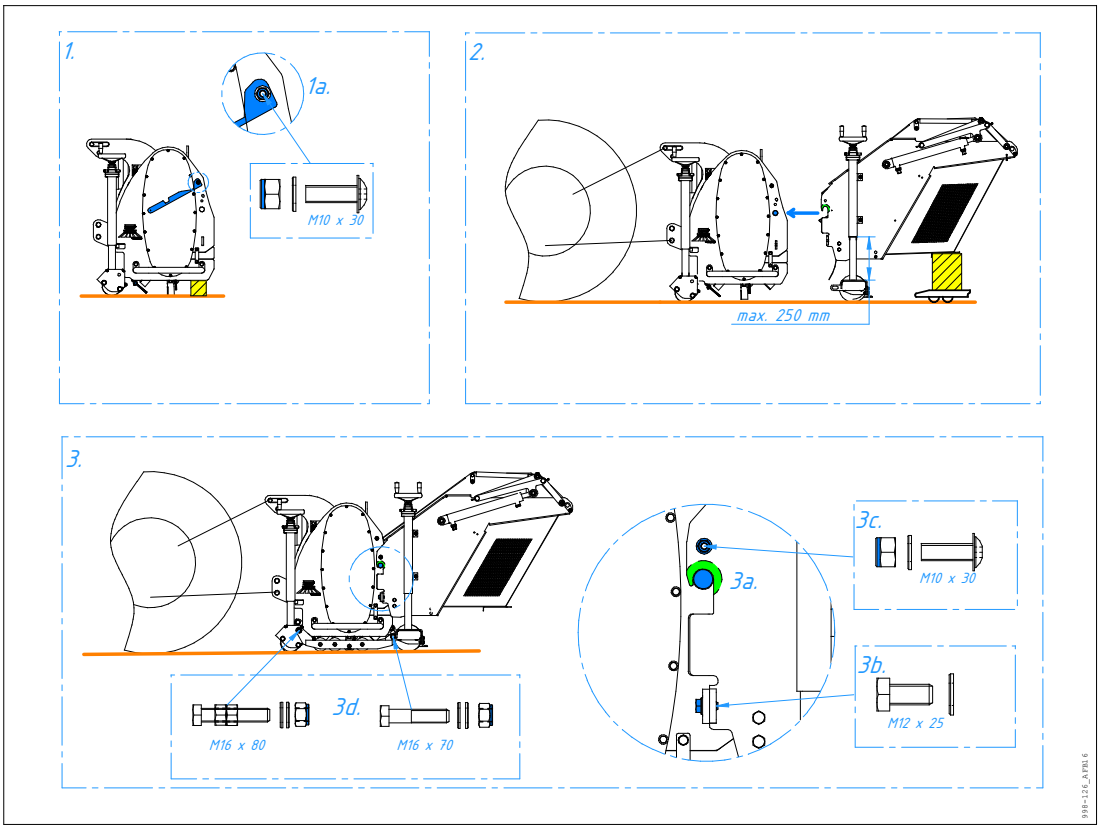
1. *See connecting and disconnecting the machine*
2. *Green is the configuration in which the machine hangs off-centre*



## 8.3.2 Connecting collector box unit to basic frame

**Coupling**

3. *Mount the flap in the top position (1a.)*
4. *Steer people away from the danger area between the tractor and machine.*
5. *Drive the tractor with the basic machine to line up with the machine.*
6. *Allow the basic machine to lower, ensuring that the digging/scarification rotor does not touch the ground*
7. *Secure the tractor so that it won't start up or roll off unexpectedly.*
8. *Push the collector box unit towards the tractor (2.)*
9. *Allow the collector box unit to lower (3a.)*
10. *Secure the bolt connection (3b.+ 3c.)*
11. *Secure the tracking wheels (3d.)* ***(for scarification only)***



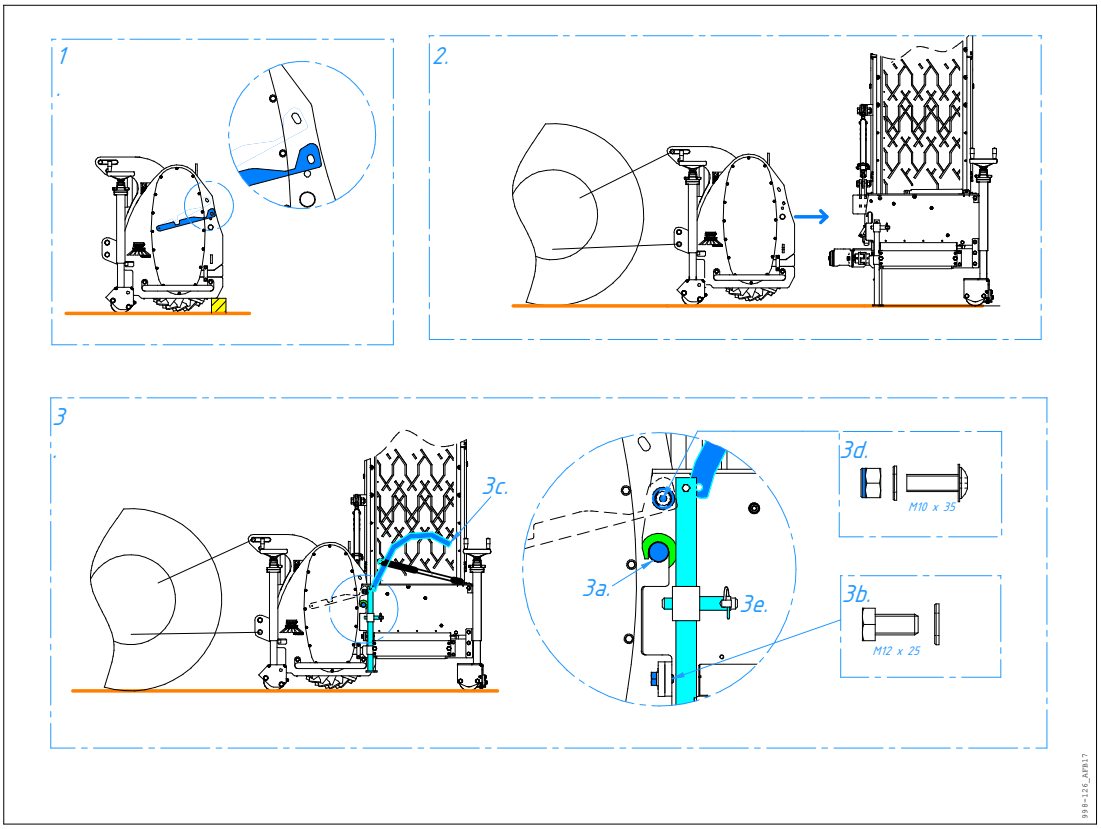

**Uncoupling**

1. *Position the machine on a flat and firm surface.*
2. *Secure the tractor and the machine so that they won't start up or roll off unexpectedly.*
3. *Remove the contour trackers (3d.)* ***(for scarification only)***
4. *Support the collector box unit at the rear (2.)*
5. *Remove the bolt connection (3b. + 3c.)*
6. *Rotate the collector box unit upwards*
7. *Drive the collector box unit backwards*

## 8.3.3 Connecting side arm conveyor to basic frame

**Coupling**

1. *Flap in the lowest position, **do not install yet** (1.)*
2. *Steer people away from the danger area between the tractor and machine.*
3. *Drive the tractor with the basic machine to line up with the machine.*
4. *Allow the basic machine to lower, ensuring that the digging/scarification rotor does not touch the ground.*
5. *Drive the tractor carefully backwards (2.).*
6. *Raise the basic frame upwards slightly (3a.)*
7. *Fasten the bolt connection (3b.)*
8. *Open the soil collection cover (3c.)*
9. *Fasten the flap (1.) together with side arm conveyor with the bolt fastening (3d.)*
10. *Slide legs upwards and secure them (3e.)*




**Uncoupling**

1. *Slide legs downwards and secure them (3e.)*
2. *Position the machine on a flat and firm surface.*
3. *Secure the tractor and the machine so that they won't start up or roll off unexpectedly.*
4. *Open the soil collection cover (3c.)*
5. *Undo the bolt connection (3d.)*
6. *Undo the bolt connection (3b.)*
7. *Allow the basic machine to lower, ensuring that the digging/scarification rotor does not touch the ground*

8. *Drive the tractor forwards*

## 8.4 Transport

*You must collect information on local road traffic regulations*

This information may concern:

- The transport width
- Axle load
- Lighting
- Use of warning signs
- Etc.

Before you go on public roads check the following:

1. *The top link and draw bar pins are secured with a linch pin*
2. *The legs are raised and secured*
3. *The lighting works, is undamaged and easily visible*
4. *The braking system works*
5. *The power cables are connected properly*

**Risk of getting jammed, cut or hit due to lack of stability and overturning**

- Maintain a driving style allowing you to keep the tractor and the coupled machine under control at all times.
- Take into account your personal abilities, road conditions, traffic, your visibility, the weather and the driveability of the tractor and the influence of the coupled machine.
- Lock the draw bars of the tractor to prevent the towed machine from swinging.

**Risk of getting jammed, cut, grabbed and hit as a result of the machine uncoupling accidentally**

- It is forbidden to allow people onto the machine when driving and/or to step onto the machine.

**20% of the unladen weight of the tractor must always rest on the front axle**

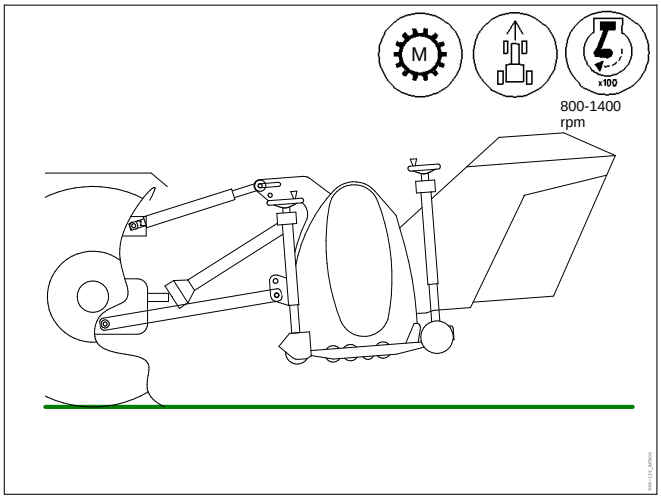
# 8.5 Machine opertion: collector box unit

## 8.5.1 Starting, stopping and unloading

**Starting**

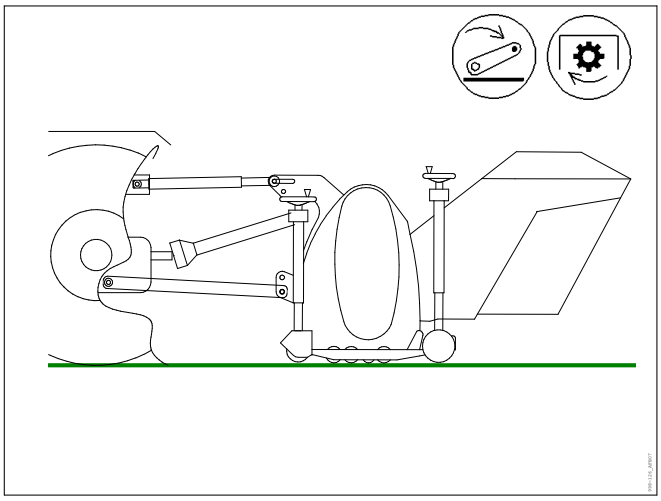
**Standing on or within the range of the machine during work is prohibited.**

**The machine should be brought to a halt when someone is on, or within reach of the working machine.**




**Engage the PTO only if there is nobody in the danger area of the machine.**

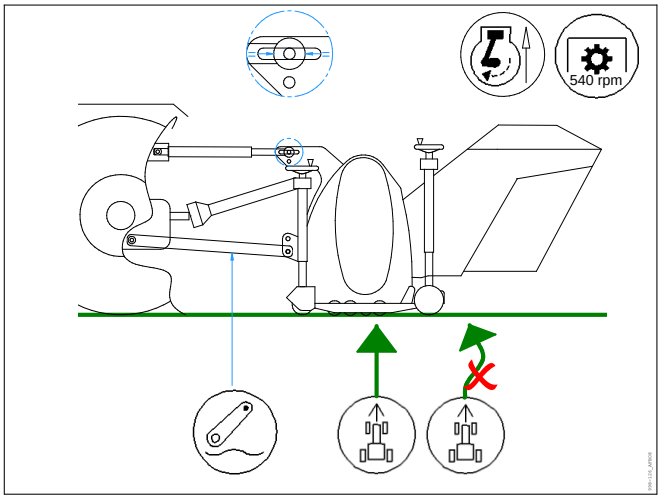
**The machine should be brought to a halt when someone is on, or within reach of the working machine.**



**Damage to turf surface:**

- Knives are bent
- Knives are not aligned
- You are not driving straight

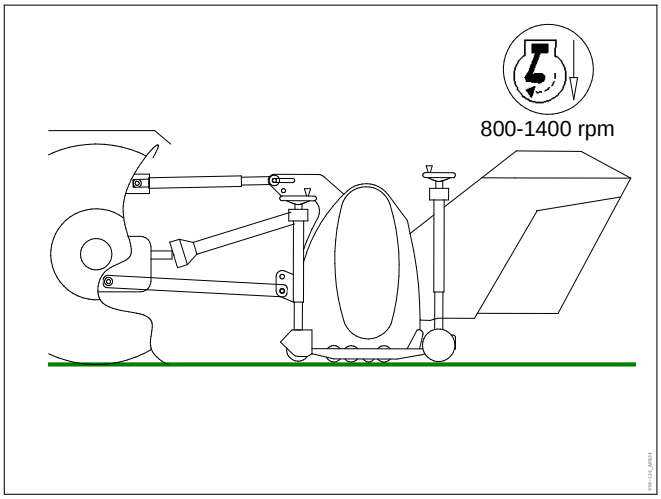
The machine works best in moist soil..



## Stopping

**While working never push in the clutch pedal of the tractor, or let the tractor slip out of gear into neutral.**

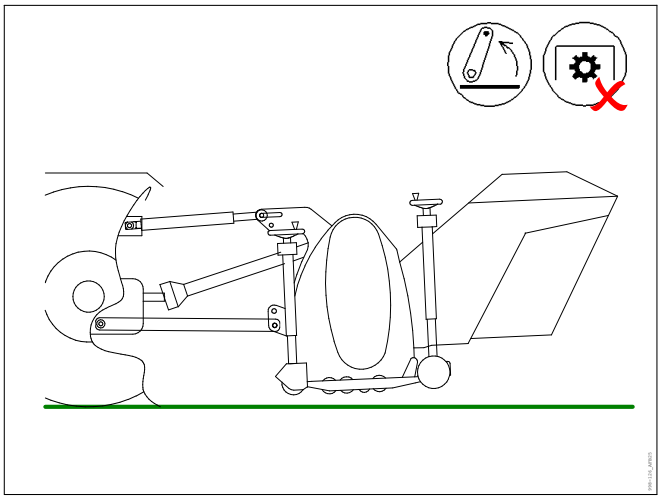
The machine can actually push the tractor forward, which can lead to dangerous situations.




**Take into account the permissible angle rotations of the rotating PTO drive shaft.**

**Turn off the PTO immediately if the lifted machine is running erratically.**

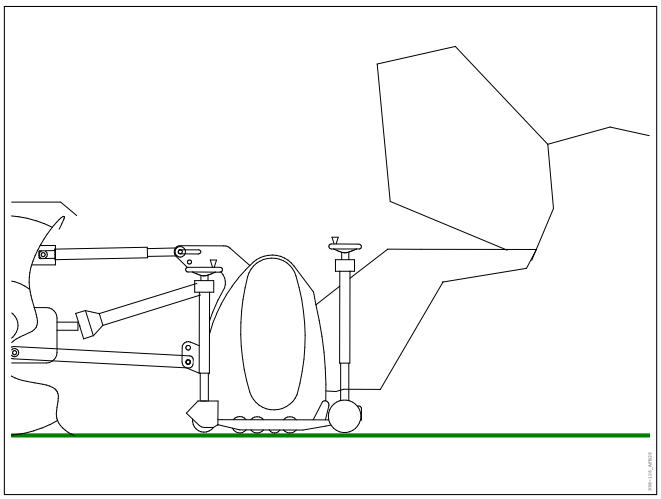
**See operating instructions for the PTO drive shaft.**



## Unloading

**During unloading machine should stand on firm flat soil.**

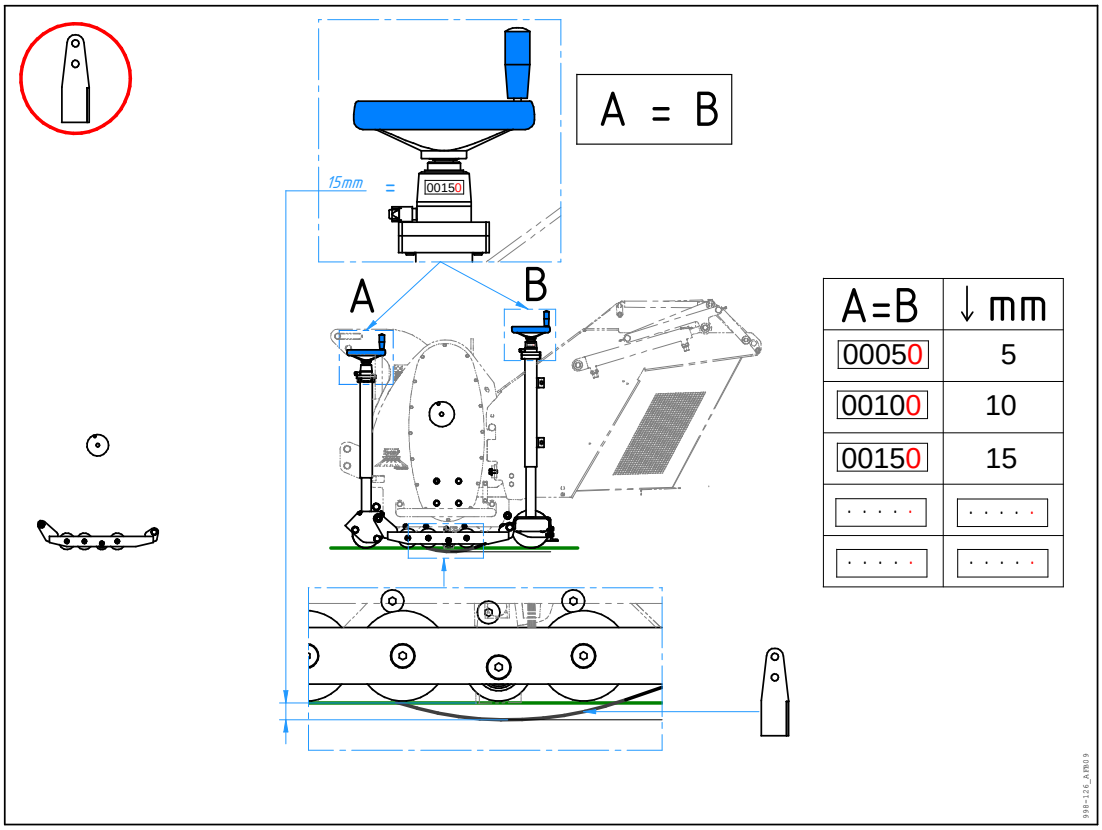
**Never drive with tipped machine**



## 8.5.2 Setting work depth

### *8.5.2.1 Scarification – collector box unit*

1. *Contour trackers mounted*
2. *Front and rear rollers at the same depth*

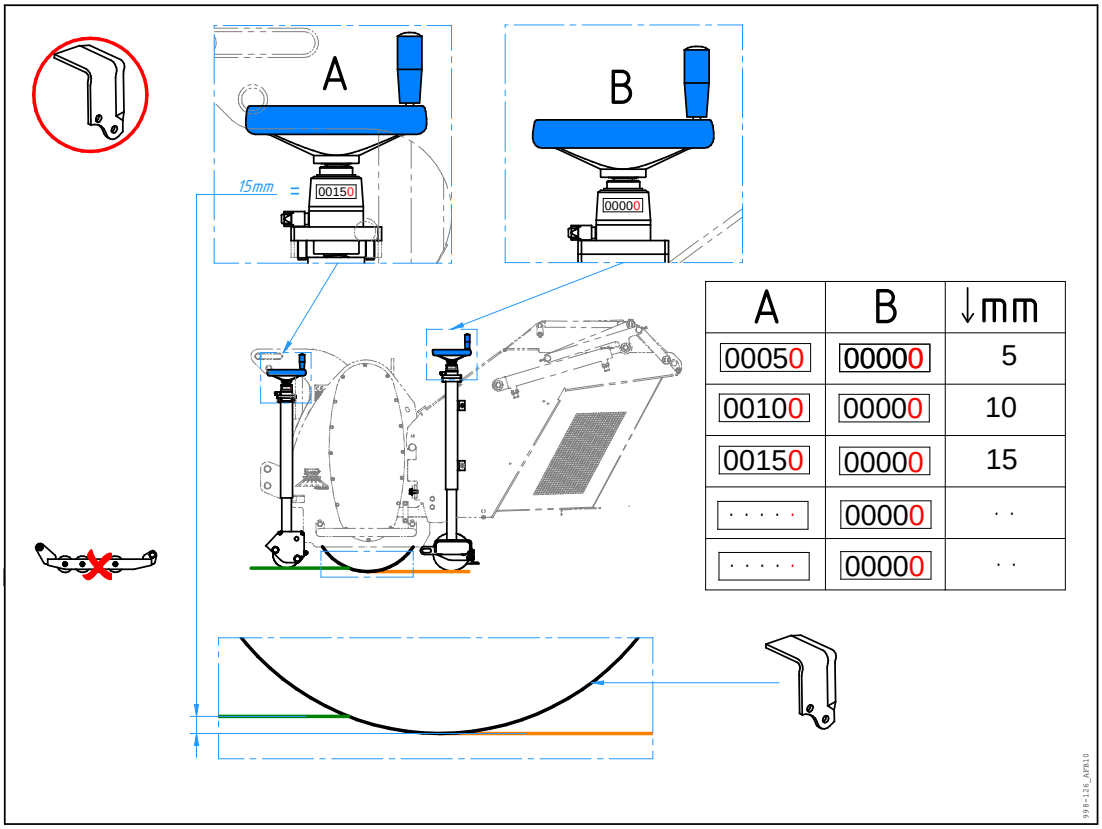



Switch off tractor when setting is changed

For example: Counter position 99950 → 5 mm clearance from digging or scarification rotor

## 8.5.2.2 Fraise mowing – collector box unit

1. *Remove contour trackers*
2. *Set rear roller (B) to zero*
3. *Front roller (A) indicates fraise mowing depth*




Switch off tractor when setting is changed

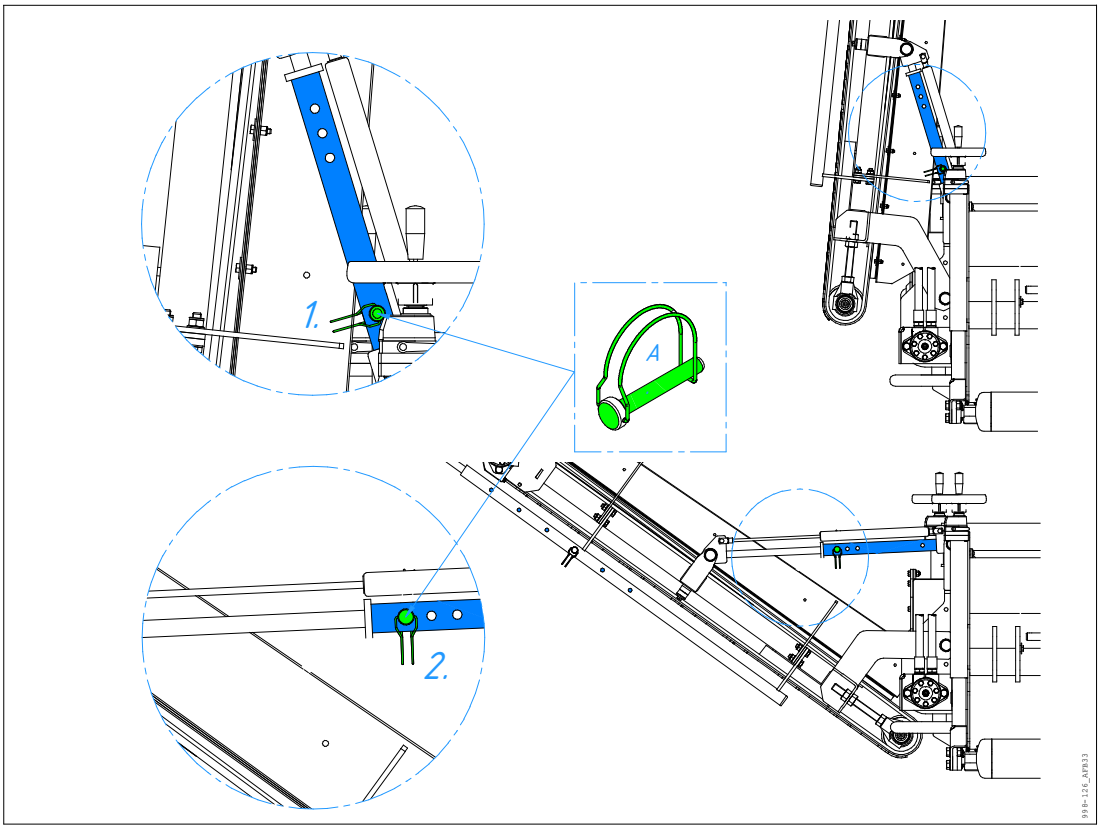
For example: Counter position scarification rotor 99950 → 5 mm clearance from digging or

# 8.6 Machine operation: side arm conveyor

## 8.6.1 Conveyor belt transport position/work position

**Transport position to operating position**

1. *Remove the cotter pin (A.) from position (1.)*
2. *Positioning discharge belt to the correct height (2.) Three positions are possible*
3. *Secure the cotter pin (A.) in one of the three positions (2.)*




**Work position to transport position**

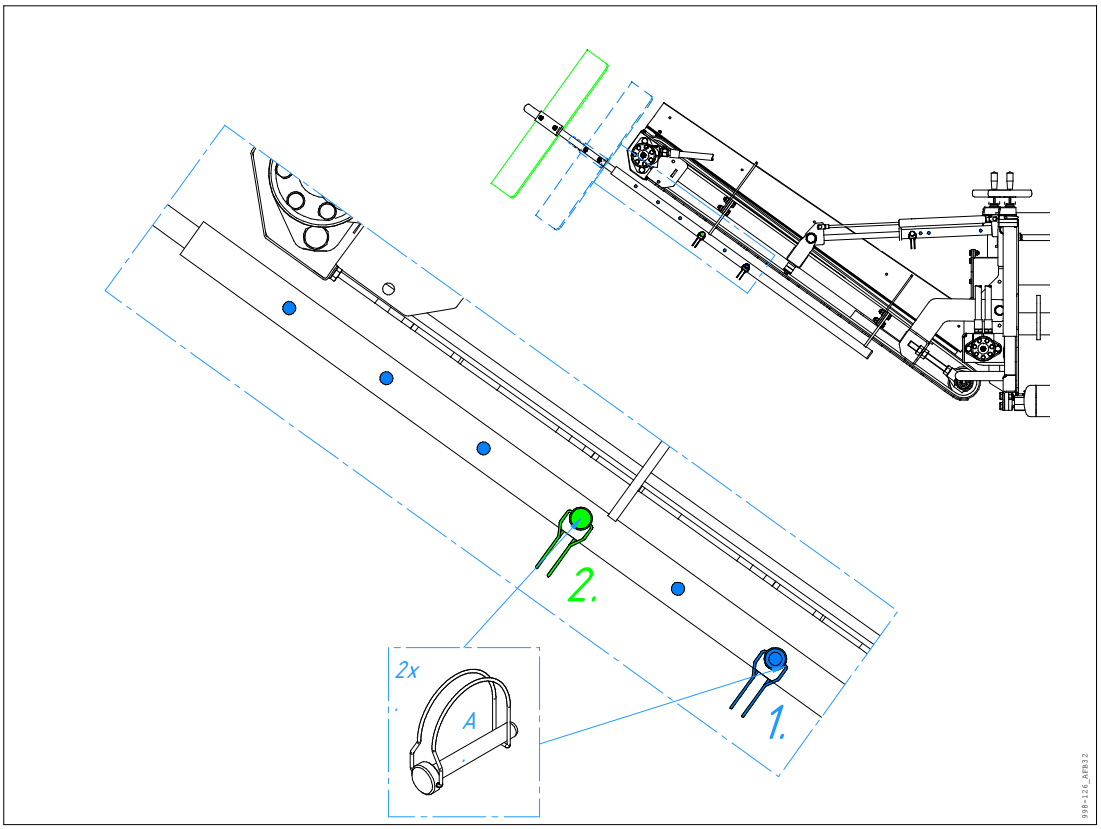
1. *Remove the cotter pin (A.) from position (2.)*
2. *Place the discharge belt in the transport position (1.)*
3. *Secure the cotter pin (A.) in position (1.)*

Switch off tractor when setting is changed

## 8.6.2 Discharge limiter transport position/work position

**Transport position to operating position**

4. *Remove the cotter pin (A.) from position (1.) both left and right. This is the transport position (blue).*
5. *Position the discharge limiter to the correct working position (green). Five positions are possible.*
6. *Secure the cotter pin (A.) in position (2.) both left and right.*



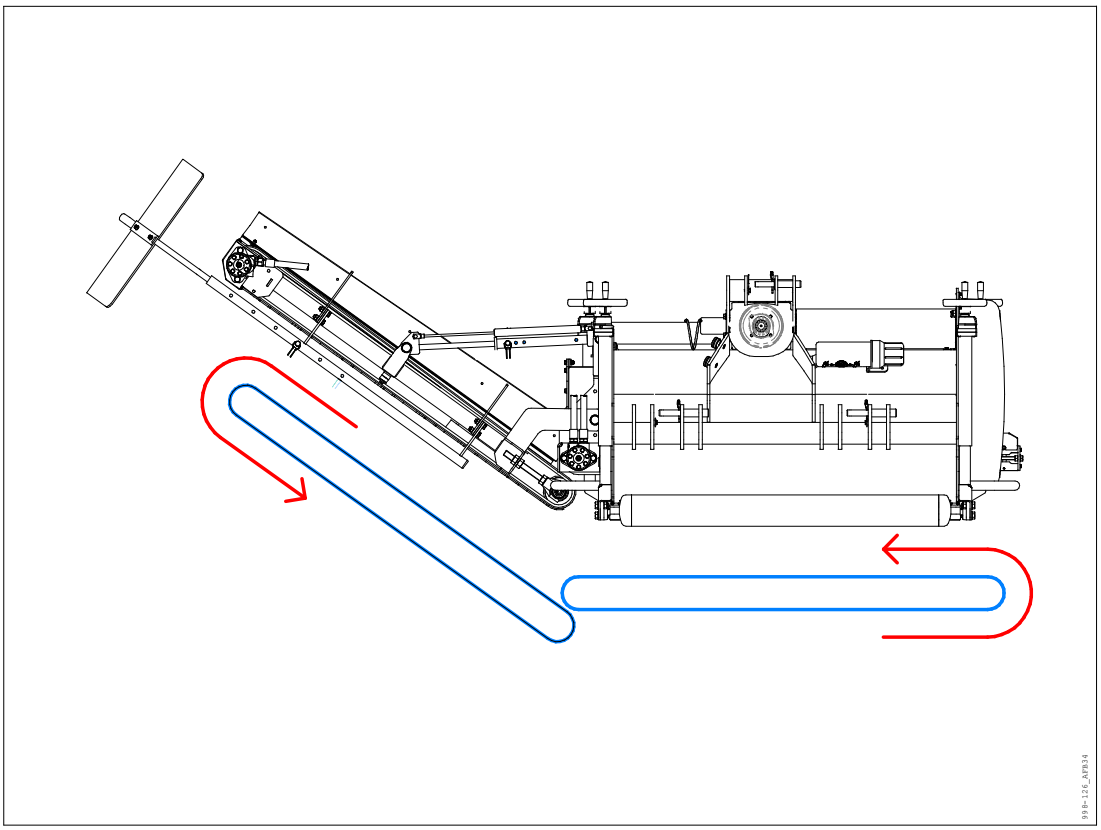

**Work position to transport position**

4. *Remove the cotter pin (A.) from position (2.) both left and right.*
5. *Place the discharge limiter to the in transport position (blue)*
6. *Secure the cotter pin (A.) in position (1.) both left and right.*

Switch off tractor when setting is changed

## 8.6.3 Direction of rotation of conveyor belts

7. *Check that the discharge belts run in the correct direction*



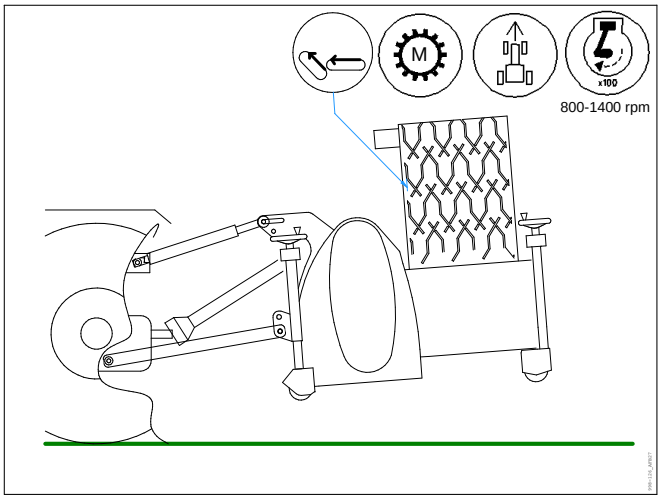
Make sure that the area of the machine is free of people. Only activate the side arm conveyor then

## 8.6.4 Starting and stopping

**Starting**

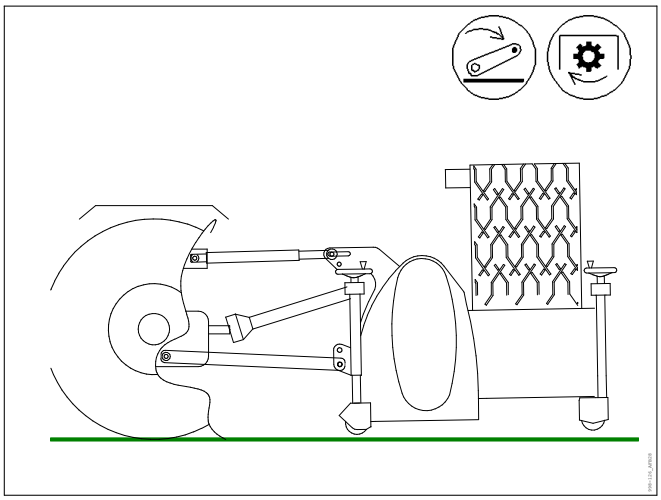
**Standing on or within the range of the machine during work is prohibited.**

**The machine should be brought to a halt when someone is on, or within reach of the working machine.**

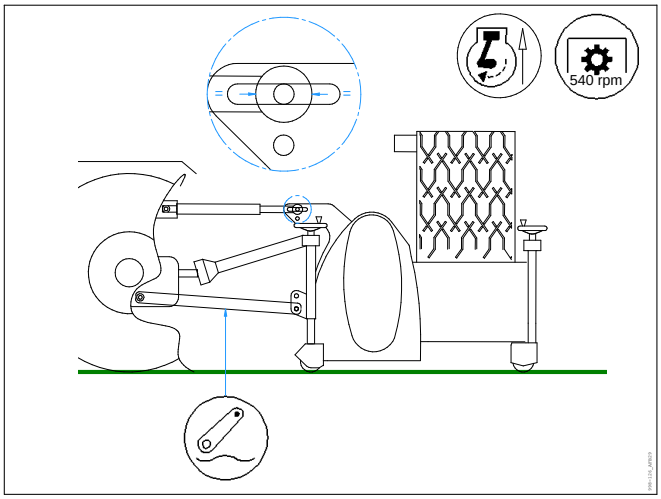



**Engage the PTO only if there is nobody in the danger area of the machine.**

**The machine should be brought to a halt when someone is on, or within reach of the working machine.**

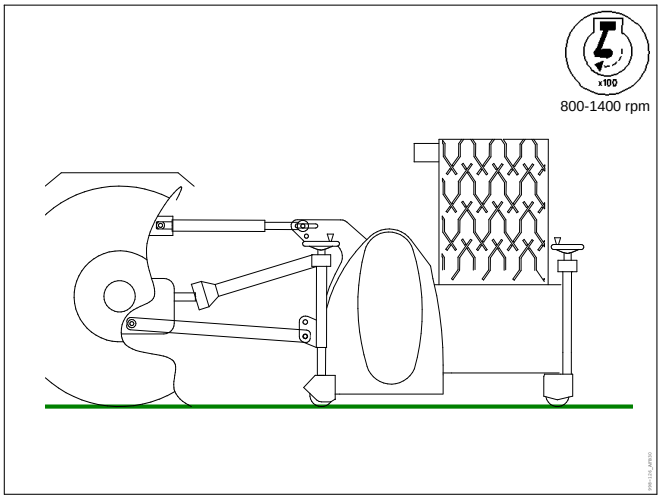


**The cover of the lateral conveyor belt should be closed and locked during work**



## Stopping

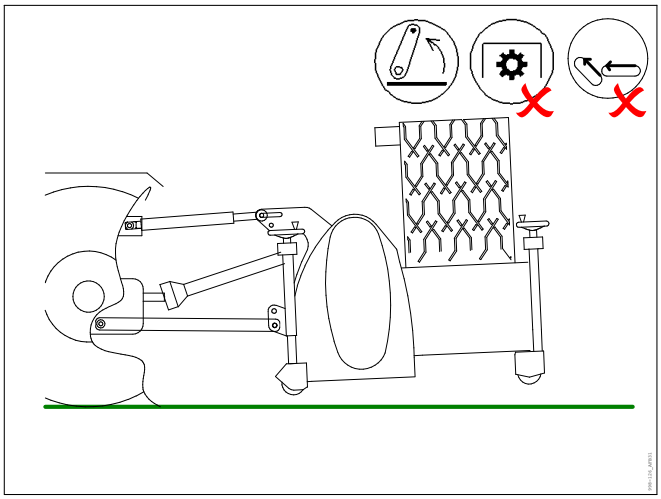
**Keep clearance to trailer. Damage to conveyor belt may be the result.**




**Take into account the permissible angle rotations of the rotating PTO drive shaft.**

**Turn off the PTO immediately if the lifted machine is running erratically.**

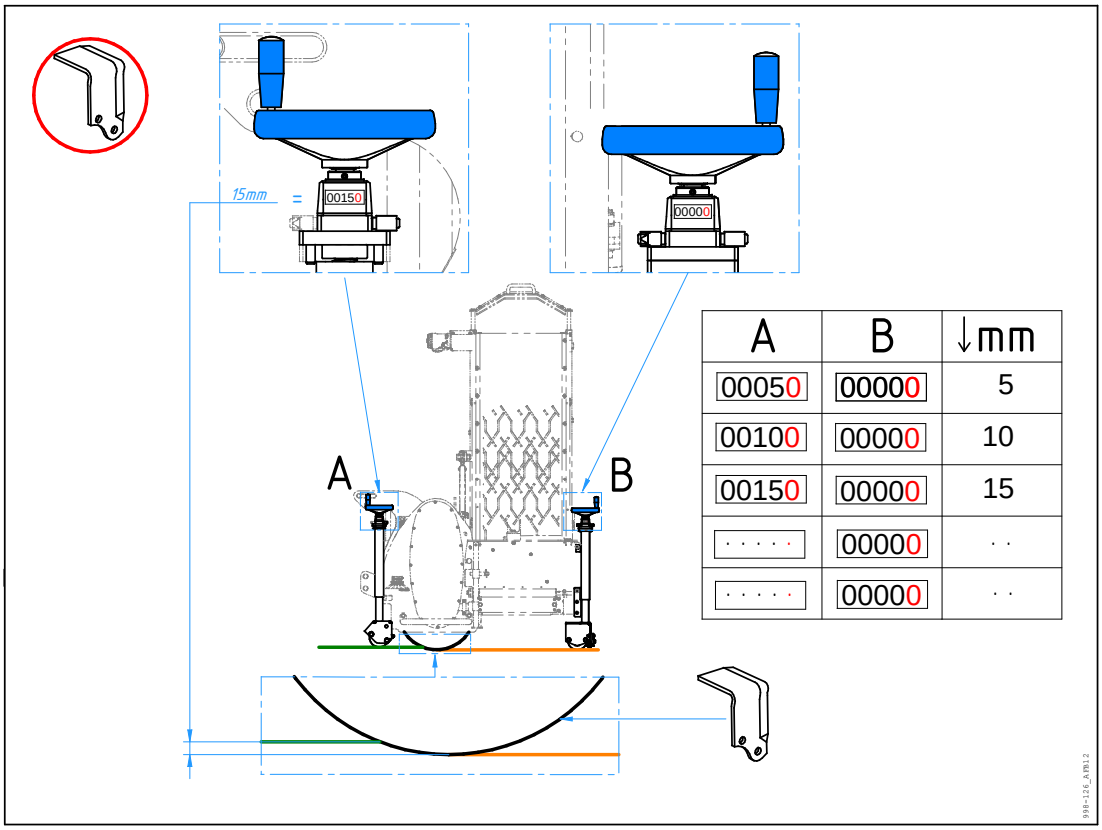
**See operating instructions for the PTO drive shaft.**



## 8.6.5 Setting work depth

### *8.6.5.1 Fraise mowing - side arm conveyor*

8. *Set rear roller (B) to zero*
9. *Front roller (A) indicates fraise mowing depth*



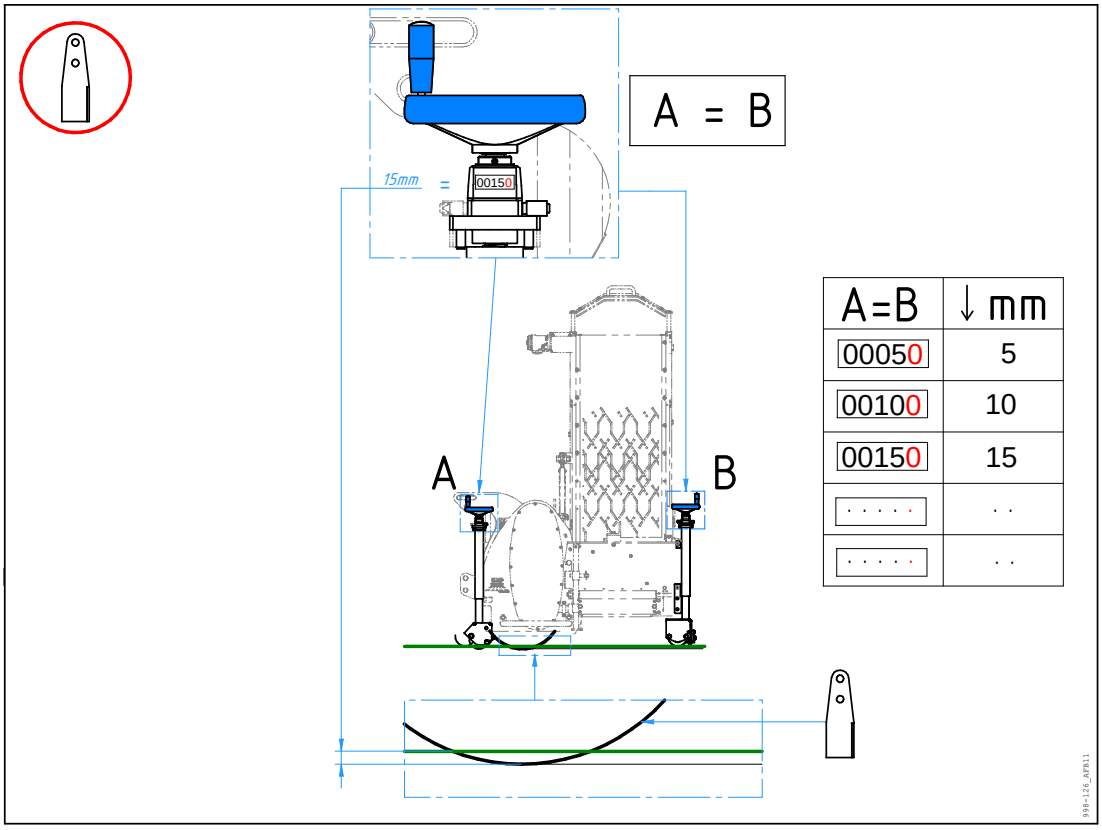

| A | B | ↓mm |
|---|---|---|
| 00050 | 00000 | 5 |
| 00100 | 00000 | 10 |
| 00150 | 00000 | 15 |
| · · · · · | 00000 | · · |
| · · · · · | 00000 | · · |

Switch off tractor when setting is changed

For example: Counter position 99950 → 5 mm clearance from digging or scarification rotor

## 8.6.5.2 Scarification – side arm conveyor

1. *Front and rear rollers at the same depth*




Switch off tractor when setting is changed

For example: Counter position 99950 → 5 mm clearance from digging or scarification rotor

## 8.7 Blocking of the machine by obstacles

The machine may come to a halt if it encounters stones or other obstacles. To prevent damage to the transmission, the PTO drive shaft is fitted with an overload protection.

**Removing the obstructions is not allowed**

- When the machine is moving;
- As long as the tractor engine is running and the PTO is engaged;
- When the tractor is not secured against accidental roll off by means of the handbrake;
- The lifted machine is not clearly supported.

**Torque limiter**

When the torque limiter is engaged, one hears a rattling noise.

1. *Immediately disengage the PTO drive shaft.*
2. *Fully raise the machine.*
3. *Place the support legs under the machine.*
4. *Place the machine on the ground and turn off the tractor engine.*
5. *Remove the obstacle from the ground or the machine.*
6. *Resume working.*

# 9 Maintenance

## 9.1.1 General maintenance and lubrification schedule

| Item | Daily | Maintenance interval in months - (hours) | |
|---|---|---|---|
| | | 1 – (100) | 12 - (500) |
| Digging blades | ● | | |
| Scarifying blaes | ● | | |
| Support rollers | ● | | |
| Screening caps | ● | | |
| PTO drive shaft protection | ● | | |
| Warning stickers | ● | | |
| Hydraulic connections | ● | | |
| Scrapers | ● | | |
| Conveyor belts | ● | | |
| Gear box oil level | ● | | |
| Change gear box oil [1)] | | | ● |
| Check bleed nipples [2)] | | ● | |
| Lubricate PTO drive shaft | | See PTO drive shaft manual | |

1) The first change after 50 hours.
2) In dusty conditions maintenance must take place at shorter intervals.

**Pay additional attention to the PTO drive shaft:**

- Keep the PTO drive shaft clean. Lubricate sliding parts so that the PTO drive shaft can slide in and out easily.

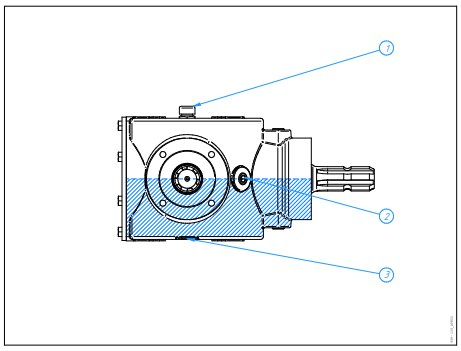
Avoid dangerous situations. Repair broken or worn parts before using the machine.

## 9.1.2 Gearbox

### 9.1.2.1 Check the oil

1. *Set the gear box horizontally.*
2. *The oil level should come to the lower side of the level plug*

- 1: Vent plug / filler plug
- 2: Level plug
- 3: Drain plug



### 9.1.2.2 Change the oil

**Draining the oil**

1. *Place a receiving pan under the gear box*
2. *Check that the vent plug is working*
3. *Open the drain plug*

- 1: Vent plug / filler plug
- 2: Level plug
- 3: Drain plug

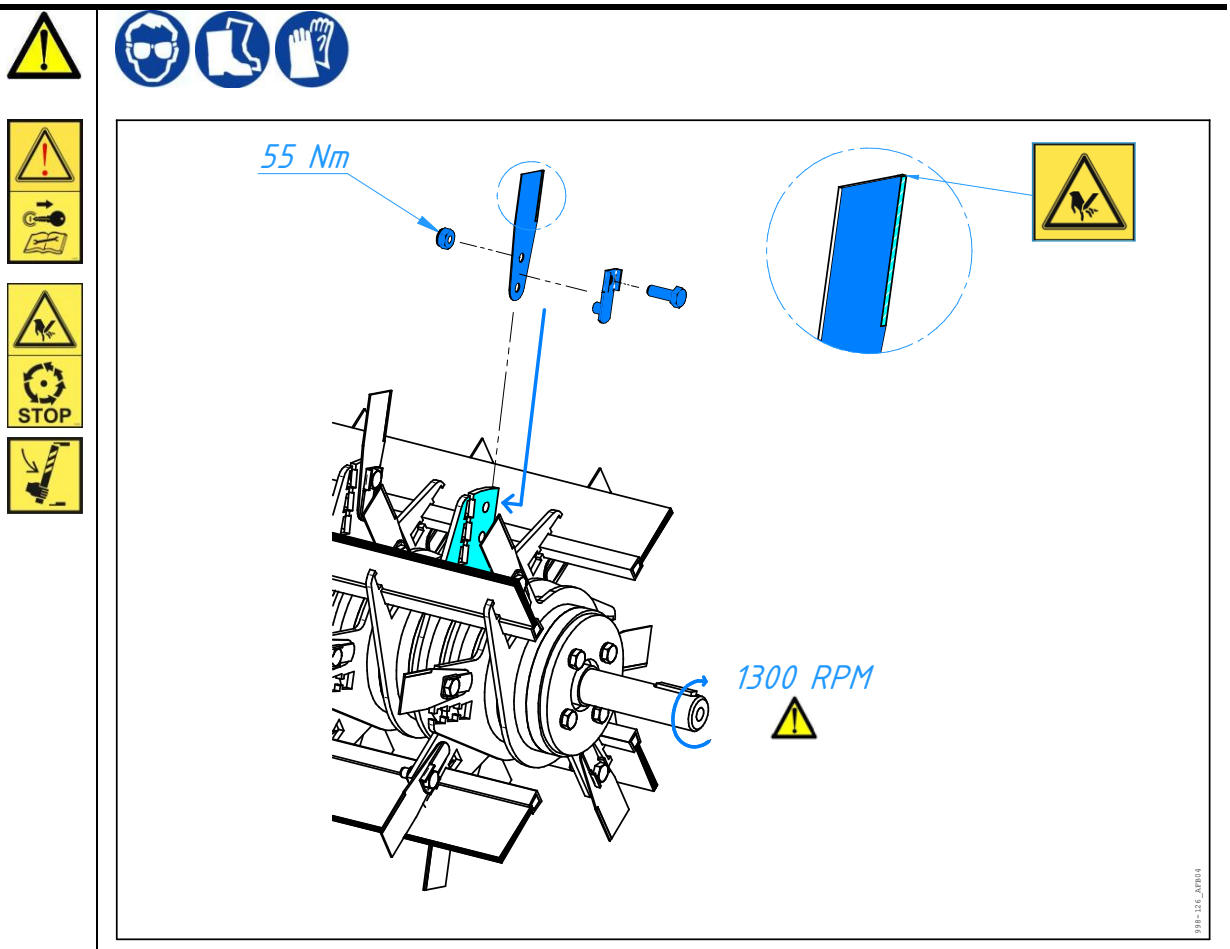
Dispose of the waste oil in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

**Filling up with oil**

1. *Turn back the drain plug and fill up with: **
2. *Turn back the vent plug*

*** 1.70 L Mobilube HD-N 80W140**

## 9.1.3 Changing scarifying blades



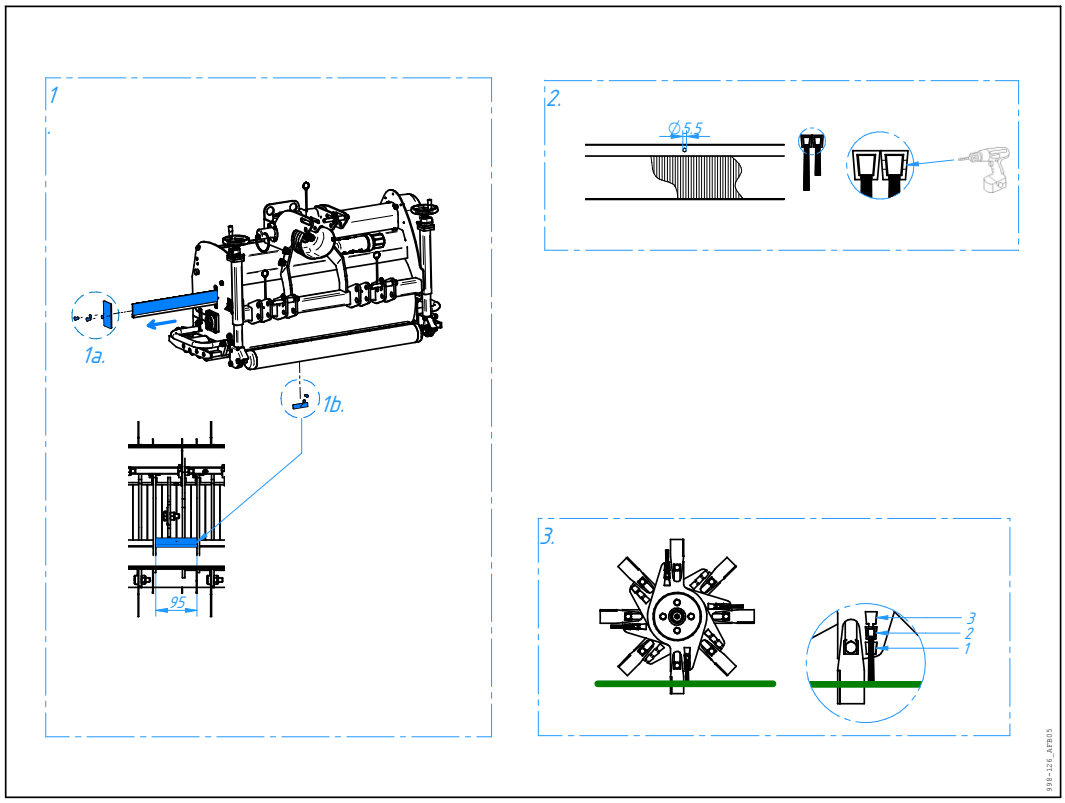

Dispose of the worn parts in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.4 Changing brushes


1. *Remove plate (1a.) and strips (1b.)*
2. *Remove the brushes. Use opening in side wall.*
3. *Use old brush as a mould to drill a hole in the new brush (2.)*
4. *Mount new brushes in position 1/2/3 (3.), secure with strips (1b.)*

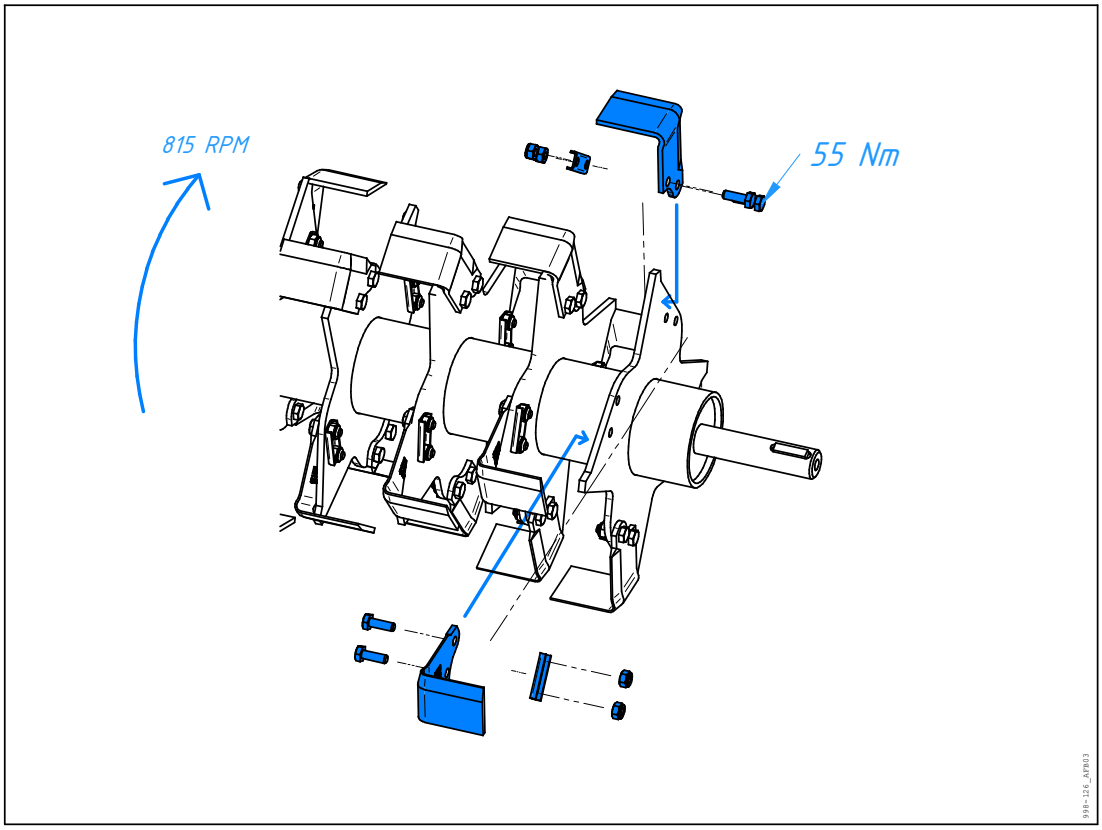

Position 1/2/3 depends on scarification depth and wear of brushes




Dispose of any worn components in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.5 Changing the digging blades



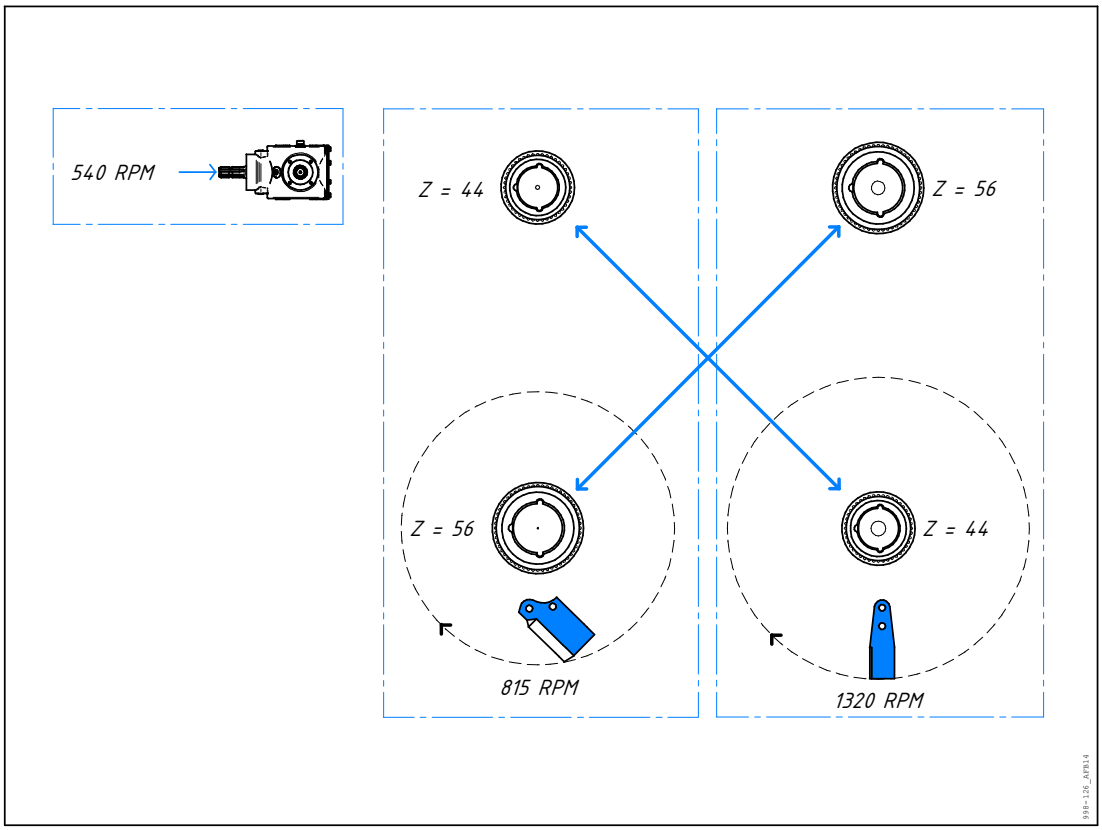

Dispose of the worn parts in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.6 Digging and scarification rotor

### *9.1.6.1 Assembly of timing belt pulleys*


1. *Changing timing belt pulleys when changing from digging to scarifying rotor and vice versa.*
2. *Note the **number of teeth** of the timing belt pulleys (see figure)*
3. *Assembly and disassembly of clamping bush, see appendix*

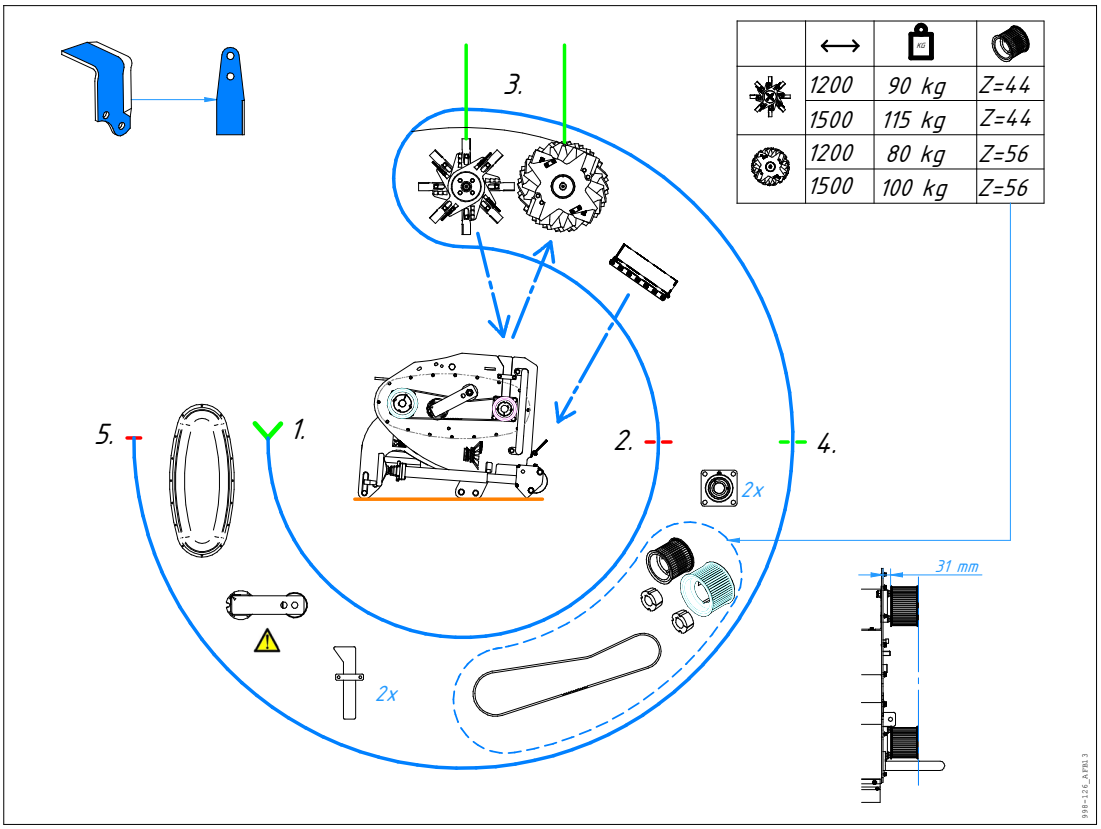




Dispose of any worn components in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.6.2 Switching digging rotor for scarification rotor

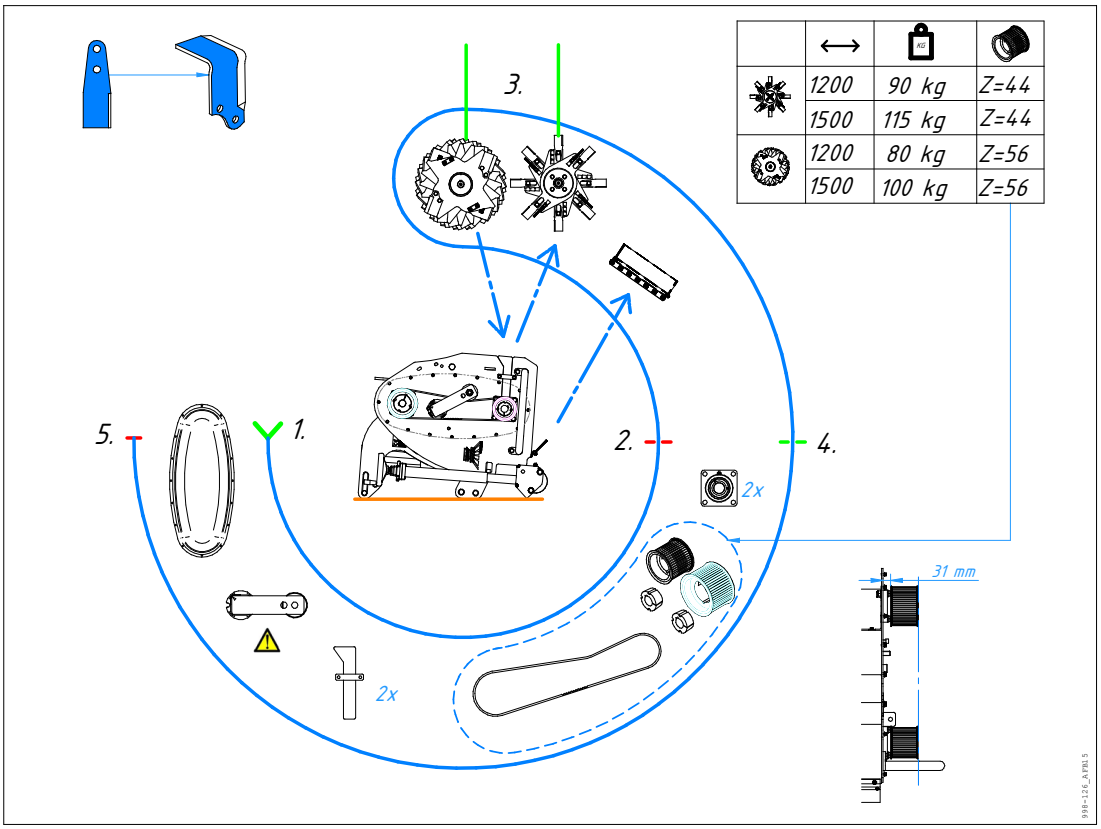
i. *[1-2] Disassemble.* ***Attention: the belt tensioner is under tension.*** *Assemble and disassemble the belt tensioner, see the appendix. The components inside the dashed line must be disassembled at the same time.*
ii. *[3] Change using lifting equipment. Mount front brush.*
iii. *[4-5] Assemble. The components inside the dashed line must be assembled at the same time.*




For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.6.3 Switching scarification rotor for digging rotor


i. *[1-2] Disassemble.* ***Attention: the belt tensioner is under tension.*** *Assemble and disassemble the belt tensioner, see the appendix. The components inside the dashed line must be disassembled at the same time.*
ii. *[3] Change using lifting equipment. Remove front brush*
iii. *[4-5] Assemble. The components inside the dashed line must be assembled at the same time.*




For reasons of quality and safety, use original Imants parts exclusively.

## 9.1.7 Conveyor belts

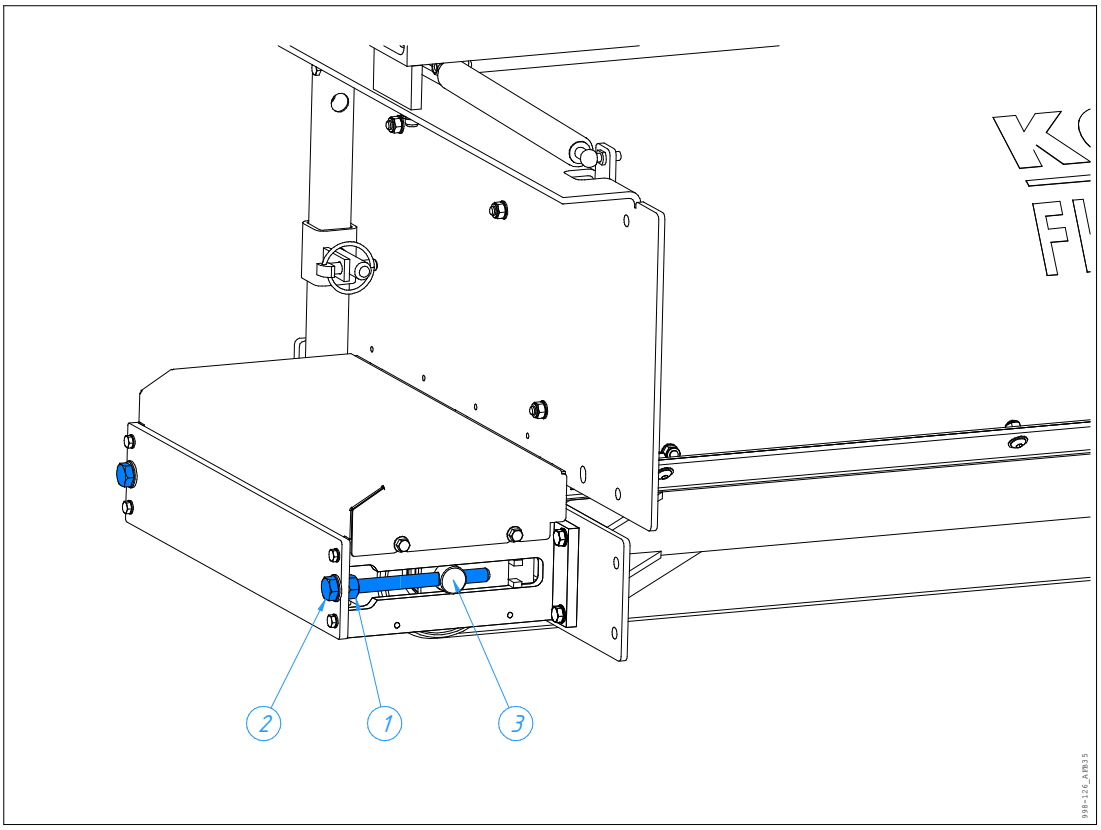
### *9.1.7.1 Tensioning lateral conveyor*








3. *Undo nuts (1) on both sides*
4. *Tension the tensioning roller (3) evenly with both bolts (2)*

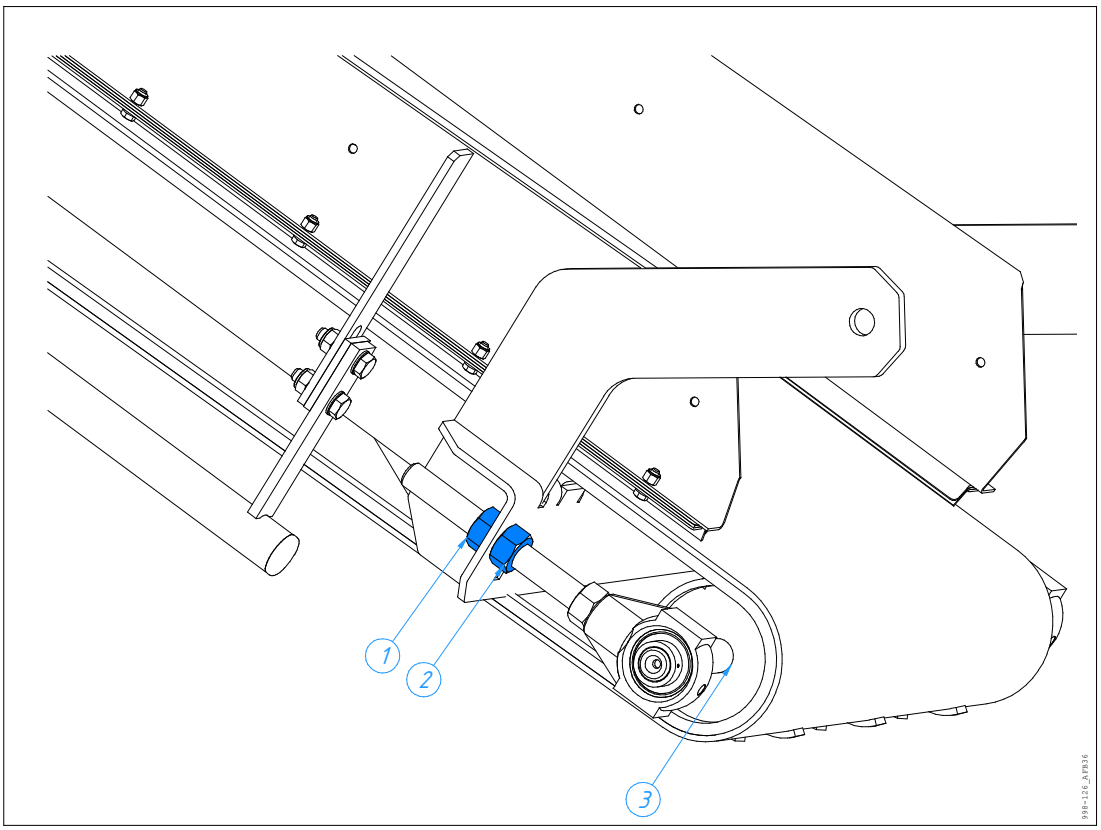





Switch off tractor when setting is changed

## 9.1.7.2 Tensioning supply conveyor

5. *Undo nuts (1) on both sides*
6. *Tension the tensioning roller (3) evenly with both nuts (2)*


Switch off tractor when setting is changed

## 9.1.8 Cleaning

1. *Check hydraulic hoses and electrical cables carefully.*
2. *Never treat hydraulic hoses and electric cables with gasoline, benzene, petroleum or mineral oils.*
3. *Lubricate the machine after cleaning. Especially after cleaning with a high-pressure cleaner/steamer or fat-soluble agents.*
4. *Observe the legal requirements for the use and disposal of cleaning agents.*

When cleaning with a high-pressure cleaner, you must absolutely follow the instructions below:

1. *Maximum pressure 100 bar*
2. *Maximum temperature 50° Celsius*
3. *Do not clean any electrical components*
4. *Never direct the flow of the high-pressure cleaner or steamer directly at the stickers, lubricating points and bearings.*
5. *Keep a minimum distance of 600 mm between the high-pressure cleaner/steamer and the machine.*
6. *Observe the safety regulations for the use of high-pressure cleaners.*

**Never clean a machine in operation. Risk of death or serious injury.**

# 10 Dismantling

When dismantling the machine, the parts can be sorted as follows:

1. Metals
2. Plastics
3. Oils and greases

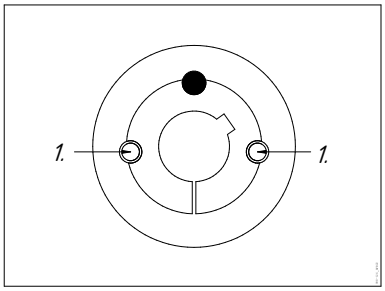
Dispose of the sorted materials in an environmentally responsible manner. To do so, follow the statutory regulations in force where you are.

# 11 Annexes

## *11.1 Installing/removing clamping bush*

### Installation of clamping bush type 1008-3020:

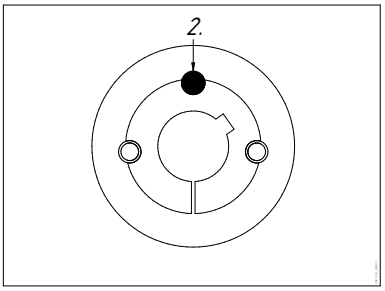
1. *Clean the following surfaces before installing the clamping bush.*
   a. *Bore/hole*
   b. *Taper clamping bush*
   c. *Tapered ring*
   d. *Shaft (ensure no burrs)*
2. *Position the clamping bush in such a way in the pulley that all the holes line up. Note: half-threaded holes must be opposite unthreaded holes!*
3. *First tighten the adjustment bolts (1) by hand, do not yet tighten fully.*
4. *If a spline is used, begin by placing this in the slot, then place the pulley at the correct distance on the shaft.*
5. *Now tighten the adjustment bolts (1) one by one to the* ***correct torque*** *(see table below).*
6. *After running for ½ to 1 hour, check the torque again.*




| Type | Torque (Nm) |
|---|---|
| 1008<br>1108 | 6 |
| 1210<br>1215 | 20 |
| 1310<br>1315 | |
| 1610<br>1615 | |
| 2012 | 30 |
| 2517 | 50 |
| 3020<br>3030 | 90 |

### Disassembly of clamping bush type 1008-3020:

1. *Undo adjustment screws and remove completely.*
2. *Then put one adjustment screw in the blind hole. (2)*
3. *Turn this adjustment screw evenly until the ring loosens.*
4. *Both the clamping bush and pulley are now loose and can be removed from the shaft.*



## *11.2 Installing/removing belt tensioner*

### Installing belt tensioner SE-38:

| | |
|---|---|
| 7. *Fasten tensioner on side wall*<br>8. *Tighten Bolt A by hand*<br>9. *Use a wrench to turn the outer housing in the correct direction*<br>10. *Position the opening (P) above the side wall of the threaded hole*<br>11. *Tighten Bolt A to **210 Nm***<br>12. *Fasten bolt in opening (P)* |  |

### Removing belt tensioner SE-38:

| | |
|---|---|
| 5. *Remove bolt from opening (P)*<br>6. *Carefully undo Bolt A slightly, the tensioner will loosen*<br>7. *Remove tensioner*<br><br>**Element is under tension. Pinching hazard for hands or fingers.** | |