



RAUCH

wir nehmen's genau

INSTRUCTION MANUAL



**Please read carefully
before using the ma-
chine.**

Keep for future reference.

This instruction manual/assembly instruction is to be considered as part of the machine. Suppliers of new and second-hand machines are required to document in writing that the instruction manual/assembly instruction was delivered with the machine and handed over to the customer.

K51

Original manual

5900364-C-en-0116

Preface

Dear customer

By purchasing the K 51 combi spreader, you have shown confidence in our product. Thank you very much! We want to justify this confidence. You have purchased a powerful and reliable machine.

However, in case unexpected problems arise: Our customer service is always there for you.



Please read this operator's manual carefully before commissioning the K 51 combi spreader and follow the instructions given.

This operator's manual gives detailed instructions on how to operate the machine, as well as valuable information on assembly, maintenance, and care.

This manual may also describe equipment that is not included in your machine.

Please note that damage caused by incorrect operation or improper use is not covered by warranty claims.

NOTE

Please enter the type and serial number as well as the year of construction of your machine here.

You can find this information on the nameplate and/or the frame.

Please always state this information when ordering spare parts or accessories, and in case of complaints.

Type

Serial number

Year of construction

Technical improvements

We are continuously improving our products. Therefore, we reserve the right to make any improvements and changes to our machine that we consider necessary without notice. This constitutes no obligation to make such improvements or changes on machines that have already been sold.

We will be pleased to answer any other questions that you might have.

Yours sincerely

RAUCH

Landmaschinenfabrik GmbH

Preface

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1 Intended use and EU declaration of conformity

1.1 Intended use

The K 51 combi spreader may only be used in accordance with the information given in this operator's manual.

The K 51 combi spreader is constructed in accordance with its intended use and may be exclusively used for the points listed below:

- in winter road maintenance for spreading material that can be delivered by chute, such as grit (3/5), sand and oil binding agents,
- in agriculture for spreading granulated fertiliser and seeds.

Any use outside these definitions is considered misuse. The manufacturer is not liable for any damage which results from misuse. The operator bears the entire risk.

The intended use also includes compliance with the operating, maintenance, repair and servicing conditions prescribed by the manufacturer. For replacement purposes, only original spare parts by the manufacturer may be used.

The K 51 combi spreader may only be used, maintained and repaired by instructed and trained individuals who are familiar with the characteristics of the machine and who are aware of the risks.

Important information on the operation and safe handling of the machine is provided in this operator's manual. The manufacturer also attaches warning notes and warning symbols to the machine. All such information must be followed when using the machine.

Moreover, the relevant accident prevention regulations and other generally recognised safety, occupational health, and road traffic regulations must be strictly observed when using the machine.

Unauthorised modification to the combi spreader are inadmissible. They will exempt the manufacturer from liability for any damage resulting therefrom.

In the following chapters, the combi spreader will be referred to as “**machine**”.

Foreseeable misuse

The manufacturer provides warning notes and symbols on the K 51 combi spreader relating to foreseeable misuse. These warning notes and symbols must be observed under all circumstances in order to prevent the K 51 combi spreaders from being used for any other purpose than that specified in the operator's manual.

1 Intended use and EU declaration of conformity

1.2 Declaration of conformity

In accordance with 2006/42/EC, Appendix II, No. 1.A

**Rauch - Landmaschinenfabrik GmbH,
Landstrasse 14, 76547 Sinzheim, Germany**

We hereby declare that the product:

Combi spreader

Type: **K 51**

complies with all relevant regulations of the EC Machinery Directive 2006/42/EC.

Technical documents compiled by:

**Rauch - Design Management
Landstrasse 14, 76547 Sinzheim, Germany**

Norbert Rauch

(Norbert Rauch - Managing director)

2 User instructions

2.1 About this operator's manual

This operator's manual is an **integral part** of the machine.

The operator's manual contains important information for a **safe, appropriate** and economic **use** and **maintenance** of the machine. Adherence to this operator's manual helps to **avoid risks**, to reduce repair costs and downtime, and to increase the machine's reliability and service life.

The complete documentation, comprising this operator's manual and any other documents provided, must be kept in an easily accessible location close to where the machine is used (e.g. in the tractor).

If the machine is sold, the operator's manual must also be passed to the new owner.

The operator's manual is intended for the operator of the machine and anyone involved in operating and maintaining it. It must be read, understood, and applied by all persons entrusted with the following work on the machine:

- Operation,
- Maintenance and cleaning,
- Repairing faults.

In particular, the following is to be observed:

- The chapter on safety,
- The warning instructions in the text of the individual chapters.

The **operator's manual does not replace** your **own responsibility** as the operator and operating personnel of the control unit.

2.2 Structure of the operator's manual

The operator's manual is divided into six key areas in terms of content:

- User instructions
- Safety instructions
- Machine data
- Instructions on the operation of the machine,
 - Transportation
 - Commissioning
 - Spreading operation
- Instructions on detecting and rectifying faults
- Maintenance and repair instructions

2.3 Notes on text descriptions

2.3.1 Instructions and procedures

Steps that the operator must carry out are shown as a numbered list.

1. Instruction for action step 1
2. Instruction for action step 2

Instructions involving only one step are not numbered. The same applies for action steps that do not have a specific sequence.

A bullet is placed in front of these instructions:

- Handling instruction

2.3.2 Listings

Listings without a specific sequence are shown with bullet points (level 1) and dashes (level 2):

- Property A
 - Point A
 - Point B
- Property B

2.3.3 References

References to other text passages in the document are indicated with section number, headline text and page number:

- **Example:** See also Chapter [3: Safety page 5](#).

References to other documents are indicated as note or instruction without exact chapter or page number:

- **Example:** Please also observe the instructions contained in the manual for the universal drive shaft.

3 Safety

3.1 General Information

The chapter **Safety** contains basic warning notes as well as working and traffic safety instructions for the usage of the installed machine.

The adherence to the instructions in this chapter is a prerequisite for the safe handling and trouble-free operation of the machine.

There are additional warnings in the other chapters of this operator's manual, which must also be observed. The warning instructions are given before the text for the relevant actions.

Warning notes on the supplier components can be found in the respective supplier documentation. These warning instructions must also be observed.

3.2 Significance of warnings

The warning instructions in this manual have been structured according to the degree of danger and the probability of their occurrence.

Danger signs and symbols inform the user about other construction-related and unavoidable residual risks that may be encountered when operating the machine. The warning notes used are structured as follows:

Signal word	
Symbol	Explanation
Example	
▲ DANGER	
	<p>Risk to life if warning is not observed</p> <p>Description of the danger and possible consequences.</p> <p>Ignoring these warnings will result in very serious or even fatal injury.</p> <p>▶ Measures to prevent the danger.</p>

Warning severity level

The degree of danger is indicated by the signal word. The levels are classified as follows:

▲ DANGER



Type and source of danger

This warning warns of a danger posing an immediate threat to the health and life of persons.

Ignoring these warnings will result in very serious or even fatal injury.

- ▶ Always observe the measures described to prevent this danger.
-

▲ WARNING



Type and source of danger

This warning warns of a possible dangerous situation for the health of persons.

Ignoring these warnings will result in very serious injury.

- ▶ Always observe the measures described to prevent this danger.
-

▲ CAUTION



Type and source of danger

This warning warns of a potentially dangerous situation for personal health or of material and environmental damage.

Ignoring this warning can result in injuries and damage to the product or the general area.

- ▶ Always observe the measures described to prevent this danger.
-

NOTICE

General information containing application tips and particularly useful information, but which constitutes neither warnings nor hazards.

3.3 General information on the safety of the machine

The machine is constructed in accordance with the state of the art and the recognized technical regulations. However, its usage and maintenance may cause danger to the health and life of the operator or third parties and/or the impairment of the machine and other material assets.

For this reason, the machine may only be operated

- when it is in a proper and roadworthy condition,
- in awareness of safety and dangers.

Therefore, it is imperative that you have read and understood the contents of the operator's manual. You must be familiar with the applicable accident protection regulations and the generally accepted regulations for safety, occupational health, and road traffic, and apply these rules as required.

3.4 Instructions for the operator

It is the operator's responsibility that the machine is used as intended.

3.4.1 Personnel qualifications

Before starting any work on or with the machine, all persons who are involved in operation, maintenance or repair must have read and understood this operator's manual.

- The machine may only be operated by instructed personnel authorized by the owner.
- Members of staff who are still in training or subject to coaching/instructions may only work on the machine when an experienced person is present.
- Only qualified maintenance staff may implement maintenance and service work.

3.4.2 Instruction

Distribution partners, works representatives or employees of RAUCH will instruct the operator regarding the operation and maintenance of the machine.

The owner must ensure that newly recruited operating and maintenance personnel are instructed to the same extent and with the same care with regard to the operation and repair of the machine in compliance with this operator's manual.

3.4.3 Accident prevention

Safety and accident prevention regulations are governed by law in every country. The operator of the machine shall be responsible for the compliance with these regulations applicable in the country of use.

The following instructions must also be observed:

- Never let the machine run without supervision.
- Do not ride on the machine while it is working or being transported (**no passengers**).
- Do **not** use machine parts as climbing aids.
- Always wear tight fitting clothes. Do not wear work clothes with belts, loose threads or other items that could snag.
- Follow the manufacturer's warning notes when handling chemicals. You may have to wear personal protective equipment (PPE).

3.5 Information on operational safety

To avoid dangerous situations, only use the machine in a reliable condition.

3.5.1 Lifting and moving the machine

The machine is delivered ex factory in a cardboard box standing on a pallet.

- Only lift the machine at the pallet using a suitable pallet truck or forklift. Take the total weight into consideration.
- Never lift or move the machine at the hopper or at other, non-marked anchor points.

3.5.2 Parking the machine

- Only park the machine with the hopper empty and on horizontal, solid ground.
- Open the metering slide completely when you park the machine.

3.5.3 Filling the machine

- Use a shovel or a bucket for filling.
- Fill the machine no higher than the top-edge. Observe the maximum admissible payload.

3.5.4 Checks before start-up

Check the operating safety of the machine before the first and every subsequent start-up.

- Is the entire safety equipment installed at the machine and functional?
- Are all fasteners and load-bearing connections tight and in proper condition?
- Are the spreading disc, the spreading vanes and their fixings in proper condition?
- Are the agitator fingers in proper condition?
- Are all locks firmly closed?
- Is the hazard zone of the machine clear of persons?

3.5.5 Hazard zone

Ejected spreading material may lead to severe injury (e. g. to eyes).

When persons are present between the tractor and the machine, there is a great hazard caused by the tractor rolling away or by machine movements which may have fatal consequences.

The following figure shows the hazard zones of the machine.

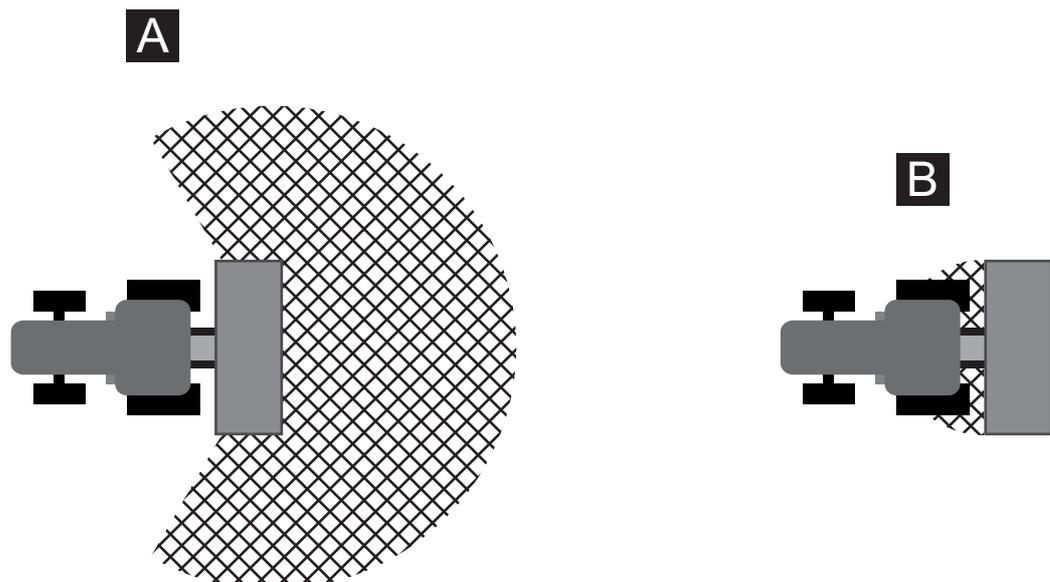


Figure 3.1: Hazard zones of towed devices

- [A] Hazard zone in spreading operation
 [B] Hazard zone when attaching/detaching the machine

- For this reason, ensure that nobody is present in spreading range [A] of the machine.
- Immediately stop the machine if persons are present in the hazard zone of the machine.
- When attaching the machine to the tractor, ensure that nobody is present in hazard zone [B].

3.5.6 Operation

- If the machine malfunctions, stop the machine immediately and secure it. Have the fault repaired immediately by appropriately instructed and authorised personnel.
- Never climb on the machine.
- Rotating machine components may cause serious injury. For this reason, ensure that you avoid any contact between body parts or clothes and rotating components.
- Do not deposit any parts (such as screws, nuts) in the hopper.
- Ejected spreading material may lead to severe injury (e. g. to eyes). For this reason, ensure that nobody is present in the spreading range of the machine.
- If the wind speed is too high, stop spreading since the specified spreading range can no longer be guaranteed under such conditions.
- Never climb onto the machine when under high-voltage electrical power lines.

3.6 Use of fertiliser

An inappropriate selection or usage of the fertiliser may lead to severe personal injury or environmental damages.

- When selecting the fertiliser, inform yourself about its effects on persons, the environment, and the machine.
- Please follow the instructions of the fertiliser manufacturer exactly.

3.7 Maintenance and service

Maintenance and service work involves additional hazards that do not occur during operation of the machine.

- Any maintenance and service work is to be conducted with increased alertness at all times. Work particularly thoroughly and cautiously.

3.7.1 Qualifications of maintenance staff

- Welding work is to be performed by qualified technicians only.

3.7.2 Wear parts

- The maintenance and service intervals described in the present operator's manual are to be strictly adhered to at all times.
- Furthermore, the maintenance and service intervals of the supplier components must also be complied with. See the supplier documentation for the relevant intervals.
- We recommend having the condition of the machine checked after each season by your specialist dealer, paying particular attention to its fixing components, safety-relevant plastic components, metering devices (such as metering slide and agitator), spreading vanes and spreading disc.
- Spare parts must at least comply with the technical standards specified by the manufacturer. The technical standards can be guaranteed by using original spare parts, for example.
- Self-locking nuts are designed to be used only once. Always use new self-locking nuts to fasten components (e. g. when replacing spreading vanes).

3.7.3 Maintenance and service work

- Always switch off the tractor motor before any cleaning, maintenance and service work and when troubleshooting. Wait until all rotating parts of the machine have come to a standstill.
- Make sure that no unauthorised person can start the machine. Remove the ignition key of the tractor.
- Check that the tractor with the machine is correctly parked. Park the spreader with an empty hopper on level, solid ground and secure it to against rolling away.
- Additionally, secure the lifted machine against falling (e. g. using an axle stand) if you need to perform maintenance and service work or inspections underneath the lifted machine.
- Remove any clogging in the hopper only when the machine stands still and never use your hand or foot to do it; always use suitable tools for this purpose.
- Before cleaning the machine using water, a steam jet or other cleaning agents, cover all components that may not get into contact with cleaning liquids (e. g. sliding bearings).
- Regularly check nuts and screws for tight seat. Retighten loose connections.

3.8 Safety in traffic

When driving on public streets and roads, the tractor with the attached machine must comply with the road traffic regulations of the respective country. The owner and driver are responsible for compliance with these regulations.

3.8.1 Checks before driving

The pre-departure check is an important contribution to road safety. Before every trip, check compliance with the operating conditions, traffic safety, and the regulations of the country of use.

- Is the permissible total weight complied with?
- Check the tyre pressure and the function of the tractor brake system.
- Is the machine attached appropriately?
- Could spreading material be lost while driving?
 - Check the filling level of the spreading material in the hopper.
 - The metering slide must be closed.
- Does the lighting and marking of the machine comply with the regulations of your country with respect to driving on public roads? Make sure that warning signs, reflectors, and auxiliary lights are correctly placed.

3.8.2 Transportation drive with the machine

The handling, tilting, steering, and braking performance of the tractor is affected by the attached machine. For example, the high load will reduce the weight on the tractor's front axle and affect its steering.

- Be aware of the changed driving behaviour.
- When driving, always ensure that there is sufficient visibility. If vision is restricted (e. g. when reversing), another person is required to direct the driver.
- Observe the permissible maximum speed.
- Avoid sudden turns when driving uphill or downhill or across a slope. By repositioning the gravity centre, there is a risk of toppling over. Special care is to be taken when driving on uneven, soft ground (e. g. when entering fields, at kerbs) as well.
- Passengers are prohibited on the machine during the drive and during operation.

3.9 Safety equipment at the machine

3.9.1 Position of safety equipment



Figure 3.2: Positions of safety equipment, warning and instruction notices - Front view

- [1] Instructions: maximum payload
- [2] Adjustable spreading disc cover (spreading width limiter)
- [3] Warning: read operator's manual
- [4] Front spreading disc cover
- [5] Serial number
- [6] Nameplate

3.9.2 Function of safety equipment

The safety equipment is designed to protect your health and life.

- Before working with the machine, ensure that the safety equipment is functional.
- Only operate the machine if the safety equipment is functional.

Designation	Function
Adjustable spreading disc cover (spreading width limiter)	Protection against getting caught by the rotating spreading disc from the side and from behind. Ensures the ejection of spreading material at the desired spreading width.
Front spreading disc cover	Protection against getting caught by the rotating disc from the front.

3.10 Warning and instruction stickers

Various warning and instruction stickers are attached to the machine (for the position at the machine, please refer to [figure 3.2](#)).

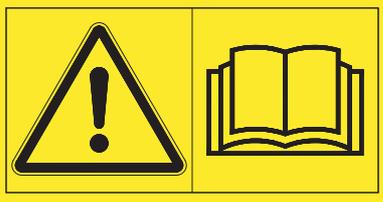
The warning and instruction stickers are components of the machine. They must not be removed or modified. Missing or illegible signs must be replaced immediately.

If new components are installed during repairs, the same warning and instruction stickers that were on the original parts must be placed on the new parts.

NOTICE

The correct warning and instruction stickers can be obtained from the spare parts service.

3.10.1 Warning stickers

	<p>Read the operator's manual and warning messages.</p> <p>Read and observe the operator's manual and warning messages before commissioning the machine.</p> <p>The operator's manual explains in detail how to operate the spreader and contains valuable information on operation, care and maintenance.</p>
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3.10.2 Instruction stickers and nameplate

	<p>Maximum payload: 60 kg</p>
	<p>Nameplate</p>
	<p>Serial number</p>

4 Technical data

4.1 Manufacturer

RAUCH Landmaschinenfabrik GmbH
Landstraße 14

D-76547 Sinzheim

Phone: +49 (0) 7221 / 985-0

Fax: +49 (0) 7221 / 985-200

Service Centre, Technical Customer Service

RAUCH Landmaschinenfabrik GmbH
Postfach 1162

D-76545 Sinzheim

Phone: +49 (0) 7221 / 985-250

Fax: +49 (0) 7221 / 985-203

4.2 Description of the machine

Use the machine in accordance with chapter [“Intended use“ on page 1.](#)

The machine consists of the following assemblies:

- Hopper with agitator fingers and outlet
- Frame
- Drive elements
- Metering elements (agitator, metering slide, scale for the spreading volume)
- Elements for adjusting the spreading width
- Safety equipment; see [“Safety equipment at the machine“ on page 13.](#)

4.2.1 Assembly overview, rear



Figure 4.1: Assembly overview - Rear

- | | |
|------------------------------------|------------------------------------|
| [1] Hopper | [4] Transmission |
| [2] Spreading width setting device | [5] Spreading disc |
| [3] Rotors | [6] Spreading width limiter plates |

4.2.2 Assembly overview, front

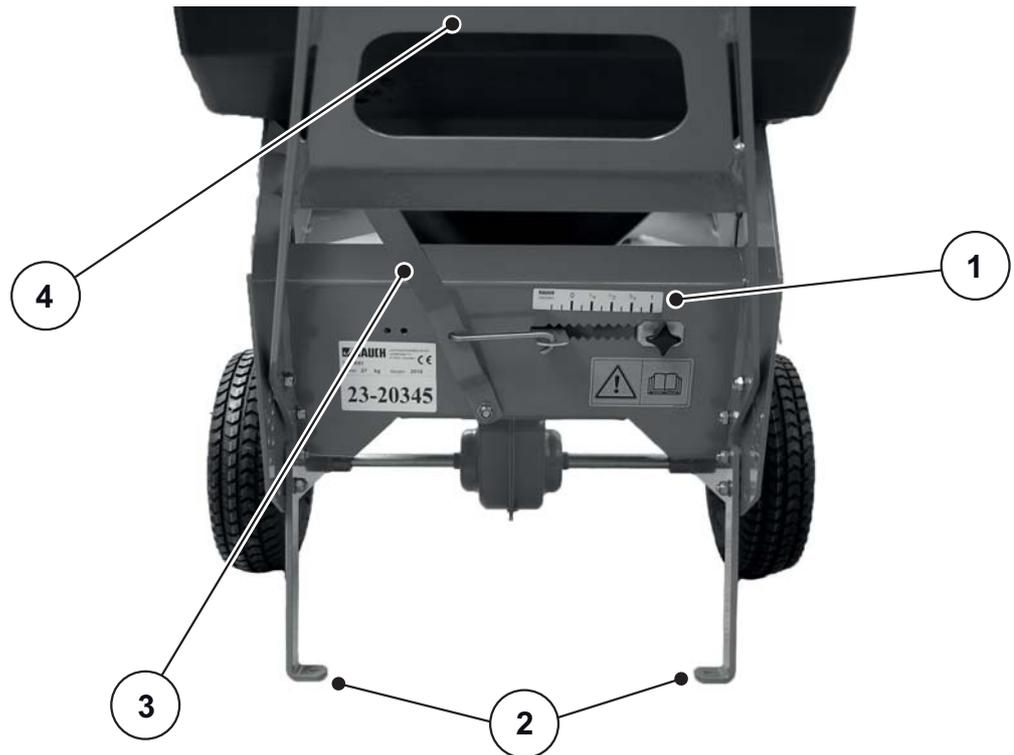


Figure 4.2: Assembly overview - Front

- | | |
|--------------------------------------|----------------------------------|
| [1] Scale for the spreading quantity | [3] Metering slide control lever |
| [2] Parking rests | [4] Towing bar |

4.3 Technical data of basic equipment

Dimensions:

Data	K 51
Total width approx.	58 cm
Spreading width	0.5 m - 5.0 m
Hopper capacity approx.	55 l
Filling height approx.	73 cm
Recommended spreading speed up to	6 km/h

Weights and loads:

NOTICE

The empty weight (mass) of the machine varies depending on the feature package. The empty weight (mass) indicated on the nameplate refers to the standard version.

Data	K 51
Empty weight approx.	29 kg
Payload max.	60 kg

5 Transportation without tractor

5.1 General safety instructions

Read the following instructions before transporting the machine:

- The work may only be carried out by suitable, trained and expressly authorised personnel.
- Use suitable means of transport.
- Determine the transportation route early, and remove possible obstacles.
- Check that all safety and transportation devices are fully operational.
- Secure all danger areas appropriately, even if they only exist briefly.
- The person responsible for transportation must ensure that the machine is transported appropriately.
- Unauthorised persons are to be kept away from the transport route. The areas concerned must be cordoned off!
- Cautiously transport the machine and handle it with care.
- Transport the machine to the final destination as close to the ground as possible.

5.2 Loading and unloading, parking

1. Determine the weight of the machine.
Details are provided on the nameplate.
2. Carefully lift the machine with the help of a second person.
3. Carefully set the machine down on the loading platform of the transport vehicle or on solid ground.

6 Commissioning

6.1 Accepting the machine

When accepting the machine, please check the completeness of the scope of delivery.

The standard equipment includes

- Pre-assembled combi spreader
- 1 K 51 operator's manual
- Towing bar
- Towing eye
- Hand grip
- Bag with screw set

Please also check any optional equipment that you ordered.

Check for any shipping damage or missing parts. Have any shipping damage confirmed by the forwarding agent.

NOTICE

When receiving the machine, check that all attached components are correctly and securely tightened.

In case of doubt, please contact your dealer or the factory.

6.2 Preparing the operating mode

In the state as delivered, the machine is set to manual operation. This means that the spreading disc and the agitator fingers rotate when the machine is pushed.

To ensure the machine can work in minitractor operation, the couplings at the wheels must be swapped.

1. Remove the linkage pin from the axle at the right wheel.
2. Remove the coupling from the axle.
3. Remove the linkage pin from the axle at the left wheel.
4. Remove the coupling from the axle.

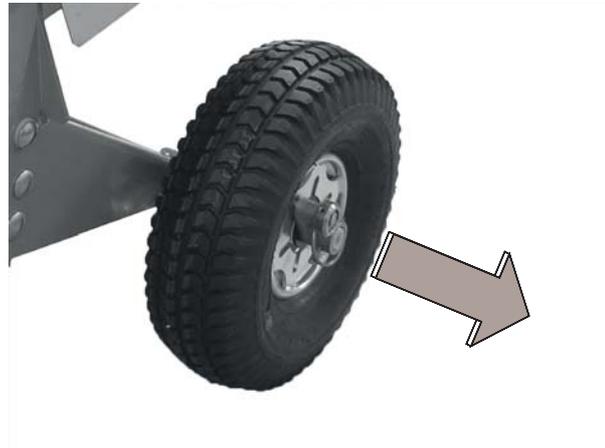


Figure 6.1: Axle with old coupling

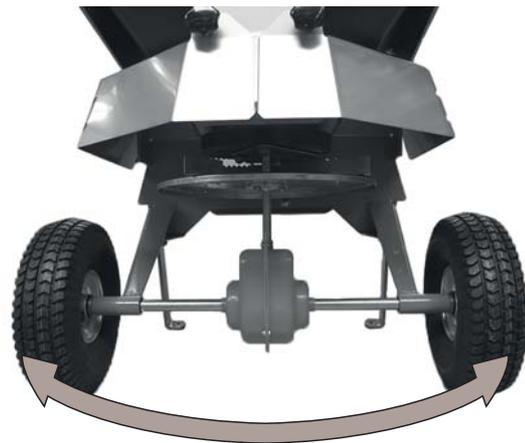


Figure 6.2: Swap couplings

5. Swap both couplings.

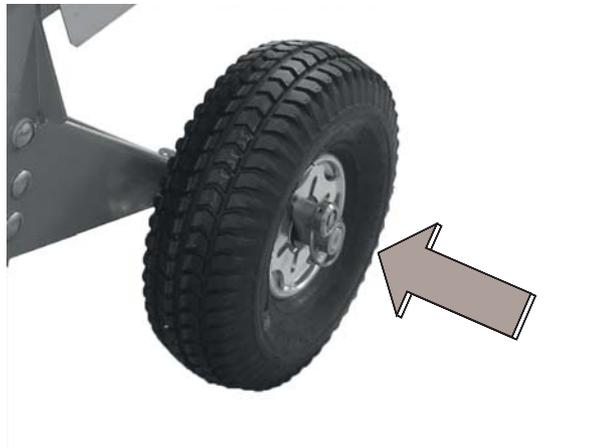


Figure 6.3: Axle with linkage pin

6. Push a linkage pin on each end of the axle.

6.3 Preparing the tractor operation

6.3.1 Tractor requirements

To ensure the intended use of the machine, the tractor must be equipped with a towing device.

6.3.2 Preparing the towing bar for tractor operation

To ensure the intended use of the machine, the towing bar must be converted depending on the operating mode.

1. Screw the towing eye to the towing bar.

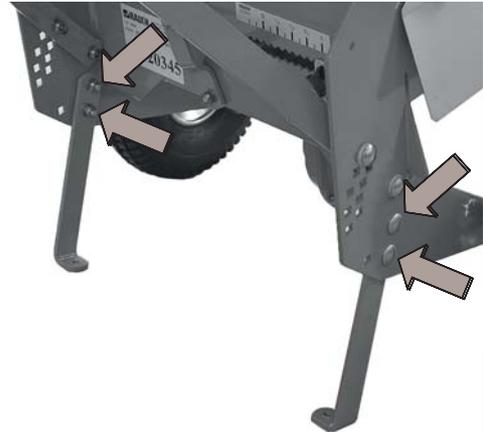


Figure 6.4: Towing bar for tractor operation

6.3.3 Preparing the support feet for tractor operation

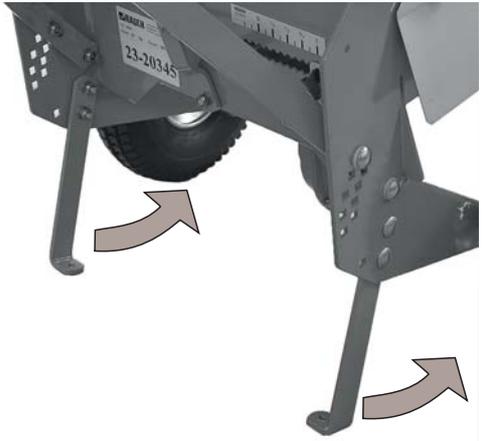
Support feet are attached to the frame of the machine. They are intended for manual operation only.

To ensure the machine can work in minitractor operation, the feet are to be folded upwards.



1. Loosen the screws.

Figure 6.5: Support feet down



2. Fold support feet upwards.
3. Tighten the screws.

Figure 6.6: Fold-in support feet

6.3.4 Attaching the machine to the tractor

- Suspend the towing eye into the pin coupling of your minitractor.

6.4 Preparing for manual operation

6.4.1 Preparing the towing bar for manual operation



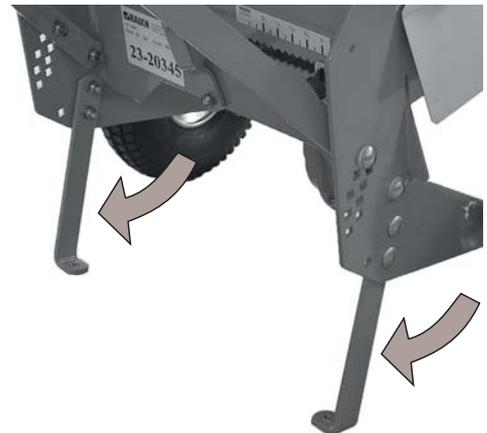
1. Screw the hand grips to the towing bar.

Figure 6.7: Towing bar for manual operation

6.4.2 Preparing the support feet for manual operation

Support feet are attached to the frame of the machine. They are intended for manual operation only.

To ensure the machine can work in manual operation, the feet are to be folded down.



1. Fold down the support feet.

Figure 6.8: Support feet down

6.5 Filling the machine

⚠ DANGER



Danger to life due to unsuitable tractor

Using an unsuitable tractor for the machine may result in severe accidents during operation or road travel.

- ▶ Only use tractors that comply with the technical requirements of the machine.
- ▶ Use the vehicle's documentation to check if your tractor is suitable for the machine.

Check the following specific requirements:

- Are both the tractor and the machine in a reliable condition?
- Is the tractor equipped with a towing device?
- Is the machine securely positioned on level and solid ground?

⚠ CAUTION



Inadmissible overall weight

If the permissible total weight is exceeded, this will affect the operating and road safety of the vehicle (machine and tractor) and may cause serious damage to the machine and the environment.

- ▶ Before you start filling, calculate the amount you can load.
- ▶ Comply with the permissible overall weight.

Instructions on filling the machine

- Close the metering slide.
- When determining the maximum admissible loading amount, consider the specific weight of the spreading material (kg/l).
 - The weight of the spreading material depends on the type of spreading material (e. g. grit, sand, fertiliser) and its state (dry, wet).
- If the machine is mounted to the tractor, secure the tractor against rolling away. To achieve this, apply the handbrake.
- Use a shovel or a bucket for loading.
- Fill the machine up to the edge maximally.

NOTICE

You can protect the spreading material while travelling to the location where the machine will be used by decoupling the drive from the agitator.

7 Machine settings

7.1 Adjusting the application rate

▲ WARNING



Risk of crushing and shearing in the area of the spreading quantity adjustment!

Adjusting the metering slide may lead to severe injury of the fingers.

- ▶ Never put your fingers in the movement direction of the metering slide control lever.

The spreading quantity is adjusted through the metering slide opening.

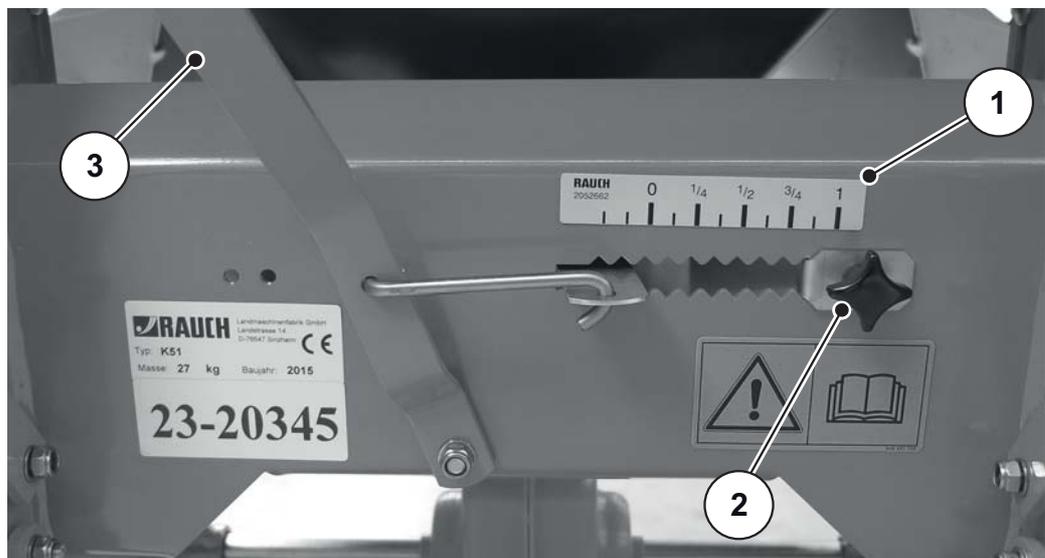


Figure 7.1: Scale for the adjustment of the spreading quantity

- [1] Scale for the spreading quantity [3] Metering slide control lever
[2] Stopper

For this purpose, move the metering slide control lever to the position you have previously found in the fertiliser chart. This is the stopper position to which the metering slide control lever is moved mechanically prior to the spreading drive.

- Moving the lever to the right, in the direction of higher values, opens the metering slide.
- Moving the lever to the left, in the direction of lower values, closes the metering slide.

▲ CAUTION



Material damage caused by an insufficient metering slide opening

Insufficient opening of the metering slide can cause blockages and can damage the spreading material. Agitator wear increases.

- ▶ Always select an adequate opening for the metering slide, at which the spreading material flows out in an unobstructed manner.

7.2 Adjusting the spreading width limiter

The different positions of the spreading width limiter allow for spreading widths between approx. **0.5 m - 5 m**. The spreading width depends on the quality of the spreading material.

NOTICE

Check the proper condition of the spreading width limiter. Damaged or bent elements of the spreading width limiter affect the spreading pattern.

Setting:

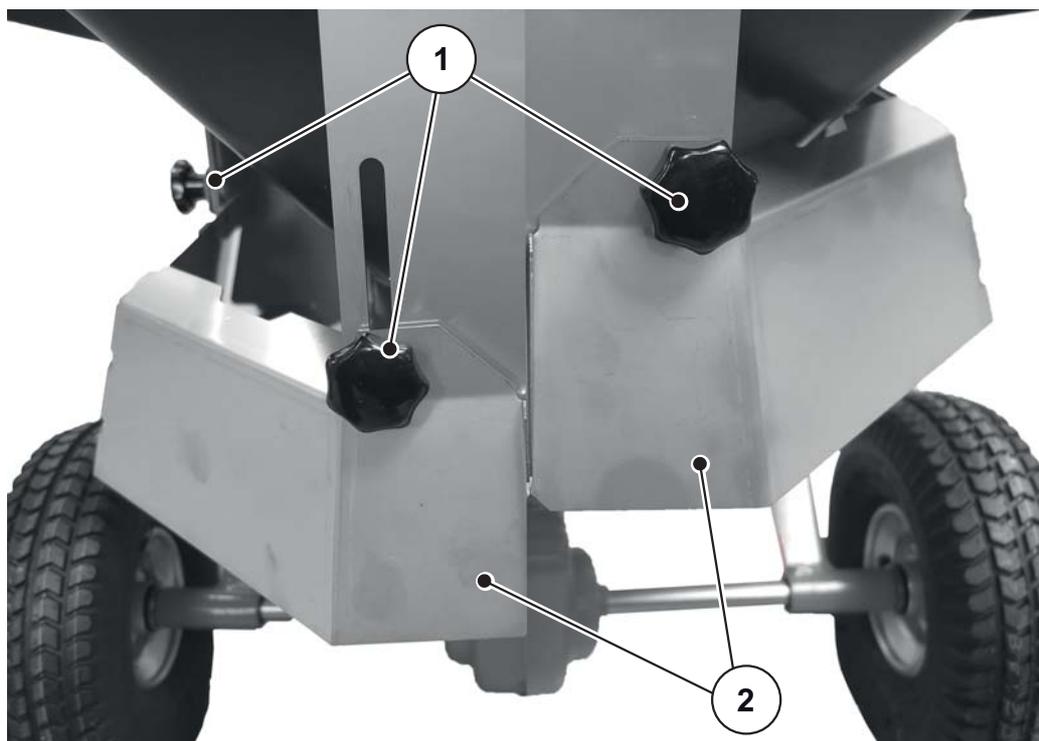


Figure 7.2: Spreading width limiter

- [1] Star knobs for adjusting the spreading width limiter plates
- [2] Spreading width limiter plates

1. Select the side to be set.
2. Loosen the lateral star knob.
3. Loosen the rear star knob.
4. Bring the spreading width limiter plate [2] in the desired position.
 - Spreading width limiter plate **upwards**: The spreading width is **increased**.
 - Spreading width limiter plate **downwards**: The spreading width is **decreased**.
5. Fasten star knobs.
 - ▷ The new spreading width is set.
6. Check the spreading pattern (visual inspection or scale) and adjust the setting, if necessary.

7.3 Adjusting the spreading vanes (towed operation)

NOTICE

Throw away the self-locking nut after loosening it and replace it by a new one.
See [page 48](#)

7.3.1 Increasing the spreading density on the right-hand side in the direction of travel

1. Observe the rotational direction of the spreading disc.



Figure 7.3: Rotational direction of the spreading disc

2. Disassemble the screws of the spreading vanes including the corresponding nuts and washers.

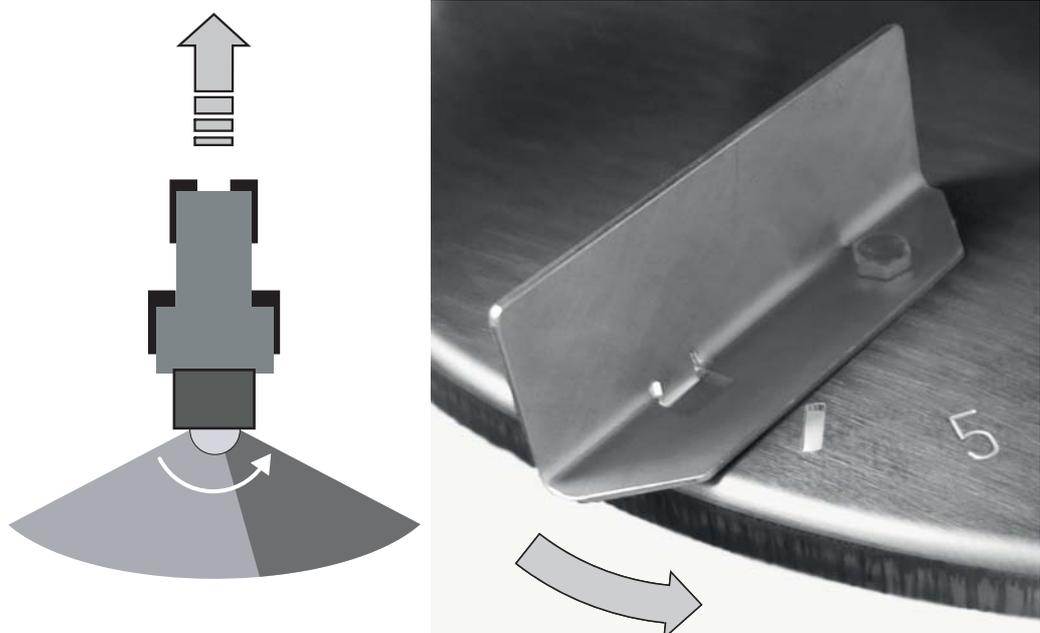


Figure 7.4: Spreading density on the right-hand side in the direction of travel

White arrow: Rotational direction of the spreading disc

Grey arrow: Adjustment of the spreading vanes against the rotational direction of the spreading disc

3. Set the spreading vanes back in the direction of number 5.
 - ▷ Using this setting, the spreading material will be ejected **later**.
4. Screw on the spreading vanes (tightening torque: approx. 7 Nm). **Always use a new self-locking nut** when screwing on the vane.
 - ▷ **The spreading density on the right-hand side viewed in the direction of travel is increased.**

7.3.2 Increasing the spreading density on the left-hand side in the direction of travel

1. Observe the rotational direction of the spreading disc. See [figure 7.3](#).
2. Disassemble the screws of the spreading vanes including the corresponding nuts and washers.

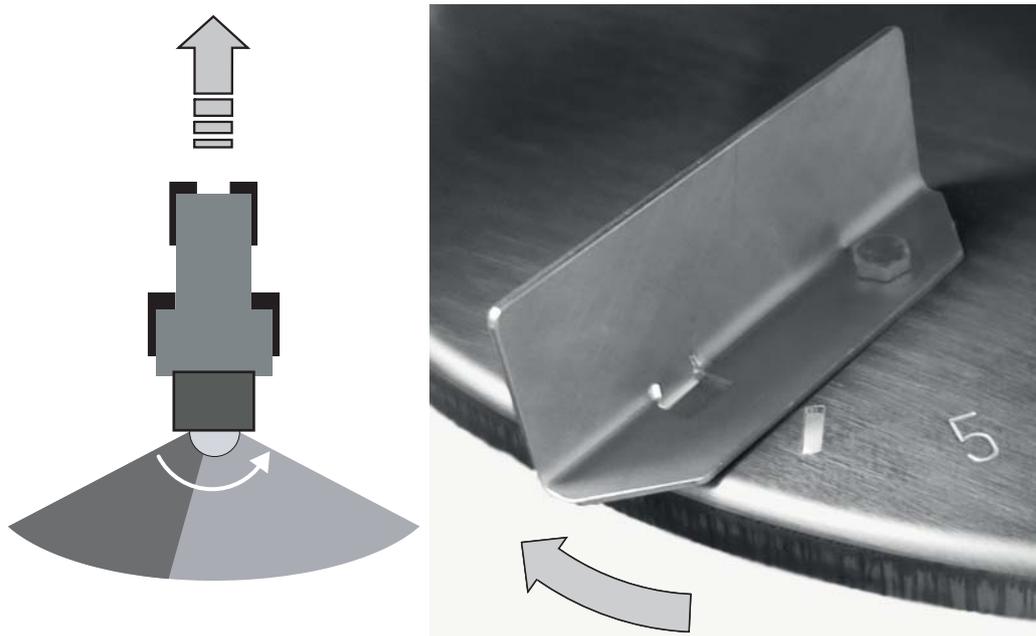


Figure 7.5: Spreading density on the left in the direction of travel

White arrow: Rotational direction of the spreading disc

Grey arrow: Adjustment of the spreading vanes in the rotational direction of the spreader disc

3. Set the spreading vanes forward in the direction of number 1.
 - ▷ Using this setting, the spreading material will be ejected **earlier**.
4. Screw on the spreading vane (tightening torque: approx. 7 Nm). **Always use new self-locking nuts** when screwing on the vane.
 - ▷ **The spreading density on the left-hand side viewed in the direction of travel is increased.**

7.4 Adjusting the spreading vanes (pushed operation)

NOTICE

Throw away the self-locking nut after loosening it and replace it by a new one.
See [page 48](#)

7.4.1 Increasing the spreading density on the right-hand side in the direction of travel

1. Observe the rotational direction of the spreading disc.



Figure 7.6: Rotational direction of the spreading disc

2. Disassemble the screws of the spreading vanes including the corresponding nuts and washers.

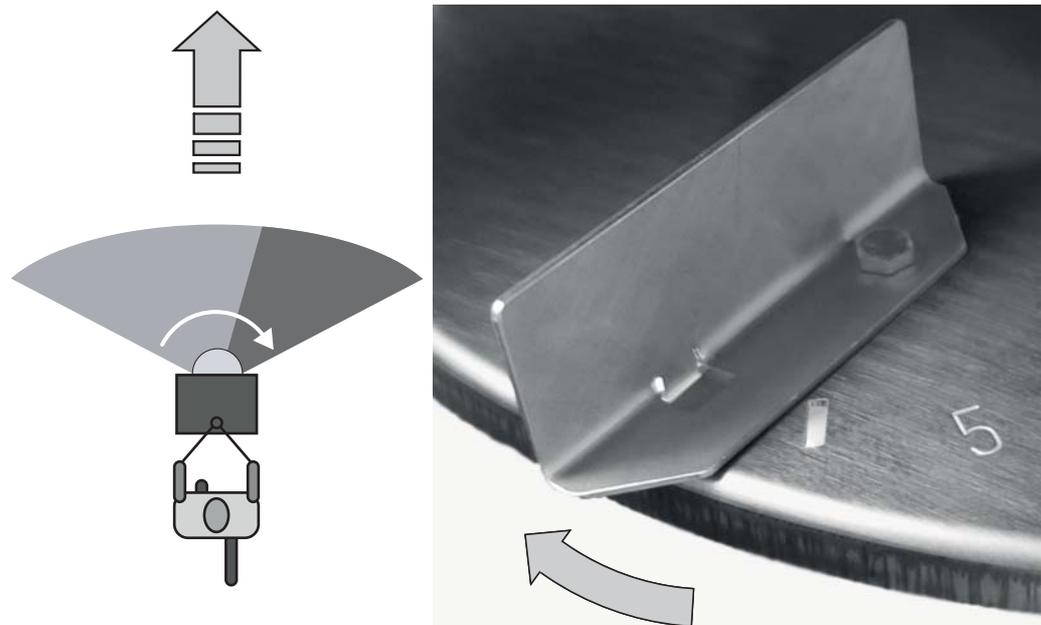


Figure 7.7: Spreading density on the right-hand side in the direction of travel

White arrow: Rotational direction of the spreading disc

Grey arrow: Adjustment of the spreading vanes against the rotational direction of the spreader disc

3. Set the spreading vanes back in the direction of number 1.
 - ▷ Using this setting, the spreading material will be ejected **later**.
4. Screw on the spreading vane (tightening torque: approx. 7 Nm). **Always use a new self-locking nut** when screwing on the vane.
 - ▷ **The spreading density on the right-hand side viewed in the direction of travel is increased.**

7.4.2 Increasing the spreading density on the left-hand side in the direction of travel

1. Observe the rotational direction of the spreading disc. See [figure 7.3](#).
2. Disassemble the screws of the spreading vanes including the corresponding nuts and washers.

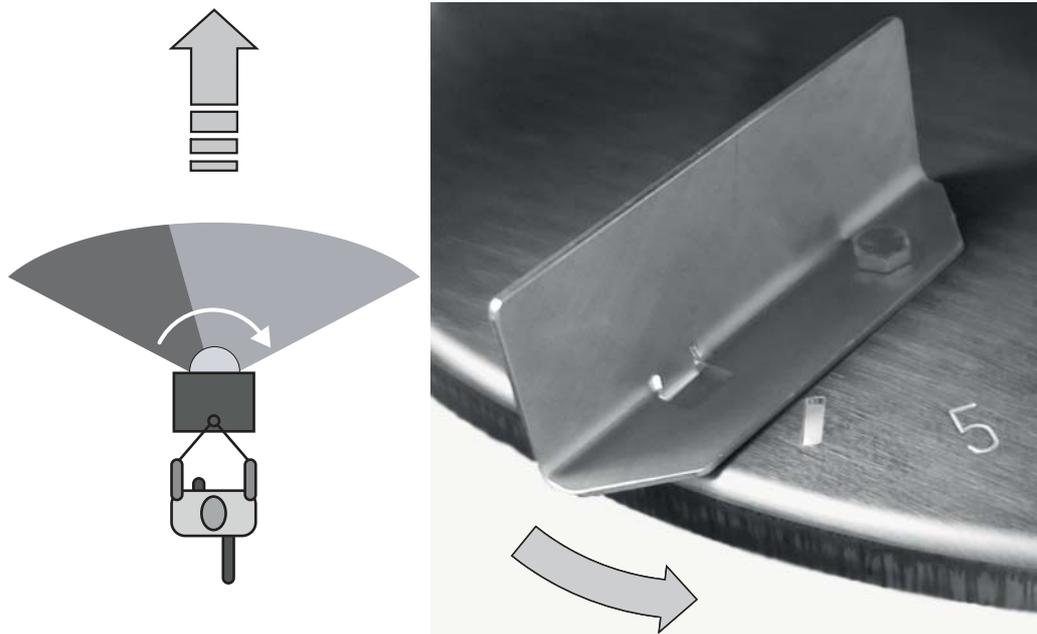


Figure 7.8: Spreading density on the left in the direction of travel

White arrow: Rotational direction of the spreading disc

Grey arrow: Adjustment of the spreading vanes in the rotational direction of the spreader disc

3. Set the spreading vanes forward in the direction of number 5.
 - ▷ Using this setting, the spreading material will be ejected **earlier**.
4. Screw on the spreading vane (tightening torque: approx. 7 Nm). **Always use new self-locking nuts** when screwing on the vane.
 - ▷ **The spreading density on the left-hand side viewed in the direction of travel is increased.**

7.5 Use the fertiliser chart

7.5.1 Information on the fertiliser chart

The values in the fertiliser chart have been determined using the spreading material test system.

The spreading material used has been purchased from the manufacturer or from dealers. Experience shows that due to storage and transport, your spreading material – even with identical specifications – might exhibit a different spreading behaviour.

This means that the settings specified in the fertiliser charts may result in a different spreading quantity and a poorer spreading material distribution.

Observe the setting values exactly. Even a slightly incorrect setting may adversely affect the spreading pattern.

NOTICE

The operating staff is responsible for making the correct spreader adjustments according to the spreading material used.

We point out specifically that we do not accept any liability for subsequent damage resulting from incorrect spreader adjustments.

7.5.2 List of fertiliser charts

NOTICE

The unit of the following specifications is gr/m².

Chart	Page
Fertiliser chart for winter applications	page 36
Fertiliser chart for fertilisers	
Agrosil LR Silikat COMPO	page 36
Basatop Sport COMPO	page 36
Cornufera NPK Günther	page 37
Ferro Top COMPO	page 37
Floranid Club COMPO	page 37
Floranid NK COMPO	page 38
Floranid permanent COMPO	page 38
Gali Gazon COMPO	page 38
Moosvernichter plus Rasendünger ZG Raiffeisen	page 39
Rasen Floranid COMPO	page 39
Sportica K COMPO	page 39

7 Machine settings

Fertiliser chart for winter applications

- Spreading width 1 m
- Forward speed 5 km/h

Open position	Grit (3.5)	Sand (0.3)	Salt	NPK complete fertiliser
1/4	10	15	10	32
-	-	-	-	-
1/2	55	61	24	65
-	-	-	-	-
3/4	105	125	38	105
-	-	-	-	-
1/1	180	187	65	170

Agrosil LR Silikat COMPO

- Composition 20 % P + 8 % Na

Open position	Forward speed km/h							
	3	4	5	6	7	8	9	10
1/4	17	13	10	8	7	6	6	5
-	92	69	55	46	39	34	31	28
1/2	200	150	120	100	86	75	67	60
-	308	231	185	154	132	116	103	93
3/4	417	313	250	208	179	156	139	125
-	517	388	310	258	221	194	172	155
1/1	600	450	360	300	257	225	200	180

Basatop Sport COMPO

- Composition NPK 20- 5 - 10

Open position	Forward speed km/h							
	3	4	5	6	7	8	9	10
1/4	17	13	10	8	7	6	6	5
-	50	38	30	25	21	19	17	15
1/2	150	113	90	75	64	56	50	45
-	342	256	205	171	146	128	114	103
3/4	517	388	310	258	221	194	172	155
-	700	525	420	350	300	263	233	210
1/1	817	613	490	408	350	306	272	245

Cornufera NPK Günther

- Composition NPK 20- 5 - 10

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	23	18	14	12	10	9	8	7
-	142	106	85	71	61	53	47	43
1/2	260	195	156	130	111	98	87	78
-	445	334	267	223	191	167	148	134
3/4	628	471	377	314	269	236	209	189
-	817	613	490	408	350	306	272	245
1/1	1003	754	603	503	431	377	335	302

Ferro Top COMPO

- Composition NK 6 - 12

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	17	13	10	8	7	6	6	5
-	67	50	40	33	29	25	22	20
1/2	150	113	90	75	64	56	50	45
-	208	156	125	104	89	78	69	63
3/4	558	419	335	279	239	209	186	168
-	708	531	425	354	304	266	236	213
1/1	783	588	470	392	336	294	261	235

Floranid Club COMPO

- Composition NPK 10 - 5 - 20 + 4

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	25	19	15	13	11	9	8	8
-	50	38	30	25	21	19	17	15
1/2	225	169	135	113	96	84	75	68
-	358	269	215	179	154	134	119	108
3/4	550	413	330	275	236	206	183	165
-	708	531	425	354	304	266	236	213
1/1	783	588	470	392	336	294	261	235

7 Machine settings

Floranid NK COMPO

- Composition NK 14 - 19

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	25	19	15	13	11	9	8	8
-	108	81	65	54	46	41	36	33
1/2	283	213	170	142	121	106	94	85
-	417	313	250	208	179	156	139	125
3/4	617	463	370	308	264	231	206	185
-	833	625	500	417	357	313	278	250
1/1	900	675	540	450	386	338	300	270

Floranid permanent COMPO

- Composition NPK 16 - 7 - 15

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	25	19	15	13	11	9	8	8
-	92	69	55	46	39	34	31	28
1/2	225	169	135	113	96	84	75	68
-	417	313	250	208	179	156	139	125
3/4	525	394	315	263	225	197	175	158
-	700	525	420	350	300	263	233	210
1/1	717	538	430	358	307	269	239	215

Gali Gazon COMPO

- Composition 27 % K

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	50	38	30	25	21	19	17	15
-	183	138	110	92	79	69	61	55
1/2	383	288	230	192	164	144	128	115
-	542	406	325	271	232	203	181	163
3/4	783	588	470	392	336	294	261	235
-	867	650	520	433	371	325	289	260
1/1	1058	794	635	529	454	397	363	318

Moosvernichter plus Rasendünger ZG Raiffeisen

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	23	18	14	12	10	9	8	7
-	128	96	77	64	55	48	43	39
1/2	235	176	141	118	101	88	78	71
-	407	305	244	203	174	153	136	122
3/4	580	435	348	290	249	218	193	174
-	750	563	450	375	321	281	250	225
1/1	920	690	552	460	394	345	307	276

Rasen Floranid COMPO

- Composition NPK 20 - 5 - 8 + 2

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	17	13	10	8	7	6	6	5
-	75	56	45	38	32	28	25	23
1/2	233	175	140	117	100	88	78	70
-	400	300	240	200	171	150	133	120
3/4	533	400	320	267	229	200	178	160
-	658	494	395	329	282	247	219	198
1/1	758	569	455	379	325	284	253	228

Sportica K COMPO

- Composition NK 30 - 10

	Forward speed km/h							
Open position	3	4	5	6	7	8	9	10
1/4	8	6	5	4	4	3	3	3
-	33	25	20	17	14	13	11	10
1/2	92	69	55	46	39	34	31	28
-	225	169	135	113	96	84	75	68
3/4	342	256	205	171	146	128	114	103
-	475	356	285	238	204	178	158	143
1/1	575	431	345	288	246	216	192	173

8 Spreading work

8.1 General information

The modern technology and design of the machine and exhaustive, continuous testing in the factory's spreading material test facilities ensure that you will have a perfect spreading pattern.

Our machines are manufactured with utmost diligence. However, deviations in the application rate or possible faults cannot be excluded, even when complying with the intended use.

This may be caused by the following:

- Changes in the physical characteristics of the fertiliser due to running agitator during transportation (e. g. deviating grain size distribution, varying density, grain form and surface, humidity).
- Clumping and moist spreading material.
- Wind drift: In the case of excessive wind speed, cancel the spreading work.
- Clogging or bridging, e. g. due to foreign bodies, bag residue or moist spreading material...
- Uneven ground.
- Wearing down of wear parts, e. g. agitator, agitator fingers, spreading vanes, outlet.
- Damages caused by external influences
- Inadequate cleaning and care to prevent corrosion.
- Wrong forward speeds.
- Incorrect machine settings.

NOTICE

Cleaning after each use of the machine prevents deposits at the bottom of the hopper. You thereby reduce the wear of the agitator fingers and increase the operational safety of your machine.

Make sure that the machine is correctly set. Even a minor deviation from the correct setting may significantly affect the spreading pattern. Therefore, before each operation and during operation, check the correct functioning of your machine and ensure that the application accuracy is sufficient.

Hard spreading materials particularly increase the wear of the spreading vanes.

Claims for damages other than for damage to the machine itself will not be accepted.

This also means that no liability will be accepted for damage resulting from spreading errors.

8.2 Instructions for spreading operation as a manual spreader

The intended use of the machine includes compliance with the operating, maintenance, and service conditions in accordance with the manufacturer specifications. **Spreading operation** therefore always includes **preparation** and **cleaning/maintenance**.

▲ WARNING



Risk of injury caused by spreading material

Ejected spreading material may lead to injuries.

- ▶ Ensure that nobody is present in the hazard zone.

-
- Carry out spreading operations as described below.

Preparation

- Close metering slide
- Fill in the spreading material [Page 28](#)
- Adjust the spreading width limiter [Page 30](#)

Spreading

- Travel to the spreading location
- Open the slide and start spreading
- Finish spreading and close the slide
- Discharge residual material [Page 44](#)

Cleaning/maintenance

- Open metering slide
- Cleaning and maintenance [Page 45](#)

8.3 Instructions for spreading operation with tractor

The intended use of the machine includes compliance with the operating, maintenance, and service conditions in accordance with the manufacturer specifications. **Spreading operation** therefore always includes **preparation** and **cleaning/maintenance**.

▲ WARNING



Risk of injury caused by spreading material

Ejected spreading material may lead to injuries.

- ▶ Ensure that nobody is present in the hazard zone.

- Carry out spreading operations as described below.

Preparation

- Install spreader at tractor [Page 26](#)
- Close metering slide
- Fill in the spreading material [Page 28](#)
- Adjust the spreading width limiter [Page 30](#)

Spreading

- Travel to the spreading location
- Open the slide and start spreading
- Finish spreading and close the slide
- Discharge residual material [Page 44](#)

Cleaning/maintenance

- Open metering slide
- Remove spreader from tractor
- Cleaning and maintenance [Page 45](#)

8.4 Spreading grit or granular fertiliser

When spreading of grit or granular fertiliser, observe the following:

- Open the metering slide so far that the agitator is able to eject the grit or granular fertiliser without obstructions.

At temperatures below 0 °C, wet spreading material may freeze in the hopper and damage the agitator.

- Ensure that the spreading material cannot freeze in the hopper.
- Do not leave filled machines outside over night.
- Keep spreading materials dry.

8.5 Spreading sand, salt or sand-salt mixtures

For spreading sand, salt or a sand-salt mixture, observe the following:

- Open the metering slide so far that the agitator is able to eject the spreading material without obstructions.
- Due to the hygroscopic effect of salt, only use the machine with a hopper cover.
- Avoid long storage of salt in the hopper.

8.6 Discharging residual material

NOTICE

Cleaning after each use of the machine prevents deposits at the bottom of the hopper. You thereby reduce the wear of the agitator fingers and increase the operational safety of your machine.

1. Move the spreading width limiter plates completely upwards.
2. Place a sufficiently dimensioned container to collect the spreading material residues in front of the machine.
3. Tilt the machine until the residual spreading material comes out at the top of the hopper.

9 Maintenance and service

9.1 Safety

Maintenance and service work involves additional hazards that do not occur during operation of the machine.

Any maintenance and service work is to be conducted with increased alertness at all times. Work particularly thoroughly and cautiously.

NOTICE

Arrange for your dealer to carry out major servicing work.

▲ WARNING



Danger of tipping due to lifted machine

Tipping over of the machine may lead to crushing and fractures.

- ▶ Secure the machine using suitable supports.

▲ WARNING



Danger of crushing and shearing due to metering slide

Ejected spreading material may lead to injuries.

- ▶ Ensure that nobody is present in the hazard zone.

Observe the following instructions in particular:

- Only experts may perform welding work.
- Spare parts must at least comply with the technical standards specified by the manufacturer. This is assured e. g. with RAUCH original spare parts.
- Before starting any cleaning, maintenance, or repair work, and when troubleshooting, switch off the tractor's engine and wait until all rotating parts of the machine have come to a stop.
- Only an **instructed and authorised workshop** may carry out repair work.

NOTICE

Please also refer to the warning notes in chapter [3: Safety, page 5](#). Take particular note of the instructions in the section [3.7: Maintenance and service, page 11](#).

9.2 Wear parts and screw connections

9.2.1 Checking wear parts

Wear parts are: **Spreading vanes, agitator, agitator fingers and bottom of hopper.**

- Check wear parts.

If these parts show visible signs of wear, deformation or holes, any worn parts must be replaced; otherwise the spreading pattern will not be correct.

The durability of wear parts depends in part on the spreading material used.

9.2.2 Checking the bolted joints

Bolted joints have been tightened to the specified torque and locked at the factory. Vibrations and shocks, in particular during the initial operating hours, can loosen bolted joints.

- With new machines, all screw connections are to be checked for their tight seat after approx. 30 operating hours.
- Check all the bolted joints regularly for tightness, and definitely before the start of the spreading season.

Some components (e.g. spreader vanes) are mounted with self-locking nuts. When mounting these components **always use new self-locking** nuts.

9.3 Cleaning

We recommend cleaning the machine with a soft jet of water immediately after every use in order to maintain its value.

The following instructions must be observed for cleaning:

- Only clean oiled machines at washing points fitted with an oil separator.
- When cleaning with high-pressure water, **never** aim the jet directly at warning signs or sliding bearings.

After cleaning, we recommend treating the **dry** machine, **especially stainless steel parts**, with an environmentally friendly anti-corrosion agent.

9.4 Checking the agitator

9.4.1 Dismounting the agitator

1. Pull out the linkage pin.
2. Take out the agitator.



Figure 9.1: Agitator in hopper

9.4.2 Exchanging agitator fingers

1. Use tongs to push the old agitator fingers out of the agitator.

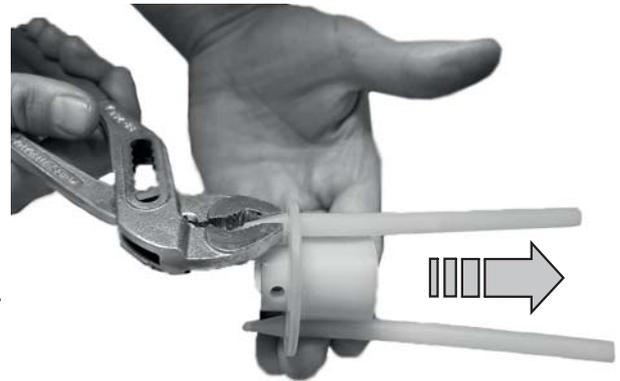


Figure 9.2: Agitator with old agitator fingers

2. Use tongs to pull the new agitator fingers in the agitator.

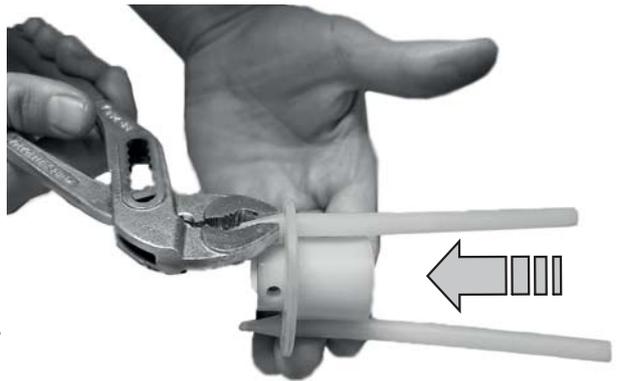


Figure 9.3: Agitator with new agitator fingers

NOTICE

Install the agitator in reverse order.

- When installing the agitator, lubricate it using grease.
- Check if the linkage pin is locked in place.

9.5 Replacing the spreader vanes

Determination of spreading vane type:

⚠ CAUTION



Conformity of the spreading vane types

The type and size of the spreading vanes are adapted to the spreading disc.

- ▶ Only mount spreading vanes approved for the corresponding disc.

NOTICE

This diagram shows the principle of spreading vane replacement. The spreading disc shown does not correspond to the spreading disc installed in your machine.

9.5.1 Replacement of spreading vanes:

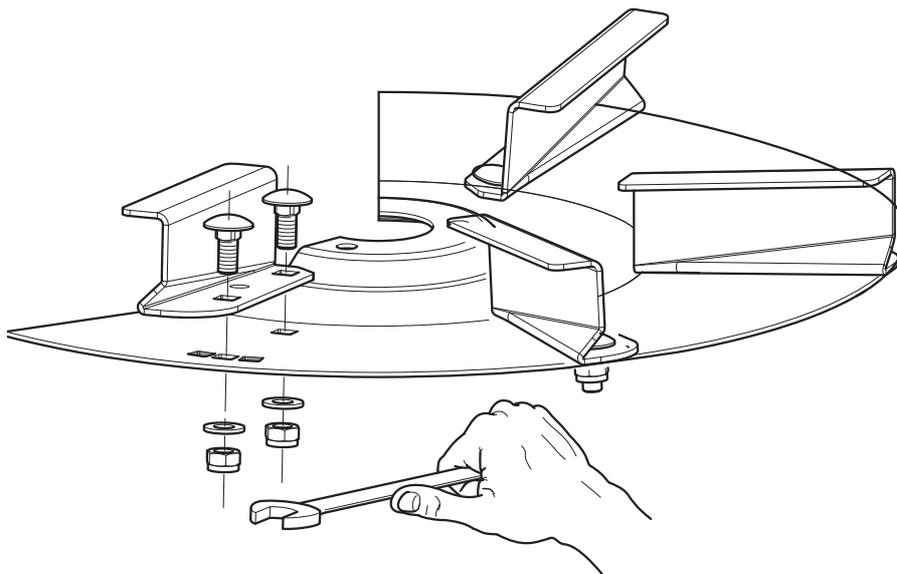


Figure 9.4: Loosen the spreading vane screws

1. Loosen the self-locking nuts at the spreading vane and take them off the spreading vane.
2. Install the new spreading vane onto the spreading disc. Make sure you use the correct spreading vane type.

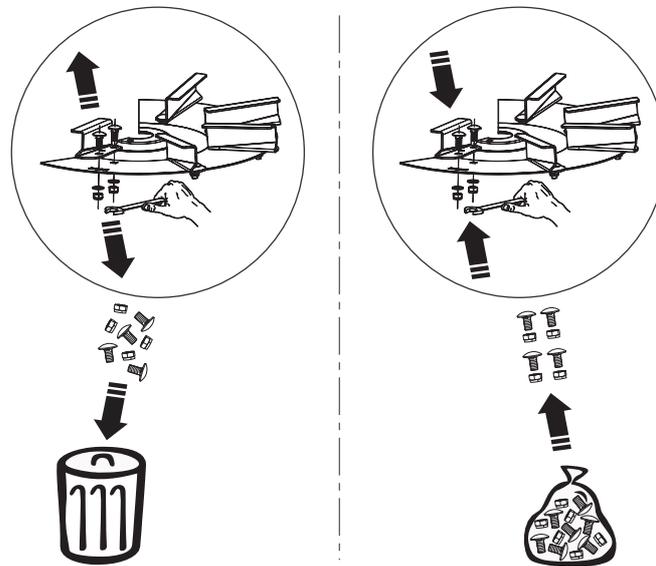


Figure 9.5: Use new self-locking nuts

3. Screw on the spreading vanes. **Always use new self-locking** nuts when screwing on the vane.

9.6 Lubrication plan

Lubrication points	Lubricant	Description
Metering slide	Grease, oil	Ensure smooth movement and grease regularly.
Joints, bushes	Grease, oil	They are designed for dryness but can be slightly lubricated.
Agitator on drive shaft	Grease	Ensure smooth movement and grease regularly. Grease at end of season.

10 Faults and possible causes

⚠ WARNING



Risk of injury when rectifying faults inappropriately

Delayed or incorrect repairs by unqualified personnel may result in severe personal injury as well as in damages to the machine and the environment.

- ▶ Any faults occurring must be repaired **immediately**.
- ▶ Only carry out repairs yourself if you have the appropriate **qualifications**.

Fault	Possible cause/action
Uneven distribution of spreading material	<ul style="list-style-type: none"> ● Remove spreading material deposits from spreading disc, spreading vanes and outlet. ● Worn spreading vanes. Exchange spreading vanes. ● Metering slide does not open completely. Check function of opening slide. ● Locking of adjustment lever not engaged.
Irregular spreading material feed to spreading disc	<ul style="list-style-type: none"> ● Check agitator and replace it, if required. ● Clear blockages.
Spreading disc flutters.	<ul style="list-style-type: none"> ● Check for tight seat.
Metering slide does not open.	<ul style="list-style-type: none"> ● Metering slide does not move easily. Check slide, lever and joints for smooth movement and improve if necessary.
Agitator not working.	<ul style="list-style-type: none"> ● Check for wear. ● Check clamping pins for damage and wear.
Blockage of the metering openings due to: lumps of spreading material, damp spreading material, other impurities (leaves, straw, sack residues)	<ul style="list-style-type: none"> ● Clear blockages. Proceed as follows: <ol style="list-style-type: none"> 1. Park tractor, remove ignition key. 2. Open metering slide. 3. Place collecting vessel underneath. 4. Clean the metering opening from the front using a suitable tool. 5. Remove any foreign objects in the hopper. 6. Close the metering slide.

11 Disposal

11.1 Safety

▲ WARNING



Environmental pollution due to unsuitable disposal of hydraulic and gear oil

The hydraulic and gearbox oils are not entirely biodegradable. Therefore, oil must be prevented from entering the environment in an uncontrolled manner.

- ▶ Collect/dam escaped oil with sand, earth or other absorptive material.
- ▶ Collect hydraulic and gear oil in a suitable container provided for the purpose, and dispose of it in accordance with the local statutory requirements.
- ▶ Oil must be prevented from spilling and draining into the sewers.
- ▶ The ingress of oil into the sewage system must be prevented by building dams made of sand and/or earth or by other suitable damming means.

▲ WARNING



Environmental pollution caused by inappropriate disposal of packaging materials

Packaging material contains chemical compounds, which must be dealt with appropriately.

- ▶ Packaging material is to be disposed of at an authorized waste management company.
- ▶ Observe the national regulations.
- ▶ Packaging material may **not** be burned nor disposed of with the domestic waste processing.

▲ WARNING



Environmental pollution caused by inappropriate disposal of components

The incorrect disposal of ingredients and materials is a threat to the environment.

- ▶ Only authorised companies may be commissioned with the disposal.

11.2 Disposal

The following points are applicable without any restriction. Stipulate suitable precautionary measures based on the national legislation and implement them.

1. All components, auxiliary and operating materials from the machine must be removed by specialist staff.

Hereby, these components and substances must be cleanly separated into categories.

2. All waste products are then to be disposed of in accordance with local regulations and directives for recycling or special refuse categories by authorised companies.

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Terms/conditions of warranty

RAUCH units are manufactured with modern production methods and with the greatest care and are subject to numerous inspections.

Therefore RAUCH offers a 12-month warranty subject to the following conditions:

- The warranty begins on the date of purchase.
- The warranty covers material and manufacturing faults. Our liability for third-party products (hydraulic system, electronics) is limited to the warranty of the manufacturer of the equipment. During the warranty period, manufacturing and material faults are corrected free of charge by replacement or repair of the affected parts. Other rights extending beyond the above, such as claims for conversion, reduction or replacement for damages that did not occur in the object of supply are explicitly excluded. Warranty services are provided by authorised workshops, by RAUCH factory representatives or the factory.
- The following are excluded from coverage by the warranty: natural wear, dirt, corrosion and all faults caused by improper handling and external causes. The warranty is rendered void if the owner carries out repairs or modifications to the original state of the supplied product. Warranty claims are rendered void if RAUCH original spare parts were not used. Therefore, the directions in the operating manual must be observed. In all cases of doubt contact our sales representatives or the factory directly. Warranty claims must be submitted to the factory by 30 days at the latest after occurrence of the problem. The date of purchase and the serial number must be indicated. If repairs under the warranty are required, they must be carried out by the authorised workshop only after consultation with RAUCH or the company's appointed representatives. The warranty period is not extended by work carried out under warranty. Shipping faults are not factory faults and therefore are not part of the warranty obligation of the manufacturer.
- No claims for compensation for damages that are not part of RAUCH machines themselves will be accepted. This also means that no liability will be accepted for damage resulting from spreading errors. Unauthorised modifications of RAUCH machines may result in consequential damage, for which the manufacturer will not accept any liability. The manufacturer's liability exclusion will not apply in case of wilful intent or gross negligence by the owner or a senior employee, and in cases where – according to the product liability law – there is liability for personal injury or material damage to privately used objects in the event of defects in the supplied product. It will also not apply in the event that assured properties are absent, if the purpose of the assured properties was to protect the purchaser against damage that does not involve the supplied product itself.



RAUCH
POWER FOR PRECISION

RAUCH Landmaschinenfabrik GmbH



Landstraße 14 · D-76547 Sinzheim



Victoria-Boulevard E200 · D-77836 Rheinmünster

Phone +49 (0) 7221/985-0 · Fax +49 (0) 7221/985-200
info@rauch.de · www.rauch.de · wap.rauch.de

