

## Fanex 833 T

### Operating manual

Edition	11.2007
Date of print	2.2008
Language	EN
Machine number	6918 0171 -
Serial number	6918 / 12 -
Parts number	VF 16644589

## Designation of the implement

Your dealer will require certain information about your machine to be able to help you as quickly as possible. Please enter the information here.

Name	Fanex 833 T
Working width	8,30 m
Weight	900 kg
Machine number	
Accessories	
Address of dealer	
Address of manufacturer	Kverneland Group Gottmadingen N. V. Filiale Gottmadingen Industriepark 312 D-78244 Gottmadingen Germany Tel.: +49 7731 7880

# Table of contents

<b>Preface</b> .....	<b>4</b>	Lubricating the cardan shafts	49
Target group for this operating manual	4	Adapting the cardan shaft	50
Symbols used	5	Friction clutch	50
<b>Safety instruction</b> .....	<b>6</b>	Lubrication points for oil lubrication	51
For your safety	6	Filling volumes	52
Who is allowed to operate the implement	9	Tyres	53
General	9	Hydraulic	53
Coupling	10	Tine position	54
Road travel	12	<b>Accessory equipment</b> .....	<b>55</b>
Operation	13	Tine anti-loss device	55
Uncoupling	14	Swathing gear	55
Care and Maintenance	15	Anti-wrapping plate	55
Further regulations	16	Hydraulic angled position	56
<b>Familiarise yourself with the device</b> .....	<b>17</b>	<b>Fault recovery</b> .....	<b>57</b>
Work area of the implement	17	<b>Circuit diagrams</b> .....	<b>58</b>
Features of the implement	17	Hydraulic diagram, standard version	58
Component designations	18	Hydraulic diagram with hydraulic angled position	59
Specifications	19	Lighting circuit diagram	60
<b>Delivery and assembly</b> .....	<b>21</b>	<b>Environmental protection</b> .....	<b>61</b>
Checking the scope of supply	21	Disposal	61
<b>Coupling the implement</b> .....	<b>22</b>	<b>EU Declaration of Conformity</b> .....	<b>62</b>
Coupling the lift link drawbar	22	<b>Index</b> .....	<b>63</b>
Coupling the pending attachment	22		
Coupling the cardan shaft	22		
Wheel wedges	23		
Connections	24		
<b>Preparing for operation</b> .....	<b>26</b>		
Safety	26		
<b>Road transport</b> .....	<b>29</b>		
Safety	29		
Prior to road transport	30		
Road transport	32		
<b>Operation</b> .....	<b>33</b>		
Safety	33		
Harvest processing	34		
Implement Usage	35		
<b>Cleaning and care</b> .....	<b>39</b>		
Safety	39		
Cleaning	40		
Care	40		
<b>Parking and storage</b> .....	<b>41</b>		
Safely setting down the implement	41		
General	41		
After the end of the season	41		
<b>Maintenance</b> .....	<b>42</b>		
Safety	42		
General	44		
Screw connections	46		
Lubrication points for grease lubrication	48		

## Target group for this operating manual

This operating manual is directed at trained farmers and individuals who are otherwise qualified to perform agricultural activities and who have received instruction on the handling of this implement.

### For your safety

You must familiarise yourself with the contents of this operating manual before assembly or initial operation of the implement. In this way, performance and work safety are optimised. The operating manual is an integral part of the implement and must always be kept to hand. This will allow:

- Accidents to be avoided.
- The warranty conditions to be met.
- A well-functioning implement to remain in good working order.

## Training

Your dealer will provide instruction on operation and care of the implement.

### Employer information

All personnel are to be regularly instructed on the use of the implement, at least once annually, in accordance with the regulations of the national organisation for Health and Safety at Work. Untrained or unauthorised persons are not allowed to use this implement.

They are personally responsible for the safe operation and maintenance of the implement. Always ensure that all other personnel that use or maintain the implement, or that work in the immediate vicinity of the implement, are familiar with the operation and maintenance instructions and the relevant safety instructions from this operating manual.



## Symbols used

In this operating manual, the following symbols and terms have been used:

- A dot accompanies each item in a list.

> A triangle indicates operating functions which must be performed.

→ An arrow indicates a cross-reference to other sections of this manual.

[+] A plus sign indicates an accessory, which is not included in the standard version.

Next to these symbols, pictograms are used to help you locate other sections of this manual:

**NOTE** The term, "Note" indicates tips and notes on operation.



The warning triangle indicates important safety instructions. Failure to observe these safety instructions can result in:

- Serious faults in the correct operation of the implement.
- Damage to the implement.
- Personal injury or accidents.



The screwdriver indicates tips during assembly or adjustments.



A star indicates examples that assist understanding of the instructions.



## For your safety

This chapter contains general safety instructions. Each chapter of the operating manual contains additional specific safety instructions which are not described here. Observe the safety instructions,

- In the interest of your own safety.
- In the interest of the safety of others.
- To ensure the safety of the implement.

Numerous risks can result from incorrect handling of agricultural implements. Therefore, always work with special care and never under pressure.

### Employer information

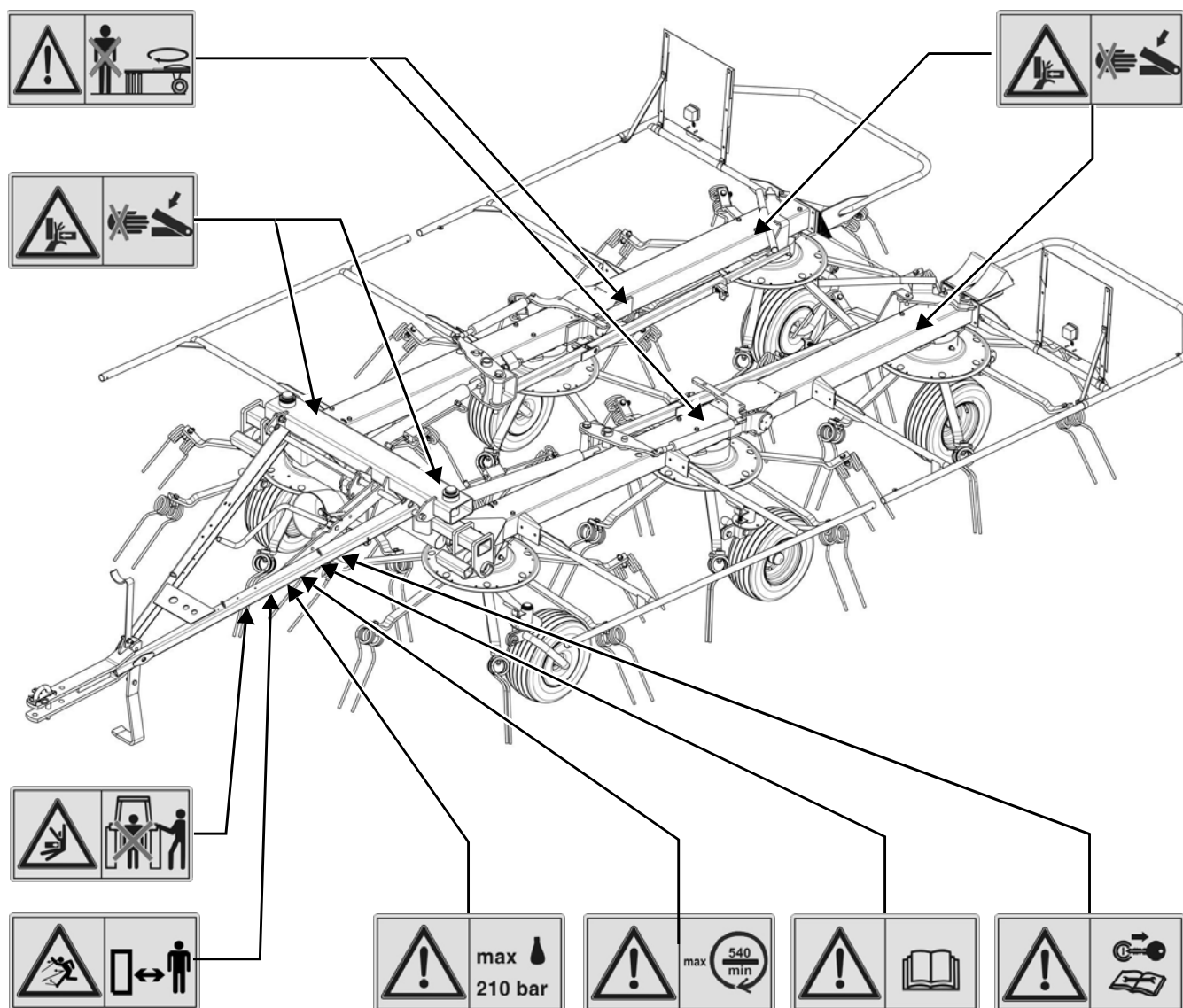
Inform personnel working with the machine of these safety instructions at regular intervals and according to statutory regulations.

## Warning symbols

On the implement, there are safety labels that are for the purpose of drawing attention to dangers. The stickers must not be removed. If any labels are illegible or have been lost, it is possible to order new labels as spare parts and affix them to the implement.



## Warning symbols on the implement



# Safety instruction



## Meaning of warning symbols



### Read the operating manual

Read and observe the operating manual and the safety regulations prior to initial operation! The machine may only be commissioned once the operating manual has been read and understood. This applies in particular to the safety instructions.



### Switch off the engine

Perform all maintenance, repair and adjusting work only when the implement is at a standstill. Serious or fatal injury can be the result.



### Keep your distance from the rotating rotor.

When the wheel rake is in operation, nobody is allowed in the immediate vicinity of the implement. Serious or fatal injury can be the result.



### Cardan shaft speed 540 rpm

The prescribed maximum cardan shaft speed of 540 rpm must not be exceeded. The consequence could be damage to the implement.



### Risk of crushing

Never reach into the crush hazard zone if any parts there are able to move. Otherwise, there is a risk of serious or fatal injury.



### Distance from the tractor

When the implement is being coupled, uncoupled or operated, there should be no-one causing an obstruction between the tractor and the implement. Serious or fatal injury can be the result.



### Do not exceed the maximum hydraulic pressure

The hydraulic pressure of the tractor on the implement's hydraulic system must not exceed 210 bar. The consequence could be damage to the implement.



### Caution: flying parts

Danger from parts flying out when the motor is running. Keep a safe distance.





## Who is allowed to operate the implement

### Only qualified personnel

Only qualified persons who have been informed of the dangers associated with handling the implement are permitted to operate, service or repair the implement. This knowledge can be gained via agricultural training, technical training or intensive instruction.

## General

### Safety is your responsibility

Follow the safety regulations. Ensure you are always in compliance with the safety regulations. Most accidents can be avoided. Avoid serious or fatal accidents by following the safety instructions.

### Prescribed workwear

Do not wear loose, baggy clothing. Any loose or baggy items of clothing worn may become caught in the rotating parts. Wear workwear and protective clothing, as prescribed by the trade's mutual indemnity association. There is otherwise the risk of serious or fatal injury.

### Good working condition

Ensure that the tractor is always in good working condition, and that the tractor's brakes and the implement are working perfectly. Observe the information and technical data in the operating manual for your tractor.

### Never work on the implement when it is running

Actions should not be carried out on the implement while it is running. Objects or personnel can be caught, drawn in or crushed. There is otherwise the risk of serious or fatal injury.

### Do not make any modifications to the implement

No modifications whatsoever must be made to the implement. Unauthorised modifications can impair safety and affect the service life of the machine. Unauthorised modifications to the implement render the manufacturer's guarantee null and void and frees the manufacturer from all liability.

### Cardan shaft

Use only the cardan shafts prescribed by the manufacturer and read the attached operating manual thoroughly. Adapt the length of the cardan shaft as required. The wrong cardan shaft lengths can cause damage to the implement and injuries to personnel.



## **Check and fix the cardan shaft guard**

The rotating cardan shaft is protected by the cardan shaft guard. Ensure that the guard is not damaged. Fix the cardan shaft guard by connecting the chains on the implement and tractor faces. Unguarded cardan shafts can cause life-threatening injuries.

## **Maximum cardan shaft speed 540 rpm**

The prescribed maximum cardan shaft speed of 540 rpm must not be exceeded. Higher rpm's can cause damage to the implement.

## **Unrestricted field of vision to the rear**

Ensure that you have an unrestricted view of the implement which is coupled when it is in both its work and transport positions. To do so, use at least the panoramic mirror provided by the tractor manufacturer. Potential hazardous situations can be identified in plenty of time. Accidents or damage may be caused.

## **Coupling**

### **Increased risk of injury**

When coupling the implement to the tractor, there is an increased risk of injury. Therefore:

- secure the tractor against rolling away, shut off the engine and take out the ignition key.
- Never stand between the tractor and the implement during coupling.
- Lock the cardan shaft securely to the PTO shaft end of the tractor and implement.
- If this is not complied with, the consequence can be damage to the implement and even life-threatening injuries.



## Hydraulic

### **Hydraulic connection at zero pressure only**

Only connect hydraulic tubes to the tractor hydraulic system if the tractor and implement hydraulic system is depressurised. A pressurised hydraulic system can trigger unforeseen movements on the implement and can cause serious damage and injuries. There is otherwise the risk of serious or fatal injury.

### **High pressure in the hydraulic system**

The hydraulic system is often overpressurised. All pipes, tubes, couplings and connecting passageways must be checked for leaks and other damage on a regular basis. Only use suitable tools when checking for leaks. Repair any damage immediately. Escaping oil can cause injuries and burns. Seek medical attention immediately if injuries occur.

### **Colour-coded hydraulic connections**

The hydraulic connections are uniquely colour-coded. Lines between the tractor and implement should be connected to hydraulic connections of the same colour. Wrongly connected hydraulic connections can trigger unexpected movements on the implement.



## Road travel

### Ensuring road safety

The implement must conform to current national traffic regulations if you intend to drive it on public roads. Ensure:

- Lighting, warning and protective equipment is installed and functioning
- Compliance with the permissible transport widths and weights, axle loads, tyre loadbearing capacities, laden weights and national speed restrictions.
- Compliance with the maximum permissible road transport speed of 40 km/h.

If this is not complied with, the driver and keeper of the vehicle are liable.

### Check the tyre pressure

Check tyre pressure regularly. The wrong tyre pressure will reduce the service life of a tyre and can cause unstable driving properties and accidents.

### Adjusting the load-dependent brake

Before travelling on the road, check that the lever of the implement's load-dependent brake is adjusted to "Full load". The braking efficiency changes. This can cause accidents. The consequence can be traffic accidents with serious or fatal injuries.

### No riding on the implement

Neither personnel nor objects are allowed to be transported on the implement at any time. Riding on the implement is hazardous and strictly prohibited.

### Altered driving and braking performance

The driving and braking performance are altered when the implement is attached to the tractor. Take the width and balancing weight of the implement into consideration, especially when cornering. A driving style which is not adapted to conditions can cause accidents.

### Adapted speed

In the event of bad road conditions and excessive speed, very high forces can occur that subject the tractor and implement material to high loads or to an overload. Adapt the speed to the road conditions. A driving style which is not adapted to conditions can cause accidents. The consequence can be traffic accidents with serious or fatal injuries.

### Checking the hitch pin

The hitch pin must be in perfect condition, there must be no signs of wear and it must be properly secured. Otherwise coupled implements are able to detach themselves. The consequence can be accidents with serious or fatal injuries.

### Check remote cord for the quick release coupling

Remote cords must hang loose and must not, when in their lowered position, release the couplings of their own accord. Coupled implements can otherwise detach themselves from the tractor's lower link arm. The consequence can be accidents with serious or fatal injuries.



## Operation

**The implement should not be put into operation for the first time until the user has been trained to use it.**

The implement must not be used until instruction has been given by distribution company employees, company representatives or manufacturer's employees. If initial operation is performed without instruction, damage to the implement can be caused by operating errors and accidents can occur.

**Ensure that the implement is in perfect working condition.**

Do not operate the implement unless it is in perfect working condition. Check all important components and replace any defective components before starting the implement. Defect components can cause damage to equipment and injury to persons.

**Check the protective equipment**

The guard devices must not be removed or by-passed. Check all protective equipment before starting the implement. Unguarded parts of the implement can cause serious or fatal injuries.

**No riding on the implement**

Neither personnel nor objects are allowed to be transported on the implement at any time. Riding on the implement is hazardous and strictly prohibited.

**Make sure the immediate vicinity is clear**

Check the surrounding area of the implement before starting and continually during operation. Make sure the operator has an adequate view of the work area. Only begin work if the immediate vicinity is cleared of any persons or objects. There is otherwise the risk of serious or fatal injury.

**Retighten all nuts, bolts and screws**

Regularly check that the nuts, bolts and screws are fully tightened and tighten them, if necessary. Screws can work loose when the implement is used. The consequence can be damage to the implement and accidents.

**Instructions in the event of malfunctions**

In the event of a malfunction, stop, shut down and secure the implement immediately. The malfunction may be eliminated immediately, or your dealer must be assigned the task. Using a faulty implement can cause accidents or damage.

**The tractor's PTO shaft continues turning after it has been switched off**

After the tractor's PTO shaft has been unhitched or disconnected the implement continues running due to inertia. Maintain a safe distance until the pick-up equipment and all moving parts have come to a complete standstill.

**Cornering and turning manoeuvres**

Centrifugal forces are in operation when cornering. The implement's centre of gravity at the rear of the tractor is displaced. Be aware of the turning radius and the moment of inertia. A driving style which is not adapted to conditions can cause accidents. The consequence can be accidents with serious or fatal injuries.



## Uncoupling

### Increased risk of injury

There is an increased risk of injury when uncoupling the implement from the tractor. Therefore:

- Secure the tractor against rolling away, switch off and take out the ignition key.
- Never stand between the tractor and the implement during uncoupling.
- Stop the implement on firm, secure, level ground.
- Ensure that the sustainer is securely locked.
- Place the cardan shaft in the brackets provided.
- Secure the implement against rolling away (use wheel wedges).
- Do not disconnect the hydraulic tubes until the hydraulic system is at zero pressure on both the tractor and implement faces.

If this is not complied with, the consequence can be serious or fatal injuries.

## Care and Maintenance

### Follow the care and maintenance chart

Observe prescribed intervals for maintenance checks and inspections specified in the operating manual. If these intervals are not complied with, damage to the implement and accidents can be caused.

### Use original parts

Many components have special properties that are decisive for the stability and operability of the implement. Only those replacement parts and accessories supplied by the manufacturer have been tested and approved. Using other products may lead to malfunctions or reduce safety of operation. The use of non-OEM replacement parts renders the manufacturer's guarantee null and void and frees the manufacturer from all liability.

### When performing care and maintenance work:

- Switch off the cardan shaft drive.
- Depressurise the hydraulic system.
- Whenever possible, uncouple the tractor.
- Switch off the electronic control system.
- Switch off the tractor and remove the ignition key.
- Ensure the implement is standing on firm, secure, level ground, and provide additional support, if necessary.
- Do not use parts of the implement as a climbing aid; use only a secure means of access.
- Secure the implement against rolling away (use wheel wedges).

Only if these regulations are complied with is safety ensured during care and maintenance work.

### Turn off the electrical supply

Prior to carrying out work on the electrical system, disconnect it from the power supply. Equipment under electrical power can cause damage to equipment and injury to persons.

### Replace hydraulic tubes every six years

Hydraulic tubes can age without this being externally visible. We therefore recommend replacing the hydraulic tubes every six years. Defective hydraulic lines can cause serious or fatal injuries.

# Safety instruction

## **Caution when cleaning with a high-pressure cleaner**

Be careful when cleaning with a high pressure cleaner. Bearings, seals and pipe unions are not waterproof. Avoid damaging the implement; the bearings, seals and pipe unions must not come into direct contact with the high pressure water jets.

## **No corrosive washing additives**

Do not use any corrosive washing additives for cleaning. The bright metal surfaces can get damaged.

## **Prior to carrying out welding work**

Disconnect all electrical connections from the tractor when carrying out welding on the attached implement. Damage may otherwise be caused to the electrical system.

## **Tighten bolt and screw connections**

All screwed/bolted connections that are released during maintenance and repair operations must be retightened. Serious injuries and damage to property can be caused by loose bolt and screw connections.

## **Further regulations**

### **Observe the regulations**

In addition to the safety instructions listed above, please observe the following:

- Accident prevention regulations.
- Generally recognised safety regulations, occupational health requirements and road traffic regulations.
- Instructions given in this operating manual.
- Regulations pertaining to operation, maintenance and repair.

## **Warranty**

The warranty and manufacturer's responsibility will no longer be valid if the instructions given in the chapter on Safety are not respected, if maintenance is inadequate or incorrect, if the implement is overloaded or used for purposes other than those for which it was intended, or if unauthorised modifications are made to the implement.



# Familiarise yourself with the device

## Work area of the implement

The implement is a rotary tedder that is solely to be used for distributing, turning and swathing mown goods, like straw and hay.

## Proper use

Any other use extending beyond this, for example, for silo distribution, any form whatsoever of soil preparation, road sweeping or for the transmission of power to other implements is not an intended use. The manufacturer and dealer are not liable for damage caused by improper use. Improper use is solely at the risk of the user.

## Features of the implement

### Usage on large areas

This rotary tedder with a span of 8.30 m and six rotors is ideal for large-scale operations.

### Low maintenance gears

The implement is equipped with low-maintenance gears and seven tedder arms per rotor. Fully closed gears submerged in oil are the perfect measure to prevent wear.

### Clear filed edges

The crop is turned away from the field edge by pivoting the guided running wheel axles. This helps to prevent fodder from being lost.

### Inclination of rotors

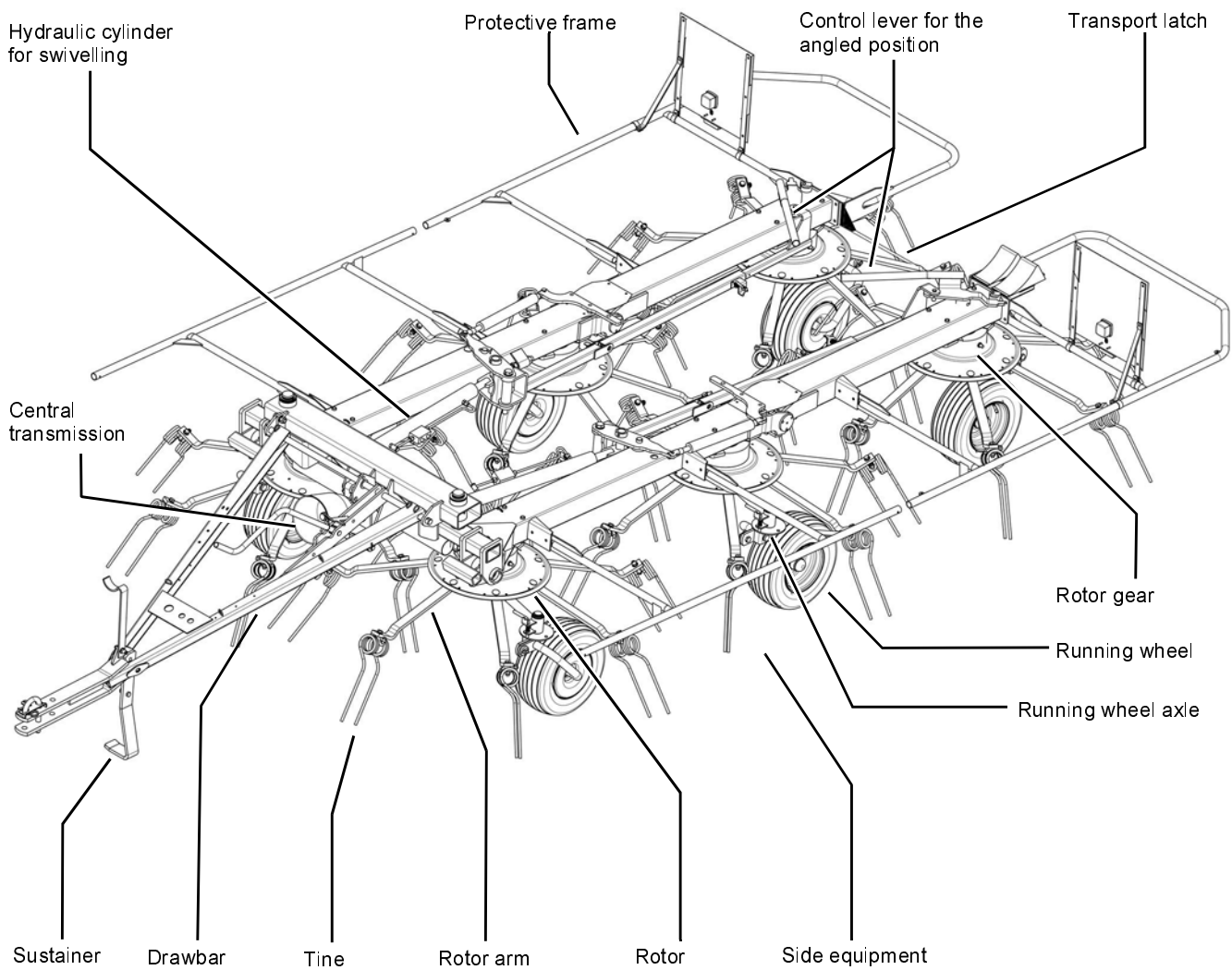
The inclination of rotors is adjustable. This enables processing a wide spectrum of feed types.

### Simple transformation from work to transport position

the rotary tedder is simply changed from work to transport position. The hydraulic cylinders swivel the rotary tedder into the transport position. Dismounting the tractor is not required.

# Familiarise yourself with the device

## Component designations

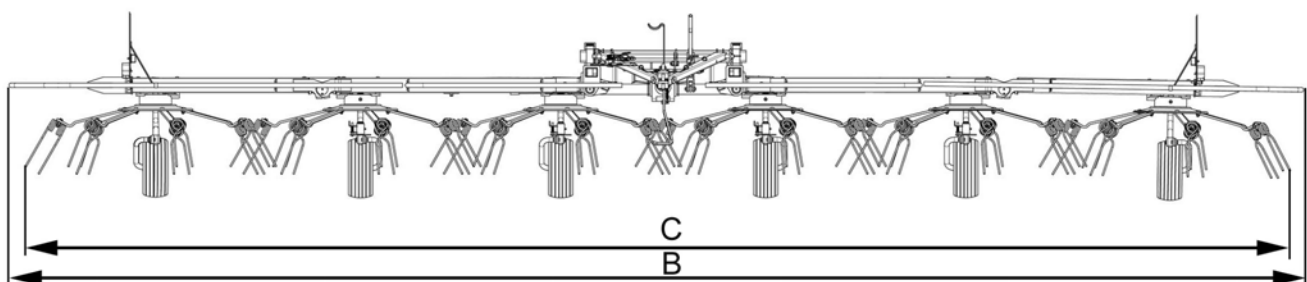
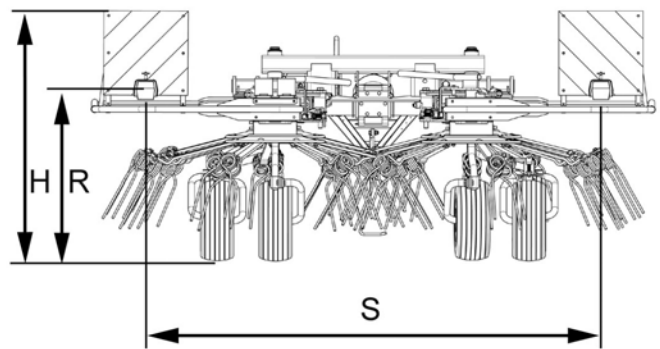
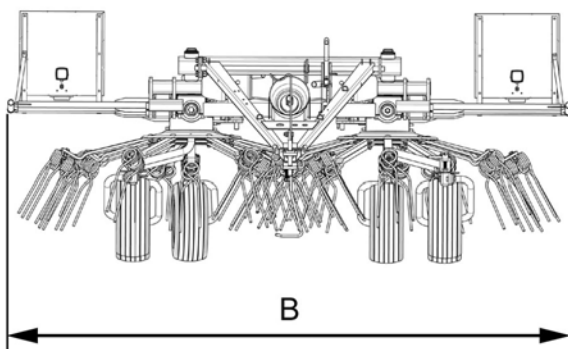
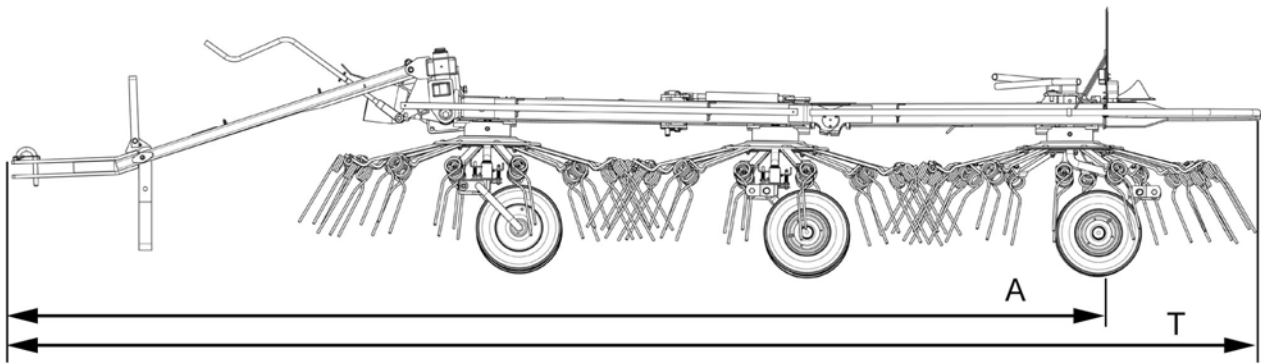


# Familiarise yourself with the device

## Specifications

### Dimensions

	Work position (m)	Transport position (m)
Length T	3.10	5.90
Length to bottom reflector A	-	5.14
Width B	8.63	2.99
Height H	1.25	
Height, lighting	0.89	
Swath width C	8.30	-



# Familiarise yourself with the device

## Weights

Transport position		
	Gross weight	850 - 900 kg
	Supporting load at front	300 kg
	Axle load per wheel axle	200 kg

## Required tractor equipment

Output / connections		
	Minimum output of the tractor	20 kW
	Voltage supply for lights	12 V, 7-pin plug socket ISO 1724
	Hydraulic connections	1 x double-acting
	Hydraulic pressure	130 - 210 bar
	Cardan shaft speed	540 rpm
	Hitch	Lift link drawbar or pending attachment

## Equipment of the implement

Rotors / rotor arms / tines		
	Number of rotors	6
	Number of arms per rotor	7
	Tine adjustment	Mechanical
	Hydraulic angled position	[+]
	Tine anti-loss device	[+]
Wheels		
	Running wheel axles side	16 x 6.50-8
Safety accessories		
	Lighting	Standard
	Warning signs	Standard
	Cardan shaft, one-sided free-wheel	Standard
Axles		
	Number of axles	6
	Model	2x steering axles, unsprung 4x rigid axles, unsprung

## Checking the scope of supply

### The delivery arrives fully assembled

The implement is delivered fully assembled. The implement must be checked after delivery. Check loose parts against the following checklist. If any parts of the implement have not been assembled or are missing, please contact your dealer.

**NOTE** If parts are missing or have been damaged during transportation, please submit a complaint immediately to the dealer, importer or the manufacturer.

Checklist for loose parts	Quantity
Operating manual	1
Spare parts list	1
Cardan shafts	1
Wheel wedge	2
Special accessories	See delivery note



### Do not assemble the machine yourself.

Do not perform the assembly work yourself. The following points are required to be met for the implement to be in proper condition:

- Observance of a sequence of work steps.
- Compliance with tolerances and torques.
- Knowledge of work safety during assembly.

# Coupling the implement



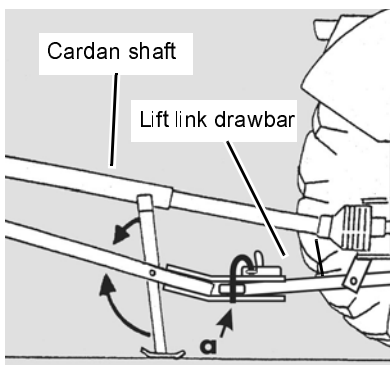
## Increased risk of injury

When coupling the implement to the tractor, there is an increased risk of injury. Therefore:

- secure the tractor in such a way that it cannot roll forwards or backwards.
- Secure the implement against rolling away by using wheel wedges.
- Never stand between the tractor and the implement during coupling.

If this is not complied with, the consequence can be serious or fatal injuries.

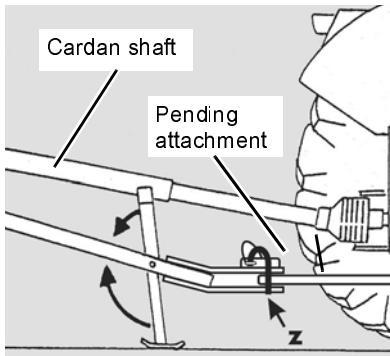
## Coupling the lift link drawbar



The implement is factory-fitted for coupling to the fixed lift link drawbar or pending attachment.

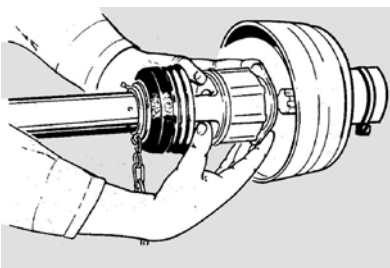
- > Couple the implement to the lift link drawbar.
- > Secure the hitch pin in position (a) with the split pin.
- > Secure the lift link drawbar against accidental lifting. This would damage the cardan shaft.

## Coupling the pending attachment



- > Couple the implement to the pending attachment.
- > Secure the hitch pin in position (z) with the split pin.

## Coupling the cardan shaft



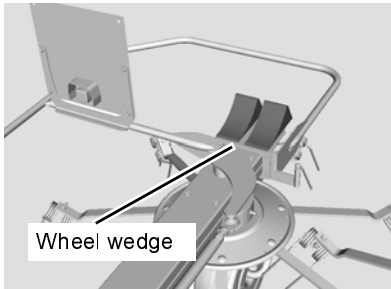
- > Couple the free-wheel cardan shaft to the tractor's PTO shaft.
- > By means of a chain, secure the free-wheel cardan shaft against being co-rotated.

Perform the following checks:

- > Is the wide-angle joint located on the implement side?
- > Is the free-wheel cardan shaft engaged on the shaft ends?

→ Chapter »Maintenance«, section »Adapting the cardan shaft«, page 50

## Wheel wedges



**Secure the tractor in such a way that it cannot roll forwards or backwards**

Never remove wheel wedges, if tractor is not secured against rolling. The implement or the tractor could run someone over. The consequence would be serious injury.

- > Remove wheel wedges from in front of the wheels.
- > Insert them into the designated brackets and click them into place.

# Coupling the implement

## Connections

### Hydraulic connections



#### Hydraulic connection at zero pressure only

Only connect hydraulic tubes to the tractor hydraulic system if the tractor and implement hydraulic system is depressurised. A pressurised hydraulic system can trigger unforeseen movements on the implement.

#### Avoid oil mixtures

If the implement is used on different tractors, a non-allowed oil mixture may occur. Non-allowed oil mixtures can destroy components on the tractor.

#### Check tubes and couplings

Check all hydraulic hoses for damage before connecting them. Check all hydraulic couplings for firm seating after connecting them. Defective hydraulic tubes or poorly seated hydraulic couplings can trigger unforeseen movements on the implement and cause accidents.

#### Secure the control devices

In transport position, secure the control devices on the tractor against unintended actuation and lock if possible. Unintended actuation of the control device can trigger unforeseen movements on the implement and cause accidents.

#### Check the routing of the hydraulic hoses

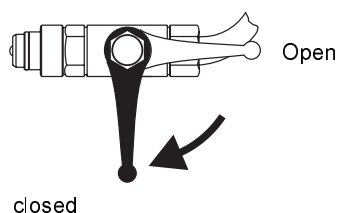
The hydraulic hoses must not be jammed or strained. Ensure that there is sufficient free space. Torn off or jammed hydraulic hoses lead to uncontrollable movements of the implement and can cause serious damage and injuries.

### Hydraulic couplings



#### Check hose routing

Check routing of the hoses. The hoses must not scour nor hang down. Cut lines or scouring can cause unpredictable movements of the implement.



- > Close the stop valve.
- > Set the tractor hydraulics to "free float".
- > Connect the implement's hydraulic coupling to two connections of the double-acting control device.

Hydraulic line	Marking
Pressure line	Red
Return line	Yellow



## Electrical connections



### Check cable distribution

Check the wiring layout. Cable must not show signs of wear or be hanging. Torn or frayed cables can cause unforeseen movements on the implement.

Attach the following electrical cables to the tractor:

## Lighting

- Lighting of the implement.
- > Connect the plug for the 12 V power supply to the 7-pin plug socket on the tractor.

# Preparing for operation

## Safety

The following applies to all preparations for use:



### Observe safety instructions

Observe the safety instructions for the performance of all work. Any disregard for safety instructions can lead to serious or fatal injuries to persons.

### Switch off the tractor and secure it

Before you dismount, switch off the tractor and secure it against rolling away. An unsecured implement can run you over or trap you and cause very serious injuries.

### Avoid the danger zone

The rotors are a danger zone. Do not stand in the danger zone. Rotors may drop or turn. This can lead to serious or fatal injuries.

### Securing the implement

Secure the implement against accidental start-up and rolling away (use wheel wedges). The implement must be standing on firm and level ground and, if necessary, must be supported during work. Unsecured or non-supported implements can cause accidents.

## General

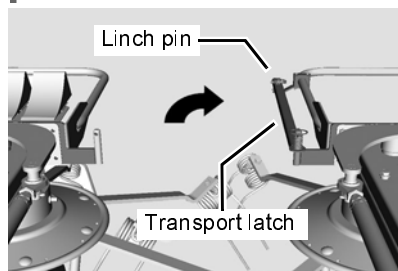
The following applies when performing all operations:

- Secure the implement
- Check the tyre pressure.
- Bring the implement into the work position.
- Perform adjustments

The following work steps are described in this section:

- Release the transport latch.
- Bring the implement into the work position.
- Working depth.
- Rotor pitch.

## Release the transport latch



Release the transport latch at the rear of the implement before it is moved to the work position.

- > Release the linch pin on the transport latch.
- > Swivel the transport latch to park position.
- > Refit the linch pin.

**NOTE** When the tractor is being reversed or transported in the transport position, the transport latch must be refitted so that the side equipment can be connected.

## Bring the implement into the work position



### Note the contour of the terrain

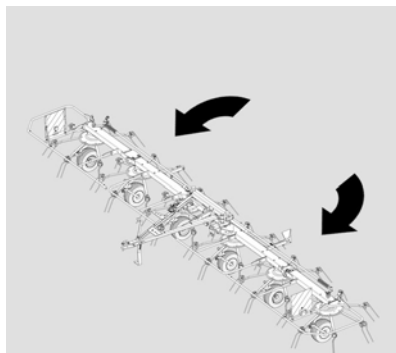
Change only from transport to work position on level ground or with the tractor facing directly uphill. Never attempt to change the machine from transport to work position with the tractor facing across a slope or facing downhill. Avoid inclines on which the combination (tractor and implement) could slip or overturn. Side equipment can swivel out uncontrollably, the implement could be damaged. There is an increased risk of tipping and injury in a position offset in relation to the direction of the slope.

### There should be no persons standing in the slew range

No-one is permitted to remain within the slew range and working area. Personnel can be caught by the implement. There is otherwise the risk of serious or fatal injury.

### Unfold fully and uniformly

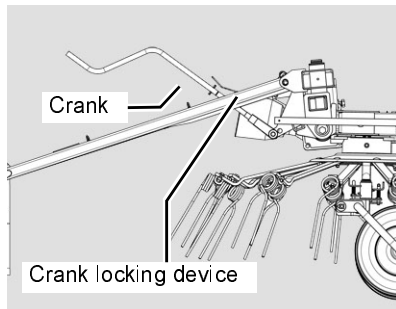
Ensure that the side equipment is uniformly unfolded. If there is a malfunction, fold the side equipment back in and repeat the process with a higher engine speed. The hydraulic cylinders must be completely extended in the work position. Damage may otherwise be caused to the implement.



- > Use the tractor's hydraulic control device to bring the implement into the work position.

# Preparing for operation

## Adjusting the working depth

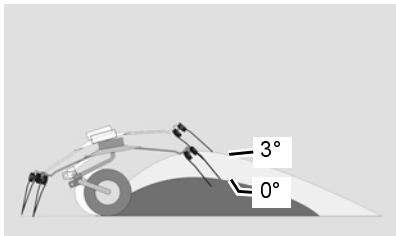


Distance of tine to ground is adjusted in the work position via the crank.

- > Use the tractor's hydraulic control device to bring the implement into the work position.
- > Drive forward approximately 2 meters until the running wheels are correctly aligned.
- > Release the crank locking device.
- > Adjust the working depth using the crank.
- > Secure the crank with the crank locking device to ensure it does not twist.

**NOTE** The tines should lightly touch the ground.

## Adjust tedder inclination

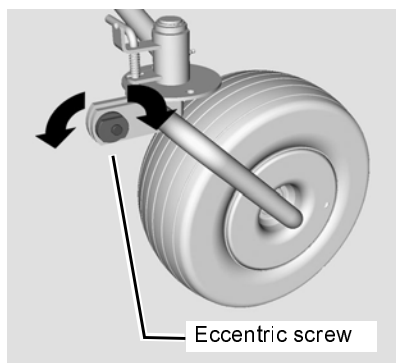


The tedder inclination determines how far the harvest is ejected from the rear. Using the eccentric screw on the wheel, allow the running wheel axles to move by 3° (infinitely variable).

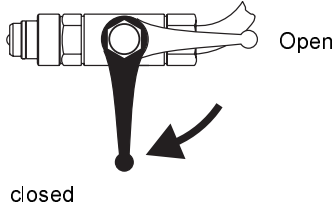
**NOTE** All wheels must be set the same. Flat tedder inclination results in optimised harvest pickup.

Adjust tedder inclination in the work position as follows:

- > Use a screwdriver (SW 30) to turn the eccentric screws to set the required tedder inclination identically for all running wheels.
- > Check the working depth and adjust if necessary.



## Safety



### Ensuring road safety

The implement must conform to current national traffic regulations if you intend to drive it on public roads. Ensure:

- Lighting, warning and protective equipment is installed
- Compliance with the permissible transport widths and weights, axle loads, tyre loadbearing capacities, laden weights and national speed restrictions.
- Compliance with the maximum permissible road transport speed of 40 km/h.

If this is not complied with, the driver and keeper of the vehicle are liable.

### Close the valves

Close the ball valve before driving on the road. If the ball valve is open and there is an operating error, the implement can drop or swing out into the opposing traffic. This can result in traffic accidents.

### Clean the implement before travelling on the road

Before any road transport, remove any coarse dirt, remaining crops and clods of earth from the implement and clean it. Crops or dirt that drop onto the road can cause slippery road conditions. There is otherwise the risk of traffic accidents and accidents with fatal consequences.

### Clean lighting equipment before travelling on the road

All lighting equipment must be cleaned before road transport. Crop residues or dirt may cover up the lighting equipment and impair its function. There is otherwise the risk of traffic accidents and accidents with fatal consequences.

### Observe the slewing range

The rear wheel of the tractor should not come into contact with the drawbar when cornering. This may happen during tight turning circles. Unsuitable driving behaviour can cause serious damage to the machine.

## General

The following work steps are described in this section:

- Prior to road transport.
- Slewing the implement.
- Resetting the field cleaning.
- Releasing the running wheel latch.
- Secure the implement

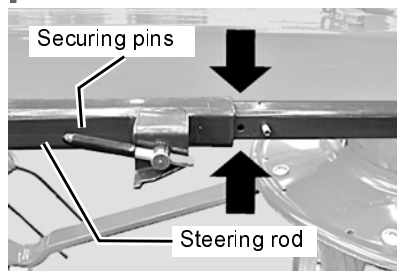
# Road transport

## Prior to road transport

The transport position must be used for driving on the road. The following steps are necessary to bring the implement into the transport position:

- > Remove any crops and coarse dirt.
- > Reset the field cleaning.
- > Release the running wheel latch.

### Resetting the angled position

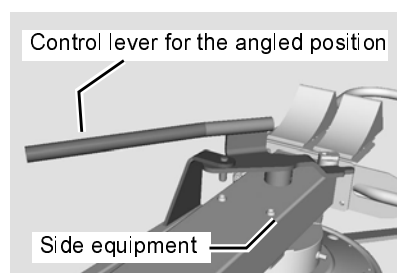


#### Resetting the angled position before road transport

Before the implement is folded into the transport position, ensure that the limit area position is not set. Damage may be caused to the implement.

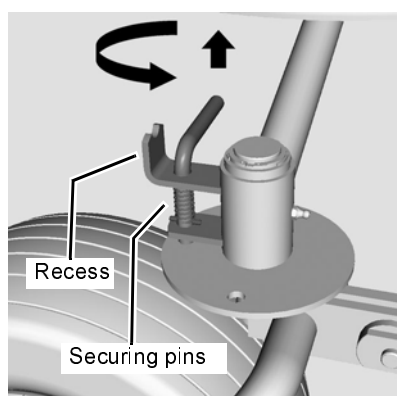
- > Release the securing pins on the side equipment steering rods.

**NOTE** The bolts in the illustration show the position of the securing pins for the reset angled position. This position must be set on both sets of side equipment.



- > Swivel both sets of side equipment with the control lever for the angled position until the securing pins are engaged in the required position.

### Release the running wheel latch



#### Release the running wheel latch

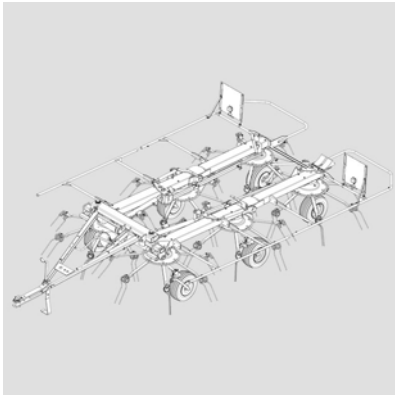
Before the implement is folded into the transport position, ensure that the running wheels are not locked. Damage may be caused to the implement.

- > Raise the securing pins for all running wheels and engage them in the recesses.

The running wheel latch for all wheels is released. The caster function for all running wheels is available for use.

→ See also »Securing the running wheel latch«, page 36

## Slew implement



### Note the contour of the terrain

Change only from transport to work position on level ground or with the tractor facing directly uphill. Never attempt to change the machine from transport to work position with the tractor facing across a slope or facing downhill. Avoid inclines on which the combination (tractor and implement) could slip or overturn. Side equipment can swivel out unevenly, the implement could be damaged. There is an increased risk of tipping and injury in a position offset in relation to the direction of the slope.

### There should be no persons standing in the slew range

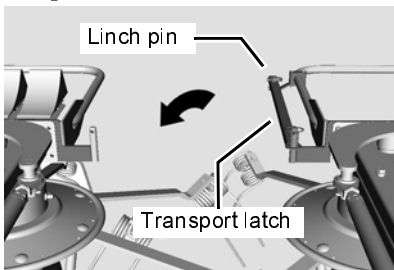
No-one is permitted to remain within the slew range and working area. Personnel can be caught by the implement. There is otherwise the risk of serious or fatal injury.

### Folding up the implement completely

Ensure that the implement is always completely folded up. Never drive with partially folded side equipment. This could lead to accidents and personal injury.

- > Use the tractor's hydraulic control device to bring the implement into the transport position.

## Securing the implement



When in the transport position, secure both sets of side equipment to the rear of the implement with the transport latch.

- > Release the linch pin on the transport latch.
- > Swivel the transport latch to the secured position.
- > Refit the linch pin.

# Road transport

## Checking the implement

Prior to driving on the road, check the implement against this check list:

- Side machines completely retracted?
- Is the side equipment secured with the transport latch?
- Tractor control unit for hydraulics "OFF"?
- PTO drive "OFF"?
- Ball valve at hydraulic coupling closed?
- Tyre pressure correct?
- Crop residue and dirt removed?
- Lighting wiring and hydraulic tubes routed so they are not tensioned when taking corners or caught in tractor wheels?
- Lighting in good working order?

## Road transport

- Before starting off, check the immediate vicinity. Always ensure an unimpeded view and pay particular attention to any children in the vicinity of the implement.
- When driving, lock the control units on tractor.
- Do not transport any personnel or objects on the implement.
- Adapt speed to road conditions.
- Do not exceed a maximum speed of 40 km/h. Comply with the national speed limits.
- Ensure sufficient steering and braking capacity. Driving behaviour, steering and braking capability are influenced by the implement that is coupled (longer braking distances due to greater thrust).
- There is a danger of tipping in precipitous places and if corners are taken too fast.
- Take corners at a suitable ground speed. There is a risk the trailed implement may swing out if corners are taken at speed.



## Safety



### **Observe safety instructions**

Observe the safety instructions for the performance of all work. Any disregard for safety instructions can lead to serious or fatal injuries to persons.

### **No riding on the implement**

Neither personnel nor objects are allowed to be transported on the implement at any time. Riding on the implement is hazardous and strictly prohibited. There is otherwise the risk of serious or fatal injury.

### **There should be no persons standing in the slew range**

No-one is permitted to remain within the slew range and working area. Personnel can be caught by the implement. There is otherwise the risk of serious or fatal injury.

### **Maximum cardan shaft speed 540 rpm**

The cardan shaft speed must not exceed 540 rpm and has to be adapted to the condition of the crop. Higher speeds can cause damage to the implement.

### **Only allow the cardan shaft coupling to respond briefly**

Do not let the slip clutch respond for longer than 10 seconds. If the clutch responds for a longer period of time, it will wear and the cut-off torque will drop.

### **Do not upset the cardan shaft**

The cardan shaft between the tractor and implement must not be jolted when in the work or transport position. Upset cardan shafts can cause damage to the implement and tractor.

### **Note the contour of the terrain**

Pay even more attention when driving on an incline. Avoid inclines on which the combination (tractor and implement) could slip or overturn. There is an increased risk of tipping and injury if the implement is towed in a direction offset in relation to the direction of the slope.

### **No reversing in the work position**

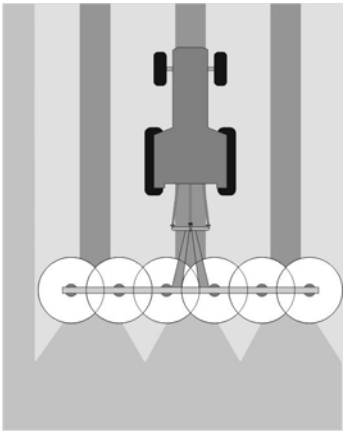
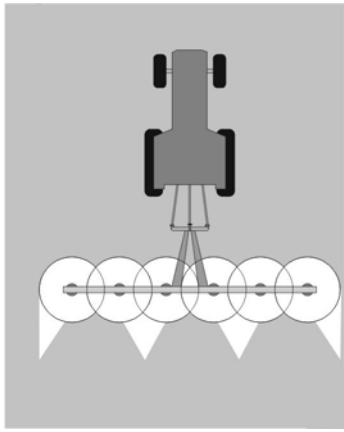
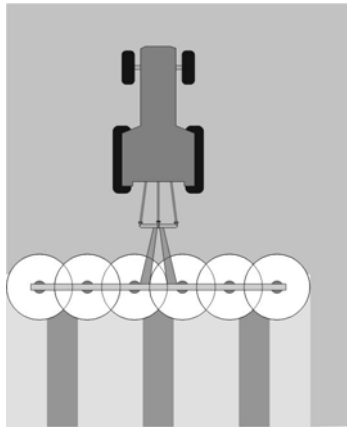
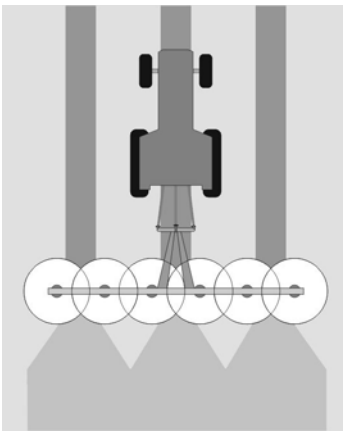
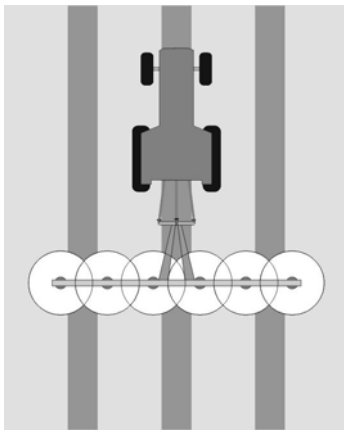
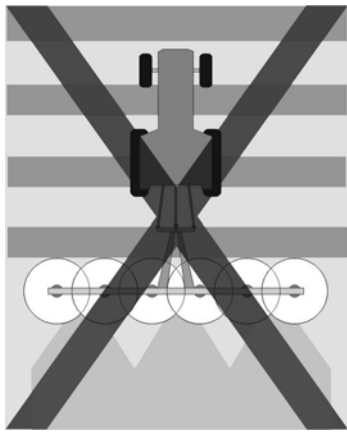
When the implement is in the work position, do not reverse. The implement may tip over. Damage may be caused to the implement.

# Operation

## Harvest processing

The following are possible with the rotary tedder, following deposit of the crop:

- Distributing
- Turning
- Rowing
- Swath laying
- Swath turning

Distributing	Turning	Rowing
		
<p>When distributing, the freshly cut crop is distributed over the stubble.</p> <p>&gt; Run the PTO shaft at roughly 500 rpm</p>	<p>Turning ensures uniform drying of the cut crop.</p> <p>&gt; Run the PTO shaft at roughly 400 rpm</p>	<p>Swathing arranges the distributed harvest in little swaths.</p> <p>&gt; Fit the swathing gear.</p> <p>&gt; Run the PTO shaft at maximum 300 to 400 rpm.</p>
Swath laying	Swath turning	Prevent crossing swaths
		
<p>Swath laying disperses the available swath to allow it to dry better.</p>	<p>For uniform drying, use swath turning.</p>	<p>Swaths should not be crossed. This loads the implement unevenly.</p>

## Implement Usage

Please remember when using:

- PTO shaft speed
- Working speed
- Working at the field edge

## PTO shaft

- > Switch the PTO shaft on at a low engine speed.

Select PTO shaft speed depending on harvest output requirements.

## Working speed



### Prevent crossing swathes

As a general measure, prevent the crossing of mowing swathes. The harvest is distributed unevenly, the implement is loaded abruptly. the implement could be damaged.

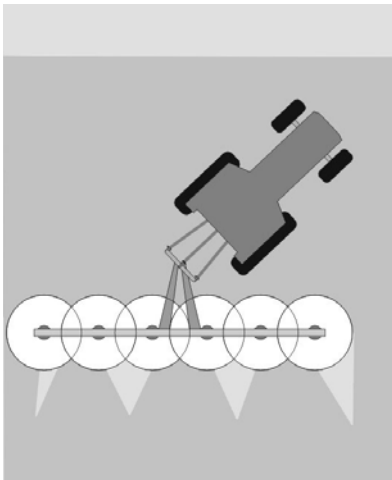
### Drive around obstacles in far distance

Obstacles must be circumnavigated in good time and at a distance. Due to the width and length of the implement, the implement reacts slowly and has an afterrun. the implement could be damaged.

A constant working speed provides uniform depositing of crops. The working speed should be set between 4 and 8 km/h. The working speed depends on ground and harvest conditions.

- > Select a working speed at which the crop is picked up cleanly and completely.

## Cornering



Ensure that, when cornering, the corner radius is not taken too close. During close cornering, the friction clutch can respond too early leading to uneven distribution.

- > Anticipate cornering in advance.

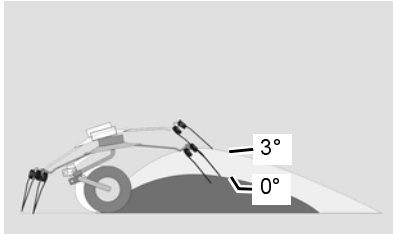
# Operation

## Distribution

Depending on the crop, distribution is changed via the following settings:

- the tedder inclination
- the PTO shaft speed
- the working speed

### Rotor pitch



Steep inclination is ideal for swathing.

Flat inclination is ideal for almost dried crop.

→ »Adjust tedder inclination«, page 28

### PTO shaft speed

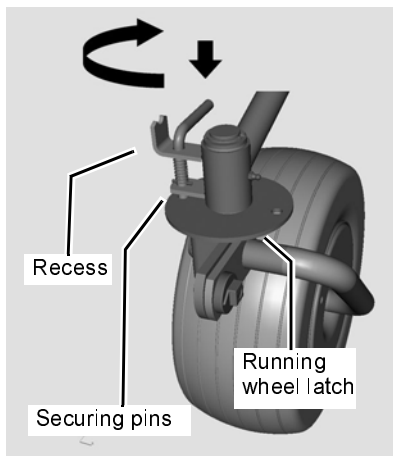
high PTO shaft speed results in crumbling losses and swathes in dry harvest.

low speed results in swathes.

### Working speed

Fast working speed results in uneven distribution and heaps.

## Securing the running wheel latch



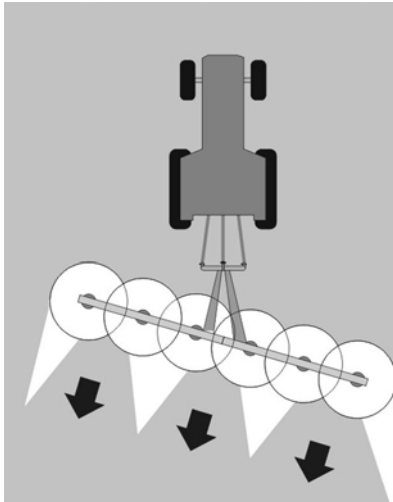
The running wheels can be secured to allow uniform work to be carried out on slopes. This adjustment is only possible in the work position. To do this, proceed as follows:

- > Align the running wheels by driving forwards.
- > Switch off the tractor's PTO shaft.
- > Switch off the tractor engine and secure the tractor.
- > Take out the ignition key.
- > Raise the securing pins for all running wheels and engage them in the running wheel latches.

→ See also »Release the running wheel latch«, page 30.

**NOTE** The running wheels cannot be turned manually. Align the running wheels by driving forwards when the securing pins are not engaged in the running wheel latches.

## Working at the field edge



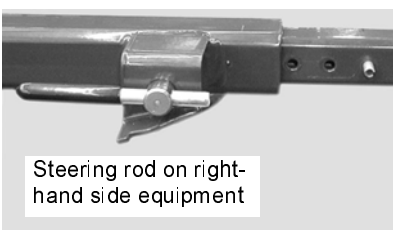
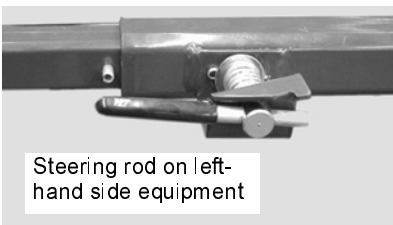
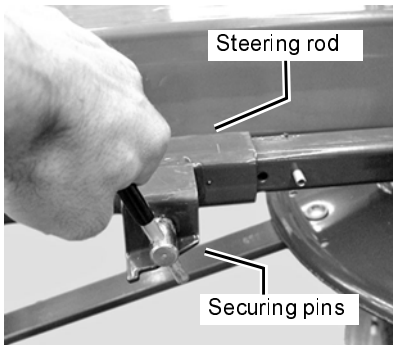
### Release the running wheel latch

The running wheels for the implement should not be locked in the transport and angled positions. Damage may be caused to the implement.

The rotor axes can be mechanically tipped to the left or to the right with the angled position. During limit spreading, the implement will tail after at an angle, thus preventing the crop from being distributed beyond the field edge. Only carry out the reorientation in the work position. The running wheels must not be secured.

The optional hydraulic angled position [+] allows a direct switch from the work position to the angled position using a cable control ball valve. With this option, the side equipment can only be swivelled in one direction.

## Adjust limit spreading



Set down the implement in the work position and adjust the angled position as follows:

- > Switch off the tractor's PTO shaft.
- > Switch off the tractor engine and secure the tractor.
- > Take out the ignition key.
- > Release the securing pins on the steering rod for the **left-hand** side equipment.
- > Swivel the left-hand side equipment with the angled position control lever until the securing pins are engaged again (see adjacent illustration).
- > Release the securing pins on the steering rod for the **right-hand** side equipment.
- > Swivel the right-hand side equipment in the same direction of rotation with the angled position control lever until the securing pins are engaged again (see adjacent illustration).

**NOTE** For limit spreading, both sets of side equipment can also be used in the opposite slew direction.

# Operation

## Working in angled position

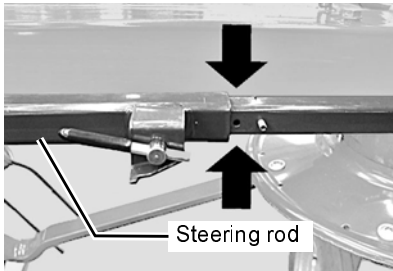


### Watch for obstacles

When driving around obstacles or along fences ensure a sufficient distance is kept. A collision may cause damage to the implement.

- > Switch the PTO shaft on at a low engine speed.
- > Select the PTO shaft speed depending on crop output requirements.
- > Adjust working speed to terrain conditions.

## End limit spreading



After the end of limit spreading, the implement must be brought back to the normal work position before it is folded into the transport position. Damage may be caused to the implement.

- > Switch off the tractor's PTO shaft.
  - > Switch off the tractor engine and secure the tractor.
  - > Take out the ignition key.
  - > Reset both steering rods as shown in the adjacent illustration.
- See »Resetting the angled position«, page 30

## Safety

The following applies to all cleaning and care work:



### **Observe safety instructions**

Do not fail to observe the safety instructions when performing all work operations. Any disregard for safety instructions can lead to serious or fatal injuries to persons.

### **Securing the implement**

- Before starting the cleaning work, always switch off the PTO shaft and lock it out against accidental operation.
- Secure the implement against rolling away by using wheel wedges.
- The implement must be standing on firm and level ground and, if necessary, must be supported during work.

Unsecured or non-supported implements can cause accidents.

### **Do not clean bearings or hydraulic parts with high pressure cleaners**

Do not clean bearings or hydraulic parts with high pressure cleaners. The high-pressure cleaner removes the grease film from the bare metal surfaces. Metal surfaces treated like this can corrode. After each cleaning process, lubricate the bearing points and grease the bare parts.

### **Clean the bearings and hydraulic parts carefully**

Be careful when cleaning with a high pressure cleaner. Bearings, seals and pipe unions are not waterproof. Avoid damaging the implement; the bearings, seals and pipe unions must not come into direct contact with the high-pressure water jets.

### **There should be no persons standing in the slew range**

No-one is permitted to remain within the slew range and working area. Personnel can be caught by the implement. There is otherwise the risk of serious or fatal injury.

# Cleaning and care

## Cleaning

- > Use the tractor's hydraulic control device to bring the implement into the work position.

After each use, clean the implement of any coarse dirt and crops. Cleaning is performed with a high-pressure cleaner, with the exception of the bearings and piston rods of the hydraulic cylinders.

## After cleaning:

After cleaning with the high-pressure cleaner lubricate all bearing points.

## Care

In order that the wheel rake has a long service life we recommend:

- > applying a protective layer of oil to all bright work tools. Use only permitted biologically degradable oil, for example, rapeseed oil
- > Repair any paint damage.



## Safely setting down the implement



When setting down and parking the implement special safety precautions have to be observed:

### Observe safety instructions

Do not fail to observe the safety instructions when performing all work. Any disregard for safety instructions can lead to serious or fatal injuries to persons.

### The implement is not a toy

Never allow children to play on or around the implement. Metal edges and work tools of the implement can cause serious injury.

## General

Uncouple the implement in the reverse order to coupling. Chapter »Coupling the implement«, sections »Coupling the pending attachment« and »Coupling the lift link drawbar« page 22

## Uncoupling and securing the implement

To uncouple the implement from the tractor proceed as follows:

- Stop the implement on firm, level ground in the transport position.
- Secure the tractor against rolling away, switch off and take out the ignition key.
- Secure the implement against rolling away by using wheel wedges.
- Pull off the cardan shaft and place it on the holder provided.
- Close the ball valve and release the hydraulic couplings.
- Insert the hydraulic couplings into the parking pockets on the implement.
- Disconnect the lighting plug and insert it into the parking pockets on the implement.
- Lower and secure the sustainer.
- Coil the electrical cables.
- Unhitch the implement.

## After the end of the season

After the end of the season and if the implement is to be stored for a long period of time, perform the following work:

- > Clean the implement thoroughly.
- > Check all the screw joints and tighten the screws.
- > Repair or replace any damaged components.
- > Repair any paint damage.
- > Lubricate the implement in accordance with the lubrication schedule.
- > Check the tyre pressure.

## Safety

The following applies to all servicing work:



### **Observe safety instructions**

Observe the safety instructions for the performance of all work. Any disregard for safety instructions can lead to serious or fatal injuries to persons.

### **Prerequisites for maintenance work**

Only perform the maintenance operations if you have the required expert knowledge and suitable tools. The absence of technical knowledge or suitable tools can cause accidents and injuries.

### **Use OEM (original equipment manufacturers) replacement parts**

Many components have special characteristics which are essential for the machine's stability and correct function. Only those replacement parts and accessories supplied by the manufacturer have been tested and approved. Using other products may lead to malfunctions or reduce safety of operation. The use of non-OEM replacement parts renders the manufacturer's guarantee null and void and frees the manufacturer from all liability.

### **Protect the device from inadvertently starting**

The following conditions must be observed for carrying out repairs and maintenance work and rectifying malfunctions on the coupled implement:

- Switch off the tractor's PTO shaft.
- Switch off the tractor engine.
- Take out the ignition key.

Severe accidents can result if the device starts inadvertently.

### **Securing moving parts**

Moving parts must be secured with lifting gear against sliding, folding or swivelling. Personnel may be injured or the implement may be damaged as a result.

### **Welding work**

Before performing any welding work on the tractor or implement always disconnect the voltage supply to the electrical control unit. Damage to the electronics cannot otherwise be excluded.

## Protective measures when handling oils or lubricants



Additives in oils and lubricants may have adverse health effects. As marking in accordance with the hazardous goods ordinance is not necessary, please always ensure the following:

### **Avoid skin contact**

Avoid skin contact with these materials. Protect your skin by means of protective skin cream or oil-resistant gloves. Contact can result in skin damage.

### **Never use oils for cleaning**

Never use oils or lubricants to clean your hands. Burrs and grit in these materials can result in injuries.

### **Change any soiled clothing**

Change clothing heavily contaminated with oil as soon as possible. Oils can cause damage to the health.

- NOTE:**
- Used oil must be collected and disposed of.
  - Immediately consult a doctor in case of skin damage caused by oils and lubricants.

# Maintenance

## General





This information relates to general servicing work. For all servicing work, the implement must be locked in the work position. If the transport position is required for maintenance work, you will find appropriate information for the maintenance work.

- > Secure the implement against rolling away by using wheel wedges.

## Direction specifications

The direction specifications (right, left, front, rear) are meant in drive direction.

Rotary direction is defined as follows:

	Description
 Rotary direction right	clockwise
 Rotary direction left	counter-clockwise
 Rotation about the vertical axis	viewed from top to bottom
 Rotation about the horizontal axis	at right-angles to the direction of travel viewed from left to right
Rotation of screws, nuts and suchlike	always viewed from the actuation face

## Maintenance terms

Listed in this table are short explanations of the most important maintenance terms.

Task	Explanation
Greasing	Apply grease to the slide surfaces using a brush.
Greasing	Apply grease to the slide surfaces using a brush.
Lubrication	One or two presses of the grease gun, unless otherwise stated.
Oiling	If not specified otherwise, use only plant-based oils, such as rapeseed oils. The employment of used oil represents a health hazard and is strictly prohibited.
Replacement	Replace the appropriate part in accordance with the instruction in the section on Maintenance.
Inspect	Check the tyre pressure, adjustment dimensions and seal tightness as required, and replace any worn parts or seals.
Observe the maintenance intervals	The specifications relate to an average usage of the implement. If subjected to heavier duty (e.g. by contracting companies), select the maintenance intervals to be shorter. Also, for extreme working conditions (for example heavy dust creation), shorter maintenance intervals are possible.

## Maintenance intervals

		After 5 hours of operation	Daily	After 30 hours of operation	After 250 hours of operation	Once per season.	After excessive use	As required	After every high pressure cleaning	In case of wear	Lubrication	Greasing	Inspect	Replacement	Cleaning	Page
<b>General</b>																
	All screws	•				•		•								46
	Visual inspection		•				•						•			
	Bearing			•			•				•					48
	»Tyre pressure«		•					•					•			53
	»Hydraulic tubes«		•					•					•			53
	Lighting							•					•		•	
<b>Lubrication</b>																
	»Lubrication points for grease lubrication«			•		•			•		•					48
	»Lubricating the cardan shafts«		•	•		•			•		•					49
<b>Hydraulics</b>																
	Hydraulic tubes every 6 years					•		•						•		53
	Hydraulic cylinders					•	•	•					•			
	Hydraulic couplings							•							•	
	Hydraulic connections					•							•			
<b>Cardan shaft</b>																
	»Adapting the cardan shaft«		•			•						•				50
<b>Transmission</b>																
	»Main gear«							•					•			52
	»Rotor gear«							•					•			52
<b>»Tine position«</b>																
	»Inspect tine position«							•					•			54
	»Correct tine position«							•					•			54

# Maintenance

## Screw connections

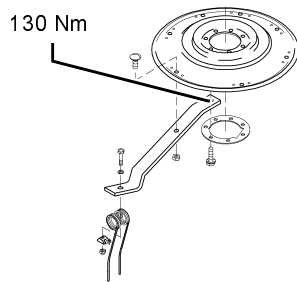
### Retighten screws

All screws have to be retightened:

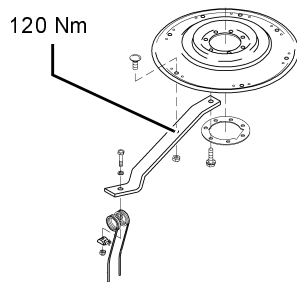
- After the first 5 operating hours and
- according to the frequency of use,
- but at least once a season.

### Special tightening torques

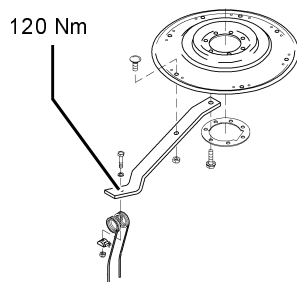
Take heed of the special tightening torques for the following screw connections:



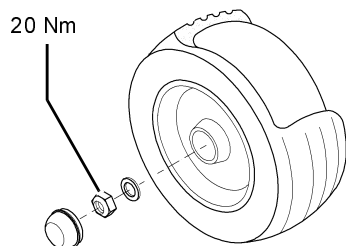
- 130 Nm Raking arms, inside



- 120 Nm Raking arms, outside



- 120 Nm Spring tines



- 20 Nm Wheel nuts of running wheels.

## Tightening torques for screw connections

All screw connections must be tightened in accordance with the table below, if no other torques are specified. On this implement screws with a minimum quality of "8.8" (read off the screw head) are used.

Screw size	Screw quality		
	8.8	10.9	12.9
<b>M6</b>	9.9 Nm (7.3 ft.lbs)	14 Nm (10.3 ft.lbs)	17 Nm (12.5 ft.lbs)
<b>M8</b>	24 Nm (17.7 ft.lbs)	34 Nm (25 ft.lbs)	41 Nm (30.3 ft.lbs)
<b>M10</b>	48 Nm (35.4 ft.lbs)	68 Nm (50.2 ft.lbs)	81 Nm (59.8 ft.lbs)
<b>M12</b>	85 Nm (62.7 ft.lbs)	120 Nm (88.6 ft.lbs)	145 Nm (107 ft.lbs)
<b>M16</b>	210 Nm (155 ft.lbs)	290 Nm (214 ft.lbs)	350 Nm (258 ft.lbs)

**NOTE** Tighten lock screws and lock nuts to a 10 % higher value.

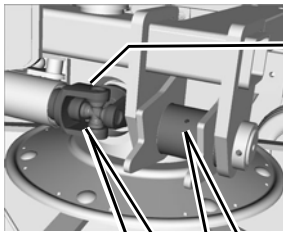
## Lubrication points for grease lubrication

**NOTE** Working with a grease gun  
Before applying the grease gun  
> Clean grease fittings and  
> grease gun fitting.

Lubricate the bearings with one or two presses of the grease gun. If you feel resistance at the second press, do not press a second time. Too much grease will force the bearings apart. This could allow dust and dirt to enter the bearing, resulting in premature wear.

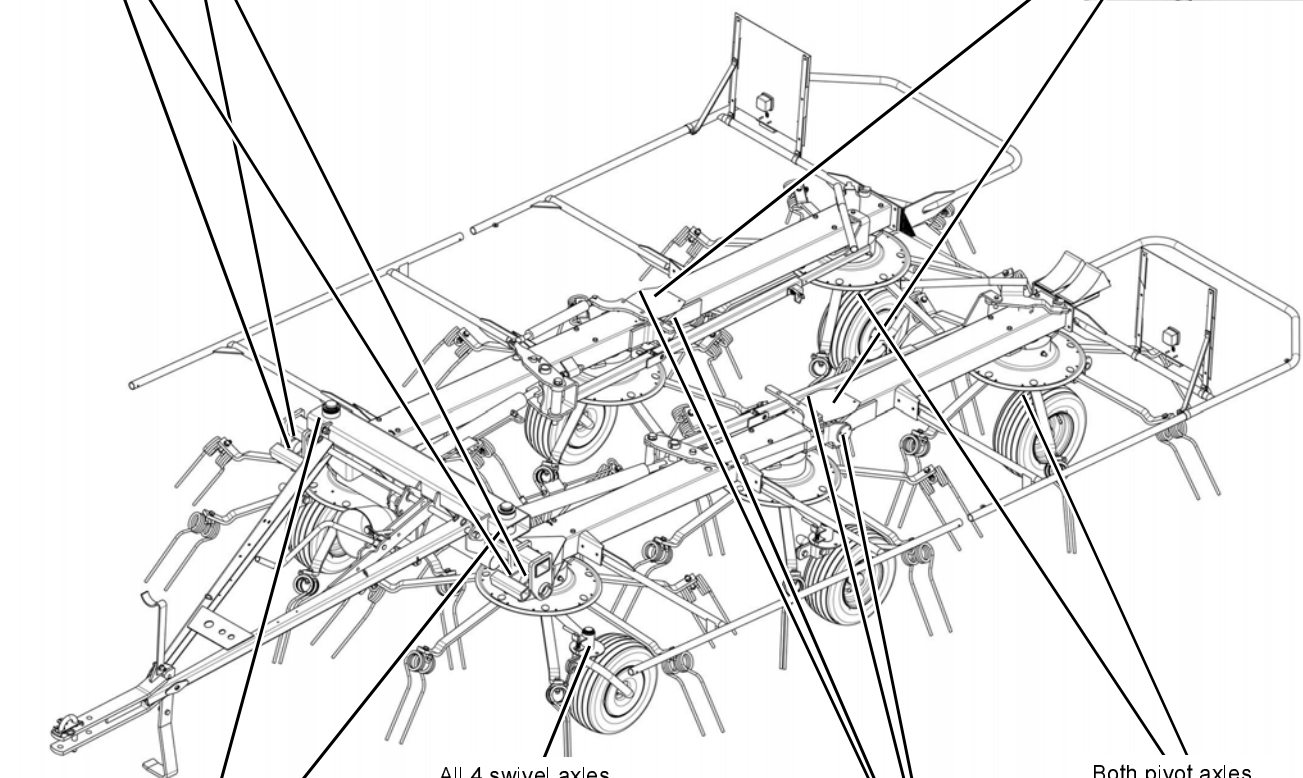
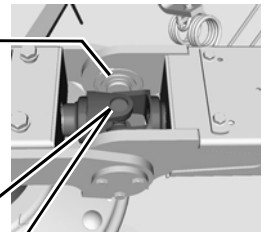
Lubricate the places listed in the illustration as follows:

- after 30 hours of operation
- before and after the season
- each time after cleaning with a high-pressure cleaner



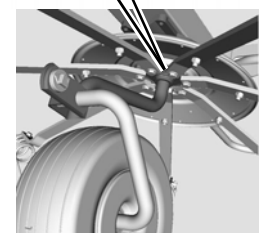
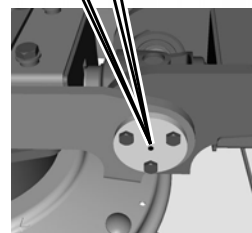
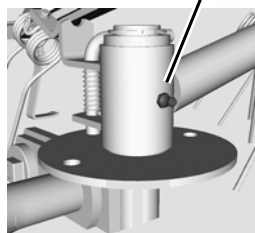
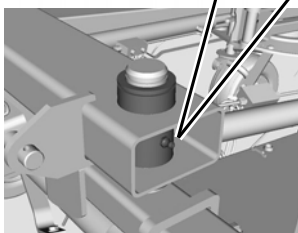
Lubricate the single cardan joint  
in the work position

Single cardan joint on  
both sets of side equipment



All 4 swivel axles

Both pivot axles





## Lubricating the cardan shafts

The manufacturer's own operating manual is attached to each cardan shaft. This includes detailed information on the relevant version of the cardan shaft.



### Check the guard components

Check all guard components of the cardan shafts for wear or damage (visual inspection). Replace any defective guard components. An unguarded cardan shaft or damaged guard components can cause very serious injuries in operation.

Lubricate the pivots and their couplings (G) as follows:

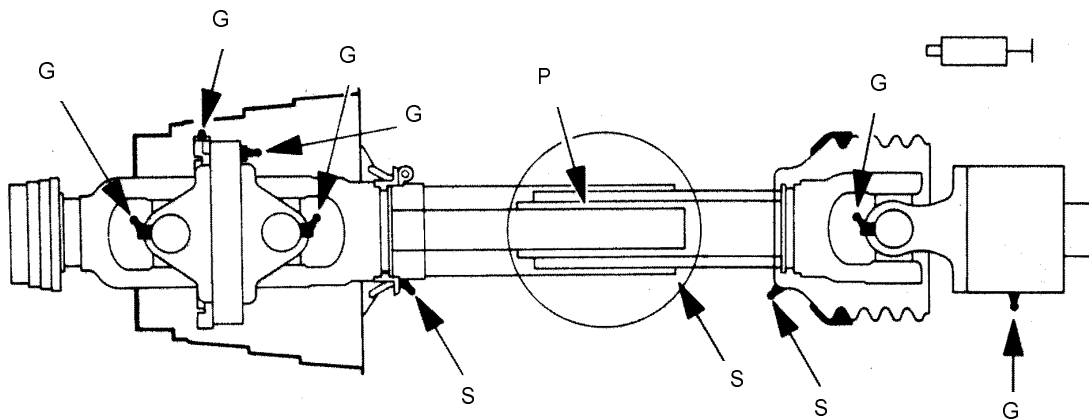
- daily
- after 20 hours of operation
- before and after the season
- after every cleaning operation using a high-pressure cleaner

Grease the profile section tubes (P):

- daily
- after 30 hours of operation
- before and after the season
- after every cleaning operation using a high-pressure cleaner

Lubricate the guard (S) as follows:

- after 250 hours of operation
- before and after the season
- after every cleaning operation using a high-pressure cleaner



## Adapting the cardan shaft

The length of the cardan shaft has been selected ex-factory so that it fits almost all types of tractor. Only in exceptional cases is a correction of the cardan shaft length required on individual tractors. The cardan shaft length has to be checked in the following way before first use:

### Safety



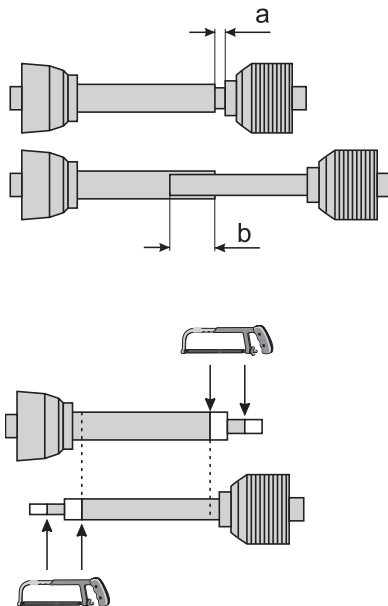
#### Switch off the tractor

Perform all work only with the engine switched off and the implement at a standstill. Withdraw the ignition key! An accidentally switched on cardan shaft can cause very serious injuries.

**NOTE** If the cardan shaft has been shortened, the minimum overlap and the minimum distance must be checked again when operated with another tractor.

Perform an adaptation of the cardan shafts in the following position:

- Couple the tractor to the implement without the cardan shaft.
- Lower the implement to the transport position.
- Park it in a tight curve, switch off the tractor and secure it against rolling away.



Shorten the cardan shaft as follows:

- > Pull the cardan shaft apart and put one half each onto the tractor PTO shaft and implement and secure them.
- > Compare the two shafts next to each other.
  - for a minimum of 250 mm overlap (b) and
  - if the cardan shaft is not sitting on the block (minimum distance (a) = 20 mm).
- > If shortening is necessary, saw off both the slide tube and guard tube by the same dimension.
- > Deburr the ends of the tubes, remove the swarf and grease the slide points well.

## Friction clutch

The friction clutch is maintenance free.

## Lubrication points for oil lubrication

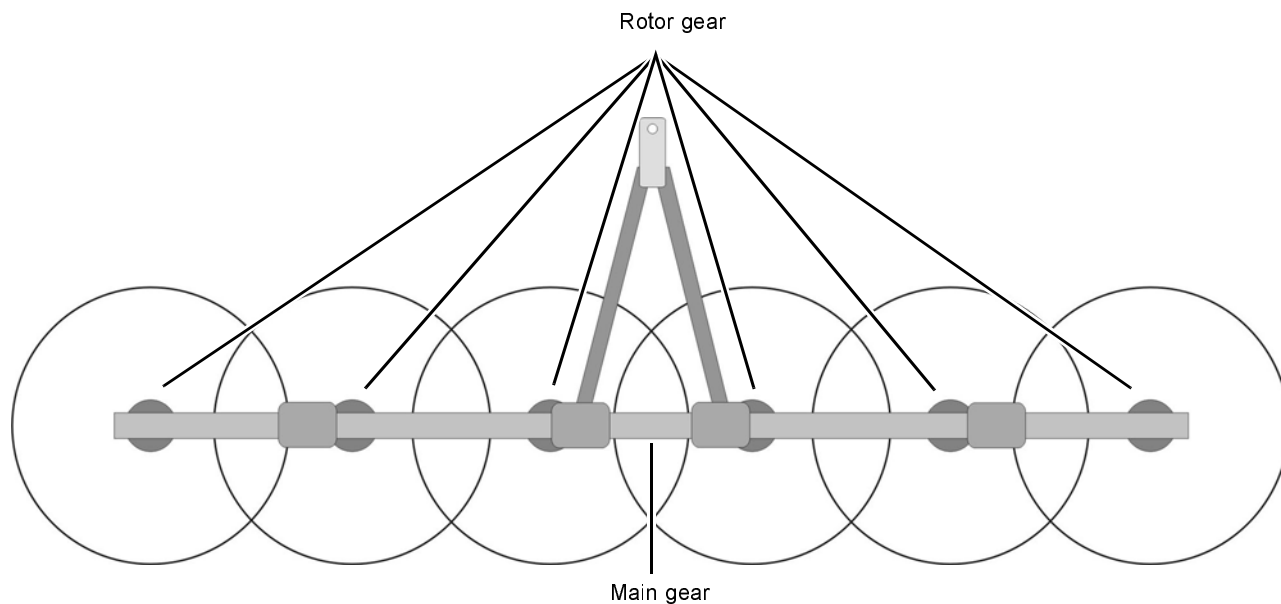
Check the oil level of the main gear box and of the tedder gears regularly.

→ »Main gear«, page 52

→ »Rotor gear«, page 52

The gear boxes must be checked and, if there is visible oil loss, re-filled.

The illustration shows the location of the gear boxes:



# Maintenance

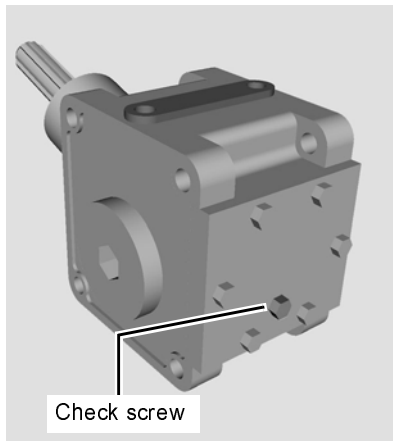
## Filling volumes

The main gear box and tedder gears are free of maintenance. Only top up the oil if the level is visibly low when checked on a level implement.

Transmission	Oil volume [litres] SAE 90 API-GL-4
Main gear	1.2
Rotor gear	0.2

## Main gear

### Inspect



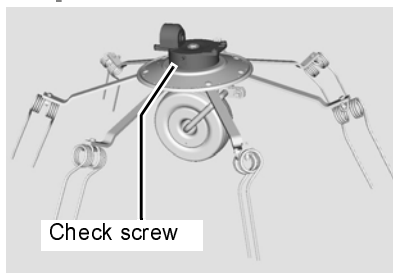
- > Ensure the implement is level
- > Release the check screw completely.

### Refill

- > Refill oil until oil seeps out of the check bore.
- > Insert the check screw and tighten.
- > Wipe up any oil spills immediately.

## Rotor gear

### Inspect



- > Ensure the implement is level
- > Release the check screw completely.

### Refill

- > Refill oil until oil seeps out of the check bore.
- > Insert the check screw and tighten.
- > Wipe up any oil spills immediately.

## Tyres



### Do not drive with worn or damaged tyres

Replace worn or damaged tyres immediately. There is a high risk of accident especially when driving on the road with such tyres.

## Tyre pressure

Check the tyre pressure regularly:

- daily
- before any road transport
- as required (for example before setting the tine height)
- before and after the season

Tyre size	Tyre pressure
16 x 6.50-8 Imp. 6PR	1.5 bar

## Hydraulic



### Hydraulic system at zero pressure

Work must only be performed on the hydraulic system if the tractor and implement hydraulic system is at zero pressure. A pressurised hydraulic system can trigger unforeseen movements on the implement and can cause serious damage and injuries. There is otherwise the risk of serious or fatal injury.

### Be careful when welding

Do not perform any welding work in the vicinity of the hydraulic hoses. Hydraulic oil can burst into flames very easily.

### Clean hydraulic system

Close or disconnect the quick release coupling with great care. Remove any dirt or air which has entered the hydraulic system. The hydraulic system can be seriously damaged. Material damage and injuries to personnel may be caused.

### Collect any escaping oil

Leaking oil must be collected and cleaned up in accordance with national regulations. Otherwise damage may be caused to the environment.

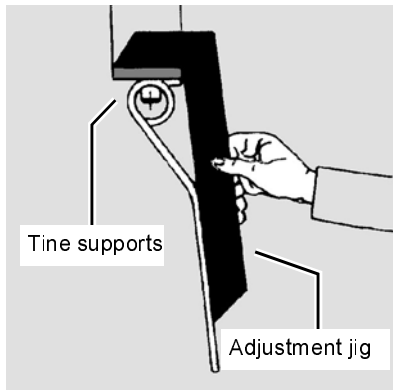
## Hydraulic tubes

Hydraulic tubes can age without this being externally visible. We therefore recommend replacing the hydraulic hoses every six years.

- > Bring the implement into the work position.
- > Depressurise the equipment.
- > Switch off the engine.
- > Take out the ignition key.
- > Disconnect the hydraulic hoses.
- > Replace hydraulic tubes.

## Tine position

### Inspect tine position



Tines should be mounted in a certain angle (88°) for optimal pick up of harvest.

Check the tine position of each tine:

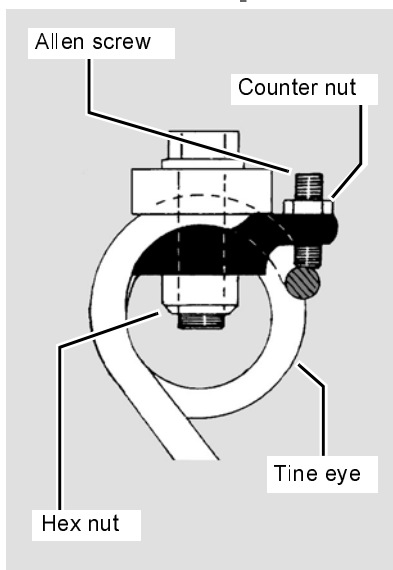
- > Place the adjustment jig onto the tine bracket.

**NOTE** The tine must be parallel to the tine adjustment jig over the entire length.

If the tine is not set parallel over the whole length:

- > Correct the tine position

### Correct tine position



Correct the tine position of each tine:

- when changing the tines and
- once before the season.

- > Release the hex nut and lock nut.

- > Turn the Allen screw, so the tine is placed parallel against the adjustment jig.

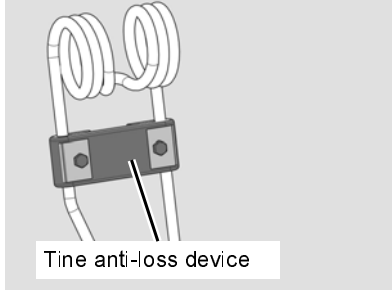
→ »Inspect tine position«, page 54

To ensure the tine cannot move, the Allen screw must lay flat against the tine eye.

- > Tighten the hex nut to 120 Nm.
- > Tighten the lock nut.

You can purchase additional equipment through your dealer.

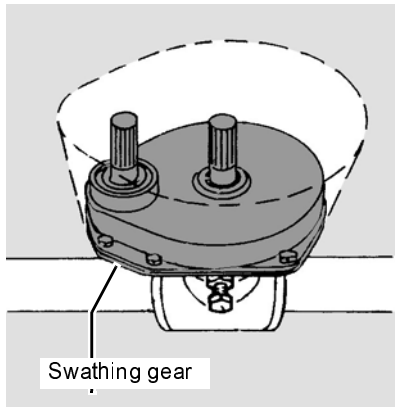
## Tine anti-loss device



If the tines are broken, the tine anti-loss devices prevent the loose, broken part from getting lost. Any towed implements, e.g. straw cutters, are then not damaged by lost tines in the fodder.

The flexible plastic containers can be easily clamped tight and then released again.

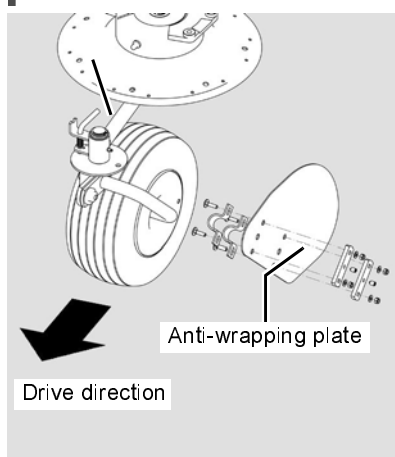
## Swathing gear



To create swaths for the hay harvest with the rotary tedder, a swathing gear can be ordered. The swathing gear reduces the speed of the cardan shaft. The crop is not dispersed, but deposited between two rotors as a swath.

- > Remove the existing protective shield on the central transmission.
- > Slide the swathing gear with the protective shield onto the central transmission shaft and secure it with a retaining ring for shafts.
- > Secure the swathing gear with adjustment screws.
- > Fit the cardan shaft on the side shaft end.

## Anti-wrapping plate

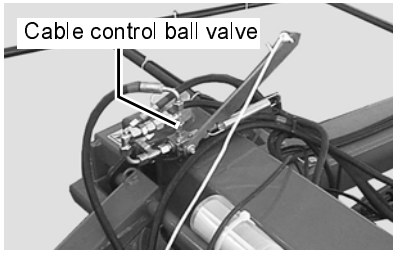


The anti-wrapping plate ensures a perfect, uniform flow of fodder. It stops the fodder getting wrapped around the running axles.

- > The anti-wrapping plates are fitted to the running wheel axles, as shown.

# Accessory equipment

## Hydraulic angled position



With the hydraulic angled position option, the angled position is set using a cable control ball valve. The driver does not therefore have to leave the tractor. This hydraulic angled position only allows the implement to be swivelled in one direction. The drive direction has to be adapted accordingly.

### Release the running wheel latch

The running wheels for the implement should not be locked in the transport and angled positions. Damage may be caused to the implement.

## Setting the hydraulic angled position

- > Bring the implement into the work position.
- > Release the running wheel latch.  
→ see »Release the running wheel latch«, page 30.
- > Pull the cable control ball valve cable and keep it taut.
- > Drive slowly forwards until the implement is in the required position.
- > The angled position hydraulic cylinder must have one completely extended hydraulic cylinder, with the second hydraulic cylinder fully retracted.
- > Slacken the cable control ball valve cable.

The angled position is set.

## Resetting the hydraulic angled position

To bring the implement to the normal work position, reverse the oil flow in the tractor's hydraulic control device.

- > Reverse the tractor's oil flow.
- > Drive slowly forwards until the implement is in the required position.

The work position is set.

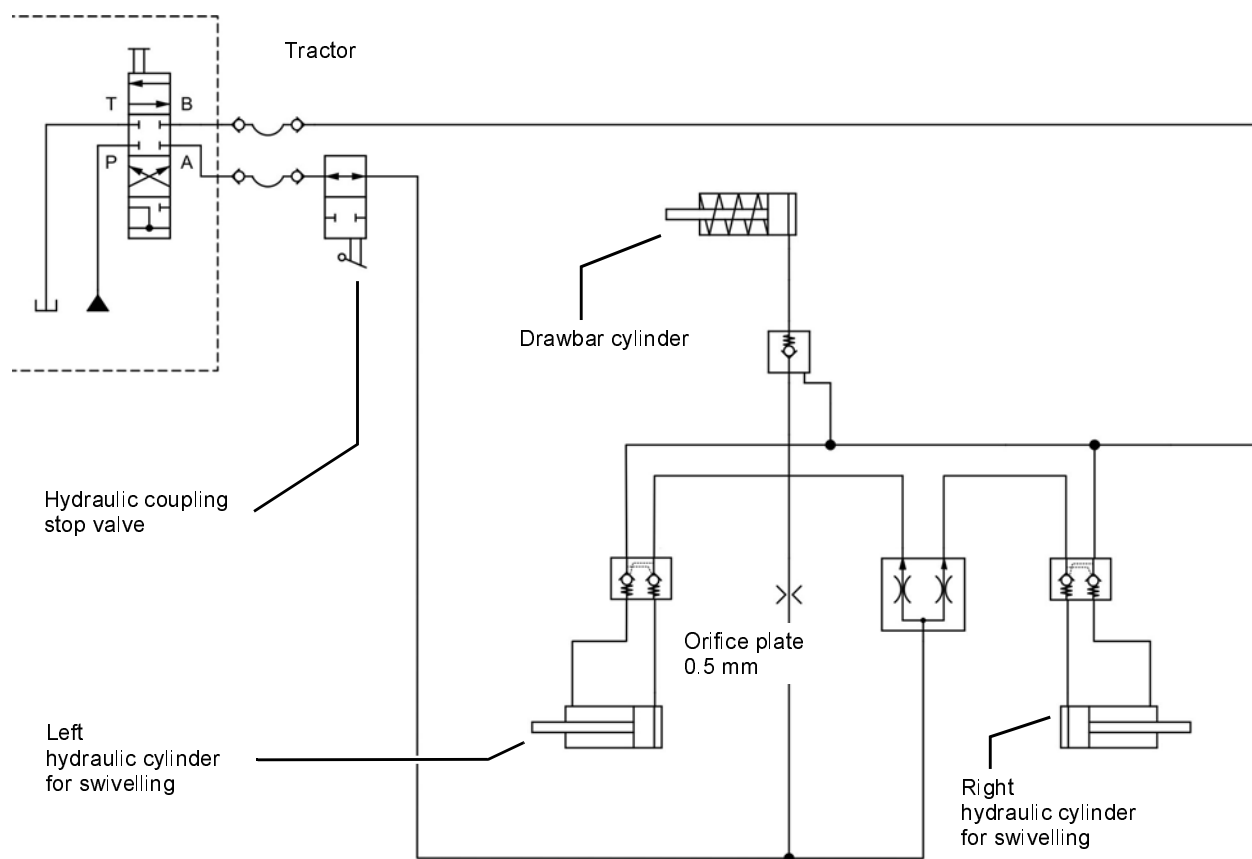


Malfunctions can often be eliminated quickly and easily. Before calling Customer Service, refer to the table to check whether the malfunction is one you can eliminate yourself.

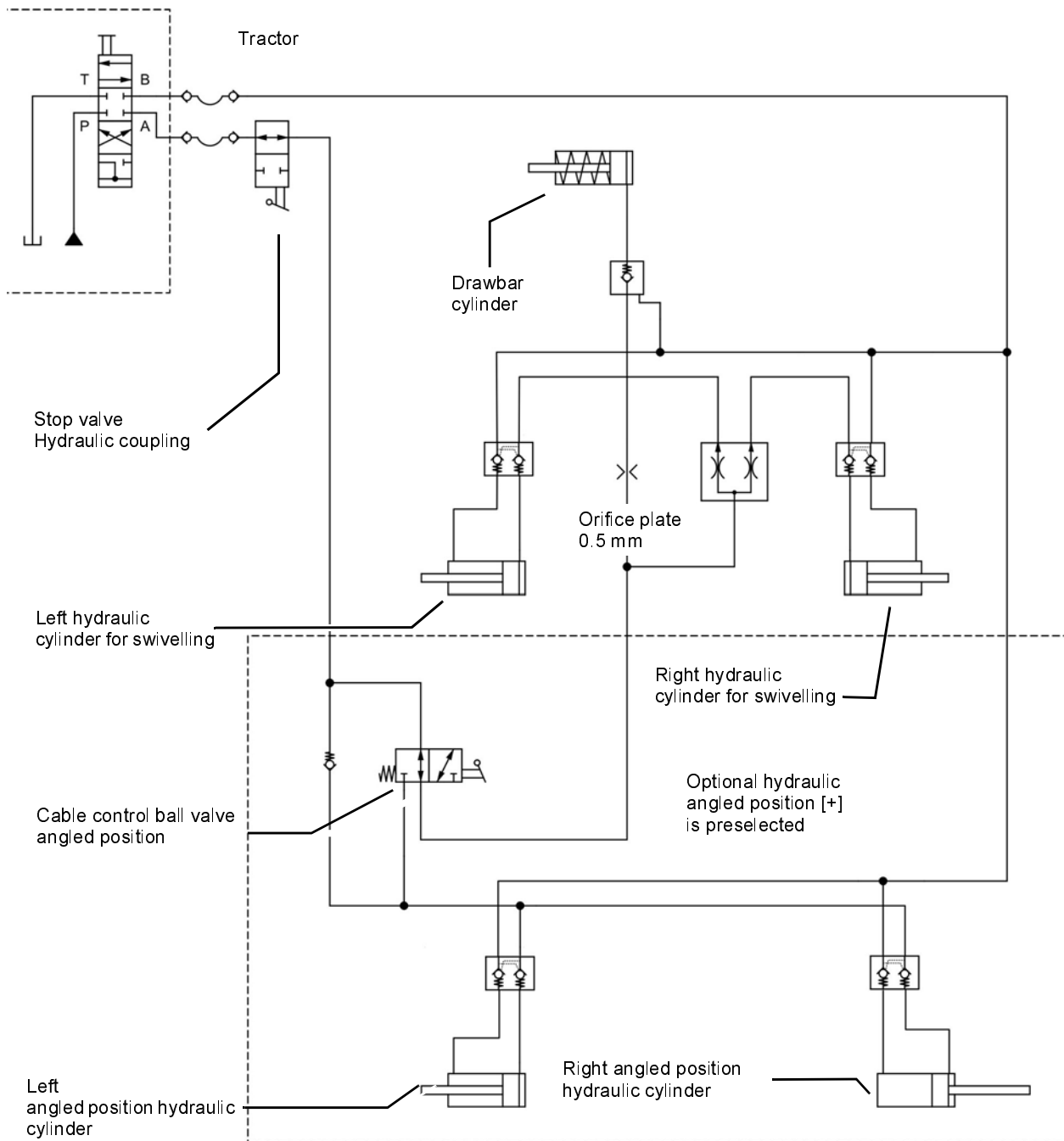
Fault	Causes	Remedy
Rotor leaves harvest across the whole crop width.	Working depth set too high	→ »Adjusting the working depth«, page 28 → »Adjust tedder inclination«, page 28
Fodder is heavily contaminated.	Working depth set too low	
Implement not operating cleanly at high speed.	Rotor tines set too high Uneven terrain	
	Speed too fast to process the amount of fodder	Reduce speed.
Friction coupling responding frequently.	Fodder mass too great or irregular	Reduce speed. Reduce PTO shaft speed.
	Working depth set too low	→ »Adjusting the working depth«, page 28 → »Adjust tedder inclination«, page 28
Noise production during work	Loose screw connections or worn-out rotor arms.	Check Rotor arms and screw connections on tines.
	Broken tines on the tine anti-loss device.	Replace the tines.

# Circuit diagrams

## Hydraulic diagram, standard version

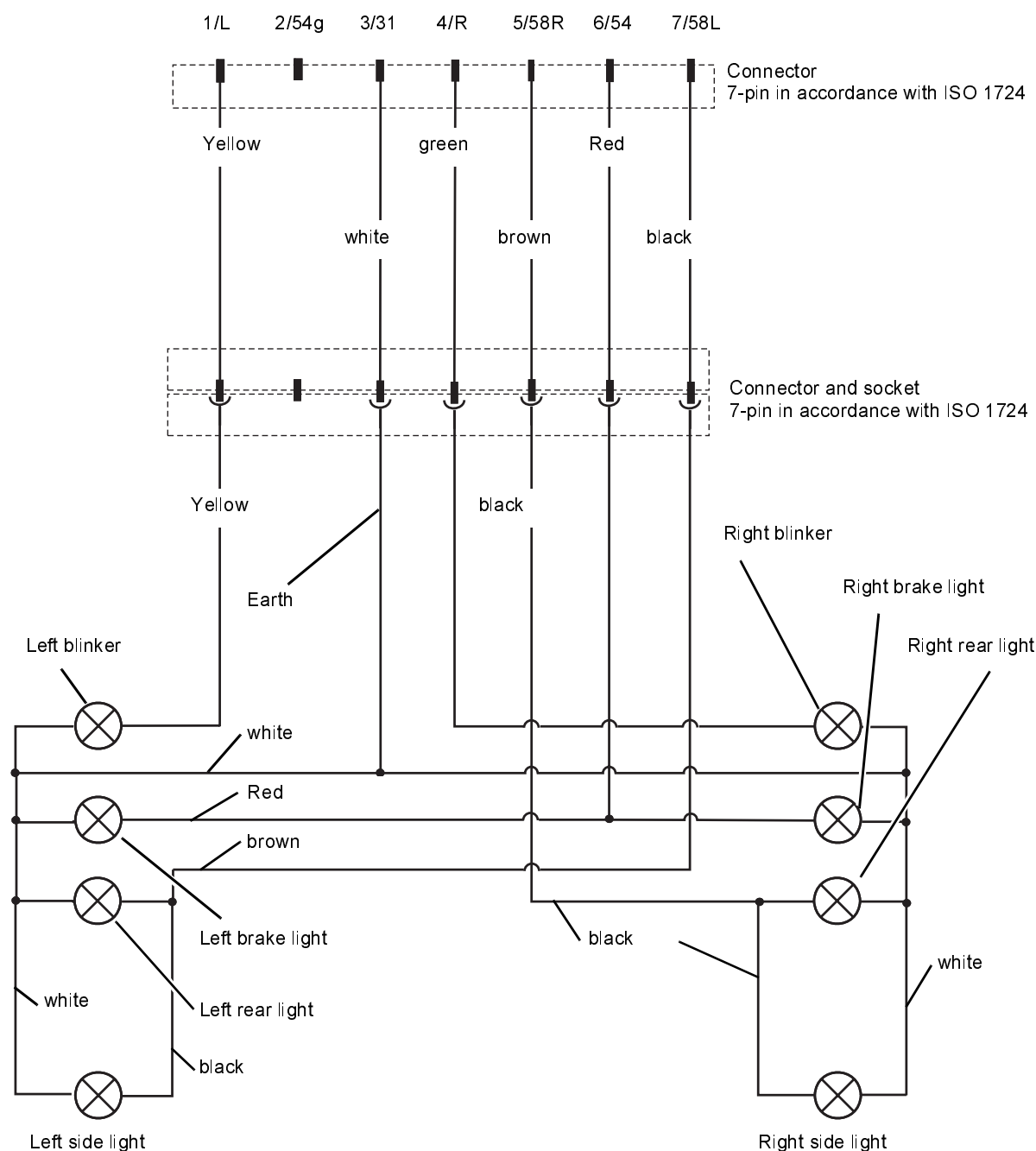


## Hydraulic diagram with hydraulic angled position



# Circuit diagrams

## Lighting circuit diagram



## Disposal

After the implement has reached the end of its service life, individual components must be disposed of properly, without damaging the environment. Please observe the currently valid waste disposal guidelines.

### **Metal parts**

All metal parts must be disposed by a metal recycler.

### **Oil**

Hydraulic fluid must be disposed by an oil recycling firm.

### **Plastic parts**

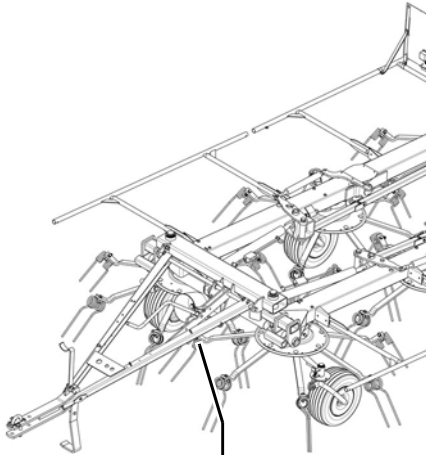
All plastic parts can be reused.

### **Rubber**

Rubber parts, like hoses and tyres must be disposed by a rubber recycler.

# EU Declaration of Conformity

in conformity with the EC  
Directive 98/37/EC



Type plate

We

**Kverneland Group Gottmadingen N. V.  
Industriepark 312  
78244 Gottmadingen  
Germany**

declares on its own responsibility that the product

**CondiMaster 8331, Fanex 833 T, Taarup 8083 T  
and accessories**

to which this declaration relates, complies with the relevant basic safety and health requirements of the EC Directive 98/37/EC.

The following standards were applied to achieve EU directive conformance on health and safety requirements:

- EN 12100-1;2 (04/2004);
- EN 1553 (04/2000)
- EN 11001-3 (01/1998)

Kverneland Group Gottmadingen GmbH & Co.KG  
Gottmadingen, 15.12.2007

A handwritten signature in cursive script, likely belonging to Uwe Kellermeier.

Uwe Kellermeier  
Manager

<b>A</b>			
Accessory equipment	55	Resetting	30
		Limit spreading	37
		Lubrication points	48, 51
		Cardan shafts	49
		General	48, 51
<b>C</b>			
Cardan shaft		<b>M</b>	
Adapting the length	50	Maintenance	42
Attaching	22	Lubrication points	48, 51
Lubrication	49	Maintenance intervals	45
Care	40	Screw connections	46
Circuit diagrams			
Hydraulic diagram with hydraulic limit spreader	59	<b>O</b>	
Hydraulic diagram, standard version	58	Oil,	
Lighting	60	disposal of	43
Clean field edges	37	Filling volumes	52
Cleaning	40	Protection measures	43
Component designations	18		
Connection		<b>P</b>	
Electrical	25	Park the implement	
Hydraulic couplings	24	Park the implement	41
Coupling		Preparing for operation	26
Cardan shaft	22	Proper use	17
<b>D</b>		<b>S</b>	
Direction specifications	44	Safety	
		Care and maintenance	15
<b>E</b>		Hitching	9
EU Declaration of Conformity	62	Pictorial symbols	7
Explanation		Road transport	12
Maintenance terms	44	Unhitching	14
		Speed	32
<b>F</b>			
Filling volumes	52	<b>T</b>	
		Technical specifications	19
<b>H</b>		Tightening torques	
Hydraulic limit spreader		Raking wheel arms	46
Adjusting	56	Screw connections	47
Resetting	56	Spring tines	46
		Tractor equipment	20
<b>I</b>		Tyre pressure	53
Implement,		Tyres	53
shutdown after the season	41		
uncoupling	41	<b>U</b>	
Information on the implement	17	Uncoupling the implement	
		Implement,	41
<b>L</b>			
Limit spreader		<b>W</b>	
Adjusting	37	Weights	20, 21
Hydraulic	56	Wheel wedges	23
Manual	37		