

**8446 / 8452**

## **Assembly instructions**

### **Original assembly instructions**

|                 |                         |
|-----------------|-------------------------|
| Edition         | 06.2012                 |
| Date of print   | 08.2012                 |
| Language        | EN                      |
| Machine number  | VF65902110 / VF65974001 |
| Model           | VF6590 / VF6597         |
| Document number | VF16649096.EN           |

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|   |           |
|---|-----------|
| <b>Preliminary information</b> .....            | <b>5</b>  |
| Target group for<br>these assembly instructions | 5         |
| Meaning of the symbols                          | 5         |
| <b>Safety</b> .....                             | <b>6</b>  |
| For your safety                                 | 6         |
| Screw and bolt tightening torques               | 8         |
| Direction and rotary direction                  | 8         |
| <b>Overview</b> .....                           | <b>9</b>  |
| Designation of components                       | 9         |
| <b>Crate packaging</b> .....                    | <b>10</b> |
| Assembly groups in<br>crate packaging           | 10        |
| Basic machine                                   | 13        |
| Fitting the support arm                         | 14        |
| Fitting the 3 point trestle                     | 15        |
| Fitting the protective pot                      | 16        |
| Fitting the protective bracket                  | 16        |
| Fitting the vibration dampers                   | 17        |
| Fitting the wheels                              | 18        |
| Parking and securing the machine                | 18        |
| Final assembly with crate packaging             | 19        |
| <b>Pallet packaging</b> .....                   | <b>20</b> |
| Requirements                                    | 20        |
| Basic machine                                   | 21        |
| Fitting the wheels                              | 22        |
| Parking and securing the machine                | 22        |
| Final assembly for pallet packaging             | 23        |
| <b>Final assembly</b> .....                     | <b>24</b> |
| Fitting the<br>deflector bars                   | 24        |
| Hydraulic                                       | 25        |
| Laying the control cables                       | 26        |
| Fitting the tine supports                       | 27        |
| Fitting the deflector frame                     | 28        |
| Fitting the<br>additional equipment             | 29        |
| <b>Adjusting work</b> .....                     | <b>32</b> |
| Coupling the machine                            | 32        |
| PTO shaft                                       | 33        |
| Adjusting the working depth                     | 35        |
| Adjusting the rotor pitch                       | 36        |
| Adjusting the tine supports                     | 37        |
| <b>Circuit diagrams</b> .....                   | <b>38</b> |
| Hydraulic diagram                               | 38        |
| Lighting equipment circuit diagram [+]          | 39        |
| <b>Final tasks</b> .....                        | <b>40</b> |
| Trial run                                       | 40        |
| Environment                                     | 40        |

# Table of contents

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## Target group for these assembly instructions

These instructions are intended for authorised dealers, workshops and agents qualified in the field of agricultural mechanical engineering.

### For your safety

You must familiarise yourself with the contents of these assembly instructions before assembly or operating the machine. In this way, you will achieve optimum work results and operational safety. The assembly instructions form an integral part of the machine and must always be kept to hand. This will allow:

- accidents to be avoided,
- warranty requirements to be met.

### The employer should:

Untrained or unauthorised individuals are not permitted to assemble the machine.

## Meaning of the symbols

In these assembly instructions, the following symbols and terms have been used:

- A bullet point accompanies each item in a list.
- ▶ A triangle indicates operating functions which must be performed.

We have also used pictograms to help you find instructions more quickly:



The "Information" pictogram indicates tips and additional information.



The warning triangle indicates important safety information and danger. Failure to observe this safety information can result in:

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



The grease gun indicates lubrication points.



The brush indicates that grease must be applied.



Switch on the tractor.



Switch off the tractor and secure it against rolling away.



The arrow in the diagram shows the direction of travel.

## For your safety

Please carefully read and observe the safety information in this chapter prior to assembly. All persons involved in assembling or setting up this machine must read and pay close attention to the assembly instructions that follow.



Danger indicators signify the risk of serious injury or death. Whenever you see this sign in the assembly instructions, please make sure that you implement all appropriate safety measures. Moreover, danger indicators warn of damage to machinery as well as of financial and legal consequences (e.g. invalidation of warranty, legal liabilities, etc.).

Faulty assembly or misuse results in:

- Risks to life and limb of the operator, third parties, and animals in the vicinity of the machine.
- Risks for the machine and other property belonging to the operator or third parties.
- Impairment of the efficient and damage-free operation of the machine.

## Correct assembly

N.B.: Non-compliance with the following rules amounts to gross negligence. As a result, the manufacturer cannot be held liable for any damage caused by negligence. The risk is then borne solely by the operator.

This machine must only be assembled by trained technicians in accordance with the current version of the assembly instructions. Before the implement is coupled to a tractor, transported, or initially operated, the operating manual and its safety instructions must be thoroughly read and observed.

It is the responsibility of the operator to ensure that all personnel involved in the assembly are provided with the relevant accident prevention regulations, as well as generally applicable health and safety and road safety regulations. All personnel involved in the assembly must be aware of these rules and regulations and adhere to them; they must also be instructed on the potential risks and dangers.

Unauthorised alterations to the machine invalidate any liability of the manufacturer for resultant damage.

The following rules and regulations must be observed:

- The locally applicable accident prevention regulations,
- Recognised safety regulations, occupational health requirements and road traffic regulations,
- The functional limits and safety regulations as set out in the technical operating instructions.

## General safety and accident prevention regulations

- Responsibilities for the various activities on the machine must be clearly defined and maintained. There must not be any confusion regarding responsibilities, otherwise the safety of the assembly personnel is put at risk.
- Before you start work, familiarise yourself with all the fittings and actuation elements and their functions.
- For all work on the machine, use only appropriate tools and implements in perfect condition.
- You must only use parts (accessories, lubricants etc.) which comply with at least the manufacturer's specifications; you must use them in accordance with instructions (including specified torques).
- A part conforms to the requirements only if it is an original part or if it is expressly approved by the manufacturer.
- Wear close-fitting clothes when operating the machine! Wear sturdy footwear and prescribed protective equipment.
- Support and secure the machine carefully during assembly.
- Particular care must be taken in dealing with energy accumulators such as springs and hydraulic or compressed-air assemblies.
- Dispose of oils, grease, and filters in accordance with regulations.
- Protective equipment must be properly attached and swung into its protective position.
- Actuation elements (cords, chains, and rod assemblies) of remotely controlled equipment must be fitted in such a way that they cannot cause unintended movement in any transport or work position.
- Do not leave the engine running in enclosed spaces.
- All remote-powered and all other movable parts (e.g. hydraulics) have crush or shear points.
- Pay close attention to the markings on reversible connections and be aware of the risk of installing a part the wrong way round.
- Always disconnect the power supply before working on the electrical system.
- When carrying out electric welding on the machine, always disconnect electric cables from the alternator and battery.

# Safety

## Screw and bolt tightening torques

Note the tightening torques that are shown in the table or specified in the text. The torque specifications refer to a dry coefficient of friction (0.12).

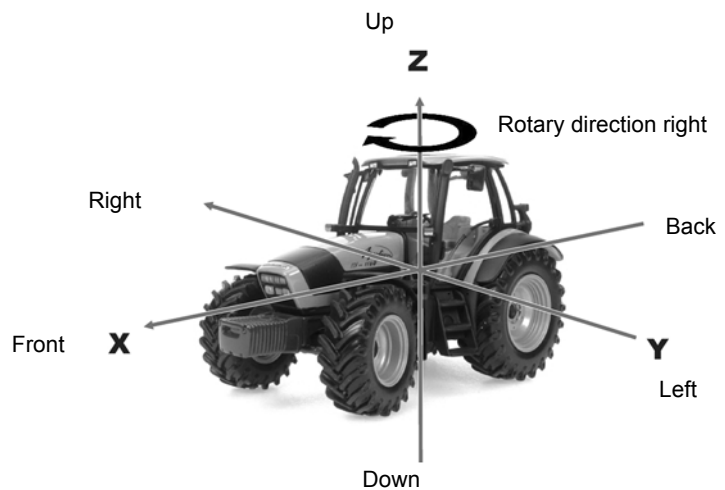
|            | 8.8                  | 10.9                 | 12.9                |
|------------|----------------------|----------------------|---------------------|
| <b>M6</b>  | 9.9 Nm (7.3 ft.lbs)  | 14 Nm (10.3 ft.lbs)  | 17 Nm (12.5 ft.lbs) |
| <b>M8</b>  | 24 Nm (17.7 ft.lbs)  | 34 Nm (25 ft.lbs)    | 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 (104 ft.lbs) |
| <b>M14</b> | 135 Nm (99.6 ft.lbs) | 190 Nm (140 ft.lbs)  | 230 Nm (166 ft.lbs) |
| <b>M16</b> | 210 Nm (155 ft.lbs)  | 290 Nm (214 ft.lbs)  | 350 Nm (258 ft.lbs) |
| <b>M20</b> | 410 Nm (302 ft.lbs)  | 580 Nm (428 ft.lbs)  | 690 Nm (509 ft.lbs) |

## Direction and rotary direction

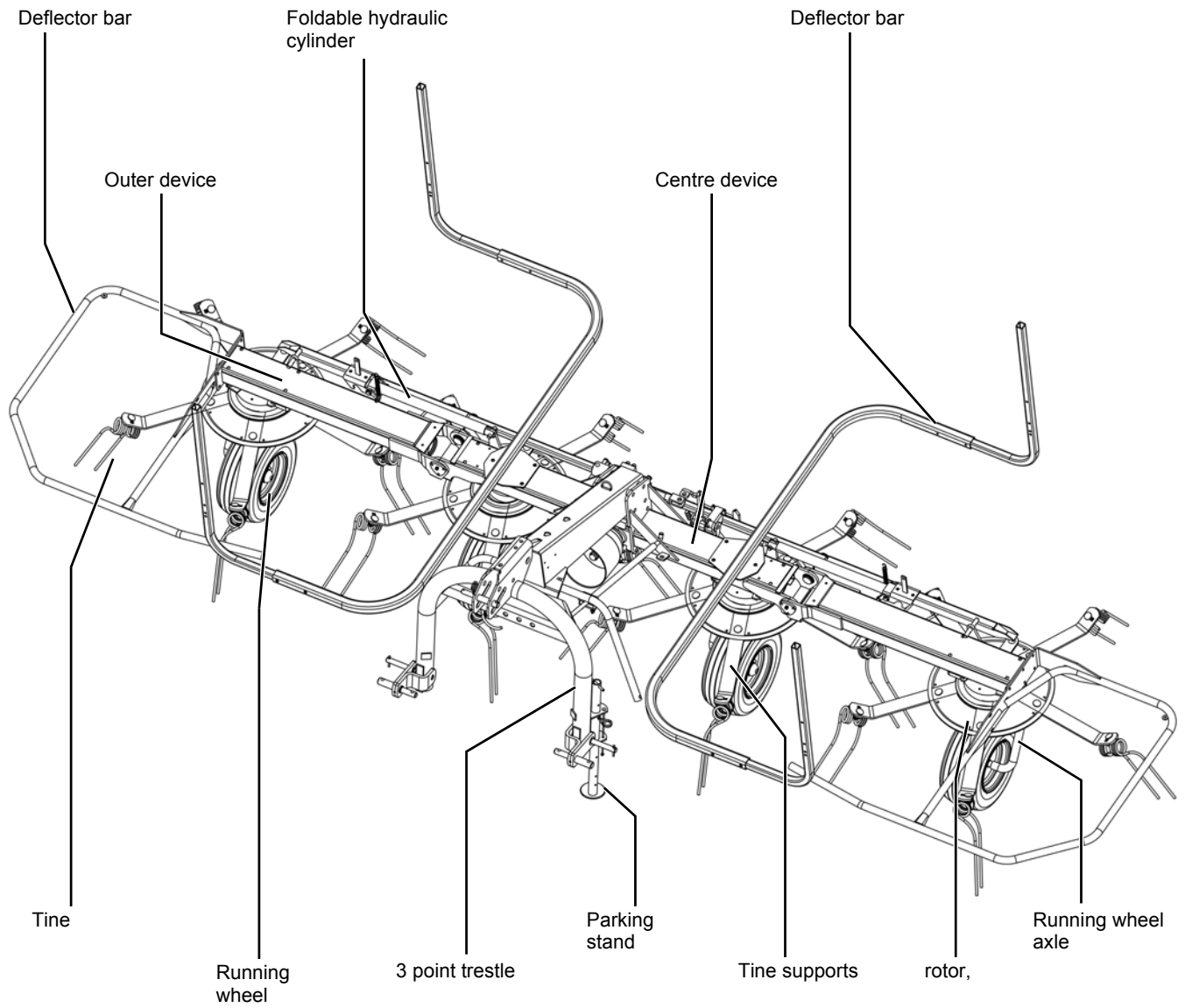
All directions ("right", "left", "front", "back") are always as viewed in the direction of travel.

Rotary direction is defined as follows:

- Rotary direction right = clockwise.
- Rotary direction left = anticlockwise.
- Rotation about a vertical axis, viewed from top to bottom.
- Rotation about a horizontal axis, viewed at right angles to the direction of travel, from left to right.
- The rotation of screws and nuts, etc. is always viewed from the operating side.



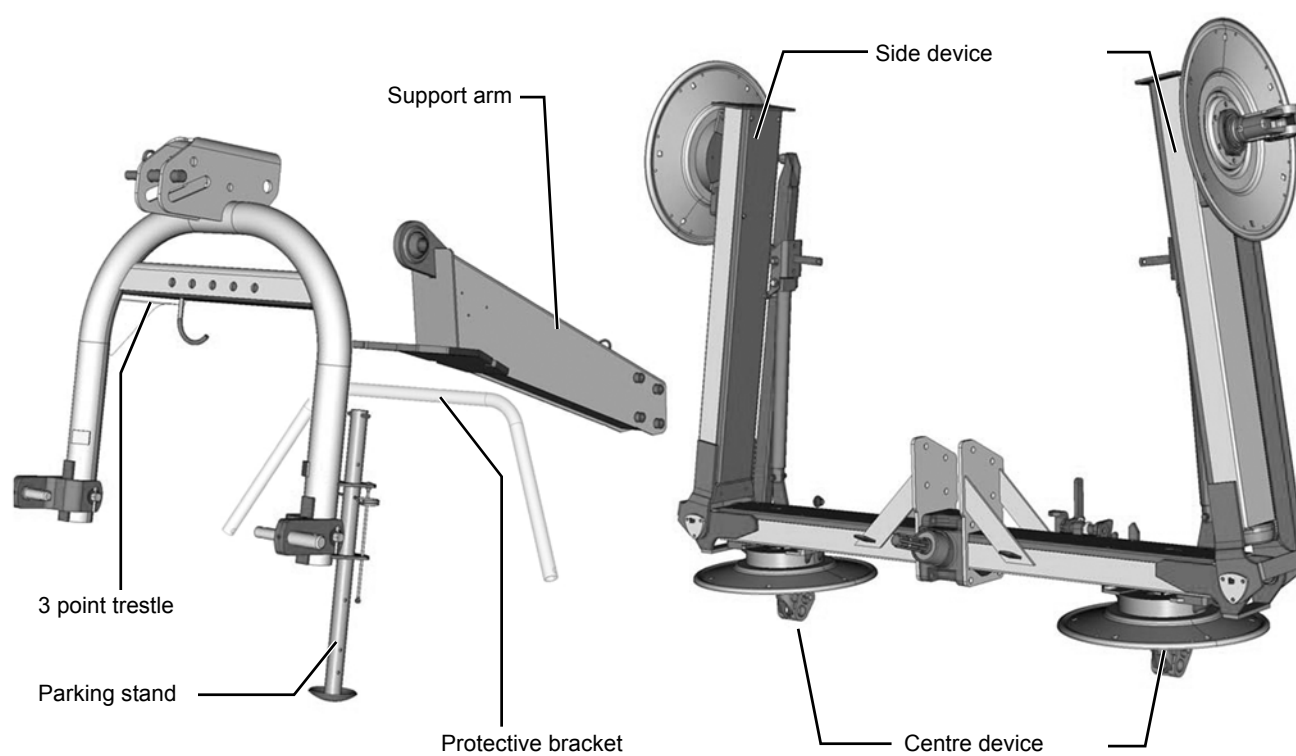
## Designation of components



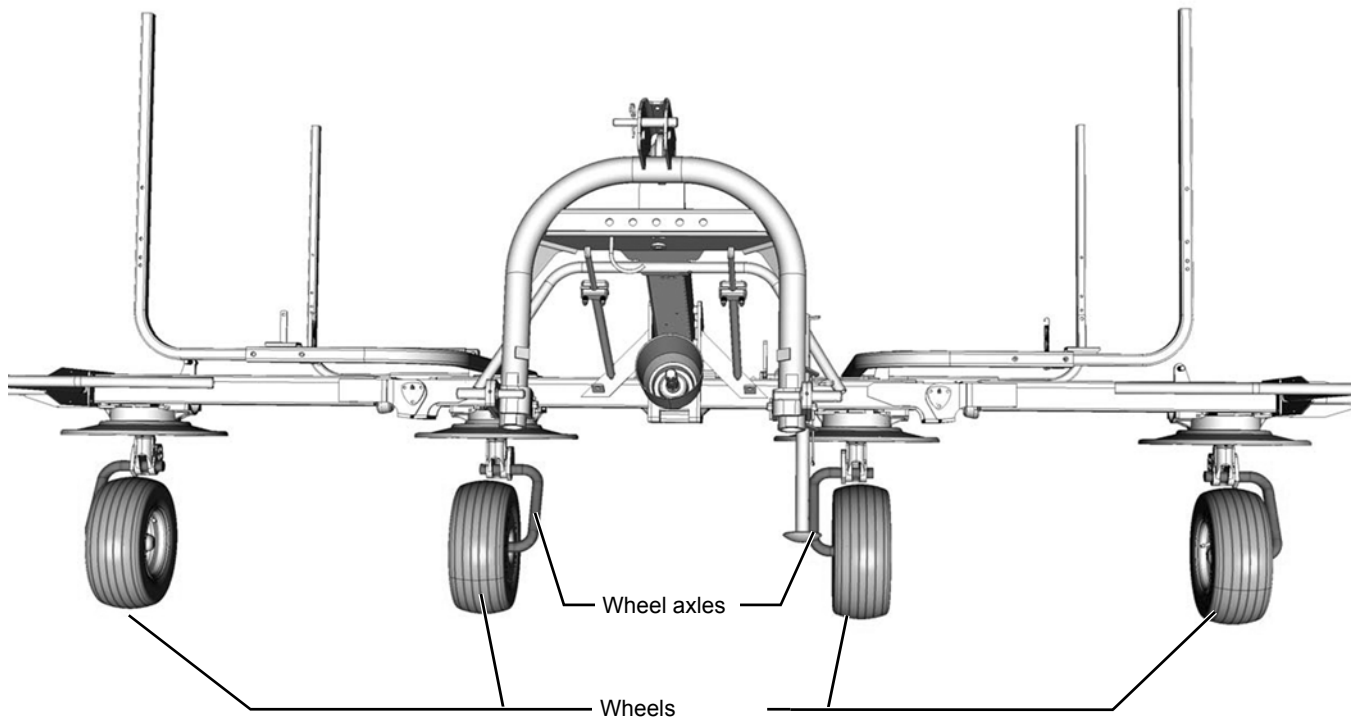
# Crate packaging

## Assembly groups in crate packaging

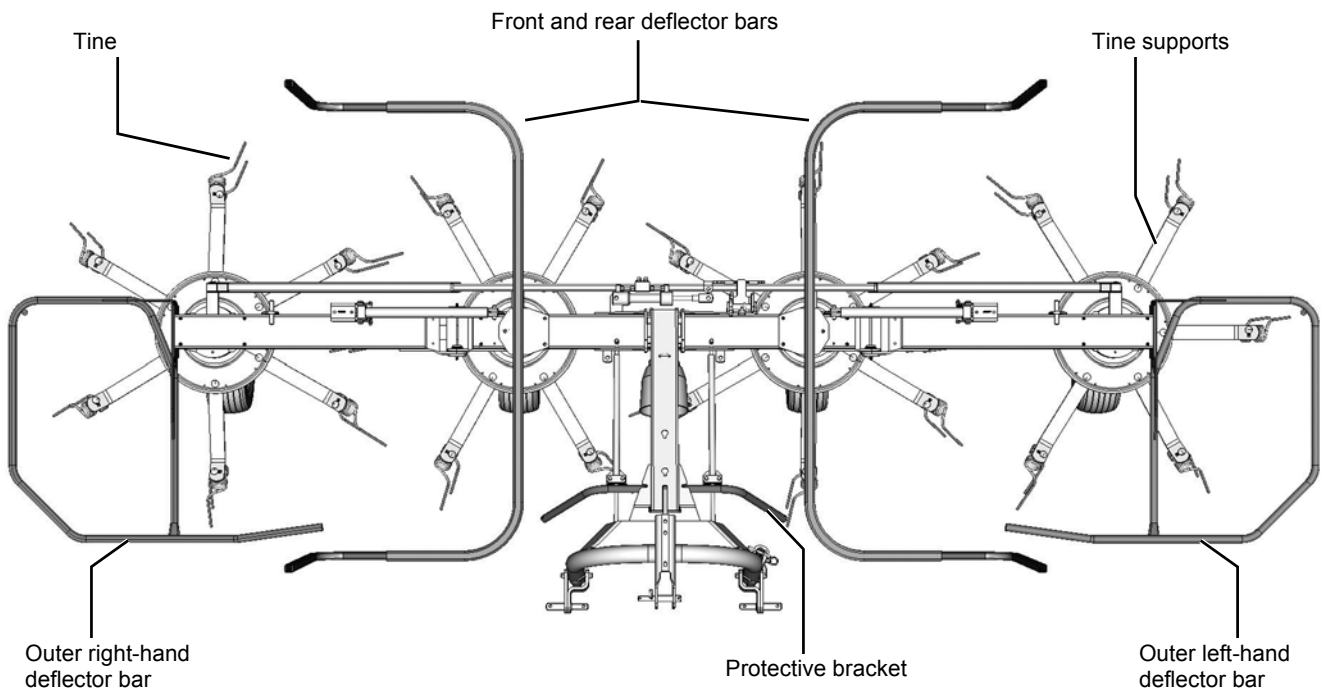
### Main frame



## Wheels



## Deflector bars and tine supports



# Crate packaging

## Requirements

- Suitable flat surface approx. 10 x 10 m as assembly space.
- Lifting gear with lifting accessories for at least 900 kg.
- Floor conveyor (pallet truck or fork lift) with a fork length of at least 1,800 mm.
- Stands for safely depositing implement parts.
- Spanners for tightening bolts.

## Preparations for assembly



### Observe the safety information

Observe the safety information when carrying out all work. Disregard for safety information can lead to serious or fatal injury.

### Ensure that hydraulic connections are correct

Before lowering the implement, you must check that the hydraulic lines are correctly connected. Wrongly connected hydraulic hoses can trigger unpredictable movements of the machine. Serious or fatal injury may be caused as a result.

### No persons within the slewing range

There is an acute risk of injury within the slewing range from machine parts which are slewing or folding. Serious or fatal injury may be caused as a result.

- ▶ Place the wooden crate on level ground (with the pallet floor at the bottom) and open it without damaging the parts inside.
- ▶ Take out loose parts (wheels, axles, boxes etc.).
- ▶ Clear plenty of space around larger components to make access easier.

## Checking the scope of delivery

- ▶ Check that the scope of delivery is complete.
- ▶ In the event of missing, incorrect or damaged parts, fill in the "REPORT MISSING PARTS" form and send it to the "ORDER DESK" in Kerteminde straight away.

## Removing the surface protection



- ▶ Remove the surface protection (e.g. Tectyl) with which the bare surfaces (such as tine arms, tine supports and bearing shafts) have been coated.
- ▶ Grease the bare surfaces using a brush.

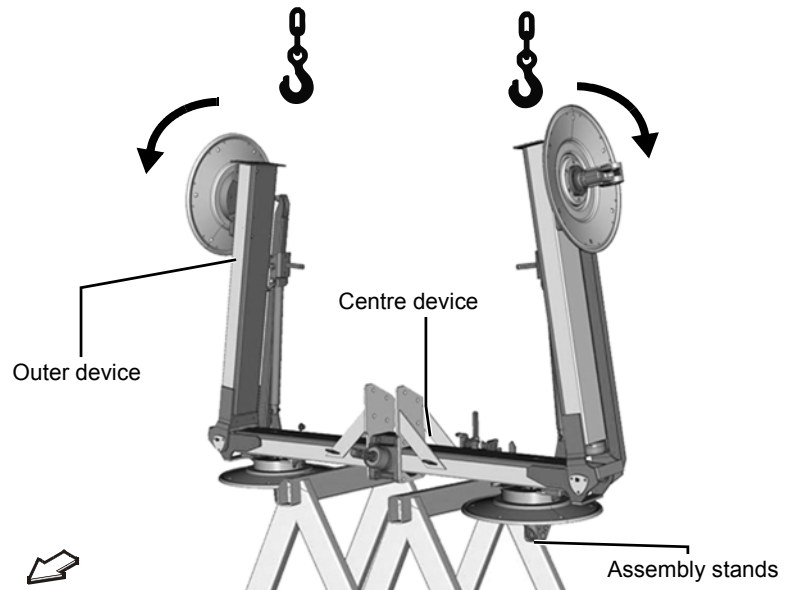
## Basic machine

The basic machine consists of the preassembled centre and side device combination.



Use suitable lifting accessories to remove the machine elements from the crate.

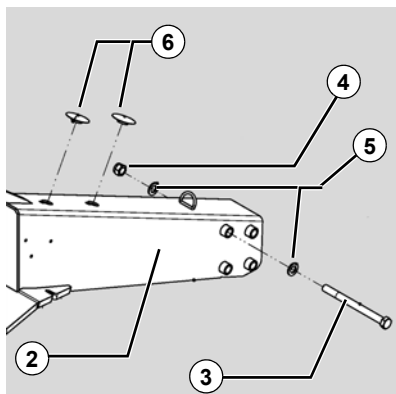
- ▶ Loosen all fastenings (wires, lashing straps).
- ▶ Use a crane to place the basic machine on stands and secure in place.
- ▶ Carefully fold down the outer devices and secure using supports.



| No. | Quantity | Part                       |
|-----|----------|----------------------------|
| 1   | 1        | Preassembled basic machine |
| 2   |          | Assembly stands            |
| 3   |          | Lifting accessories        |

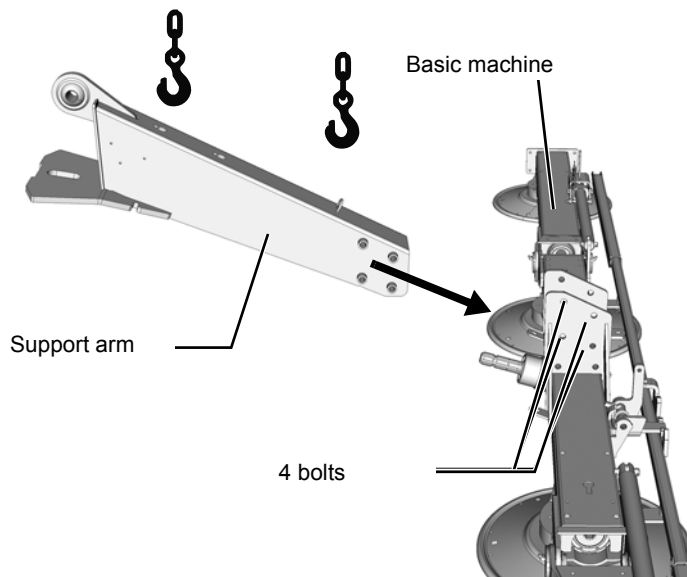
# Crate packaging

## Fitting the support arm



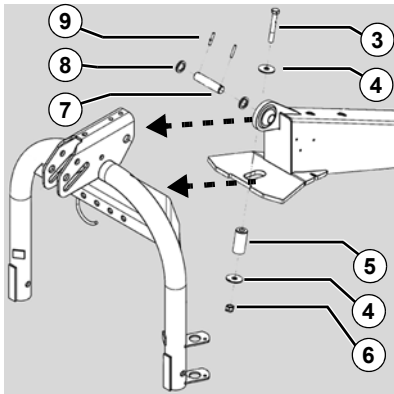
### To fit the support arm:

- ▶ Bring the support arm to the adapter on the basic machine using suitable lifting accessories.
- ▶ Fasten the support arm using 4 bolts.
- ▶ Support the support arm.
- ▶ Insert rubber stoppers.



| No. | Quantity | Part                       |
|-----|----------|----------------------------|
| 1   | 1        | Preassembled basic machine |
| 2   | 1        | Support arm                |
| 3   | 4        | M16 x 190 bolts            |
| 4   | 4        | M16 nuts                   |
| 5   | 8        | M16 washers                |
| 6   | 2        | Rubber stoppers            |

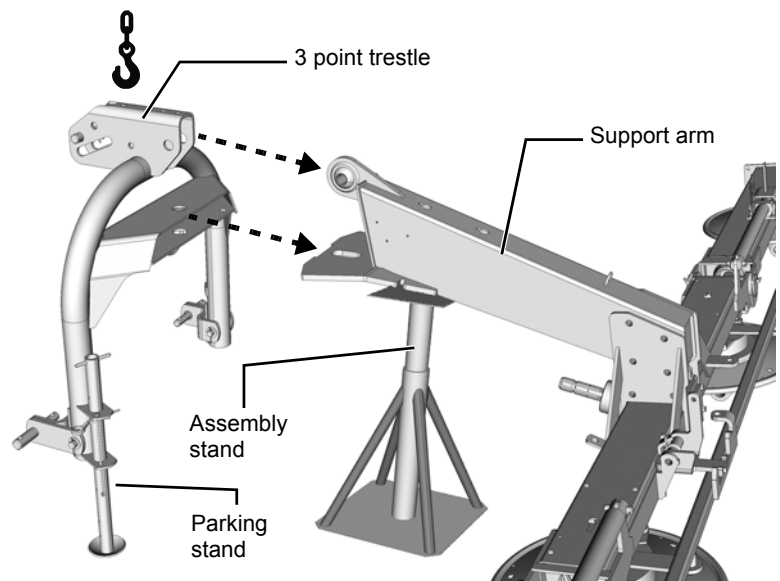
## Fitting the 3 point trestle



The machine is equipped ex-factory for coupling to the tractor's three-point lifting pickup.

### To fit the 3 point trestle:

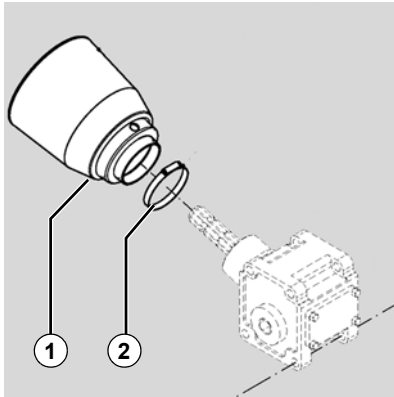
- ▶ Bring the preassembled 3 point trestle to the support arm using suitable lifting accessories.
- ▶ Guide the plate on the support arm into the adapter on the 3 point trestle.
- ▶ Insert the bush (5) and insert the bolt (3) through the bush.
- ▶ Secure the bolt (3) with a nut (6).
- ▶ Insert the pin (7) through the 3 point trestle and the support arm.
- ▶ Secure the pin with dowel pins on both sides.
- ▶ Secure the 3 point trestle with a parking stand.



| No. | Quantity | Part  |
|-----|----------|---|
| 1   | 1        | Preassembled basic machine with support arm |
| 2   | 1        | Preassembled 3 point trestle                |
| 3   | 1        | M16 x 110 bolt                              |
| 4   | 2        | M16 washers                                 |
| 5   | 1        | Bush for M16 bolt                           |
| 6   | 1        | M16 nut                                     |
| 7   | 1        | Pin   |
| 8   | 2        | Washers                                     |
| 9   | 2        | Dowel pins                                  |

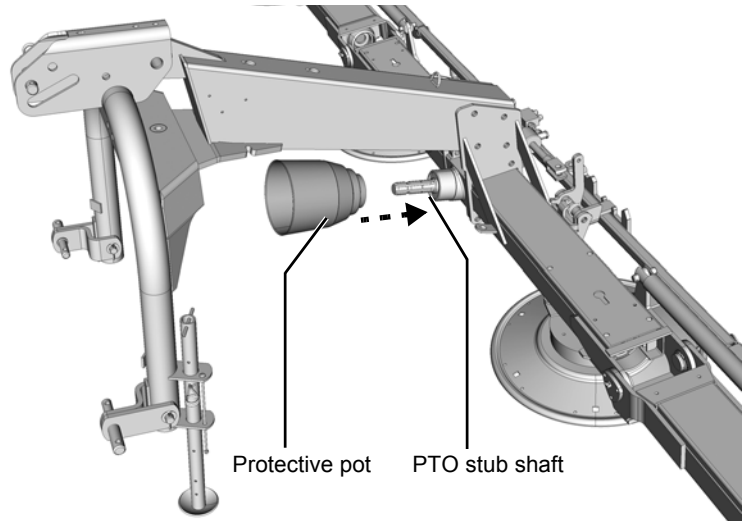
# Crate packaging

## Fitting the protective pot



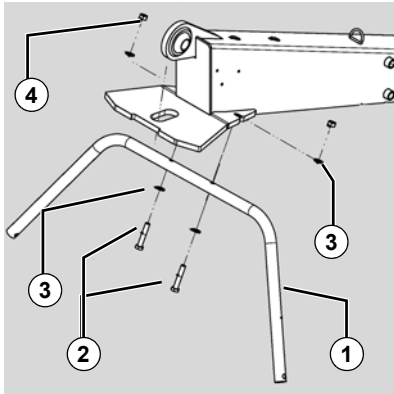
### To fit the protective pot:

- ▶ Fit the protective pot onto the PTO stub shaft and fasten with a jubilee clip.



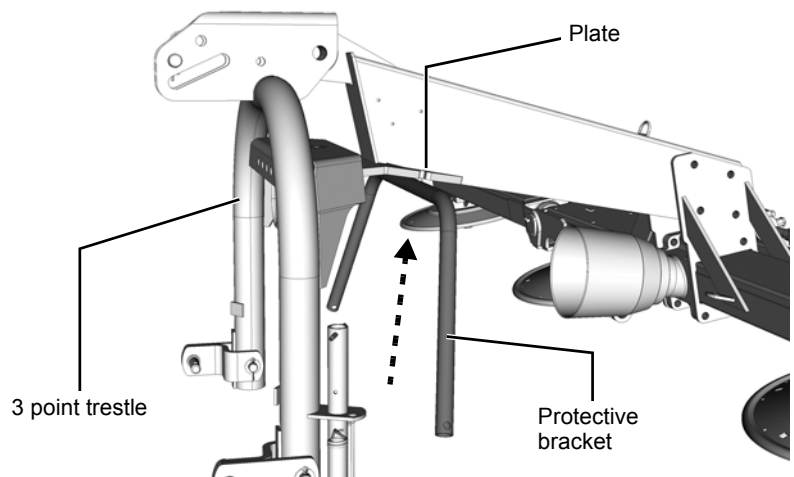
| No. | Quantity | Part           |
|-----|----------|----------------|
| 1   | 1        | Protective pot |
| 2   | 1        | Jubilee clip   |

## Fitting the protective bracket



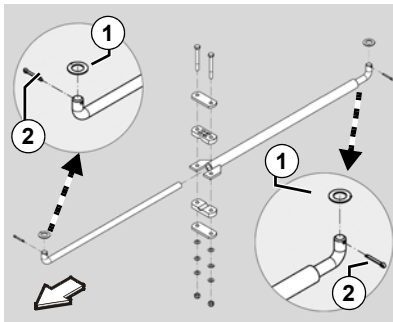
### To fit the protective bracket:

- ▶ Fit the protective bracket to the support arm plate from below.



| No. | Quantity | Part               |
|-----|----------|--------------------|
| 1   | 1        | Protective bracket |
| 2   | 2        | M12 x 65 bolts     |
| 3   | 4        | M12 washers        |
| 4   | 2        | M12 nuts           |

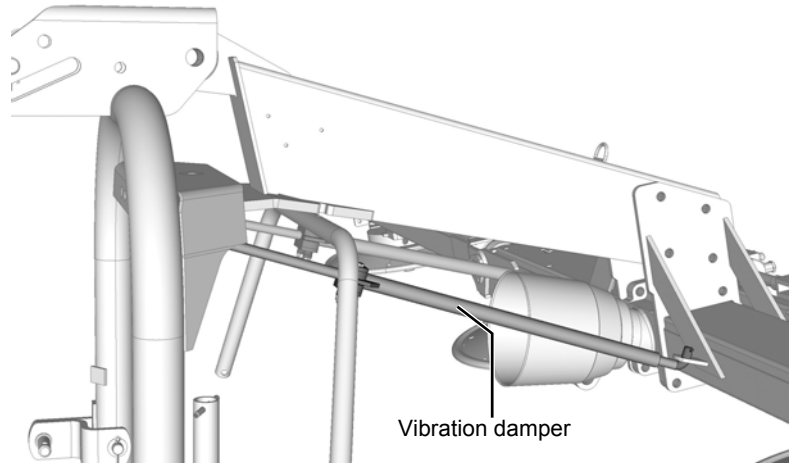
## Fitting the vibration dampers



The vibration dampers are fitted between the main frame and the 3 point trestle.

### To fit the vibration dampers:

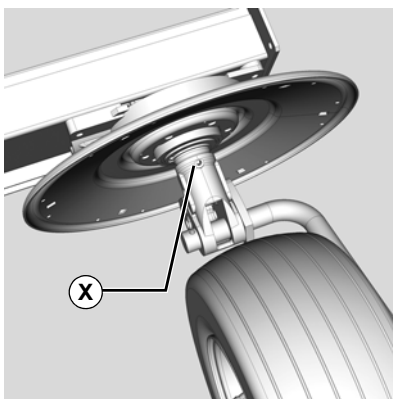
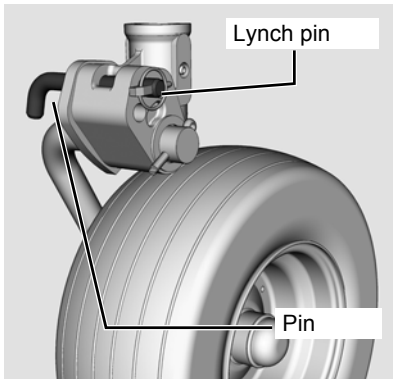
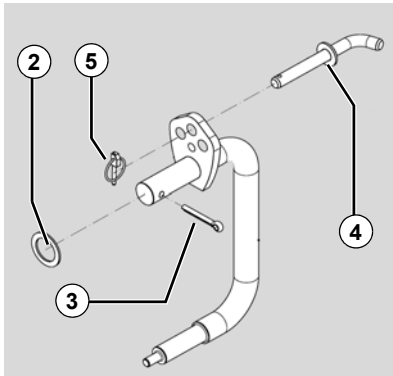
- ▶ Insert the preassembled vibration dampers into the frame and 3 point trestle adapters from below.
- ▶ Fit the washer (1) and secure with the safety splint (2).



| No. | Quantity | Part                           |
|-----|----------|--------------------------------|
| 1   | 2        | Preassembled vibration dampers |
| 2   | 2        | Washers                        |
| 3   | 2        | Safety splint                  |

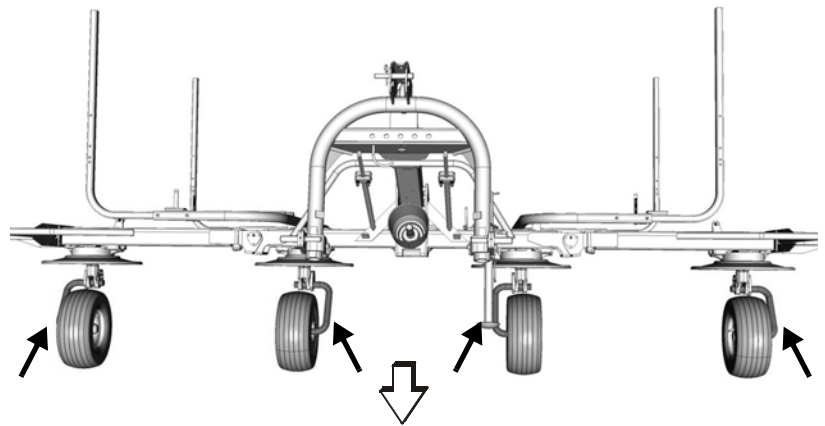
# Crate packaging

## Fitting the wheels



### To fit the wheels to the rotor chassis:

- ▶ Move the running wheel axle into the correct position.  
→ see illustration below
- ▶ Fit the running wheel axle and secure with the washer (2) and split pin (3).
- ▶ Adjust the rotor pitch.
- ▶ For each axle, insert the pin (4) and secure with the lynch pin (5).
- ▶ Grease the fitted wheel axles using the lubricating nipple (X).



| No. | Quantity | Part                |
|-----|----------|---------------------|
| 1   | 4        | Preassembled wheels |
| 2   | 4        | Washers             |
| 3   | 4        | Split pin           |
| 4   | 4        | Pin                 |
| 5   | 4        | Lynch pin           |



There are 3 levels to choose from for the rotor pitch (three adapter holes). All wheels must be set the same.

→ Cf. operating instructions, chapter "Adjusting the rotor pitch".

## Parking and securing the machine

- ▶ Remove the assembly stands.
- ▶ Set the machine down on the wheels and parking stand.
- ▶ Secure the machine against rolling away.

## Final assembly with crate packaging

The basic machine, support arm and 3 point trestle are connected. The wheels are fitted. The machine is in the work position.

### Now proceed as follows:

- ▶ »Fitting the deflector bars«, page 24
- ▶ »Hydraulic« connecting, page 25
- ▶ »Laying the control cables«, page 26
- ▶ »Fitting the tine supports«, page 27
- ▶ »Fitting the deflector frame«, page 28
- ▶ »Coupling the machine«, page 32
- ▶ »Adjusting the working depth«, page 35 ff.
- ▶ »Final tasks«, page 40

# Pallet packaging

## Requirements

- Suitable flat surface approx. 10 x 10 m as assembly space.
- Lifting gear with lifting accessories for at least 900 kg.
- Floor conveyor (pallet truck or fork lift) with a fork length of at least 1,800 mm.
- Stands for safely depositing implement parts.
- Spanners for tightening bolts.

## Preparations for assembly



### Observe the safety information

Observe the safety information when carrying out all work. Disregard for safety information can lead to serious or fatal injury.

### Ensure that hydraulic connections are correct

Before lowering the implement, you must check that the hydraulic lines are correctly connected. Wrongly connected hydraulic hoses can trigger unpredictable movements of the machine. Serious or fatal injury may be caused as a result.

### No persons within the slewing range

There is an acute risk of injury within the slewing range from machine parts which are slewing or folding. Serious or fatal injury may be caused as a result.

- ▶ Place the wooden crate on level ground (with the pallet floor at the bottom) and open it without damaging the parts inside.
- ▶ Take out loose parts (wheels, axles, boxes etc.).
- ▶ Clear plenty of space around larger components to make access easier.

## Checking the scope of delivery

- ▶ Check that the scope of delivery is complete.
- ▶ In the event of missing, incorrect or damaged parts, fill in the "REPORT MISSING PARTS" form and send it to the "ORDER DESK" in Kerteminde straight away.

## Removing the surface protection



- ▶ Remove the surface protection (e.g. Tectyl) with which the bare surfaces (such as tine arms, tine supports and bearing shafts) have been coated.
- ▶ Grease the bare surfaces using a brush.

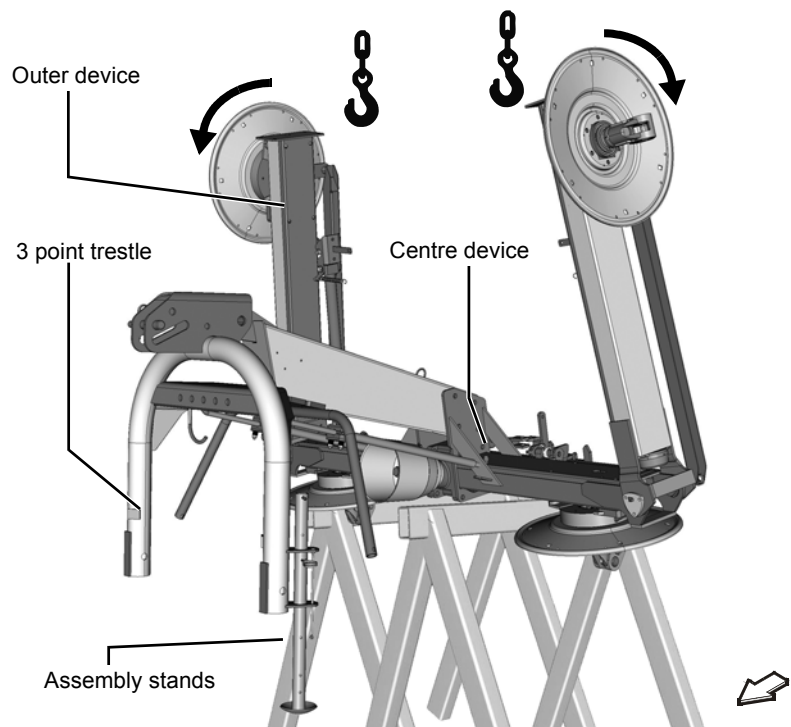
## Basic machine

The basic machine consists of centre and outer devices and is preassembled ex works. The support arm, 3 point trestle and vibration dampers are fitted.



Use suitable lifting accessories to remove the machine elements from the crate.

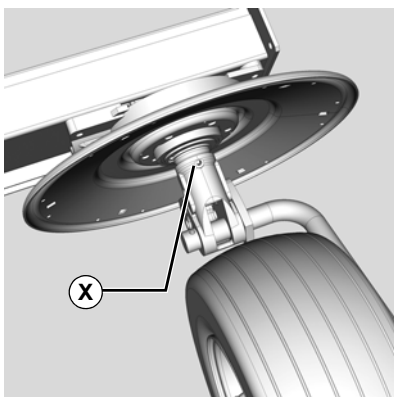
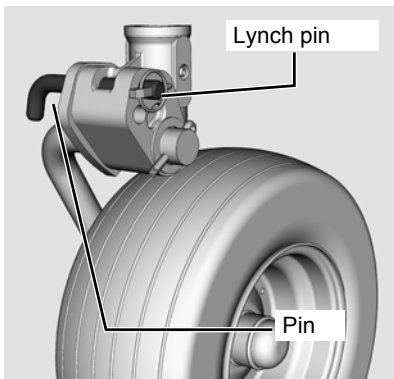
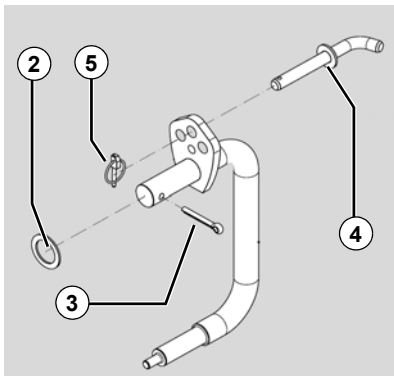
- ▶ Loosen all fastenings (wires, lashing straps).
- ▶ Use a crane to place the basic machine on stands and secure in place.
- ▶ Carefully fold down the outer devices and secure using supports.



| No. | Quantity | Part                       |
|-----|----------|----------------------------|
| 1   | 1        | Preassembled basic machine |
| 2   |          | Assembly stands            |
| 3   |          | Lifting accessories        |

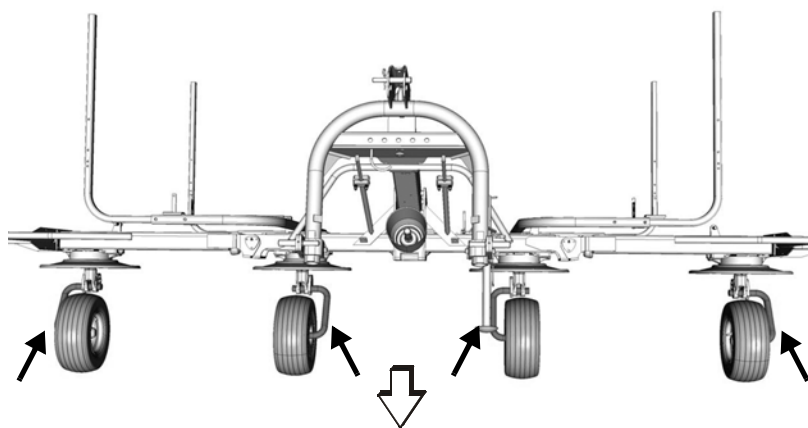
# Pallet packaging

## Fitting the wheels



### To fit the wheels to the rotor chassis:

- ▶ Move the running wheel axle into the correct position.  
→ see illustration below
- ▶ Fit the running wheel axle and secure with the washer (2) and split pin (3).
- ▶ Adjust the rotor pitch.
- ▶ For each axle, insert the pin (4) and secure with the lynch pin (5).
- ▶ Grease the fitted wheel axles using the lubricating nipple (X).



| No. | Quantity | Part                |
|-----|----------|---------------------|
| 1   | 4        | Preassembled wheels |
| 2   | 4        | Washers             |
| 3   | 4        | Split pin           |
| 4   | 4        | Pin                 |
| 5   | 4        | Lynch pin           |



There are 3 levels to choose from for the rotor pitch (three adapter holes). All wheels must be set the same.

→ Cf. operating instructions, chapter "Adjusting the rotor pitch".

## Parking and securing the machine

- ▶ Remove the assembly stands.
- ▶ Set the machine down on the wheels and parking stand.
- ▶ Secure the machine against rolling away.

## Final assembly for pallet packaging

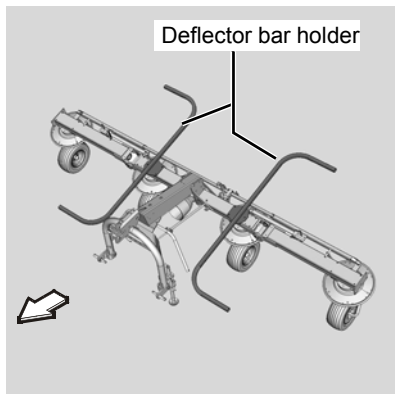
The basic machine, support arm and 3 point trestle are connected. The wheels are fitted. The machine is in the work position.

### Now proceed as follows:

- ▶ »Fitting the deflector bars«, page 24
- ▶ »Hydraulic« connecting, page 25
- ▶ »Laying the control cables«, page 26
- ▶ »Fitting the tine supports«, page 27
- ▶ »Fitting the deflector frame«, page 28
- ▶ »Coupling the machine«, page 32
- ▶ »Adjusting the working depth«, page 35 ff.
- ▶ »Final tasks«, page 40

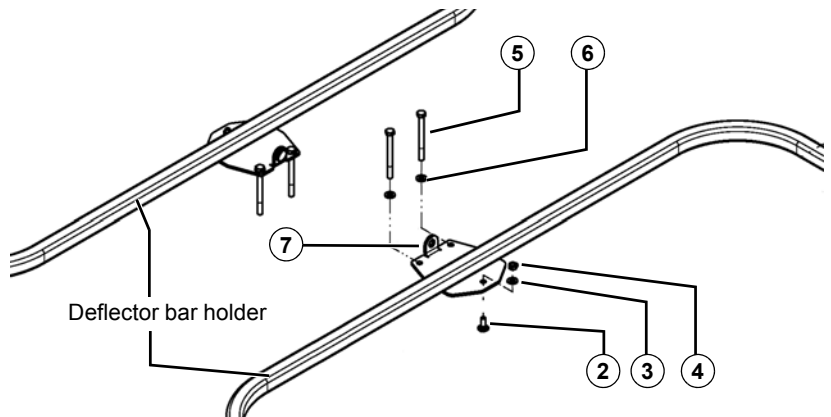
# Final assembly

## Fitting the deflector bars

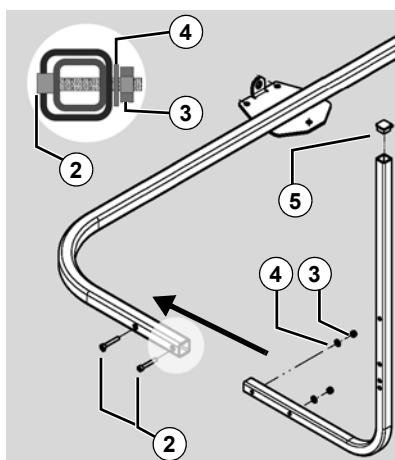


### To fit the deflector bar holder:

- ▶ Place the deflector bar holder onto the frame.
- ▶ Thread the coach bolt (2) into the elongated hole and secure with the washer (3) and nut (4).
- ▶ Place the washer (6) onto the bolts (5).
- ▶ Insert the bolts through the frame and screw onto the gear box.



| No. | Quantity | Part                      |
|-----|----------|---------------------------|
| 1   | 2        | Deflector bar holder      |
| 2   | 2        | M10 x 30 coach bolts      |
| 3   | 2        | M10 washers               |
| 4   | 4        | M10 nuts                  |
| 5   | 4        | M12 x 130 bolts           |
| 6   | 4        | M12 washers               |
| 7   | 2        | Cable guide and fastening |



### To fit the deflector bars:

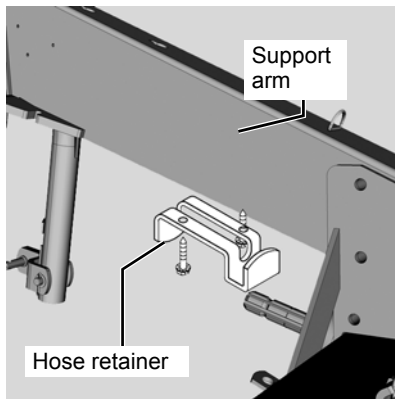
- ▶ Insert the deflector bars into the deflector bar holder.
- ▶ Insert the Allen bolts (2) through the deflector bar and deflector bar holder as illustrated, and fasten with the washer and nut.
- ▶ Fit the end caps (5).

| No. | Quantity | Part          |
|-----|----------|---------------|
| 1   | 4        | Deflector bar |
| 2   | 8        | M8 bolts      |
| 3   | 8        | M8 nuts       |
| 4   | 8        | M8 washers    |
| 5   | 4        | End caps      |

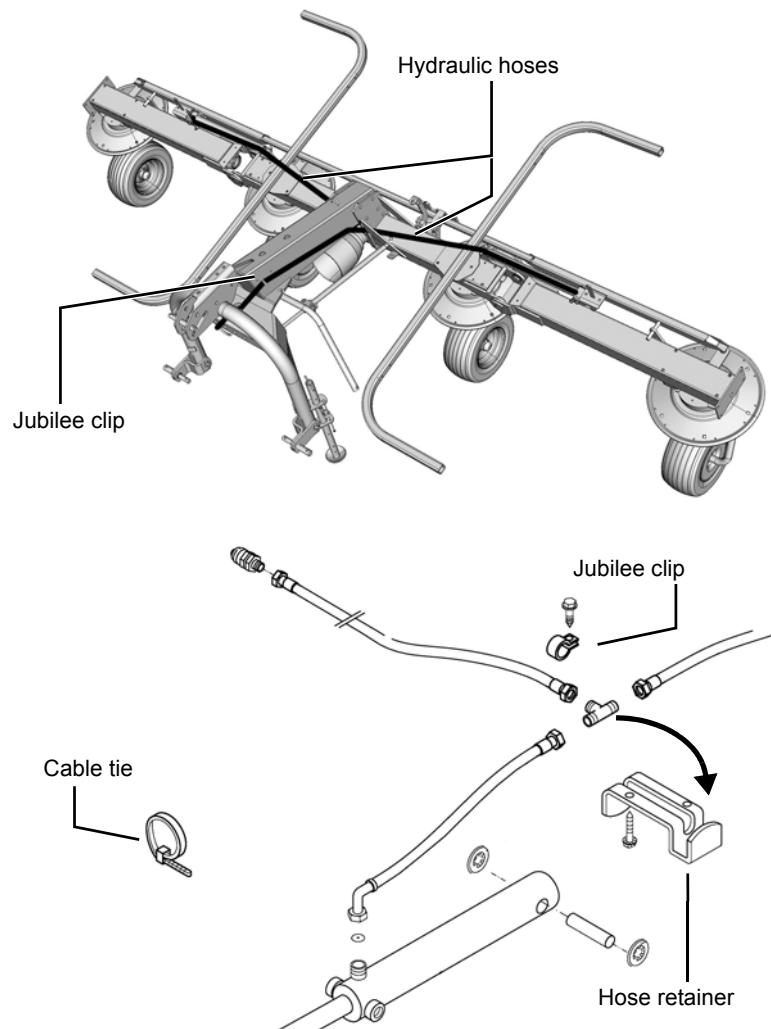
## Hydraulic

The hydraulic cylinders are preassembled ex works.

### Routing the hydraulic hoses



- ▶ Route the hydraulic hoses as shown in the illustration below.  
→ Cf. hydraulic diagram on page 38.
- ▶ Connect the hydraulic connections or check the connections already made.
- ▶ Position the hose connector in the hose retainer.
- ▶ Screw the hose retainer onto the support arm from below.
- ▶ Secure the hydraulic hoses using cable ties and fasten to the support arm using a jubilee clip.



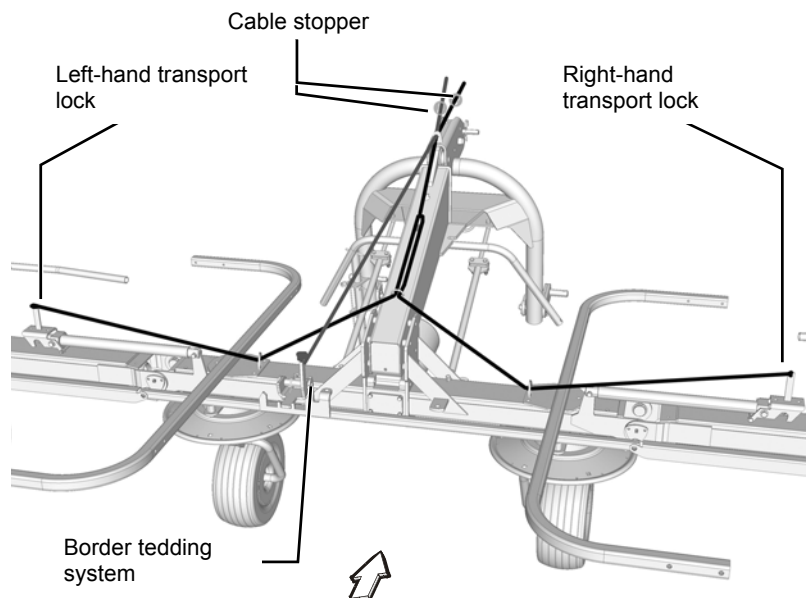
Ensure that the hydraulic hoses do not chafe or kink.

# Final assembly

## Laying the control cables

The control cables for the transport lock (black control cables) and for the mechanical border tending system (yellow control cable) are knotted to the corresponding levers and guided forwards through the guide eyes as illustrated below.

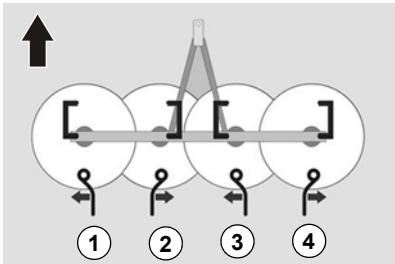
- ▶ Secure the black control cable to the lever for the left-hand transport lock.
- ▶ Guide the control cable through the guide eyes on the deflector bar holders to the right-hand transport lock and fasten by knotting.
- ▶ As a loop, guide the middle of the control cable forwards through the eye on the support arm.
- ▶ Connect the loop with the second black control cable and guide it forwards through the eye on the 3 point trestle.
- ▶ Knot the yellow control cable to the lever for the mechanical border tending system and guide it forwards through the eye on the 3 point trestle.
- ▶ Secure both control cables in front of the eye on the 3 point trestle using cable stoppers.



Ensure that the cables do not obstruct each other.

## Fitting the tine supports

When fitting the tine support, pay attention to the rotational direction of the rotor and the tine position. The tine support must be fitted to either the left or right-hand side of the rotor, depending on the rotational direction.

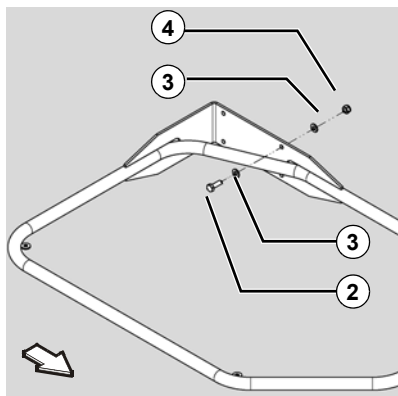


| Adjusting the tine support                            |  |
|---|--|
| On rotors 1 and 3, fit all tine supports on the left. | On rotors 2 and 4, fit all tine supports on the right. |
|   |  |
|   |  |

| No. | Quantity | Part                             |
|-----|----------|----------------------------------|
| 1   | 10 / 12  | Tine support, right (pre-fitted) |
| 2   | 10 / 12  | Tine support, left (pre-fitted)  |

# Final assembly

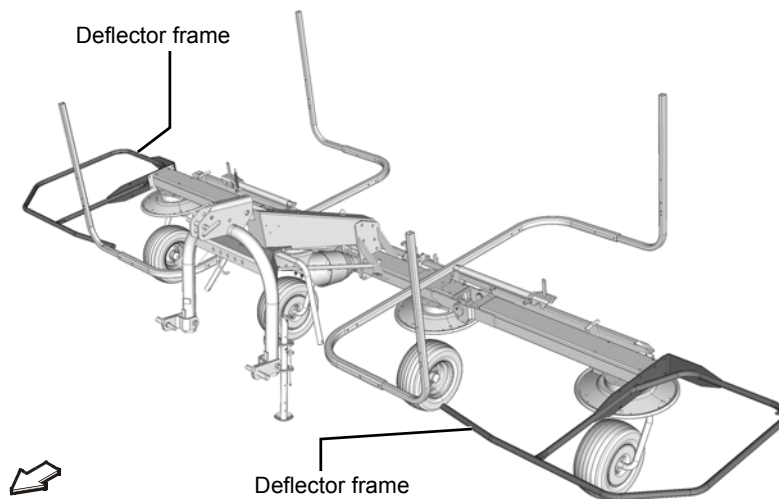
## Fitting the deflector frame



The deflector frames are secured to the main frame with 4 bolts each.

### To fit the deflector frame:

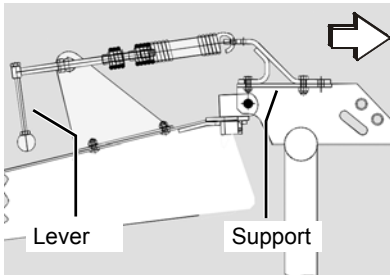
- ▶ Bring the deflector frame to the an main frame.
- ▶ Fit the deflector frame to the main frame using 4 bolts.
- ▶ Fasten the deflector bar using bolts (2).
- ▶ Fit the end caps (5).



| No. | Quantity | Part            |
|-----|----------|-----------------|
| 1   | 2        | Deflector frame |
| 2   | 8        | M10 x 30 bolts  |
| 3   | 16       | M10 washers     |
| 4   | 8        | M10 nuts        |
| 5   | 2        | End caps        |

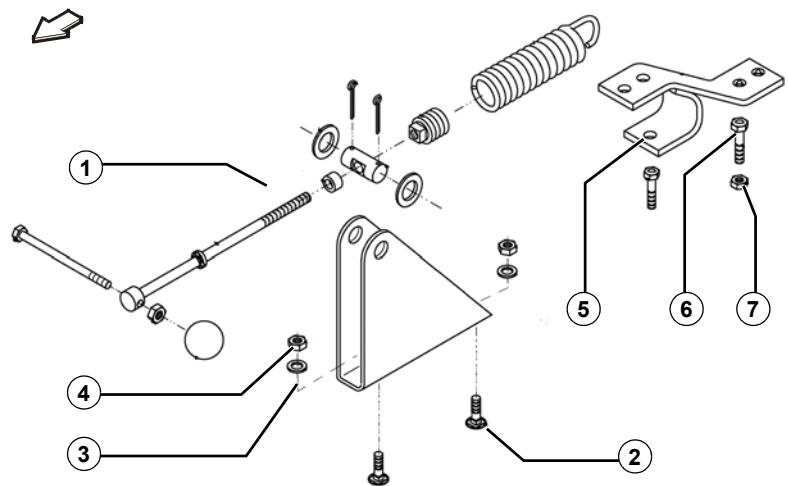
## Fitting the additional equipment

### Slope locking mechanism [+]



The slope locking mechanism is fitted between the 3 point trestle and the machine frame.

- ▶ Remove the rubber stoppers from the support arm.
- ▶ Place the preassembled slope locking mechanism onto the support arm.
- ▶ Secure the slope locking mechanism to the support arm using 2 coach bolts.
- ▶ Fit the support to the 3 point trestle using 2 bolts.
- ▶ Hook in the spring and adjust it to the desired tension by screwing the lever in or out.



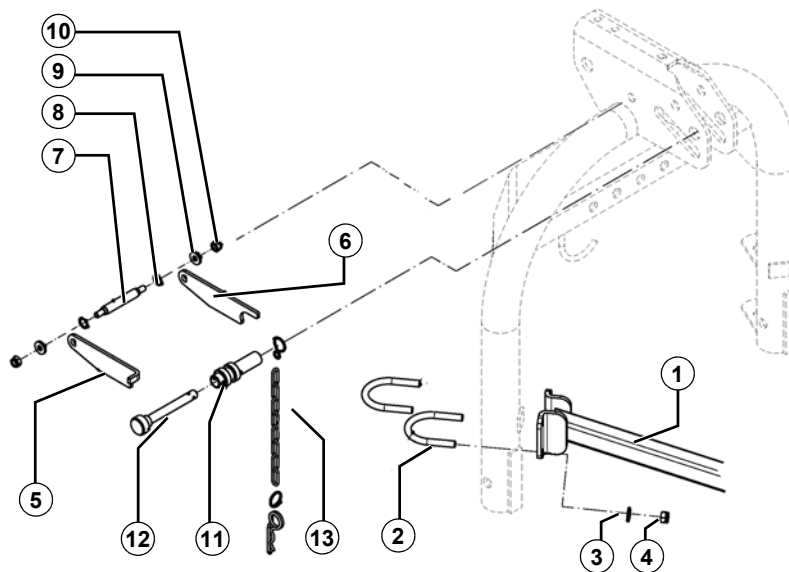
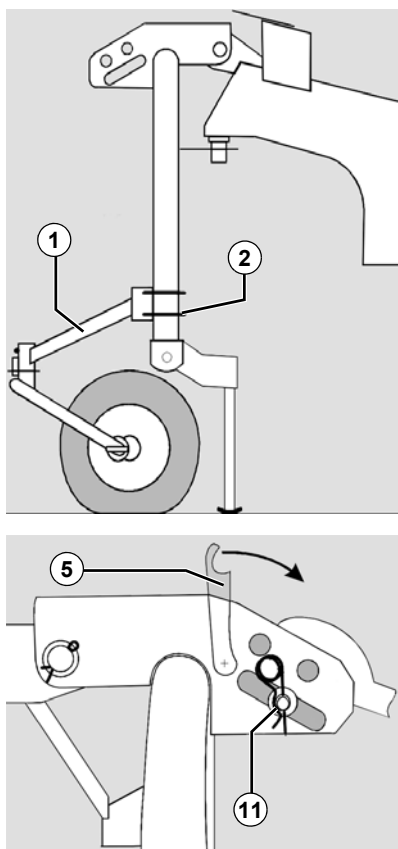
| No. | Quantity | Part                                 |
|-----|----------|--------------------------------------|
| 1   | 1        | Preassembled slope locking mechanism |
| 2   | 2        | M10 x 25 coach bolts                 |
| 3   | 2        | M10 washers                          |
| 4   | 2        | M10 nuts                             |
| 5   | 1        | Support                              |
| 6   | 3        | M12 x 35 bolts                       |
| 7   | 2        | M12 nuts                             |

# Final assembly

## Contact roller [+]

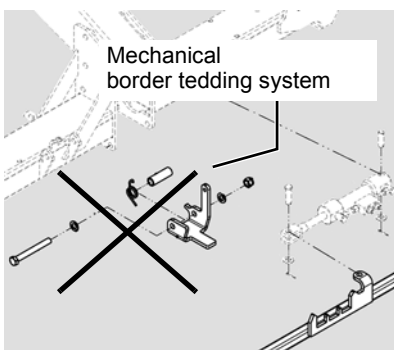
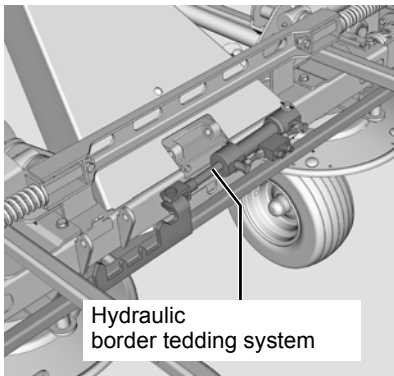
The contact roller is secured to the 3 point trestle using two U-bolts. When using the contact roller, an additional transport lock on the 3 point trestle is required.

- ▶ Fit the transport lock.
- ▶ Insert the top link hitch pin into the elongated hole and secure with a safety splint.
- ▶ Fit the preassembled contact roller to the 3 point trestle using U-bolts.



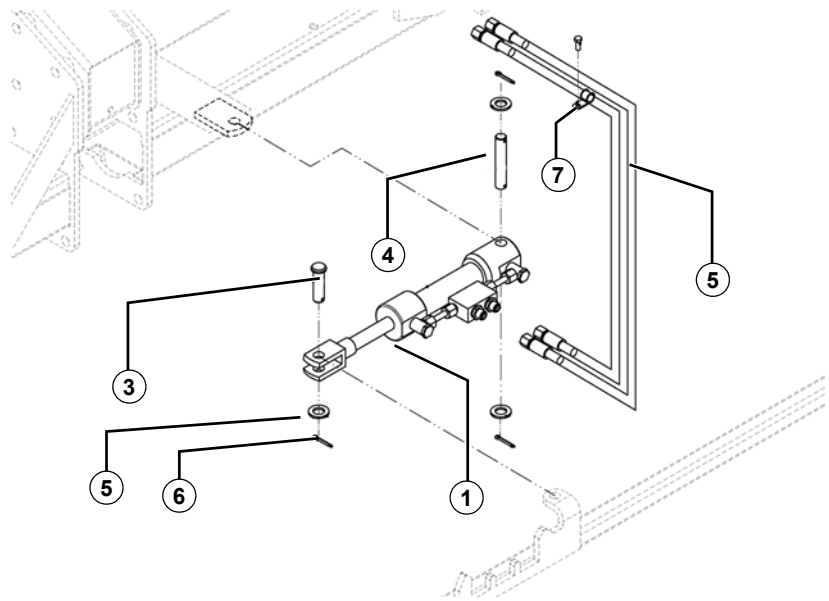
| No. | Quantity | Part                        |
|-----|----------|-----------------------------|
| 1   | 1        | Preassembled contact roller |
| 2   | 2        | M12 U-bolts                 |
| 3   | 2        | M12 washers                 |
| 4   | 2        | M12 nuts                    |
| 5   | 1        | Right-hand transport lock   |
| 6   | 1        | Left-hand transport lock    |
| 7   | 1        | Pins for transport lock     |
| 8   | 2        | 16 x 22 x 1 washers         |
| 9   | 2        | M10 washers                 |
| 10  | 2        | M10 nuts                    |
| 11  | 1        | Hitch pin                   |
| 12  | 1        | Fixing pin                  |
| 13  | 1        | Chain with safety splint    |

## Hydraulic border tedding system [+]



The hydraulic border tedding system replaces the mechanical border tedding system.

- ▶ Remove the cable pull for the mechanical border tedding system.
- ▶ Remove the lever for the mechanical border tedding system.
- ▶ Fit the hydraulic cylinders for the hydraulic border tedding system as illustrated.
- ▶ Connect the hydraulic hoses.
- ▶ Bring the hydraulic hoses forward and connect them to the tractor's double-acting control device.



| No. | Quantity | Part                             |
|-----|----------|----------------------------------|
| 1   | 1        | Preassembled hydraulic cylinders |
| 2   | 2        | Hydraulic hoses                  |
| 3   | 1        | Left-hand pin                    |
| 4   | 1        | Right-hand pin                   |
| 5   | 3        | M16 washers                      |
| 6   | 3        | Split pins                       |
| 7   | 2        | Jubilee clips                    |



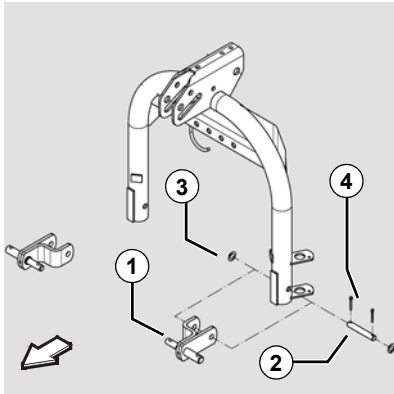
Ensure that the hydraulic hoses do not chafe or kink.

# Adjusting work

## Coupling the machine

The machine is equipped ex-factory for coupling to the tractor's three-point lifting pickup. The lower link clevises can optionally be used for category I or category II hitches.

### Fitting the clevises

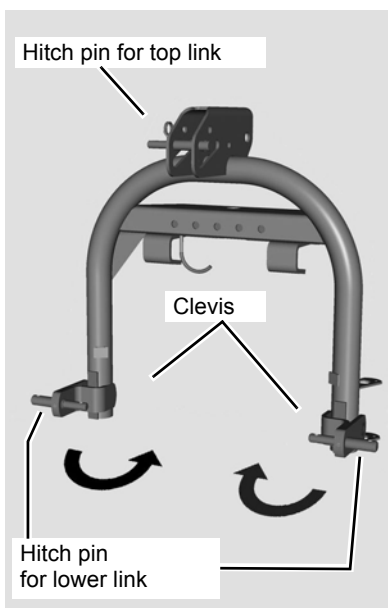


If the clevises are not yet fitted, fit them as illustrated:

- ▶ Fit the clevises to the 3 point trestle.
- ▶ Insert the pin through the clevis and the 3 point trestle.
- ▶ Fasten the pin using washers and split pins.

| No. | Quantity | Part         |
|-----|----------|--------------|
| 1   | 2        | Clevises     |
| 2   | 2        | 108 x 20 pin |
| 3   | 4        | Washers      |
| 4   | 4        | Split pins   |

### Coupling



- ▶ Check if clevises of the lower link are set to category I or category II.
- ▶ Turn clevises of the lower link through 180°, if necessary, and secure with split pins.
- ▶ Move the tractor back with lowered lower links until the arrester hooks of the lower link are positioned below the machine's hitch pins.
- ▶ Lift the lower link via the tractor's hydraulic control device until the arrester hooks of the lower link engage with the hitch pins.
- ▶ Secure hitch pins for lower link.
- ▶ Adjust the tractor's top link to the required length and connect to the hitch pin for top links.
- ▶ Secure hitch pins for top link.

## PTO shaft

### Adjusting the PTO shaft

The length of the PTO shaft was selected at the factory to suit almost all types of tractor. Only in exceptional cases is a correction of the PTO shaft length required on individual tractors. Check the length of the PTO shaft on each tractor prior to first use.

A manufacturer's operating manual for the PTO shaft is enclosed. This includes detailed information on the relevant version of the PTO shaft and must be observed.

### Safety



#### **Switch off the tractor and secure it**

Before you dismount:

- ▶ Switch off the tractor.
- ▶ Remove the ignition key.
- ▶ Secure the tractor against rolling away.

**An unsecured tractor can run over or trap you. Serious or fatal injury may be caused as a result.**

#### **Check the angle of lock**

The PTO shaft has a wide hinge joint giving the tractor a steering angle of up to 80°. Make sure that the PTO shaft is not damaged during sharp cornering. This would result in damage to the machine.

#### **Correct length**

A PTO shaft that is too long must not be used. Otherwise, damage to the drive bearings on the tractor and machine may be caused as a result.

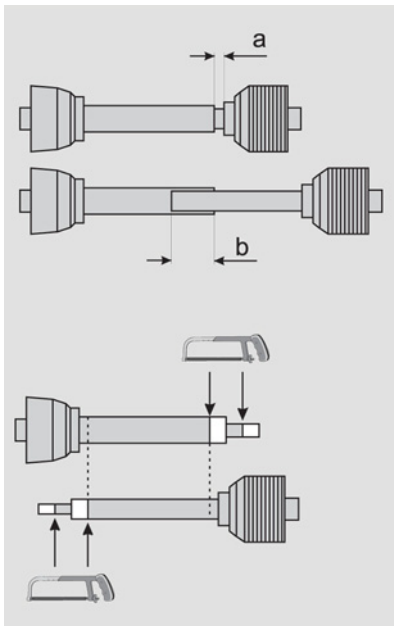
### Checking the length of the PTO shaft



- ▶ Couple the machine to the tractor without the PTO shaft.
- ▶ Lower the tractor's lower link.
- ▶ Set the combination (tractor and machine) to the smallest steering angle.
- ▶ Switch off the tractor and secure it against rolling away.

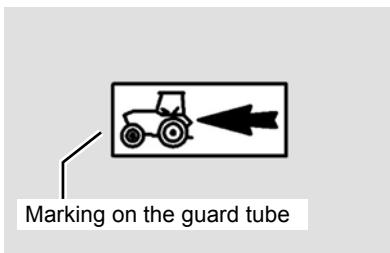
# Adjusting work

## Shortening the PTO shaft



- ▶ Pull the PTO shaft apart and connect one half to the tractor PTO shaft drive and one to the machine and secure them.
- ▶ Place the two shaft halves next to each other and:
  - Check for a minimum of 250 mm overlap (b).
  - Check that the PTO shaft is not blocked at one end (minimum distance (a) = 20 mm).
- ▶ Shorten the slide tube and guard tube by the same dimension.
- ▶ Deburr the ends of the tube.
- ▶ Remove the swarf.
- ▶ Grease the sliding surfaces well.

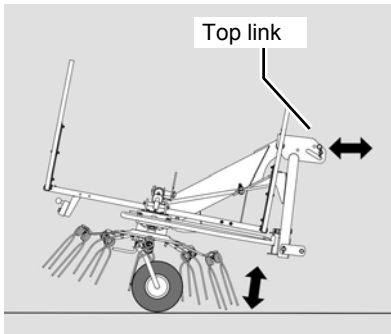
## Fitting the PTO shaft



Make sure that you fit the PTO shaft in the correct installation position. There is a marking on the guard tube of the PTO shaft.

- ▶ Check the length of the PTO shaft and shorten it if necessary.
- ▶ Place the PTO shaft onto the PTO stub shaft of the machine.
- ▶ Secure the PTO shaft with a locking pin.

## Adjusting the working depth



In working position, the distance between the tines and the ground is adjusted via the tractor's top link.

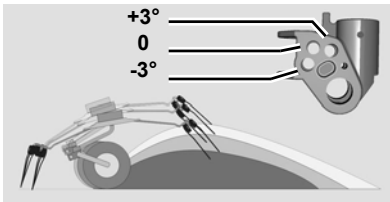
- ▶ The PTO shaft drive is off.
- ▶ Use the tractor's hydraulic control device to move the machine to its work position.
- ▶ Align the running wheels by driving forwards.
- ▶ Switch off the tractor and secure it.
- ▶ Adjust the top link to the required length so the distance between the tines and the ground can be adapted.



The tines should lightly touch the ground.

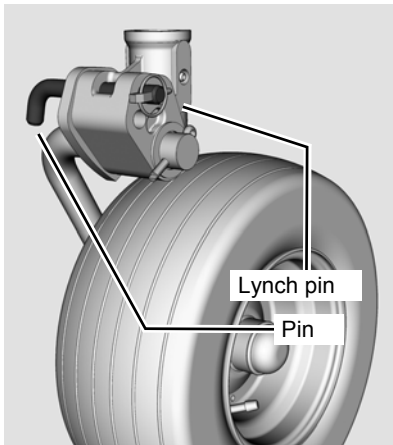
# Adjusting work

## Adjusting the rotor pitch



### Secure the machine

Secure the machinery against inadvertent starting and rolling away. The machine must be standing on firm and level ground and, if necessary, be supported during the work. Unsecured or non-supported machines can cause accidents.



The rotor pitch changes the tedding angle. It thereby adjusts how far the crop is ejected to the rear. The tedding angle can be adjusted in steps of 3°.

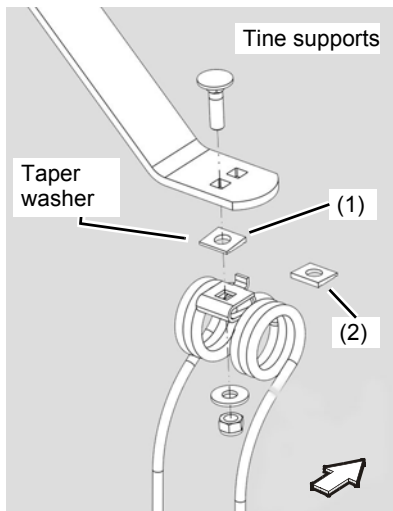
- ▶ Switch off the tractor PTO shaft drive.
- ▶ Use the tractor's hydraulic control device to move the machine to its work position.
- ▶ Align the running wheels by driving forwards.
- ▶ Using the tractor's three-point lifting pickup, lift the machine by approximately 30 cm.
- ▶ Lock the tractor's hydraulic control device.
- ▶ Switch off the tractor and secure it.
- ▶ Remove the ignition key.
- ▶ Release the lynch pin on all rotor chassis.
- ▶ Move running wheel axle into new position.
- ▶ Insert bolt and secure with lynch pin.



Adjust all wheels uniformly. The flatter the rotor pitch, the better the crop pickup.

## Adjusting the tine supports

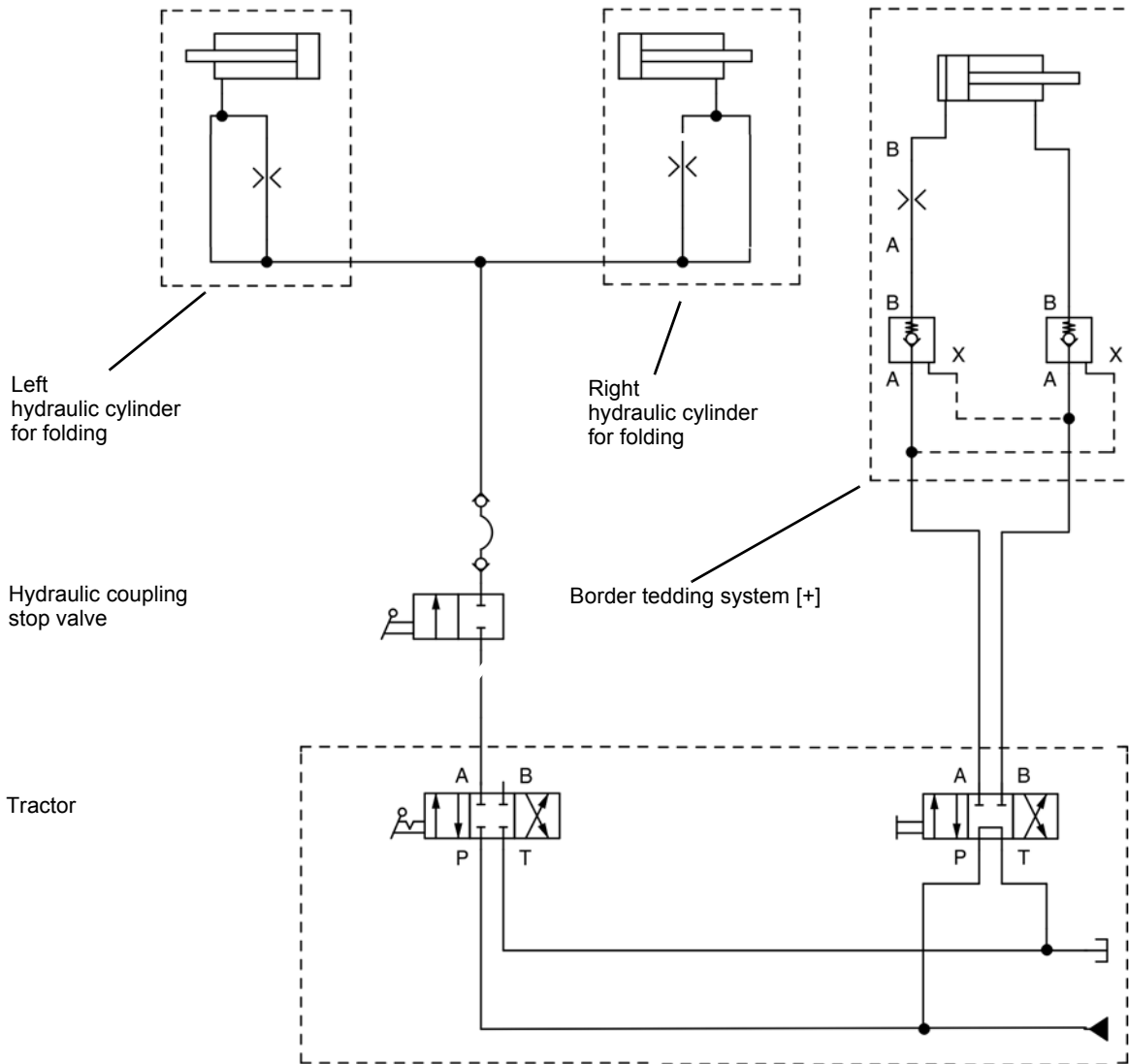
The lowering angle of the spring tines is set using taper washers. This function allows a continuous, even and optimum performance. The smaller the angle, the steeper and stronger the tine position.



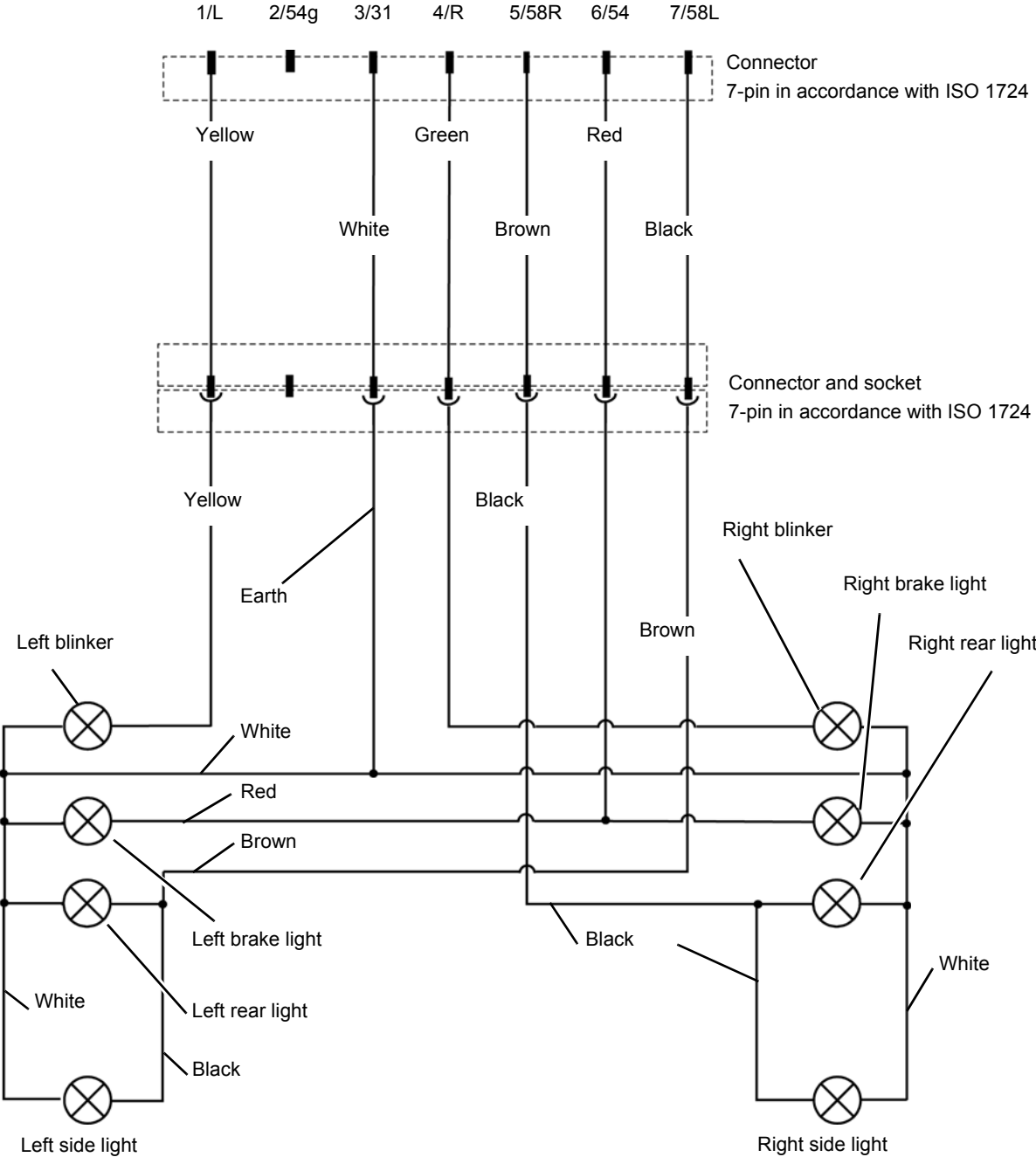
- ▶ To fit taper washers to the tine supports:
  - Angle of tine position (1): gentle ( $8^\circ$ ).
  - Angle of tines without taper washer: normal ( $4^\circ$ ).
  - Angle of tine position (2): aggressive ( $0^\circ$ ).

# Circuit diagrams

## Hydraulic diagram



Lighting equipment circuit diagram [+]



# Final tasks

## Trial run



### **No persons within the slewing range**

There is an extreme risk of injury within the slewing range from slewing or folding machine parts!

- ▶ Check the following after assembly is complete.
  - Length of PTO shaft. See »Adjusting the PTO shaft«, page 33.
  - All screws and torques.
  - Correct routing of the electrical cables.
  - Correct routing of the hydraulic hoses.
  - The connections of the hydraulic components.
  - Track position of all running wheels.
  - Rotational direction of the tine supports.
- ▶ Grease all lubrication points, as described in the operating manual.
- ▶ Referring to the operating manual, adjust the machine and carry out a trial run.
- ▶ Extend and retract the hydraulic cylinders from the end position at least 10 times in order to bleed the cylinders.
- ▶ Once complete, check the hydraulic system for leaks.

## Environment

- ▶ Dispose of packaging according to the current local waste disposal guidelines.
- ▶ Ensure that lubricants are handled and disposed of correctly.