



EC Declaration of Conformity as defined by the EC directives

- Implements 98/37/EG (22.06.1998)

The implement

product : Rotary Tedder
type : CondiMaster 8331 / Fanex 833 T / Taarup 8083 T
identity no. : 6918
serial numbers : 12 -
implement no. : 171 -
year of construction : 2003

was designed, constructed and manufactured, in accordance with the aforementioned EC directives, solely by

Kverneland Gottmadingen GmbH & Co. KG
Hauptstrasse 99
D-78244 Gottmadingen

The following harmonised norms were applied:

- DIN EN 292/1 and EN 292/2, safety of machinery, equipment and systems, basic terminology, general principles for design

Complete technical documentation is available.

The operating instructions for the implement are available

- in the original version : German
- in the languages : English, French

Gottmadingen, 10.03.2003

Rasmus Nordbø
GPA Managing Director

Foreword

Dear customer!

We would like to congratulate you on the purchase of your Rotary Tedder and thank you for choosing our product.

These operating instructions provide you with detailed information concerning system set up and maintenance of your new Rotary Tedder. In addition, the instructions also include safety instructions which ensure safe employment of the implement. The operating instructions contain descriptions of all the available equipment, the various models and all special and additional pieces of equipment which are not included in the normal scope of delivery.

These operating instructions are intended to enable you to obtain the best possible use from your new Kverneland Rotary Tedder.

The performance of your implement depends to a great extent on correct use and careful maintenance. For this reason, read the instructions carefully before the first system start-up and always keep them close at hand. In this way, you will avoid accidents, preserve the manufacturer's warranty and always enjoy the advantages of an efficient and reliable implement.

Kverneland is continuously making every effort to improve their products. The company reserves the right to make any alternations or improvements to the implement considered necessary. This, however, does not obligate the company to modify implements which have already been supplied.

If you have any questions which are not covered by the operating instructions, please contact your nearest dealer.

We hope you reap a bountiful harvest with the help of the Rotary Tedder!

Read and observe the operating and safety instructions before system start-up!



Kverneland Gottmadingen GmbH & Co. KG
Hauptstrasse 99
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Fill in the details of your implement here:

Implement type :

Serial number :

Initial start-up on :

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1 Safety

1.1 For your safety

On delivery, your dealer explained to you the operation and maintenance of the implement. Please read these operating instructions before operating the implement for the first time and do not fail to observe the safety instructions. Parts of the text which are of particular importance are marked with a pictogram.



This symbol can be found wherever important safety instructions appear in these operating instructions. Follow these instructions strictly and take special care in these cases.

This Rotary Tedder is equipped with safety devices and has been tested by the German "Landwirtschaftliche Berufsgenossenschaft" (Agricultural Trade Association) with respect to safety and accident protection. However, incorrect use or mishandling of the implement can endanger:

- life and limb of the operator or third persons or animals in the vicinity of the implement,
- the implement and other material assets of the owner or third persons,
- the performance of the implement.

Anyone who is involved in installation, system start-up, operation or maintenance of the implement must read the following instructions very carefully and observe them at all times.

It is for your own safety!

1.2 Safety information to be found in this manual

Safety alert signs:



Danger!

This sign signals the risk of injury or fatal injury. If you see this safety alert sign in the operating instructions, please take all the necessary safety precautions.



Attention!

This alert sign is a warning about the risk of material damage or financial and penal consequences (e.g. loss of guarantee rights, liability, etc.).



Note:

Instructions and important information.

1.3 Nameplate

The nameplate with the implement type and serial number is attached to the front left side of the main frame.



Note:

Enter the data on the nameplate in the box provided on page 3.

1.4 Designated use

The Rotary Tedder is built solely for use in the field of agricultural work and is intended and suitable for the processing of stems which have been mown and are lying on the ground!

Any other use is not in accordance with the designated use. The manufacturer is not liable for any resulting damage resulting as a consequence. The user bears all risks!

The designated use of the implement also includes adhering to the manufacturer's instructions pertaining to operation, maintenance and repair work conditions at all times. The Rotary Tedder may only be operated, serviced and repaired by qualified personnel who know the work involved and who have been thoroughly informed of the inherent dangers.

All applicable accident prevention regulations, as well as all generally recognised safety, health and traffic regulations, must be complied with.



Attention!

Never modify/make alterations to the implement yourself; otherwise no liability will be assumed for any resulting damage.

1.5 Liability and warranty

These operating instructions must be read and observed by all personnel who work on or with this implement. In addition, this implement is to be used solely for the designated purpose (see chapter 1.4).

1. You may only work with this implement in accordance with the instructions in the relevant documentation.

This documentation can comprise the following documents:

- Mounting instructions
- Operating instructions
- Supplement sheets

2. The following regulations and instructions must be observed:

- All applicable local accident prevention regulations,
- All recognised traffic, safety and health regulations,
- The system limits and safety instructions listed in the technical manuals.

3. Any work on the implement should be carried out using suitable tools and equipment in perfect condition.
4. You may not use any parts (spares, accessories, lubricants, etc.) other than those complying with or exceeding the manufacturer's requirements and you must use them in accordance with the instructions (including the torque values indicated).

A part complies with the manufacturer's requirements if it is either genuine or approved by the manufacturer.

5. Never modify/make alterations to the implement yourself; otherwise no liability will be assumed for any damage resulting as a consequence.



Attention!

Anyone who disregards the regulations given above is acting with gross negligence. In this case the manufacturer's liability and warranty no longer applies for any resulting damage. The negligent person bears all risks.

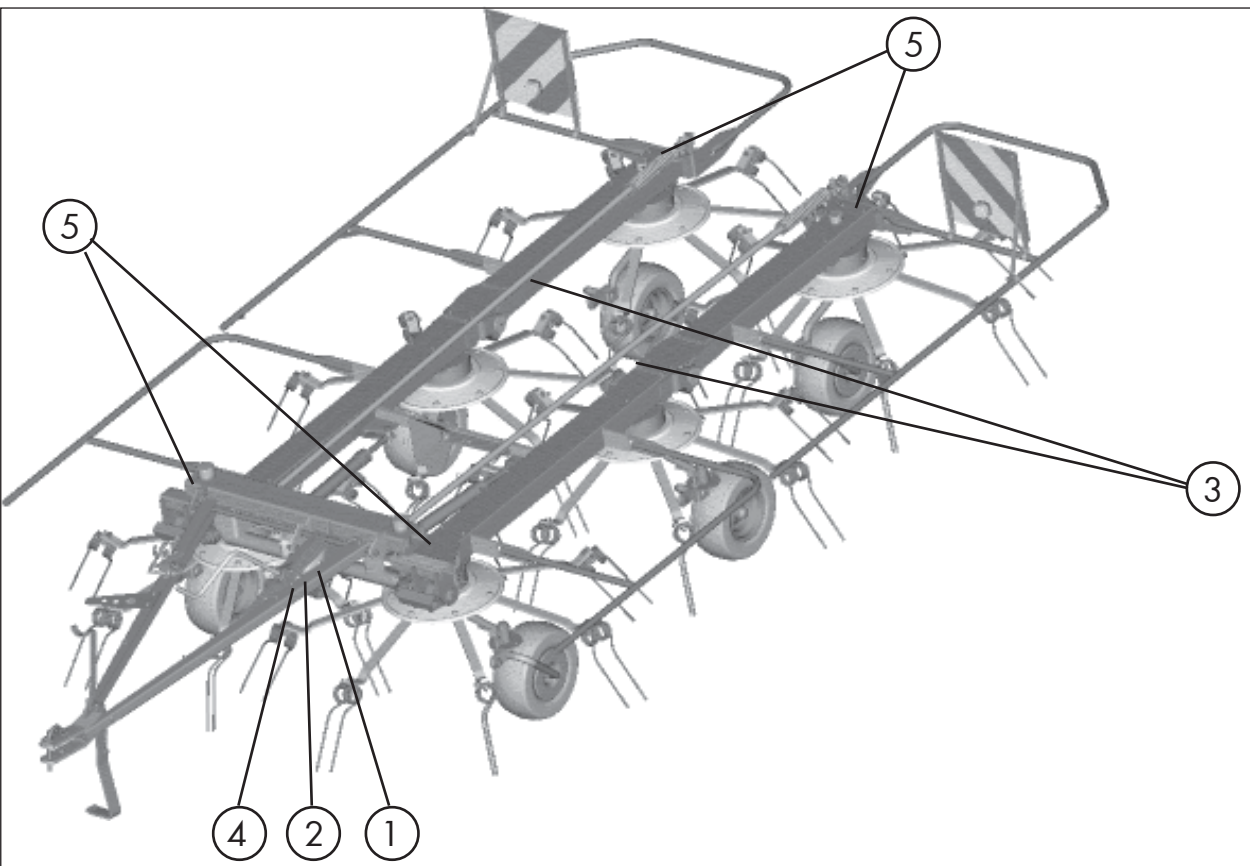
1.6 Safety stickers and warning signs

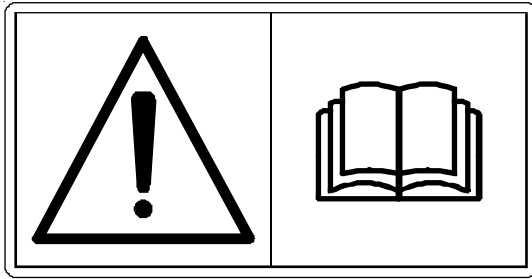


Attention!

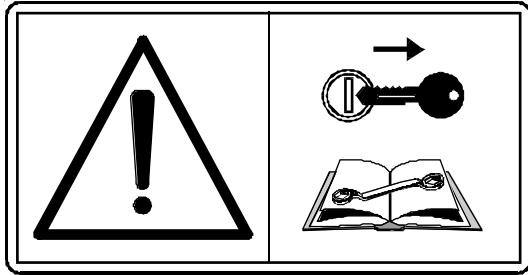
Real safety means that you know all safety stickers. This refers to the type and place of any danger, and in particular the relevant safety measures. Always remain alert and be aware of the danger(s).

This implement is equipped with warning signs (safety stickers). The stickers with the corresponding explanations are listed below and illustrated in the following overall drawing:

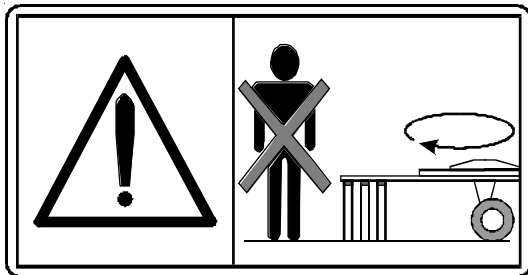




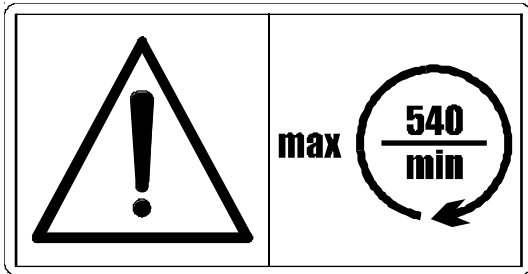
1. Read and observe the operating and safety instructions before system start-up!



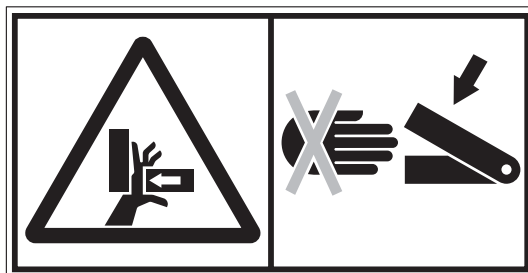
2. Before proceeding with any maintenance and repair work, you must read the corresponding instructions!
All maintenance, repair and adjustment work may only be carried out with the implement at a standstill. Shut down the engine and remove the ignition key!



3. Keep away from the rotating unit. No-one may be in the immediate vicinity of the implement when the Rotary Tedder is running! Before switching on the power take-off (p.t.o.) shaft, make sure that no-one can be hit by the rotary unit!



4. The prescribed p.t.o. shaft speed $n_{\max} = 540$ rpm must not be exceeded.



5. Never reach into the area where there is a risk of being crushed until it is certain that no parts can move!

CAUTION

1. Read Operator's Manual before using machine.
2. Stop tractor engine, lower machine to the ground, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, unplugging or fitting.
3. Install and secure all guards before starting.
4. Keep hands, feet, hair and clothing away from moving parts.
5. Do not allow riders.
6. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
7. Clean reflectors, SMV and lights before transporting.
8. Install safety locks before transporting or working beneath components.
9. Add extra lights and use pilot vehicle when transporting during times of limited visibility.
10. Use hazard flashers in tractor when transporting.
11. Install safety chain when attaching to tractor.
12. Keep away from overhead electrical lines. Electrocutation can occur without direct contact.
13. Review safety instructions with all operators annually.

SW4

DANGER



ROTATING DRIVELINE HAZARD

To prevent serious injury or death from rotating driveline:

- Keep all guards in place when operating.
- Operate only at 540 RPM.
- Keep hands, feet, hair and clothing away from moving parts.

SW104

DANGER



To prevent serious injury or death from pinching:

- Keep all persons and objects clear while any part of this machine is in motion.

SW205

U.S. warning signs

6. Read and observe the operating and safety instructions before system start-up.

7. Danger from rotating drive shaft.

8. Danger from moving parts.

1.7 Authorised operators

People under the age of 16 may not operate the Rotary Tedder.

The owner of the implement must provide the operators with the operating instructions and make sure that they have read and understood them. Only then may the implement be put into operation.

The allocation of responsibility for the various tasks on the implement must be clearly defined and complied with. There must be no uncertainties regarding authority, as this could endanger the safety of the operators.

The owner must ensure that only authorised persons work on the implement. The owner is responsible for any third persons in the working area of the Rotary Tedder.

1.8 General safety and accident prevention regulations

Fundamental rule:

Before every system start-up, check the implement and the tractor for road safety and operational safety! In addition to the instructions in these operating instructions, observe the general safety and accident prevention regulations.

1.8.1 General

1. The warning and safety alert signs provide important advice to ensure the safe operation of the implement. Observe these instructions at all times, for the sake of your own safety!
2. Before operation, make yourself familiar with all elements and operating devices of the implement, as well as with their function. Make sure that all protective equipment is correctly mounted.
3. The operator's clothing should be close fitting. Avoid any loose fitting clothing! Always wear robust footwear!
4. Keep the implement clean at all times! Risk of fire!
5. When travelling on public roads, observe the following:
 - all traffic regulations in force in your country,
 - the permissible axle loads and total weights and
 - the permissible transport dimensions.Never leave the driver's seat during the journey!
6. Before any transport on public roads, make sure the implement is in the condition prescribed and secure it in accordance with the manufacturer's instructions!
7. Inspect and install all equipment required for transportation such as lighting, warning and protective devices!
8. All operating devices such as ropes, chains, rods, etc. which act on remote-controlled elements, have to be installed in such a way that no unintentional movement is possible in any transport or operating position!
9. Couple the implement to the tractor as prescribed, fix it to the points according to the instructions and secure! Proceed with special care when mounting implements to and removing them from the tractor!

10. When mounting or removing the implement, make sure that the support devices are always in the prescribed position.
Ensure sufficient stability and only park the implement on level and firm ground.
11. Always mount the ballast weights as prescribed to the points intended for this!
12. Do not leave the engine running in enclosed spaces!
13. Before start-up and operation, inspect the area around you and make sure that no-one (especially children or animals!) is in the danger area! Good visibility is essential!
14. No-one (other than the driver) is allowed on the implement during transport! Persons required on the implement during operation must not leave their work place and may only carry out the job which requires their presence on the implement!
15. Always select the speed according to conditions! Avoid sudden turns when travelling uphill, downhill or across a slope!
16. Trailed implements and ballast weights influence driving behaviour, steering and braking performance! Make sure there is sufficient steering and braking capacity!
17. When going round bends, take into account the overhang and the flywheel mass of the implement!
18. Make sure all protective devices are installed and in position before operating the implement!
19. Keep clear of the working and danger area of the implement!
20. Keep clear of the swinging/turning area of the implement!
21. Caution when working on parts operated by additional driving systems (e.g. hydraulic system). Risk of squeezing and shearing!
22. No-one is allowed to step between the tractor and the implement until the vehicle has been secured against unintentional movement by means of the parking brake and wheel chocks!
23. Observe the permissible axle load and total weight of the implement, as well as the permissible transport dimensions!

1.8.2 Operation of the power take-off shaft (p.t.o. shaft)

1. Do not use cardan shafts other than those specified by the manufacturer!
Make sure that the cardan shaft is always properly installed and secured!
The guard tube and the funnel-shaped guard of the cardan shaft must be installed correctly and be in perfect condition!
Secure the cardan shaft against rotation by fastening the chains to the implement and the tractor!
Observe the overlaps prescribed for cardan shaft tubes, both in transport and operating position!
2. When working with the cardan shaft, no-one is allowed to be in the vicinity of the rotating cardan shaft!
3. When using cardan shafts with overload clutches or overrunning clutches, the clutches must be mounted on the implement!
4. Only attach or remove the cardan shaft when the p.t.o. shaft is disengaged, the engine is off and the ignition key has been removed!
Place the detached cardan shaft onto its support!
After the cardan shaft has been detached, slide the protective cap over the p.t.o. stub!
5. The p.t.o. shaft guard must be positioned correctly and be in perfect condition!
Before engaging the p.t.o. shaft, make sure the selected speed and direction of rotation of the tractor p.t.o. shaft corresponds to the permissible speed and direction of rotation of the implement!
Before engaging the p.t.o. shaft, make sure that no-one is in the danger area of the implement!
6. Never engage the p.t.o. shaft when the engine is off!
7. Always disengage the p.t.o. shaft if the angle becomes too great or if the p.t.o. shaft is not needed!
8. Attention! Working elements continue to rotate after the p.t.o. shaft has been disengaged!
Keep clear of the implement until rotation has stopped! No work may be carried out on the implement until it has come to a complete standstill.
9. Before cleaning, lubricating or adjusting the p.t.o. shaft-driven implement or the cardan shaft, disengage the p.t.o. shaft, switch off the engine and remove the ignition key!
10. Repair any damage prior to working with the implement!

1.8.3 Hydraulic system

1. Attention! The hydraulic system is under high pressure!
2. Check the hydraulic hoses at regular intervals and replace them when damaged, at the latest, however, every 6 years! The spare hoses must comply with the technical requirements laid down by the manufacturer of the implement! Only use original parts!
3. Before working on the hydraulic system, lower the implements and aggregates. Then release the pressure from the system and switch off the engine.
4. When tracing leakages, use suitable tools. Danger of injury!
5. When connecting hydraulic cylinders and motors, make sure the hydraulic hoses are connected as prescribed!

When connecting the hydraulic hoses to the hydraulic system of the tractor, make sure that both the hydraulic system of the tractor and that of the implement are depressurised!

6. In the case of hydraulic connections between the tractor and the implement, mark the coupling sleeves and plugs to avoid any incorrect connections!
Should the connections be confused, the function is reversed (e.g. lifting/lowering). Danger of accidents!
7. Fluids forced out under high pressure (hydraulic oil) can break the skin and cause severe injury! In the case of injury, immediately consult a physician!
Danger of infection!
8. Do not exceed a maximum hydraulic pressure of 210 bar.

1.8.4 Tyres

1. When working on the tyres, make sure the implement is standing safely and has been secured against unintentional movement! Use suitable wheel chocks!
2. The mounting of tyres and wheels presupposes sufficient knowledge as well as the availability of all necessary tools!
3. Only skilled workers using appropriate tools may repair or mount tyres and wheels!
4. Check the inflation pressure at regular intervals! The prescribed inflation pressure is 1.5 bar!

1.9 Safety when the implement is not in use or is in storage

1. Store the implement in a safe place.
2. Make sure that no children play on or around the implement.
3. Only couple or detach the implement on stable, dry and level ground. This minimises the danger of the implement tipping or sinking into the soft ground or mud.
4. Place the detached cardan shaft onto its support!
5. Place the hydraulic rapid action clutch into its support.
6. Use wheel chocks to prevent any unintentional movement of the implement.

1.10 Maintenance

Directions quoted ("right", "left", "in front", "behind") are always taken as being in the direction of travel.

The direction of rotation is defined as follows:

- Direction of rotation right = clockwise,
 - Direction of rotation left = anticlockwise,
 - Rotations around a vertical axis, taken from top to bottom,
 - Rotations around a horizontal axis, at a right angle to the direction of travel, taken from left to right,
 - Rotations of nuts, bolts, etc. are always taken from the side from which they are operated.
1. As a rule, disengage the driving system and stop the engine prior to carrying out any repair, maintenance and cleaning work or for eliminating malfunctions! Remove the ignition key!
 2. Ensure that the nuts and bolts are firmly secured and retighten if necessary, once after the first 5 operating hours and later once every 100 operating hours! Observe the prescribed torques (see appendix)!
 3. Prior to carrying out any maintenance work on the lifted implement, secure it using appropriate supports!
 4. When changing working elements, use appropriate tools and protective gloves.
 5. Dispose of used oil, grease and filters according to regulations!
 6. Always disconnect the power supply before carrying out any work on the electrical system!
 7. The protection devices which are subject to wear and tear (e.g. cardan shaft guard) must be inspected regularly and be exchanged in good time.
 8. The generator and battery cables should be disconnected before any electrical welding is carried out on the tractor or mounted implements!
 9. Do not clean the implement with aggressive washing agents. This can cause corrosion to polished metal surfaces, e.g. hydraulic cylinders.

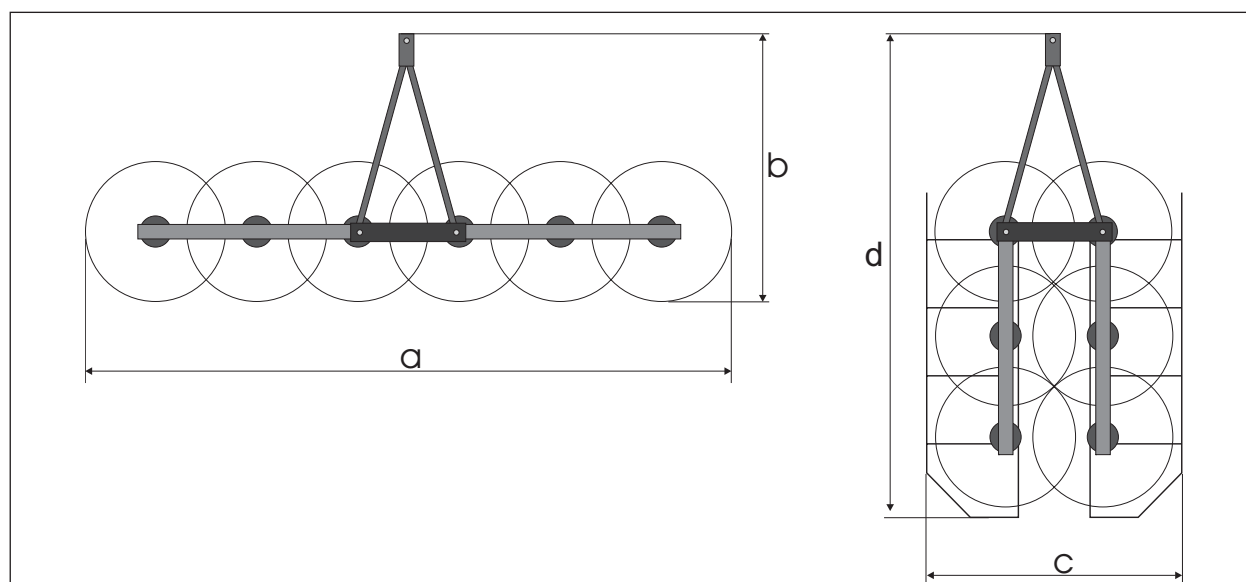
1.11 Safety instructions for the Rotary Tedder

1. General safety instructions are contained in this documentation (and in Germany additionally in the accident prevention regulation VSG 1.1, 01.01.2000, of the "Landwirtschaftliche Berufsgenossenschaft" (Agricultural Trade Association)).
2. Check the cardan shaft prior to the first operation, and if necessary adjust it to your implement (see chap. "Adjusting the cardan shaft")!
3. Check the tyre pressure (1.5 bar) prior to every use of the implement.
4. Before each transport:
 - disengage the p.t.o. shaft,
 - wait until the rotary units have come to a complete standstill,
 - put the implement in transport position,
 - check that it is correctly secured,
 - lock the control valve.
5. Keep away from the rotating units. No-one may be in the immediate vicinity of the implement when the Rotary Tedder is running! Before activating the p.t.o. shaft, make sure that no-one can be hit by the rotary unit!
6. Ensure that no-one is within reach of the implement when raising, lowering and swinging in the rotary units.
7. Repair work on pre-tensioned energy stores (springs, accumulators, etc.) may only be carried out by specialists using the prescribed mounting tools. All such repairs may only be carried out in specialist workshops!
8. Before proceeding with any maintenance and repair work, you must read the corresponding instructions!
Any maintenance, repair and adjustment work may only be carried out with the implement at a standstill; shut down the engine and remove the ignition key!
9. Keep away from the rotating units. No-one may be in the immediate vicinity of the implement when the Rotary Tedder is running! Before activating the p.t.o. shaft, ensure that no-one can be hit by the rotating unit.
10. The prescribed p.t.o. shaft speed $n_{\max} = 540$ rpm must not be exceeded!
11. Do not step between the tractor and the implement. Risk of serious injury from pinching!
12. When actuating the power lift, stay out of the lifting area of the three-point linkage!
13. After approx. 5 operating hours, check all screwed connections and retighten them if necessary.
Observe the prescribed torque!
14. When parking the implement, place the cardan shaft in the support!

2 Technical specifications

2.1 General

Type	6918
Number of rotary units	6
Working width	8.30 m
Implement width in working position "a"	8.63 m
Transport width incl. protective yoke and warning plates "c"	2.90 m
Length in working position "b"	2.60 m
Transport length "d"	5.90 m
Max. height	1.20 m
Required tractor performance	> 20 kW
Weight incl. cardan shaft	860 kg
Max. p.t.o. shaft speed	540 rpm
P.t.o. shaft dimension (diameter)	Ø 35 mm DIN 9611
Tyres	16 x 6.5 x 8 - PR6
Tyre pressure	1.5 bar
Max. permissible speed	40 km/h
Hydraulic connection	1 double-acting control unit
Oil pressure in the hydraulic system	130 to 210 bar
Hydraulic requirements	150 - 210 bar; at least 30 ltrs./min.
Power supply (lighting)	12 volt



2.2 Noise level

The emission sound level was measured in accordance with EN 31 201 and EN 31 204.

A-evaluated equivalent sound level

	Tractor	Tractor and Rotary Tedder
With the cabin window open	76.6 dB(A)	79.6 dB(A)
With the cabin window closed	74.2 dB(A)	74.8 dB(A)

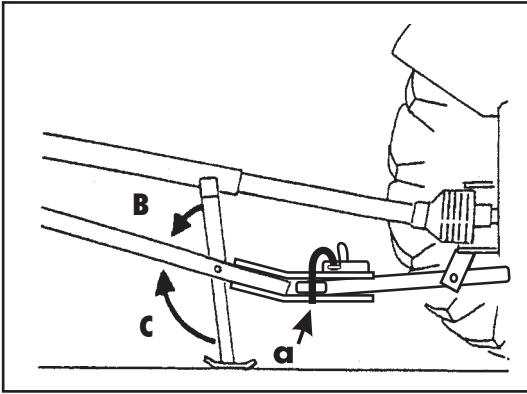


fig 3.1

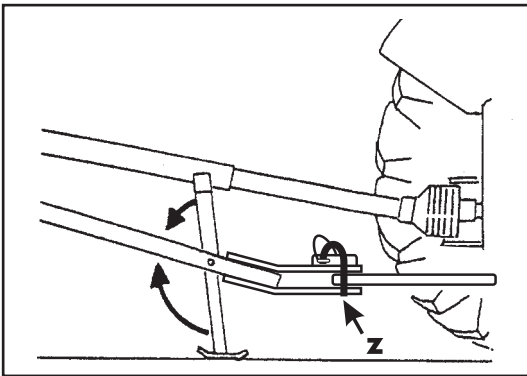
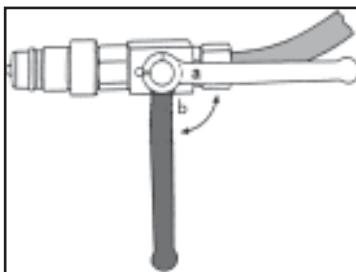
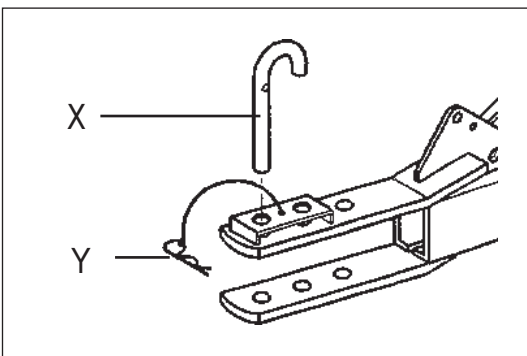


fig 3.2



a = open

b = close

3 Operation

3.1 Hitching to the tractor



Danger!

Before performing the following work, switch off the engine and wait for all machine components to be at a complete standstill. Remove the ignition key!

Hitching

- Hitch the rotary tedder to the fixed towbar (fig. 3.1) or to the swinging drawbar (fig. 3.2) of the tractor.



Danger!

There is a risk that the machine gets loose from the tractor.

Always use split pin (Y) to secure hitch pin (X) in position (a) (towbar) or in position (z) (swinging drawbar).

- Secure the towbar against unintentional lifting to prevent damage to the universal joint drive shaft.



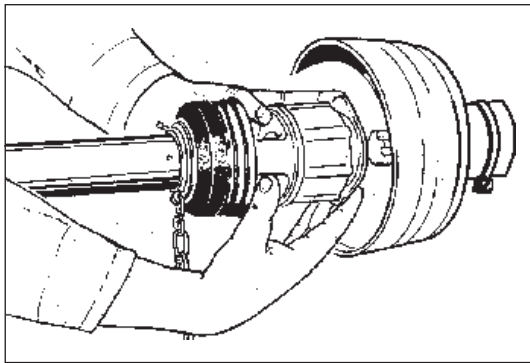
Attention!

The rear wheels can move away from straight-on position.

Once the machine is hitched to the tractor, activate the hydraulic system to fold machine together.

Hydraulic and electric connection

- Connect both hydraulic hoses to the tractor hydraulics. The hydraulic hose with ball cock must be connected to the delivery line and the other hose must be connected to the return line of the control unit.
- Connect the electric cable for lighting equipment to the electric socket of the tractor (service voltage: 12 V).
- Couple the universal drive shaft to the PTO and use the chain to secure the guard tubes against rotation.
- Be sure to install all hydraulic lines and electric cables in a safe manner.



Attaching the cardan shaft:

Before attaching the cardan shaft, ensure the installation position is correct. A marking is on the cardan shaft guard for correct installation.

- Attach the cardan shaft to the p.t.o. shaft (overload clutch on the implement).
Pull the snap lock towards you while pushing the cardan shaft onto the p.t.o. shaft until the lock engages automatically.
- Fold back the cardan shaft support.

3.2 Adjusting the cardan shaft

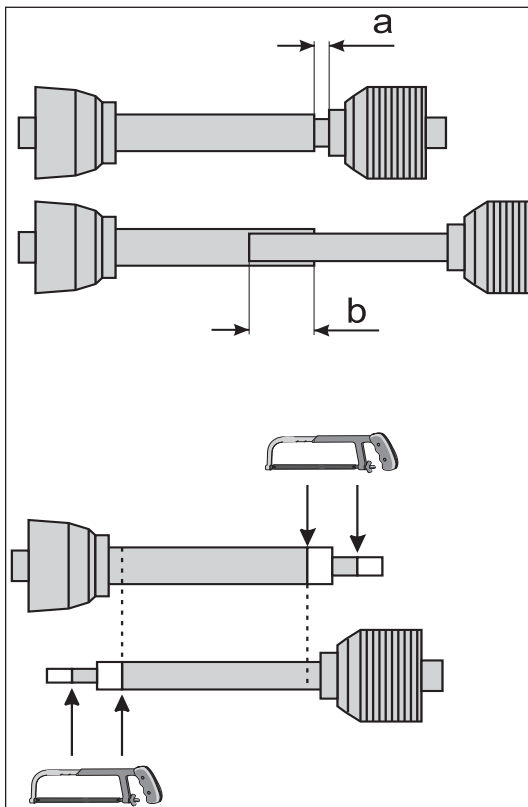
The length of the cardan shaft has been rated in the factory to fit practically all types of tractors. It will only need to be adjusted for individual tractors in exceptional cases.

Check the length of the cardan shaft as described below before using it for the first time:

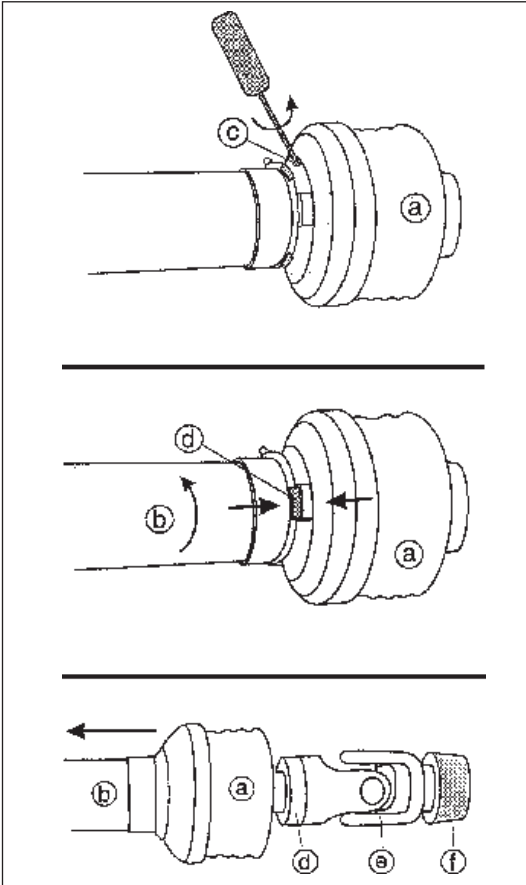


Danger!

Work may only be carried out with the engine shut down and the implement at a standstill. Remove the ignition key!



- Pull the cardan shaft apart and push both halves onto the p.t.o. shaft (overload clutch on the implement side).
- Hold the two shaft halves next to each other and check that when the Rotary Tedder is raised and lowered, or when going round bends,
 - ⇒ there is an overlap of at least 150 mm (b) and
 - ⇒ the cardan shaft does not come into contact with the block (min. distance (a) = 20 mm).
- If the cardan shaft has to be shortened, cut off the sliding and protecting tubes by the same amount.
- Burr the tube ends, remove any loose chips and thoroughly grease the contact points.



Shortening both halves of the cardan shaft:

1. Remove the fixing screw (c) between the protecting tube (b) and the funnel-shaped guard (a).
2. Turn the funnel-shaped guard (a) and the protecting tube (b) in opposite directions so that the "noses" of the sliding ring (d) are exactly above the recesses on the funnel-shaped guard (see arrows).
3. Then push back the guard and the tube.
4. Remount the cardan shaft guard in reverse order.

3.3 Conversion from transport to working position



Danger!

Before moving the machine from transport to working position make sure that no persons are in the working range of the unfolded machine. The machine is 8.63 m wide when unfolded into working position.

1. Unfold the machine using the control lever of the tractor spool valve.
2. The lateral machine elements must unfold evenly. If the unfolding procedure does not run correctly, fold machine together again and repeat the process at increased engine speed.

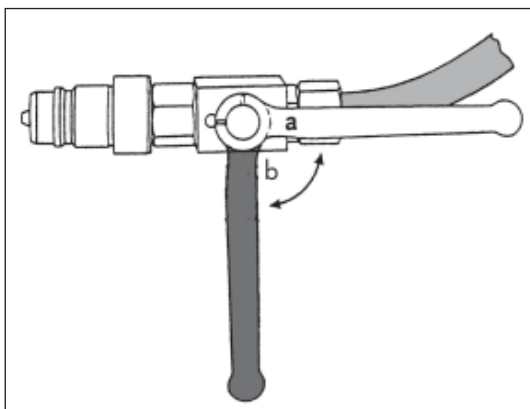
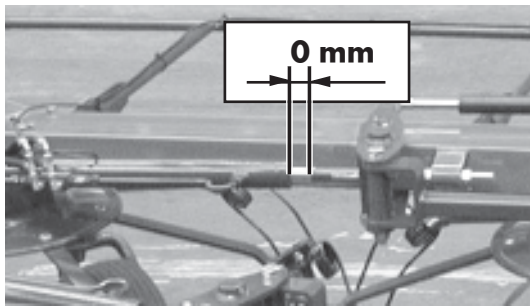
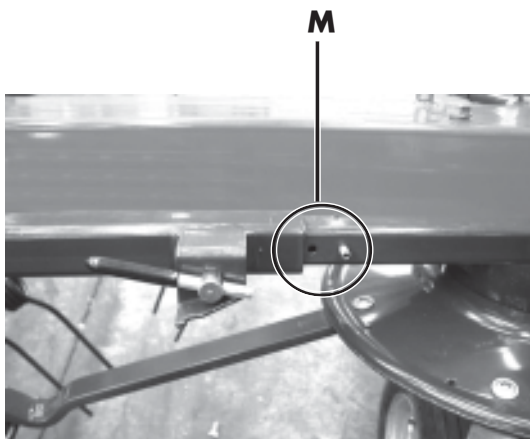


Attention!

If the lateral machine elements should not unfold evenly, this step must be repeated at increased engine speed. Non-observance can result in deformation of the tine arms or breakage of the universal joints.

3. Both hydraulic rams must be fully extended.

3.4 Conversion from working to transport position



a = open

b = close



Danger!

Before moving the machine to transport position make sure that no persons are in the folding range of the machine.

Requirements:

- Level and horizontal area
- The mechanism that moves the machine to angled position, must be set to centre position (M).
- Fold the machine into transport position using the control lever of the tractor pool valve.
- Both hydraulic rams must be fully retracted. To this end drive slowly forward at the end of the folding procedure while keeping the hydraulic control lever activated.

The hydraulic rams will be retracted when the chromium-plated piston rods are no longer visible.



Attention!

If the lateral machine elements should not fold together evenly, this step must be repeated at increased engine speed. Non-observance can result in deformation of the tine arms or breakage of the universal joints.



Danger!

Lock the control unit against unintentional control.



Note:

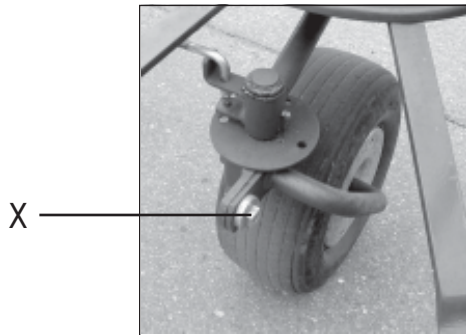
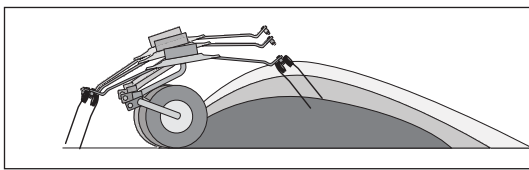
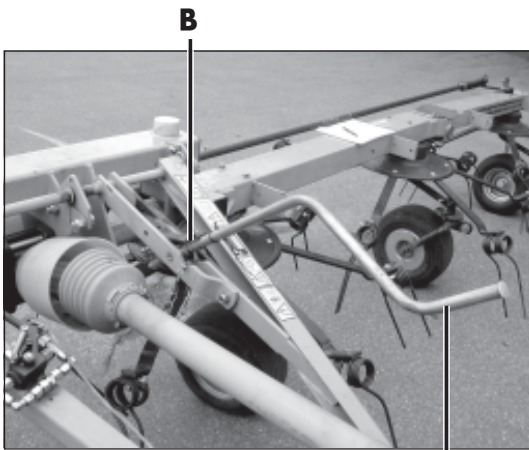
You can move the machine to transport position from the normal working position only.

Moving the machine directly from angled to transport position is not possible.



Danger!

The machine can suddenly move sideways on curves. Reduce transport speed before negotiating curves. During transport the tedder runs on its two rear wheels only.



3.5 Tine position

Ground clearance of the tines can be adjusted using crank (A). After adjustment the crank must be secured with lock (B).

The tines should slightly touch the ground depending on the volume and quality of the forage crop.

3.6 Adjusting the spreading angle

The schematic drawing on the left shows the effects of adjusting the spreading angle.

Use the eccentric adjustment device (X) to progressively adjust the wheel axles within a 3° range:

1. Loosen the hexagon bolt.
2. Work the eccentric adjustment device using a screwdriver and set the desired tilt of the axles.
3. Tighten the hexagon bolt.



Note

All wheels equal adjust.

3.7 Locking the wheels

The four middle wheels of the implement can be locked.

Attention!

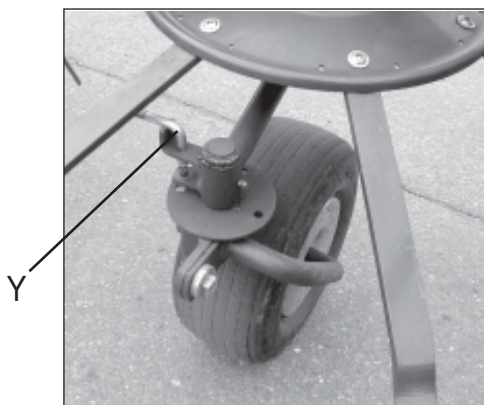


The four middle wheels must be locked when driving backwards in the working position! The four middle wheels can be locked when driving up/down a slope to keep the implement from sliding.

Attention!



The four middle wheels must not be locked when transporting the implement (in transport position)!



Locking the four middle wheels:

1. Slightly raise the safety bolt (Y).
2. Turn the wheel to the desired position.
3. Lower the bolt guiding it through the desired locking hole and thus locking the wheel.

For normal operation on even ground we recommend not locking the wheels.

3.8 Using the implement

3.8.1 General

Select the speed so that the entire crop is picked up correctly. Do not use the slip clutch for longer than 10 seconds at a time. In case of overload, change back one gear. Disengage the p.t.o. shaft if the angle of the cardan shaft becomes too great.

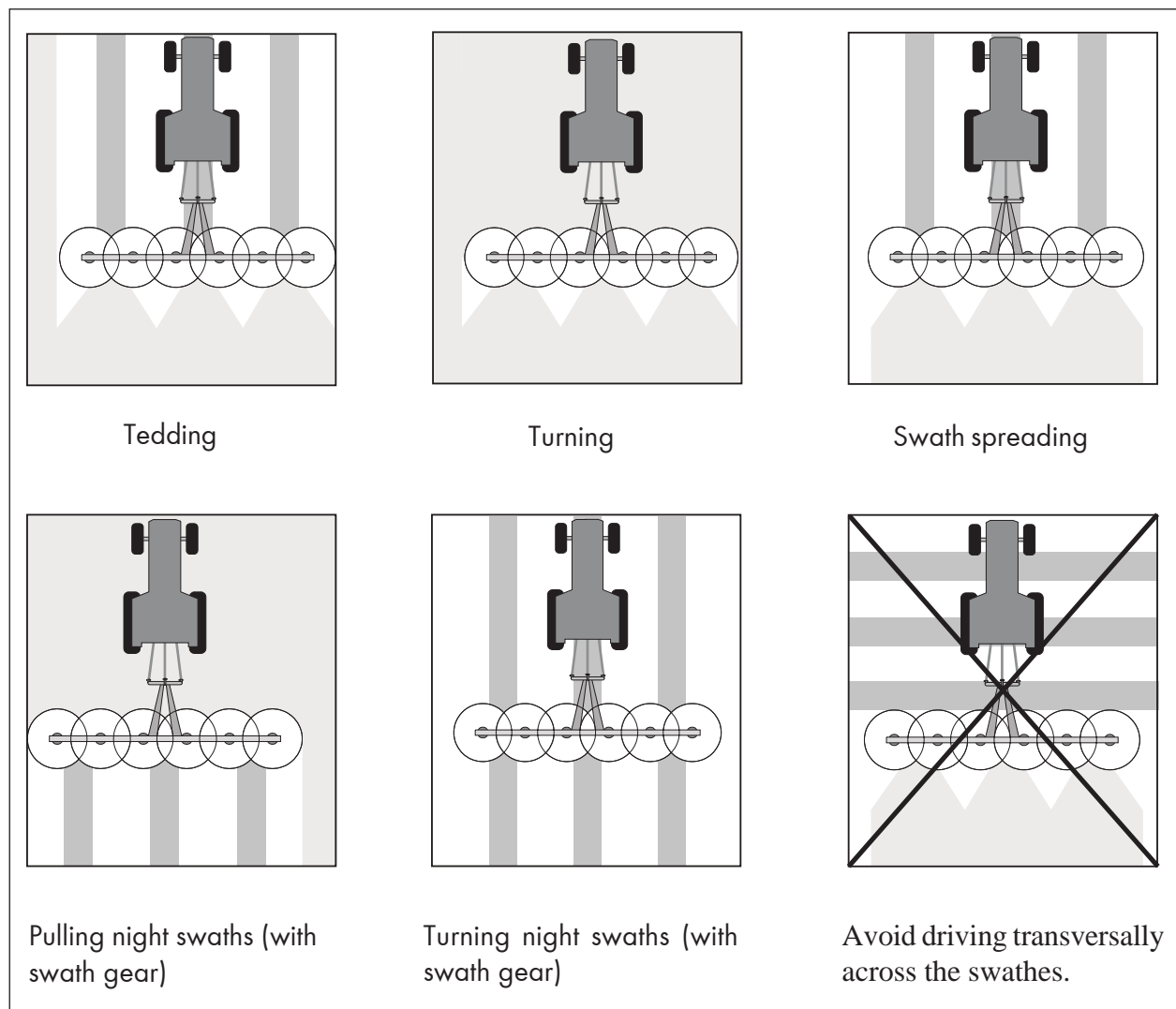
The spreading image can be influenced by adjusting the speed of the p.t.o. shaft. The correct tine adjustment is the basis for a perfect spreading image.



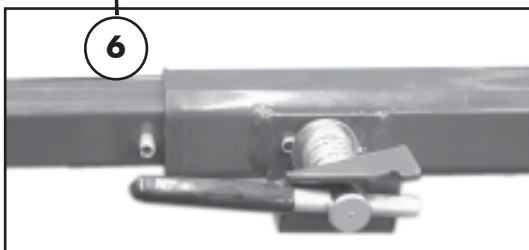
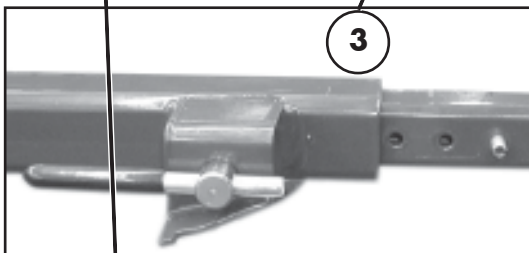
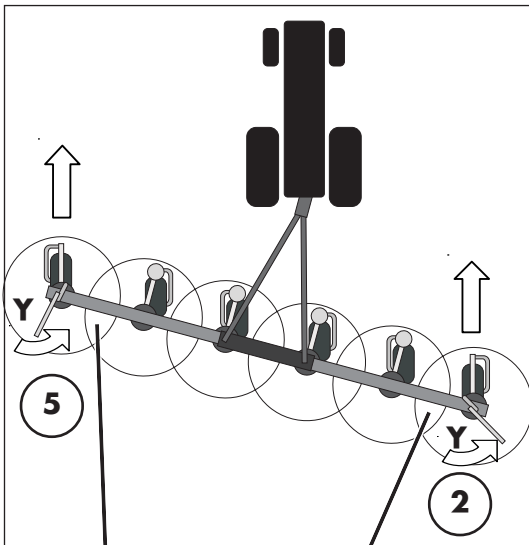
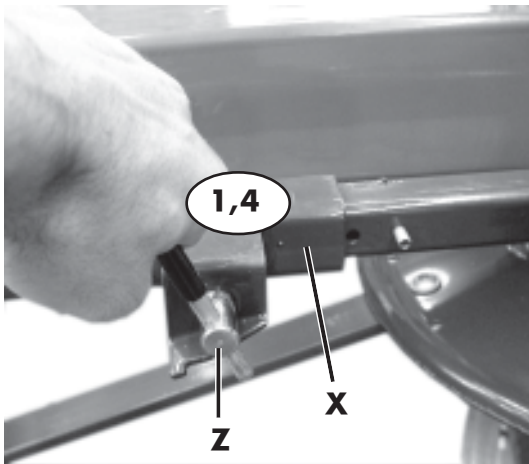
Danger!

Never drive backwards in the working position unless the wheel axles have been locked! Otherwise the implement will tilt backwards and damage the cardan shaft.

The following work can be carried out with your Rotary Tedder:



3.8.2 Moving the machine to angled position



Danger!

Before performing the following work, switch off the engine and wait for all machine components to be at a complete standstill. Remove the ignition key!

The machine must be in working position when being moved to angled position for spreading along the field boundaries. Procedure:

1. Unlock steering rod (X) on the right hand side.
2. Use lever (Y) to move the wheel axle to angled position until ...
3. ... pin (Z) locks into engagement.
4. Unlock the steering rod on the left hand side.
5. Move the wheel axle to angled position (in the same direction as on the right) ...
6. ... until the pin locks into engagement.



Attention!

The outer wheels must be parallel to each other when in the angled position.

Note:

You can move the machine to angle position from the normal working position only.

Moving the machine directly from transport to angled position is not possible.

3.9 Unhooking from the tractor

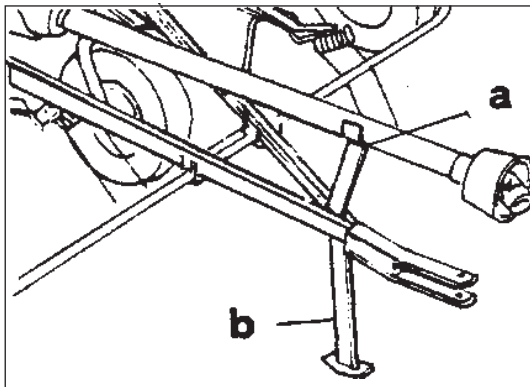
**Danger!**

Work may only be carried out with the engine shut down and the implement at a standstill. Remove the ignition key!

**Danger!**

Only unhook the Rotary Tedder from the tractor when the implement is in the transport position.

There is otherwise a danger of tipping!



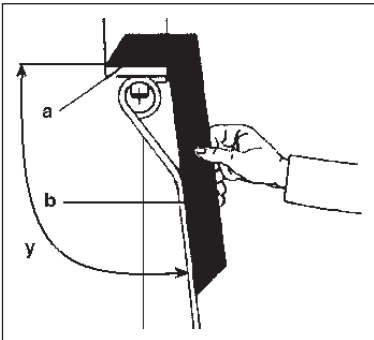
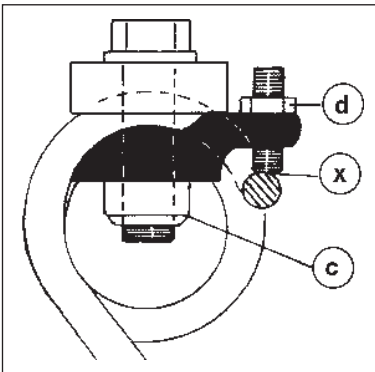
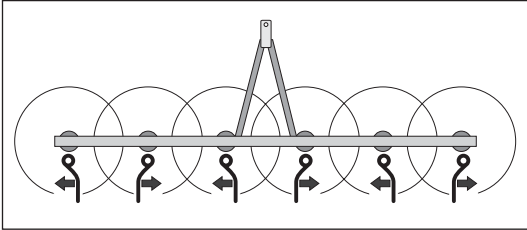
1. Secure the implement against accidental movement using wheel chocks.
2. Remove the cardan shaft from the tractor and place it on the raised support (a).
3. Pull the parking support (b) from its lock and move it downwards until it engages.
4. Disconnect the hydraulic and electric lines and place them in the support on the drawbar. Take the two traction ropes from the tractor's cabin and attach them to the implement again.
5. Lower the tow bar of the tractor until the parking support rests firmly on ground; you can now unhook the implement.

4 Adjustment work



Danger!

Work may only be carried out with the engine shut down and the implement at a standstill. Remove the ignition key!



4.1 Adjusting the position of the tines

Check the position of the tines and adjust if necessary:

- Loosen the hexagonal nut (c) and the counter nut (d).
- Adjust the tine position by turning the stop screw (x) until the adjusting gauge is parallel to points (a) and (b).

Angle $y = 88^\circ$

- Retighten the hexagonal nut (c) and the counter nut (d). The torque value for the tine fixing (c) is 120 Nm.



Attention!

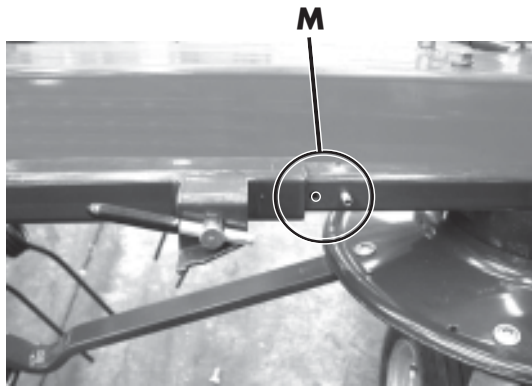
The stop screw (x) must touch the tine eye. This is to prevent accidental movement of the tine.

4.2 Wheels

When changing the wheels, the wheel nuts may only be tightened with 20 Nm to prevent damage to the plastic rings.

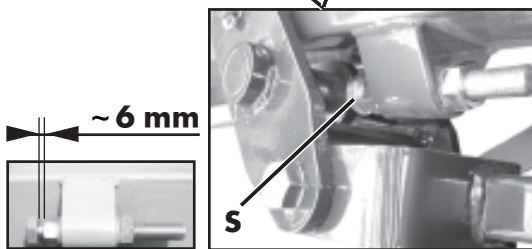
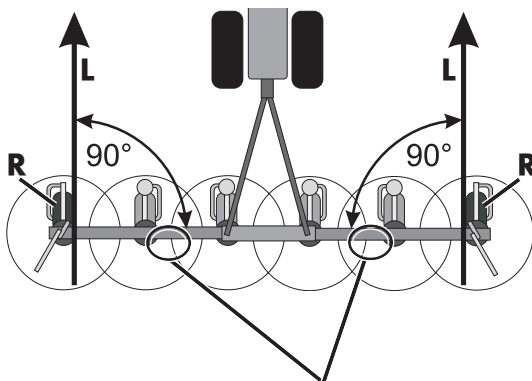
Check the tyre pressure at regular intervals: 1.5 bar.

4.3 Moving the wheels to straight-on position for transport:



A. Moving the outer wheels to straight-on position:

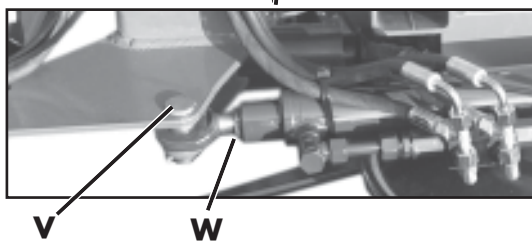
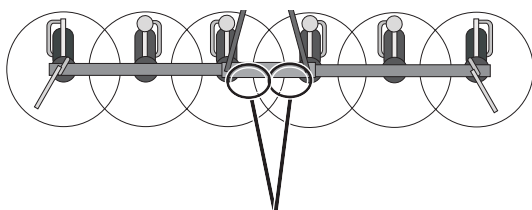
1. Move machine to working position.
2. Move outer wheels to normal working position (no angled position).
3. Extend the hydraulic rams totally.
4. Drive out screw (S) against the piston rod until the wheel is in straight-on position (L).
6. Lock the screw (S).



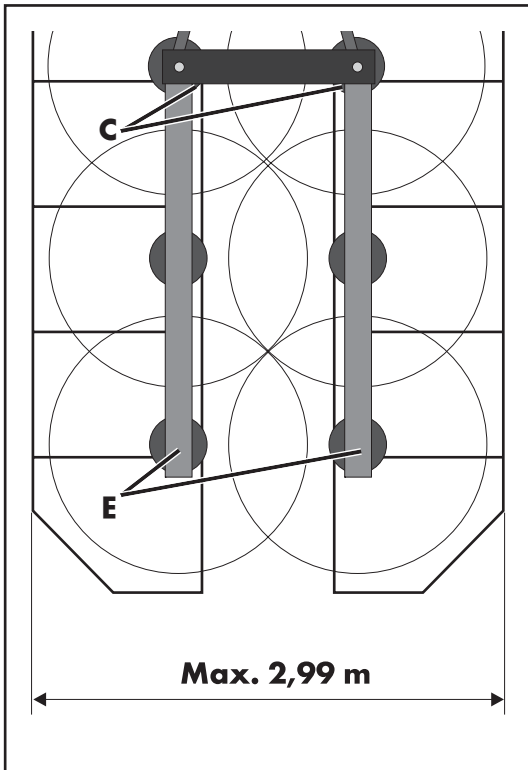
B. Aligning the rotor carrier arms:

1. Loosen pin (V) at the hydraulic ram. The lateral units can be adjusted as follows:

Drive the joint in to move the lateral unit to the rear.
Drive the joint out to move the lateral unit to the front.



2. Align the machine.
3. Secure the joint using pin and split pin and lock the screw (W)



C. Aligning the wheels in transport position

1. Loosen eccentric (E).
2. Move machine to transport position.
3. Retract the hydraulic rams totally (the chromium-plated piston rod must no longer be visible).
4. Screw (T) is used to adjust the machine width at the rear:

Drive screw out to reduce transport width.

Drive screw in to increase transport width.



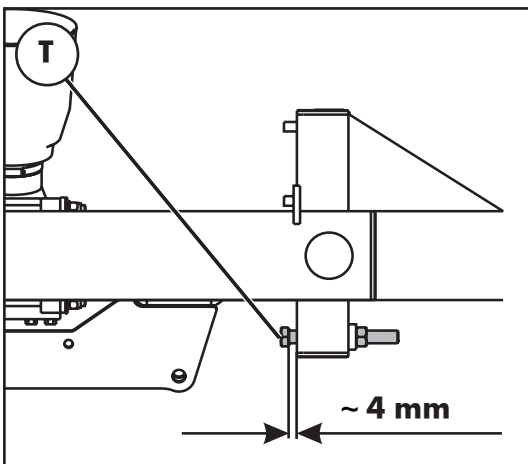
Note:

To drive the screw (T) in it is necessary to unfold the lateral unit using hydraulic power (towards the working position).

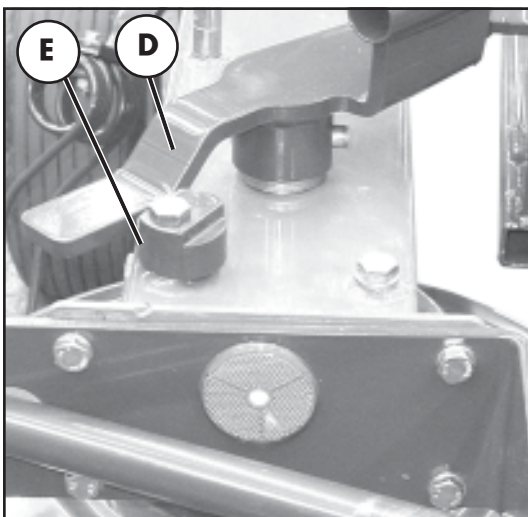


Caution!

Do not exceed the maximum transport width = 2.99 m.



5. Lock the screw.
6. Fold machine into transport position again.
7. Refit eccentric (E) to control lever (D) and pull screw up to 90 Nm torque.



5 Maintenance



Danger!

Work may only be carried out with the engine shut down and the implement at a standstill. Remove the ignition key!



5.1 Checking the Rotary Tedder

After approx. 5 operating hours, the Rotary Tedder must be thoroughly checked!

Check all screws, especially on the fixtures of the spring-mounted tines, the rotary arms and the wheel axles. Retighten if necessary.

Tightening values:

- Tine fixture = 120 Nm
- Rotary arm fixture, outside = 120 Nm
- Rotary arm fixture, inside = 130 Nm

5.2 Lubrication schedule

You can achieve a long service life for your implement by observing all maintenance and lubrication intervals stated in these instructions.

Use K 2 k lubricating greases in acc. with DIN 51825 such as Deutzer Oil, HFL 300 W or Shell Retinax A.

Clean the lubrication nipples and application nipples of the grease gun before applying grease.

Greasing points:

- Universal drive shaft, all joints and friction faces
- Universal joints of rotor drive shafts and hinge bolts
- Main gearbox (in case of oil loss only):

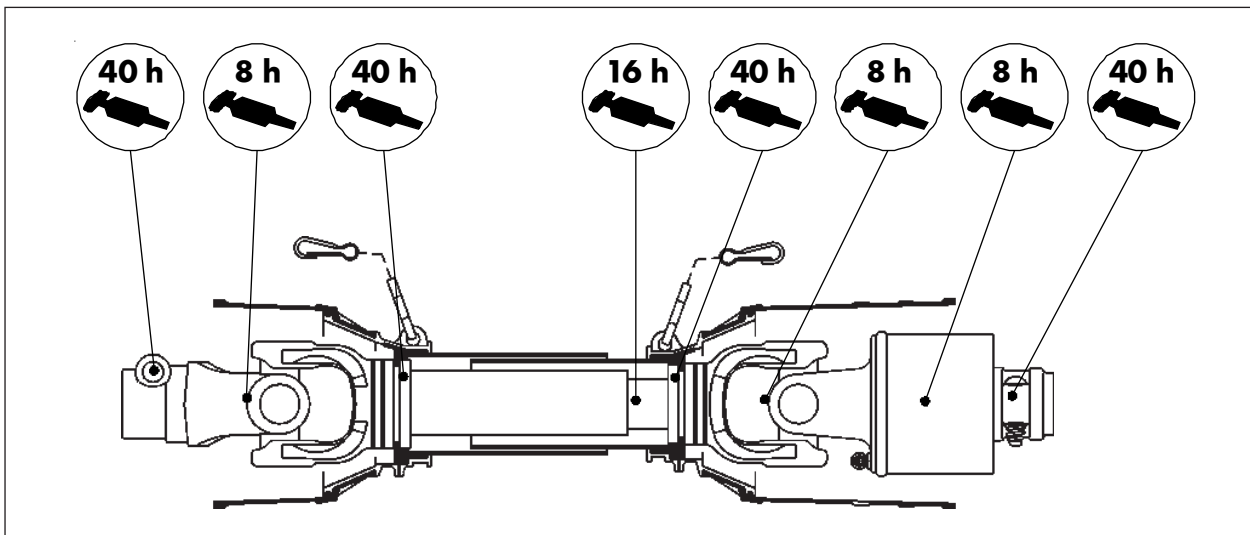
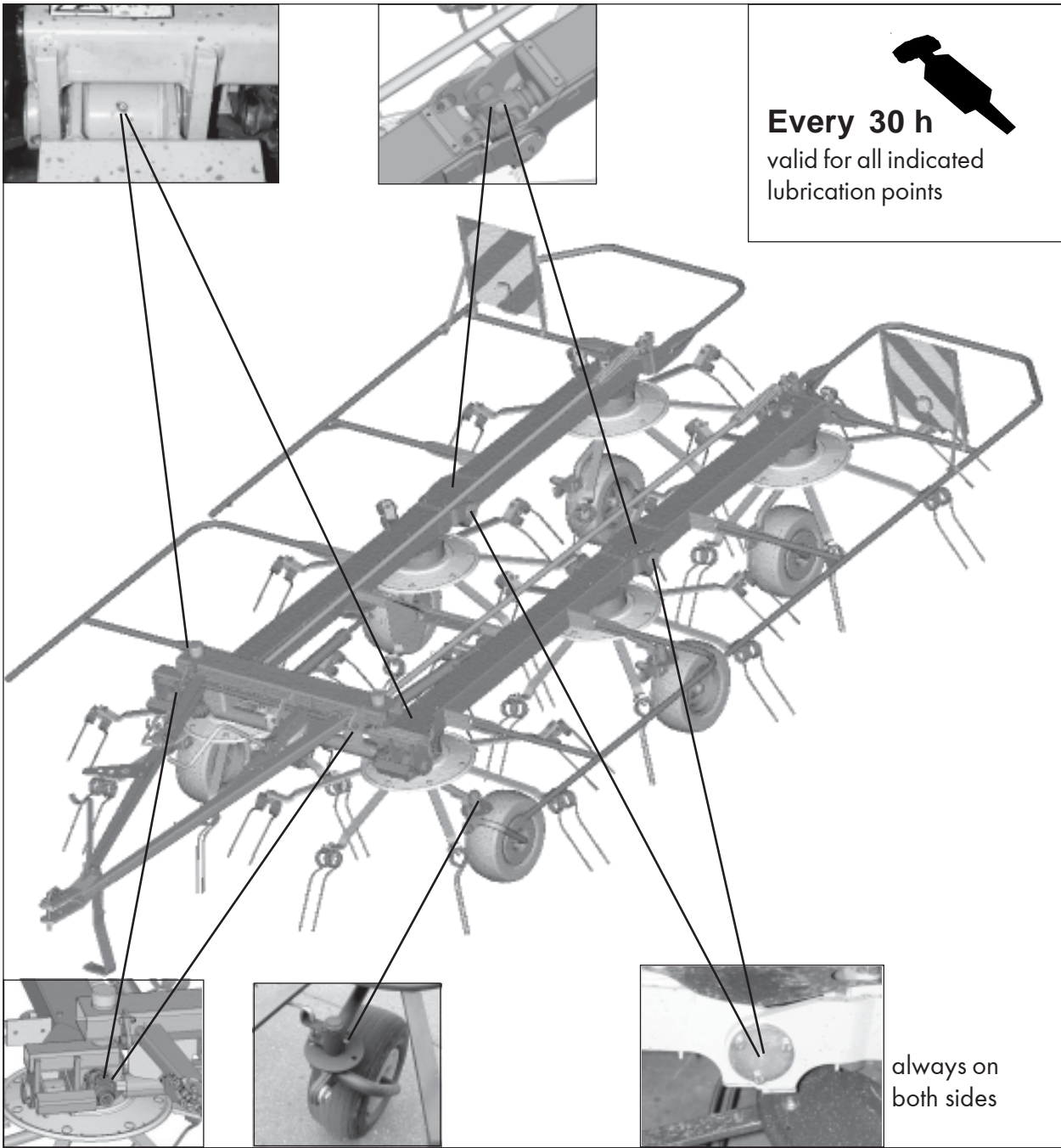
Check oil level at the lower threaded plug with gearbox in horizontal position.

Oil quantity: 1.2 l / SAE 90 API-GL-4

- Rotor gearbox (in case of oil loss only):

Oil quantity: 0.25 l / SAE 90 API-GL-4



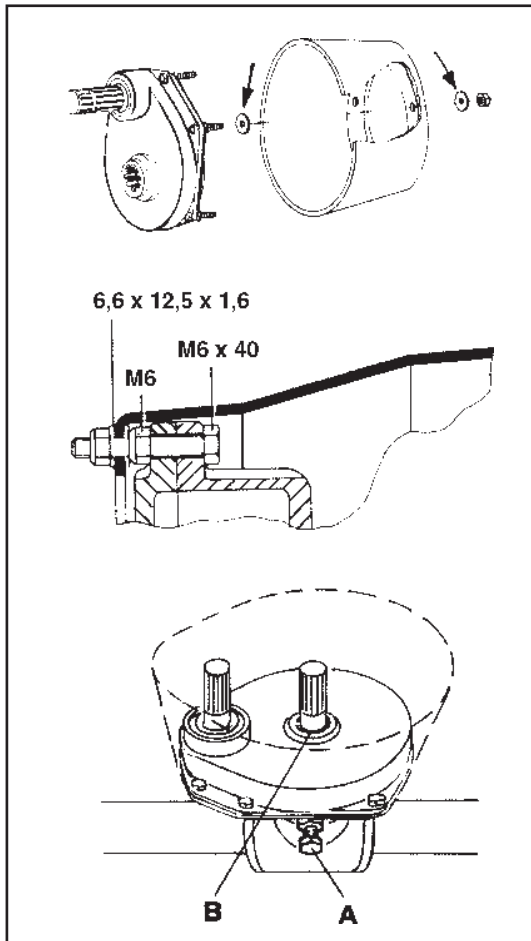


6 Special and additional equipment



Danger!

Work may only be carried out with the engine shut down and the implement at a standstill. Remove the ignition key!



6.1 Swath gear

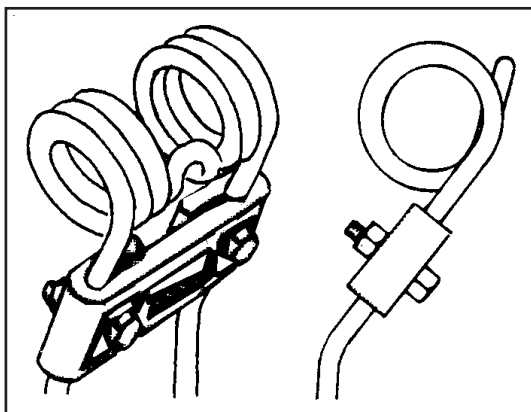
First mount the funnel-shaped guard to the swath gear as shown in the diagram, then remove the guard from the gear housing.

- Clean the extension housing and the wedge profile.
- Remove the plastic cap from the swath gear, slide the swath gear onto the extension housing (if necessary, gently knock on the chain wheel hub (B)) and secure it using a Seeger circlip ring.
- Turn the clamping screw (A) in the corresponding groove on the extension housing and secure it with a counter nut.

For pulling swaths, the cardan shaft must be put onto the lateral drive stub. Select the travel speed and the speed of the rotary units so that perfect swaths are pulled.

6.2 Tine loss safeguard

The flexible plastic holders can be easily clamped in position and released again. If a tine breaks, it is held by its neighbouring tine. It does not get lost and therefore cannot cause any damage to implements following, e.g. shredders. The preliminary tightening of the screws is correct if the screw thread protrudes from the hexagonal nut by 6 mm.



7. Troube shooting

Problem	Solution
Machine swings to the right and left hand side when in working position.	<ul style="list-style-type: none"> ● Lock lower links against lateral movement ● Reduce forward speed.
Frequent operation of the PTO shaft overload clutch	<ul style="list-style-type: none"> ● Tines adjusted too low ● Reduce forward speed.
Poor scatter pattern	<ul style="list-style-type: none"> ● Adjust PTO speed to match the crop density. ● Collect swathes in a different way (see section 3.8.1). ● Check the spreading angle (see section 3.6).
Wheel does not totally move to transport position.	<ul style="list-style-type: none"> ● Drive a bit forward when folding the machine.
Rotary tedder not properly folded together or unfolded	<ul style="list-style-type: none"> ● Increase the oil volume. ● Remove dirt from the hydraulic circuit. ● Unfold machine on a level area. ● Machine inadvertently set to angled position.
Lateral units moving out of transport position	<ul style="list-style-type: none"> ● Remove dirt from the hydraulic circuit (stop valves not totally closed). ● Operating error (ball cock must be closed during road transport).
Lateral deviation of the machine in sloping terrain	<ul style="list-style-type: none"> ● Lock castor wheels (see section 3.7).
Rear wheels leave their position after a prolonged storage time.	<ul style="list-style-type: none"> ● Once hitched to the tractor, the machine should be folded together using hydraulic power. ● Hydraulic circuit not properly bled. Bleed the system by folding the machine several times.

A Appendix

A.1 Torque values for screw connections

All screw connections must be tightened in accordance with the values given in the following table if no other torque values are indicated. "8.8" is both the standard and minimum quality of the screws used for this implement.



Attention!

When locking screws and nuts are used, the given value must be increased by 10%.

Thread	Torque for material qualities in acc. with DIN ISO 898 (dry)						Width across flats		Notes
	8.8		10.9		12.9		mm	inch	
	Nm	lbf-ft*	Nm	lbf-ft*	Nm	lbf-ft*			
M3	1.9	(11.5)	1.8	(16.0)	2.1	(18.6)	6	1/4	*Values in brackets = lbf-in.
M4	2.9	(25.5)	4.1	(36.5)	4.9	(43.5)	8	5/16	
M5	5.7	(50.5)	8.1	(71.5)	9.7	(86.0)	9	23/64	
M6	9.9	7.3	14	10.3	17	12.5	10	13/32	
M8	24	17.7	34	25.0	41	30.3	14	9/16	
M10	48	35.4	68	50.2	81	59.8	17	11/16	
M12	85	62.7	120	88.6	145	107	19	3/4	
M14	135	99.6	190	140	225	166	22	7/8	
M16	210	155	290	214	350	258	24	121/1-28	
M18	290	214	400	295	480	354	27	1 9/128	
M20	400	295	570	421	680	502	30	1 3/16	
M22	550	406	770	568	920	679	32	1 17/64	
M24	700	517	980	723	1180	871	36	1 27/64	
M27	1040	767	1460	1077	1750	1291	41	1 79/128	
M30	1410	1041	1980	1461	2350	1734	46	1 13/16	
M33	1910	1410	2700	1996	3200	2362	50	1 31/32	
M36	2450	1808	3450	2546	4150	3063	55	2 11/64	
M39	3200	2362	4500	3321	5400	3985	60	2 3/8	
Tensile strength	8.8		10.9	12.9					
	< M16	> M16							
N/mm ² lbf/sq.in	808	830	1040	1220					
	117.2 - 22	120.4 - 14	150.880	176.994					

A.2 Hydraulic system

