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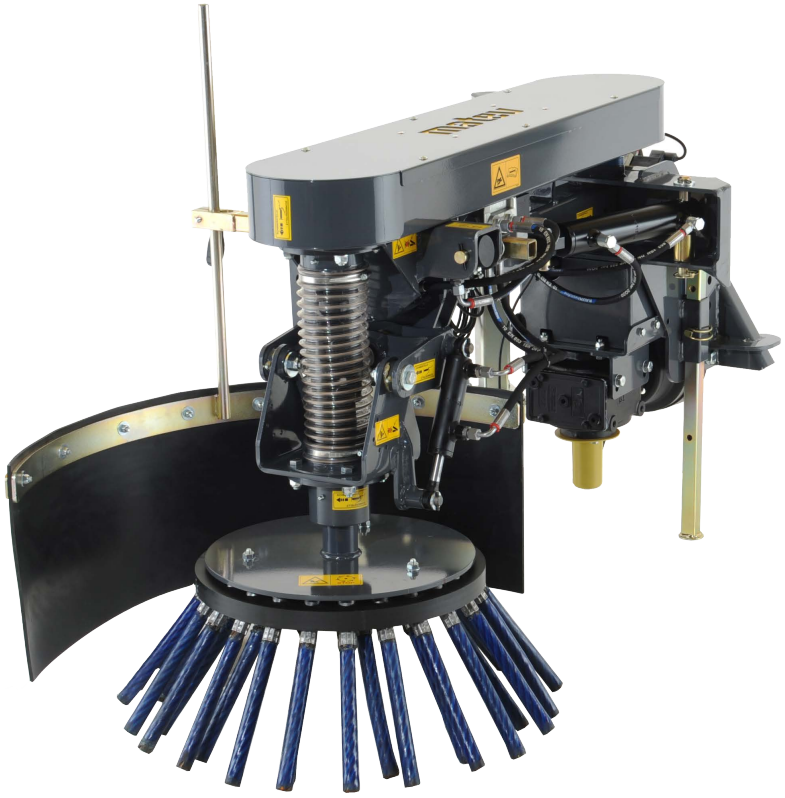
Original Operating Manual

Weed Brush

WRM-145 Order no. 131 8732

WRM-200 Order no. 131 8753



Version

10/2018

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1 About this operating manual

Dear customer! Dear customer!

Thank you for purchasing this weed brush, we appreciate your trust.

Prior to using this implement for the first time, read this operating manual carefully and conscientiously all the way through.

Keep this operating manual where it is easily accessible. This will enable you to refer to important information and handling instructions as needed.

Listings with bullet points are marked as follows:

- Text
- Text
- Text

Handling instructions are marked in the sequence, in which they should be executed, as follows:

1. Text
2. Text
3. Text

The weed brush is subject to change in the interest of technical progress. All information, illustrations, and technical specifications represent the latest status at the time this manual was published. The manufacturer reserves the right to make changes at any time in the interest of technical progress.

2 Safety

Note
Must be read!!!

Guidelines and instructions that you must comply with are presented in this section.

Personnel who install, operate and maintain the weed brush, must have read and understood this operating manual.

2.1 Intended use

- The implement must only be attached on tractors or carrier vehicles with front hydraulics **in compliance with the permissible axle loads.**
- Only use the weed brush to remove weeds
- Any use extending beyond the intended use cited above is considered non-intended use. The manufacturer bears no liability whatsoever for resulting damage; the risk associated with non-intended use is borne solely by the operator.
- Intended use also includes compliance with the operating, service, and maintenance conditions prescribed by the manufacturer.
- The implement should only be used, maintained, and repaired by persons who are familiar with these tasks and who have been instructed in the hazards.
- Moreover, intended use includes exclusive use of original spare parts and supplemental equipment, or use of such parts and equipment that meet the technical requirements specified by the manufacturer.
- Unauthorized modifications to the machine result in exclusion of liability on the part of the manufacturer. For the resulting damage, in the case of non-intended use there is risk of:
    - Health hazards for the operator or for third parties
    - Damage to the tractor and the implements
    - Environmental damage
    - Immediate invalidation of the guarantee
- Changes to the implement and/or the associated accessories that are not authorized by the manufacturer invalidate the guarantee and exclude any liability on the part of the manufacturer for damage due to the changes.
- To avoid accidents and to reduce the risk of accidents, the relevant accident prevention regulations and the other generally acknowledged occupational health and safety and road traffic regulations apply without limitation.

2.2 Qualifications of personnel

Only persons who meet the following qualifications should mount, operate, and maintain the implement:

- They must be at least 18 years old.
- They must have read and understood this operating manual.

2.3 General safety notices

In this section general safety notices are explained that are used in the subsequent sections.

Comply with these safety notices to ensure safe operation and to save work time and costs.

- In addition to the instructions in this operating manual, also comply with the generally valid safety and accident prevention regulations! Young persons under the age of 16 are not allowed to operate the implement!
- Comply with the respective regulations for use on public traffic routes!
- Prior to commencing work, become familiar with all features and activation elements, and their function. Ensure that all protective devices are properly attached.
- The user is responsible for third persons in the work area!
- Presence in the danger zone of the machine is prohibited!
- Check the immediate vicinity of the implement before start-up. Ensure sufficient visibility!
- Fluids (hydraulic oil) escaping under high pressure can penetrate the skin and cause severe injuries! Seek medical attention immediately – danger of infection!
- Always execute repair, maintenance, and cleaning tasks, as well as rectification of malfunctions with the drive switched off and the engine at a standstill. Remove the ignition key! After execution of these tasks re-attach all protective devices!
- For maintenance tasks with the implement lifted, always ensure that the lifted implement is secured with suitable support elements!

These safety notices are used in the subsequent sections.

Danger!
Severe injury to the operator or third parties occurs.
Comply with the safety notice.

Attention!
Minor injury to the operator or third parties can occur. The tractor, the weed brush or the environment can be damaged.
Comply with the safety notice.

Note!
Important, helpful tips or information for the operator.
Read this notice. It facilitates your work.

Attention!
Injuries can occur.
Wear protective work clothing.

2.4 Special safety notices

The safety notices specified in this section are also affixed as stickers on the implements.

Attention!
Injuries can occur due to improper operation. The implement can be damaged.
Read the operating manual all the way through.
Comply with the safety instructions.

Danger due to thrown-out parts when the engine is running – maintain a safety distance.

Attention!
Danger of crushing due to moving parts.
Never reach into the crushing hazard zone if parts are moving or can move.
Comply with the notice in the operating manual.

Only touch machine parts,
after they have come to a complete standstill.

Attention!
Prior to performing maintenance and repair tasks, turn off the engine and remove the key. Danger of injury due to moving parts.

Attention!
Danger of injury due to rotating parts. Switch off the implement. Wait until all machine parts have come to a standstill before converting or servicing the implement.
Do not position yourself in the area of the drive shaft.
Increased risk of accident due to rotating PTO shaft. Do not enter the work area of the PTO shaft when it is rotating.
For your own safety do not wear any loose clothing, belts, or any other loose items.

Caution if fluid is escaping under high pressure.
Comply with the notice in the technical manual.

Never open or remove protective devices when the engine is running.

Attention!
Check all threaded unions prior to using the implement and after using the implement. Loosened connections must be re-tightened.
Damage can occur.

2.5 Basic rules

- **Each time before starting up, check the machine for operational reliability!!!**
- **Cleaning tasks, e.g. with a high-pressure cleaner, should be executed in such a manner that the water jet is not held directly on bearing parts and turned parts (shaft seals, lubricating nipples, etc.). Otherwise, check the moving parts for ease of movement, regrease if necessary!**
- **Failure to comply with these instructions invalidates the guarantee claim.**

2.6 Hazard warnings

- When pivoting the weed brush always ensure that no one is in the danger zone of the weed brush – DANGER OF INJURY
- The depth adjustment of the brush must be selected with the utmost precision to prevent damage of the substrate, the vehicle, and of the machine.
- For carrier vehicles that with the lift device can not only LOWER but also can PRESS, you must ensure that when working, the lift device never presses the weed brush on the ground – this would cause an extreme accident hazard. By offloading the axles the ability to steer the carrier vehicles is restricted. The vehicle must have a float position installed on the lift device, the float position must be switched on while clearing weeds, to prevent vehicle and machine damage.
- If the weed brush should be deployed on a hard substrate under particularly dry weather conditions, sparking is possible. Therefore the possibility if igniting dry vegetation is present. Water the area to be processed before use.

3 Task and use

In conjunction with a tractor the weed brush is used to remove weeds from streets and paths.

The implement is mounted on the tractor as a front attachment, and is driven by the tractor via a PTO shaft. The brush pivots hydraulically beyond the width of the tractor. The brush head can be hydraulically and/or mechanically adjusted.

4 Delivery and transport

The weed brush is delivered lashed on a pallet.

Lift the machine off of the pallet

1. Remove the protective packaging and the transport safeguard.
2. Lift the weed brush off of the pallet with a suitable device (crane or forklift) and set it down.

Long-distance transport

If you want to transport the weed brush over longer distances (e.g. shipping via freight forwarder), you must lash the machine onto a pallet, as it was when it was originally delivered.

5 Installation

Danger!
Switch off the tractor and remove the ignition key before mounting or dismounting the implements.

Note!
Enter the vehicle chassis number of the weed brush in section 7.4 of this operating manual.

5.1 Installation of the universal joint shaft

For transmission of force between tractor and weed brush a universal joint shaft or a hydraulic system is necessary. Only use the universal joint shaft provided by the manufacturer.

Depending on tractor type the supplied universal joint shaft may be too long. In this case, execute the steps described below to shorten the universal joint shaft.

Attention!
Damage can occur to the attached implement or on the tractor.
Only use the provided universal joint shaft.

Note!
In addition, when mounting the universal joint shaft, comply with the instructions in the original manual provided by the manufacturer of the universal joint shaft.

The safety and maintenance instructions that are contained in the operating manual provided with the universal joint shaft, must be strictly complied with!

5.1.1 Adaptation of the universal joint shaft

1. Pull the two halves of the universal joint shaft apart.
2. Mount the one end of the universal joint shaft on the tractor.
3. Mount the other end of the universal joint shaft on the implement.
4. In the shortest work position, mark the piece that will be sawn off on one half of the universal joint shaft.

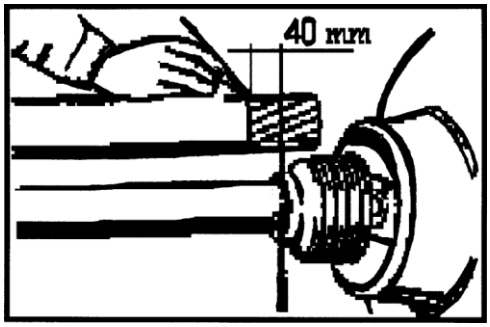

Fig. 1: Mark the cutting point

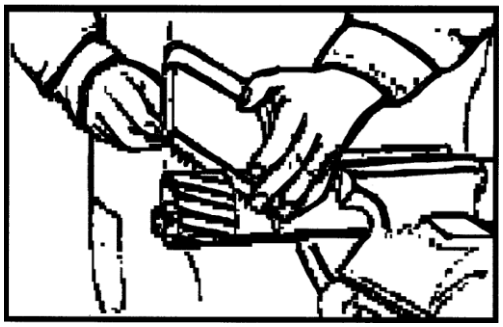

Fig. 2: Saw off the universal joint shaft

5. Cut off the universal joint shaft guard to the marking.
6. Saw off the profile tube. Attention: The profile tube must be 10 mm longer than the guard.

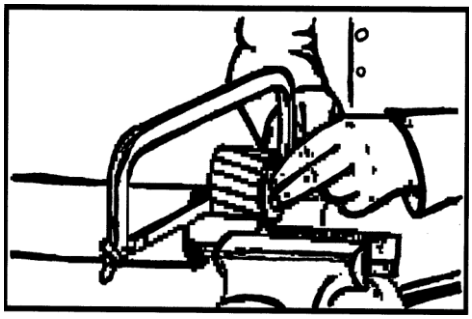

Fig. 3: Saw off the profile tube

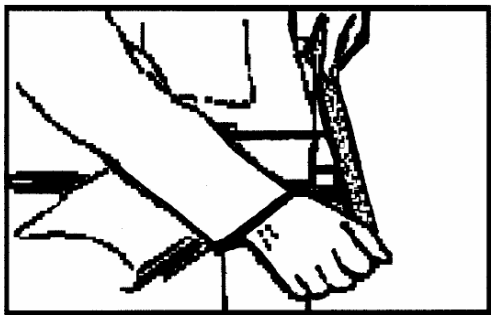

Fig. 4: Deburr the sawn edges

7. Repeat steps described steps on the other half of the universal joint shaft.
8. Deburr the sawn edges.
9. Grease the profile tube.

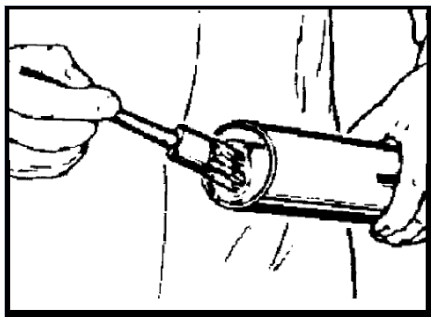

Fig. 5: Grease the profile tube

10. Slide the profile tubes together.

5.1.2 Mounting the universal joint shaft

1. Press the locking disk that is on the outer side and keep it depressed.
2. Slide the splined hub onto the splined shaft of the PTO shaft.
3. Release the locking disk.
4. Slightly move the universal joint shaft back and forth until the locking disk audibly locks in place.

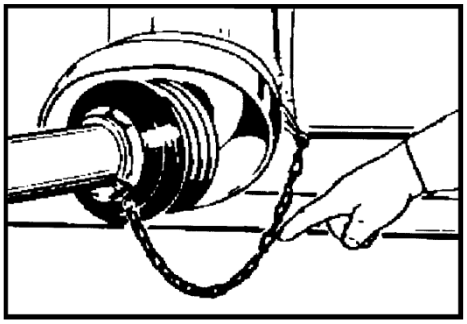

Fig. 6: Allow the locking disk to lock in place

5. Connect the counter-piece of the shaft with the implement and secure it with the screw included in the scope of delivery.
6. Hook the universal joint shaft safety chains to a stationary part on the tractor and on the implement.

5.1.3 Universal joint shaft sharply angled

The universal joint shaft can vary in how sharply it is angled depending on the tractor. If the universal joint shaft is too sharply angled (angle greater than 15 degrees) this reduces the service life. The angle of the universal joint shaft can be reduced through slightly shifting the gearbox. The gearbox can be shifted upward via a hole pattern. If the universal joint shaft is sharply angled in the lifted-out position then the PTO shaft must be switched off

Fig. 7: Open the clamp ring on the pedestal bearing

The clamp ring on the pedestal bearing must be opened to enable a shifting of the shaft. However, to do this the belts and the belt pulley must be dismounted beforehand.

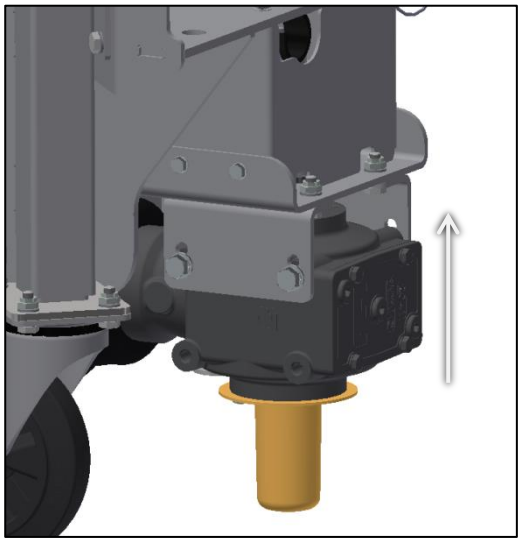

Fig. 8: Adjust the height of the gearbox

The belt pulley must again be adjusted to the height of the other belt pulley.

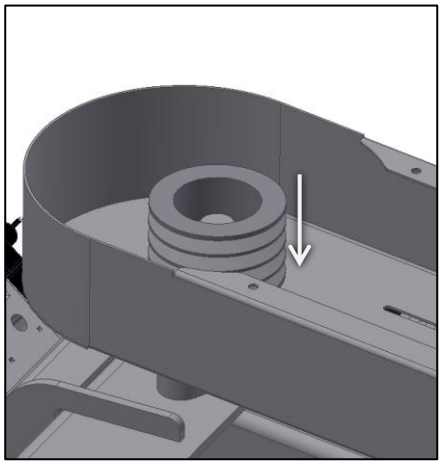

Fig. 9: Adjust the height of the belt pulley

5.2 Connecting the hydraulic connections of the weed brush on the tractor

Ensure that the plug couplings are clean.

Hydraulic pivoting

The weed brush must be hydraulically pivoted beyond the width the tractor. Then adjustments can be made via the hydraulic cylinders of the brush head. The hydraulic hoses must be connected on the tractor on the free hydraulic circuits.

5.3 Mounting the water sprinkler

Note!
The water sprinkler is an accessory and is not included in the scope of delivery of the weed brush. Please order it separately.

A separate operating manual is provided for the water sprinkler (order no. 131_8751).

Fig. 10: Water sprinkler

Fig. 11: Placement of the spray nozzles

Fig. 12: Layout of the water hose

5.4 Hydraulic variants

The machine is available in different variants with reference to control

5.4.1 Two functions with one hydraulic circuit

For this variant the weed brush is equipped with a hydraulic changeover valve and has the mechanical adjustment element for pivoting of the brush.

1. Hydraulic connection for tilting the brush head; the changeover valve that is controlled via the switch, changes over between pivoting the arm and tilting the brush head.
2. The pivoting of the brush head is set via the mechanical adjustment element

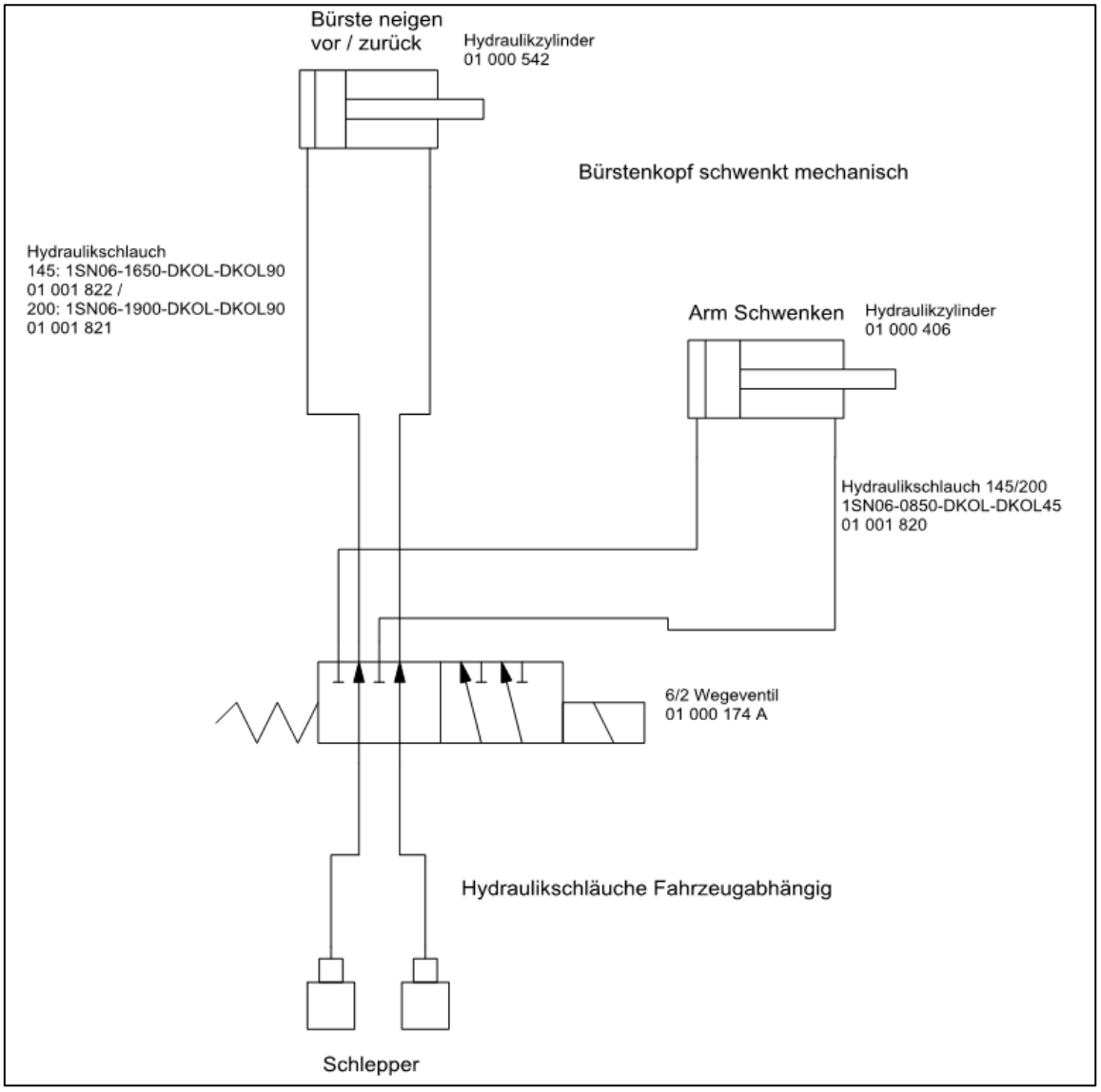

Fig. 13: Hydraulic diagram 1

5.4.2 Three functions with two hydraulic circuits

For this variant the weed brush is equipped with a hydraulic changeover valve. Pivoting is adjusted with the aid of a hydraulic cylinder.

1. Hydraulic connection for tilting the brush head; the changeover valve that is controlled via the switch, changes over between pivoting the arm and tilting the brush head.
2. Pivoting of the brush head is controlled via the second hydraulic connection on the carrier vehicle.

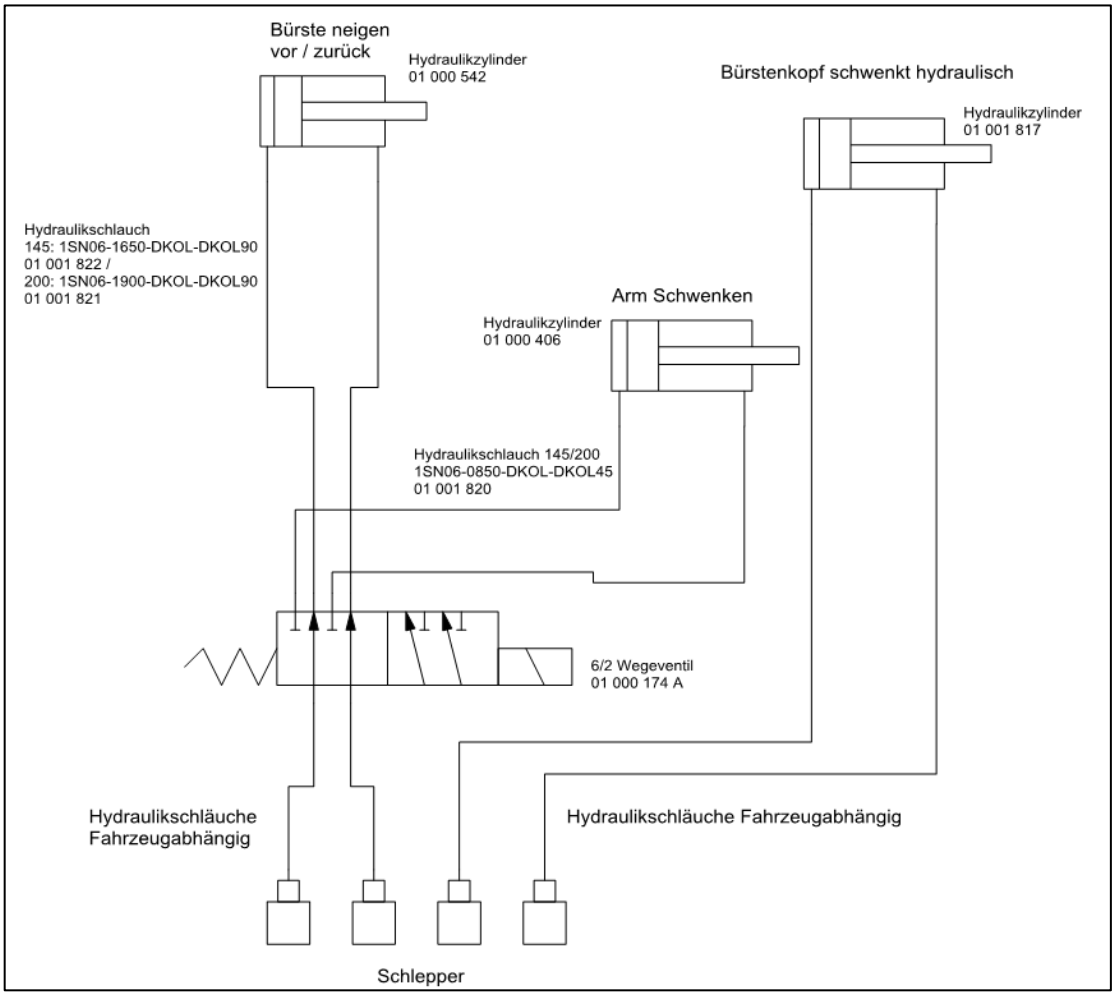

Fig. 14: Hydraulic diagram 2

5.4.3 Three functions with one hydraulic circuit

For this variant the weed brush is equipped with two hydraulic changeover valves. Pivoting of the brush is adjusted with the aid of a hydraulic cylinder.

3. Hydraulic connection for tilting the brush head; the changeover valve that is controlled via the switch, changes over between pivoting the arm and tilting the brush head.
4. Pivoting of the brush head is activated via the second changeover valve.

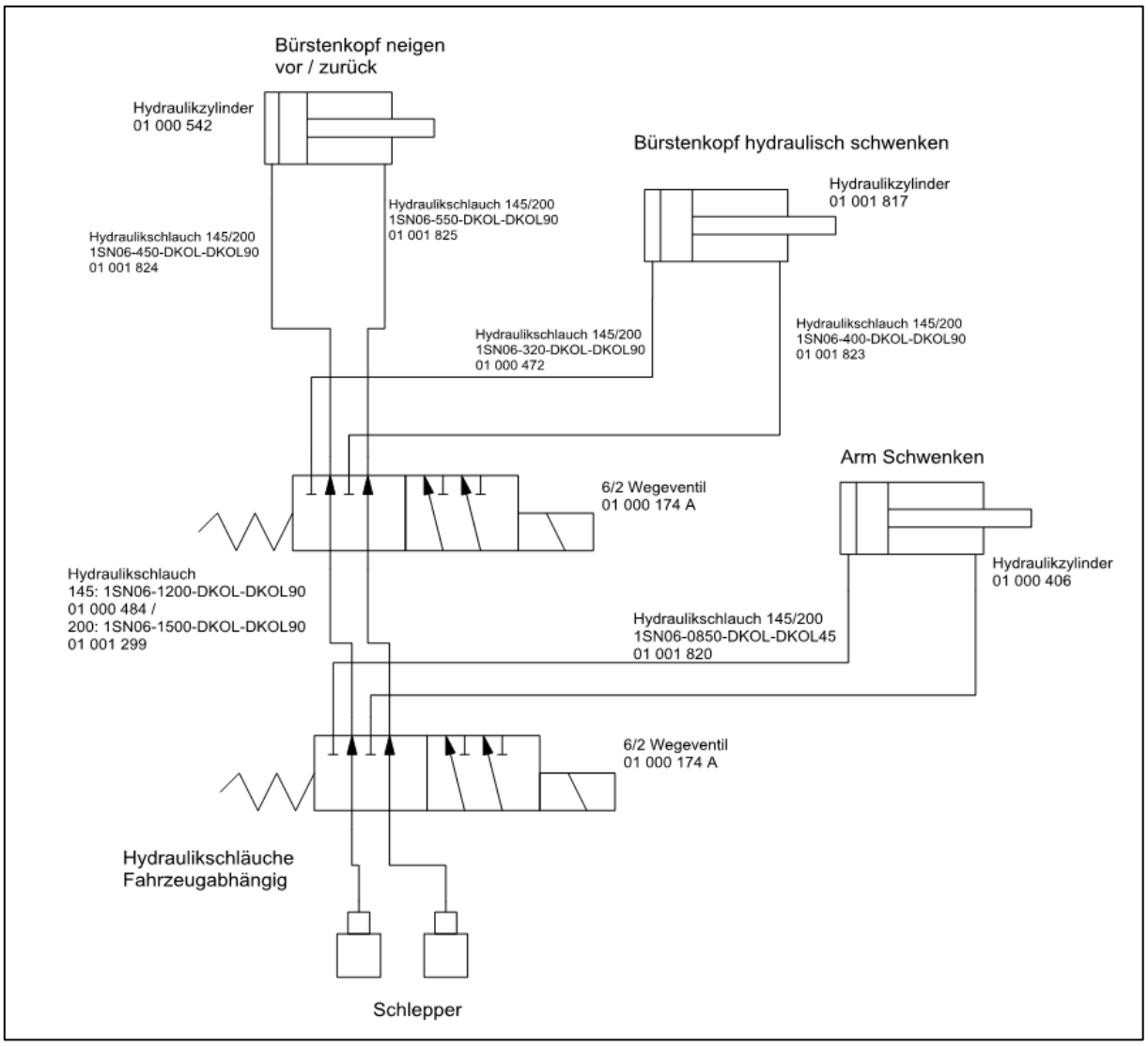

Fig. 15: Hydraulic diagram 3

5.5 Conversion for operation on the left side

With a few hand motions the weed brush can be converted to left-hand drive operation.

1. Dismount cover

Fig. 16: Dismount cover

2. Dismount gearbox, turn it and remount

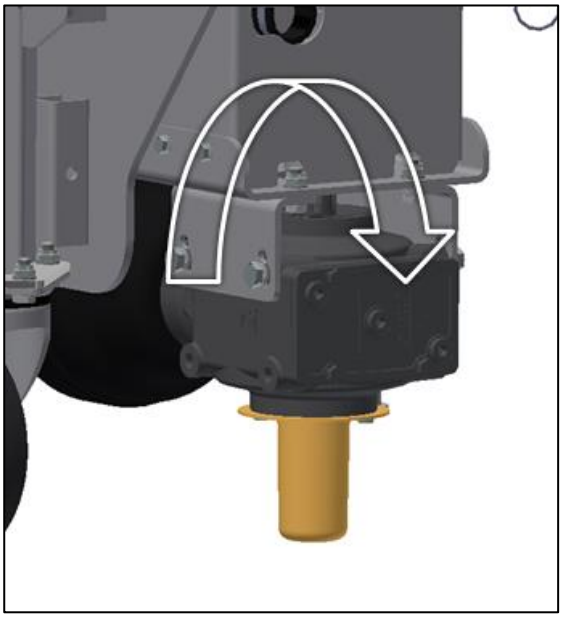

Fig. 17: Turn gearbox

3. Mount support foot, cylinder, and support wheel on the other side.

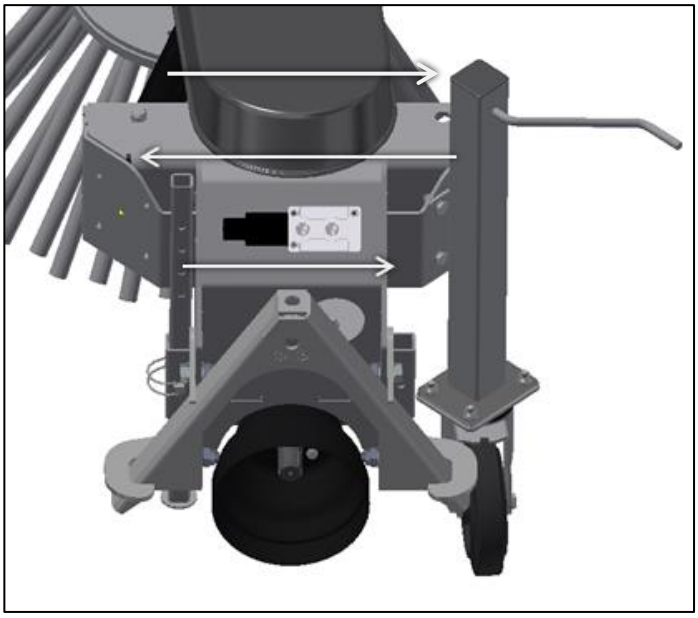

Fig. 18: Support foot and support wheel

4. If a water sprinkler is present, then a nozzle must also be screwed on, on the other side.

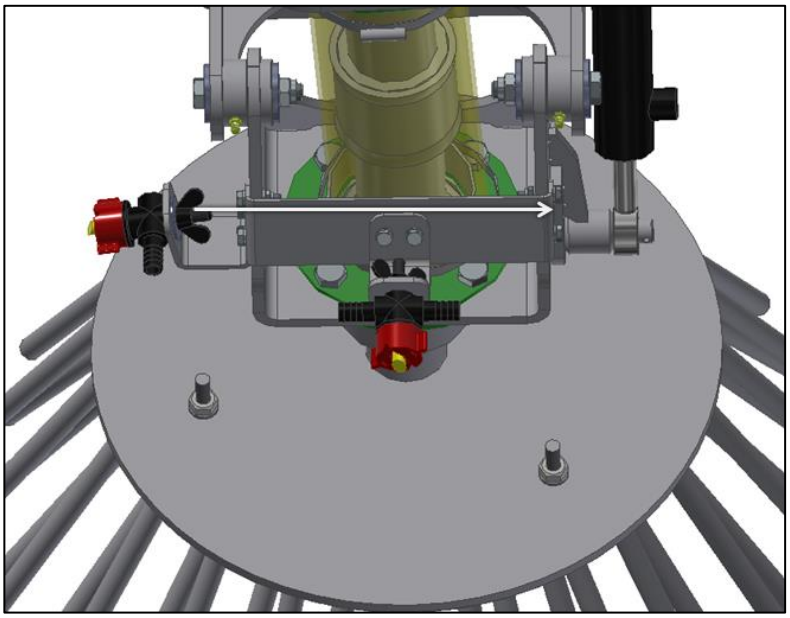

Fig. 19: Spray nozzle on the other side

5. Remount the cover as shown in Fig. 16.

6 Operation

Attention!
Before starting up the implement, read the instructions on safety and handling for operation of the entire implement and connection to the tractor.

Note!
A weed brush that is adjusted too tightly does not provide any better sweeping results.

Weeds on streets, streamlets, and paths can be removed with the weed brush.

Correct adjustment of the weed brush is part of proper operation. If the machine is adjusted too high, the surface will not be effectively cleaned. However if the weed brush is adjusted too low, the machine has excessive ground pressure and thus it can be damaged. The brush height is adjusted via the support wheel that also runs on the ground in use. The support wheel must be adjusted in such a manner that when the machine is lowered the brush touches the ground with a defined pressure. Because the brush is a wear part, its setting must be checked and adjusted before each use.

6.1 Attaching the weed brush

1. Approach the brush with the carrier vehicle.
2. Lift out the brush with the lift mechanism. Ensure that the coupling triangle is correctly locked in place.
3. Now switch off the engine, depressurize the hydraulic circuits for operation of the weed brush, and properly bring the vehicle to a standstill
4. Then secure the coupling triangle with the screw, connect the hydraulic lines and universal joint shaft.
5. Fix the support foot in place in the highest position

6.2 Adjusting the weed brush

Note!
At each re-attachment on a tractor and each re-adjustment of the brush pressure, the inclination must be re-adjusted.

6.2.1 Adjusting the inclination of the weed brush

The weed brush must be aligned horizontally to the ground. The inclination of the machine can be adjusted via the top link on the front power system. When the caster is vertical to the ground, inclination of the machine is correctly set.

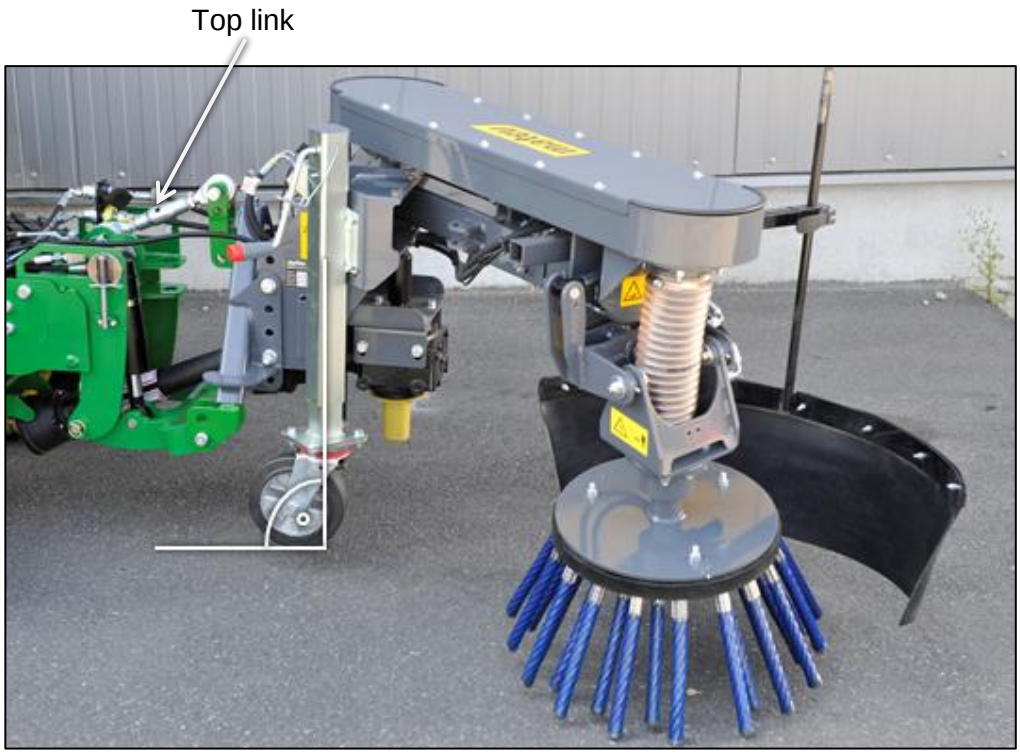

Fig. 20: Adjusting the inclination of the weed brush

6.2.2 Maximum brush pressure

The maximum pressure of the brush on the substrate must be selected in such a manner that when the tractor is at a standstill with the weed brush in float position, a pressure of 15 kg is in effect. Brush pressure in excess of this range causes increased wear of the brush. The brush pressure is changed by adjusting the height of the support wheels. (Chapter 6.2.4)

6.2.3 Adjusting the debris collection cloth

The spray cloth must always be adjusted in accordance with the adjustment of the brush plate. Contact with the brush should be avoided in operation. The cloth directs the sweepings.
On flat terrain the spray cloth should be placed all the way down, however with a minimal free passage.
On uneven terrain there should be distance between terrain and cloth of 5-10 cm. Thus unnecessary wear is avoided.

6.2.4 Adjusting the height of the support wheel

Note!
Adjust the support wheel in such a manner that in working position the brush touches the ground with a defined pressure.

1. Turn the anti-rotation lock of the height adjustment element upward
2. Turning the handle adjusts the height of the wheel
3. Press the anti-rotation lock downward.

Fig. 21: Release the lock

6.3 Parking the weed brush

1. Pivot the weed brush inward, i.e. the weed brush must be aligned straight in the vehicle direction.
2. By turning the top link or activating the cylinders, align the brush of the weed brush unit in such a manner that when lowering the brush it rests full surface on the ground.
3. Lower the weed brush far enough that the brush rests full surface on the ground.
4. Bring the support foot of the weed brush into position and fix it in place
5. Switch off the engine, depressurize the hydraulic circuits for operation of the weed brush, and properly park the vehicle.
6. The machine is uncoupled in the reverse sequence of the procedure described for attachment

Fig. 22: Safely park the weed brush

6.4 Working with the weed brush

Attention!
Before each use, check to ensure that the support wheel is correctly adjusted, see section 6.2.4 in this regard.
Only operate the weed brush from the driver seat of the tractor.

Attention!
Third persons can be injured and objects can be damaged. When clearing weeds, the brush throws rocks or similar items forward. Consequently, always maintain an adequate distance to persons who could be injured or objects that could be damaged.
The manufacture accepts no liability in such cases of injury or damage.

Attention!
The weed brush must only be operated on a lift mechanism with float position. The vehicle can become unsteerable. Vehicle and machine can be damaged.

Before each use the adjustment must be checked and corrected if necessary. In this process, the weed brush is adjusted to the implementation site and to the surface and ground conditions that will be processed.

1. Pivot the weed brush into the outer-most position.
2. Adjust the brush head to the desired diagonal position with the angle adjustment element.
3. Lower the weed brush.
4. Always place the hydraulic system for lowering the machine in **float position**.
5. Switch on the brush.
6. Drive forward at a slow speed.

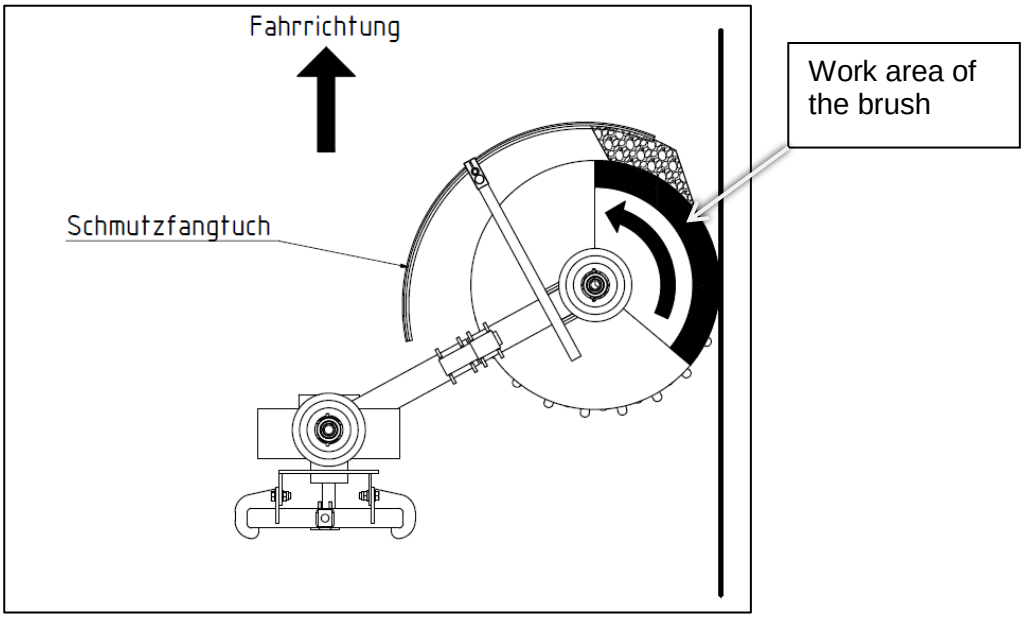

Fig. 23: Optimal work area of the brush

6.5 Brush replacement

If the desired clearing pattern can no longer be set, the brush should be replaced (chapter 7.2.5). The greater the wear on the brush, the greater the danger of collision with the belt drive cover and walls.

6.6 rpm

The weed brush is factory tailored to the carrier vehicle. Only a low rotational speed is required for brush operation. Higher rotational speeds only increase the wear and do not improve the result.

7 Maintenance

7.1 General information

Attention!
Personal injury or damage to the tractor and the implements can occur.
Before each use of the implements check all safety-relevant parts, and the hydraulic connections.

Danger!
Only perform service and maintenance tasks when the tractor is switched off.

Attention!
Remove the ignition key before performing maintenance tasks on the implement.

Attention!
Danger of crushing due to moving parts.
Never reach into the crushing hazard zone if parts are moving or can move.

If there is pressure loss, there is danger of crushing and shear injuries in the lift-out mechanism.

Attention!
Properly reattach all protective devices that have been dismounted after executing the maintenance tasks.

Note!
- **After the first 20 hours of operation check all screw and bolt connections.**
- **Subject the implement to regular maintenance.**
- **Use lubricating grease to lubricate the moving parts.**

7.2 Service

The moving parts of the implement must be greased or oiled at regular intervals, and always at the beginning and end of the season.

7.2.1 Maintenance schedule

Daily service:

- Prior to each use, check the safety elements and moving parts for wear
- Check the hydraulic connections and lines
- Trial run before each use
- The entire implement must be cleaned after each use

Service after 20 operating hours or after a longer standstill period:

- Check all screw connections and bolt connections. Tighten any loose screws, and secure any loose bolt connections with spring cotter pins.
- For versions with mechanical drive, perform a visual inspection of the belt. Worn or damaged belts must be replaced.
- Grease all lubrication points

7.2.2 Lubricating schedule

The positions of the lubricating nipples are marked on the Overview below.

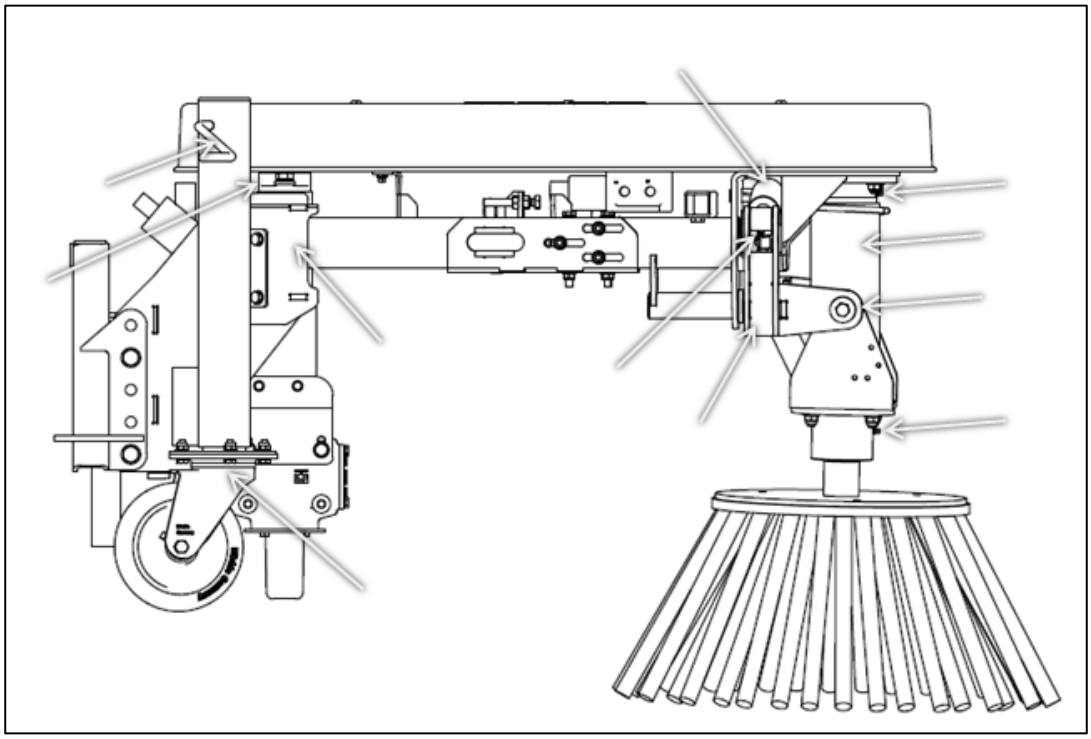

Fig. 24: Lubricating nipples Overview

- The universal joint shaft must be greased.

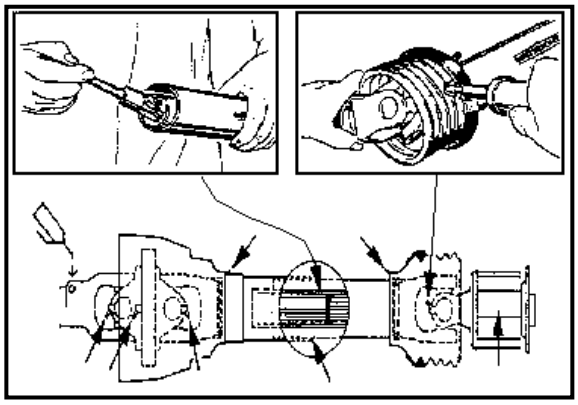

Fig.25: Lubricating the universal joint shaft

7.2.3 Changing the gear oil

The gear oil should be changed after the first 50 hours; thereafter it should be changed every 500 hours.

Recommended oil: ISO VG 150 EP

Oil quantity: approx 0.9 l

7.2.4 Hydraulic hoses

At the latest, the hydraulic hoses must be replaced after 5 years of use or after 2 years of storage. The date of manufacture is imprinted on the hoses.

7.2.5 Replacing the brush

Fig. 26: Replacing the brush

1. The tractor is stopped!
2. The weed brush is lifted out.
3. Safeguard the lift mechanism against uncontrolled falling.
4. Unscrew the fastening screws.
5. Replacing the brush
6. Bolt on the new brush and tighten it sufficiently to prevent autonomous loosening.

7.2.6 Tensioning the V-belt

1. Unscrew the 6 fastening screws

Fig. 27: Fastening screws – arm

2. Unscrew the 2 fastening screws of the cover

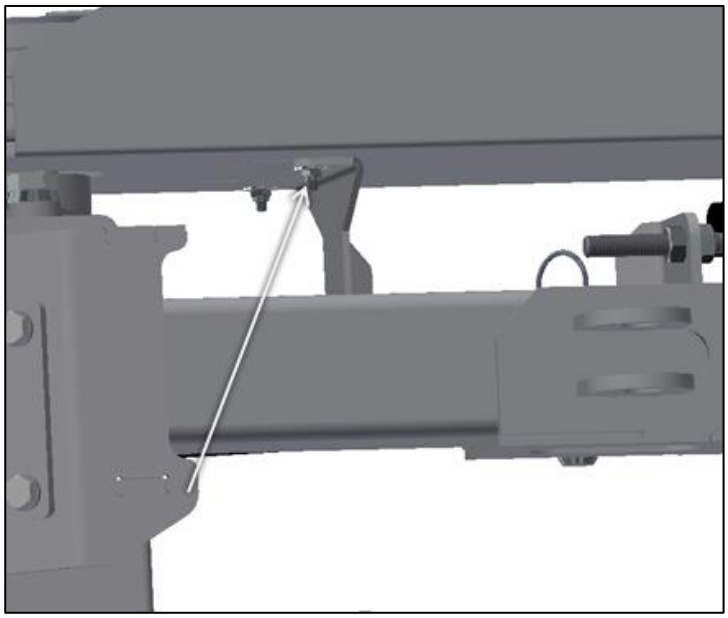

Fig. 28: Fastening screws of the cover

3. Tension the belts via the tension screw. Then tighten all screws again

Fig. 29: Tension screw – belt drive

7.3 Faults

Fault	Possible cause / rectification
Weeds are not completely removed	• Brush is set too high • Weed brush is not lowered all the way • Substrate is very uneven
Tractor has a hard time working with the weed brush	• Tractor is too small for this machine • Brush is set too low
Whistling sound	• Belt is too loose and slips
Belts come off the belt pulleys	• The belt must be tensioned with more tension • Belt pulleys are not aligned
Vehicle can no longer be steered Caster wobbles when driving	• Front lift is not in float position, thus the steering axle is off-loaded • Speed is too high – reduce speed, if you do not reduce the speed the wear rate is extremely high • Substrate is very uneven, e.g. lawn lattice area, paved surface
Weed brush interferes with itself	• The substrate is not paved (e.g. crushed stone/gravel surface) or extensive thrust; remedy – set the caster higher, so that the engagement area of the brush is reduced

7.4 Repair

If there are faults, problems, or other indications of malfunction, contact your sales consultant or contact the manufacturer directly:

matev GmbH

Nürnberger Str. 50

90579 Langenzenn, Germany

Tel. (switchboard): +49 9101/90 87-0

Enter the article number and the chassis number here.
This information is on the type plate of the implement.

Article number: .....

Chassis number: .....

8 Disposal

The implements must be disposed of in accordance with the applicable regulations of the municipality or the country.

Take the parts to the collection points for residual waste, special waste, or recycle them depending on material.

matev GmbH does not provide any disposal services.

9 Warranty

The General Terms & Conditions of matev GmbH provide information on the guarantee conditions.

matev GmbH
Nürnberger Str. 50
90579 Langenzenn, Germany

10 Technical data, implements and optional equipment

10.1 WRM-M 145

Dimensions	Data
L x W x H	1520 mm x 750 mm x 950 mm
To track width	1450 mm
Brush diameter	Ø 700 mm
Weight depends on equipment	Approx. 225 kg

10.2 WRM-M 200

Dimensions	Data
L x W x H	1800 mm x 750 mm x 950 mm
To track width	2000 mm
Brush diameter	Ø 700 mm
Weight depends on equipment	Approx. 238 kg

10.3 Implements and optional equipment

For WRM-M 145

Accessory / spare part	Order number
Attachment Cat. 0	131 8747
Attachment Cat. 1	131 8748
Inclination adjustment, incl. hydraulic kit BG2	131 8743
Inclination adjustment, incl. hydraulic kit BG3	131 8744
Hydraulic kit, incl. electric changeover valve for inclination adjustment	131 8745
Brush fitted with braided elements Ø 700 mm	131 8750
Brush with flat wire elements Ø 700 mm	131 8749
Water sprinkler 110-liter	131 8751
Debris catch cloth	131 8752

For WRM-M 200

Accessory / spare part	Order number
Attachment Cat. 0	131 8747
Attachment Cat. 1	131 8748
Inclination adjustment, incl. hydraulic kit BG2	131 8764
Inclination adjustment, incl. hydraulic kit BG3	131 8765
Hydraulic kit, incl. electric changeover valve for inclination adjustment	131 8766
Brush with braided wire elements Ø 700 mm	131 8750
Brush with flat wire elements Ø 700 mm	131 8749
Water sprinkler 110-liter	131 8751
Debris catch cloth	131 8752

11 List of illustrations

12 EC Declaration of Conformity

EC Declaration of Conformity for a machine to confirm compliance with Directive 2006/42/EC and with the statutory regulations issued for its implementation.

The manufacturer matev GmbH
Nürnberger Str.50
90579 Langenzenn, Germany

declares that the machine WRM-M 145 Basic implement: Order no. 131_8732
WRM-M 200 basic implement: Order no. 131_8753

complies with the provisions of the Machinery Directive 2006/42/EC and with the implementing national statutory regulations.

The signatory is authorized to compile the technical documents.

The address is the address of the manufacturer.

Date / signature September 2018 .....

Name of the signatory Georg Hemmerlein
Information on the signatory Managing Director